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: Jarrell High School					**2. Regulated Entity No.: RN 101519049**			
3. Customer Name: Jarrell ISD					**4. Customer No.: CN 600794234**			
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):**		119.5
9. Application Fee:	$11,950		**10. Permanent BMP(s):**			Wet Pond (Existing)		
11. SCS (Linear Ft.):	942.8'		**12. AST/UST (No. Tanks):**			2		
13. County:	Williamson		**14. Watershed:**			Salado Creek		

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	_XX_
Region (1 req.)	___	___	_XX_
County(ies)	___	___	_XX_
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 _XX_Jarrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.	
Matt Hardy, PE	
Print Name of Customer/Authorized Agent	03/11/2024
Signature of Customer/Authorized Agent	Date

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

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) 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 **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Matt Hardy, PE

Date: 03/11/2024

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Jarrell High School
2. County: Williamson
3. Stream Basin: Salado Creek
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☒ SCS
   ☒ Modification
   ☒ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

   Contact Person: Toni Hicks, Ed. D
   Entity: Jarrell ISD
   Mailing Address: 108 E. Avenue F
   City, State: Jarrell, TX Zip: 76537
   Telephone: 512-746-2124 FAX: 512-746-2518
   Email Address: toni.hicks@jarrellisd.org

8. Agent/Representative (If any):

   Contact Person: Matt Hardy, PE
   Entity: Langan Engineering
   Mailing Address: 9606 N. Mopac Expressway, Suite 110
   City, State: Austin, TX Zip: 78759
   Telephone: 817-328-3240 FAX: _____
   Email Address: mhardy@langan.com

9. Project Location:

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

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

    The high school site is located on the north sideof FM 487 about one mile west of its intersection with I35

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

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

    ☒ Project site boundaries.
    ☒ USGS Quadrangle Name(s).
    ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
    ☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☐ Survey staking will be completed by this date: _____

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. 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

15. 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/Uncleared)
    ☒ Other: Existing Institutional (High School)

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

    (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

    (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

    (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

    (4) The use of sewage holding tanks as parts of organized collection systems; and

    (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

    (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

    (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
☒ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
☒ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

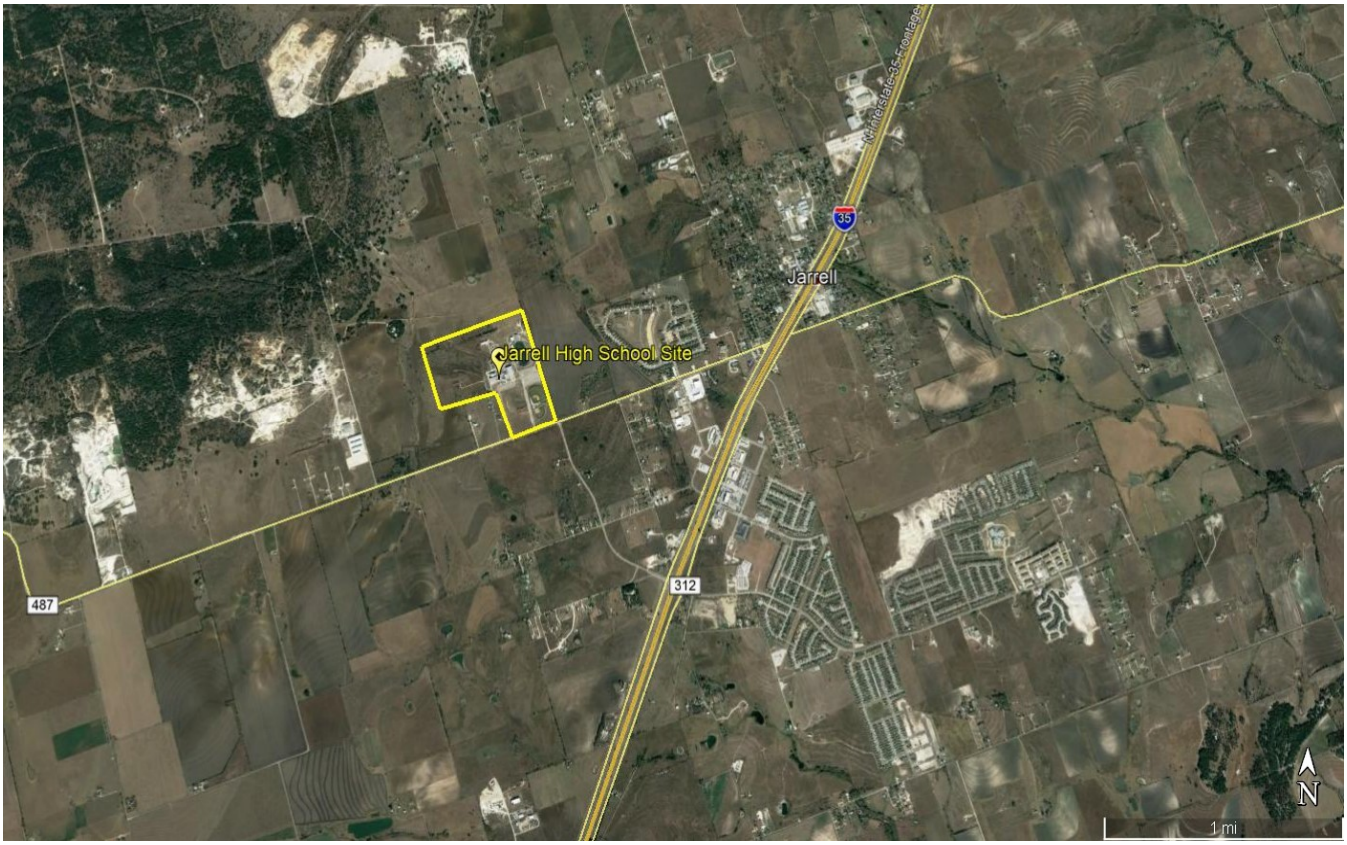
☐ TCEQ cashier
☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ 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. The copies must be submitted to the appropriate regional office.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

General Information Form - TCEQ Form 0587

Attachment A: Road Map



General Information Form - TCEQ Form 0587

Attachment B: Edwards Aquifer Recharge Zone Map

General Information Form - TCEQ Form 0587
Attachment B: USGS Map

USGS science for a changing world

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

The National Map US Topo

COBBS CAVERN QUADRANGLE
TEXAS
7.5-MINUTE SERIES

Jarrell HS site

EdAq Recharge Zone boundary

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
10 000-foot ticks: Texas Coordinate System of 1983 (central zone)

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, July 2014
Roads..... U.S. Census Bureau, 2014 - 2015
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2003
Boundaries.....Multiple sources; see metadata file 1972 - 2015

Wetlands.....FWS National Wetlands Inventory 1977 - 2014

UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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

SCALE 1:24 000

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

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

QUADRANGLE LOCATION

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

ADJOINING QUADRANGLES
1 Ding Dong
2 Youngsport
3 Salado
4 Florence
5 Jarrell
6 Leander NE
7 Georgetown
8 Weir

COBBS CAVERN, TX
2016

76430163955596
NSN. 7643016395596
NGA REF NO. USGSX24K9370

General Information Form - TCEQ Form 0587
Attachment B: USGS Map

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
10 000-foot ticks: Texas Coordinate System of 1983 (central zone)

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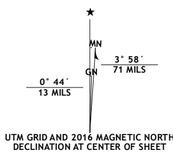

UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
PV
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
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National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

QUADRANGLE LOCATION

ROAD CLASSIFICATION

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

1	2	3
4		5
6	7	8

1 Youngsport
2 Salado
3 Holland
4 Cobbs Cavern
5 Bartlett
6 Georgetown
7 Weir
8 Granger

ADJOINING QUADRANGLES

JARRELL, TX
2016

764301639670 1
NSN. 7643016396701
NGA REF NO. USGSX24K22406

Form 0587 Attachment C: Project Description:

The proposed project is additions and renovations to Jarrell High School on the existing 119.5-acre tract located at 1100 FM487 in Jarrell, Texas. The additions consist of a new operations center, a new administrative addition near the main entrance of the high school, a choir addition on the southeast corner of the existing building, and a new ag facility adjacent to the existing ag building, which will also be renovated. The operations center has several key elements associated, including bus and driver parking areas, a fueling station with canopy, two above ground storage tanks for the storage of gasoline and diesel fuel, and two access drives connecting to on-site circulation paths.

The project demolition will be 19,513 Square feet and the additional impervious cover will add 442,955 square feet. The net for the project will add 10.17 acres or an additional 8.5%. The total impervious cover will total 37.07 acres (31.0 percent).

Due to expected additions of impervious cover with future school expansions, a wet basin water quality and detention pond were added in WPAP Mod #5 permit package sufficient to treat 65% impervious cover. The proposed additions do not modify existing drainage patterns.

The project scope associated with WPAP Modification #7 approved in March of 2023 is currently under construction. The existing water quality pond proposed with Modification #5 has been completed and is currently in service. The drawings and scope associated with this WPAP modification, SCS modification, and AST addition are being added to the on-going project.

The proposed additions require additions to the existing sewer system in three locations, including the new operations center, the new ag barn addition, and an adjustment at the new choir addition. A total of 942.8 linear feet of sanitary sewer line is to be installed and included in the site Sewage Collection System Modification.

GEOLOGIC ASSESSMENT

Rowden Consulting, LLC
Environmental Services

Project:
Jarrell High School Campus
1100 FM 487
Jarrell, Williamson County, TX

Rowden Project No. 19.069

Prepared For:
Adams Engineers
13785 Research Blvd., Ste. 125
Austin, Texas 78759

© November 25, 2019*
*Table Corrected with Clarifications 3/22/23

Rowden Consulting, LLC
P.O. Box 978 ● Bullard, TX 75757
903.894.6410

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APPENDICES

INTRODUCTION

Rowden Consulting, LLC was retained by Adams Engineers & Development Consultants to conduct this geologic assessment of approximately 120 acres of land comprised of the existing Jarrell High School and undeveloped acreage planned for development and expansion of the campus. The property is located at 1100 FM 487 in Jarrell, Williamson County, Texas. The primary purpose of this assessment was to evaluate the property for geologic or man-made features that could exhibit increased rates of recharge to the subsurface.

After conducting a literature and file review, a field evaluation was conducted to identify any potential occurrences of geologic or man-made features. The study area was evaluated for potential features including, but not limited to, closed depressions, sinkholes, caves, faults, fractures, bedding plane surfaces, interconnected vugs, reef deposits, wells, borings, and excavations which may have hydraulic interconnectedness between the surface and the Edwards Aquifer. The evaluation was conducted in accordance with the requirements of the Edwards Aquifer rules provided in 30 TAC Chapter 213.

PROJECT DESCRIPTION

The property is comprised of approximately 120 acres of land developed for the Jarrell High School campus. Approximately 63 acres remains undeveloped, and this acreage is currently being evaluated for development and campus expansion. Adjacent properties are comprised of undeveloped, agricultural land. Properties to the east and south are actively being farmed while properties to the north and west are used as rangeland pasture. Farm to Market Road 487 is located adjacent to the south side of the property.

The proposed development plan for the subject property had not been completed at the time this report was prepared. According to the school district's engineer, the current task is to master plan the facility to plan for future growth. Since no site plans were available, the Site Geologic Map in Appendix II will not likely match the scale of the site plan produced in the future by Adams Engineers. An updated Site Geologic Map may be required at a later date to match the scale of the engineer's drawing.

Again, the current engineering task is to master plan the future campus. Jarrell is a growing community, and campus expansion is expected to include additional buildings, athletic fields, and other buildings and amenities required to support the future growth of the school. At this time, there are no permanent stormwater controls in place other than a detention pond and vegetated filter strips (according to previous permit information). A detention pond was observed in the field. A wet pond may be constructed on the northwest corner of the property in the future. Proposed development plans will be completed before an application for a Water Pollution Abatement Plan can be submitted to the Texas Commission on Environmental Quality (TCEQ) for review and approval.

METHODS

This Geologic Assessment was conducted in accordance with the requirements of 30 TAC Chapter 213, including an implementation of the TCEQ-0585-Instructions document titled *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* Rev. 10-01-04). The general procedure for conducting the geologic assessment was to perform the following steps: research information, perform a field survey, evaluate data, make conclusions, and make a report with feature assessments and recommendations.

A Professional Geoscientist with Rowden Consulting, LLC walked transects spaced fifty feet apart and mapped the location of any sensitive or non-sensitive features using a handheld global positioning system (GPS), topographic maps, LDIAR maps, and aerial photographs. Features and transects were mapped in the field using a mapping grade global positioning (GPS) system. A Global Navigation Satellite System (GNSS) GPS receiver was used in the field. Real-time correction was utilized to attempt meter to submeter accuracy. Accuracy was closely monitored during fieldwork and critical data point collection was allowed to average over time until near or sub-meter results were achieved. The GNSS GPS is typically capable of producing one-meter positional accuracy using GPS, Precise Point Positioning (PPP), and Satellite-based Augmentation System (SBAS). PPP technology is made possible by stabilizing measurements of the distance between GNSS satellites and the receiver (pseudo-ranges) using carrier phase tracking. Additional accuracy is achieved from ionospheric correctional data received from satellite-based augmentation systems. Benchmark points were utilized to ensure accuracy at the beginning and end of the field day, and control points were carefully monitored with sufficient time to ensure that accuracy levels were acceptable for critical field shots.

The Geologic Assessment Table in Appendix I provides a description of features that meet the TCEQ definition of sensitive or nonsensitive features, where identified. Features that do not meet the TCEQ definition of potential features, which include surface weathering, karren, or animal burrows, were evaluated in the field and omitted from this report. To a limited degree, the geoscientist removed loose rocks and soil to preliminarily assess each feature's subsurface extent. No intensive excavation was conducted.

The results of this ground level survey do not preclude the possibility of finding subsurface voids or abandoned test or water wells during the clearing or construction phases of the proposed project. If a subsurface void is encountered during any phase of the project, construction should be halted and the TCEQ should be notified. Void closure plans may be required to resume development in such areas.

PREVIOUS STUDIES AND APPROVALS

A file review was conducted at the Texas Commission on Environmental Quality (TCEQ) Central File Room. The subject property was evaluated previously when the existing campus was being planned for development. Kenneth Crider with Steger & Bizzell Engineering, Inc. completed a geologic assessment of the property in 1997. Mr. Crider identified no karst features on the property, but noted the possible sensitivity of a fault line through the property. Mr. Crider also identified two pairs of water wells on the property (four wells), which were unused and planned for plugging and abandonment. Permits were issued under the Edwards Aquifer Protection Plan for the Jarrell High School by the Texas Natural Resource Conservation Commission.

Several modifications were approved by the Texas Commission on Environmental Quality for the Jarrell High School campus in years subsequent to the initial Water Pollution Abatement Plan (WPAP) approval. All modifications included reference to the 1997 Geologic Assessment with no new assessments. Modifications generally included sewer projects, wastewater treatment projects, stormwater management and detention, and the installation of athletic fields. A TCEQ Investigation Report dated May 3, 2006 noted that four wells were shown in the 1997 assessment, but only one plugged well was found at one location, and a plugged well with a cistern and concrete trough were observed at the other location. The second well (or wells) shown in the pairs of wells in the 1997 Geologic Assessment were thought to be an error. A TCEQ modification approval letter issued on June 8, 2009 noted that there were only two abandoned water wells on the property and both had been plugged. Another TCEQ letter dated May 14, 2015 referenced the 1997 Geologic Assessment and noted that only two plugged water wells were observed in 2006.

SITE GEOLOGY

According to the *Geological Atlas of Texas, Austin Sheet* (Barnes 1974. Reprinted 1981.), the property is located along a fault line (labeled as Feature S-1 on the attached Geologic Site Map). On the northwest side of the fault line, the surface geology is represented by the Georgetown formation. On the southeast side of the fault line, the surface geology is represented by the Del Rio clay. Smaller scale Geographic Information System shapefile data from the STATEMAP Program (Bureau of Economic Geology 2019), also maps a very small area of Edwards Formation outcrop on the extreme northwestern property corner. However, field evaluations did not confirm the presence of the Edwards Formation outcrop on the property. The Edwards Formation does not appear to outcrop at the surface within the study area as it is overlain by the Georgetown formation and Del Rio clay (where the Del Rio is present).

The Edwards Formation is susceptible to chemical weathering processes and is typically vuggy where exposed. Karst features are typically present wherever the Edwards Formation is present (Housh, 2007). The Edwards Formation is overlain by the Georgetown Formation and the Del Rio clay within the study area. The study area is located within the Balcones Fault Zone, and a fault extends through the study area in a northeast-southwest direction. This fault line separates the two surface geologic units. Both the Georgetown Formation and Del Rio clay are part of the Washita Group. The Georgetown Formation is a massive nodular limestone that is often hydrologically connected to the underlying Edwards Limestone (Brune and Duffin, 1983). The Del Rio clay is composed of shale (Brune and Duffin, 1983).

The Edwards Formation is an aquifer sensitive to rapid recharge in the area. The Edwards Formation consists of massive limestone beds with bands of chert nodules and rudistid biostromes (Housh, 2007). The Edwards Limestone is composed of 200 to 350 feet of highly fractured and thickly bedded

to massive limestone or dolomite, with minor shale, clay, and siliceous limestone. The Edwards Limestone is vuggy in places because of the occurrence of solution-collapse zones (Brune and Duffin, 1983). These zones, parallel to bedding planes, are the result of dissolution of gypsum beds that formerly occurred in this stratigraphic unit. They are cavernous and iron stained and contain brecciated limestone, chert, crystalline calcite, and residual clay. These solution-collapse zones occur mainly 60 to 80 feet above the base of the Edwards Limestone, and are the main water-bearing horizons in the aquifer (Brune and Duffin, 1983). In addition to solution-collapse zones, groundwater in the Edwards aquifer flows through a network of steeply dipping faults and joints (Brune and Duffin, 1983). The Edwards Formation conformably overlies the Comanche Peak Formation and is unconformably overlain by the rocks of the Georgetown Formation in the region including the study area.

Due to its potential for hydraulic connectivity, the Georgetown Formation is typically considered a part of the Edwards aquifer while the lesser permeable Del Rio clay is not. The Del Rio clay is recognized as a confining unit. The lower Washita Group, including the Georgetown Formation, and the Edwards Formation are collectively referred to as the Edwards and associated limestones (Brune and Duffin, 1983). Recharge to the Edwards and associated limestones results from infiltration of precipitation that falls on the outcrop of the aquifer or infiltration of runoff derived from watershed areas upstream from the aquifer outcrop. The recharge zone is characterized by the occurrence of numerous scattered karst features, such as dissolution-enhanced fractures, sinkholes, and caves, which are potential recharge sites (Jones 2003). Recharge also takes the form of infiltration along faults and joints that intersect losing segments of perennial and intermittent streams in the region. These fractures are often enlarged by karstification (Brune and Duffin, 1983). Infiltrating water tends to perch within the Georgetown Formation because of the occurrence of low-permeability shale members. Resultant lateral flow often discharges from small seeps and springs. Rapid recharge occurs when underlying Edwards and Comanche Peak limestones are encountered (Dahl, 1990).

SOILS

U.S. Department of Agriculture *Web Soil Survey*, the lower elevations of the property are mapped within the Denton silty clay, 1 to 3 percent slopes soil series. The northern and southwestern sides of the property are mapped within the Georgetown clay loam, 0 to 2 percent slopes soil series Georgetown stony clay loam, 1 to 3 percent slopes soil series. A part of the south side of the property is mapped within the Heiden clay, 1 to 3 percent slopes soil series, and the east side of the property is mapped within the Houston black clay, 1 to 3 percent slopes soil series. The following information was obtained from the *Web Soil Survey* for each soil series:

Denton silty clay, 1 to 3 percent slopes
Setting
Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile
A - 0 to 14 inches: silty clay
Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay

Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: 22 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Interpretive groups
Hydrologic Soil Group: D
Ecological site: Clay Loam 29-35 PZ (R081CY357TX)
Hydric soil rating: No

Georgetown clay loam, 0 to 2 percent slopes
Setting
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile
A - 0 to 7 inches: clay loam
Bt - 7 to 35 inches: cobbly clay
R - 35 to 60 inches: bedrock

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Interpretive groups
Hydrologic Soil Group: D
Ecological site: Redland 29-35 PZ (R081CY361TX)
Hydric soil rating: No

Georgetown stony clay loam, 1 to 3 percent slopes
Setting
Landform: Ridges
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile
A - 0 to 7 inches: stony clay loam
Bt - 7 to 35 inches: cobbly clay

R - 35 to 60 inches: bedrock

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Interpretive groups
Hydrologic Soil Group: D
Ecological site: Redland 29-35" PZ (R081CY361TX)
Hydric soil rating: No

Heiden clay, 1 to 3 percent slopes
Setting
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey residuum weathered from mudstone

Typical profile
Ap - 0 to 6 inches: clay
A - 6 to 18 inches: clay
Bkss - 18 to 58 inches: clay
CBdk - 58 to 70 inches: clay

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 65 inches to densic material
Natural drainage class: Well drained
Runoff class: Very high
Interpretive groups
Hydrologic Soil Group: D
Ecological site: Southern Blackland (R086AY011TX)
Hydric soil rating: No

Houston Black clay, 1 to 3 percent slopes
Setting
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile
Ap - 0 to 6 inches: clay
Bkss - 6 to 70 inches: clay

BCkss - 70 to 80 inches: clay

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very high

Interpretive groups
Hydrologic Soil Group: D
Ecological site: Southern Blackland (R086AY011TX)
Hydric soil rating: No

WATER WELLS

As mentioned previously, the subject property was evaluated previously in 1997 and four water wells were identified on the property. Subsequent inspections by the TCEQ identified only two plugged water wells at the locations of two pairs of wells previously reported. One of these plugged wells was observed in the field during this assessment. The plugged well presents no concern for rapid recharge or infiltration. The approximate location of the second well was also observed during this field event. However, the plugged status of this well could not be confirmed as some disturbances of the area were evident. However, the shallow feature was observed to be filled by fine material with no evidence of water movement or potential for rapid recharge.

A TCEQ Investigation Report dated May 3, 2006 noted the presence of a plugged well, a cistern and a concrete trough on the north side of the property. A concrete watering trough was observed on the north side of the property, and the trough had been flipped over, which must have required heavy equipment. In addition, concrete blocks, steel piping, and well casing materials were observed in a mound of dirt thought to have been pushed up by heavy equipment. Small trees had begun growing in the mound. Footings and wood observed in the area are thought to have supported a windmill, which was identified in a previous land survey. Remnants of electric pump equipment were also observed.

It is unknown if the water well on the north side of the property remains properly plugged at depth. It's current condition presents no potential for rapid recharge, but construction in this area could disturb the feature. An investigation of the area revealed the remnants of a hole or well bore that had been concealed by a slab of concrete. Upon removing the slab of concrete, a hole was revealed with a depth of about 2 feet and width of about 1.5 feet. There was no evidence of water movement or infiltration, and the area was filled with nesting material with interior evidence of animal burrowing. This feature had a concrete cap with a circular opening, which likely surrounded a well casing or pipe previously. Probing of the area revealed no concrete and only soil fill material. It is unknown if this was the plugged well and heavy equipment physically removed the casing and surface plug, if the potential well remains plugged at depth, or if this is a remnant of a cistern observed previously by TCEQ. Due to its unknown condition and potential for increased infiltration following grading and construction, out of an abundance of caution, it is recommended that the feature be investigated by a licensed water well driller, and if necessary, re-plugged to ensure its integrity and protectiveness of the underlying aquifer.

Two newer wells were also observed on the property and/or were identified within a literature review. A review of database information provided by the Texas Water Development Board (TWDB) revealed

records of two on-site water wells. Both on-site water wells were drilled on the east edge of the property, and one of the wells has been plugged. Surface geology in this location appears to have been Del Rio clay. The active well (well number 5811604) was drilled for irrigation use in 1999 for Jarrell ISD. The well was drilled to a depth of 700 feet and was reportedly completed in the Trinity (Glen Rose) Formation. The well records indicate that the drilled encountered brown topsoil from the surface to a depth of 4 feet, clay and caliche between 4 and 30 feet, limestone between 30 and 220 feet, shale between 220 and 300 feet, limestone between 300 and 400 feet, and limestone between 400 and 700 feet.

The plugged well identified on the property (well number 5811605) was drilled for irrigation use in 1999 for Jarrell ISD. The well was drilled to a depth of 400 feet. The well records indicate that the drilled encountered brown topsoil from the surface to a depth of 4 feet, clay and caliche between 4 and 31 feet, limestone between 31 and 220 feet, shale between 220 and 310 feet, and limestone between 310 and 400 feet. Both wells appear to have been located within an existing pump house located on the east side of the property. The wells are in a developed area of the campus with no current plans for development or redevelopment. The plugged well and the well in use on the east side of the campus presents no risk of rapid recharge or infiltration.

A review of database information provided by the Texas Water Development Board (TWDB) also revealed records of several nearby water wells. Review of drilling logs for these nearby wells provided pertinent information for this assessment. Two water wells were drilled adjacent to the south side of property (just across FM 487) by the Texas Department of Water Resources for an outcrop study in 1980. One of these wells was located near the southwest corner of the property, which appears to have been within the Del Rio clay surface formation. The well rig geologist reported encountering the top of the Georgetown formation at a depth of 26 feet, the top of the Edwards Formation at a depth of 158 feet, and the base of the Edwards Formation at a depth of 203 feet.

Another well record (well number 404253) was identified approximately 0.7 miles northeast of the property. This well was drilled for domestic use in 2015 for a private landowner. The well was located in a similar geologic setting as the property, and it appears to have been drilled in the Georgetown Formation. No log of lithology was available, but annular seal data indicates a bottom depth of 20 feet while the well was completed in the Edwards Formation at a depth of 160 feet.

Another domestic well record (well number 483011) was identified approximately 0.5 miles southwest of the property. This well was drilled for domestic use in 2018 for a private landowner. The well was also located in a similar geologic setting as the property, and it appears to have been drilled in the Georgetown Formation. The drilling log reported encountering topsoil from the surface to a depth of 2 feet, limestone from 2 to 910 feet, limestone and sand between 910 and 960 feet, and tan limestone from 960 to 970 feet.

A third domestic well record (well number 281132) was identified approximately 0.5 miles west of the property. This well was drilled for domestic use in 2006 for a private landowner. The well was also located in a similar geologic setting as the property, and it appears to have been drilled in the Georgetown Formation. The drilling log reported encountering rocky topsoil from the surface to a depth of 2 feet, Edwards limestone from 2 to 125 feet, limestone and shale between 125 and 380 feet, shale from 380 to 500 feet, limestone from 500 to 650 feet, sandy shale and limestone between 650 and 800 feet, limestone from 800 to 900 feet, and sand and water from 900 to 940 feet.

TOPOGRAPHY AND DRAINAGE

The land surface is gently sloping throughout the study area. Surface drainage from the existing school campus is directed into a large detention pond. Observations of the outfall structure revealed little evidence of recent drainage events, and there was no channel or rill formation below the outlet structure. The detention pond and the rest of the undeveloped property drain via sheetflow in the general direction of the northwest corner of the property.

A linear, man-made drainage ditch provides some drainage conveyance from the west side of the study area to the northwest corner of the study area. This drainage ditch is depicted as an intermittent stream in historic USGS topographic maps. However, the man-made drainage ditch identified on the west side of the study area appears to have been excavated wholly in uplands for the purpose of draining uplands. The man-made ditch does not exhibit a relatively permanent flow of water, and it generally exhibits no ordinary high water mark along most of its length. The ditch was observed to be very dry and would convey drainage only ephemerally. In review of historic aerial photographs, the ditch was excavated many decades ago, and it appears to have been excavated to drain nearly level uplands. The ditch has an entirely earthen bottom, and it was not excavated into bedrock. No exposed rock was exposed in the ditch, except for some limited amount of cobbles visible in the downstream reach near the northwest corner of the study area. With the absence of any ordinary high water mark, ephemeral runoff appears to be rapidly drained from the property and the feature is neither a losing nor gaining drainage feature with little to no connectivity to subsurface drainage.

A 100-year floodplain is mapped along the linear drainage ditch on the west side of the property. The floodplain is shown on the attached Site Geologic Map. The floodplain is likely influenced by a potential backwater flooding impact from downstream waters, on occasion. However, little to no evidence of flooding was observed. Flooding does not appear to be frequent or persistent. According to the civil engineer working on the project, the limits of the possible floodplain are being re-evaluated by their hydrologist as they suspect that the 100-year floodplain does not actually extend very far into the study area. The updated floodplain study has not yet been completed.

SITE ASSESSMENT RESULTS

No sensitive geologic features were identified in this study, except for an existing water well located beyond the limits of development on the existing school campus. Features observed are summarized in the following sections. A non-sensitive fault was observed by inference and interpretation of published geologic maps. A cave was identified through local interviews at an off-site location, an existing water well was identified at the existing school campus, a plugged water well was observed on the east side of the property, and a plugged well feature was observed that requires further investigation and re-plugging by a licensed water well driller, if necessary, to avoid increasing its recharge potential during construction.

Fault Line (Feature: S-1)

According to the *Geological Atlas of Texas, Austin Sheet* (Barnes 1974. Reprinted 1981.), the property is located along a fault line (labeled as Feature S-1 on the attached Geologic Site Map). The fault line trends northeast at an angle of 34 degrees. On the northwest side of the fault line, the surface geology is represented by the Georgetown formation. On the southeast side of the fault line, the surface geology is represented by the Del Rio clay. The entire property is covered by highly indurated clay, including the zone along the fault line. The fault line was not obvious in the field, and its location on the attached Site Geologic Map was inferred from the Geological Atlas.

The area along the fault line was observed to have significant soil development with clayey surface soils. The soils exhibited characteristics of vertisols with significant surface cracking caused by the turning of the soils as a result of wetting and desiccation within clays with a high shrink-swell potential. The property was observed at a time of relative seasonal dryness, and soil cracks were evident. However, the surface cracks are not considered to be potential recharge features as clayey vertisols tighten up rapidly upon wetting. No evidence of water movement or infiltration was observed throughout the zone of the fault line. Due to the presence of the fault, some potential for recharge through soil percolation is likely; however, the Hydrologic Group D soils that overly the fault provide for rapid runoff and very slow permeability. As such, a relative infiltration rate of 5 was assigned to the fault throughout its location on the property. The fault was determined to be a non-sensitive geologic feature.

Earthen-Plugged Well or Cistern (Feature: Well to Inspect)

A soil-filled cistern or wellbore was observed on the northwest side of the property. The possible well feature presents no concern for rapid recharge or infiltration in its current location and condition; however, the potential for future construction impacts in this area is unknown. An investigation of the area revealed the remnants of a hole or well bore that had been concealed by a slab of concrete. Upon removing the slab of concrete, a hole was revealed with a depth of about 2 feet and width of about 1.5 feet. It is unknown if this was the plugged well and heavy equipment physically removed the casing and surface plug, if the potential well remains plugged at depth, or if this is a remnant of a cistern observed previously by TCEQ. Due to its unknown condition and potential for increased infiltration following disturbance by construction, it is recommended that the feature be investigated by a licensed water well driller, and if necessary, re-plugged to ensure its integrity and protectiveness of the underlying aquifer if it is to be disturbed.

Plugged Well (Feature: NW Plugged Well)

A plugged water well was observed on the northwest side of the property. The well was observed plugged with concrete. The feature has a low sensitivity for recharge.

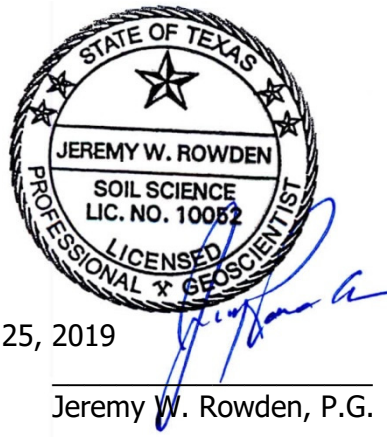
Existing Well (Feature: Open Well)
An existing water well was identified on the east side of the property. The well has the potential for rapid recharge, but is currently located beyond the limits of development within the existing school campus. The well is currently in use. Should redevelopment of this area be planned in the future, the well should be properly plugged and abandoned or setbacks be considered.

Plugged Well (Feature: East Plugged Well)
A plugged water well was observed on the east side of the property. The plugged well is located within an existing well house. The feature has a low sensitivity for recharge.

Off-Site Cave
An interview with a neighboring landowner identified the presence of an off-site, downgradient cave at a location 1,185 feet north-northwest of the northwest corner of the property. The cave is not located within the study boundary, and any potential setbacks around the off-site cave would not encompass any of the subject property. As such, no mapping of the cave has been provided and it was not entered into the Geologic Assessment Table. The cave was found to be formed in the Edwards formation and located at a higher elevation than the floodplain connected with the property, so any drainage or flood occurrences downgradient from the school property should have no potential to inundate or drain to the cave feature, which is located on a hillside above the floodplain.

SIGNATURE OF PROFESSIONAL GEOSCIENTIST

This Geologic Assessment has been prepared under the direction and supervision of the *Professional Geoscientist* undersigned below. The site reconnaissance, as well as review and interpretation of information upon which the report is based were all portions of the assessment performed by the undersigned.



November 25, 2019

Jeremy W. Rowden, P.G.

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APPENDIX I
GEOLOGIC ASSESSMENT TABLE

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Jarrell ISD Expansion

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	30.8179° N	97.6300° W	F	20	Kgt/Kdr	2350			N34E	10			F	5	35	X			X	hillside
Well to Inspect	30.8208° N	97.6331° W	MB	30	Kgt	1.5	1.5	2		0			F	5	35	X		X		hillside
NW Plugged Well	30.8202° N	97.6324° W	MB	30	Kgt	0.5	0.5	0		0				5	35	X			X	drainage
Open Well	30.8192° N	97.6258° W	MB	30	Kdr	0.5	0.5	700		0				35	65		X	X		hillside
East Plugged Well	30.8192° N	97.6258° W	MB	30	Kdr	0.5	0.5	0		0				5	35	X		X		hillside
															0					
															0					
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2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

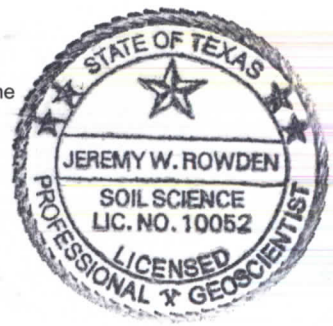
8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

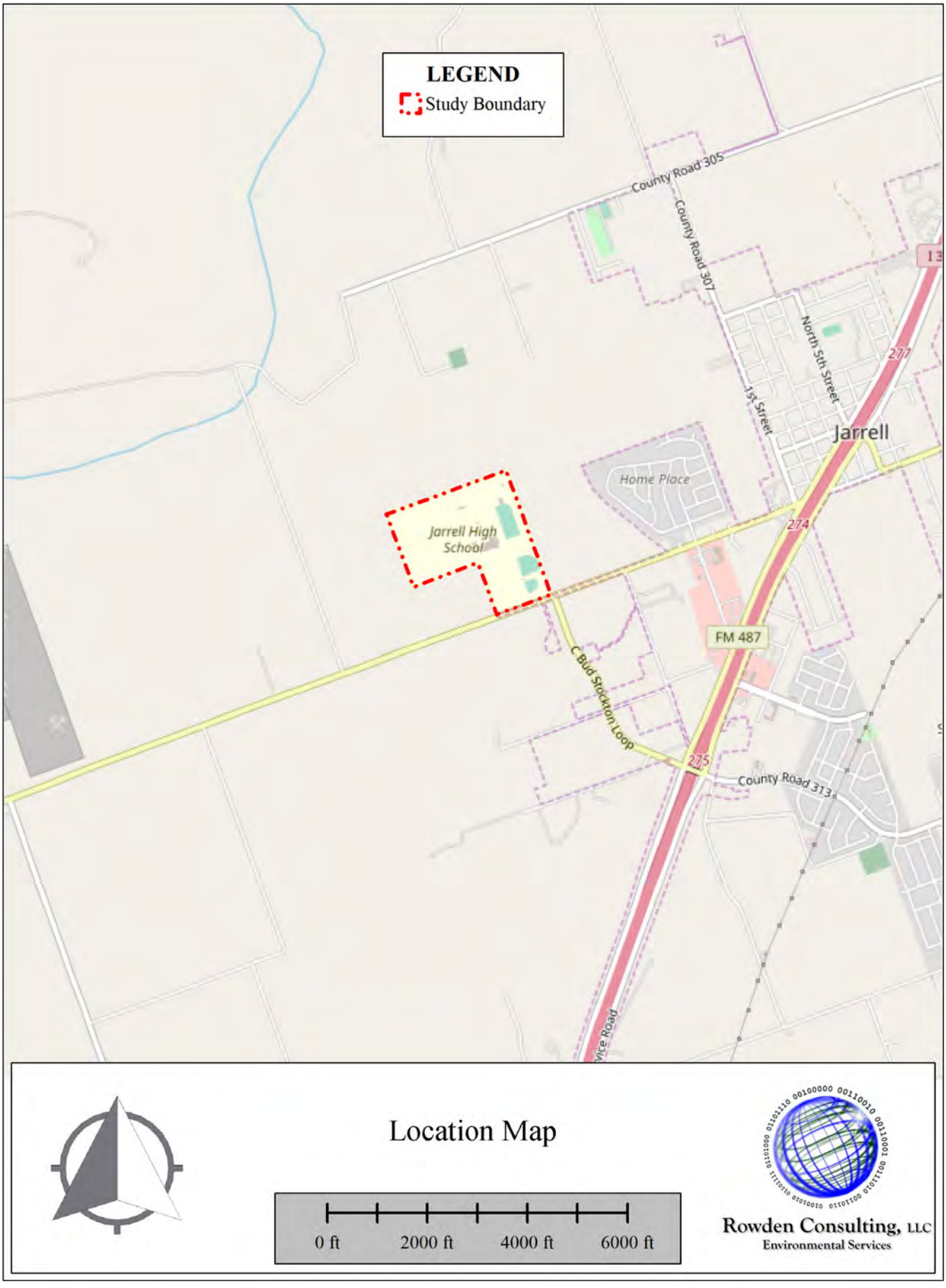
Date 3/22/23



Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)

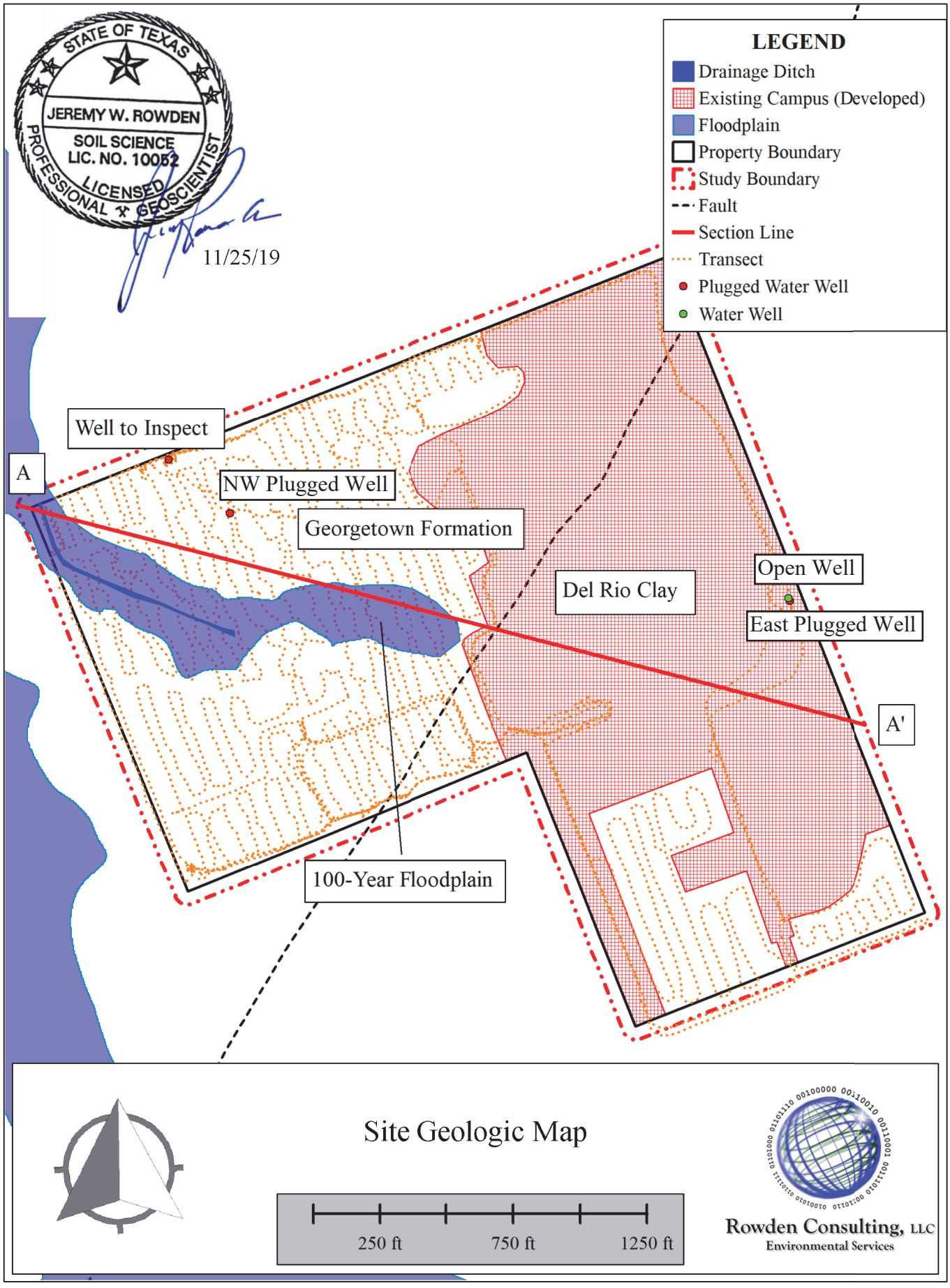
APPENDIX II
MAPS



Location Map

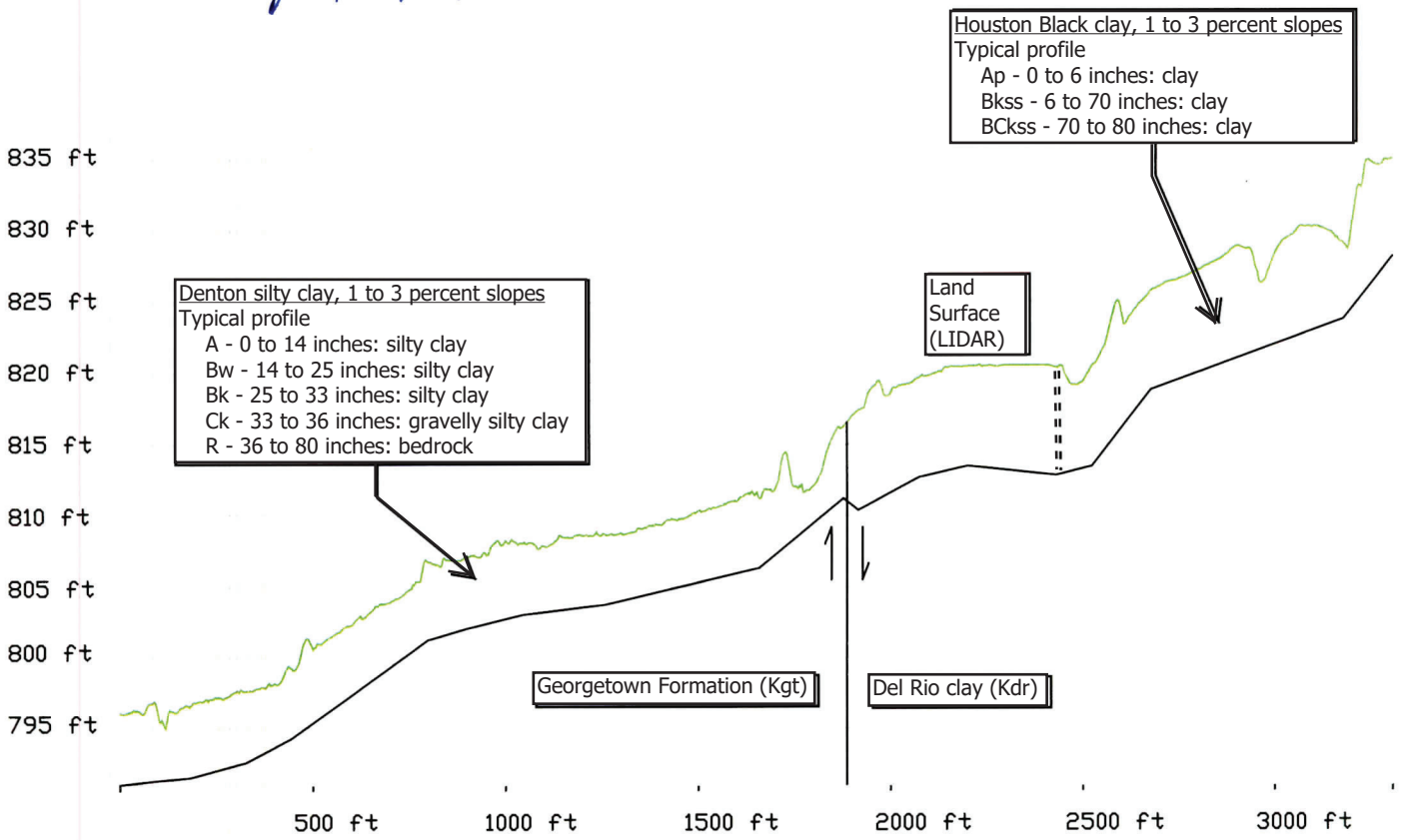
Rowden Consulting, LLC
Environmental Services

Existing Site Features Map


STATE OF TEXAS
JEREMY W. ROWDEN
SOIL SCIENCE
LIC. NO. 10052
LICENSED
PROFESSIONAL GEOSCIENTIST
11/25/19
LEGEND
Drainage Ditch
Existing Campus (Developed)
Floodplain
Property Boundary
Study Boundary
Fault
Section Line
Transect
Plugged Water Well
Water Well
Well to Inspect
A
NW Plugged Well
Georgetown Formation
Del Rio Clay
Open Well
East Plugged Well
A'
100-Year Floodplain
Site Geologic Map
250 ft
750 ft
1250 ft
Rowden Consulting, LLC
Environmental Services

STATE OF TEXAS
JEREMY W. ROWDEN
SOIL SCIENCE
LIC. NO. 10052
LICENSED
PROFESSIONAL GEOSCIENTIST

11/25/19



Section A – A'

Georgetown Formation (Kgt) - limestone and marl; mostly limestone, fine grained, argillaceous, nodular, moderately indurated, light gray; some limestone, hard, brittle, thick bedded, white; some shale, marly, soft, light gray to yellowish gray; thickness 30-80' (Barnes).

...

Del Rio clay (Kdr) - calcareous and gypsiferous, becoming less calcareous and more gypsiferous upward, pyrite common, blocky, medium gray, weathers light gray to yellowish gray; some thin lenticular beds of highly calcareous siltstone; thickness 40-70' (Barnes).

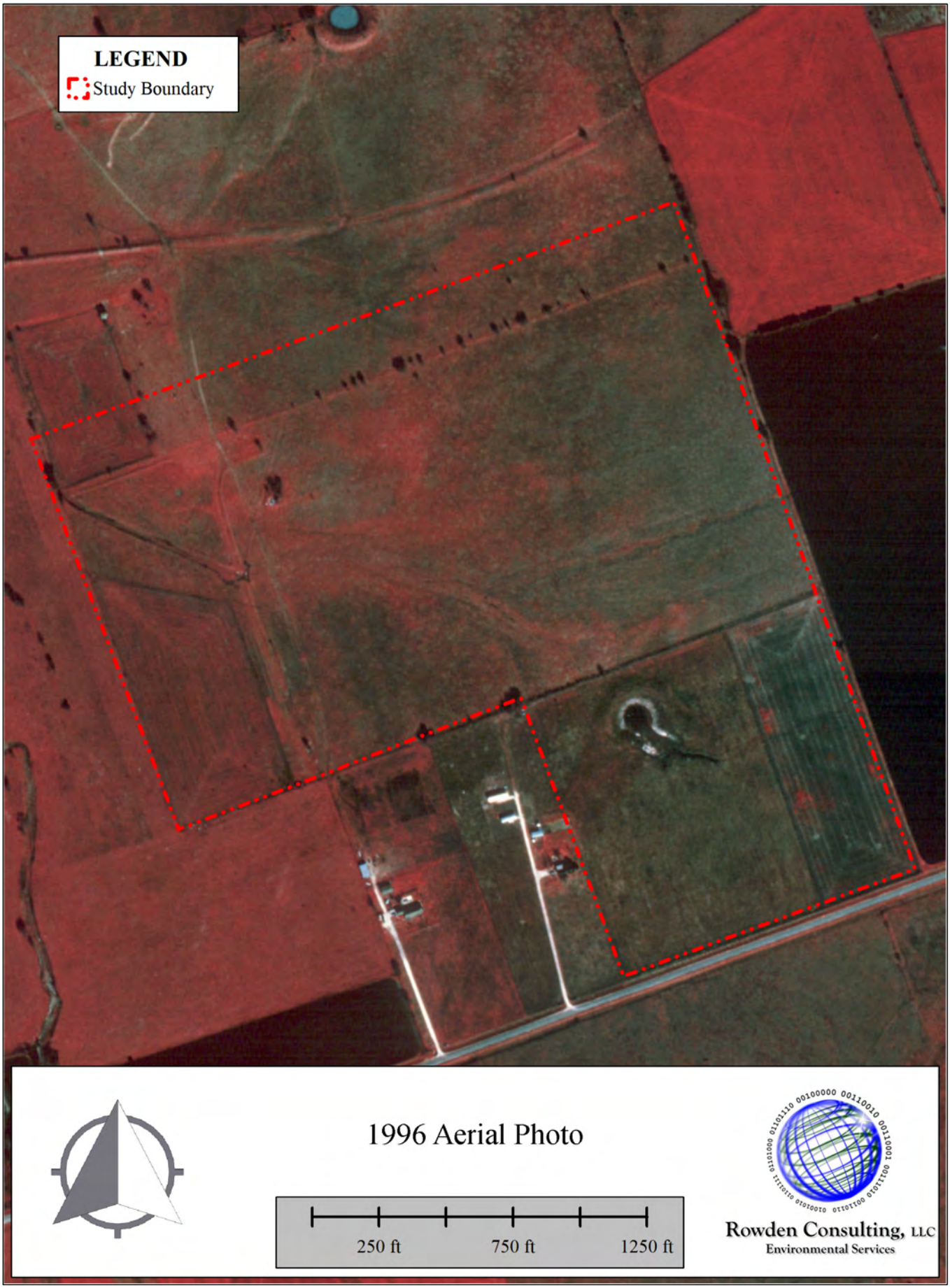
SCALE: 1"= 500'	Section A – A'	Rowden Consulting, LLC Environmental Services P.O. Box 978 - Bullard, TX - 75757	PROJECT NO. 19.069
FIGURE NO. Sec	Jarrell High School November 2019		DATE Nov 2019
			PROJECT MGR. jwr
			PROJECT TECH jwr

2018 Aerial Photo

Rowden Consulting, LLC
Environmental Services

2004 Aerial Photo

Rowden Consulting, LLC
Environmental Services

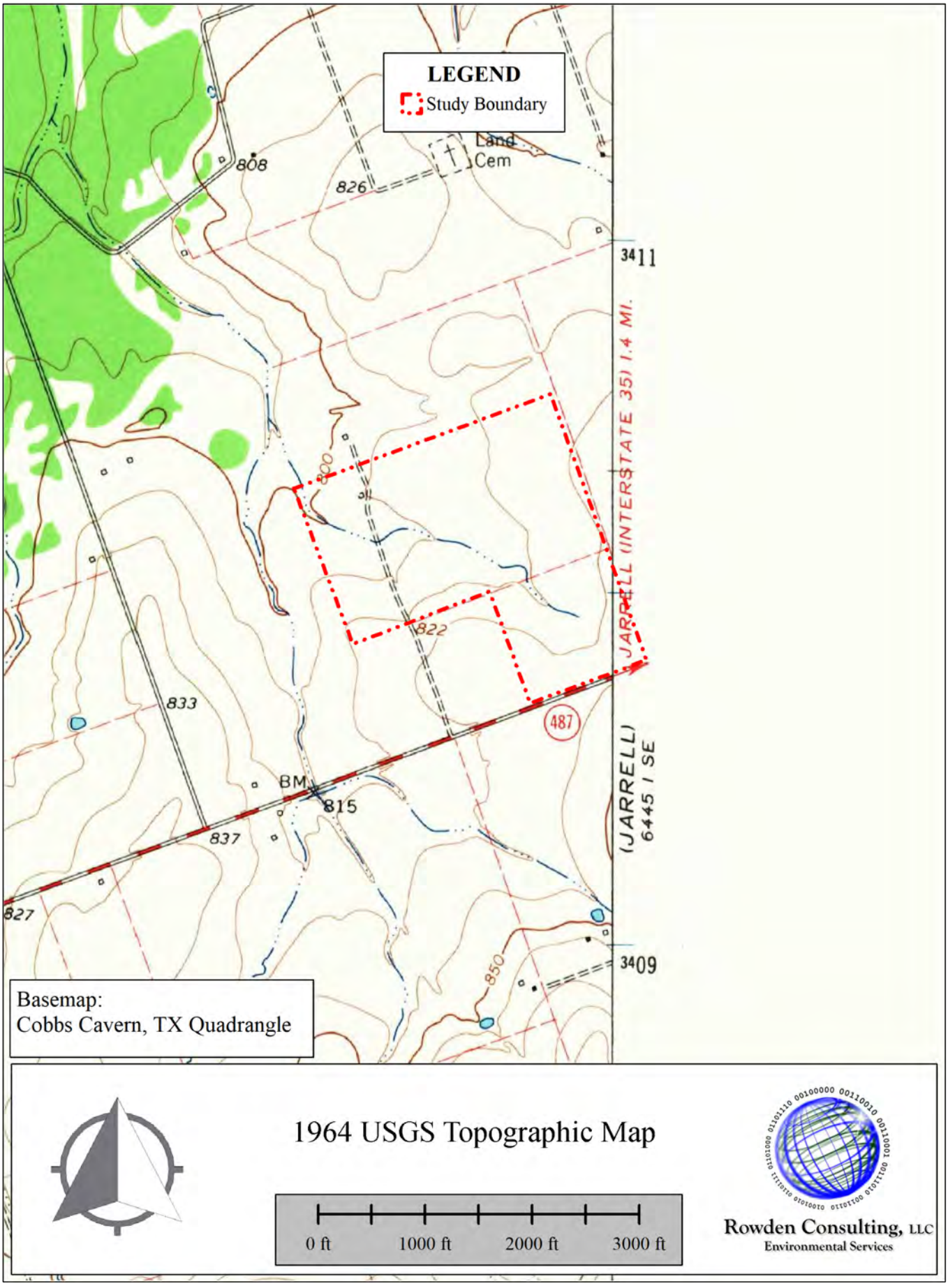

LEGEND
Study Boundary
1996 Aerial Photo
250 ft
750 ft
1250 ft
Rowden Consulting, LLC
Environmental Services

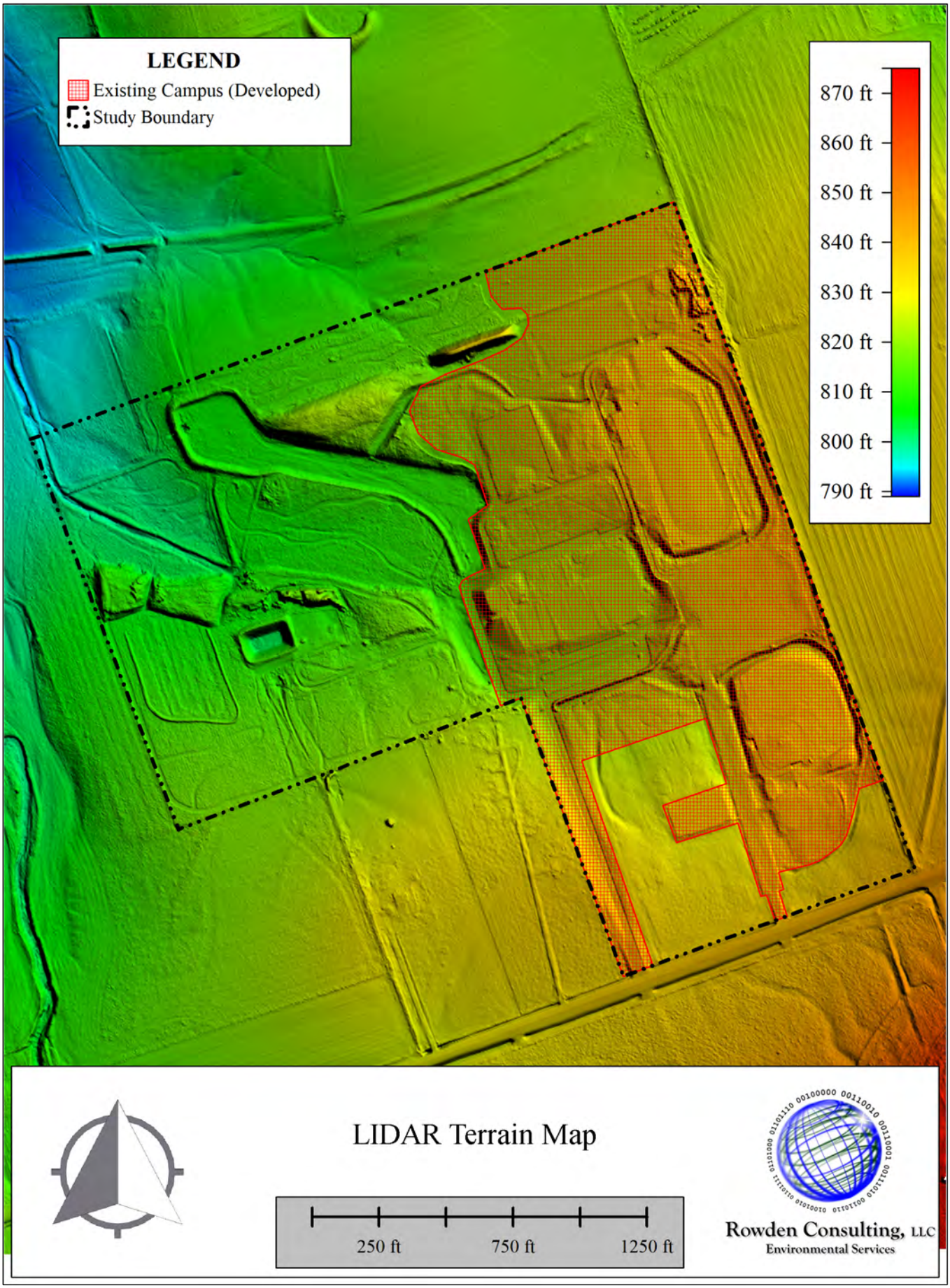

LEGEND
Study Boundary
1981 Aerial Photo
250 ft
750 ft
1250 ft
Rowden Consulting, LLC
Environmental Services

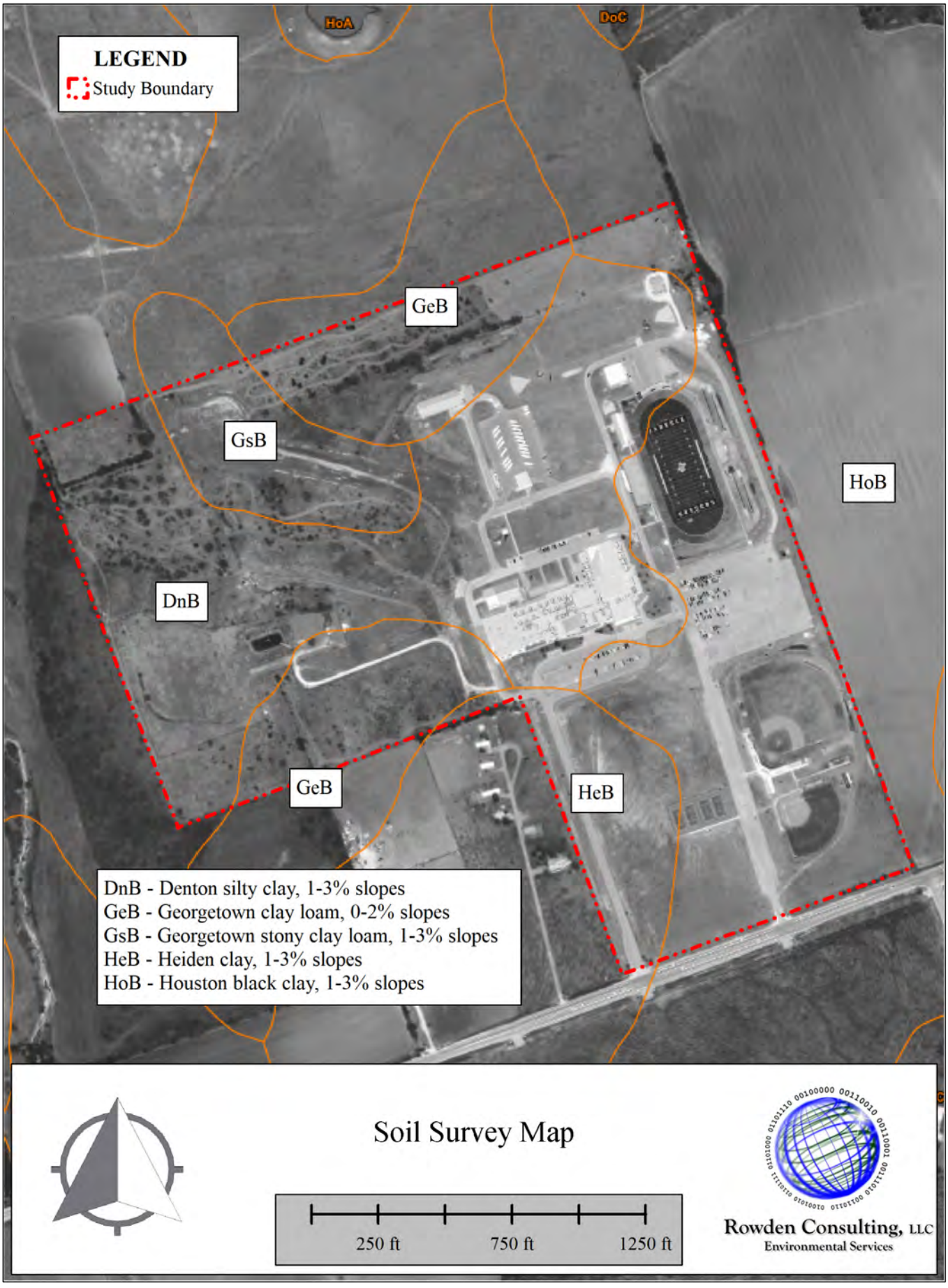
1963 Aerial Photo

250 ft 750 ft 1250 ft

Rowden Consulting, LLC
Environmental Services


LEGEND
Study Boundary
Land
Cem
808
826
3411
JARRELL (INTERSTATE 35) 1.4 MI.
800
822
833
487
BM
815
837
827
(JARRELL)
6445 I SE
850
3409
Basemap:
Cobbs Cavern, TX Quadrangle
1964 USGS Topographic Map
0 ft
1000 ft
2000 ft
3000 ft
Rowden Consulting, LLC
Environmental Services

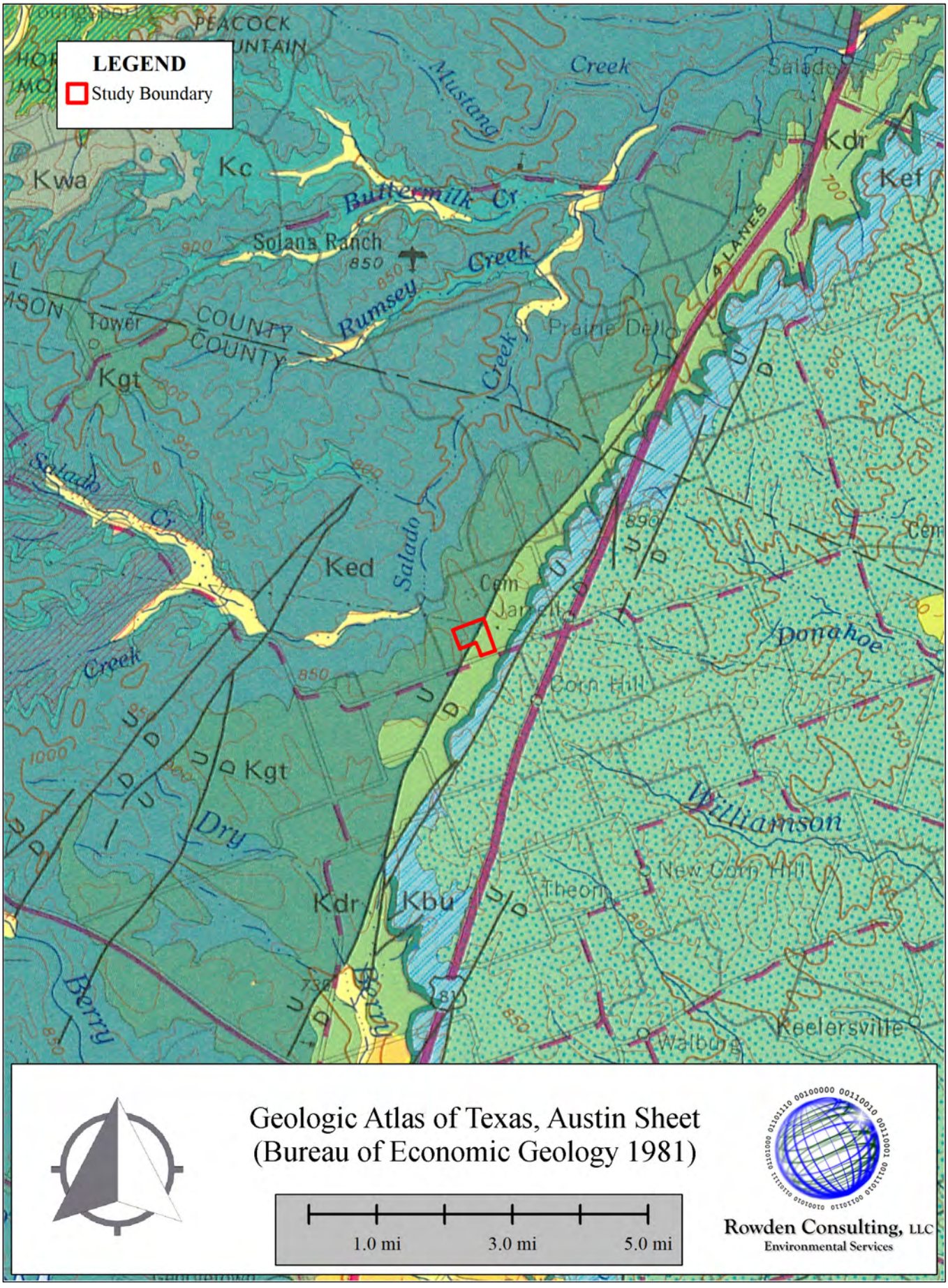

LEGEND
Existing Campus (Developed)
Study Boundary
870 ft
860 ft
850 ft
840 ft
830 ft
820 ft
810 ft
800 ft
790 ft
LIDAR Terrain Map
250 ft
750 ft
1250 ft
Rowden Consulting, LLC
Environmental Services



Soil Survey Map

250 ft 750 ft 1250 ft

Rowden Consulting, LLC
Environmental Services



Geologic Atlas of Texas, Austin Sheet
(Bureau of Economic Geology 1981)

Rowden Consulting, LLC
Environmental Services

Generalized Stratigraphic Column of the Study Area

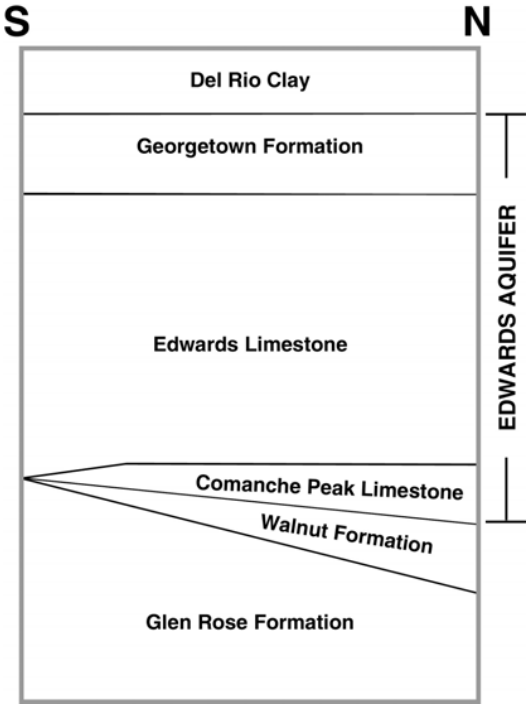
Series	Group	Stratigraphic Unit		Hydrologic Unit	Maximum Thickness (feet)
Gulf	Navarro			Navarro and Taylor Group	850
	Taylor				
	Austin			Austin Chalk	450
Comanche	Eagle Ford				50
	Washita	Buda Limestone			50
		Del Rio Clay			60
		Georgetown Formation			100
	Fredericksburg	Edwards Limestone		Edwards aquifer	200
		Comanche Peak Limestone			50
		Walnut Formation			150
	Trinity	Paluxy Formation		Upper Trinity	10
		Glen Rose	Upper Member		450
			Lower Member	Middle Trinity	450
		Travis Peak	Hensell Sand Member		100
			Cow Cr. Limestone Member		100
			Hammett Shale Member		50
			Sligo Member	Lower Trinity	150
			Hosston Member		850

Surface Geology of Study Area

Source: Jones 2003

Stratigraphic Column - Northern Williamson Co., including Study Area

Absent on west side of study area



Outcrops on east side of study area

Outcrops on west side of study area

Source: Jones 2003

APPENDIX III
PHOTOGRAPHS

Site Photos

General View

View of the property from the southwest corner facing north.

General View

View of the property from the southwest corner facing northeast.

Site Photos

General View

View of the property from the southwest corner facing east.

General View

View of the property from the northwest corner facing east.

Site Photos

Drainage Ditch

View of a man-made drainage ditch constructed in uplands near the northwest corner of the property. The ditch exhibited no ordinary high water mark or indications of recent flow at this location.

Drainage Ditch

View of the man-made drainage ditch at the property line facing off-site.

Site Photos

General View

View along the northern property line facing east.

Detention Pond

View a drainage structure installed to drain a detention pond. There was no evidence of recent flows from the structure.

Site Photos

Drainage Ditch

View of the man-made drainage ditch farther in uplands. The ditch exhibited no ordinary high water mark or indications of recent flow at this location.

Drainage Ditch

View of the man-made drainage ditch in uplands. The ditch exhibited no ordinary high water mark or indications of recent flow at this location.

Site Photos

Drainage Ditch

Another view of the man-made drainage ditch in uplands. A running track had been mowed down the middle of the ditch at this location.

Wastewater Plant

View overlooking an off-line wastewater treatment plant.

Site Photos

Drainage Ditch

View of the man-made drainage ditch along the northwestern property line. The ditch was narrower and exhibited a scour at this location. However, no bedrock was exposed and soils were well defined along the entire bed and bank.

Fill

View of mound of fill on the west side of the property.

Site Photos

Wastewater Plant

View of an empty wastewater pond at the off-line treatment plant.

General View

View of level, open land as viewed from the south end of the campus facing north.

Site Photos

General View

View of athletic practice fields as viewed from the northeast property corner facing west.

General View

View of athletic practice fields as viewed from the northeast property corner facing south.

Site Photos

General View

View inside the detention pond area as viewed from near the northern property line facing southeast.

Fill

View of another mound of fill on the west side of the property.

Site Photos

General View

View of vegetated upland conditions on the west-central part of the property.

Burrow

View of one of many burrows found on the property.

Site Photos

Burrow

View of another burrow on the property.

Crack

View of surface soil crack formed in dessicated clayey soils with high shrink/swell potential.

Site Photos

Cracks

View of surface soil cracking formed in dessicated clayey soils with high shrink/swell potential.

Wellhouse

View of water well and tank located on the developed, eastern side of the campus. One plugged well is reportedly located inside the wellhouse while the active well was present outside the housing.

Site Photos

Adjacent Property

View of adjacent property used for rangeland.

Adjacent Property

View of adjacent property under cultivation.

Site Photos

Adjacent Property

View of adjacent property under cultivation.

Exposed Rock

View of rock exposed in the bottom of the detention pond. The rocks exhibited no signs of fluid flow or karstification.

Site Photos

Exposed Rock

View of rock exposed in the bottom of the detention pond. The rocks exhibited no signs of fluid flow or karstification.

Plugged Well

View of plugged well located in the detention pond.

Site Photos

Former Well

View of well materials pushed into a mound on the northwest side of the property. It is unknown if this well remains properly plugged.

Trough

View of a livestock trough flipped over near a former well.

Site Photos

Former Well

View of well materials pushed into a mound on the northwest side of the property. It is unknown if this well remains properly plugged.

Former Well

View of earth-filled former cistern or former wellbore. Probing of the area identified no concrete. The opening was hidden below a slab of concrete. This is the feature that should be inspected by a licensed well driller to determine if additional well plugging is required.

APPENDIX IV
TCEQ FORM F-0585

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), 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. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Jeremy Rowden Telephone: (903) 894-6410

Date: 11/25/19 Fax: (903) 894-7511

Representing: Rowden Consulting, LLC #50394 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: Jarrell Independent School District

Project Information

1. Date(s) Geologic Assessment was performed: 10/08/19, 10/09/19, and 11/21/19
2. Type of Project:

   ☒ WPAP ☐ AST
   ☐ SCS ☐ UST
3. Location of Project:

   ☒ Recharge Zone
   ☐ Transition Zone
   ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Denton silty clay, 1 to 3 percent slopes	D	3.0
Georgetown clay loam, 0 to 2 percent slopes ;	D	2.9
Georgetown stony clay loam, 1 to 3 percent slopes	D	2.9
Heiden clay, 1 to 3 percent slopes	D	5.0
Houston black clay, 1 to 3 percent slopes	D	5.2

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**.The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 500'
   Site Geologic Map Scale: 1" = 500'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

Note: updated map that matches engineering drawing scale may be required in the future.

9. Method of collecting positional data:

☒ Global Positioning System (GPS) technology.
☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.
12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 4(#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    ☒ The wells are not in use and have been properly abandoned.
    ☒ The wells are not in use and will be properly abandoned.
    ☒ The wells are in use and comply with 16 TAC Chapter 76.

    See narrative.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☒ 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. The copies must be submitted to the appropriate regional office.

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Matt Hardy, PE

Date: 03/11/2024

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Jarrell High School
   Original Regulated Entity Name: Jarrell High School
   Regulated Entity Number(s) (RN): 101519049
   Edwards Aquifer Protection Program ID Number(s): 1115041301
   ☒ The applicant has not changed and the Customer Number (CN) is: 600794234
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☒ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☒ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☒ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	119.5	119.5
Type of Development	School	School
Number of Residential Lots	0	0
Impervious Cover (acres)	26.90	37.07
Impervious Cover (%	22.5	31
Permanent BMPs	Water Quality Pond	No modification
Other	____	____

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	____	942.8
Pipe Diameter	____	4", 6", & 8"
Other	____	____

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	0	2
Volume of ASTs	0	2,400 gallons
Other		

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	0	0
Volume of USTs	0	0
Other	0	0

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☒ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☐ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☒ Acreage has not been added to or removed from the approved plan.

8. ☒ 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. The copies must be submitted to the appropriate regional office.

ATTACHMENTS TO EDWARDS AQUIFER WATER POLLUTION ABATEMENT PLAN FORM 0590, JARRELL HIGH SCHOOL SITE

Project Information Summary of Original WPAP, Previous WPAP Modifications, and Proposed WPAP Modification

WPAP Modification Summary	Acres	Type of Development	Number of Residential Lots	Impervious Cover (acres)	Impervious Cover (%)	Permanent BMPs
Original WPAP (1998)	119.5	School	0	31.67	26.49%	Vegetative filter strip
WPAP Modification 1 (2006)	119.5	School	0	31.67	26.49%	Vegetative filter strip
WPAP Modification 2 (2009)	119.5	School	0	31.67	26.49%	Vegetative filter strip
WPAP Modification 3 (2015)	119.5	School	0	34.30	28.70%	Partial sedimentation / filtration water quality pond; sand filter
WPAP Modification 4 (2018)	119.5	School	0	23.1	19.3%	No change
WPAP Modification 5 (March 2022)	119.5	School	0	24.6	20.6%	Water Quality Wet Pond and Detention Basin
WPAP Modification 6 (September 2022)	119.5	School	0	25.67	21.5%	No change
WPAP Modification 7 (March 2023)	119.5	School	0	26.90	22.5%	No change
Proposed Modification	119.5	School	0	37.07	31.0%	No change

Attachment A Form 0590: See below copies of the 2015 WPAP Modification, 2019 WPAP Modification, March 2022 WPAP and SCS Modification, September 2022 WPAP Modification, and March 2023 WPAP and SCS Modification Approval Letters.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 31, 2023

Ms. Toni Hicks
Jarrell ISD
108 E. Avenue F
Jarrell, TX 76537-2145

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Jarrell High School; Located on FM 487, One Mile West of IH-35, Jarrell, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP-MOD) and an Approved Organized Sewage Collection System (SCS-MOD); 30 Texas Administrative Code (TAC) Chapter 213 & 217 Edwards Aquifer

Edwards Aquifer Protection Program ID Nos. 11003444 (WPAP) and 11003445 (SCS); Regulated Entity No. RN101519049

Dear Ms. Hicks:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP-MOD and SCS-MOD applications for the above-referenced project submitted to the Austin Regional Office by Langan Engineering on behalf of Jarrell ISD on January 4, 2023. Final review of the WPAP-MOD and SCS-MOD applications was completed after additional material was received on March 24, 2023. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected, and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The Jarrell High School WPAP project (EAPP ID No. 11002792), approved by letter dated March 1, 2022, included the construction of a wet basin that was sized for future development. The wet basin was designed to treat the total impervious cover of the site (24.6 acres) and to replace all previously approved Permanent Best Management Practices at the Jarrell High School site.

The Jarrell High School WPAP project (EAPP ID No. 11003119), approved by letter dated September 2, 2022, increase the total IC of the project site to 25.67 acres, The increase in IC for the project was treated by the wet basin (EAPP ID No. 11002792).

PROJECT DESCRIPTION

WPAP DESCRIPTON

The proposed WPAP project will have an area of approximately 119.54 acres. It includes a new classroom wing, expansion of the existing kitchen, an administrative addition at the main entrance, a band hall addition, expansion of the exiting field house, a new parking lot, sidewalks, drives, utilities, and associated appurtenances. The impervious cover will be 26.90 acres (22.5 percent).

SCS DESCRIPTION

The proposed project will reroute parts of the existing SCS to keep the system clear of the proposed and future foundation elements. The proposed SCS will provide disposal service for the high school campus. The gravity SCS system will consist of 1,077 linear feet of 8-inch SDR-26 PVC pipe that meets ASTM-D3034 standards, with associated manholes and stub-outs.

The system will be connected to an existing City of Jarrell wastewater line for conveyance to the existing City of Jarrell Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Jarrell and will conform to all applicable codes, ordinances, and requirements of the City of Jarrell.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, an existing wet basin (EAPP ID No. 11002792), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be used to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 23,414 pounds of TSS generated from the 26.90 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The wet basin (EAPP ID No. 11002792) is sized for future development and is designed to remove 67,631 pounds of TSS to treat stormwater runoff from a maximum of 77.9 acres of impervious cover.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the site is underlain by the Del Rio Clay and Georgetown Formation. No sensitive features were identified on site. The TCEQ site assessment conducted on March 16, 2023, revealed the site to be generally in accordance with the description included in the GA.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letters dated March 1, 2022 (EAPP ID No. 11002792) and September 2, 2022 (EAPPID No. 11003119).

II. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

IV. All wastewater collection and conveyance infrastructure shall be operational prior to any occupancy of the houses and prior to any wastewater flow being introduced into the sewage collection system.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP, SCS and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP and SCS applications following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP and SCS, must be installed prior to construction and inspected, maintained, and repaired during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213 and Chapter 217, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. All water wells including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices.
16. The following records shall be maintained and made available to the executive director 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

After Completion of Construction:

19. The applicant shall be 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. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.
22. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.
23. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
24. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.
25. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Bob Castro, P.E. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality
LIB/rbc

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

CC: Mr. Jack Garner, P.E., Langan Engineering

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, _____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 2, 2022

Dr. Toni Hicks
Jarrell ISD
108 E. Ave. F
Jarrell, TX 76537

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Jarrell High School; Located at 1100 W. FM 487; Jarrell, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP-MOD); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID No. 11003119; Regulated Entity No. RN101519049

Dear Dr. Hicks:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the Austin Regional Office by Langan Engineering on behalf of Jarrell ISD on May 31, 2022. Final review of the WPAP was completed after additional material was received on August 31, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

A wet basin was approved by letter dated March 1, 2022 (EAPP ID No. 11002792). Preceding this approval, a WPAP and four WPAP-MODs were approved by letters dated July 1, 1998 (EAPP ID No. 11-98042301), May 3, 2006 (EAPP ID No. 11-98042301), June 8, 2009 (EAPP ID No. 11-98042301), May 14, 2015 (EAPP ID No. 11-15041301), and January 28, 2019 (EAPP ID No. 11001369), respectively.

PROJECT DESCRIPTION

The proposed school project will have an area of approximately 119.5 acres. It will include removal of an asphalt parking lot with replacement and expansion of concrete, relocation of a portable, and the addition of another portable. The impervious cover will be 25.67 acres (21.5 percent). Project wastewater will be disposed of by conveyance to the existing City of Jarrell Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a wet basin (EAPP ID No. 11002792), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 22,343 pounds of TSS generated from the 25.67 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment included with the application, the surficial units on site are the Georgetown Formation (Kgt) and Del Rio Clay (Kdr). There are no sensitive features on site. The TCEQ site assessment conducted on July 19, 2022 determined the site to be generally as described.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated March 1, 2022.

II. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

18. 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 Austin Regional Office within 30 days of site completion.
19. The applicant shall be 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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Savannah Finger of the Edwards Aquifer Protection Program of the Austin Regional Office at 512-339-2929.

Sincerely,

Lillian Butler

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/sjf

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Jack Garner, P.E., Langan Engineering

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, _____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 1, 2022

Ms. Toni M. Hicks
Jarrell ISD
108 East Avenue F
Jarrell, TX 76537

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Jarrell High School; Located at 1100 W FM 487; Jarrell, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP-MOD) and Modification of an Approved Organized Sewage Collection System (SCS-MOD); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID Nos. 11002792 (WPAP-MOD) and 11002793 (SCS-MOD); Regulated Entity No. RN101519049

Dear Ms. Hicks:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP-MOD and SCS-MOD applications for the above-referenced project submitted to the Austin Regional Office by Langan Engineering on behalf of Jarrell ISD on November 17, 2021. Final review of the WPAP-MOD and SCS-MOD applications were completed after additional materials were received on February 22, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected, and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The Jarrell High School WPAP was approved by letter dated July 1, 1998 (EAPP ID: 11-98042301). The Jarrell High School SCS was approved by letter dated June 3, 1999 (EAPP ID: 11-99022502). A WPAP-MOD was approved by letter dated May 3, 2006 (EAPP ID: 11-98042301A) and a SCS-MOD was also approved by letter dated May 3, 2006 (EAPP ID: 11-99022502A). A subsequent WPAP-MOD was approved by letter dated June 8, 2009 (EAPP ID: 11-98042301B). A WPAP-MOD was approved by letter dated May 14, 2015 (EAPP ID: 11-15041301). The most recent WPAP-MOD was approved by letter dated January 28, 2019 (EAPP ID: 11001369).

PROJECT DESCRIPTION

WPAP DESCRIPTION

The proposed commercial project will have an area of approximately 119.5 acres. It will include the demolition of some pavement and the construction of four tennis courts, batting cages, ADA improvements to the stadium, parking lot expansion, and a wet basin. The impervious cover will be 24.6 acres (20.6 percent). Project wastewater will be disposed of by conveyance to the existing Jarrell Wastewater Treatment Plant.

SCS DESCRIPTION

The proposed sewage collection system will consist of a total of 461.5 linear feet. The SCS will consist of 335.95 linear feet of 6-inch diameter SDR-26 PVC ASTM 3034 pipe and 125.55 linear feet of 8-inch diameter SDR-26 PVC ASTM 3034 pipe. The SCS will provide disposal service for the non-residential development. The project is located within the City of Jarrell and will conform to all applicable codes, ordinances, and requirements of the City of Jarrell.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a wet basin, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 21,412 pounds of TSS generated from the 24.6 acres of impervious cover (IC). The wet basin is designed to treat 77.9 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the site is underlain by the Del Rio Clay and Georgetown Formation. There were no sensitive recharge features identified within the GA. During the TCEQ site assessment conducted on February 17, 2022, the site was found to be generally as described.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP and SCS approval letters dated July 1, 1998 (EAPP ID: 11-98042301), June 3, 1999 (EAPP ID: 11-99022502), May 3, 2006 (EAPP ID: 11-98042301A & 11-99022502A), June 8, 2009 (EAPP ID: 11-98042301B), May 14, 2015 (EAPP ID: 11-15041301), and January 28, 2019 (EAPP ID: 11001369).

II. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

IV. By the responsible engineer's dated signature and seal on the Engineering Design Report attached to the submitted application, all information therein accurately reflects the information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer in accordance with the requirements of 30 TAC 213.5 (c) and Chapter 217.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP-MOD and SCS-MOD plans, and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP-MOD and SCS-MOD applications following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

After Completion of Construction:

19. 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 Austin Regional Office within 30 days of site completion.

20. The applicant shall be 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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
21. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.
22. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.
23. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
24. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
25. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
26. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Ms. Jade Mendiola of the Edwards Aquifer Protection Program of the Austin Regional Office at (512)339-2929.

Sincerely,

Lillian Butler

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/jkm

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures, Form TCEQ-10263

cc: Mr. Jack Garner, P.E., Langan Engineering

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, _____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 28, 2019

Mr. Bill Chapman
Superintendent
Jarrell Independent School District (ISD)
312 N 5th St.
Jarrell, TX 76537

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Jarrell High School, located at 1100 W FM 487, Jarrell, Texas

TYPE OF PLAN: Request for Approval of a Modification to an approved Water Pollution Abatement Plan (WPAP)
30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program (EAPP) ID No. 11001369; Regulated Entity No. RN101519049

Dear Mr. Chapman:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the Austin Regional Office by Adams Engineering on behalf of Jarrell Independent School District on November 28, 2018. Final review of the WPAP Modification was completed after additional material was received on January 18, 2019. As presented to the TCEQ, the Temporary Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND (Chronological)

The Jarrell High School WPAP was approved by letter dated July 1, 1998 (EAPP ID No. 11-98042301). It included development of the Jarrell High School and School Complex on the 119.5-acre site. The approved impervious cover was 31.67 acres (26.49%) and permanent water

quality treatment was via a 42-acre vegetative filter strip designed in accordance with the LCRA Non-point Source Pollution Control Ordinance Technical Guidance Manual.

The Jarrell High School Organized Sewage Collection System Plan (SCS) was approved by letter dated June 3, 1999 (EAPP ID No. 11-99022502). It included construction of gravity wastewater lines, forcemain wastewater lines, lift station, package wastewater treatment plant, irrigation area, emergency effluent storage pond and appurtenances. The system was designed to provide wastewater treatment and disposal for the complex.

The first Jarrell High School WPAP Modification was approved by letter dated May 3, 2006 (EAPP ID No. 11-98042301A). The modification included changes in the site layout of the High School and Middle School. It also re-defined the vegetative filter strip areas and added construction of a detention pond (for others). The impervious cover remained at 31.67 acres (26.49%).

The Jarrell High School SCS Modification was approved by letter dated May 3, 2006 (EAPP ID No. 11-99022502A). The project included modifications to the gravity system due to site layout re-design.

The second Jarrell High School WPAP Modification was approved by letter dated June 8, 2009 (EAPP ID No. 11-98042301B). The modification included construction and relocation of the bus maintenance facility and improvements to an existing road east of the football field. The existing vegetative filter strip was approved as the permanent BMP for the modification. The impervious cover remained at 31.67 acres (26.49%).

The third Jarrell High School WPAP Modification was approved by letter dated May 14, 2015 (EAPP ID No. 11-15041301). The modification included conversion of an existing grass football field to synthetic turf, maintenance and re-surfacing of existing field events structures, and associated appurtenances for the football complex. The impervious cover was increased by 2.63 acres, from 31.67 acres to 34.30 acres (28.70%). The increase in impervious cover was treated by the synthetic field design and a partial sedimentation/filtration basin.

PROJECT DESCRIPTION

The proposed project will have an area of approximately 119.5 acres. It will include additions to the existing high school building, drives, and parking areas. It will also redefine the impervious cover at the site; the impervious cover will be 23.1 acres (19.3 percent). Project wastewater will be disposed of by conveyance to the existing Jarrell Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

The school will not have more than 20 percent impervious cover. Since this school will have less than 20 percent impervious cover, an exemption from permanent BMPs is approved. If the percentage of impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site as described in the WPAP may no longer apply and the property owner must notify the Austin Regional Office of these changes.

GEOLOGY

An exception to the Geologic Assessment was granted as the project limits are located within a previously disturbed area. A site assessment conducted by the Austin Regional Office on December 12, 2018 did not identify any sensitive features.

SPECIAL CONDITIONS

I. Since this project will not have more than 20 percent impervious cover, an exemption from additional permanent BMPs is approved. If the percent impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

II. If the impervious cover ever increases above 20 percent or land use changes, permanent BMPs which meet current design standards must be provided for the site's entire impervious cover. No previously-approved permanent BMPs will be considered for future development unless the permanent BMP is up-to-date with TCEQ design standards at the time of submittal.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

18. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
19. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
20. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Ms. Michelle Zvonkovic of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier, Water Section Team Leader
Austin Regional Office
Texas Commission on Environmental Quality

RCS/maz

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, ____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 14, 2015

Dr. Bill Chapman
Superintendent
Jarrell Independent School District (ISD)
312 5th Street
Jarrell, Texas 76537

Re: Edwards Aquifer, Williamson County
NAME OF PROJECT: Jarrell High School – Jarrell High School Football Field Improvements; Located at 1100 West FM 487; City of Jarrell, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan Modification (WPAPMOD); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 11-15041301; Investigation No. 1245757; Regulated Entity No. RN101519049

Dear Dr. Chapman:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the Austin Region Office by Tait Pitkin Sports Engineering, PLLC on behalf of Jarrell ISD on April 14, 2015. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND (Chronological)

The Jarrell High School WPAP was approved by letter dated July 1, 1998; EAPP ID No. 11-98042301. It included development of the Jarrell High School and School Complex on the 119.5 acre site. The approved impervious cover was 31.67 acres (26.49%) and permanent water quality treatment was via a 42 acre vegetated filter strip designed in accordance with the LCRA Non-point Source Pollution Control Ordinance Technical Guidance Manual.

The Jarrell High School Organized Sewage Collection System Plan (SCS) was approved by letter dated June 3, 1999; EAPP ID No 11-99022502. It included construction of gravity wastewater lines, forcemain wastewater lines, lift station, package wastewater treatment plant, irrigation area, emergency effluent storage pond and appurtenances. The system was designed to provide wastewater treatment and disposal for the complex.

The first Jarrell High School WPAPMOD was approved by letter dated May 3, 2006; EAPP ID No. 11-98042301A. The modification included changes in the site layout of the High School and Middle School. It also re-defined the vegetated filter strip areas and added construction of a detention pond (for others). The impervious cover remained at 31.67 acres (26.49%).

The Jarrell High School SCS Modification (SCSMOD) was approved by letter dated May 3, 2006; EAPP ID No. 11-99022502A. The project included modifications to the gravity system due to site layout re-design.

The second Jarrell High School WPAPMOD was approved by letter dated June 8, 2009; EAPP ID No. 11-98042301B. The modification included construction and relocation of the bus maintenance facility and improvements to an existing road east of the football field. The existing vegetated filter strip was approved as the permanent BMP for the modification. The impervious cover remained at 31.67 acres (26.49%).

PROJECT DESCRIPTION

The proposed football field improvements project is the third WPAP Modification for the 119.5 acre site. The proposed project includes converting the existing grass turf football field into synthetic turf, maintenance and re-surfacing of the existing field events structures (track and appurtenances), new ticket booth, entrance gate, concession stand/restroom building, 70 by 70-foot metal multipurpose building, bleacher expansion, sidewalks, partial sedimentation/filtration water quality pond and appurtenances.

The impervious cover will be increased by 2.63 acres, from 31.67 acres to 34.30 acres (28.70 percent). Project wastewater will be disposed of by conveyance to the existing onsite Jarrell High School wastewater treatment plant; Water Quality ID No. WQ00140100001.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a partial sedimentation/filtration water quality pond, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The water quality pond will have a 1.59 acre contributing drainage area with 0.87 acres of impervious cover, including existing and proposed impervious cover. The required TSS load to

be removed from the 0.87 acres of impervious cover is 757 pounds. The pond is sized to remove 845 pounds of TSS. The pond will have a water quality volume of 7,997 ft^3 and a sand filter area of 2,100 ft^2.

The 2.29 acre synthetic turf field area is considered impervious cover. The field itself will provide equivalent water quality protection due to the low potential for pollution based on the field use, filtration of stormwater via the sand/gravel layer that is part of the turf design, removal of potential sources of pollution such as fertilizer and pesticides used on the existing grass turf and mitigation of increased downstream flow effects from 32,478 ft^3 of detention capacity below the field. The turf and sand layer will be replaced every eight to ten years with the routine replacement of the synthetic turf. The field will be lined using a 20-mil synthetic liner.

GEOLOGY

According to the geologic assessment, the site is underlain by the Del Rio Clay formation and the Georgetown formation. A non-sensitive fault transects the southeast portion of the site. The assessment also identified four (4) manmade wells on the site. The site assessment conducted during the second WPAPMOD review by the Austin Region Office on March 16, 2006, revealed that only two (2) wells were present and both were plugged. The Austin Region Office did not conduct a site assessment with this modification.

SPECIAL CONDITIONS

I. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

II. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

III. This approval letter is being issued for regulated activities (as defined in Chapter 213) and for best management practices presented in the application. This approval does not constitute a water right permit or authorization from the TCEQ Dam Safety Program. Failure to obtain all necessary authorizations could result in enforcement actions. For more information on Water Rights Permits, please refer to:

http://www.tceq.state.tx.us/permitting/water_supply/water_rights/wr_amiregulated.html

For more information on the Dam Safety program, please refer to:

http://www.tceq.state.tx.us/compliance/field_ops/dam_safety/damsafetyprog.html

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations

and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.

3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Region Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAPMOD is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAPMOD application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Region Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAPMOD, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The

applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Region Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

18. 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 Austin Region Office within 30 days of site completion.
19. The applicant shall be 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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through Austin Region Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Region Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Zach Lanfear of the Edwards Aquifer Protection Program of the Austin Region Office at (512) 339-2929.

Sincerely,

Carolyn D. Runyon, Water Section Manager
Austin Region Office
Texas Commission on Environmental Quality

CDR/zcl

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Larry Tait, P.E., Tait Pitkin Sports Engineers, PLLC, 917 Yellowstone Dr., Taylor, TX 76574
The Honorable Dewey Hulme, Mayor, City of Jarrell
The Honorable Dan A. Gattis, County Judge, Williamson County
Dr. James K. Morgan, Interim Director, Williamson County & Cities Health District
TCEQ Central Records, Building F, MC 212

Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, _____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Attachment B Form 0590: Project Description:

The proposed project is additions and renovations to Jarrell High School on the existing 119.5-acre tract located at 1100 FM487 in Jarrell, Texas. The additions consist of a new operations center, a new administrative addition near the main entrance of the high school, a choir addition on the southeast corner of the existing building, and a new ag facility adjacent to the existing ag building, which will also be renovated. The site drains into a tributary of Salado Creek. The existing and proposed land uses in the immediate area are school buildings, athletic fields, drives and parking areas. The impervious cover for the existing site is 26.9 acres or 22.5% of the site. The impervious cover post-construction site, which includes rooftop, drives, and parking areas, is 37.07 A or 31.0% of the site.

Previous WPAP submittals for the Jarrell High School site, 1100 W FM487, Jarrell, Texas (original WPAP in 1998, WPAP Modification 1 in 2006, WPAP Modification 2 in 2009, WPAP Modification 3 in 2015, WPAP Modification 4 in 2018, WPAP Modification 5 in March 2022, WPAP Modification 6 in September 2022, and WPAP Modification 7 in March 2023) have given the % Impervious Cover value for the site as 26.5%, 26.5%, 26.5%, 28.7%, 19.3%, 20.6%,21.5% and 22.5%, respectively. As part of WPAP Modification 4 in 2018, due to concerns about the accuracy of these numbers due to improvements that were planned and approved but never built, Jarrell ISD retained a Registered Professional Land Surveyor in April 2018 to perform a detailed survey of the Jarrell High School site to re-evaluate the % Impervious Cover that was actually present on the site. The results of that survey showed that the actual Impervious Cover on the 119.5 Acre site was 921,121 SF (21.15A) which equates to 17.7% Impervious Cover. The proposed additions since have resulted in a total impervious cover percentage of 22.5%.

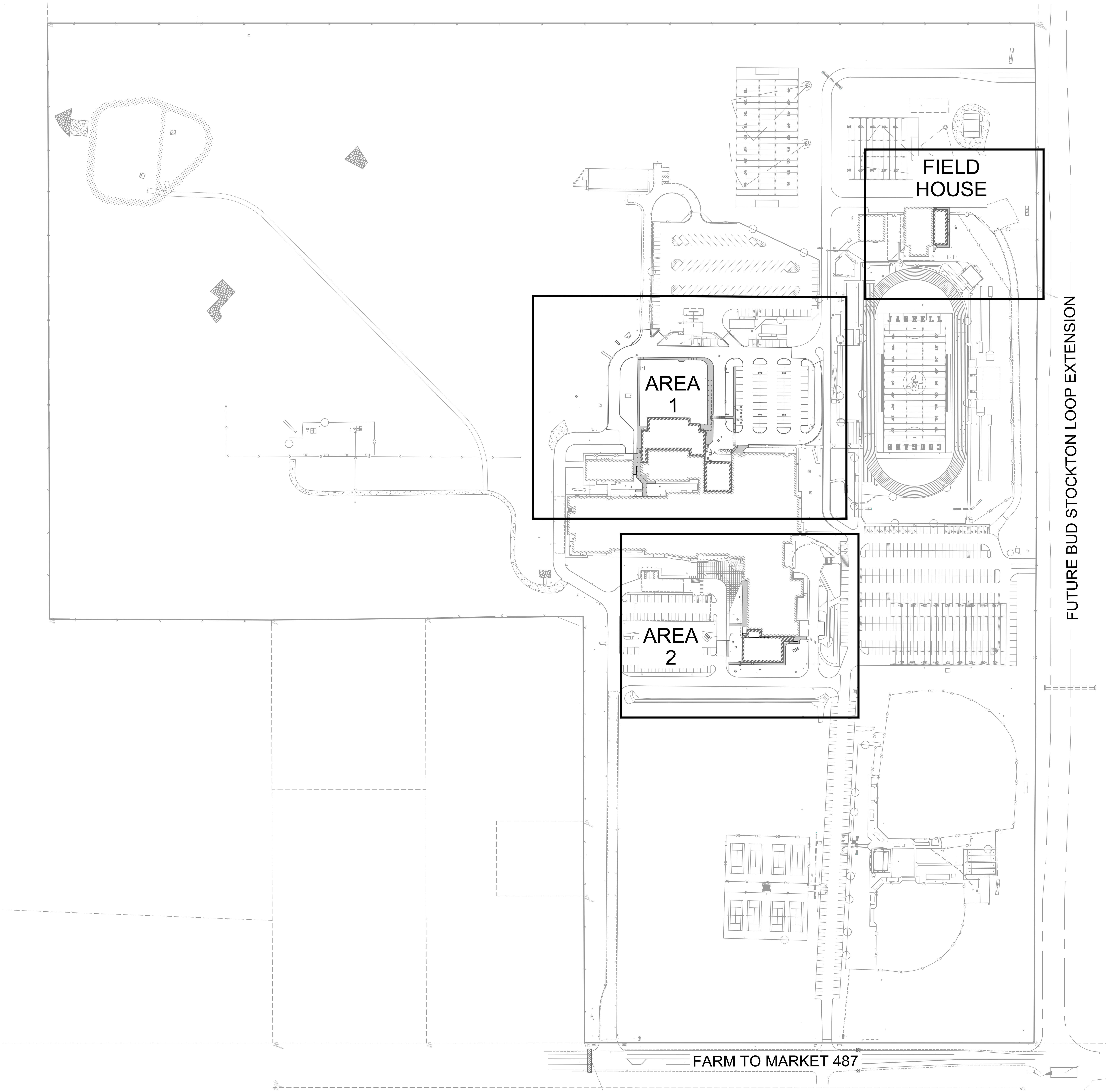
All previously permitted and installed permanent BMPs, (filtration through sand/gravel layer under the synthetic turf field, 2100 SF sand filter and water quality pond, and 42.A vegetative filter), as described and approved in previous WPAP Modifications, were removed and replaced by a water quality wet pond and detention basin in WPAP Modification 5.

The existing drainage pattern for the site consists of roof drainage and driveway/ parking areas draining into the existing stormwater collection system to open channels that drain to the water quality wet pond and detention basin. The proposed additions consists of modifications to the existing storm system, but do not modify existing drainage patterns.

With the proposed expansions to the high school building, some modifications to the existing sanitary sewer system are necessary to keep the system clear of proposed foundation elements as well as extensions necessary for the proposed out buildings. The proposed sewage collection system in this phase of construction consists of 965.7 linear feet of SDR-26 pipe.

Attachment C Form 0590: – Current Site Plan of the Approved Project

CONFORMED CONSTRUCTION DOCUMENTS



WPAP CALCULATIONS

CURRENT SITE AREA: 119.5 ACRES

EXISTING IMPERVIOUS AREA	
TOTAL IC	25.67 AC = 21.5%
DEMOLITION THIS PHASE	
TOTAL IC REMOVED	79,423 SQ FT = 1.82 AC
PROPOSED IMPERVIOUS THIS PHASE	
STRUCTURES/ROOFTOPS	38,606 SQ FT = 0.89 AC
PARKING, ACCESS DRIVES & SIDEWALKS	94,243 SQ FT = 2.16 AC
TOTAL	132,849 SQ FT = 3.05 AC
NET IC ADDED	53,426 SQ FT = 1.23 AC
TOTAL IC	26.90 AC = 22.5%

** NOTICE TO CONTRACTORS - TOPOGRAPHIC SURVEY **

TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PERFORMED BY 4WARD LAND SURVEYING. 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.

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.

!!!CAUTION!!!

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

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

Revision / Date

Project:
ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
01/31/2023
TBPE Registration #: F- 13,709

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OVERALL AREA MAP

Job. No. 1836-03-01	Sheet No.
Drawn By:	C1.12
Date: 11/17/2022	

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), 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 **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Matt Hardy, PE

Date: 03/11/2024

Signature of Customer/Agent:

Regulated Entity Name: Jarrell High School

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☐ Commercial
   ☐ Industrial
   ☒ Other:High School Additions

2. Total site acreage (size of property):119.5 Acres

3. Estimated projected population:1,260

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	61,152	÷ 43,560 =	1.40
Parking	-19,513 (demo)+ 387,139 (proposed)	÷ 43,560 =	8.44
Other paved surfaces	14,177	÷ 43,560 =	0.33
Total Impervious Cover	442,955	÷ 43,560 =	10.17

Total Impervious Cover 26.90 (existing) + 10.17 (proposed) = 37.07 **÷ Total Acreage** 119.5 **X 100 =** 31**% Impervious Cover**

5. ☒ **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

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

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. 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.

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

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

10. 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.

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

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

12. ☐ 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

13. ☒ **Attachment B - 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 the 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

14. The character and volume of wastewater is shown below:

100% Domestic	25,200 Gallons/day
_____% Industrial	_____ Gallons/day
_____% Commingled	_____ Gallons/day

TOTAL gallons/day 25,200

15. Wastewater will be disposed of by:

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

☐ **Attachment C - 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):

☐ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

☒ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

☐ The SCS was previously submitted on_____.

☒ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the City of Jarrell Wastewater (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

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

Site Plan Scale: 1" = 40'.

18. 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): _____

19. ☒ 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, open space, etc. are shown on the plan.

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

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☒ There are 4 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☒ The wells are not in use and have been properly abandoned.
☒ The wells are not in use and will be properly abandoned.
☒ The wells are in use and comply with 16 TAC §76.

☐ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☒ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

29. ☒ 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. The copies must be submitted to the appropriate regional office.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

WPAP Application TCEQ Form 0584 No. 5.
Attachment A: 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 washwater from concrete and masonry cleanup/ washout facilities. Sediment runoff will be significantly reduced during construction by the use of an onsite temporary sedimentation pond. The high pH washwater 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 the erosion control plans 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, drives and fuel tanks. Sediment runoff from the site will be significantly reduced by the action of the water quality/ detention pond 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.

WPAP Application TCEQ Form 0584 No. 13.

Attachment B: Quantity and Quality of Stormwater Runoff Expected to Occur on the Site.

Please refer to Plan Sheets C3.03, C3.04, C3.05, & C3.06 of the WPAP MOD #5 Construction plans for more details on the information presented below.

Pre-construction conditions: The drainage area is 134.23 A, with 119.54 A on site and 14.71 A from adjacent offsite areas. Total calculated discharge rate for the drainage area is as follows (calculations are based on the SCS Method, as presented in the City of Austin Drainage Criteria Manual; total peak discharge rate is calculated using the Time of Concentration values shown below):

Pre-Project Time of Concentration																		
Watershed	Sheet Flow						Shallow Flow						Channel Flow				Total ToC (min)	Lag Time
	Length (ft)	Slope (S)	n	P2	T (hr)	T (min)	Cover	Length (ft)	Slope (S)	V (fps)	T (hr)	T (min)	Length (ft)	V (ft/s)	T (hr)	T (min)		
A	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	2037.80	0.015	1.99	0.28	17.07	3503.16	6	0.16	9.73	39.61	23.8
B	100.00	0.012	0.15	3.90	0.18	10.89	Unpaved	252.09	0.008	1.44	0.05	2.91	2026.05	4	0.14	8.44	32.50	19.5
													3694.74	6	0.17	10.26		
C	100.00	0.039	0.15	3.90	0.11	6.79	Unpaved	1710.78	0.011	1.70	0.28	16.77	1432.12	4	0.10	5.97	36.20	21.7
							Unpaved	765.73	0.014	1.92	0.11	6.66						
D	100.00	0.010	0.15	3.90	0.20	11.71	Unpaved	1689.79	0.008	1.44	0.33	19.52	2154.18	4	0.15	8.98	52.38	31.4
													3726.31	6	0.17	10.35		
													654.79	6	0.03	1.82		
E	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	1807.38	0.015	2.01	0.25	15.00	4292.97	6	0.20	11.92	51.66	31.0
													4292.96	6	0.20	11.92		

Watershed	Area (Acres)	Soil Type	Cover	Curve Number	Composite Curve Number
A	220.46	D	Open Space - Good	80	79.8
	1.85	B	Open Space - Good	61	
B	182.56	D	Open Space - Good	80	80.0
C*	134.23	D	Open Space - Good	80	80.0
D	571.81	D	Open Space - Good	80	80.0
E	402.14	D	Open Space - Good	80	80.0
*Watershed C represents the area tributary to the proposed water quality wet pond and detention basin					

	Discharge (CFS)			
	100-yr	25-yr	10-yr	2-yr
Pre-project	729.6	522.3	395.6	207.5
Post-project (Detention)	704.9	517.1	374.4	200.8
Difference	-24.7	-5.2	-21.2	-6.7
% Difference	-3.4%	-1.0%	-5.4%	-3.2%

Post-construction conditions: The drainage areas and peak discharge rates for the offsite areas remain the same as for pre-construction conditions. Total calculated discharge rate for the entire drainage area is as follows (calculations are based on the SCS Method, as presented in the City of Austin Drainage Criteria Manual):

Post-Project Time of Concentration																		
Watershed	Sheet Flow						Shallow Flow						Channel Flow				Total ToC (min)	Lag Time
	Length (ft)	Slope (S)	n	P2	T (hr)	T (min)	Cover	Length (ft)	Slope (S)	V (fps)	T (hr)	T (min)	Length (ft)	V (ft/s)	T (hr)	T (min)		
A	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	2037.80	0.015	1.99	0.28	17.07	3503.16	6	0.16	9.73	39.61	23.8
B	100.00	0.012	0.15	3.90	0.18	10.89	Unpaved	252.09	0.008	1.44	0.05	2.91	2026.05	4	0.14	8.44	32.50	19.5
													3694.74	6	0.17	10.26		
C	100.00	0.039	0.15	3.90	0.11	6.79	Unpaved	765.73	0.014	1.92	0.11	6.66	3561.06	6	0.16	9.89	23.35	14.0
D	100.00	0.010	0.15	3.90	0.20	11.71	Unpaved	1689.79	0.008	1.44	0.33	19.52	2154.18	4	0.15	8.98	52.38	31.4
													3726.31	6	0.17	10.35		
													654.79	6	0.03	1.82		
E	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	1807.38	0.015	2.01	0.25	15.00	4292.97	6	0.20	11.92	51.66	31.0
													4292.96	6	0.20	11.92		

Watershed	Area (Acres)	Soil Type	Cover	Curve Number	Composite Curve Number
A	220.46	D	Open Space - Good	80	79.8
	1.85	B	Open Space - Good	61	
B	182.56	D	Open Space - Good	80	80.0
C*	134.23	D	Open Space - Good	80	80.0
D	571.81	D	Open Space - Good	80	80.0
E	402.14	D	Open Space - Good	80	80.0
*Watershed C represents the area tributary to the proposed water quality wet pond and detention basin					

	Discharge (CFS)			
	100-yr	25-yr	10-yr	2-yr
Pre-project	729.6	522.3	395.6	207.5
Post-project (Detention)	704.9	517.1	374.4	200.8
Difference	-24.7	-5.2	-21.2	-6.7
% Difference	-3.4%	-1.0%	-5.4%	-3.2%

Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), 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.

Regulated Entity Name: Jarrell High School

1. ☒ **Attachment A – SCS Engineering Design Report**. This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

2. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

   Contact Person: Toni Hicks, Ed.D
   Entity: Jarrell ISD
   Mailing Address: 108 E. Avenue F
   City, State: Jarrell, Texas Zip: 76537
   Telephone: 512.746.2124 Fax: 512.746.2518
   Email Address: toni.hicks@jarrellisd.org
   The appropriate regional office must be informed of any changes in this information within 30 days of the change.

3. The engineer responsible for the design of this sewage collection system is:

   Contact Person: Matt Hardy, PE
   Texas Licensed Professional Engineer's Number: 134448
   Entity: Langan Engineering
   Mailing Address: 9606 N. Mopac Expressway, Suite 110
   City, State:Austin, Texas Zip: 78759
   Telephone:817.328.3240 Fax:_____
   Email Address:mhardy@langan.com

Project Information

4. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

   ☐ Residential: Number of single-family lots: _____
   ☐ Multi-family: Number of residential units: _____
   ☐ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☒ Other: High School

5. The character and volume of wastewater is shown below:

100% Domestic	25,200 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 25,200

6. Existing and anticipated infiltration/inflow is 250 gallons/day. This will be addressed by: Maximum annual I&I rate can be estimated by subtracting the base sanitary flow from the maxium annual average flow to monitor the performance.

7. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

   ☐ The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached.
   ☒ The WPAP application for this development was submitted to the TCEQ on 3/12/24, but has not been approved.
   ☐ A WPAP application is required for an associated project, but it has not been submitted.
   ☐ There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
4"	44.2	PVC SDR-26	ASTM 3034
6"	377.9	PVC SDR-26	ASTM 3034
8"	520.7	PVC SDR-26	ASTM 3034

Total Linear Feet: 942.8'

(1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
(2) Pipe Material - If PVC, state SDR value.

(3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

9. The sewage collection system will convey the wastewater to the City of Jarrell (name) Treatment Plant. The treatment facility is:

☒ Existing
☐ Proposed

10. All components of this sewage collection system will comply with:

☒ The City of Jarrell standard specifications.
☐ Other. Specifications are attached.

11. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.

☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

13. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.

☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes**. A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.

☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

14. ☒ Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 - Manholes and Cleanouts

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
SSWR 1	C6.00 Of Const. Set	0+00.00	MH (existing)
SSWR 1	C6.00 Of Const. Set	2+97.44	MH (proposed)
SSWR 2	C7.00 Of Const. Set	0+00.00	MH (existing)
SSWR 2	C7.00 Of Const. Set	0+44.21	MH (proposed)
SSWR 3	C7.01 Of Const. Set	0+00.00	MH (proposed)
SSWR 3	C7.01 Of Const. Set	2+80.56	MH (proposed)

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
SSWR 4	C7.01 Of Const. Set	0+57.00	MH (proposed)
SSWR 4	C7.01 Of Const. Set	2+23.32	MH (proposed)
	Of		
	Of		

15. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.

16. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	Max. Manhole Spacing (feet)
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing**. The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

17. ☐ All manholes will be monolithic, cast-in-place concrete.

☒ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

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

Site Plan Scale: 1" = 30'.

19. ☐ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.

20. Lateral stub-outs:

☒ The location of all lateral stub-outs are shown and labeled.

☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

☒ The entire water distribution system for this project is shown and labeled.
☒ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
☐ There will be no water lines associated with this project.

22. 100-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
☐ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

Line	***Sheet***	***Station***
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
☐ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

Line	***Sheet***	***Station***
	of	to
	of	to
	of	to
	of	to

24. ☐ Legal boundaries of the site are shown.

25. ☒ The ***final plans and technical specifications*** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

26. ☒ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.

☐ There will be no water line crossings.
☐ There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*
SSWR 4	0+47.99	Crossing		2.5'

27. Vented Manholes:

☒ **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
☐ **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
☐ **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
☐ **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 - Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

☒ There are no drop manholes associated with this project.
☐ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*

29. Sewer line stub-outs (For proposed extensions):

☐ The placement and markings of all sewer line stub-outs are shown and labeled.
☒ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

30. Lateral stub-outs (For proposed private service connections):

☐ The placement and markings of all lateral stub-outs are shown and labeled.
☒ No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

☒ Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

32. Maximum flow velocity/slopes (From Appendix A)

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*

33. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.
☐ Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.
☒ N/A

Administrative Information

34. ☒ The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

35. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	of
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	C7.02 of Cons. Set
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	of
Typical trench cross-sections **[Required]**	C7.02 of Cons. Set
Bolted manholes **[Required]**	of
Sewer Service lateral standard details **[Required]**	of
Clean-out at end of line **[Required, if used]**	C7.02 of Cons. Set
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	of
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	C7.01 of Cons. Set
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	of

Standard Details	*Shown on Sheet*
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	of

36. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.

37. ☐ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.

    ☐ Survey staking was completed on this date: _____

38. ☒ 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. The copies must be submitted to the appropriate regional office.

39. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

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 **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Matt Hardy, PE

Date: 3/11/2024

Place engineer's seal here:

Signature of Licensed Professional Engineer:

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 - Slope Velocity

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

**For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.*

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)
n = Manning's roughness coefficient (0.013)
Rh = hydraulic radius (ft)
S = slope (ft/ft)

ENGINEERING DESIGN REPORT

for

ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL
Jarrell, Texas

Prepared For:

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program Austin Regional Office
P.O. Box 13087
Austin, TX 78711-3087

Prepared By:

Langan Engineering and Environmental Services, Inc.
9606 N. Mopac Expressway, Suite 110
Austin, TX 78759

Matt Hardy, PE
Professional Engineer License No. 134448

March 12, 2024
Langan Project Number: 531023303 & 531013304

LANGAN

INTRODUCTION

This design report is prepared in accordance with accepted engineering practices and the requirements of the Texas Commission on Environmental Quality (30 TAC 217). The specific design parameters for daily wastewater influent loading used in this report are as follow (taken from 30 TAC 217.32 Table B.1): School with cafeteria and showers: 20 gal/day/ person.

The purpose of this report is to provide engineering design data for changes to the sanitary sewer collection system serving Jarrell High School on the existing 119.5-acre tract located at 1100 FM487 in Jarrell, Texas. The additions consist of a new operations center, a new administrative addition near the main entrance of the high school, a choir addition on the southeast corner of the existing building, and a new ag facility adjacent to the existing ag building, which will also be renovated. The project demolition will be 19,513 Square feet and the additional impervious cover will add 442,955 square feet. The net for the project will add 10.17 acres or an additional 8.5%. The total impervious cover will total 37.07 acres (31.0 percent).

The sanitary sewer system design is gravity flow and no lift stations, wet wells or force mains are included in the project. There is one waterline crossings of the sanitary sewer system with vertical separations as indicated in Table 5 on Form 0582. At all crossings, the sewer passes below the proposed water line. An encasement of C-900, Class 150 (DR-18) pipe will be centered at the crossing point, supported by spaces at 5' intervals, and sealed at both ends with cement grout or a manufactured seal. Six manholes will be constructed on the site with this proposed modification. All proposed sewer pipe will be SDR-26. The wastewater flow from the site will enter the City of Jarrell wastewater system and will be conveyed to their existing Wastewater Treatment Plant for treatment.

Description of the Proposed System

The plans and specifications which describe the project are in compliance with all of the requirements of the TCEQ's TAC Chapter 217. The estimated flow in the sanitary sewer main is 25,200 gallons/day with an anticipated student population of 1,260.

Some of the sanitary sewer will be under internal roads. Therefore, the live and dead loads on the pipes were evaluated to determine if the pipe deflections will be within acceptable range. HS20 vehicle loading was chosen as the live load considering that semi-tractor trailer trucks may access these internal school roads. Based on the depth of the pipes the live load on the pipe ranged from 1.93 to 8.99 psi with total loads ranging from 8.22 to 11.49 psi. Deflections of the pipes were calculated to be between 1.05 to 1.47%.

The sanitary sewer pipes are designed with a slope that will provide a velocity of at least 2 feet per second, as calculated using a Manning's equation with an "n" value of 0.013 for the pipes. Also, at full flow the collection system is designed not to exceed a

velocity of 10 feet per second. No part of the project will be in the 100-year or 5-year floodplain.

Design Flows

The specific design parameters for daily wastewater influent loading used in this report are estimated as follows: (taken from 30 TAC 217.32 Table B.1): School with cafeteria and showers: 20 gal/day/person.

TABLE 1: ESTIMATED WASTEWATER FLOW RATE

Land Use and Acreage	Estimated maximum Population to be served	Basis for Daily wastewater	Estimated Average daily flow, gal/day
School with cafeteria and showers	1,260 person	20 gal/ day /person	25,200 gpd Or 72 LUE

Minimum Peaking Factor = (0.2 * (1260/1000) $^{\wedge 0.198}$) = 0.21
Max Peaking Factor = (18 + (1260/1000) $^{\wedge 0.5}$) / (4 + (1260/1000) $^{\wedge 0.5}$) = 3.73
Average Dry Weather Flow = 25,200 gpd / 1440 (min/day) = 17.5 gpm
Minimum Dry Weather Flow = 17.50 gpm * 0.20 = 3.68 gpm
Peak Dry Weather Flow = 17.50 gpm * 3.80 = 65.27 gpm
I/I = 1,000 gpd/acre * 0.25 acre = 250 gpd = 0.17 gpm
Peak Wet Weather Flow = 65.27 gpm + 0.17 gpm = 65.44 gpm

Pipe Capacity

65.44 gpm / 448.8 = 0.15 cfs
Full Flow of 8" pipe at 0.63% (minimum) (n=0.013) = 0.96 cfs
Full Flow of 6" pipe at 1.08% (minimum) (n=0.013) = 0.58 cfs
Full Flow of 4" pipe at 1.26% (minimum) (n=0.013) = 0.21 cfs

0.15 cfs / 0.96 cfs = 16% pipe capacity @ 0.63%
0.15 cfs / 0.58 cfs = 26% pipe capacity @ 1.08%
0.15 cfs / 0.21 cfs = 71% pipe capacity @ 1.26%

Structural Design

Input

	Depth	Deflection	Dead Load	Live Load	Total Load
SSWR 1 - 8″	5 ft	1.05%	4.17 PSI	4.06 PSI	8.22 PSI
SSWR 1.1 – 4″	4 ft	1.15%	3.33 PSI	5.67 PSI	9.00 PSI
SSWR 1.2 – 6″	5 ft	1.05%	4.17 PSI	4.06 PSI	8.22 PSI
SSWR 2 – 4″	3 ft	1.47%	2.5 PSI	8.99 PSI	11.49 PSI
SSWR 4 – 8″	8 ft	1.1%	6.67 PSI	1.93 PSI	8.59 PSI

Calculation Inputs
E': 1000.0 lbs/in^2
E'b: 1000.0 lbs/in^2
Time Lag Factor: 1.0
Pipe Stiffness: 115 psi
Bedding Constant: 0.1
Earth Load Pressure: 120 lb/cuft
Trench Width: 24.0"

Output

Allowable deflection is 2%. Calculated deflection is a maximum 1.15% **OK**

Aboveground Storage Tank Facility Plan Application

Texas Commission on Environmental Quality

For Permanent Storage on The Edwards Aquifer Recharge and Transition Zones And Relating to 30 TAC §213.5(e), 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 **Aboveground Storage Tank Facility Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Matt Hardy, PE

Date: 3/11/24

Signature of Customer/Agent:

Regulated Entity Name: Jarrell High School

Aboveground Storage Tank (AST) Facility Information

1. Tanks and substance stored:

Table 1 - Tank and Substance Storage

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
1	One 12,000 gal via-6,000 gal/6,000 gal	gasoline/diesel	steel
2	One single compartment 12,000 gal	diesel	steel

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

Total x 1.5 = 36,000 **Gallons**

2. ☐ 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 A - Alternative Methods of Secondary Containment**. Alternative methods for providing secondary containment are proposed. Specifications that show equivalent protection for the Edwards Aquifer are attached.

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

Table 2 - Secondary Containment

Length (L) (Ft.)	*Width (W) (Ft.)*	*Height (H) (Ft.)*	*L x W x H = (Ft3)*	*Gallons*
33.33	8.5	8.5	1,891.3	14,147.0
33.33	8.5	8.5	1891.3	14,147.0

Total: 28,294 **Gallons**

4. ☐ 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

5. ☒ 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 Concrete.

6. ☒ **Attachment B - Scaled Drawing(s) of Containment Structure**. A scaled drawing of the containment structure that shows the following is attached:

   ☒ 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.

Site Plan Requirements

Items 7 - 18 must be included on the Site Plan.

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

   Site Plan Scale: 1" = 40'.

8. 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): LOMR associated with addition of water quality and detention pond in MOD #5 is currently under review by FEMA.

9. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.

   ☐ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

10. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

    ☒ There are 4 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply):
    ☒ The wells are not in use and have been properly abandoned.
    ☒ The wells are not in use and will be properly abandoned.
    ☒ The wells are in use and comply with 16 TAC § 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

11. Geologic or manmade features which are on the site:

    ☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
    ☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
    ☐ **Attachment C - Exception to the Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

16. ☐ Surface waters (including wetlands).

    ☒ N/A

17. ☐ Locations where stormwater discharges to surface water or sensitive features.

    ☒ There will be no discharges to surface water or sensitive features.

18. ☒ Legal boundaries of the site are shown.

Best Management Practices

19. ☒ 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.

20. ☐ All stormwater accumulating inside the containment structure will be disposed of through an authorized waste disposal contractor.

    ☐ Containment area will be covered by a roof.

    ☒ Containment area will not be covered by a roof.

    ☒ A description of the alternate method of stormwater disposal is submitted for the executive director's review and approval and is attached.

21. ☒ **Attachment D - Spill and Overfill Control**. A site-specific description of the methods to be used at the facility for spill and overfill control is attached.

22. ☒ **Attachment E - Response Actions to Spills**. A site-specific description of the planned response actions to spills that will take place at the facility is attached.

Administrative Information

23. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

    ☐ The WPAP application for this project was approved by letter dated _____. A copy of the approval letter is attached at the end of this application.

☒ The WPAP application for this project was submitted to the TCEQ on 3/12/24, but has not been approved.

☐ A WPAP application is required for an associated project, but it has not been submitted.

☐ There will be no building or structure associated with this project. In the event a building or structure is needed in the future, the required WPAP will be submitted to the TCEQ.

☐ The proposed AST is located on the Transition Zone and a WPAP is not required. Information requested in 30 TAC 213.5 subsection (b) (4)(B) and (C) and (5) is provided with this application. (Forms TCEQ-0600 Permanent Stormwater Section and TCEQ-0602 Temporary Stormwater Section or Stormwater Pollution Prevention Plan/SW3P).

24. ☒ This facility is subject to the requirements for the reporting and cleanup of surface spills and overfills pursuant to 30 TAC 334 Subchapter D relating to Release Reporting and Corrective Action.

25. ☒ 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. The copies must be submitted to the appropriate regional office.

26. ☒ Any modification of this AST Facility Plan application will require executive director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

ATTACHMENT A

Alternative Methods of Secondary Containment
Aboveground Storage Tank Facility Plan
Jerrell Independent School District

I. Aboveground Fuel Tank (AST) Summary

The two proposed ASTs at this facility will be UL-2085 listed. The diesel tank will be an 8-foot nominal diameter 12,000 gallon capacity tank. The second tank is also a 12,000 gallon tank, and of the same physical size. The exception is that the second AST will be compartmentalized at 6,000/6,000 gallons (diesel/gasoline) using a double wall bulkhead.

The tanks are constructed of materials that are compatible with the liquids stored within (unleaded and diesel) and have the appropriate safety equipment such as primary and emergency venting, overfill protection, and fire valves.

The primary tank is wholly contained within a secondary tank, and the interstitial space is completely sealed. Therefore, if a failure occurs in the primary tank, all fuel will be trapped within the secondary tank. Additionally, because the interstice is sealed, stormwater cannot enter the interstice and reduce the available containment volume. An interstitial space monitor will be placed in the interstice of the ASTs to alert the operator of a primary tank failure. Because of these features, the AST containment structures are not 1.5 times the total tank volume.

A more detailed description of each system is provided below. Cut sheets for each tank type is attached.

II. Fuel Tank Description (12,000 gallon unleaded, including compartmentalized)

The ASTs used to store and dispense fuel for vehicles and equipment are set within a concrete curbed containment structure. The volume of the concrete structure is designed to contain approximately 3,200 gallons. The tanks are constructed to UL-2085 standard and are fire safe for both unleaded and diesel fuel. The piping is standard weight double wall pipe with welded joints. The estimated volume of all piping within this containment structure is 25 gallons. Therefore, the ASTs and aboveground piping both have tertiary containment.

III. Containment Volume of the 12,000 gallon Unleaded AST

The interstitial space of the 12,000 gallon AST is as follows:

Outer Tank

33'-4" long by 8'-6" diameter
Volume: 56.744 ft^2 x 33.33 ft x 7.48 gal/ft^3 = 14,147 gallons

Inner Tank

32'-67" long by 8'-0" diameter
Volume: 50.27ft^2 x 32.67 ft x 7.48 gal/ft^3 = 12,284.6 gallons

Total containment from 12,000 gallon AST interstitial space = 1,862.4 gallons

Transfer of fuel to the AST from the delivery trucks will occur within a sloped concrete pavement area. Liquids spilled in this sloped area will drain into the delivery tanker containment structure. Flow of liquids once in the containment structure is to a sump with a manually operated ball valve that ties into the storm water system. The drain pipe ball valve is to remain closed at all times to avoid accidental release of fuel into storm water drainage. The driver must stop the flow of fuel from the tanker as soon as the release is noted to prevent further waste. This system provides secondary containment for the delivery tankers as they deliver fuel.

In any case, the truck driver shall stay at the AST and monitor the fluid level as the tank is filled at all times. Fuel levels can be monitored by watching the Morrison Clock Gauge placed on the AST. An alarm will sound once the fuel level reaches 85%.

Place holder

ATTACHMENT D

Spill and Overfill Control
Aboveground Storage Tank Facility Plan
Jerrell Independent School District

The fuel system at the proposed Jerrell Independent School District in Jerrell, Texas is composed of two aboveground storage tanks (ASTs) for unleaded gasoline and diesel fuel and the associated fuel dispensers. This attachment described the Spill and Overfill Control procedures.

I. Vehicle Fueling Station

The means of spill containment for the ASTs at the vehicle fueling stations (unleaded and diesel) at Jerrell Independent School District Operations Center is achieved through the use of equipment and by human presence and observation. This containment area will capture lost fuel from the rupture of the delivery hose during a fuel delivery. A 2" gate valve (normally closed) is in place on the low point on the containment curb of the spill containment pit, and this may be used to drain or contain fuel after a rupture into a container for proper disposal. Clean fluids will be discharged to the storm water system, but contaminated fluid will be removed from the pit by a vacuum truck and properly disposed of. The gate valve must remain closed at all times to prevent accidental release of fuel into fluids.

A means of spill prevention is a tight fill fitting that ensures a liquid tight connection is made to prevent spills during the transfer of fuel. This fitting is housed within the spill container and both the delivery hose and the fuel piping have these fittings such that a tight connection must be made.

Human presence and observation of the filling process is another means to prevent spills and overfills for that matter. There shall be an experienced trained person at the fill point at all times that a fill operation is taking place.

Overfill of the ASTs is prevented in multiple ways. The first is the use of the Morrison Clock Gauge with relay that indicates the volume of liquid in the tank as measured in feet and inches. With the tank level provided in feet and inches, and a tank volume chart, one can calculate the volume of fuel in the AST. This information may then be compared to the delivery ticket and the decision made as to whether all of the available fuel can be contained within the AST at that time.

The Morrison Brothers tank management system used at this facility will alert the operator to the fact that the liquid level has reached 85 percent of the tank volume by sounding an alarm. The operator must then acknowledge the alarm and add fuel more cautiously. There is a mechanical overfill prevention valve inside the AST that is set to stop the flow of fuel into the AST at the 90 percent level. This is a float type valve that restricts the flow of fuel into the tank when the preset liquid level is reached. It is critical that an overfill valve rated for a pressurized delivery be used to ensure a safe delivery of fuel occurs.

ATTACHMENT E

Response Actions to Spills
Aboveground Storage Tank Facility Plan
Jerrell Independent School District

A spill kit capable of containing 25 gallons of unleaded or diesel shall be placed adjacent to the fill point at the tanker off loading area as well as the dispenser area where unleaded and diesel fueling takes place. These spill kits shall be kept stocked with all materials necessary to control and contain a 25 gallon spill of fuel, if one were to occur. Two significant components of the spill kit shall be hydrophobic pads and booms. There shall be sufficient booms to extend around the circumference of the containment structure. There also shall be sufficient hydrophobic pads to control a spill in the fueling area for the AST. Other items such as gloves and absorbent materials shall also be stored in this spill kit.

There are only two likely times when a spill might occur. The first and most probable would be during the filling of the AST. Inattentive operators or other causes could allow fuel to spill from the delivery truck or out of the AST. The second could be during the filling of a vehicle.

The operator must follow the established procedures when filling the AST. Before fuel is placed into the ASTs, the operator shall verify that the drain valve in the AST area containment area is closed. The operator shall also check for the proper fuel type (unleaded or diesel), available space to place the fuel (ullage), and then stand at the fill point while filling the AST. Additionally, the operator shall periodically visually observe the fuel level using the Morrison Clock Gauge to prevent an overfill and spill. These actions will prevent spills from the AST when filling.

Additionally, the operator must carefully monitor the delivery hose leading from the tanker to the AST connection point. A rupture of this delivery hose, or allowing it to separate from the connection point will allow a substantial amount of fuel to be lost to the containment structure. Therefore, the operator of the truck must be prepared to close the delivery valve at any time, especially if fuel is noted leaking from the delivery hose.

The second most probable time in which a spill could occur is during the filling of a vehicle while parked adjacent to the fuel position. The driver must stand next to the fuel tank as it is filled, monitoring the vehicle tank at all times. Drivers and others who fill vehicles

must stay with the vehicles while they are being fueled, and shall monitor the fuel levels in the tank at all times.

With respect to the vehicle filling operations, if a spill is noted from any location, and it is safe to do so, immediately run to an Emergency Fuel Shut Off switch and stop the flow of fuel. Do not run into an area that is on fire. Call 911 and report the spill. Help any person in the area in need and get them to a safe zone. Once the flow of fuel has stopped, and if there is no threat of fire, contact the facility/corporate emergency contact person and have a response team notified.

If a spill occurs during the filling of a vehicle at the fuel position, hydrophobic booms shall be placed across the concrete containment pavement. These booms will prevent the loss of fuel to the environment.

Once booms and pads have been placed as noted, the cause of the leak or spill shall be identified, and stopped. *If fire is imminent, leave the area immediately and call the Fire Department.* Document the actions taken and place them in a file for later use/documentation.

With the spill or leak stopped (either at the AST fill point or the vehicle fueling position), and the pads and booms containing and controlling the spill, final clean up may take place. A person shall call a spill response contractor, have the fuel cleaned up, and the absorbent materials collected, manifested, and properly disposed of as oily materials.

Finally, the cause of the spill shall be identified, and means and methods to prevent a similar occurrence determined.

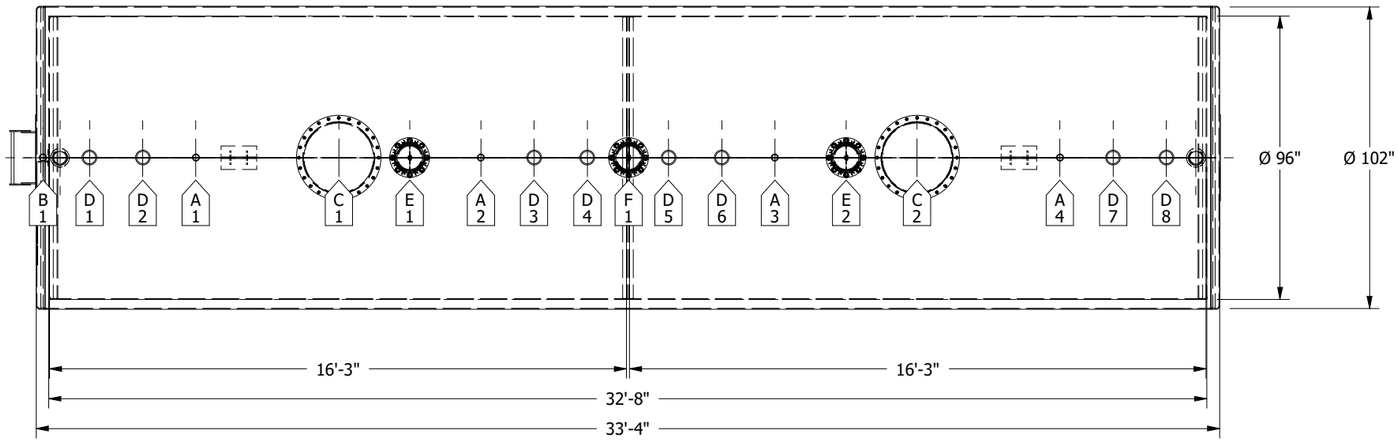
ATTACHMENT A

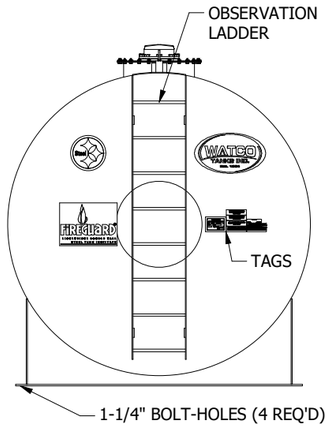
Description of the Alternate Method of Stormwater Removal
Aboveground Storage Tank Facility Plan
Jarrell Independent School District

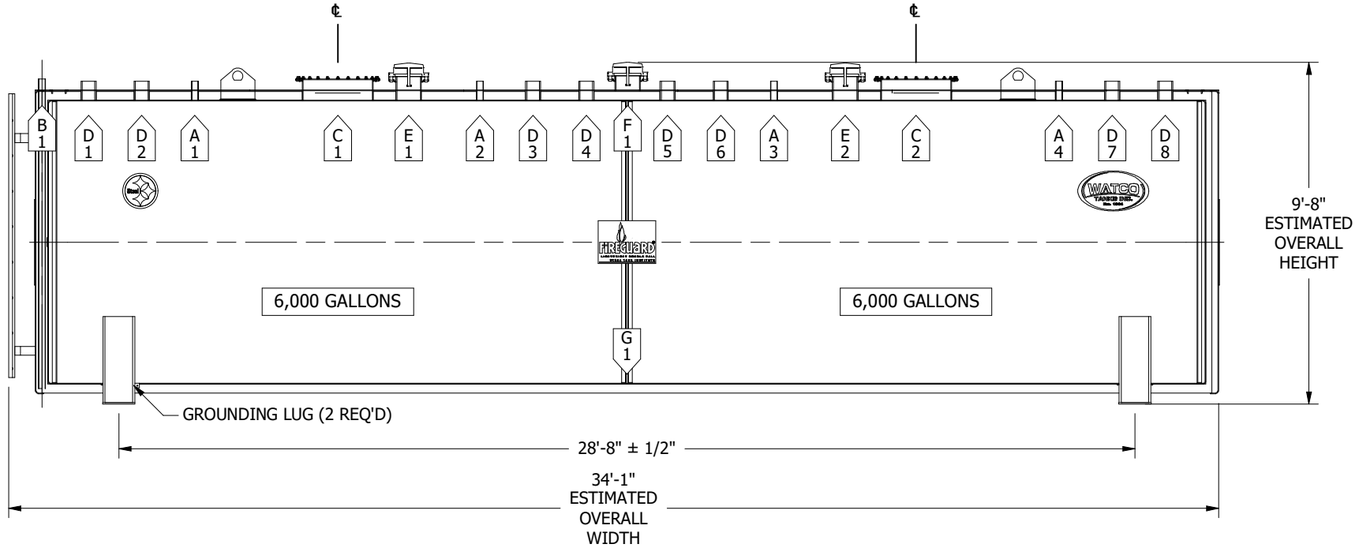
As a means of control of stormwater caught within the facility stormwater treatment system, a trench drain is placed between the tank foundation area and the tanker containment area. This location is the low area between the two areas. Before being released, a person trained by the facility operator shall inspect the water for an iridescent sheen, free drops of oil, or larger volumes of oil that has been released. If no signs of oil are noted in the pooled water, the trench grate valve shall be opened and the trapped storm water may sheet flow out. If a sheen is noted on the storm water within the concrete, the valve may not be opened, and a pump truck shall be hired to remove the oil, and properly. This will include the issuance of a waste manifest.

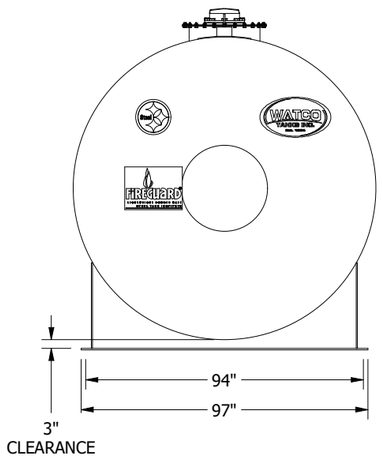
After the issuance of the waste manifest, the oil laden storm water will be passed through a furnace or pumped into a deep well to dispose of the material. These two methods are expensive but contain contaminants in a sure manner.

LIGHTWEIGHT CONCRETE
INSULATION

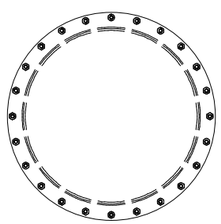


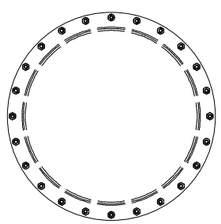






LIST OF COMPONENTS		
ID	**QTY**	**DESCRIPTION**
A	4	2" FEMALE THREADED FITTING
B	1	2" MONITOR WELL
C	2	24" MANWAY
D	8	4" FEMALE THREADED FITTING
E	2	8" PRIMARY VENT
F	1	8" SECONDARY VENT
G	1	BRACED DOUBLE BULKHEAD
H	2	FGCY LIFTING LUG





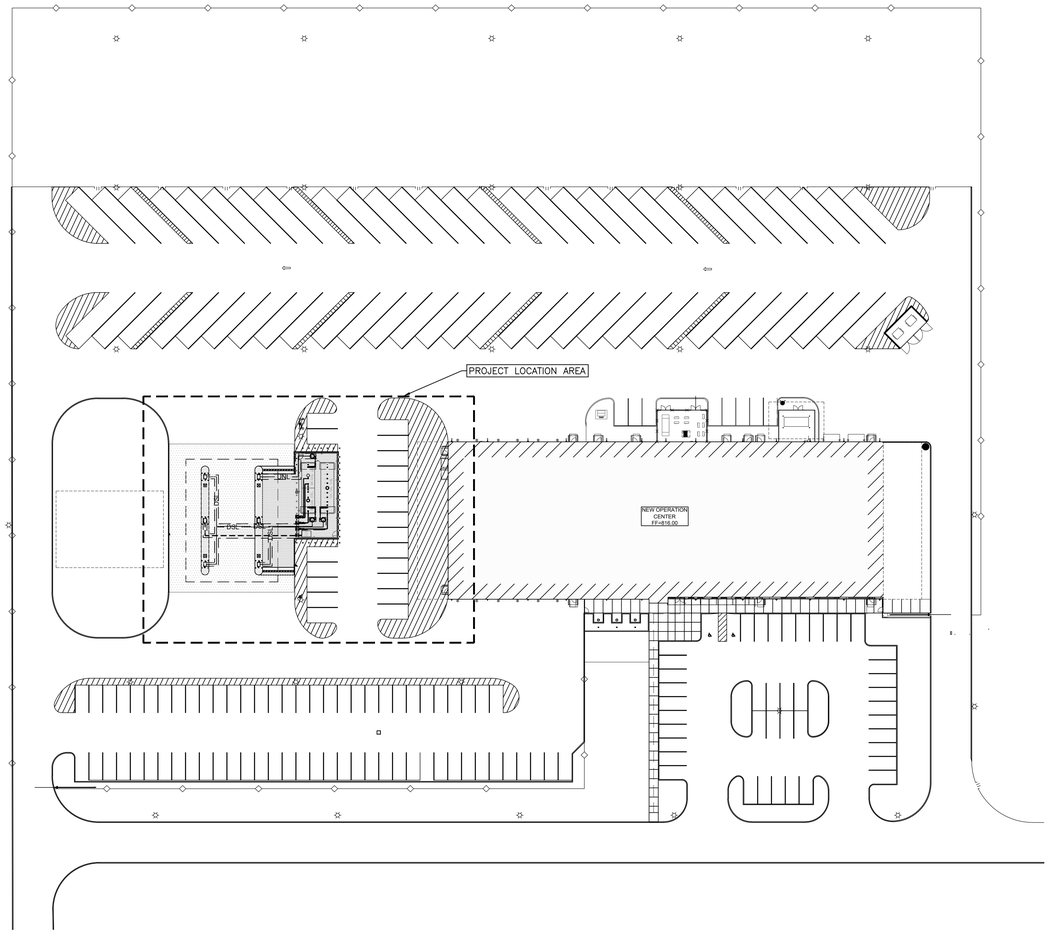
12,000 GALLON
STI FIREGUARD - UL 2085
96" X 32'-8"
(6,000/6,000)

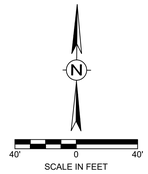
CUST.:
LOC.: JARRELL ISD FUEL TANK
DWG NO: STD-FGCY-12k(6-6)-96

REV.	DATE	DWG BY	APP'D	DESCRIPTION

NOTES:
EXTERNAL: BLAST; PRIME & WHITE
INTERNAL: BARE METAL
TEST INNER: 5 PSIG SOAP & WATER
ESTIMATED WEIGHT: 37,000 LBS (+/- 5%)

WATCO TANKS INC. Est. 1984





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EXISTING CONDITIONS SITE LAYOUT PLAN

Job No.	Sheet No.
124052	C1.1
Drawn By: AAA	
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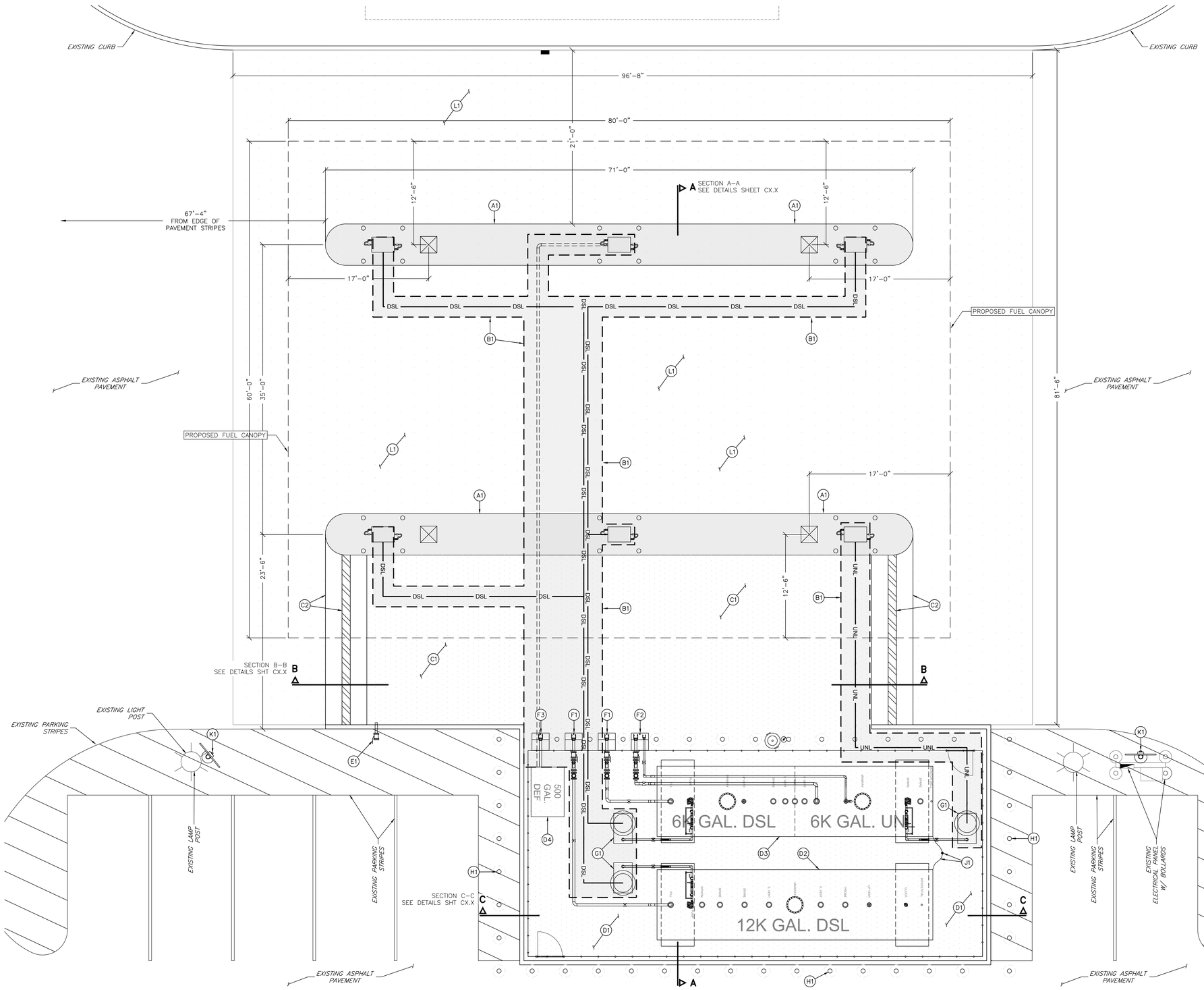

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5' 0 5'

SCALE IN FEET

KEY NOTES

- (A1) FUELS ISLANDS (SEE SHT CX.X)
- (B1) PIPE BURIAL TRENCH (SEE SHT CX.X)
- (C1) TRUCK OFFLOAD CONTAINMENT AREA (SEE SHT CX.X)
- (C2) ROLL OVER CURB (SEE SHT CX.X)
- (D1) AST FUEL CONTAINTMENT AREA (SEE SHEET CX.X)
- (D2) AST DIESEL (12K GAL. DBL WALL UL2085 FIRE GUARD) (TYP.) (SEE SHT CX.X)
- (D3) AST DUAL COMPARTMENT (6K DIESEL/6K UNLEADED) (12K GAL. DBL WALL UL2085 FIRE GUARD) (TYP.) (SEE SHT CX.X)
- (D4) AST DEF TANK (BENECOR PLASTIC, 500 GAL) (SEE SHT CX.X)
- (E1) CARBON STEEL LOCKING BALL DRAIN VALVE
- (F1) DIESEL FILL STATION (SEE SHT CX.X)
- (F2) UNLEADED FILL STATION AND VAPOR RECOVERY (SEE SHEET CX.X)
- (F3) DEF FILL STATION (SEE SHT CX.X)
- (G1) TRANSITION SUMP (SEE SHT CX.X)
- (H1) BOLLARDS (TYP.) (SEE SHT CX.X)
- (J1) 3/4"Ø x10' COPPER CLAD STEEL GROUNDING ROD AND 4/0 COPPER CONDUCTORS
- (K1) EMERGENCY FUEL SHUT OFF (SEE SHT CX.X)
- (L1) FUEL ISLAND DRIVE CONC. SLAB (SEE SHT CX.X)

NOTE:
CONTAINMENT VOLUME (W/O TANK VOLUMES) = E,EEE GAL
25 YEAR, 24 HOUR STORM = E.EE" (JARRELL COUNTY)

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GENERAL KEYNOTE AND DIMENSIONAL CONTROL PLAN

Job No.	Sheet No.
124052	C2.0
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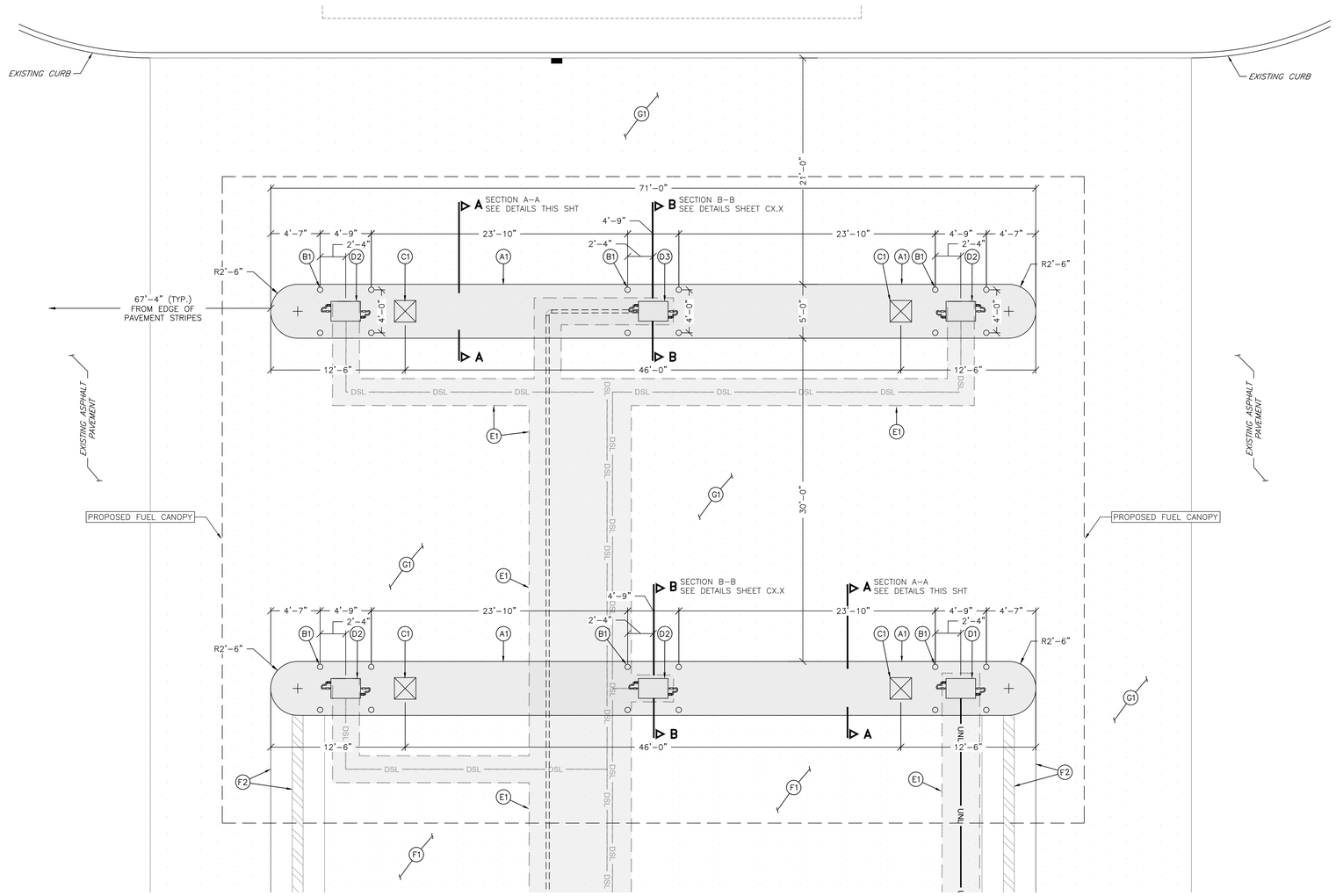
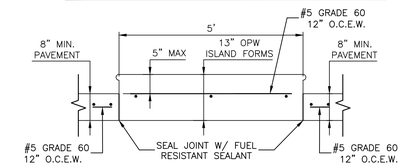


KEY NOTES

- (A1) DISPENSER ISLAND (SEE SHT CX.X)
- (B1) BOLLARD (TYP.) (SEE SHT CX.X)
- (C1) CANOPY COLUMN
- (D1) DISPENSER – UNLEADED (SEE SHT CX.X)
- (D2) DISPENSER – DIESEL (SEE SHT CX.X)
- (D3) DISPENSER – DEF (SEE SHT CX.X)
- (E1) PIPE BURIAL TRENCH (SEE SHT CX.X)
- (F1) TRUCK OFFLOAD CONTAINMENT AREA (SEE SHT CX.X)
- (F2) ROLL OVER CURB (SEE SHT CX.X)
- (G1) FUEL ISLAND DRIVE CONC. SLAB (SEE SHT CX.X)



SECTION "A-A" FUEL ISLAND DETAIL
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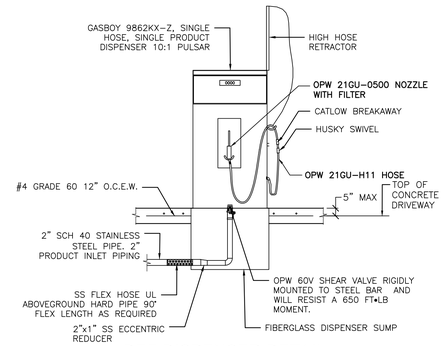

DEF DISPENSER DETAIL
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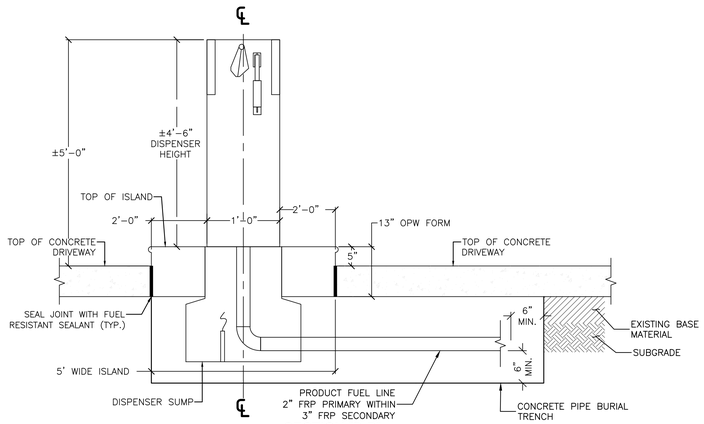
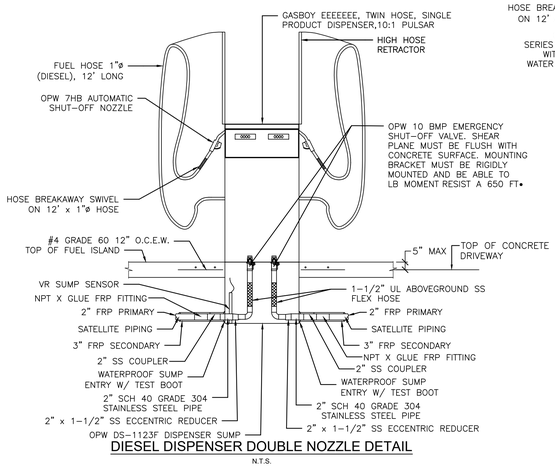
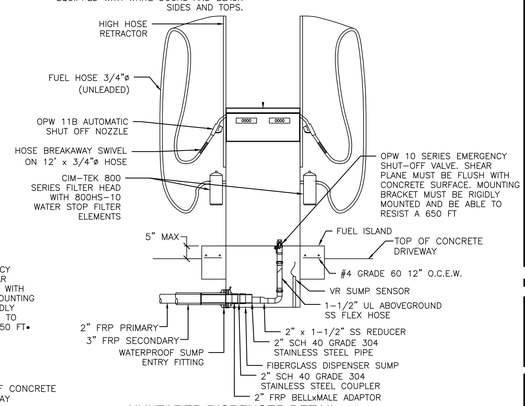


SECTION "B-B" FUEL ISLAND, DISPENSER AND PIPE BURIAL TRENCH DETAIL
N.T.S.



DIESEL DISPENSER DOUBLE NOZZLE DETAIL
N.T.S.

GASOLINE: GASBOY 9853KX-TW1, SINGLE PRODUCT, TWO HOSE DISPENSER, HOSE RETRACTOR, RS485 PULSE OUTPUT, AND EQUIPPED WITH WHITE DOORS AND BLACK SIDES AND TOPS.



UNLEADED DISPENSER DETAIL
N.T.S.

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FUEL ISLAND KEYNOTE AND DIMENSIONAL CONTROL PLAN

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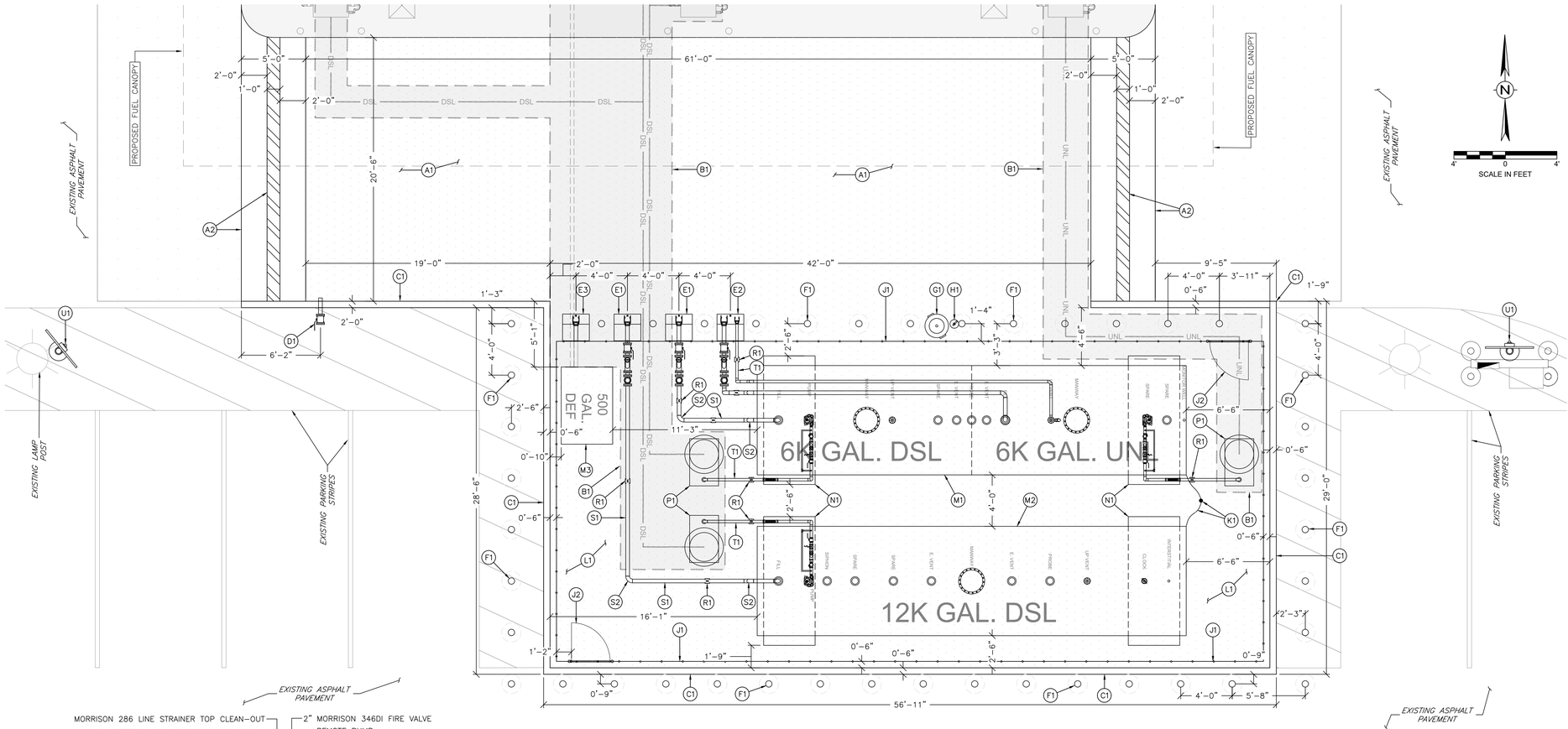
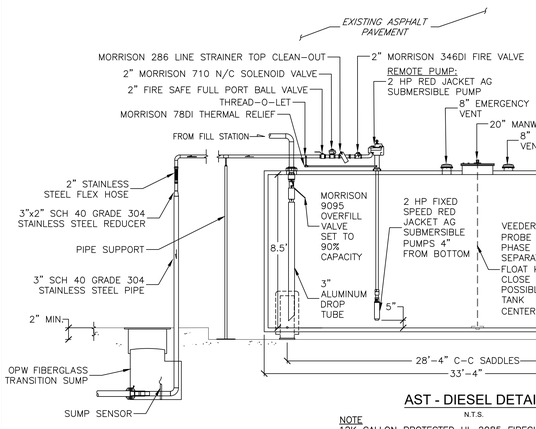


KEY NOTES

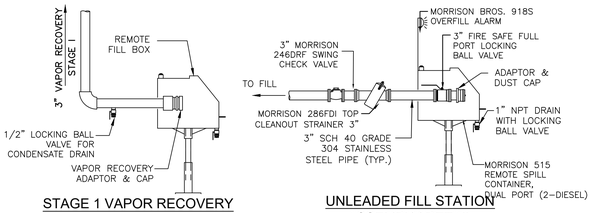
- (A1) TRUCK OFFLOAD CONTAINMENT AREA (SEE SHT CX.X)
- (A2) ROLL OVER CURB (SEE SHT CX.X)
- (B1) PIPE BURAL TRENCH (SEE SHT CX.X)
- (C1) STANDARD CURB (TYP.) (SEE SHT CX.X)
- (D1) CARBON STEEL LOCKING BALL DRAIN VALVE
- (E1) FILL STATION – DIESEL (SEE SHT. CX.X)
- (E2) FILL STATION – UNLEADED/VAPOR RECOVERY (SEE SHT. CX.X)
- (E3) FILL STATION – DEF (SEE SHT CX.X)
- (F1) BOLLARD (TYP) (SEE SHT CX.X)
- (G1) SPILL KIT
- (H1) 20 B:C FIRE EXTINGUISHER MOUNTED ON BOLLARD
- (J1) CONTAINMENT AREA CHAINLINK FENCE (SEE SHT. CX.X)
- (J2) AST CONTAINMENT AREA CHAINLINK 3' FENCE GATE (SEE SHT. CX.X)
- (K1) 3/4"Ø x 10' COPPER CLAD STEEL GROUNDING ROD AND 4/0 COPPER CONDUCTORS (BOTH TANKS SHALL BE GROUNDED TO COMMON GROUND)
- (L1) AST CONTAINMENT AREA CONC. SLAB (SEE SHT CX.X)
- (M1) AST DUAL COMPARTMENT TANK (6K GAL. DIESEL/6K GAL. UNLEADED
- (M2) AST TANK – DIESEL (20K GAL. DBL WALL UL2085 FIRE GUARD) (TYP.) (SEE SHT CX.X)
- (M3) AST DEF TANK (BENECOR PLASTIC, 500 GAL) (SEE SHT CX.X)
- (N1) AST FOOTING (TYP.) (SEE SHT CX.X)
- (P1) TRANSITION SUMPS (SEE SHT CX.X)
- (R1) PIPE STAND (TYP.) (SEE SHT CX.X)
- (S1) 3" SCH 40 GRADE 304 STAINLESS STEEL (TYP.)
- (S2) 3" SCH 40 GRADE 304 STAINLESS STEEL 90° PIPE BEND AND FITTINGS (TYP.)
- (T1) 2" SCH 40 GRADE 304 STAINLESS STEEL PIPE (TYP.)
- (U1) EMERGENCY FUEL SHUT OFF (SEE SHT CX.X)

NOTE
1. AIR TEST ALL FRP LINES IN ACCORDANCE WITH MARBLE FALLS FIRE DEPT. REQUIREMENTS.
2. CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES IN THE AREA PRIOR TO DIGGING.
3. EMERGENCY FUEL SHUT OFF SHALL BE GREATER THAN 20', LESS THAN 100' FROM THE POINT OF FUELING.
4. THE TLS-450 PLUS SYSTEM IS LOCATED IN THE IDF CLOSET IN THE MAIN OFFICE BUILDING.
5. THE VEEDER-ROOT CONSOLE SHALL BE WITHIN 1000' OF WIRE DISTANCE FROM THE SENSORS AND PROBE.
6. ALL SPILL KIT MATERIALS SHALL BE PLACED IN A WATER RESISTANT AND UV RESISTANT DRUM.
7. ALL SPILL KITS SHALL HAVE SUFFICIENT PPE, TOOLS, AND HYDROPHOBIC BOOMS AND PADS TO CONTROL A 25 GALLON SPILL.
8. PROVIDE SIGNAGE IN ACCORDANCE WITH NFPA 704, INCLUDING BUT NOT LIMITED TO, "NO SMOKING" AND "NO OPEN FLAMES" SIGNAGE.
9. 3/4"Ø x 10' COPPER CLAD STEEL GROUNDING ROD TO BE INSTALLED IN BETWEEN TANKS. ALL SYSTEMS TO BE GROUNDED AND BONDED TOGETHER.



AST - DIESEL DETAIL
N.T.S.

NOTE
12K GALLON PROTECTED UL 2085 FIREGUARD DOUBLE WALL ABOVEGROUND STORAGE TANK DIESEL FUEL

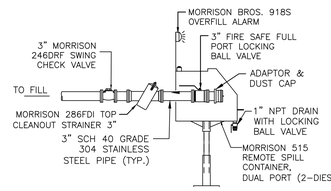


STAGE 1 VAPOR RECOVERY ASSEMBLY DETAIL

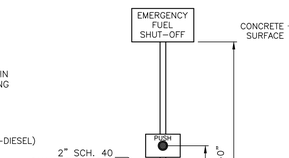
UNLEADED FILL STATION ASSEMBLY DETAIL

NOTE
FILL ASSEMBLY AND VAPOR RECOVERY ASSEMBLY CONTAINED WITHIN SPILL CONTAINER

UNLEADED FILL STATION AND STAGE 1 VAPOR RECOVERY
N.T.S.



DIESEL FILL STATION DETAIL
N.T.S.



EMERGENCY SHUT-OFF DETAIL
N.T.S.

NOTE
- CONTRACTOR TO MOUNT EMERGENCY FUEL SHUT OFF (EFSO) SWITCH ON THE OUTSIDE OF THE BUILDING WALL, WITHIN SIGHT OF THE FUEL DISPENSING LOCATIONS. THE EFSO SHALL ALSO BE LOCATED LESS THAN 100', AND MORE THAN 20' FROM THE POINT OF FUELING.
- EMERGENCY FUEL SHUTOFF SIGN: 24"x24" RED BACKGROUND WITH 5" WHITE REFLECTIVE LETTERS.
- EMERGENCY INSTRUCTION SIGN: 24"x24" TOP PORTION RED BACKGROUND WITH 2" WHITE REFLECTIVE LETTERS. BOTTOM PORTION WHITE REFLECTIVE BACKGROUND WITH 1" RED LETTERS.
- PUSH OR PULL SIGN: 12"x8" RED BACKGROUND WITH 4" WHITE LETTERS.

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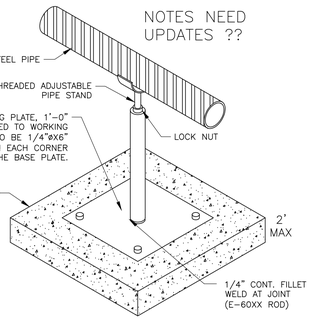
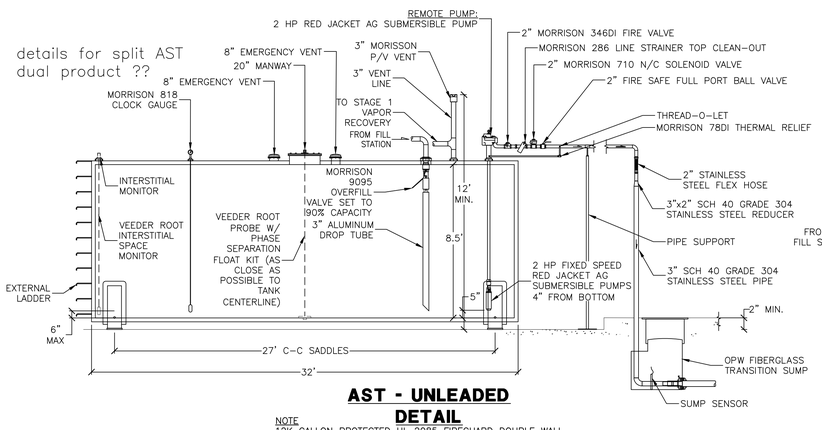
NOTES NEED UPDATES ??



PIPE STAND DETAIL
N.T.S.

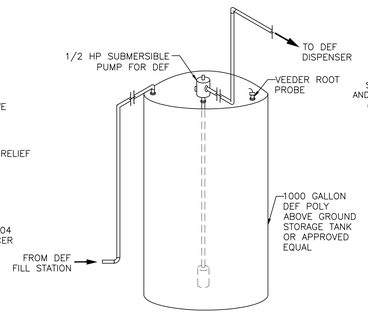
NOTES
1. PAINT PIPE STAND WITH APPROVED EXTERIOR PAINT MATCHING PIPING.
2. PLACE PIPE IN STAND WITHOUT CLAMPS OR OTHER RESTRAINTS
3. MAXIMUM SPACING ON PIPE SUPPORTS IS 10'-0" O.C. OR IN POSITIONS INDICATED ON PLANS.

details for split AST dual product ??



AST - UNLEADED DETAIL
N.T.S.

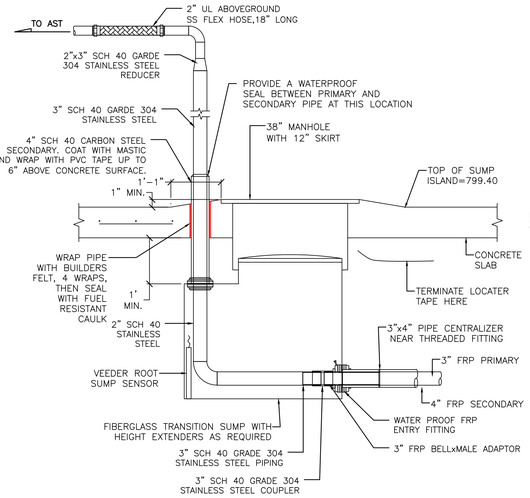
NOTE
12K GALLON PROTECTED UL 2085 FIREGUARD DOUBLE WALL ABOVEGROUND STORAGE TANK DIESEL FUEL



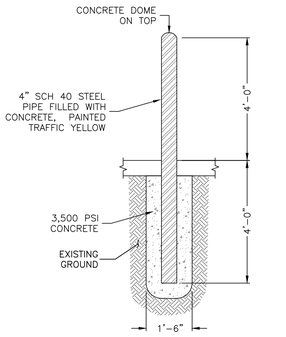
DEF TANK DETAIL
N.T.S.

NOTES
1. BENECOR PLASTIC DEF TANK
2. 1000 GAL.
3. 1/2 HP SUB PUMP MOTOR
4. VEEDER ROOT PROBE RISER
5. DRY BREAK REMOTE FILL

WHICH DEF TANK ARE WE USING??



TRANSITION SUMP DETAIL
N.T.S.



PIPE BOLLARD DETAIL
N.T.S.

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AST FUEL AND TRUCK OFFLOAD CONTAINMENT AREA KEYNOTE AND DIMENSIONAL CONTROL PLAN

Job No. 124052
Drawn By: AAA
Date: 03.8.2024 -CD SET
Sheet No. C2.2

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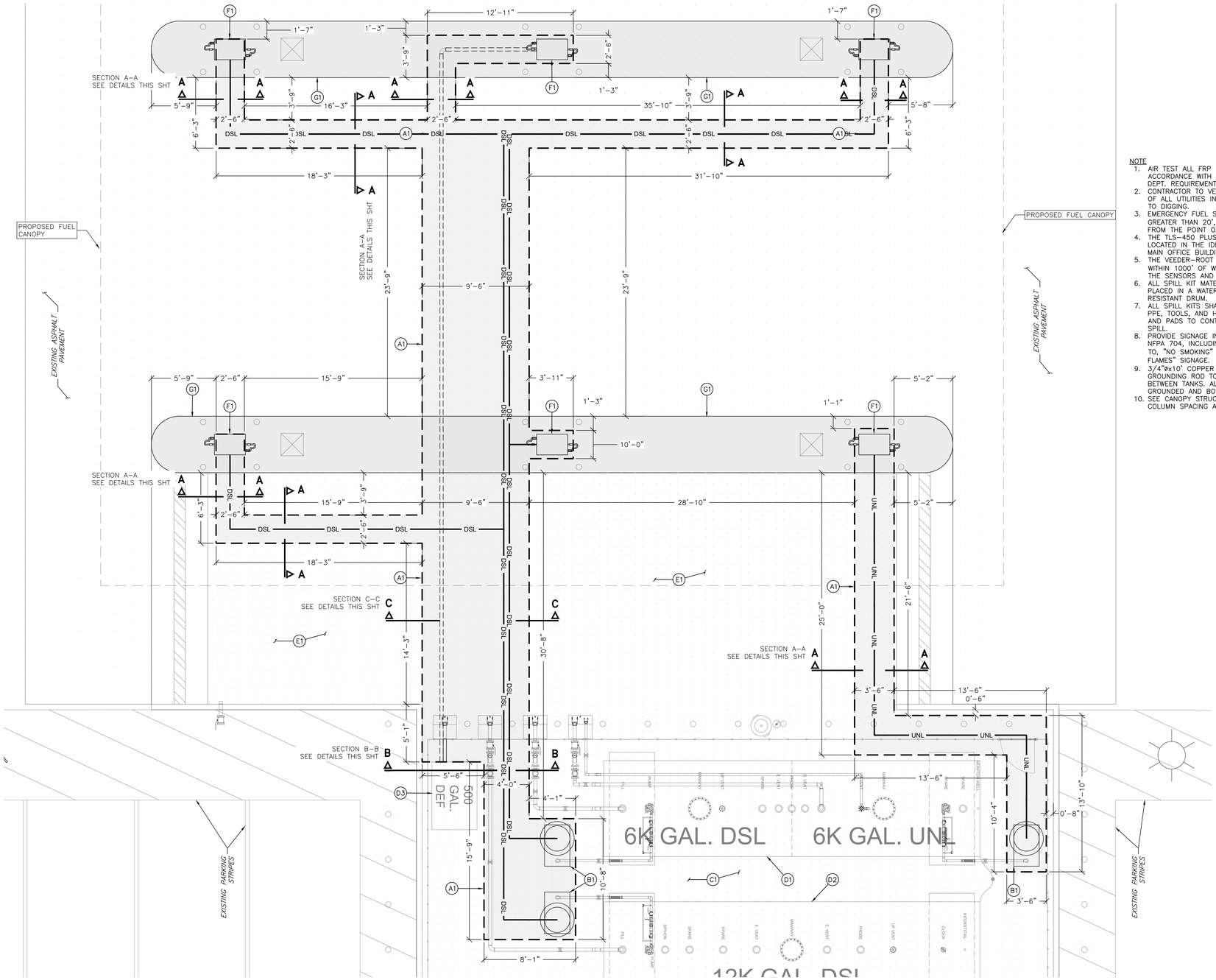


LEGEND

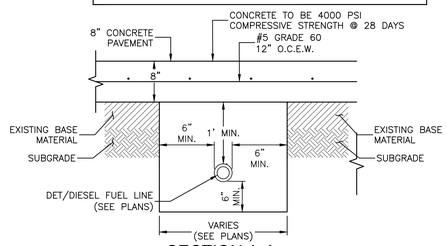
- DSL — 2" FRP DIESEL FUEL LINE
- UNL — 2" FRP UNLEADED FUEL LINE
- 2" DET FUEL LINE

KEY NOTES

- (A1) CONCRETE PIPE BURAL TRENCH (SEE SHT CX.X)
- (B1) TRANSITION SUMP (TYP) (SEE SHT CX.X)
- (C1) PROPOSED FUEL CONTAINMENT AREA SLAB (SEE SHT. CX.X)
- (D1) AST DUAL COMPARTMENT (6K DIESEL/6K UNLEADED) (12K GAL. DBL WALL UL2085 FIRE GUARD) (TYP.) (SEE SHT CX.X)
- (D2) AST DIESEL (12K GAL. DBL WALL UL2085 FIRE GUARD) (TYP.) (SEE SHT CX.X)
- (D3) AST DEF TANK (BENECOR PLASTIC, 500 GAL) (SEE SHT CX.X)
- (E1) TRUCK OFFLOAD CONTAINMENT AREA (SEE SHT CX.X)
- (F1) DISPENSER (UNLEADED/DIESEL/DEF) (SEE SHT CX.X)
- (G1) FUEL ISLAND (SEE SHT CX.X)

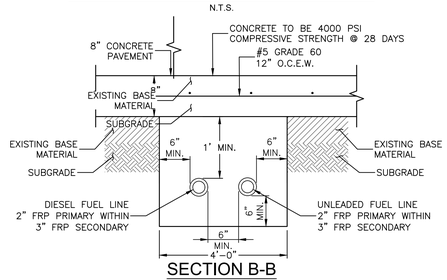
NOTE

1. AIR TEST ALL FRP LINES IN ACCORDANCE WITH MARBLE FALLS FIRE DEPT. REQUIREMENTS.
2. CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES IN THE AREA PRIOR TO DIGGING.
3. EMERGENCY FUEL SHUT OFF SHALL BE GREATER THAN 20', LESS THAN 100' FROM THE POINT OF FUELING.
4. THE TLS–450 PLUS SYSTEM IS LOCATED IN THE IDF CLOSET IN THE MAIN OFFICE BUILDING.
5. THE VEEDER–ROOT CONSOLE SHALL BE WITHIN 1000' OF WIRE DISTANCE FROM THE SENSORS AND PROBE.
6. ALL SPILL KIT MATERIALS SHALL BE PLACED IN A WATER RESISTANT AND UV RESISTANT DRUM.
7. ALL SPILL KITS SHALL HAVE SUFFICIENT PPE, TOOLS, AND HYDROPHOBIC BOOMS AND PADS TO CONTROL A 25 GALLON SPILL.
8. PROVIDE SIGNAGE IN ACCORDANCE WITH NFPA 704, INCLUDING BUT NOT LIMITED TO, "NO SMOKING" AND "NO OPEN FLAMES" SIGNAGE.
9. 3/4"Ø x 10' COPPER CLAD STEEL GROUNDING ROD TO BE INSTALLED IN BETWEEN TANKS. ALL SYSTEMS TO BE GROUNDED AND BONDED TOGETHER.
10. SEE CANOPY STRUCTURAL SHEETS FOR COLUMN SPACING AND SIZE.



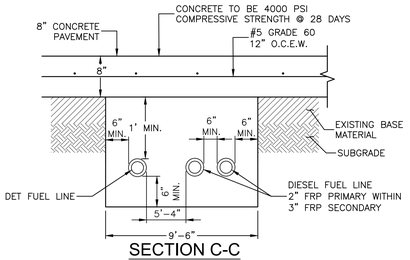
SECTION A-A
PIPE BURIAL SECTION DETAIL (TYP.)

N.T.S.



SECTION B-B
PIPE BURIAL SECTION DETAIL (TYP.)

N.T.S.



SECTION C-C
PIPE BURIAL SECTION DETAIL (TYP.)

N.T.S.

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PIPE BURIAL AND PIPING KEYNOTE AND DIMENSIONAL CONTROL PLAN

Job No. 124052	Sheet No. C2.3
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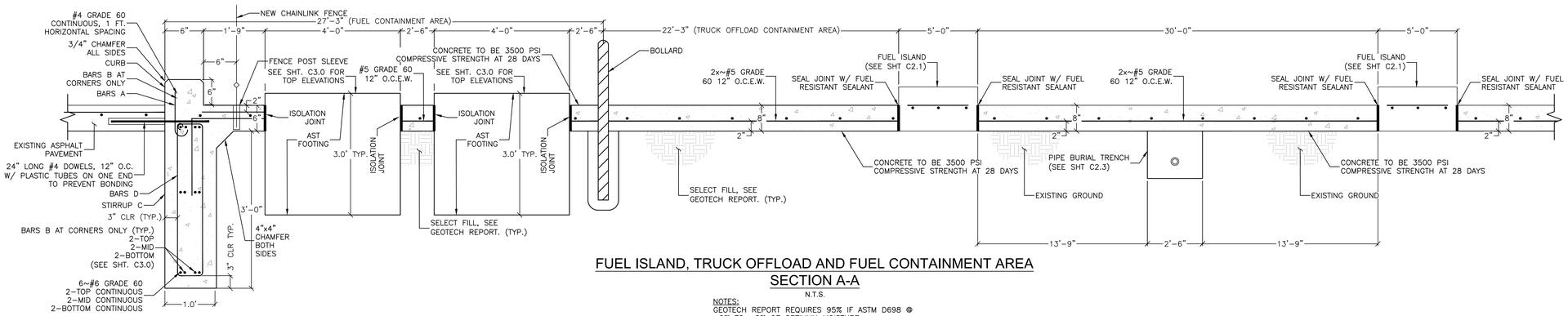
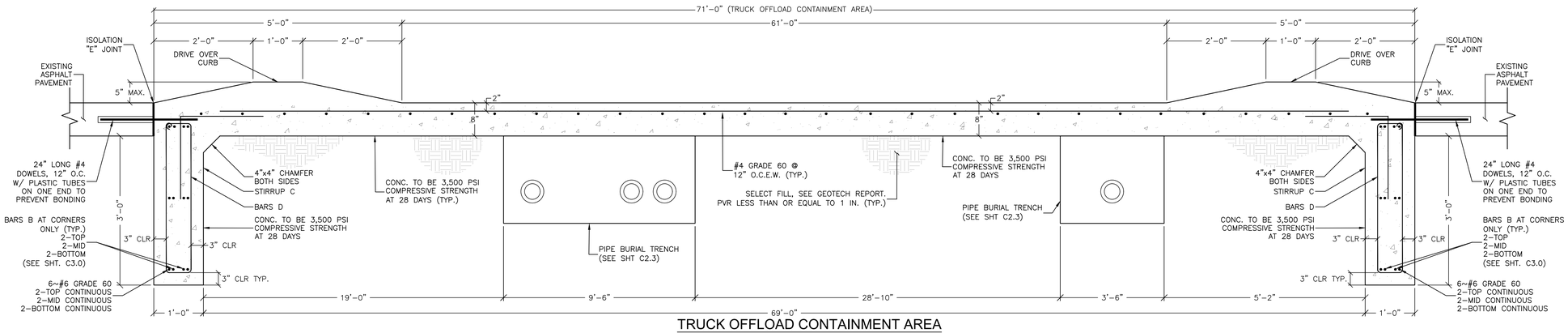


FUEL ISLAND, TRUCK OFFLOAD AND FUEL CONTAINMENT AREA
SECTION A-A

N.T.S.

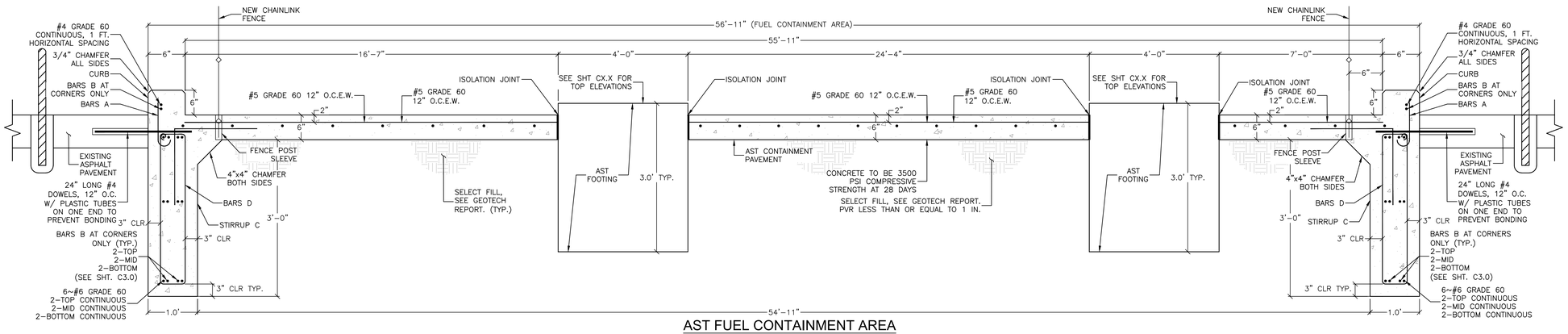
NOTES:
GEOTECH REPORT REQUIRES 95% IF ASTM D698 @ −2% TO +2% OF OPTIMUM MOISTURE.



TRUCK OFFLOAD CONTAINMENT AREA
SECTION B-B

N.T.S.

NOTES:
GEOTECH REPORT REQUIRES 95% IF ASTM D698 @ −2% TO +2% OF OPTIMUM MOISTURE.



AST FUEL CONTAINMENT AREA
SECTION C-C

N.T.S.

NOTES:
GEOTECH REPORT REQUIRES 95% IF ASTM D698 @ −2% TO +2% OF OPTIMUM MOISTURE.

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PROJECT LAYOUT
SECTION VIEWS

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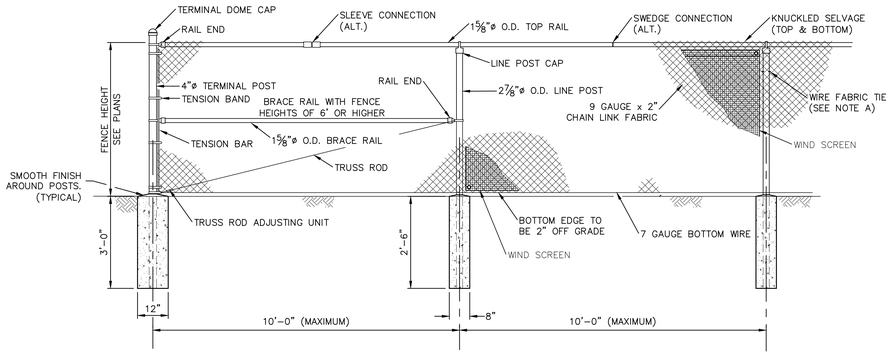


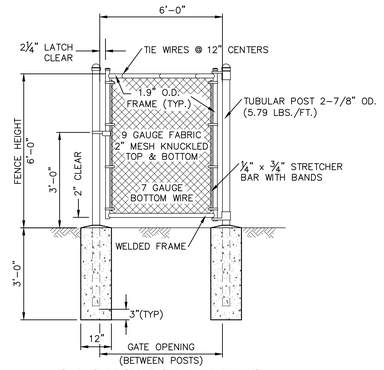
TYPICAL CHAIN LINK FENCE SECTION

N.T.S.

NOTE A:
PROVIDE AND INSTALL GALVANIZED STEEL WIRE TIES, REFER TO SPECIFICATIONS.

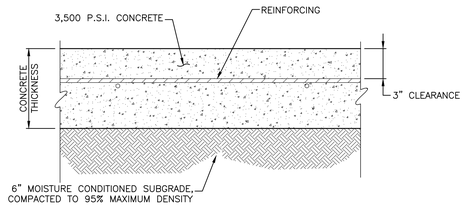
CHAIN LINK FENCE DETAILS

N.T.S.



CHAIN LINK GATE DETAIL

N.T.S.



	SECTION
THICKNESS	8" – 3,500 PSI
REINFORCING	NO. 4 @ 12" OCEW

CONCRETE PAVEMENT SECTION

N.T.S.

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SITE DETAILS

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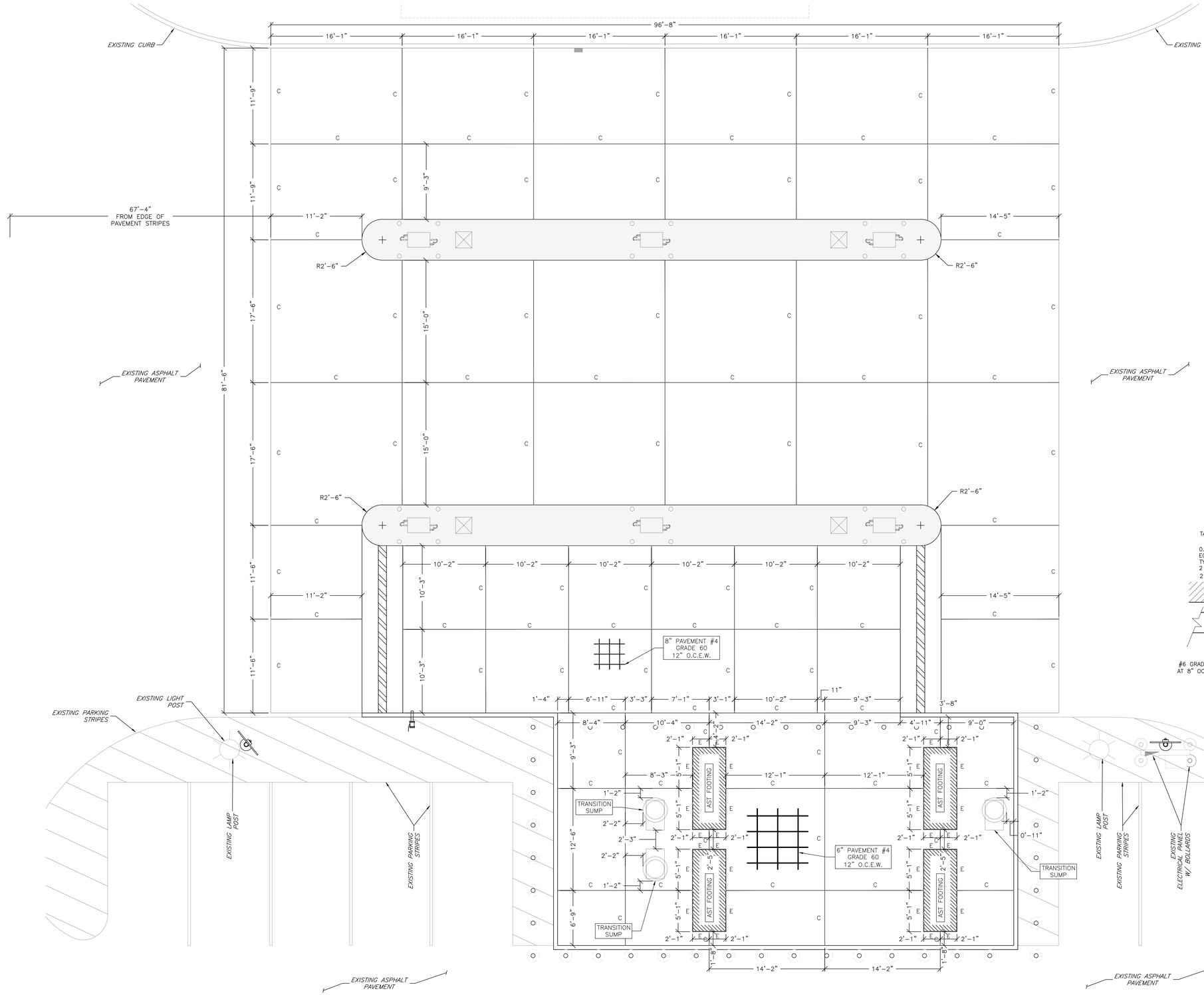
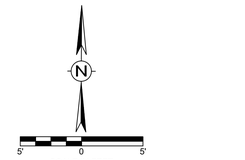
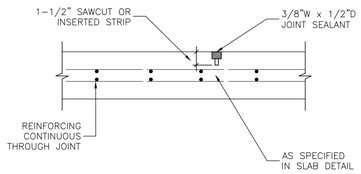
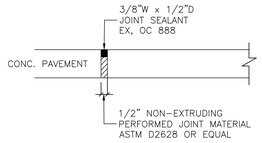






CONTRACTION JOINT TYPE "C" DETAIL

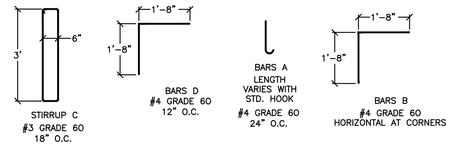
SCALE: N.T.S.



ISOLATION JOINT TYPE "E" DETAIL

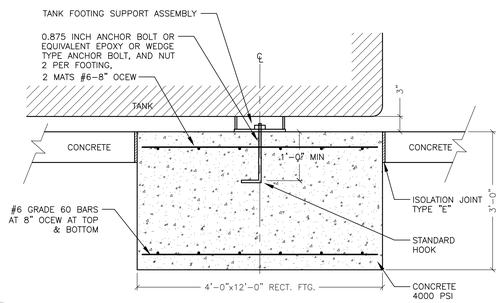
SCALE: N.T.S.

NOTE:
- ALL SAW CUTS SHALL BE COMPLETED WITHIN 8 HOURS OF INITIAL SET CONCRETE



REINFORCEMENT BAR DETAILS

N.T.S.



FOOTING DETAILS

N.T.S.

NOTE:
- FOOTING SIZE TO BE CONFIRMED WITH PROJECT GEOTECH REPORT. SIZE SHOWN IS APPROXIMATE AND CHANGED TO GEOTECH REPORT.
- CONTRACTOR TO VERIFY CENTER TO CENTER SPACING ON TANK SADDLES

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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: Matt Hardy, PE

Date: 03/11/2024

Signature of Customer/Agent:

Regulated Entity Name: Jarrell High School

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: Gasoline and diesel fuel tanks are proposed permanent features. AST plan included.

   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: Salado Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

Temporary Stormwater Management Practices TCEQ Form 0602
Attachment A Spill Response Actions

SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

1 MATERIALS COVERED

The following materials or substances with known hazardous properties are expected to be present onsite during construction:

Concrete	Cleaning solvents
Detergents	Petroleum based products
Paints	Pesticides
Paint solvents	Acids
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 Section 3.02.4.B of this SWPPP. 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 SPCC plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included. If the spill exceeds a

Reportable Quantity, all federal regulations regarding reports of the incident will be complied with.

G. 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 C2.0 SWPPP Plan contained in the Construction Plans for the project for details):

A. Install silt fence around perimeter of property and disturbed areas as shown on the SWPPP plan sheet. (Area Disturbed = 0.75 acres)

B. Install inlet protection for all existing grate inlets, curb inlets, and at the end of all exposed storm sewer pipes, if present. (Area Disturbed = 0.01 acres)

C. Construct temporary construction exit. (Area Disturbed = 0.02 acres)

D. Commence grubbing and removal of vegetation in area to receive cut or fill. (Area Disturbed = 19.6 acres)

E. Commence grading operation for building pad preparation. (Area Disturbed = 1.5 acres)

F. Install all underground utilities. (Area Disturbed = 1.2 acres)

G. Finalize pavement subgrade preparation. (Area Disturbed = 9.0 acres)

H. Install all proposed storm sewer pipes and install inlet protection silt fences at ends of exposed pipes. (Area Disturbed = 1.2 acres)

I. Construct all grate inlets and drainage structures. Inlet protection silt fences may be removed temporarily for this construction. (Area Disturbed = 0.01 acres)

J. Remove silt fences around inlets and manholes no more than 48 hours prior to placing stabilized base course. (Area Disturbed = 0.01 acres)

K. Install base material as required for pavement, curb and gutter. (Area Disturbed = 9.0 acres)

L. Install all paving, curb and gutter. (Area Disturbed = 9.0 acres)

M. Complete planting and/or seeding of vegetated areas to accomplish stabilization, in accordance with the landscaping plan. (Area Disturbed = 14.6 acres)

N. Remove temporary construction exit, erosion control logs, inlet protection, and all other temporary sediment controls. (Area Disturbed = 0.1 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 gravel filled bags and silt fence.

2. Perimeter protection using silt fencing and/or erosion control logs

3. Stabilized construction exit point

4. Diversion swales to channel onsite runoff flow into the pond basin.

5. Rock check dams

6. Temporary concrete washout area

7. 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 C5.00 Existing Drainage Area Map and C5.01 Proposed Drainage Area Map from the current proposed package.

Temporary Stormwater Management Practices TCEQ Form 0602
Attachment H Temporary sediment pond plans and calculations

The existing water quality wet pond constructed with WPAP Modification #5 (recently completed) will be utilized as a temporary sediment pond for the stormwater runoff from the site.

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 exit point

   D. Temporary sediment pond with outlet structure and Faircloth skimmer for dewatering

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.
- ☐ Concrete washout will be inspected for buildup. Once concrete wastes are allowed to harden, the concrete should be broken up, removed and disposed of properly.
- ☐ 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

1. All soil disturbing activities are complete

2. Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time

3. 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

4. If portions of the site will have a temporary or permanent 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.

BMP INSPECTION REPORT FOR STORM WATER POLLUTION PREVENTION PLAN

Jarrell High School – 1100 FM 487, Jarrell, TX 76537

INSPECTOR QUALIFICATIONS: _____

DATE OF INSPECTION: _____ **SITE CONDITIONS:** _____

POLLUTANT CONTROL	IN CONFORMANCE?	CORRECTIONS NEEDED
Construction Exit	YES/ NO /NA	
Perimeter Silt Fence	YES/ NO /NA	
Exposed Areas/ Material Storage	YES/ NO /NA	
Sediment Traps, Basins, Check Dams	YES/ NO /NA	
Diversion Berms, Swales	YES/ NO /NA	
Stabilization, Vegetation, Mulch, EC Mats	YES/ NO /NA	
Inlet Protection	YES/ NO /NA	
Street, Curb, Site Perimeter	YES/ NO /NA	
Concrete Washout Area	YES/ NO /NA	
Litter/ Trash Containment	YES/ NO /NA	
Outfalls/ Areas receiving discharges	YES/ NO /NA	
Other:	YES/ NO /NA	

LOCATION OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE:

RECOMMENDED REMEDIAL ACTIONS :(to be implemented prior to the next anticipated rain event)

ACTION ON PREVIOUS RECOMMENDED REMEDIAL ACTIONS:

INSPECTOR CERTIFIES THAT SITE IS IN COMPLIANCE WITH PERMIT/SWPPP -- YES/NO

Certification Statement

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

Inspector Name: _____
Address: _____
Telephone: _____
Site location: _____
Signature: _____Date_____

Permanent 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)(C), (D)(Ii), (E), and (5), 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 **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Matt Hardy, PE

Date: 3/11/24

Signature of Customer/Agent

Regulated Entity Name: Jarrell High School

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

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

   ☐ N/A

2. ☒ 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

3. ☒ 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

4. 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.

5. 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 A - 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.

6. ☒ **Attachment B - 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.

7. ☒ **Attachment C - 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.

8. ☒ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☐ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

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

    ☐ N/A

12. ☐ **Attachment H - 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

13. ☒ **Attachment I -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 results in water quality degradation.

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☒ 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.

    ☐ N/A

15. ☒ 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.

    ☐ N/A

Permanent Stormwater Management Practices TCEQ Form 0600
Attachment B BMPs for Upgradient Stormwater

There is about 14.69 acres of upgradient stormwater from primarily undeveloped land that will cross over the southern boundary of the site. The upgradient stormwater flows via overland flow through the western portion of the site. It is collected via a system of open channels to divert flow to the water quality wet pond and detention pond constructed in WPAP Mod #5.

Permanent Stormwater Management Practices TCEQ Form 0600

Attachment C BMPs for Onsite Stormwater

Construction Phase
Please refer to Plan Sheets C3.03, C3.04, C3.05, & C3.06 of the construction plans approved in WPAP Modification #5, and the Storm Water Pollution Prevention Plan prepared for this construction site for more information and details about the data 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 1V: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 logs

3. Stabilized construction exit point

4. Diversion berm/ swale to channel onsite runoff flow into the pond basin

5. Rock check dams

6. 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 pond
A water quality and detention pond, designed in WPAP Modification #5 in accordance with the TCEQ Edwards Aquifer Compliance Technical Guidance Manual on Best Management Practices, was recently completed by the Owner for use as a permanent water quality and water quantity control system. All storm water runoff (both surface runoff and runoff from roof drains into a subsurface stormwater collection system) from the school site will be routed to the water quality and detention pond.

Permanent Stormwater Management Practices TCEQ Form 0600

Attachment D BMPs for surface streams

The stormwater runoff from this site will flow into on-site water quality and detention pond, before discharging to the tributary floodplain and then on to Salado Creek. The water quality and detention pond proposed in WPAP Modification #5 will provide effective protection to the water quality of this surface stream.

Permanent Stormwater Management Practices TCEQ Form 0600

Attachment F Construction Plans

Please refer to Plan Sheets C3.03-3.06 of the construction plans prepared for WPAP Modification #5, which are a separate part of this permit application package.

Permanent Stormwater Management Practices TCEQ Form 0600

Attachment G – 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

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 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

Matthew Hardy, P.E.

Printed Name

3/11/24

Date

PE Seal

Owner

Dr. Toni Hicks – Jarrell I.S.D.

Printed Name

3/7/24

Date

Permanent Stormwater Management Practices TCEQ Form 0600

Attachment I Measures for minimizing surface stream contamination

An Owner's representative shall visually inspect all roof drains and drive/ parking area inlets in the onsite collection system at a minimum interval of every 3 months. 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, inlet grates)

The stormwater runoff from this site will flow into a water quality and detention pond, built and maintained by the Owner, before being discharged to the tributary floodplain and Salado Creek. An Owner’s representative shall visually inspect all downstream flow path at a minimum interval of every 3 months. These combined onsite practices will provide effective measures to minimize surface stream contamination.

APPROVED PLAN SHEETS FROM
WPAP MODIFICATION #5 - RECENTLY
COMPLETED CONSTRUCTION

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Jarrell ISD HS Additions
Date Prepared: 10/28/2021

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 * =	119.54	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	77.70	acres
Total post-development impervious cover fraction * =	0.65	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	67631	lbs.

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 =	119.54	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	77.70	acres
Post-development impervious fraction within drainage basin/outfall area =	0.65	
$L_{M\ THIS\ BASIN}$ =	67631	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Wet Basin
Removal efficiency = 93 percent

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

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

where:

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

A_C =	119.54	acres
A_I =	77.70	acres
A_P =	41.84	acres
L_R =	80681	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 67631 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 =	0.46	
On-site Water Quality Volume =	251249	cubic feet

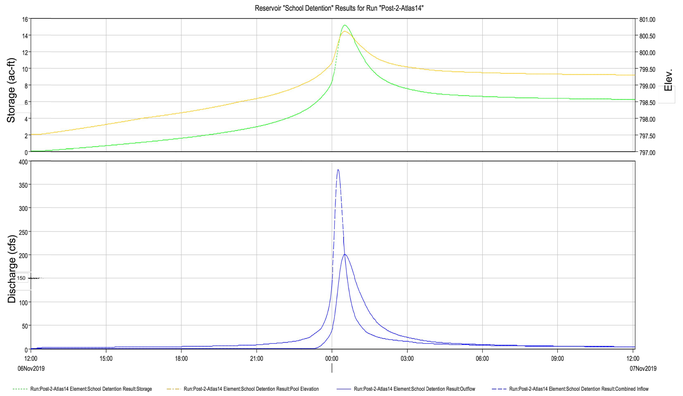
Calculations from RG-348 Pages 3-36 to 3-37

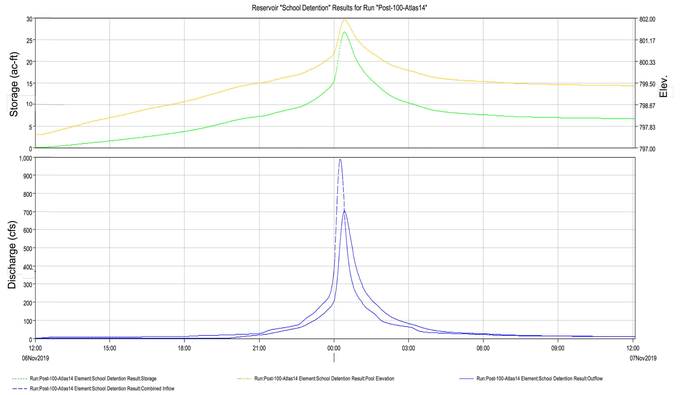
Off-site area draining to BMP =	14.69	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.02	
Off-site Water Quality Volume =	1344	cubic feet
Storage for Sediment =	50519	
Total Capture Volume (required water quality volume(s) x 1.20) =	303111	cubic feet

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

Required capacity of Permanent Pool =	303111	cubic feet
Required capacity at WQV Elevation =	554360	cubic feet

Permanent Pool Capacity is 1.20 times the WQV
Total Capacity should be the Permanent Pool Capacity plus a second WQV.





WPAP CALCULATIONS

** WPAP CALCULATIONS SUMMARY**

SITE WPAP AND SCS CURRENTLY PERMITTED UNDER
EAPP ID NO. 11001369 AND RN NO. 101519049

CURRENT SITE AREA:	5,207,149 SQ FT = 119.5 ACRES
EXISTING IMPERVIOUS COVER (IC):	1,005,000 SQ FT = 23.1 ACRES OR 19.3%

PROPOSED IMPERVIOUS COVER SUMMARY

STRUCTURES/ROOFTOPS:	8,712 SQ FT = 0.20 ACRES
PARKING, DRIVES & SIDEWALKS:	32,670 SQ FT = 0.75 ACRES
OTHER IMPERVIOUS COVER:	23,961 SQ FT = 0.55 ACRES
PROPOSED IMPERVIOUS COVER TOTAL:	65,343 SQ FT = 1.50 ACRES

POST PROJECT IMPROVEMENTS SUMMARY

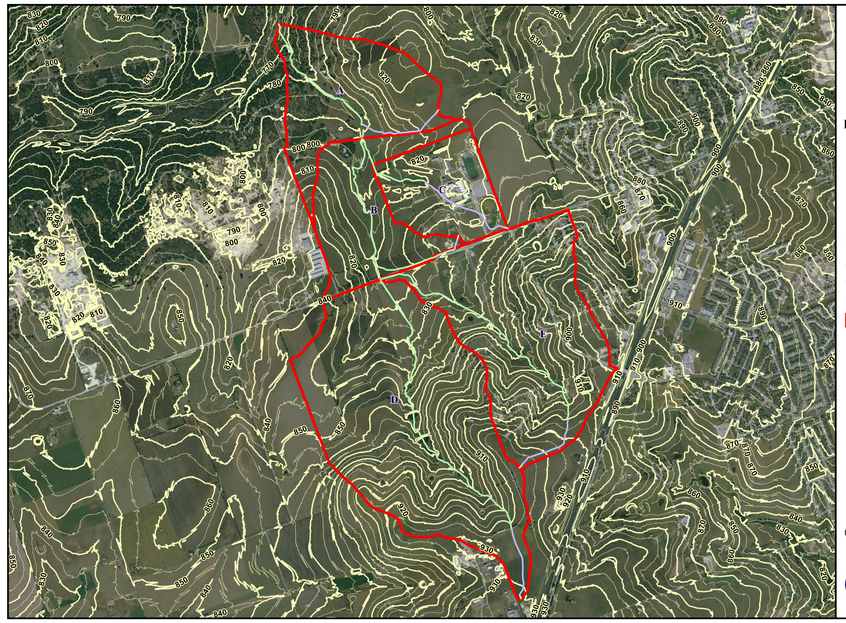
TOTAL SITE IMPERVIOUS COVER:	1,070,343 SQ FT = 24.6 ACRES OR 20.6%

ONSITE PERMANENT BMP WATER QUALITY POND IS SIZED TO ALLOW AN OVERALL SITE IMPERVIOUS COVER OF 77.7 ACRES OR 65%.

Forebay Volume					
Stage	Elevation	Contour Area	Incremental Storage	Total Storage	AC-FT
0.00	792.50	9,197	0	0	0.00
1.00	793.50	10,941	10,056	10,056	0.23
2.00	794.50	12,785	11,851	21,907	0.50
3.00	795.50	14,729	13,746	35,653	0.82
4.00	796.50	17,619	16,152	51,805	1.19
5.00	797.50	19,064	18,337	70,142	1.61

Main Pond Volume					
Stage	Elevation	Contour Area	Incremental Storage	Total Storage	AC-FT
0.00	790.50	24,052	0	0	0.00
1.00	791.50	26,570	25,301	25,301	0.58
2.00	792.50	29,188	27,869	53,169	1.22
3.00	793.50	31,907	30,537	83,707	1.92
4.00	794.50	34,727	33,307	117,014	2.69
5.00	795.50	37,646	36,177	153,190	3.52
6.00	796.50	41,072	39,347	192,537	4.42
7.00	797.50	43,267	42,165	234,702	5.39

Detention Volume					
Stage	Elevation	Contour Area	Incremental Storage	Total Storage	AC-FT
0.00	797.50	71,870	0	0	0.000
0.50	798.00	116,175	46,570	46,570	1.069
1.00	798.50	164,142	69,735	116,305	2.670
1.50	799.00	212,030	93,788	210,093	4.823
1.70	799.20	232,117	44,400	254,492	5.842
2.00	799.50	263,248	74,256	328,748	7.547
2.50	800.00	317,345	144,938	473,686	10.874
3.00	800.50	349,460	166,637	640,323	14.700
3.20	800.70	358,183	70,763	711,085	16.324
3.50	801.00	370,380	109,279	820,364	18.833
4.00	801.50	388,709	189,754	1,010,118	23.189
4.50	802.00	405,993	198,660	1,208,778	27.750
5.00	802.50	410,995	204,246	1,413,024	32.439
5.50	803.00	416,023	206,753	1,619,777	37.185



LANGAN

JARRELL HIGH SCHOOL

FIGURE 1: DRAINAGE AREA MAP

CARDINAL STRATEGIES

Watershed	Area (Acres)	Soil Type	Cover	Curve Number	Composite Curve Number
A	220.46	D	Open Space - Good	80	79.8
	1.85	B	Open Space - Good	61	
B	182.56	D	Open Space - Good	80	80.0
C*	134.23	D	Open Space - Good	80	80.0
D	571.81	D	Open Space - Good	80	80.0
E	402.14	D	Open Space - Good	80	80.0

*Watershed C represents the area tributary to the proposed water quality wet pond and detention basin

	Discharge (CFS)			
	100-yr	25-yr	10-yr	2-yr
Pre-project	729.6	522.3	395.6	207.5
Post-project (Detention)	704.9	517.1	374.4	200.8
Difference	-24.7	-5.2	-21.2	-6.7
% Difference	-3.4%	-1.0%	-5.4%	-3.2%

Pond Results				
	100-yr	25-yr	10-yr	2-yr
Peak Storage (ac-ft)	26.7	22.9	20.0	15.2
Peak Elevation	801.9	801.5	801.2	800.6

Pre-Project Time of Concentration

Watershed	Sheet Flow						Shallow Flow					Channel Flow				Total ToC (min)	Lag Time
	Length (ft)	Slope (S)	n	P2	T (hr)	T (min)	Cover	Length (ft)	Slope (S)	V (fps)	T (hr)	T (min)	Length (ft)	V (ft/s)	T (hr)	T (min)		
A	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	2037.80	0.015	1.99	0.28	17.07	3503.16	6	0.16	9.73	39.61	23.8
B	100.00	0.012	0.15	3.90	0.18	10.89	Unpaved	252.09	0.008	1.44	0.05	2.91	2026.05	4	0.14	8.44	32.50	19.5
													3694.74	6	0.17	10.26		
C	100.00	0.039	0.15	3.90	0.11	6.79	Unpaved	1710.78	0.011	1.70	0.28	16.77	1432.12	4	0.10	5.97	36.20	21.7
							Unpaved	765.73	0.014	1.92	0.11	6.66						
D	100.00	0.010	0.15	3.90	0.20	11.71	Unpaved	1689.79	0.008	1.44	0.33	19.52	2154.18	4	0.15	8.98	52.38	31.4
													3726.31	6	0.17	10.35		
													654.79	6	0.03	1.82		
E	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	1807.38	0.015	2.01	0.25	15.00	4292.97	6	0.20	11.92	51.66	31.0
													4292.96	6	0.20	11.92		

Post-Project Time of Concentration

Watershed	Sheet Flow						Shallow Flow					Channel Flow				Total ToC (min)	Lag Time
	Length (ft)	Slope (S)	n	P2	T (hr)	T (min)	Cover	Length (ft)	Slope (S)	V (fps)	T (hr)	T (min)	Length (ft)	V (ft/s)	T (hr)	T (min)		
A	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	2037.80	0.015	1.99	0.28	17.07	3503.16	6	0.16	9.73	39.61	23.8
B	100.00	0.012	0.15	3.90	0.18	10.89	Unpaved	252.09	0.008	1.44	0.05	2.91	2026.05	4	0.14	8.44	32.50	19.5
													3694.74	6	0.17	10.26		
C	100.00	0.039	0.15	3.90	0.11	6.79	Unpaved	765.73	0.014	1.92	0.11	6.66	3561.06	6	0.16	9.89	23.35	14.0
D	100.00	0.010	0.15	3.90	0.20	11.71	Unpaved	1689.79	0.008	1.44	0.33	19.52	2154.18	4	0.15	8.98	52.38	31.4
													3726.31	6	0.17	10.35		
													654.79	6	0.03	1.82		
E	100.00	0.008	0.15	3.90	0.21	12.80	Unpaved	1807.38	0.015	2.01	0.25	15.00	4292.97	6	0.20	11.92	51.66	31.0
													4292.96	6	0.20	11.92		

Revision / Date

Project: ATHLETICS COMPLEX IMPROVEMENTS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D. 1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

STATE OF TEXAS — JAMES M. GARNER — 98447 — LICENSED PROFESSIONAL ENGINEER — 2-17-2022

TBPE Registration #: F- 13,709

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WATER QUALITY & DETENTION POND CALCULATIONS

PACKAGE 1 — 1

Job No. 1838-06-01
Drawn By: —
Date: 10/28/2021
Sheet No. C3.03

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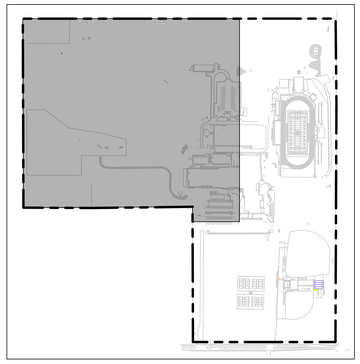
GENERAL SITE NOTES:

1. CONTRACTOR TO ENSURE EDWARDS AQUIFER (EA) PERMITTING IS IN PLACE AND REVIEWED BEFORE BEGINNING ANY SITE DISTURBANCE.
2. ALL TEMPORARY EROSION CONTROLS SHALL BE INSTALLED PER EA REQUIREMENTS PRIOR TO ANY SITE DISTURBANCE.
3. CONTRACTOR SHALL REVIEW AND REFERENCE SITE GEOTECHNICAL REPORT PREPARED BY ALLIANCE ENGINEERING GROUP AND TITLED "SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION FOR JARRELL HIGH SCHOOL STORMWATER PROJECT, JARRELL, TEXAS" OR ANY ADDITIONS OR ADDENDUMS TO THE ORIGINAL REPORT.
4. CONTRACTOR SHALL PROPERLY DISPOSE OF ANY DEMOLISHED SITE FEATURES OR UTILITIES OFFSITE. BURYING DEMOLISHED ELEMENTS WILL NOT BE ALLOWED.
5. CONTRACTOR SHALL WORK WITH PROJECT GEOTECHNICAL ENGINEER AND PROJECT CONSTRUCTION MATERIALS TESTING LAB TO IDENTIFY ONSITE CLAY SOIL TO USE IN CREATING THE PERMANENT CLAY LINER FOR THE POND.
6. ONSITE TOPSOIL IN THE AREA OF DISTURBANCE SHALL BE STRIPPED AND STOCKPILED FOR USE IN REVEGETATION OF DISTURBED AREAS. NO ADDITIONAL PAY ITEM WILL BE ALLOWED FOR TOPSOIL IMPORT. CONTRACTOR TO USE ONSITE SOILS SUITABLE FOR HEALTHY REVEGETATION OF PROJECT.
7. ALL ONSITE FILL AREAS SHALL BE STRIPPED, PROCESSED, AND COMPACTED UNDER THE DIRECTION OF THE PROJECT GEOTECH AND PROJECT CMT LAB. THE DISTRICT WILL USE UNKNOWN PORTIONS OF THE FILL AREAS AS FUTURE BUILDING EXPANSIONS. THEREFORE, CONTRACTOR WILL NEED TO PLACE ALL FILL IN A CONTROLLED MANNER AS DIRECTED BY THE PROJECT GEOTECH AND THE PROJECT CMT LAB.
8. CONTRACTOR TO WORK CLOSELY WITH THE PROJECT GEOTECHNICAL ENGINEERING/MATERIAL TESTING FIRM TO ENSURE MATERIAL USED TO CONSTRUCT ANY FEATURE USED TO IMPOUND WATER WILL REMAIN WATER TIGHT AND RESISTANT TO SOIL PIPING THROUGH THE FEATURE'S LIFE SPAN.
9. ALL CONDUITS ENTERING THE WATER IMPOUNDMENT STRUCTURE (WATER QUALITY POND) SHALL INCLUDE CLAY DAMS TO ENSURE THERE IS NO SOIL PIPING TO OR FROM THE CONDUIT EMBEDMENT MATERIAL.

GRAPHIC SCALE

0 60 120 FEET



KEY MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	100
EXISTING CONTOUR	100
SPOT GRADE	100.00
PROPOSED FLOW ARROW	

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

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

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Revision / Date

Project:
ATHLETICS COMPLEX IMPROVEMENTS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED
PROFESSIONAL
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2-17-2022

TBPE Registration #: F- 13,709

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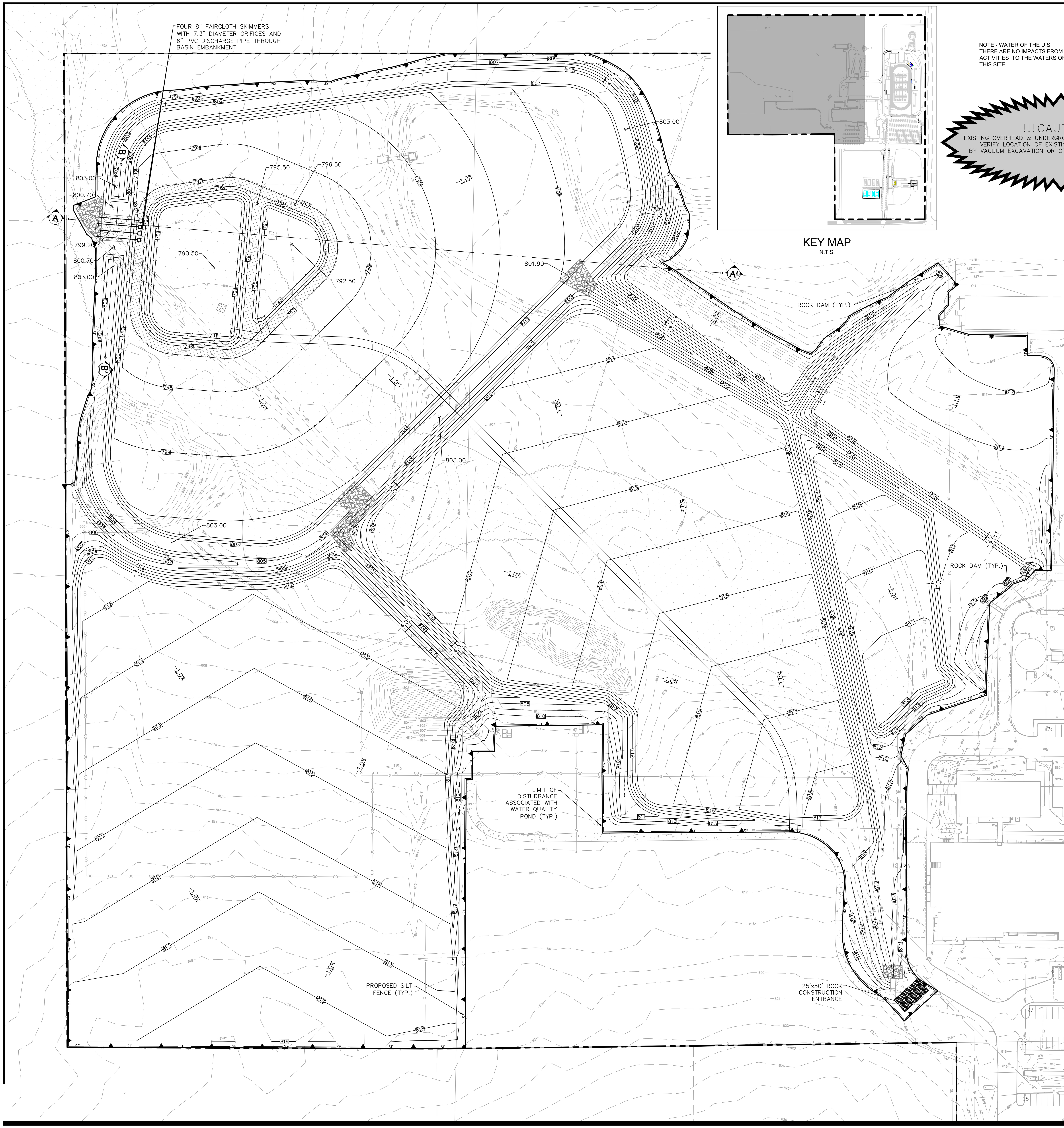
WATER QUALITY & DETENTION POND GRADING, AND DEMOLITION PLAN

PACKAGE 1 1

Job No. 1836-06-01	Sheet No. C3.04
Drawn By: —	
Date: 10/28/2021	

9/14/2021 1:57:27 PM
C:\Users\tallford\Documents\2019 Revit Local Files\1836-06-01_JarrellISD_HS-AthleticsReno_ARCH_v19_jtallford.rvt

Date: 2/17/2022 Time: 16:55 User: chcaldwell Style Table: Langan.stb Layout: C3.04 Water Quality & Detention Pond Grading Plan Document Code: 531012001-0503-CG101-0103



KEY MAP

N.T.S.

NOTE - WATER OF THE U.S.
THERE ARE NO IMPACTS FROM CONSTRUCTION ACTIVITIES TO THE WATERS OF THE U.S. ON THIS SITE.

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

LEGEND

- INLET PROTECTION
- LIMITS OF DISTURBANCE
- SILT FENCE
- CONSTRUCTION EXIT
- ROCK CHECK DAM
- PROPOSED FLOW ARROW

GRAPHIC SCALE: 0, 60, 120 FEET

EROSION CONTROL NOTES

1. CONTRACTOR MUST COMPLETE A CONSTRUCTION SITE NOTICE, OBTAIN SIGNED COPIES OF NOI FORM FOR BOTH OWNER AND CONTRACTOR (IF APPLICABLE TO THIS SITE), AND POST THEM AT THE CONSTRUCTION SITE, IN ACCORDANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES (TXR150000). 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.
2. 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.
3. 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.
4. 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).
5. 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.
6. 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.
7. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR AT LEAST FOURTEEN DAYS SHALL BE TEMPORARILY STABILIZED WITH VEGETATION AND MULCH.
8. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED SHALL BE PERMANENTLY SEEDED WITHIN FOURTEEN DAYS PER SEEDING OR LANDSCAPING SPECIFICATIONS.
9. 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.
10. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED ONTO ADJACENT ROADWAYS BY VEHICLES EXITING THE SITE SHALL BE CLEANED OR REMOVED IMMEDIATELY.
11. 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.
12. 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).
13. SILT FENCES SHALL BE PLACED AROUND ANY STOCKPILES USED ON THIS SITE.
14. 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.
15. 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.
16. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE WITHIN THIRTY DAYS AFTER STABILIZATION OF ALL SURFACES.
17. 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.
18. 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.
19. 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 PREVENTI0N 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 SECTION 5 OF THE STORM WATER POLLUTION PREVENTION PLAN.

EROSION CONTROL SEQUENCE

1. INSTALL SILT FENCES AROUND PERIMETER OF PROPERTY AND DISTURBED AREAS AS SHOWN.
2. INSTALL ROCK CHECK DAMS AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES, IF PRESENT.
3. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.
4. COMMENCE GRUBBING AND REMOVAL OF VEGETATION IN AREA TO RECEIVE CUT OR FILL.
5. CONSTRUCT TEMPORARY SEDIMENT POND WITH FAIRCLOTH SKIMMER OUTLET STRUCTURE, AS SHOWN ON THE PLANS.
6. COMMENCE GRADING OPERATION.
7. INSTALL ALL PROPOSED STORM SEWER PIPES AND INSTALL INLET PROTECTION SILT FENCES AT ENDS OF EXPOSED PIPES.
8. TEMPORARY SEDIMENT POND AND OUTLET STRUCTURE MAY BE REMOVED AFTER THE STORM SEWER SYSTEM IS INSTALLED AND FUNCTIONAL AND INLET PROTECTION IS IN PLACE AND FUNCTIONAL AT ALL STORM SEWER INLETS. SEDIMENT REMOVED FROM THE SEDIMENT POND MAY BE RELOCATED ON SITE.
9. COMPLETE PLANTING AND/OR SEEDING OF VEGETATED AREAS TO ACCOMPLISH STABILIZATION, IN ACCORDANCE WITH THE LANDSCAPING PLAN.
10. REMOVE TEMPORARY CONSTRUCTION EXIT, SILT FENCES & ROCK CHECK DAMS.

NOTE 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 - 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.

NOTE - MATERIAL STORAGE

THE CONTRACTOR SHALL NOTE ON SITE PLAN THE LOCATION OF ALL MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREAS, 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.

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Revision / Date

Project: ATHLETICS COMPLEX IMPROVEMENTS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D. 1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

SWPPP: SCS
STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
11-8-2021
TBPE Registration #: F-13,709

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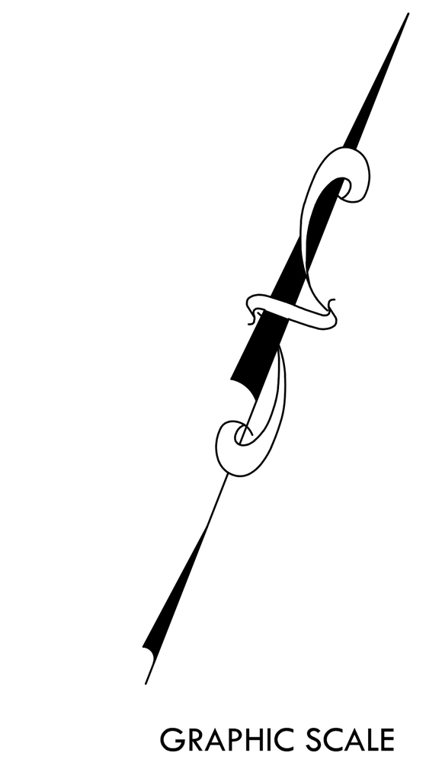
WATER QUALITY & DETENTION POND SWPPP

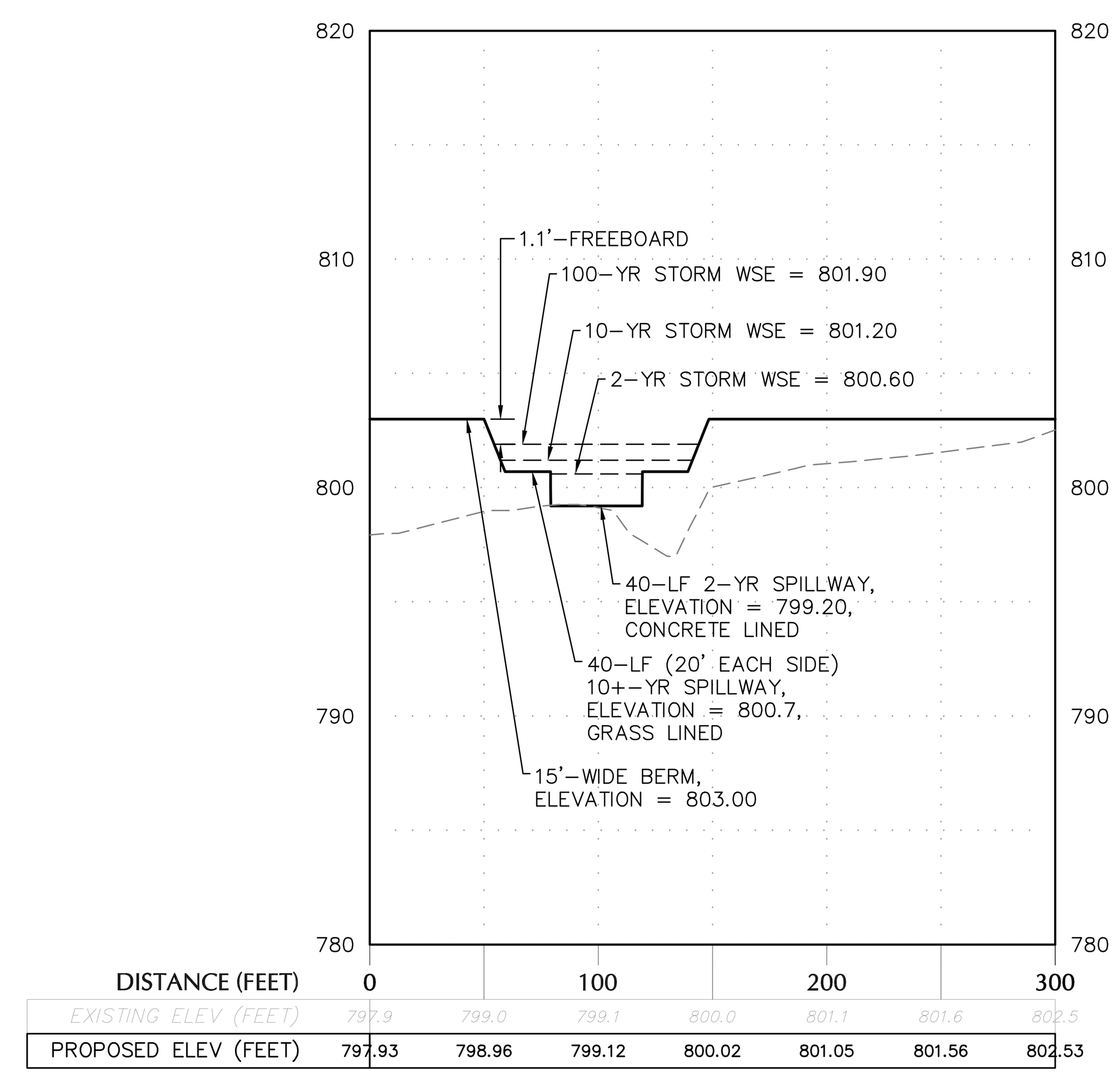
PACKAGE 1 — 1

Job No.: 1836-06-01
Drawn By: ---
Date: 10/28/2021
Sheet No.: C3.05

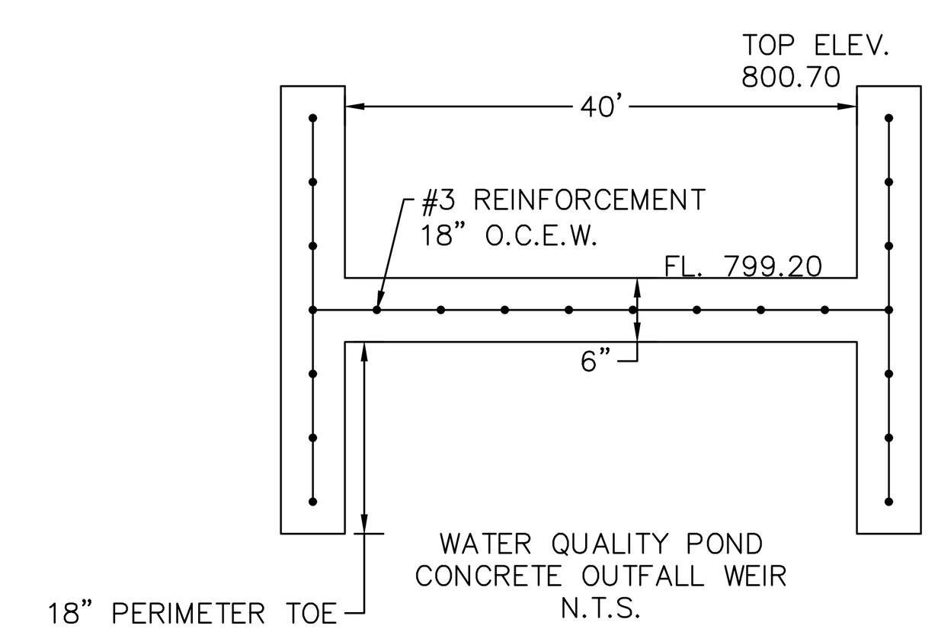


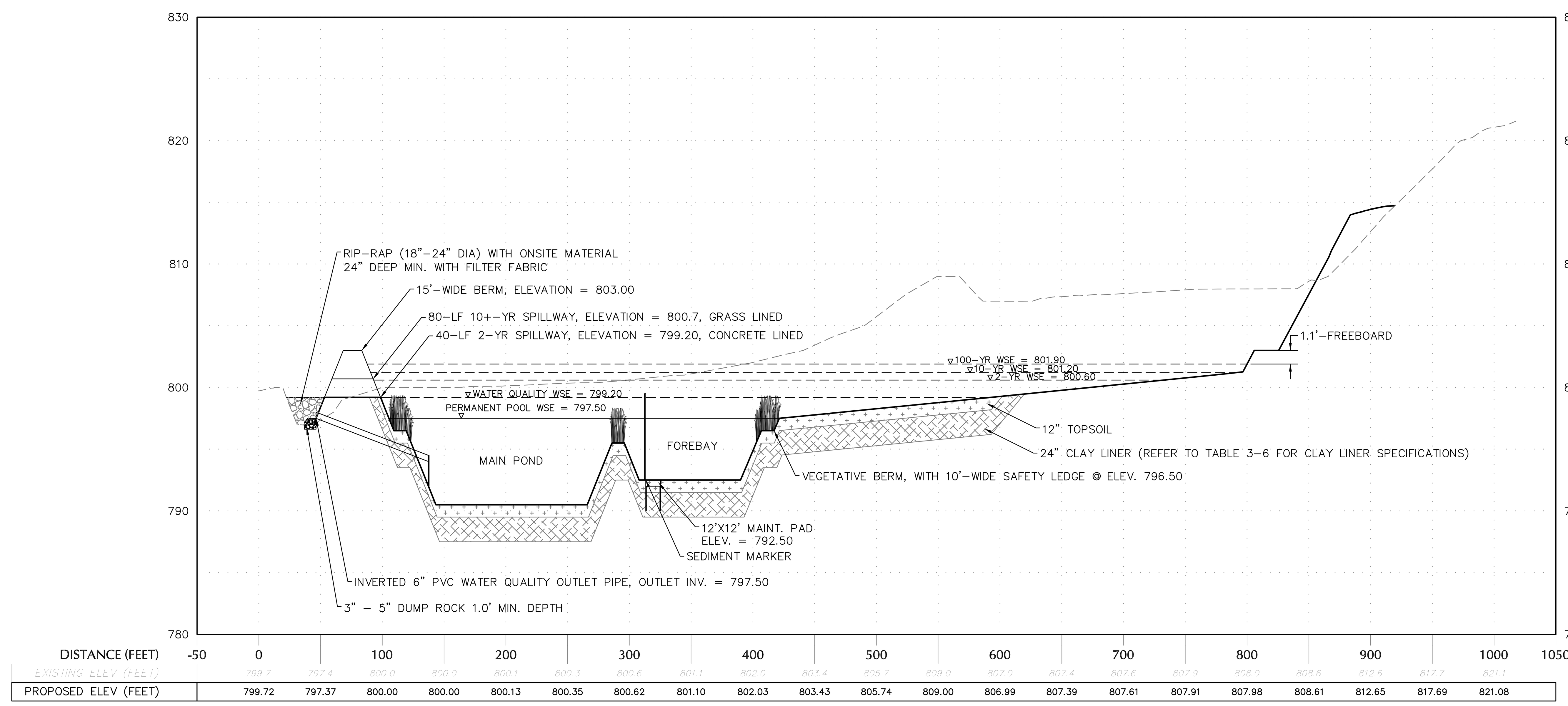
GRAPHIC SCALE

0 60 120 FEET



B-B' (OUTLET) PROFILE





A-A' (POND) PROFILE

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

Revision / Date

Project: ATHLETICS COMPLEX IMPROVEMENTS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.

1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

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2-17-2022

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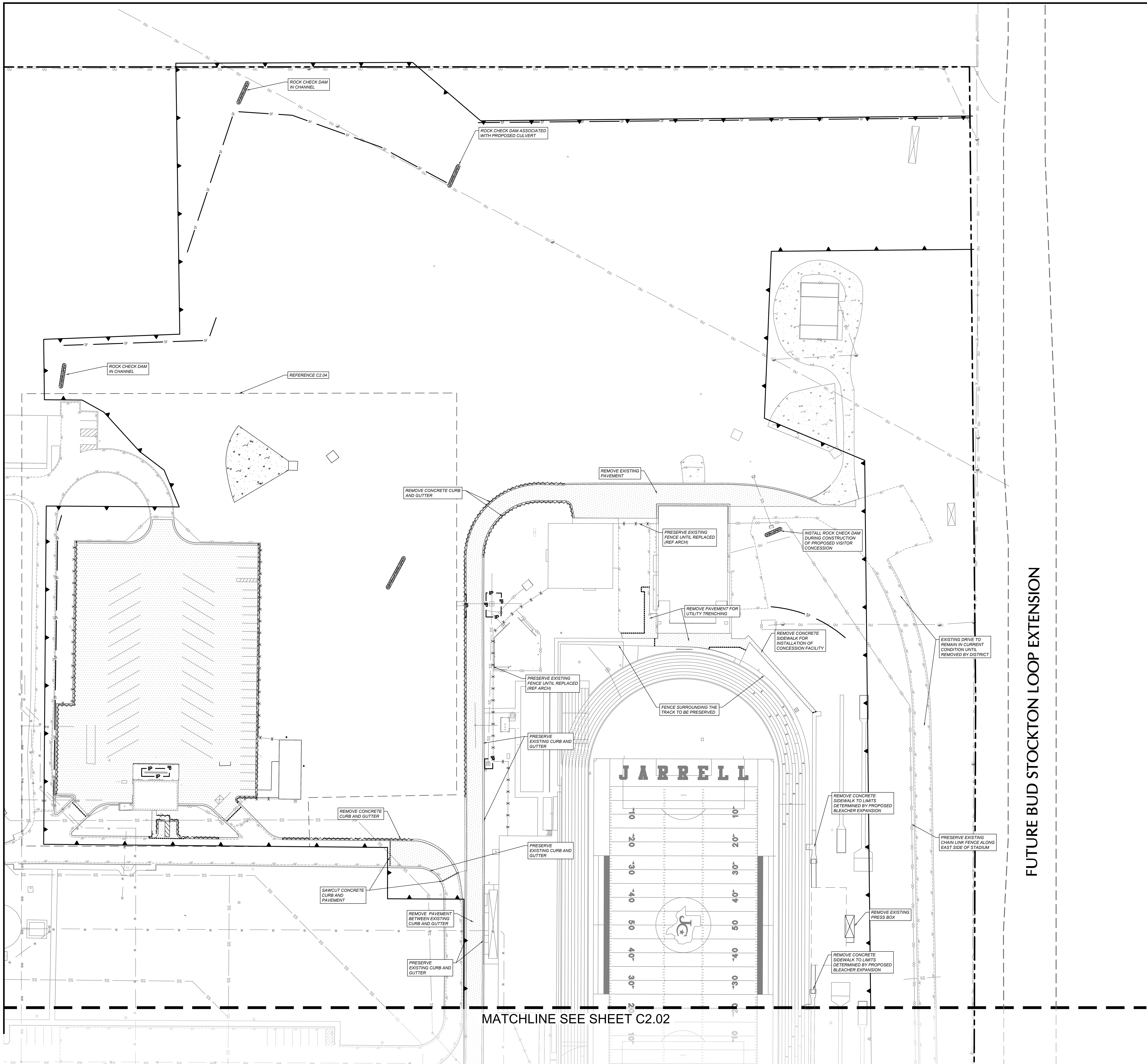
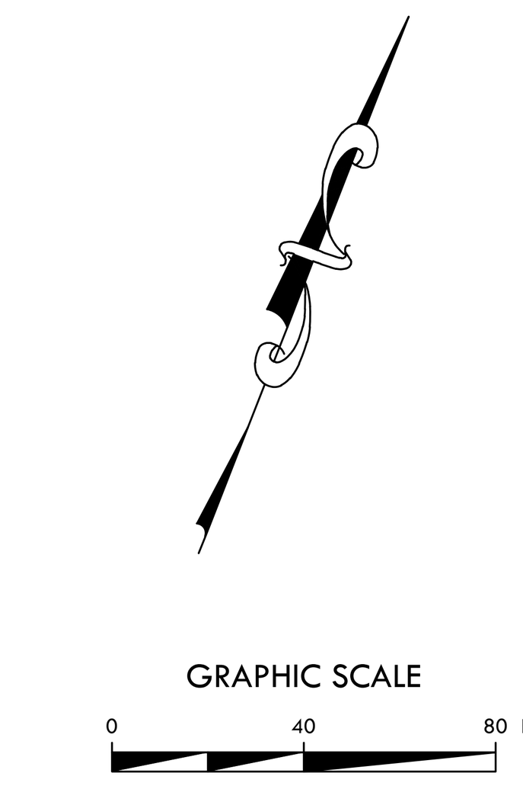
WATER QUALITY & DETENTION POND PROFILE VIEWS

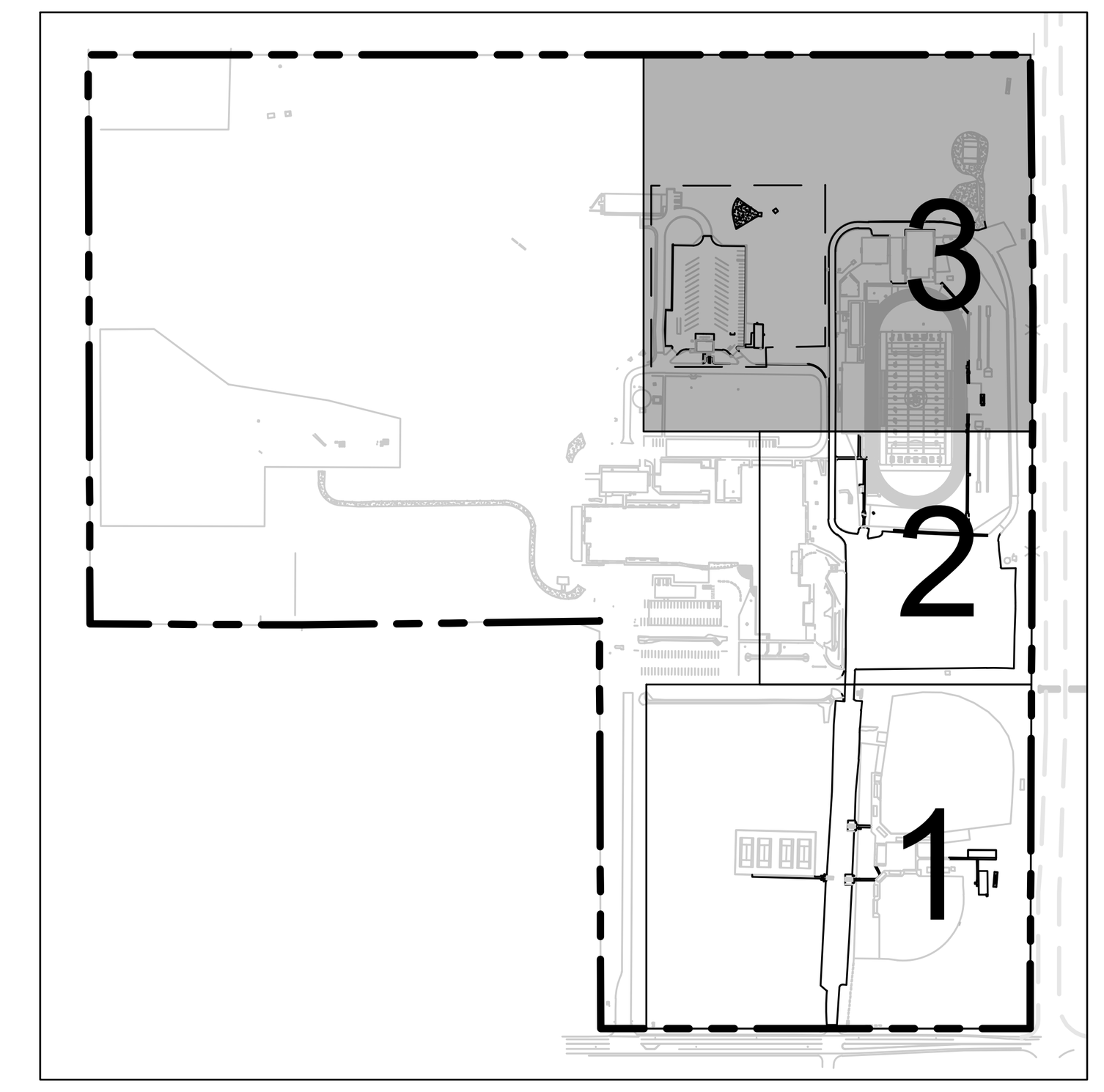
PACKAGE 1 1

Job No.	Sheet No.
1836-06-01	C3.06
Drawn By: ---	
Date: 10/28/2021	

APPROVED PLAN SHEETS FROM
WPAP MODIFICATION #6 - RECENTLY
COMPLETED CONSTRUCTION







KEY MAP
N.T.S.

LEGEND

SAWCUT	
PAVEMENT REMOVAL	
FENCE REMOVAL	X X X X X X
CURB REMOVAL	
INLET PROTECTION	IP IP IP IP
LIMITS OF DISTURBANCE	
SILT FENCE	SF
ROCK CHECK DAM	

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

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Revision / Date

Project:

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1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

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EROSION CONTROL & DEMOLITION PLAN AREA 3

PACKAGE 1

Job No. 1836-06-01	**Sheet No.**
Drawn By: CLC	C2.03
Date: 05/17/2022	

EXISTING PAVING TO REMAIN

REFERENCE CPR #3

1 - PLAN SHEET ADDED TO PROJECT SCOPE

EXISTING FENCE AND CONCRETE CURB TO REMAIN TO THIS POINT

PRESERVE EXISTING CONCRETE CURB AND GUTTER

EXISTING FENCE AND CONCRETE CURB TO REMAIN TO THIS POINT

REMOVE CONCRETE RIBBON CURB

PRESERVE EXISTING LIGHT STRUCTURE

REMOVE EXISTING PAVEMENT

EXISTING LIGHT STRUCTURE TO BE RELOCATED (REFER TO MEP)

REMOVE CONCRETE CURB AND GUTTER

EXISTING FENCE TO REMAIN TO THIS POINT

CONTINUATION OF EXISTING SANITARY LINE IS UNKNOWN. CONTRACTOR SHALL NOT DISTURB LINE TO ENSURE SERVICE IS NOT INTERRUPTED

PRESERVE EXISTING LIGHT STRUCTURE

ADJUST EXISTING UTILITIES TO REMAIN TO FINISH GRADE

CONTINUATION OF EXISTING SANITARY LINE IS UNKNOWN. CONTRACTOR SHALL NOT DISTURB LINE TO ENSURE SERVICE IS NOT INTERRUPTED

BUS FUELING / MAINTENANCE

ADJUST EXISTING UTILITIES TO REMAIN TO FINISH GRADE

PRESERVE EXISTING CURB AND GUTTER

REMOVE ACCESSIBLE PARKING SIGNAGE

REMOVE EXISTING PAVEMENT AND CONCRETE SIDEWALK

PRESERVE EXISTING DRIVE APPROACH AND MAINTAIN A CLEAN STRAIGHT EDGE ADJACENT TO PROPOSED PAVING

REMOVE CONCRETE CURB AND GUTTER

SAWCUT AND REMOVE CONCRETE CURB AND GUTTER TO THE NEAREST JOINT (TYP)

EXISTING PAVING TO REMAIN

PRESERVE EXISTING LIGHT STRUCTURE

COORDINATE RELOCATION OF PORTABLE AND SUPPORTING COMPONENTS WITH THE DISTRICT

ADJUST EXISTING UTILITIES TO REMAIN TO FINISH GRADE

EXISTING FENCE AND GATE TO REMAIN TO THIS POINT

PRESERVE EXISTING DRIVE APPROACH AND MAINTAIN A CLEAN STRAIGHT EDGE ADJACENT TO PROPOSED PAVING

REMOVE CONCRETE CURB AND GUTTER

ADJUST EXISTING UTILITIES TO REMAIN TO FINISH GRADE

REFERENCE PACKAGE 1 PLAN SET

GRAPHIC SCALE

0 20 40 FEET

KEY MAP
N.T.S.

LEGEND

- SAWCUT
- PAVEMENT REMOVAL
- FENCE REMOVAL
- CURB REMOVAL
- INLET PROTECTION
- LIMITS OF DISTURBANCE
- SILT FENCE
- ROCK CHECK DAM

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

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CPR #8

Revision / Date
1 5/3/2022

Project:
ATHLETICS COMPLEX IMPROVEMENTS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

STATE OF TEXAS
JACK M. GARNER, JR.
98447
LICENSED
PROFESSIONAL
ENGINEER
5-3-2022

TBPE Registration #: F- 13,709

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EROSION CONTROL & DEMOLITION PLAN TRANSPORTATION

PACKAGE 1

Job No.	Sheet No.
1836-06-01	C2.04
Drawn By: CLC	
Date: 05/03/2022	

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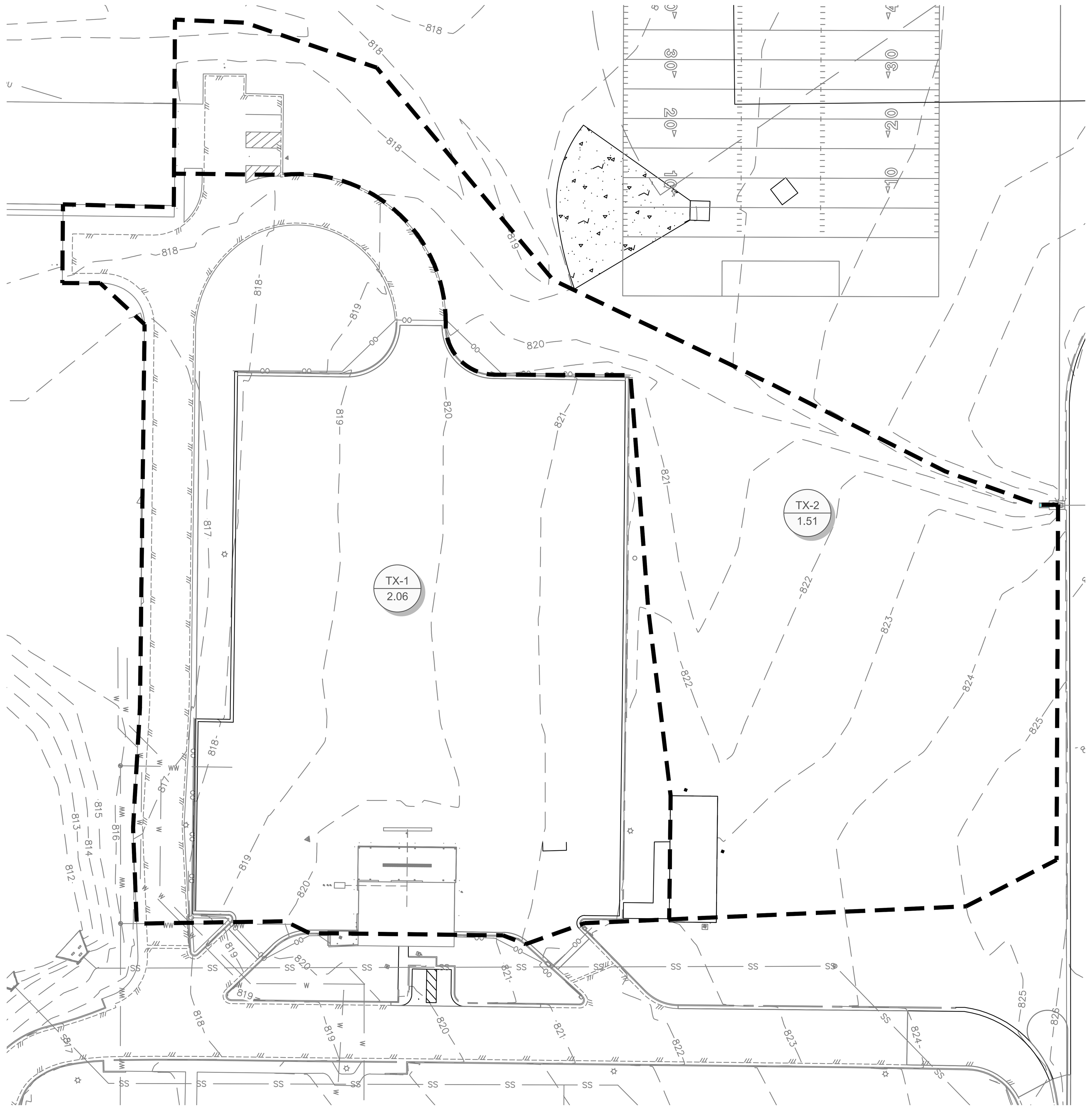

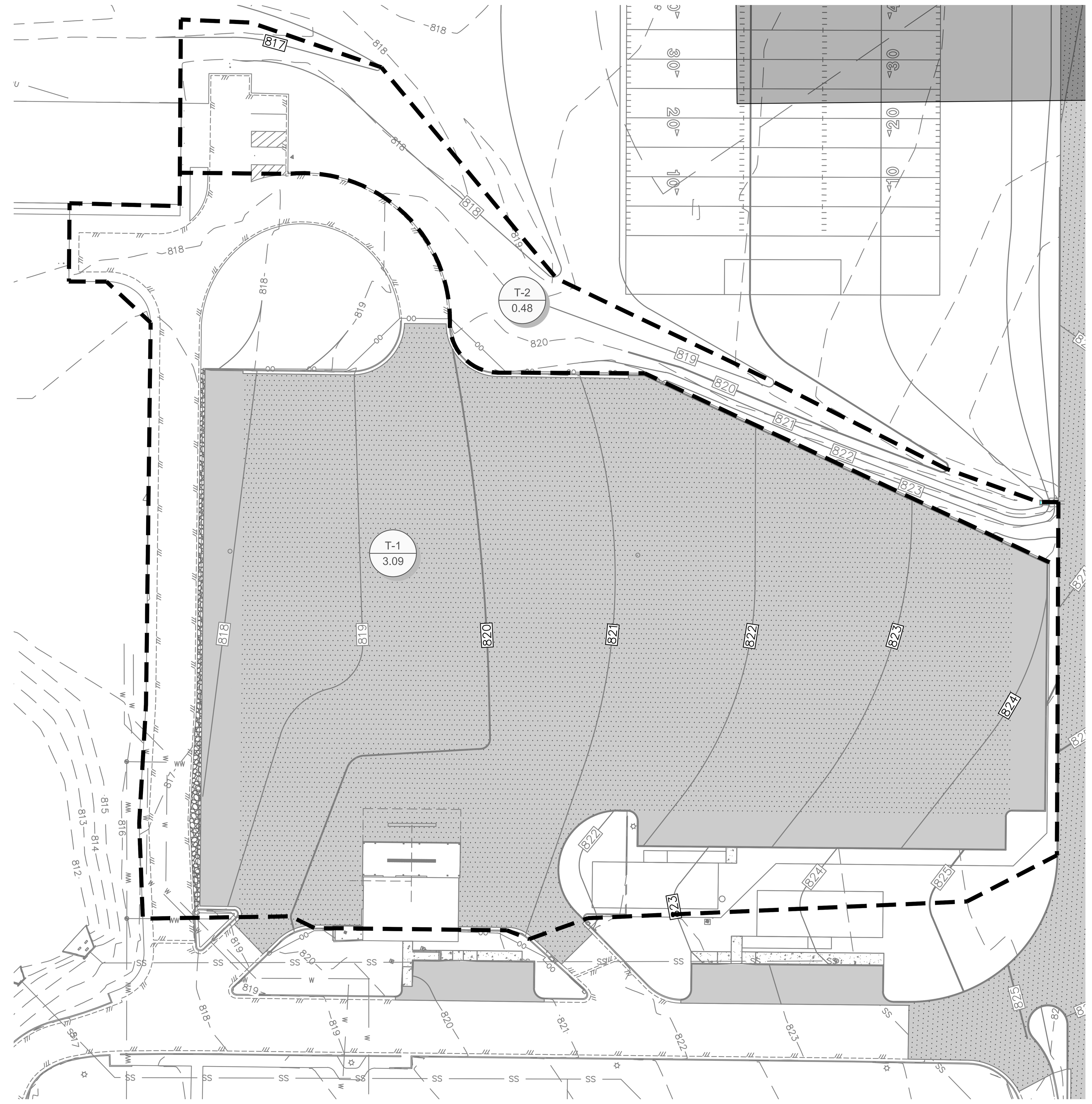

GRAPHIC SCALE

0 40 80 FEET

LEGEND

DRAINAGE BASIN — BASIN NAME / ACRES — DA-00 / 1.00

DRAINAGE AREA

TRANSPORTATION DRAINAGE AREA CALCULATIONS														
Drainage Area Designation	Drainage Area	Runoff Coefficient "C"				Time of Concentration	2-Year Rainfall Intensity (I2)	2-Year Peak Discharge (Q2)	10-Year Rainfall Intensity (I10)	10-Year Peak Discharge (Q10)	25-Year Rainfall Intensity (I25)	25-Year Peak Discharge (Q25)	100-Year Rainfall Intensity (I100)	100-Year Peak Discharge (Q100)
-	(ac)	2- Yr	10- Yr	25- Yr	100- Yr	(min)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)
TX-1	2.06	0.69	0.77	0.81	0.90	10	5.02	7.13	7.51	11.84	9.22	15.44	12.14	22.48
TX-2	1.51	0.35	0.41	0.44	0.51	10	5.02	2.66	7.51	4.66	9.22	6.14	12.14	9.36
Total	3.57							9.79		16.49		21.58		31.84
T-1	3.09	0.71	0.79	0.84	0.93	10	5.02	11.04	7.51	18.31	9.22	23.87	12.14	34.71
T-2	0.48	0.35	0.41	0.44	0.51	10	5.02	0.85	7.51	1.48	9.22	1.95	12.14	2.98
Total	3.57							11.89		19.79		25.82		37.68

Note: Calculations based on the Rational Method: Q = C*I*A per the 2020 Round Rock Drainage Criteria Manual. Both drainage areas drain via sheet flow to the water quality and detention p

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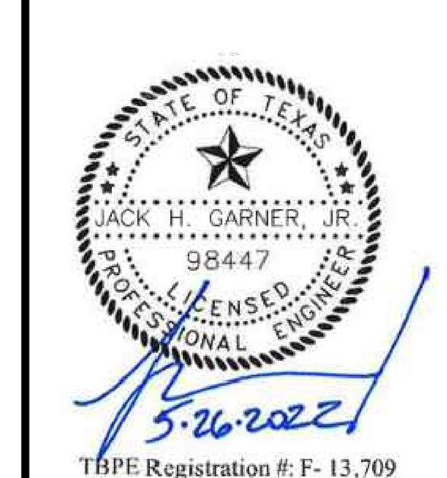
Revision / Date

Project: ATHLETICS COMPLEX IMPROVEMENTS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D. 1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams



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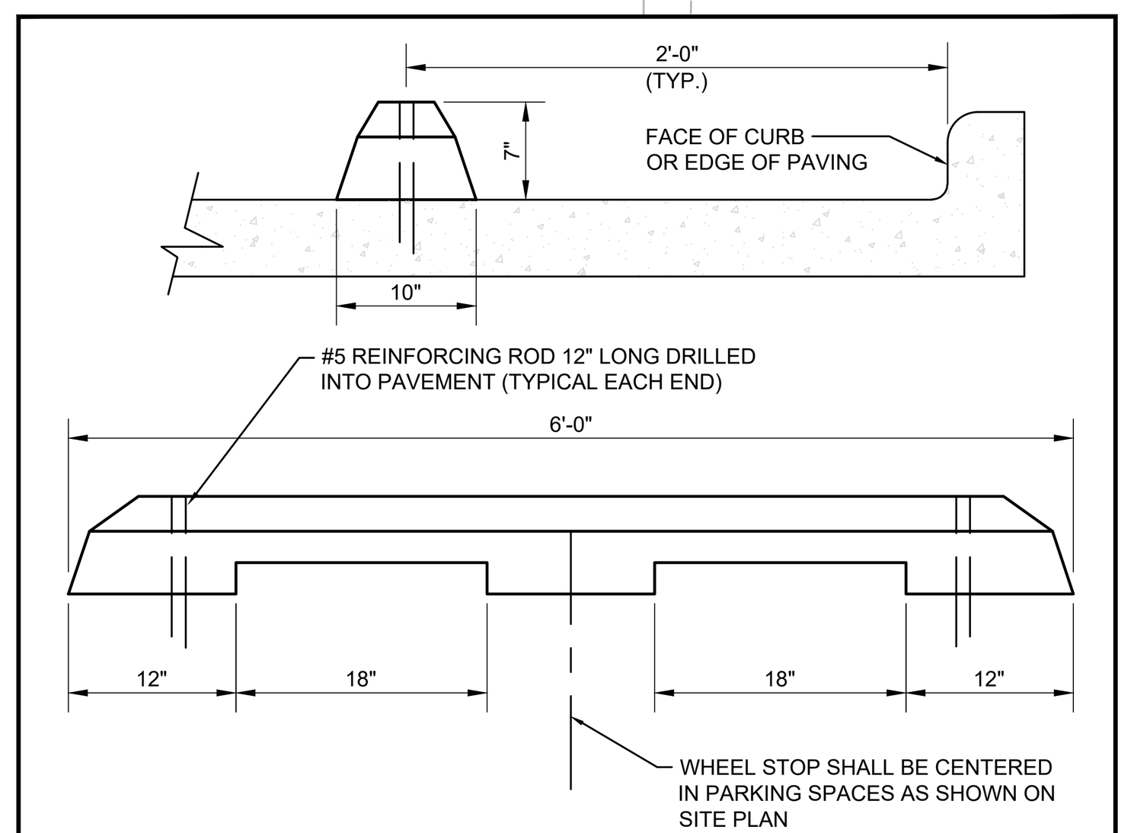
TRANSPORTATION DRAINAGE AREA MAPS

PACKAGE 1

Job No. 1836-06-01	Sheet No. C5.05
Drawn By: MSH	
Date: 05/17/2022	

SYMBOL KEY
(1) TYPICAL ACCESSIBLE PARKING SPACES SEE PAVING DETAILS (TYP)
(2) INSTALL BARRIER FREE RAMP (BFR) REFER TO PAVING DETAILS (TYP)
(3) PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)
(4) PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
(5) TRANSITION CURB REFER TO PAVING DETAILS

SIGNAGE SYMBOL KEY	
A	"STOP" SIGN (R1-1)
B	"DO NOT ENTER" SIGN (R5-1)
C	"ONE WAY" SIGN (R6-2L)
D	"LEFT AND RIGHT TURN ONLY" SIGN (R3-30AA)
E	ACCESSIBLE DROP-OFF SPACE
F	ACCESSIBLE PARKING SIGNAGE IN BOLLARD
G	VAN ACCESSIBLE PARKING SIGNAGE IN BOLLARD
H	"YIELD" SIGN (R1-2)
I	"KEEP RIGHT" SIGN (R4-7)
J	"BUS AND SERVICE ENTRANCE"



WHEEL STOP
N.T.S.

PARKING SUMMARY

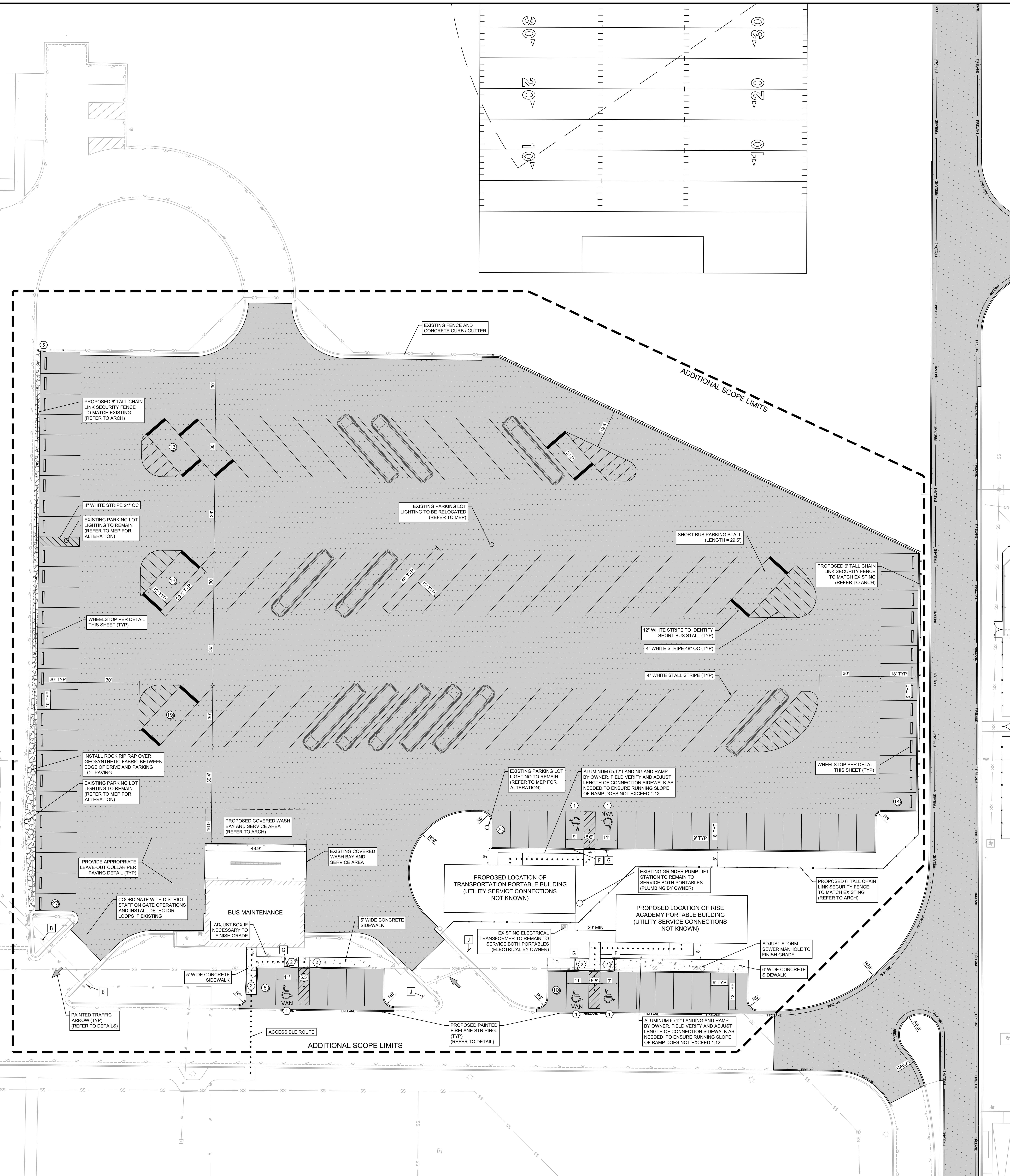
TRANSPORTATION PARKING	
EXISTING BUS STALLS	27 (3 SHORT STALLS)
EXISTING WHITE FLEET STALLS	11
EXISTING STAFF STALLS	28
BUS STALLS PROVIDED	51 (6 SHORT STALLS)
WHITE FLEET STALLS PROVIDED	27
STAFF STALLS PROVIDED	37
ADA STALLS PROVIDED	3
ADA STALLS REQUIRED	--
TOTAL STALLS	118
RISE ACADEMY PARKING	
EXISTING STALLS	--
STANDARD STALLS PROVIDED	8
ADA STALLS PROVIDED	2
ADA STALLS REQUIRED	--
TOTAL STALLS	10

WPAP IMPERVIOUS COVER CALCS

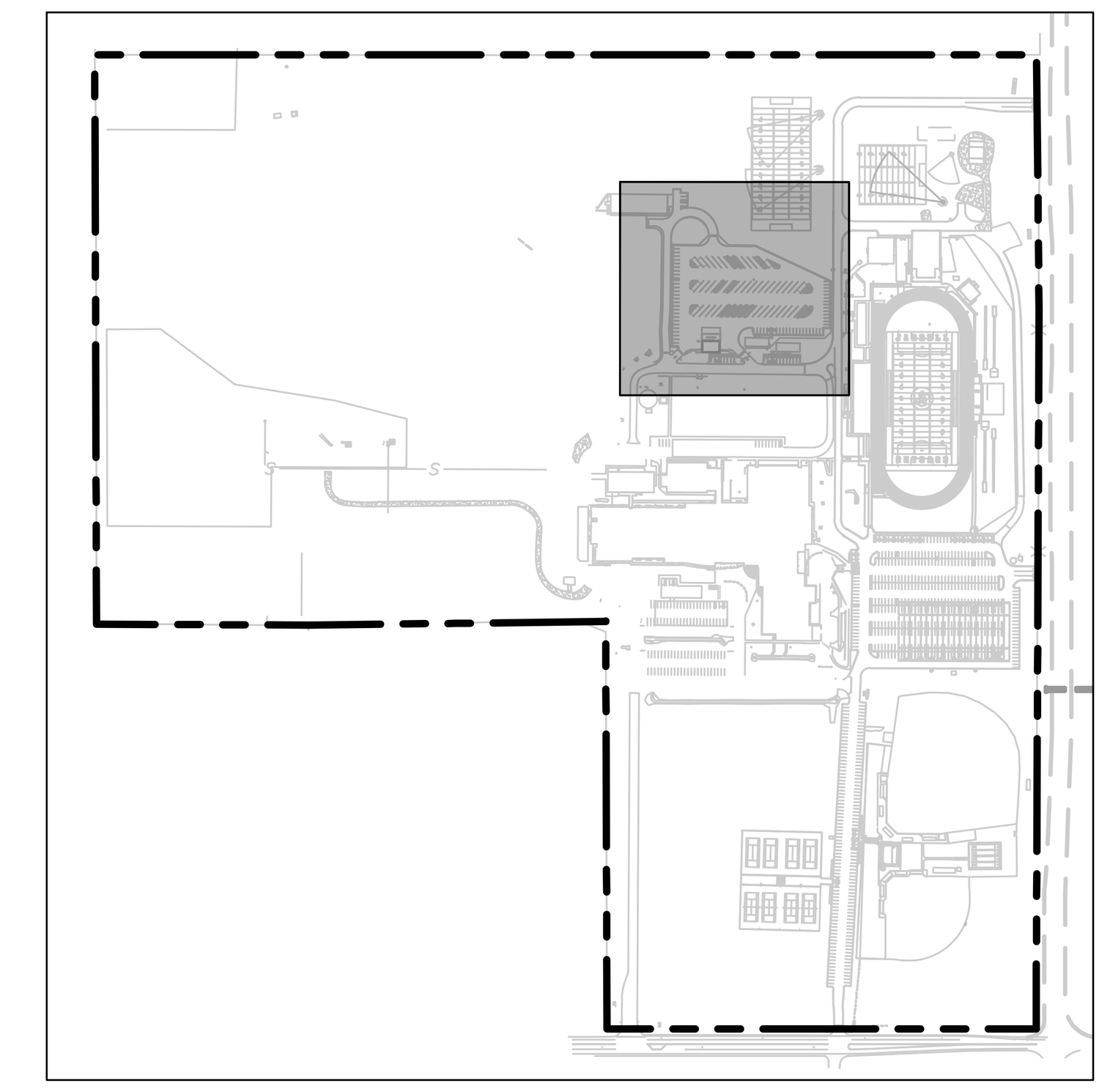
IMPERVIOUS COVER IN WPAP MODIFICATION #5: 24.60 ACRES

PAVING DEMOLISHED = 58,395 SQ. FT.
PAVING ADDED = 103,680 SQ. FT.
PORTABLE AREA = 1,500 SQ. FT.
TOTAL IMPERVIOUS ADDED = 46,785 SQ. FT. = 1.07 ACRES

TOTAL SITE IMPERVIOUS = 24.60 + 1.07 = 25.67 ACRES



GRAPHIC SCALE
0 20 40 FEET



KEY MAP
N.T.S.

LEGEND

PROPERTY LINE	
PROPOSED FACE AND BACK OF CURB	
PROPOSED HEAVY DUTY (FIRELANE) REINFORCED CONCRETE (PCC) PAVEMENT (REFER PAVING DETAILS AND GEOTECH REPORTS #A182148)	
PROPOSED MODERATE DUTY (PARKING) REINFORCED CONCRETE (PCC) PAVEMENT (REFER PAVING DETAILS AND GEOTECH REPORT #A182148)	
BID ALTERNATE IF DESIRED BY THE DISTRICT SHALL INCLUDE THE INSTALLATION OF ASPHALT (HMAC) IN LIEU OF MODERATE AND HEAVY DUTY CONCRETE. (REFERENCE PAVING DETAILS AND GEOTECH REPORT #A182148) COORDINATE WITH ARCHITECT FOR BID ITEM NUMBER.	
PROPOSED REINFORCED CONCRETE SIDEWALK (REFER DETAILS)	
PROPOSED SIGN	
PAINTED TRAFFIC ARROW	
ACCESSIBLE ROUTE	
FIRE LANE STRIPING	FIRELANE
PARKING COUNT	(1)

811
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ATHLETICS COMPLEX IMPROVEMENTS AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN | Adams

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
5-26-2022
TBPE Registration #: F- 13,709

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SITE PLAN TRANSPORTATION

PACKAGE 1

Job No. 1836-06-01	Sheet No.
Drawn By: CLC	C4.04
Date: 05/17/2022	

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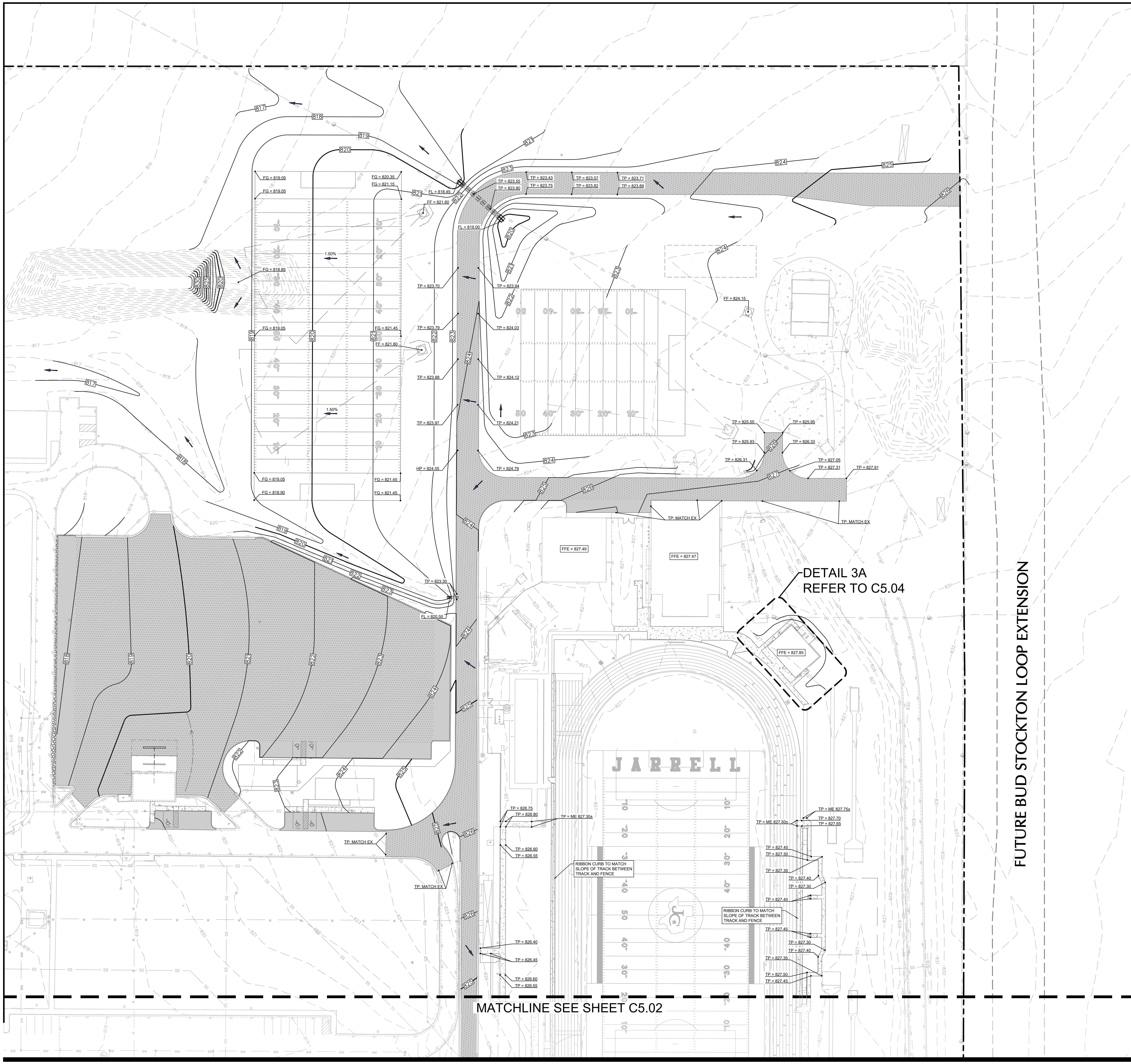
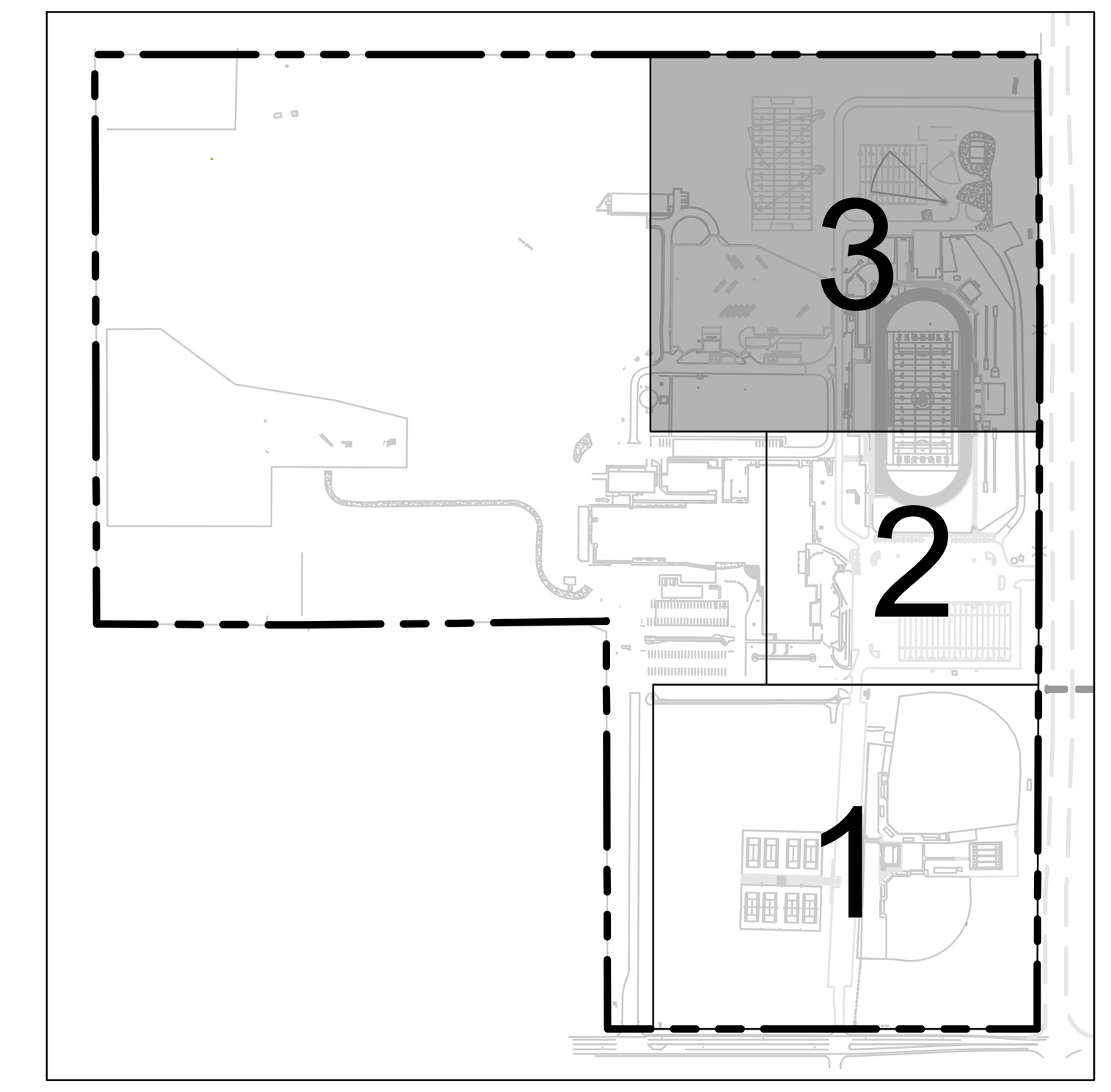


GRAPHIC SCALE

0 40 80 FEET



KEY MAP

N.T.S.

LEGEND

PROPOSED CONTOUR	100
EXISTING CONTOUR	100
SPOT GRADE	TP = 100.00
PROPOSED FLOW ARROW	
TP	TOP OF PAVEMENT
FL	FLOWLINE
FF	FINISHED FLOOR
FG	FINISHED GRADE
ME	MATCH EXISTING

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.

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GRADING PLAN AREA 3

PACKAGE 1

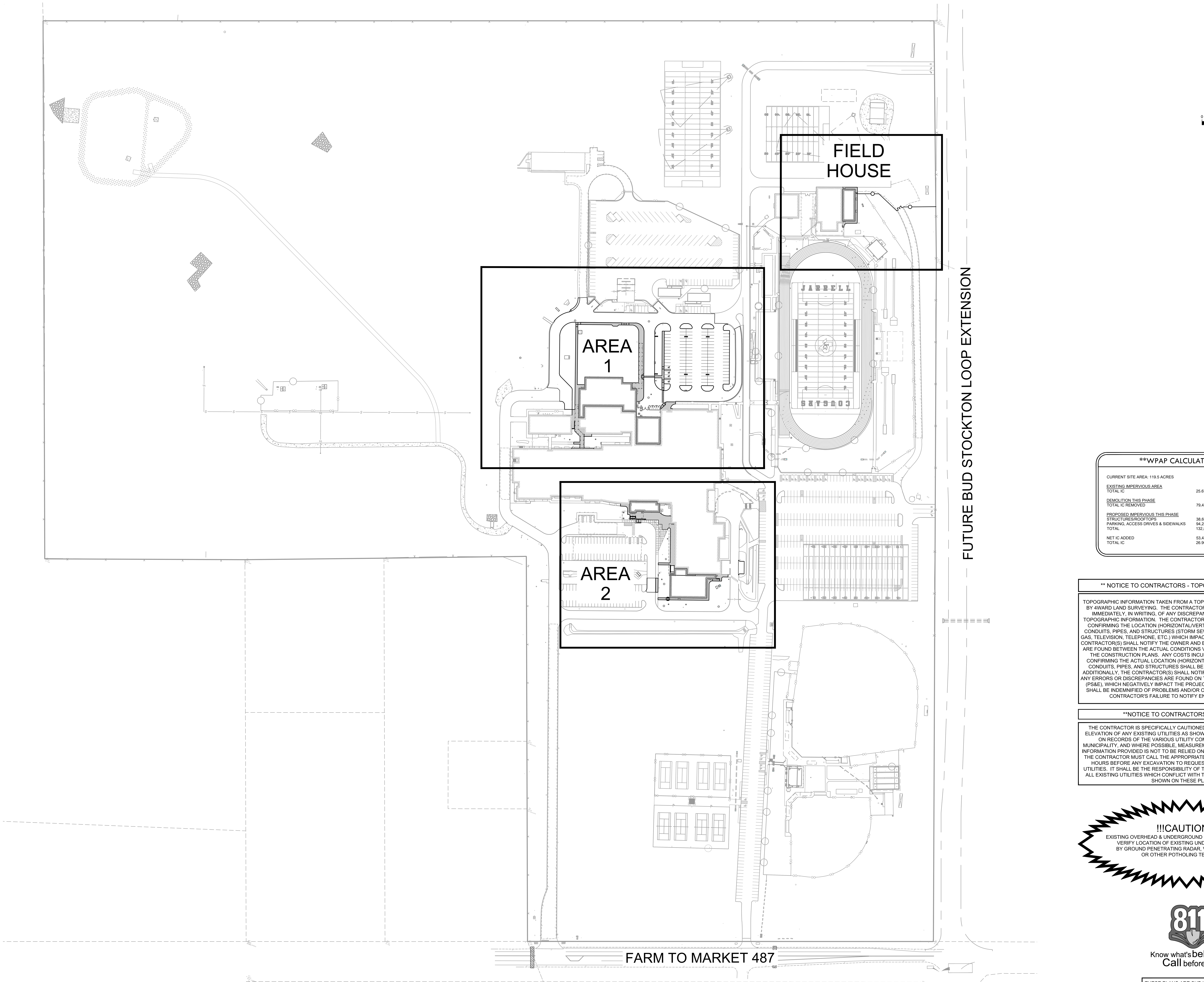
Job No. 1836-06-01	**Sheet No.**
Drawn By: CLC	C5.03
Date: 05/17/2022	

9/14/2021 1:57:27 PM
C:\Users\tafford\Documents\2019 Revit Local Files\1836-06-01_JarrellISD_HS-AthleticsReno_ARCH_v19_jmafford.rvt

Date: 5/26/2022 Time: 21:23 User: mhardy Style Table: Langan.stb Layout: C5.03 - Grading Plan Area 3 Document Code: 531012001-0503-CG101-0102

APPROVED PLAN SHEETS FROM
WPAP MODIFICATION #7 -
CURRENTLY UNDER CONSTRUCTION

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY



WPAP CALCULATIONS

CURRENT SITE AREA: 119.5 ACRES

EXISTING IMPERVIOUS AREA	
TOTAL IC	25.67 AC = 21.5%
DEMOLITION THIS PHASE	
TOTAL IC REMOVED	79,423 SQ FT = 1.82 AC
PROPOSED IMPERVIOUS THIS PHASE	
STRUCTURES/ROOFTOPS	38,606 SQ FT = 0.89 AC
PARKING, ACCESS DRIVES & SIDEWALKS	94,243 SQ FT = 2.16 AC
TOTAL	132,849 SQ FT = 3.05 AC
NET IC ADDED	53,426 SQ FT = 1.23 AC
TOTAL IC	26.90 AC = 22.5%

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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.

!!!CAUTION!!!

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ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

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OVERALL AREA MAP

Job. No. 1836-03-01	Sheet No.
Drawn By:	C1.12
Date: 11/17/2022	

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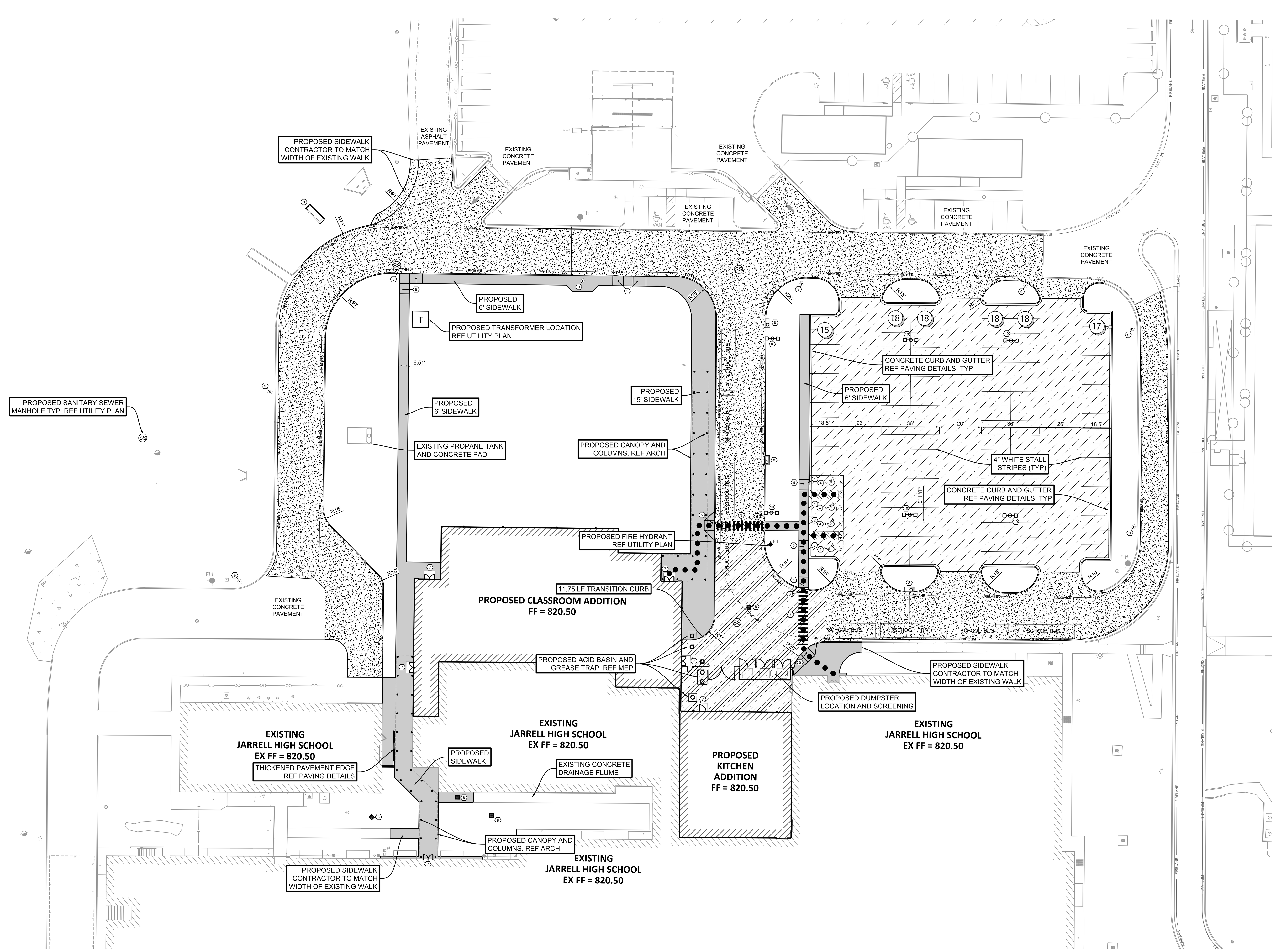

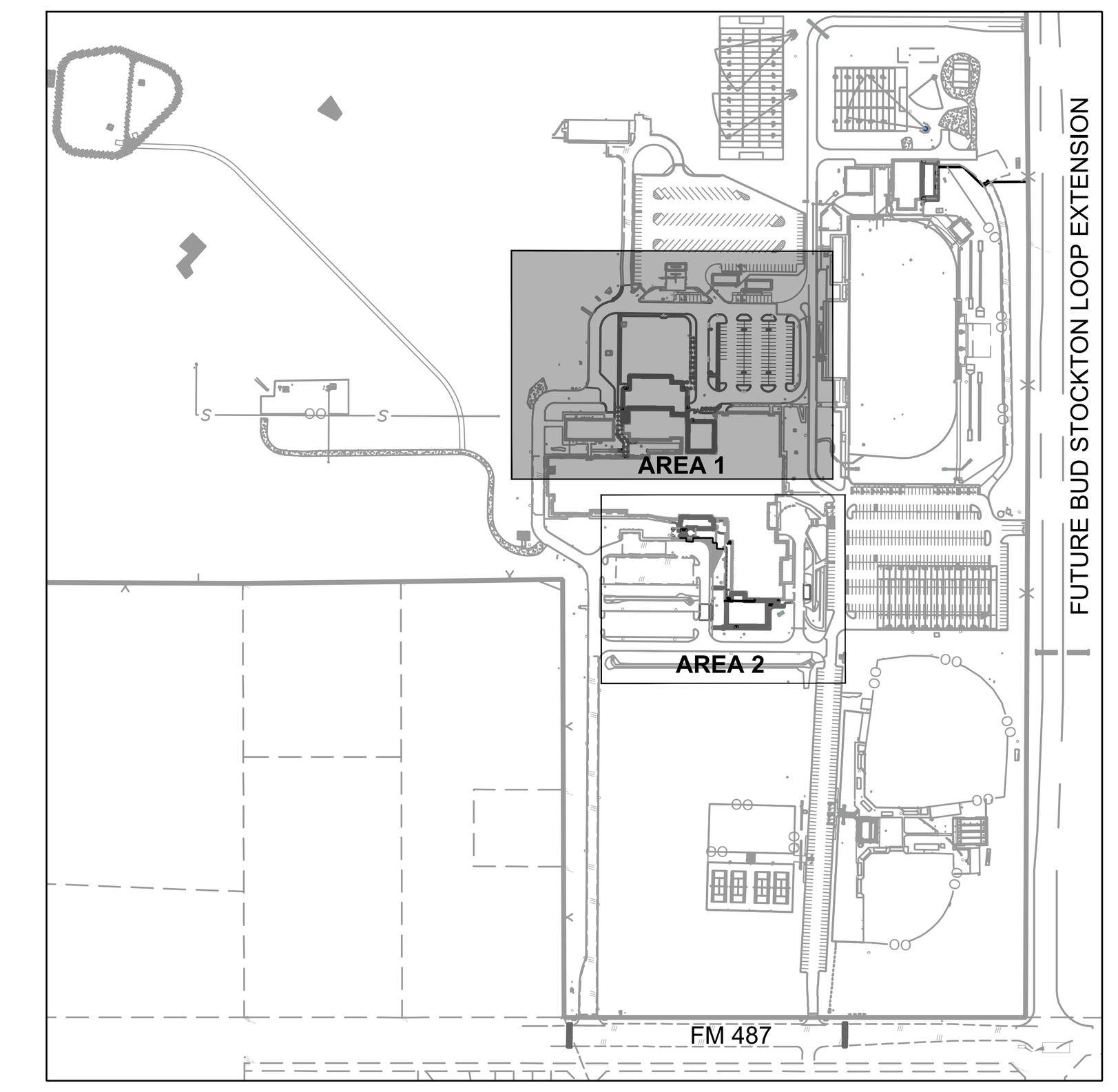

KEY MAP
N.T.S.

SYMBOL KEY

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

LEGEND

PROPOSED FACE AND BACK OF CURB

PROPOSED BUS LOOP PAVEMENT
7" REINFORCED PCC
6" RECOMPACTED SUBGRADE
NO. 3 BARS @ 18" O.C.E.W.
REF GEOTECH RECOMMENDATIONS

PROPOSED ACCESS DRIVE PAVEMENT
6.5" REINFORCED PCC
6" RECOMPACTED SUBGRADE
NO. 3 BARS @ 18" O.C.E.W.
REF GEOTECH RECOMMENDATIONS

TEMPORARY PARKING ASPHALT PAVEMENT
1.5" TYPE C OR D HMAC SURFACE COURSE
8" FLEXIBLE BASE
6" RECOMPACTED SUBGRADE
REF GEOTECH RECOMMENDATIONS

PROPOSED REINFORCED SIDEWALK
REF PAVING DETAILS

PROPOSED SIGN

PROPOSED RETAINING WALL

FIRE LANE STRIPING

PROPOSED FIRE HYDRANT

PROPOSED SANITARY MANHOLE

ACCESSIBLE ROUTE

PARKING COUNT

PARKING COUNT SUMMARY

EXISTING SPACES	TOTAL SPACES
788 SPACES	888 SPACES
43 ACCESSIBLE SPACES	47 ACCESSIBLE SPACES
51 BUS SPACES	51 BUS SPACES
882 TOTAL EXISTING SPACES	986 TOTAL SPACES

NEW SPACES

100 SPACES ADDED
4 ACCESSIBLE ADDED
0 BUS SPACES ADDED
104 TOTAL SPACES ADDED

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%)

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.

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

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1 1) ADDED STRUCTURAL STOOPS

Revision /	Date	
1	12/09/2022	ADDENDUM 2

Project:
ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
12/09/2022
TBPE Registration #: F- 13,709

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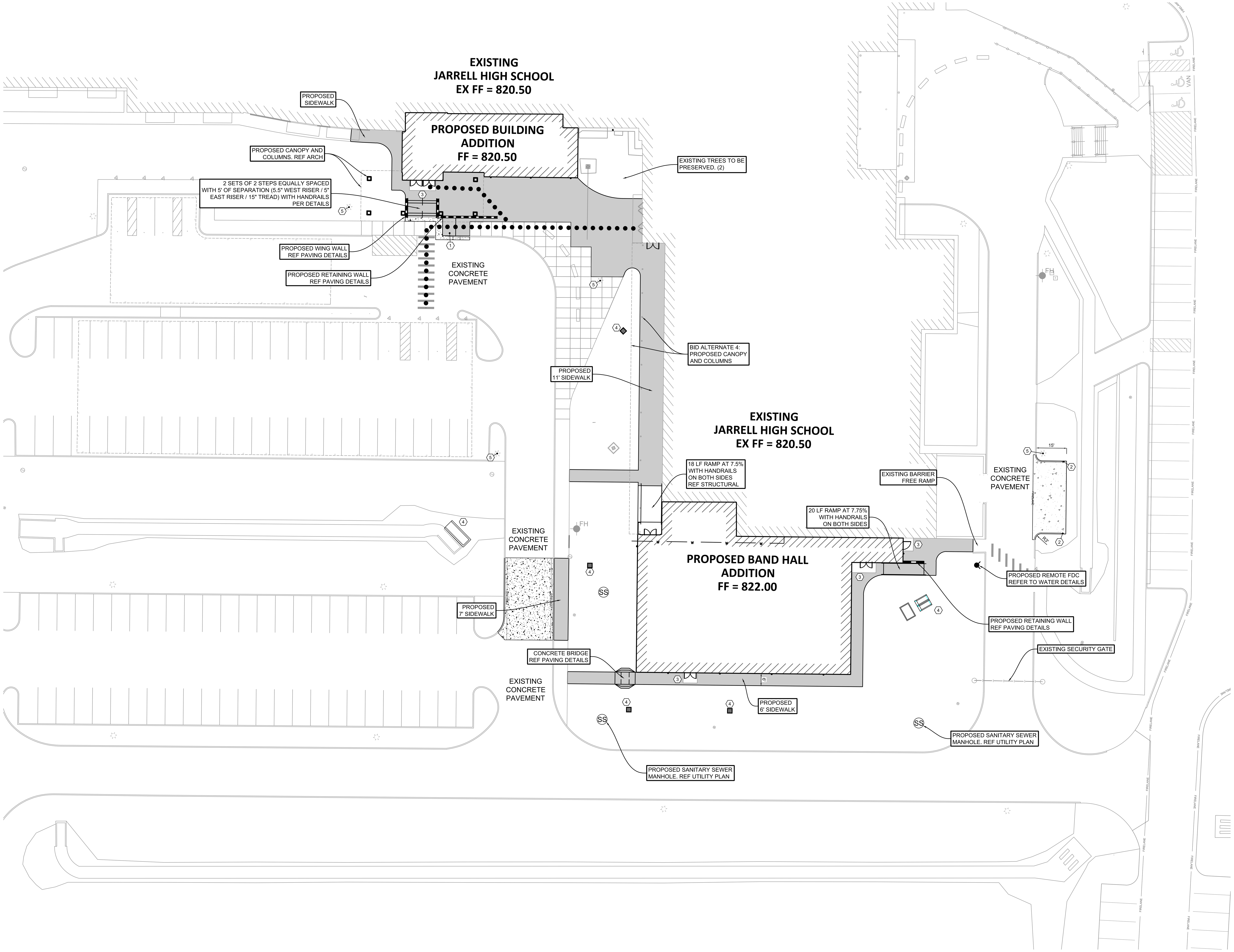
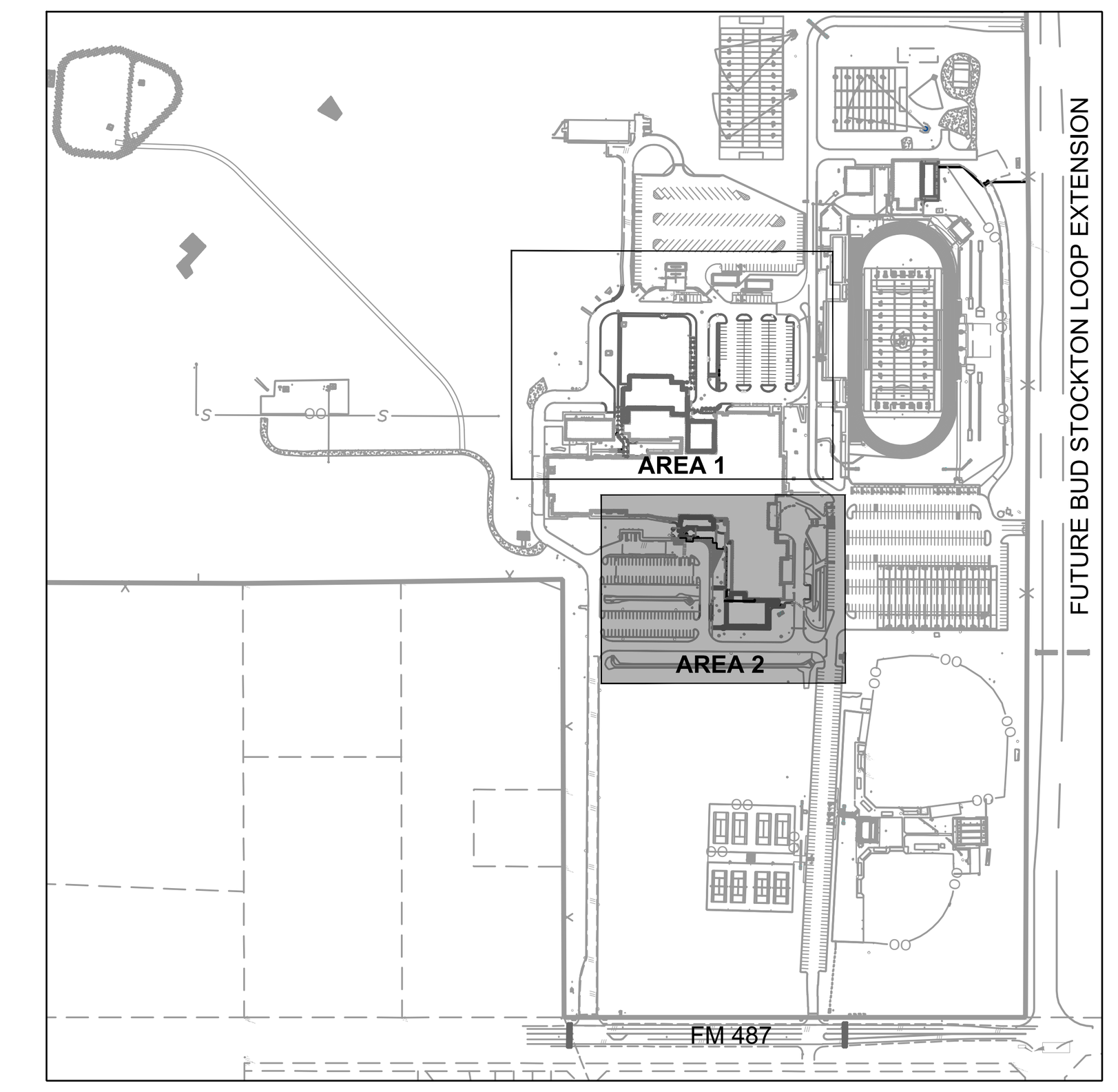
SITE PLAN AREA 1

Job. No.	Sheet No.
1836-03-01	C4.00
Drawn By:	
Date: 11/17/2022	

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY





KEY MAP
N.T.S.

LEGEND

PROPOSED FACE AND BACK OF CURB	
PROPOSED ACCESS DRIVE PAVEMENT 6.5" REINFORCED PCC 6" RECOMPACTED SUBGRADE NO. 3 BARS @ 18" O.C.E.W. REF GEOTECH RECOMMENDATIONS	
PROPOSED SIDEWALK REF PAVING DETAILS	
PROPOSED SIGN	
PROPOSED RETAINING WALL	
FIRE LANE STRIPING	
PROPOSED FIRE HYDRANT	FH
PROPOSED SANITARY MANHOLE	SS
ACCESSIBLE ROUTE	
PARKING COUNT	1

SYMBOL KEY

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Revision / △ | Date
1 ADDENDUM 2 | 12/09/2022

Project:
ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

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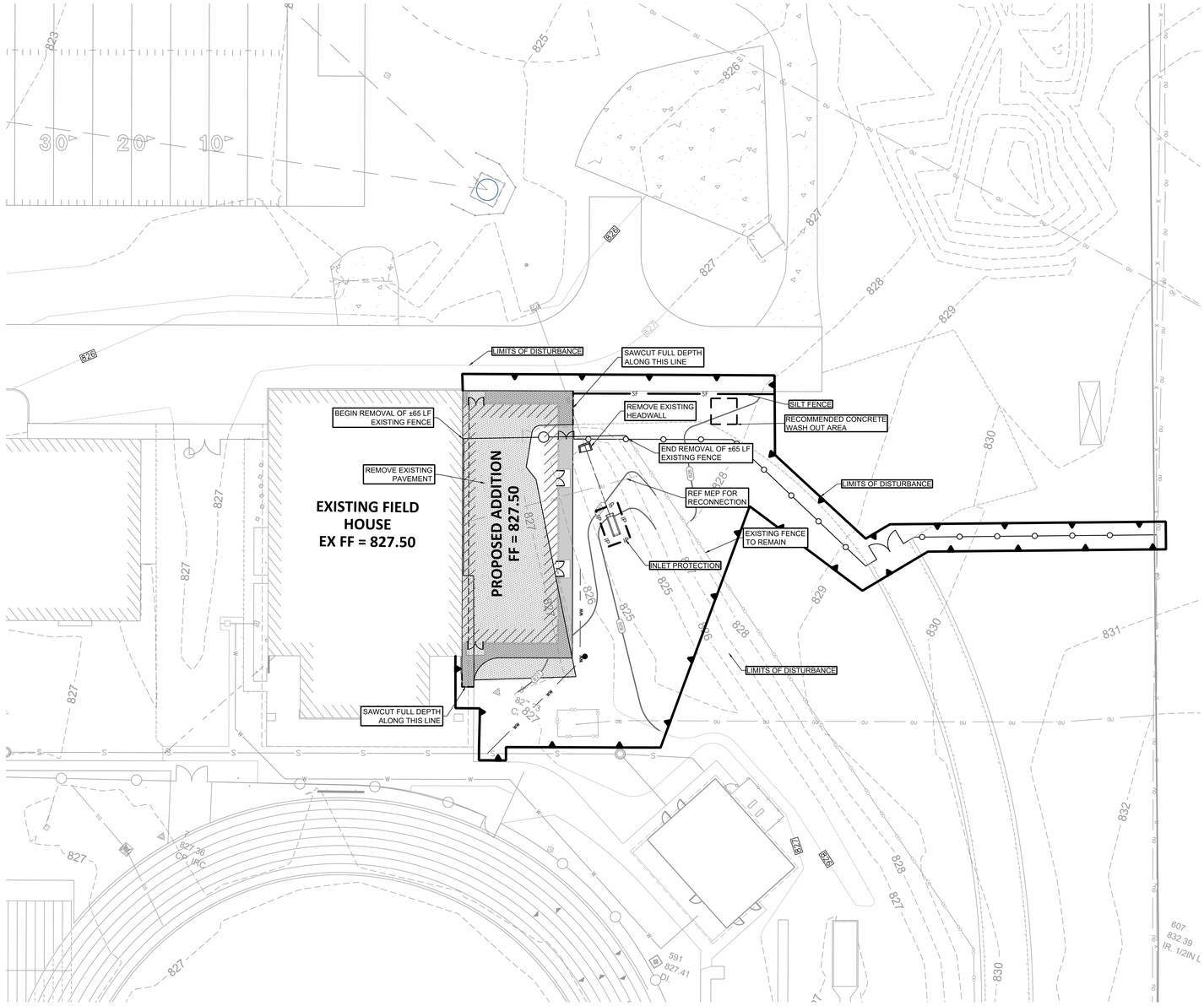
SITE PLAN AREA 2

Job. No. 1836-03-01	Sheet No.
Drawn By:	C4.01
Date: 11/17/2022	



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BY VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

GRAPHIC SCALE
0 20 40 FEET

1) ADDED CONCRETE WASHOUT LOCATION
2) REVISED STABILIZATION NOTE

LEGEND

- INLET PROTECTION — IP — IP
- LIMITS OF DISTURBANCE
- SILT FENCE — SF
- ROCK CHECK DAM
- PAVEMENT REMOVAL
- SAWCUT

** IMPORTANT DEMOLITION NOTE ***

IT IS NOT KNOWN BY LANGAN, THE INTEGRITY OF THE EXISTING IRRIGATION SYSTEM. THEREFORE, PRIOR TO ANY DEMOLITION, THE IRRIGATION CONTRACTOR SHALL MEET WITH DISTRICT MAINTENANCE PERSONNEL TO LOCATE LIMITS OF COVERAGE AND EXISTING SYSTEM FAILURES. WITH AN UNDERSTANDING OF PROPOSED IMPROVEMENTS, THE DISTRICT AND CONTRACTOR SHALL DETERMINE WHERE TO PRESERVE THE EXISTING IRRIGATION SYSTEM TO QUANTIFY PROPOSED INSTALLATION LIMITS. THE CONTRACTOR SHALL THEN CAP AND/OR TERMINATE THE EXISTING MAINLINE, CONTROL WIRES, AND LATERALS WITHIN APPROPRIATE IRRIGATION BOXES. ANY COMPONENTS OF THE EXISTING SYSTEM TO BE SALVAGED SHALL BE DETERMINED BY THE DISTRICT.

EROSION CONTROL NOTES

1. CONTRACTOR MUST COMPLETE A CONSTRUCTION SITE NOTICE, OBTAIN SIGNED COPIES OF NOI FORM FOR BOTH OWNER AND CONTRACTOR (IF APPLICABLE TO THIS SITE), AND POST THEM AT THE CONSTRUCTION SITE, IN ACCORDANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES (TXR150000). 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.
2. 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 OF THE STORM WATER POLLUTION PREVENTION PLAN.
3. 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.
4. 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).
5. 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.
6. 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.
7. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR AT LEAST FOURTEEN DAYS SHALL BE TEMPORARILY STABILIZED WITH VEGETATION AND MULCH.
8. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED SHALL BE PERMANENTLY SEEDED WITHIN FOURTEEN DAYS PER SEEDING OR LANDSCAPING SPECIFICATIONS.
9. 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.
10. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED ONTO ADJACENT ROADWAYS BY VEHICLES EXITING THE SITE SHALL BE CLEANED OR REMOVED IMMEDIATELY.
11. 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.
12. 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 THE SWPPP).
13. SILT FENCES SHALL BE PLACED AROUND ANY STOCKPILES USED ON THIS SITE.
14. 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.
15. 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.
16. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE WITHIN THIRTY DAYS AFTER STABILIZATION OF ALL SURFACES.
17. 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.
18. 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.
19. 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.

SITE DATA

TOTAL LAND AREA: 119.54 AC
DISTURBED AREA: 5.49 AC
IMPERVIOUS: 3.47 AC
PERVIOUS: 2.02 AC
RUNOFF COEFF. PRE-DEV: 0.76
RUNOFF COEFF. POST-DEV: 0.80

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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.

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.

NOTE - SWPPP

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

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

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FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY

Revision / Date
1 ADDENDUM 2 12/09/2022

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS — JACK H. GARDNER — 98447 — LICENSED PROFESSIONAL ENGINEER
12/09/2022
TBPE Registration #: F- 13,709

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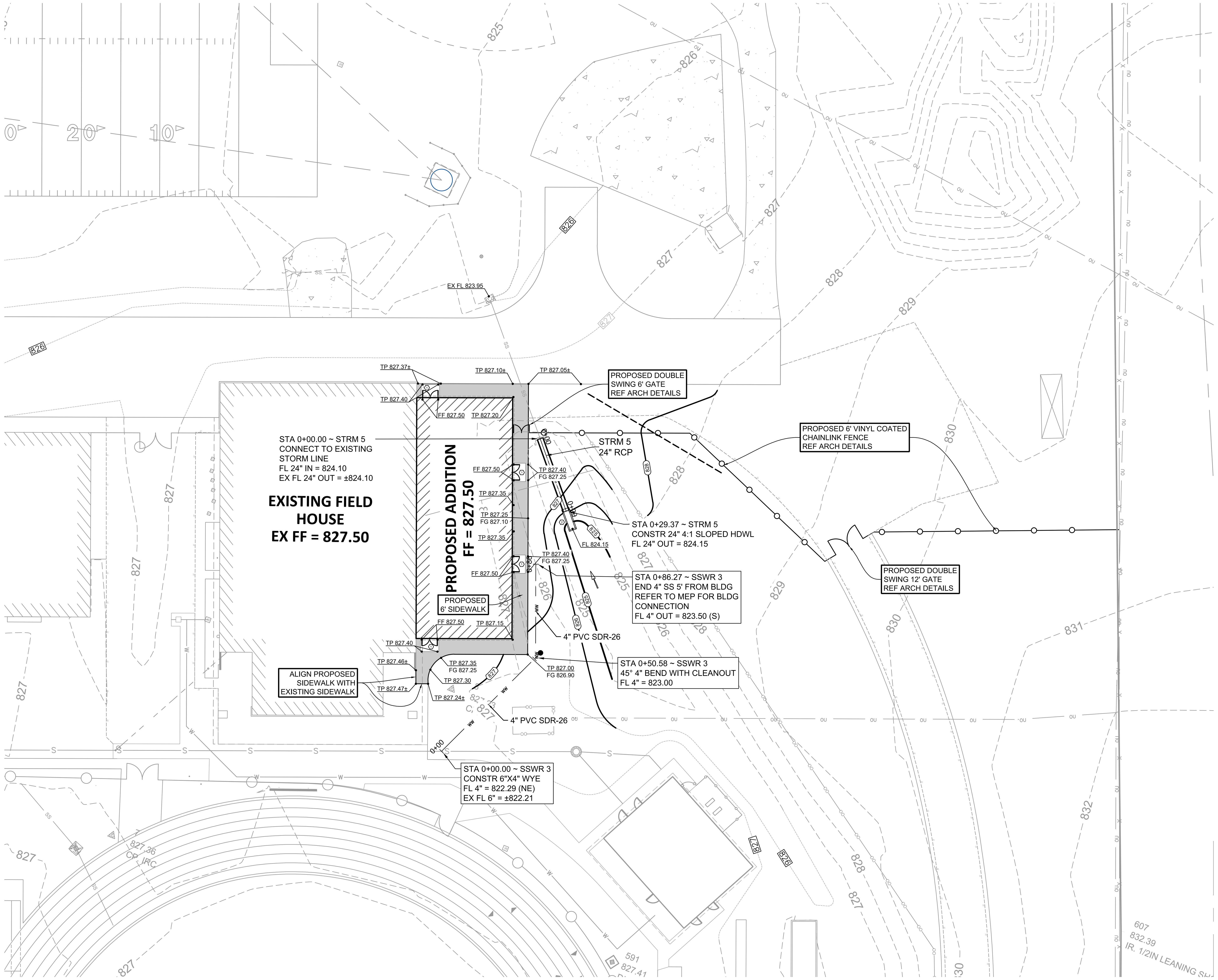
FIELD HOUSE PLAN: DEMO & EROSION CONTROL

Job. No. 1836-03-01
Drawn By: AM
Date: 11/17/2022
Sheet No. C4.02



1) ADDED STRUCTURAL STOOPS
2) ADDED SEWER PIPE MATERIAL

GRAPHIC SCALE
0 20 40 FEET

SYMBOL KEY

1. PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
2. PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)

LEGEND

PROPOSED REINFORCED SIDEWALK REF PAVING DETAILS
PROPOSED STORM LINE
PROPOSED SANITARY SEWER
PROPOSED CONTOUR
EXISTING CONTOUR
FLOWLINE
GRADE BREAK
ACCESSIBLE ROUTE
SPOT GRADE (FG=100.50)
PROPOSED RETAINING WALL
PROPOSED FLOW ARROW

FG	FINISHED GRADE
TP	TOP OF PAVEMENT
TC	TOP OF CURB
FL	FLOWLINE
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- 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.

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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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(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.

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(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)

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VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES
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Revision /	Date	
1	12/09/2022	ADDENDUM 2

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
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1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
JACK H. GARNER, JR.
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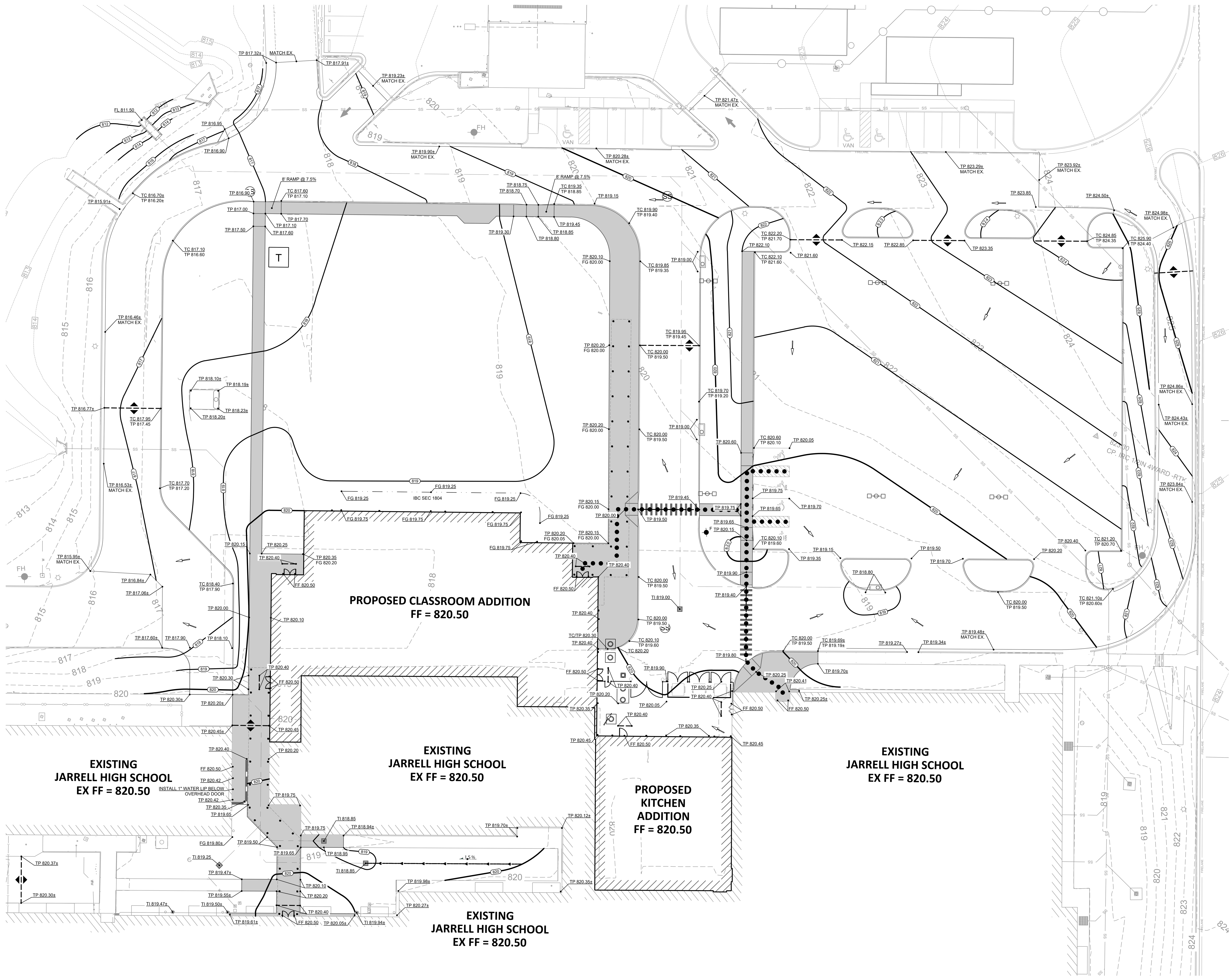
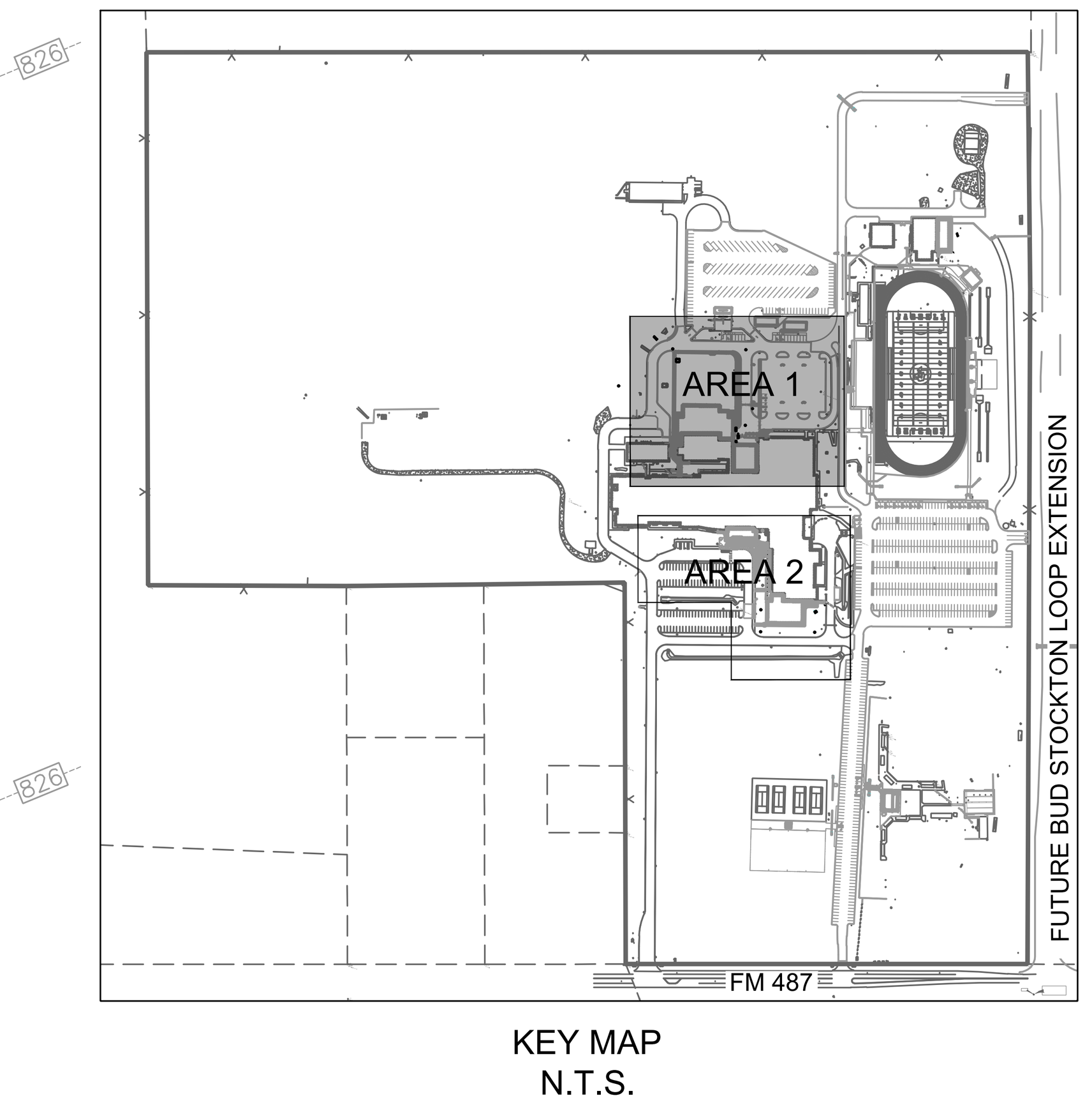
FIELD HOUSE PLAN: SITE, GRADING, DRAINAGE, & UTILITY

Job. No. 1836-03-01	Sheet No.
Drawn By: AM	C4.03
Date: 11/17/2022	

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY





KEY MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	
EXISTING CONTOUR	100
FLOWLINE	
GRADE BREAK	
ACCESSIBLE ROUTE	
SPOT GRADE	FG=100.50
PROPOSED RETAINING WALL	
PROPOSED FLOW ARROW	
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Revision / Date

Project: ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

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STATE OF TEXAS
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98447
LICENSED PROFESSIONAL ENGINEER
11-17-2022
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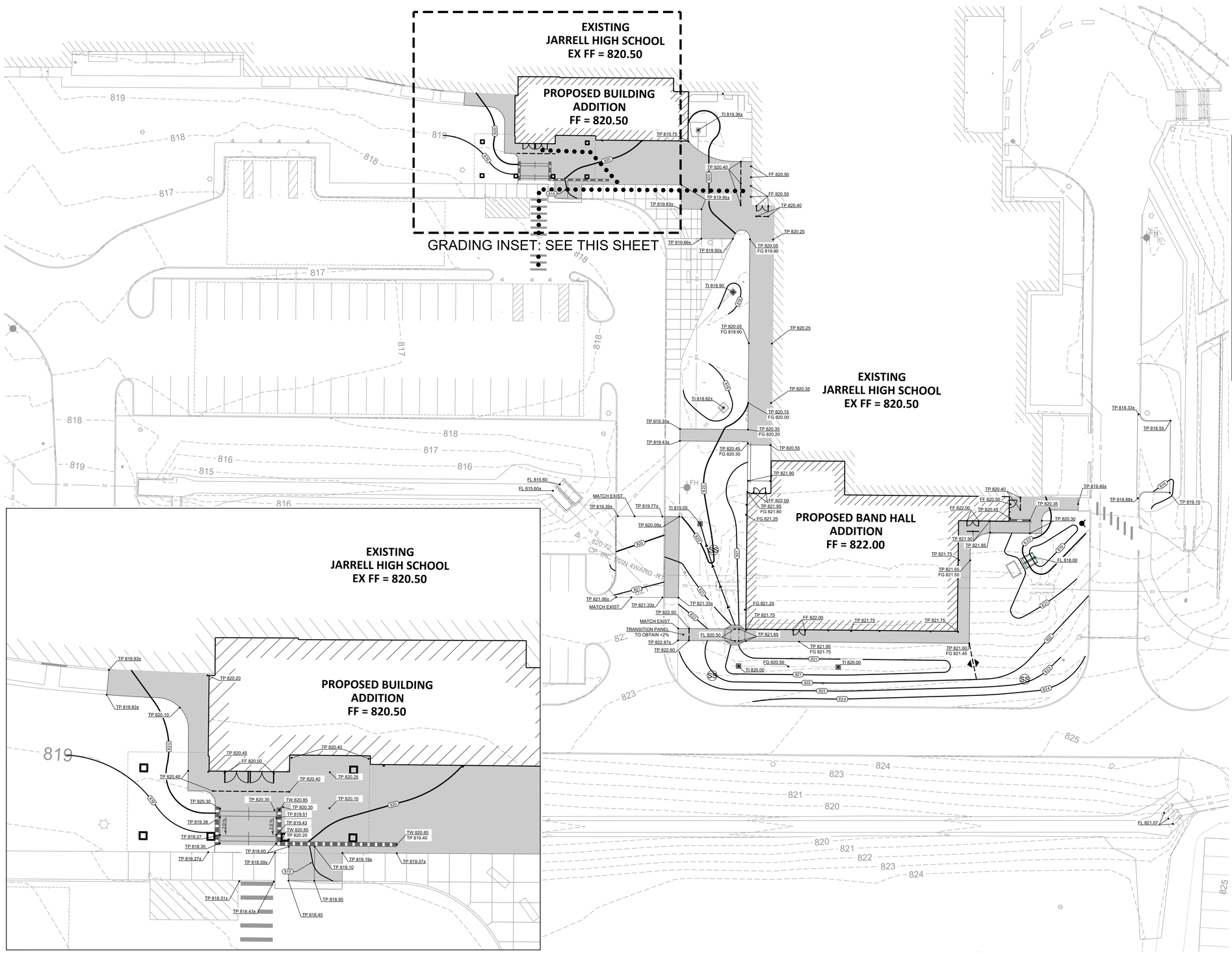
GRADING PLAN AREA 1

Job. No. 1836-03-01	Sheet No.
Drawn By: CCW	C5.00
Date: 11/17/2022	



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- *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 ALPHA, REPORT No. A2201008 AND DATED JUNE 8, 2022 OR ANY SUPPLEMENTAL ADDENDUMS.*

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.

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

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FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY

Revision / Date

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
JACK H. GARDNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
11-17-2022

TBPE Registration #: F- 13,709

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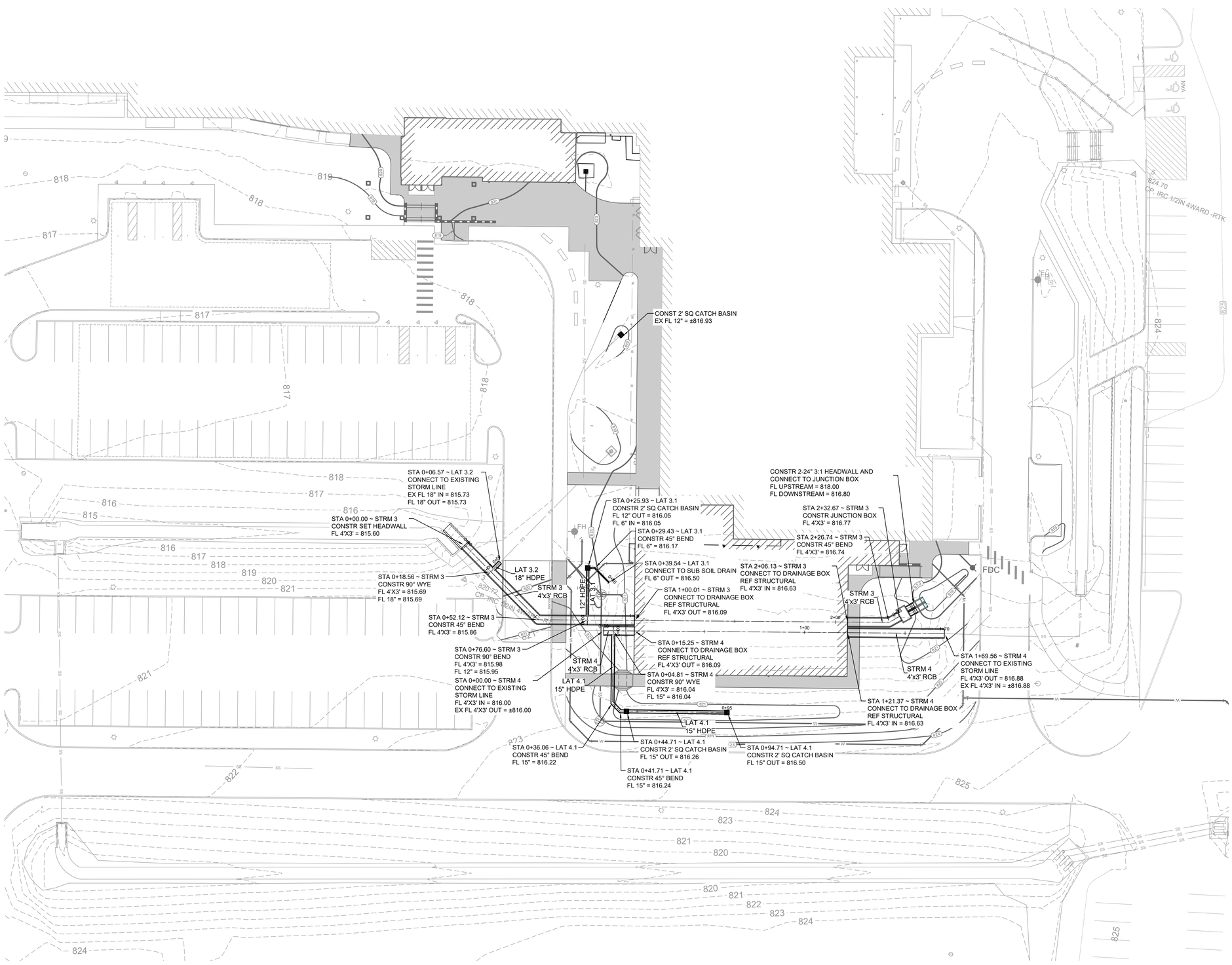
GRADING PLAN AREA 2

Job. No. 1836-03-01	Sheet No. C5.01
Drawn By: CCW	
Date: 11/17/2022	



KEY MAP
N.T.S.

LEGEND

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

1) ADDED STRUCTURAL BOX CONNECTION NOTE
2) REVISED LAT 3.1

STRUCTURAL BOX CONNECTION

CONTRACTOR TO INSTALL CLAY CUT-OFF WALL PER DRAINAGE DETAILS AT ALL CONNECTION POINTS OF STRUCTURAL DESIGNED DRAINAGE BOX TO CIVIL RCB.

** NOTICE TO CONTRACTORS - TOPOGRAPHIC SURVEY **

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Revision / Date
1 12/09/2022 ADDENDUM 2

Project:
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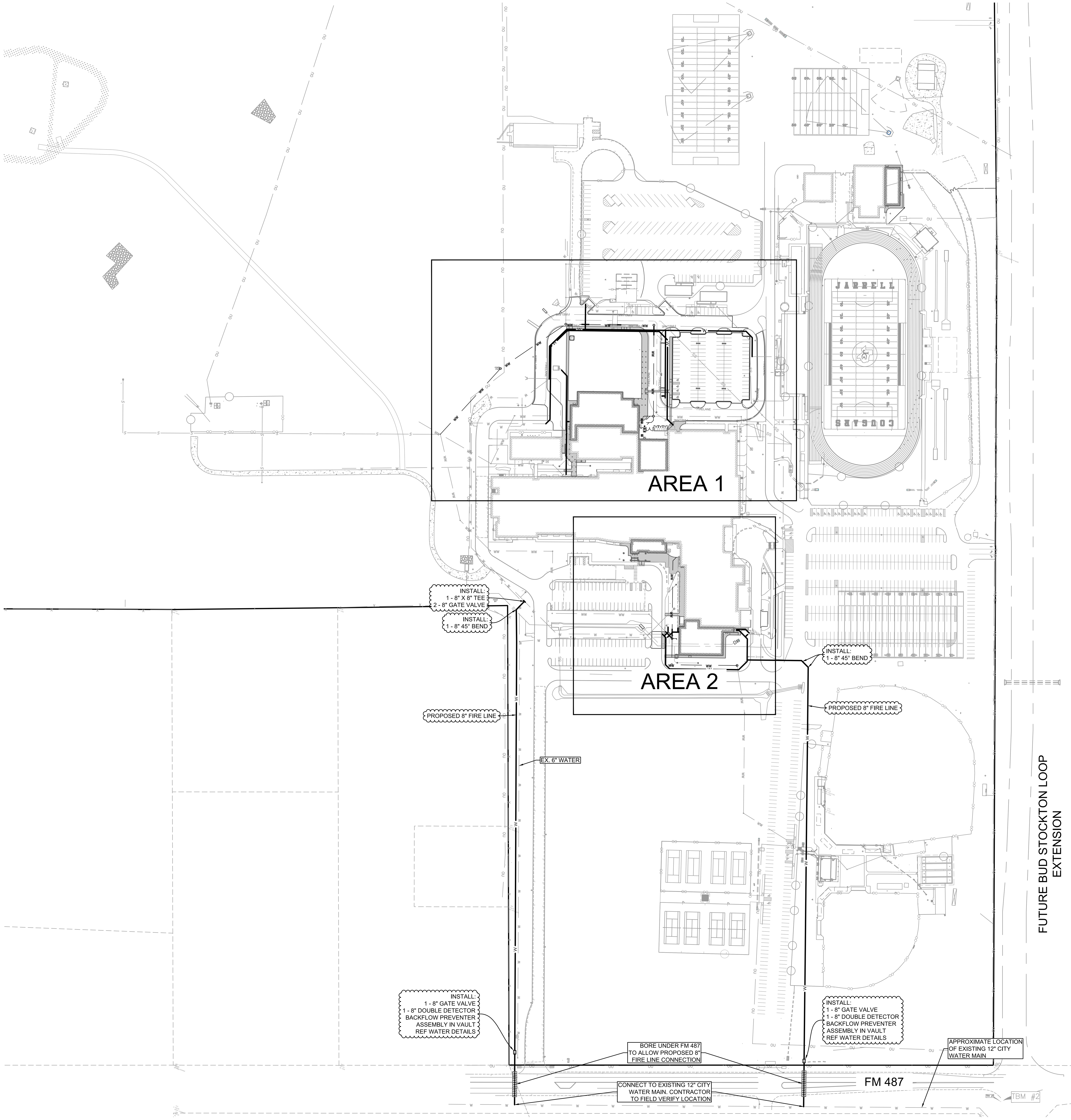
DRAINAGE PLAN AREA 2

Job. No. 1838-03-01	Sheet No. C6.03
Drawn By: CCW	
Date: 11/17/2022	

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY



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GRAPHIC SCALE
0 100 200 FEET

1) ADDED BORING UNDER FM 487 FOR BOTH FIRE LINE CONNECTIONS TO CITY WATER MAIN

LEGEND

PROPOSED UNDERGROUND ELECTRIC	UE
PROPOSED GAS	GAS
PROPOSED SANITARY SEWER	WW
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	SS

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WATER AND SEWER GENERAL NOTES

1. ALL WATER MAINS UNLESS OTHERWISE NOTED SHALL HAVE A MINIMUM COVER OF 48" BELOW FINISHED GRADE. PROVIDE VALVE EXTENSIONS TO ALL VALVES ON LINES DEEPER THAN 48".
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.

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Revision /	Date	
1	12/09/2022	ADDENDUM 2

Project:
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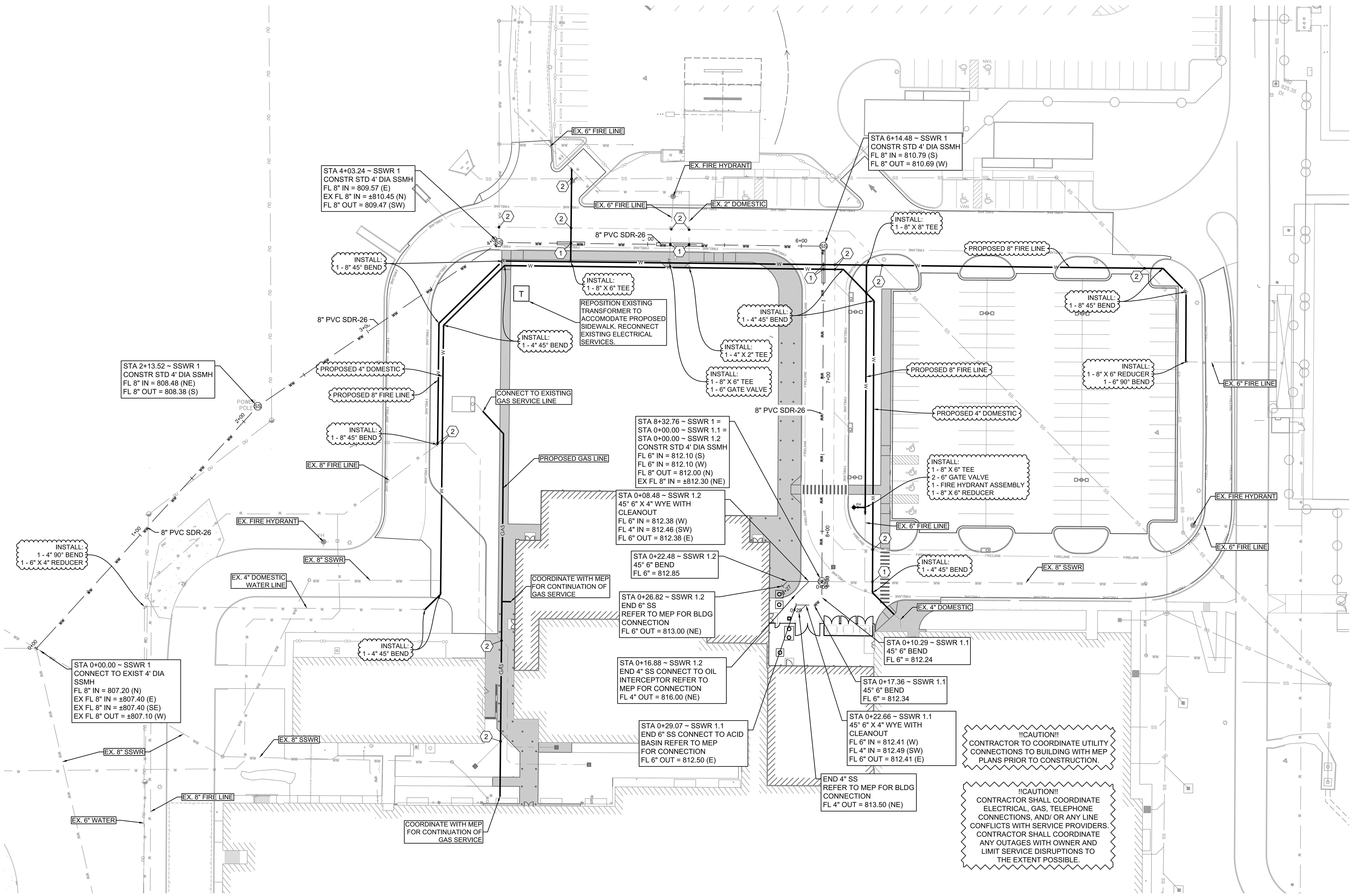
OVERALL UTILITY PLAN

Job. No. 1836-03-01	Sheet No.
Drawn By: CCW	C7.00
Date: 11/17/2022	

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY

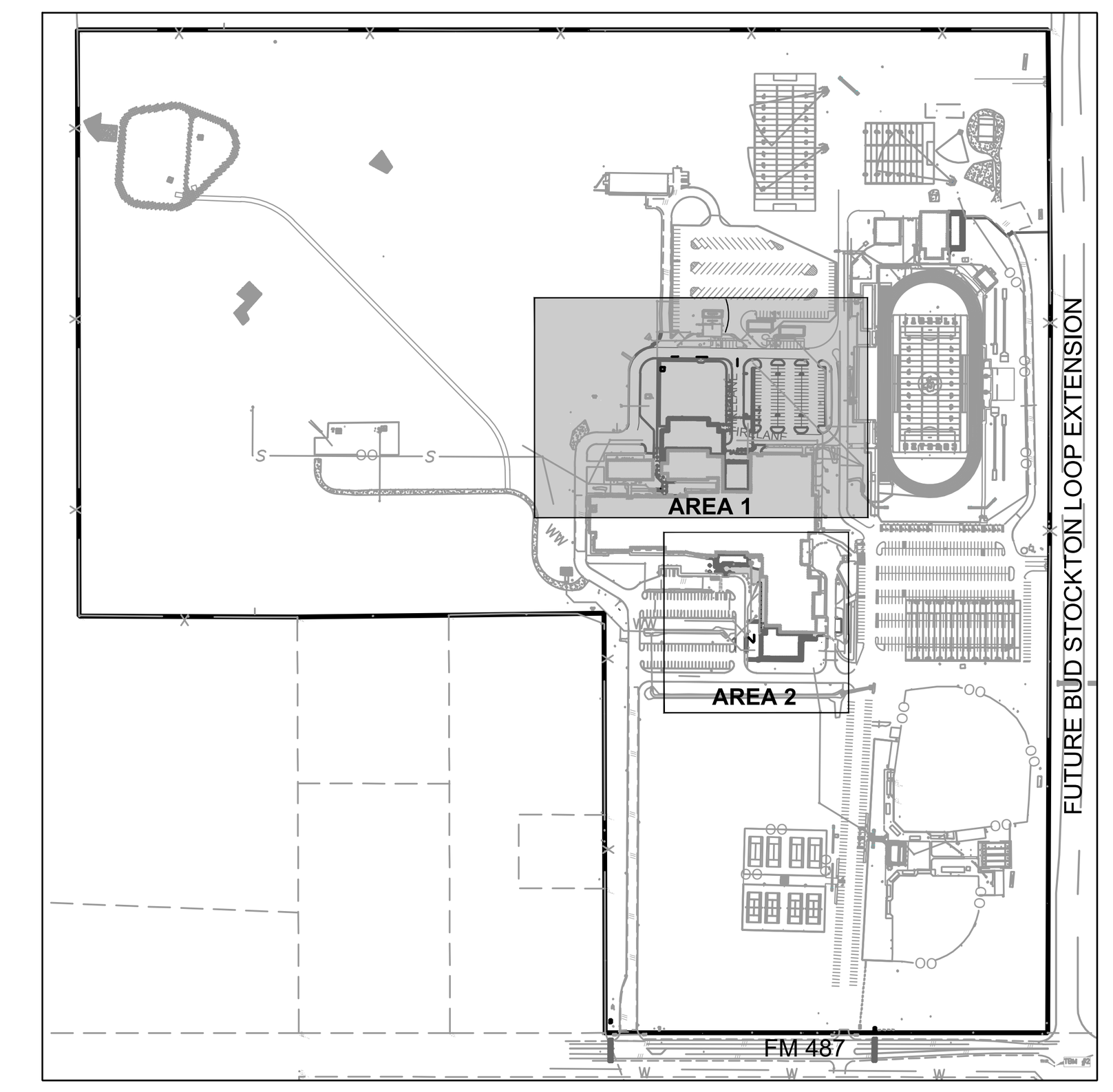
1) ADDED SANITARY SEWER PIPE ENCASEMENT SPECS AND LOCATION

GRAPHIC SCALE
0 30 60 FEET



!!CAUTION!!
CONTRACTOR TO COORDINATE UTILITY CONNECTIONS TO BUILDING WITH MEP PLANS PRIOR TO CONSTRUCTION.

!!CAUTION!!
CONTRACTOR SHALL COORDINATE ELECTRICAL, GAS, TELEPHONE CONNECTIONS, AND/ OR ANY LINE CONFLICTS WITH SERVICE PROVIDERS. CONTRACTOR SHALL COORDINATE ANY OUTAGES WITH OWNER AND LIMIT SERVICE DISRUPTIONS TO THE EXTENT POSSIBLE.



KEY MAP
N.T.S.

LEGEND

PROPOSED UNDERGROUND ELECTRIC	UE
PROPOSED GAS	GAS
PROPOSED SANITARY SEWER	WW
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	SS

SYMBOL KEY

(1) WATER-SANITARY SEWER CROSSING PER CITY AND TCEQ STANDARDS. ENCASE ALL PORTIONS OF SEWER WITHIN NINE FEET OF WATER LINE IN MIN. 150 PSI PIPE TWO NOMINAL SIZES LARGER THAN CARRIER PIPE. SUPPORT BY SPACERS AT 5' INTERVALS AND SEAL AT BOTH ENDS WITH CEMENT GROUT OR MANUFACTURED SEAL.

(2) UTILITY CROSSINGS

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2	12/09/2022	ADDENDUM 2

Project: ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D. 1100 FM 487, JARRELL, TEXAS 76537

LANGAN

JACK H. GARNER, JR. 98447 LICENSED PROFESSIONAL ENGINEER 12/09/2022

TBPE Registration #: F- 13,709

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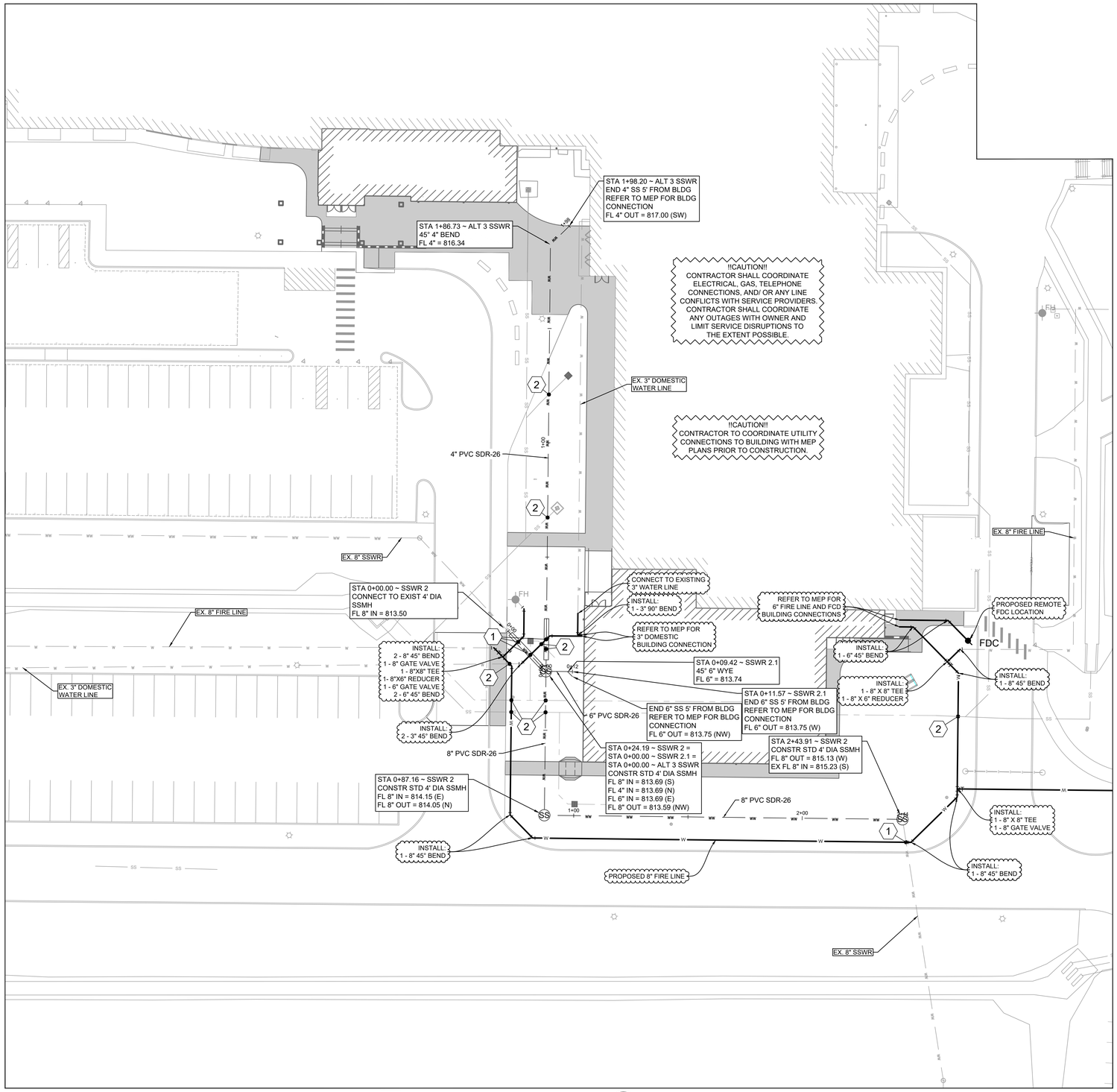
UTILITY PLAN AREA 1

Job. No. 1836-03-01	Sheet No.
Drawn By: CCW	C7.01
Date: 11/17/2022	



AREA 2
SCALE: 1"=20'

TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PERFORMED BY 4WARD LAND SURVEYING. 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.

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.

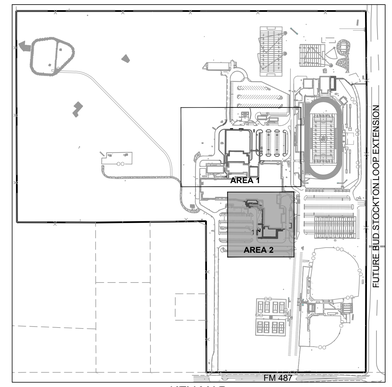
!!!CAUTION!!!
EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY. VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES BY VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

1) ADDED SANITARY SEWER PIPE ENCASEMENT SPECS AND LOCATION
2) ADDED EXISTING 3" WATER LINE AND PROPOSED BUILDING CONNECTION
3) REVISED ALT 3 SSWR

GRAPHIC SCALE
0 30 60 FEET



KEY MAP
N.T.S.

LEGEND

PROPOSED UNDERGROUND ELECTRIC	UE
PROPOSED GAS	GAS
PROPOSED SANITARY SEWER	WW
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	

SYMBOL KEY

1. WATER-SANITARY SEWER CROSSING PER CITY AND TCEQ STANDARDS. ENCASE ALL PORTIONS OF SEWER WITHIN NINE FEET OF WATER LINE IN MIN. 150 PSI PIPE TWO NOMINAL SIZES LARGER THAN CARRIER PIPE. SUPPORT BY SPACERS AT 5' INTERVALS AND SEAL AT BOTH ENDS WITH CEMENT GROUT OR MANUFACTURED SEAL.
2. UTILITY CROSSINGS

WATER AND SEWER GENERAL NOTES

1. ALL WATER MAINS UNLESS OTHERWISE NOTED SHALL HAVE A MINIMUM COVER OF 48" BELOW FINISHED GRADE. PROVIDE VALVE EXTENSIONS TO ALL VALVES ON LINES DEEPER THAN 48".
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.

FOR THE PURPOSES OF BIDDING AND PERMITTING ONLY

Revision /	Date	
2	12/09/2022	ADDENDUM 2

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
JACK M. GARNER
98447
LICENSED PROFESSIONAL ENGINEER
12/09/2022
TBPE Registration #: F- 13,709

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800.687.1229

UTILITY PLAN AREA 2

Job. No. 1836-03-01	Sheet No. C7.02
Drawn By: CCW	
Date: 11/17/2022	

PLAN SHEETS FOR PROPOSED MODIFICATION

GENERAL NOTES

1. All construction shall be in accordance with the City construction standards and specifications where applicable. In the event that the City standard details do not apply, applicable City of Austin standard construction details and specifications shall govern.

2. The Contractor shall begin work as directed by the Owner/City or the Notice to Proceed.

3. The Contractor is responsible for obtaining all necessary permits, approvals, and inspections prior to and throughout construction.

4. 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.

5. 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.

6. 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.

7. All adjacent property damaged by the proposed construction shall be restored to equal or better condition than which it was found before such work was undertaken (non-pay item).

8. All efforts shall be made to avoid damage to existing trees that are to remain. Trees shall be trimmed and painted only if necessary for the safe maneuvering of construction equipment. Contractor shall receive prior approval from the Owner's field representative for removal of any trees. When excavating around a tree, the roots shall be clean cut prior to any excavation work. Do not snag and tear tree roots

9. All existing fences are to remain unless specified otherwise by the Owners representative. Any damage to fences shall be repaired at Contractor's expense with new and like materials. Temporary construction site security fences are required.

10. The Contractor is responsible for keeping existing driveways and sidewalks free of mud and debris from the construction at all times.

11. 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.

12. The Contractor shall take all available precautions to control dust. Contractor shall control dust by sprinkling water, or by other means, approved by the City and Engineer.

13. The Contractor shall notify the Owner/City representative of off-site excess spoils sites that are to be utilized

14. 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 establishment of grass or other growth to prevent erosion.

15. Disturbed areas that are seeded shall be checked periodically for full coverage of grass. All disturbed areas shall be watered, fertilized, and reseeded or sodded, as necessary and by definition "maintained" until an established stand of grass can be released to the owner.

16. 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.

17. The Contractor shall set two (2) permanent benchmarks in the City coordinate system. Contractor shall coordinate with City staff for recorded / approved locations.

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 MUTCD, 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 the all authorities having jurisdiction and coordinate the plan and schedule with the Owner prior to the start of construction.

DEMOLITION NOTES

1. No earth-disturbing activities shall commence until all permits are obtained and perimeter erosion control measures are in place.

2. All demolition shall be closely coordinated with the owner's representative regarding items to be salvaged, those to be removed, etc. including any and all tree preservation and transplanting activities, as outlined in the pre-construction meeting. Removal, relocation and/or disposal of any pre-existing on-site trash, debris, or stockpiles shall be included in the total cost of demolition and shall be coordinated with the owner's representative at all times.

3. Contractor shall comply to the fullest extent with all regulations governing agencies regarding the demolition, removal, transportation and disposal of all demolition debris.

4. Ingress and egress points, proposed disposal sites, and haul routes must be approved by City officials prior to removal of demolition debris off-site.

5. The contractor shall be responsible for coordinating disconnection of all utilities serving the existing site with the appropriate utility company, and shall obtain approval from same to commence demolition activities.

6. Contractor shall comply to the fullest extent with the latest OSHA standards for excavation and trenching procedures. Contractor shall use support systems, sloping, benching, etc. as necessary for these operations, and shall comply with all OSHA performance criteria.

7. The contractor shall assume responsibility for the protection of all property corner monuments, benchmarks, control points, etc, and shall have, at his expense, all corner monuments replaced which are disturbed by construction activities.

8. The contractor shall incur all costs for maintenance and repair of the existing fences to remain, irrigation systems to remain, utility lines, etc, as outlined in the specifications.

9. The contractor shall locate and remove all underground utility cables (electric, telephone, etc.) up to a depth of 24 inches below grade as part of the base bid.

10. The contractor shall locate and remove all underground utility piping, conduit, and cables, regardless of depth, in the area of the proposed building(s) foundations.

11. Notes shown hereon regarding specific items of demolition are general in nature, and are not intended to be wholly inclusive. The contractor shall demolish and remove all existing improvements to the satisfaction of the owner, as necessary for the construction of the proposed improvements, and to the extent as noted in the specifications.

12. The contractor shall be responsible for plugging, capping, or otherwise terminating utility service lines at existing meter locations, cleanouts, etc. a min. distance of 1 foot outside the limits of the tract shown.

13. The contractor shall create ample staging and stockpiling areas for the deliveries of construction materials, concrete deliveries, topsoil, etc. in accordance with the owner's representative and the project specifications.

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 themself 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. Contractor shall, in base bid provide all necessary fittings and appurtenances required to complete all connections, resolve utility conflicts and other incidental utility work shown on the plans or contained in the specifications or required by governing agencies to include, but not limited to temporary services: valves, boxes, meters, backflow preventors, fire department connections, etc. including the repair or replacement of any existing irrigation system. Contractor shall raise/lower or adjust all existing utility mains in conflict with proposed utilities as part of the base bid for all known or unknown lines.

3. 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.

4. 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.

5. Contractor shall exercise caution and maintain adequate clear zone between the Contractor's equipment and any power lines.

6. 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.

7. The Contractor shall salvage all existing City utilities (including signs, valves, fire hydrants, etc.) in accordance with City requirements and provide to the City.

8. All utilities within 5' of proposed building(s) shall adhere to the MEP's recommendations and or requirements. Contractor shall provide storm drain connections for all roof drain lines. Refer to MEP's plans and related technical specifications. Civil utilities (water, sanitary sewer & storm sewer) limits begin 5' outside the building. In the event of of a conflict with the MEP's within this area, the MEP's requirements shall govern.

9. Testing of utility trench backfill compaction shall be at 75' intervals and each lift's backfill. Backfill shall be processed such that no dirt clods are in excess of 4" diameter. All sanitary sewer lines and storm sewer lines shall be TV tested at the completion of the project (in addition to minimum Code or other requirements) to check for damage caused by other trades, utility conflicts, trench settlement, etc. The cost of such shall be included in the contractors base price.

10. Concrete cut-off collars or clay plugs should be provided where utility lines cross building lines to prevent water from traveling in the trench backfill and entering beneath the structures.

PAVING NOTES

1. The Contractor shall be responsible for the cost of a maximum number of passing field density tests on the stabilized subgrade for site paving equal to the ratio of 1 per 5,000 square feet of pavement (and all failing density tests and required moisture density curves). Additional field density tests may be required for foundations refer to structural plans and specifications for such. In addition, the Contractor shall provide the Owner ten (10) passing site pavement cores for the Owners use in the Owner's testing for thickness and compressive strength. Core locations shall be designated by the Owner. Contractor shall patch core holes and finish with like and matching materials. Contractor shall be responsible for any additional testing costs should the above tests fail minimum criteria as established by City of Austin. Any non-conforming paving shall be replaced or resolved in accordance with City of Austin (typ.) specifications.

2. All earthwork and subgrade preparation shall be in accordance with the Geotechnical Investigation as prepared by Raba Kistener, Report No. AAA23-128-00, dated February 07, 2024 and those recommendations listed within the report. Refer to this report for all earthwork and related items. Refer to Structural for building prep. The report references agency/industry standards. In the event that there is a question or dispute between governing specifications, the most stringent shall apply such that the owner receives the most advantageous finished product.

3. 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.

4. All paving dimensions are to back of curb, and edge of pavement unless otherwise noted.

5. 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.

6. The Contractor shall protect any existing and/or proposed utilities, which are in the proposed subgrade during the subgrade stabilization process.

7. Contractor shall adjust all utilities (existing and proposed) to final grade (non-pay item). All utilities and appurtenances shall be extended up to final grade. Utility clean-outs, valves, manholes, etc. located within paved areas shall be paved per detail. In non-paved areas, said appurtenances shall have a 4" thick concrete pad extending 12" beyond said appurtenance (block out) poured at final grade for protection against damage from mowing and maintenance equipment.

8. Contractor shall place irrigation, electrical, and other sleeves prior to any paving, per the irrigation plan, or as directed by the Owner's representative with the curbs scored to identify the sleeve locations.

9. Unless otherwise noted, subgrade shall be stabilized to 12" beyond the back of curb or edge of pavement per Geotech recommendations unless stated otherwise. All concrete strength and reinforcing steel shall be per project geotechnical recommendations. 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.

10. 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.

11. For "curb inlets" subtract 0.5' (6 inches) for standard throat recess at inlets per standard Details. Surrounding pavement and gutter shall be warped to drain for inlets on grade and sag inlets. Inlets on grade shall be set in place to match the curb grade line.

12. All reinforcing steel and dowel bars in pavement shall be supported and maintained at the correct clearances by the use of bar chairs or other approved support.

13. 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).

14. Joint Spacing shall be as follows:
    - 5 inch pavement thickness - 10' joint spacing
    - 6+ inch pavement thickness - 12' joint spacing

    In areas where pavement thickness varies, the shorter joint spacing shall govern

15. 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).

EARTHWORK NOTES

1. Placement of 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.

3. Contractor to reference structural drawings for foundation subgrade improvement limits.

4. If not covered with concrete flatwork or pavements, the upper 2 feet of the 5 feet overbuild should consist of a cohesive clay with a Plasticity Index (PI) between 20 to 35 percent. The purpose of the clay cap is to reduce the potential for water to infiltrate the building pad causing the subgrade soils to swell. This overbuild cap shall extend no less than 10 feet from the building face.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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GENERAL NOTES

100% CD SUBMITTAL

Job. No.	Sheet No.
531023303	C1.01
Drawn By: NF	
Date: 03/20/2024	

THIS CONSTRUCTION PROJECT IS SUBJECT TO THE CONDITIONS GIVEN IN THE EDWARDS AQUIFER PROTECTION PLAN (EAPP) AND THE SEWAGE COLLECTION SYSTEM (SCS) PLAN 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
WATER POLLUTION ABATEMENT 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 REGULATED 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 MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.

3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

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

5. 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 APPROVED PLANS AND 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.

6. 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.

7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

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

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT 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.

11. THE FOLLOWING RECORDS SHALL 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.

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    D. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

    E. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

    F. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ORGANIZED SEWAGE COLLECTION SYSTEM
GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

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

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

5. 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. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.

8. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

9. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

   THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET __ OF __.

   IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

10. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).

11. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: ______________________________.

    IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: ____________________ ______.

    SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

12. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

    IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET __ OF __. (FOR POTENTIAL FUTURE LATERALS).

    THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET __ OF __ AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN
    SHEET __ OF __.

13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

14. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).

15. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:

    (a) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AN EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:

    (1) LOW PRESSURE AIR TEST.
    (A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(II) OF THIS PARAGRAPH.
    (B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
    (i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.
    (ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

    EQUATION C.3

    WHERE:

    T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
    K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
    D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
    L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
    Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE
    (C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

Pipe Diameter *(inches)*	Minimum Time *(second)*	Maximum Length for Minimum Time *(sec)*	Time for Longer Length *(seconds/foot)*
6	340	398	0.855
8	454	298	1.52
10	567	239	2.375
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	108	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

    (D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
    (E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
    (F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
    (G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

    (2) INFILTRATION/EXFILTRATION TEST.

    (A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.
    (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
    (C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.
    (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.
    (E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.

    (b) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST B FOLLOWED:
    (1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.
    (A) MANDREL SIZING.
    (i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE IDOF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
    (ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
    (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

    (B) MANDREL DESIGN.
    (i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
    (ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.
    (iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.
    (iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.

    (C) METHOD OPTIONS.
    (i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.
    (ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
    (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
    (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
    (3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
    (4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
    (5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
    (6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

16. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
    (a) ALL MANHOLES MUST PASS A LEAKAGE TEST.
    (b) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
    (1) HYDROSTATIC TESTING.
    (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
    (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
    (C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
    (2) VACUUM TESTING.
    (A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
    (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
    (C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
    (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
    (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
    (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
    (G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
    (H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

MATTHEW S. HARDY
134448
3-11-2024

TBPE Registration #: F-13709

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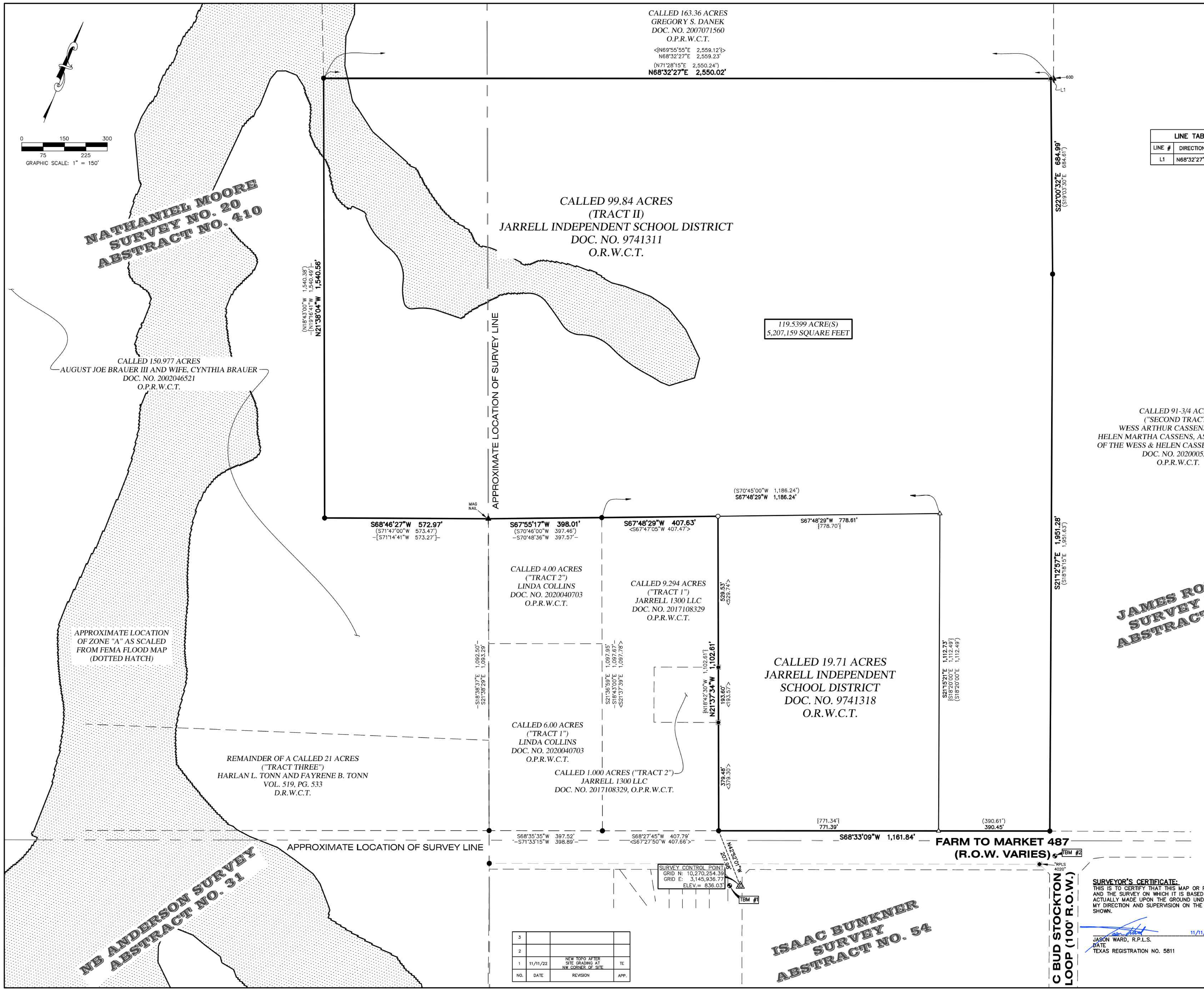
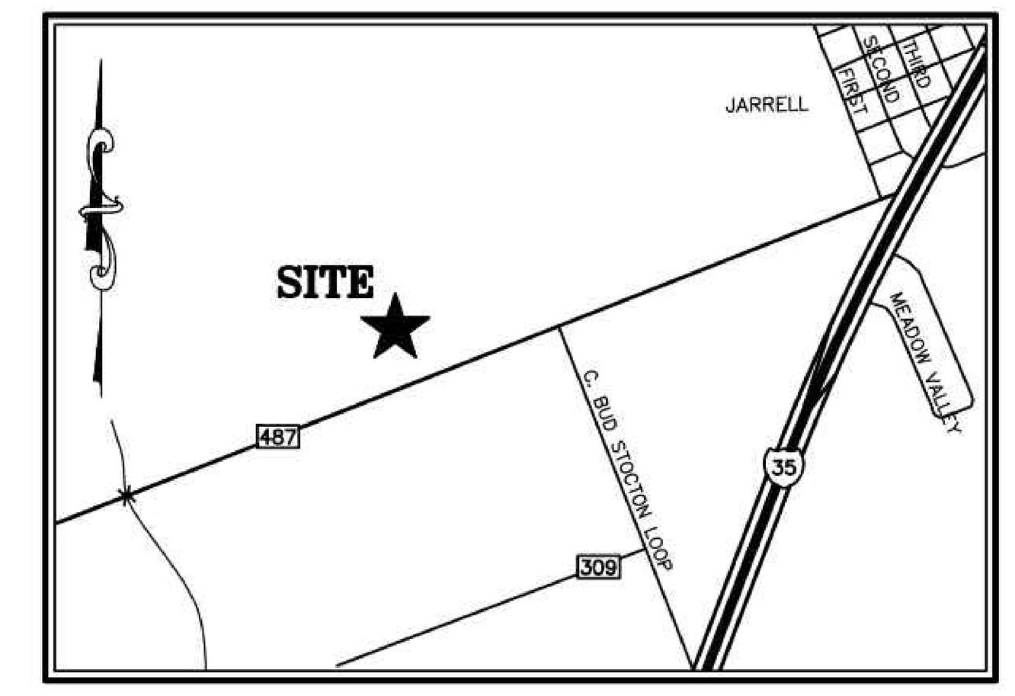
TCEQ NOTES

100% CD SUBMITTAL

Job. No. 531023303	Sheet No. C1.02
Drawn By: NF	
Date: 03/20/2024	





VICINITY MAP

SCALE: 1" = 2000'

LEGAL DESCRIPTION:
BEING A TRACT OF LAND CONTAINING 119.5399 ACRES (5,207,159 SQUARE FEET) BEING PARTIALLY OUT OF THE NATHANIEL MOORE SURVEY NO. 20, ABSTRACT NO. 410, AND BEING PARTIALLY OUT OF THE JAMES ROEBUCK SURVEY NO. 27, ABSTRACT NO. 527, BOTH IN WILLIAMSON COUNTY, TEXAS.

BEARING BASIS:
ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE, (4203), NAD83, ALL DISTANCES WERE ADJUSTED TO SURFACE USING A COMBINED SCALE FACTOR OF 1.000152968139.

SURVEY CONTROL:
STATE PLANE GRID CONTROL FOR THIS SURVEY IS BASED ON A 1/2" IRON ROD WITH "4WARD CONTROL" CAP SET, GRID COORDINATES AND ELEVATIONS (NAVD 88) SHOWN HEREON WERE DERIVED FROM OPUS SOLUTIONS TAKEN ON JULY 26, 2021, 4WARD CONTROL POINT WAS CHECKED TO CITY OF GEORGETOWN SURVEY CONTROL MONUMENT NO. 96–013, HAVING A PUBLISHED GRID COORDINATE & ELEVATION OF N 10,230,084.8541, E 3,134,539.7473, ELEV. 707.9280'.

FLOODPLAIN NOTE:
A PORTION OF THIS PROPERTY IS LOCATED PARTIALLY WITHIN ZONE "A", AREAS DETERMINED TO BE WITHIN THE 1% ANNUAL CHANCE FLOODPLAIN, AND PARTIALLY WITHIN ZONE 'X', AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON F.I.R.M. PANEL NO. 48491C 0125F, WILLIAMSON COUNTY, TEXAS DATED DECEMBER 20, 2019.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

GENERAL NOTES:
1) PROPERTY ADDRESS: FM 487, JARRELL, TEXAS 76537
2) THE LOCATION OF FENCES AND THE SIZE AND LOCATION OF UTILITY STRUCTURES, (IF SHOWN), MAY BE EXAGGERATED FOR GRAPHICAL CLARITY.
3) ADDITIONAL NUMBERS (IF SHOWN) IN THE TREE LIST AT THE END OF THE TREE DESCRIPTION, REPRESENT THE SIZES AND NUMBER OF MULTI–TRUNK TREES.
4) UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON UTILITY MAPS PROVIDED BY THE VARIOUS UTILITY COMPANIES. TEXAS811 WAS CONTACTED TO MARK UTILITIES FOR THIS SITE HOWEVER, NO UTILITIES WERE MARKED.
5) THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A TITLE COMMITMENT AND WOULD BE SUBJECT TO ANY AND ALL EASEMENTS, CONDITIONS OR RESTRICTIONS THAT A CURRENT TITLE COMMITMENT MAY DISCLOSE.

BENCHMARK NOTE:
TBM #1– SQUARE CUT ON TOP OF CONCRETE DRAINAGE INLET ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF BLACK OPAL DRIVE, ±200' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±196' SOUTHEAST OF THE SOUTHWEST CORNER OF CALLED 19.71 ACRE TRACT. ELEVATION = 835.98'.

TBM #2– SQUARE CUT ON TOP OF CONCRETE WALL ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF C. BUDD STOCKTON LOOP, ±90' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±90' SOUTHEAST OF THE SOUTHEAST CORNER OF CALLED 99.84 ACRE TRACT. ELEVATION = 844.55'.

BOUNDARY, TOPOGRAPHIC AND IMPROVEMENT SURVEY OF 119.5399 ACRES OUT OF THE JAMES ROEBUCK SURVEY NO. 27, ABSTRACT NO. 527, AND THE NATHANIEL MOORE SURVEY NO. 20, ABSTRACT NO. 410 City of Jarrell, Williamson County, Texas

SURVEYOR'S CERTIFICATE:
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WAS ACTUALLY MADE UPON THE GROUND UNDER MY DIRECTION AND SUPERVISION ON THE DATE SHOWN.

11/11/2022
JASON WARD, R.P.L.S.
DATE
TEXAS REGISTRATION NO. 5811

STATE OF TEXAS REGISTERED JASON WARD 5811 PROFESSIONAL LAND SURVEYOR

4WARD Land Surveying
A Limited Liability Company
PO Box 90876, Austin Texas 78709
WWW.4WARDLS.COM (512) 537-2384
TBPELS FIRM #10174300

Date:	11/11/2022
Project:	01280
Scale:	1" = 150'
Reviewer:	DV
Tech:	DDL
Field Crew:	TS/JC/WC
Survey Date:	NOV. 2022
Sheet:	1 OF 9

P:\01280\Dwg\01280_REV.dwg

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
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1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

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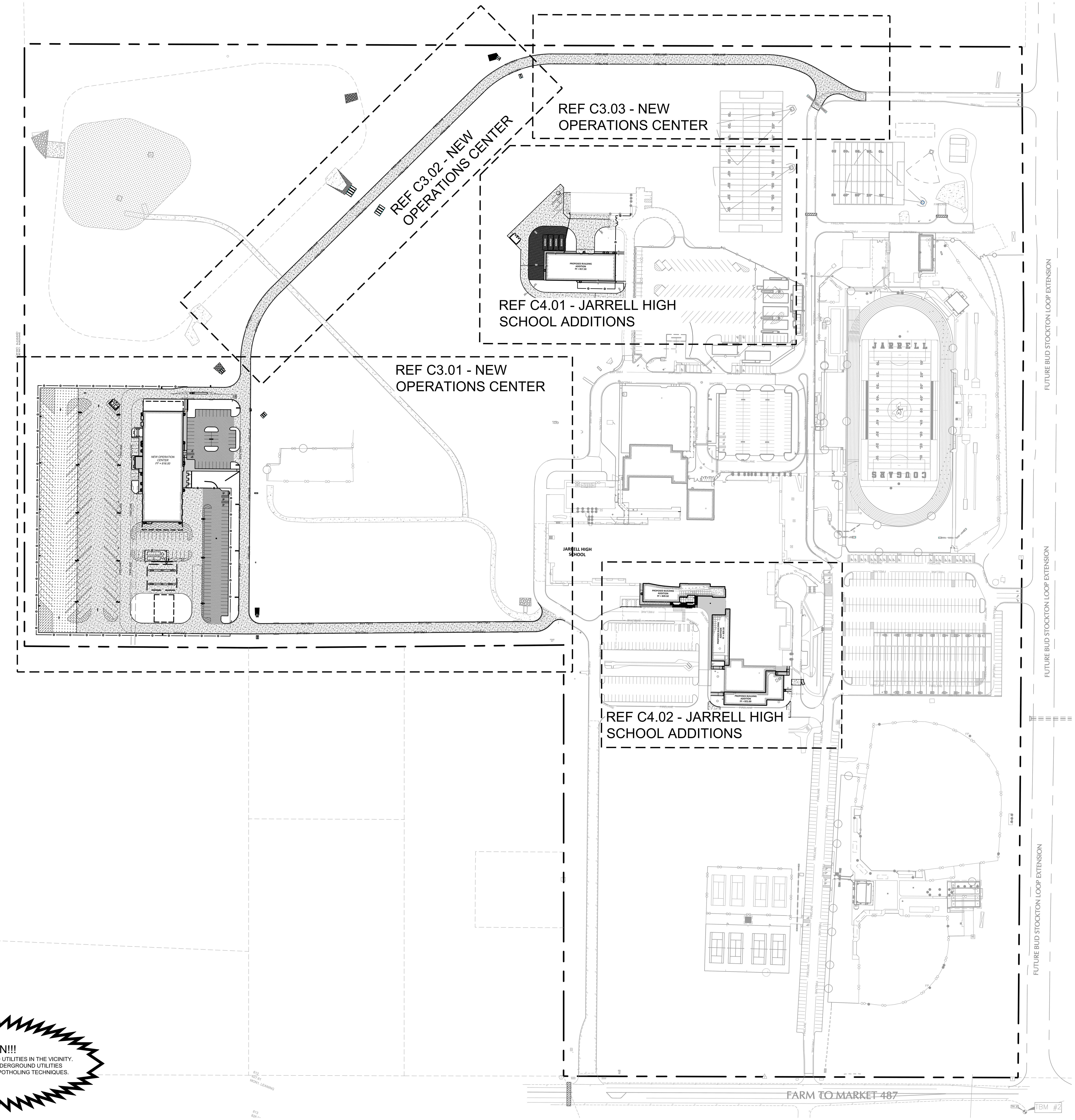
TOPOGRAPHIC SURVEY

100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C1.03
Date: 03/20/2024	



GRAPHIC SCALE
0 100 200 FEET

LEGEND

PROPOSED FACE AND BACK OF CURB	
PROPOSED HEAVY DUTY PAVEMENT 6" REINFORCED MIN. 3,600 PSI CONCRETE WITH #3 REBAR @ 18" O.C.E.W. OVER 4" FLEXIBLE BASE REFERENCE GEOTECH REPORT	
PROPOSED LIGHT DUTY PAVEMENT 5" REINFORCED MIN. 3,600 PSI CONCRETE WITH #3 REBAR @ 18" O.C.E.W. OVER 4" FLEXIBLE BASE REFERENCE GEOTECH REPORT	
BASE BID. 6" COMPACTED TxDOT ITEM 247 TYPE A GRADE 1-2. BID ALTERNATE 1 - PROPOSED HEAVY DUTY PAVEMENT PER DESCRIPTION ABOVE	
PROPOSED SIDEWALK REFERENCE PAVING DETAILS FOR PANEL SCHEDULE	
PROPOSED SIGN	
PAINTED TRAFFIC ARROW	
FIRE LANE STRIPING	
PROPOSED FIRE HYDRANT	FH
PROPOSED SANITARY MANHOLE	
PROPOSED CURB INLET	
PROPOSED GRATE INLET	
PROPOSED LIGHTING	

WPAP CALCULATIONS

SITE AREA: 119.54 ACRES

IMPERVIOUS SUMMARY

EXISTING IMPERVIOUS COVER	26.90 AC (22.5%)
OPERATIONS CENTER IC INCREASE	8.82 AC
AG BARN IC INCREASE	1.06 AC
ADMIN AND BAND IC INCREASE	0.29 AC
NET PROJECT IC INCREASE	10.17 AC
TOTAL IC	37.07 AC (31%)

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

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

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 4WARD LAND SURVEYING. 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.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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OVERALL SITE PLAN

100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C3.00
Date: 03/20/2024	

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 $\geq$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 STORMWATER 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 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 SEQUENCE

1. INSTALL EROSION PROTECTION AS SHOWN ALONG PERIMETER OF PROPERTY AND DISTURBED AREAS.
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 TURF PROJECT NOTES.
15. REMOVE ALL TEMPORARY CONTROL DEVICES CONSTRUCTION EXIT.

** NOTICE TO CONTRACTORS - TOPOGRAPHIC SURVEY **

TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PERFORMED BY 4WARD LAND SURVEYING. 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.

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.

EROSION CONTROL MAINTENANCE NOTES

1. ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTI0N 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.

SITE DATA

TOTAL LAND AREA: 119.54 AC
DISTURBED AREA: 19.53 AC
IMPERVIOUS: 8.82 AC
PERVIOUS: 10.71 AC

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 C4.00 GRADING PLAN, C3.01 SITE PLAN, AND SPECIFICATION 32 9200 TO COORDINATE PLANTING ENHANCEMENTS AND LIMITS OF TEMPORARY IRRIGATION COVERAGE.

MATERIAL STORAGE - NOTICE TO CONTRACTOR ***

THE CONTRACTOR SHALL NOTE ON SITE PLAN THE LOCATION OF ALL MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREAS, 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.

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

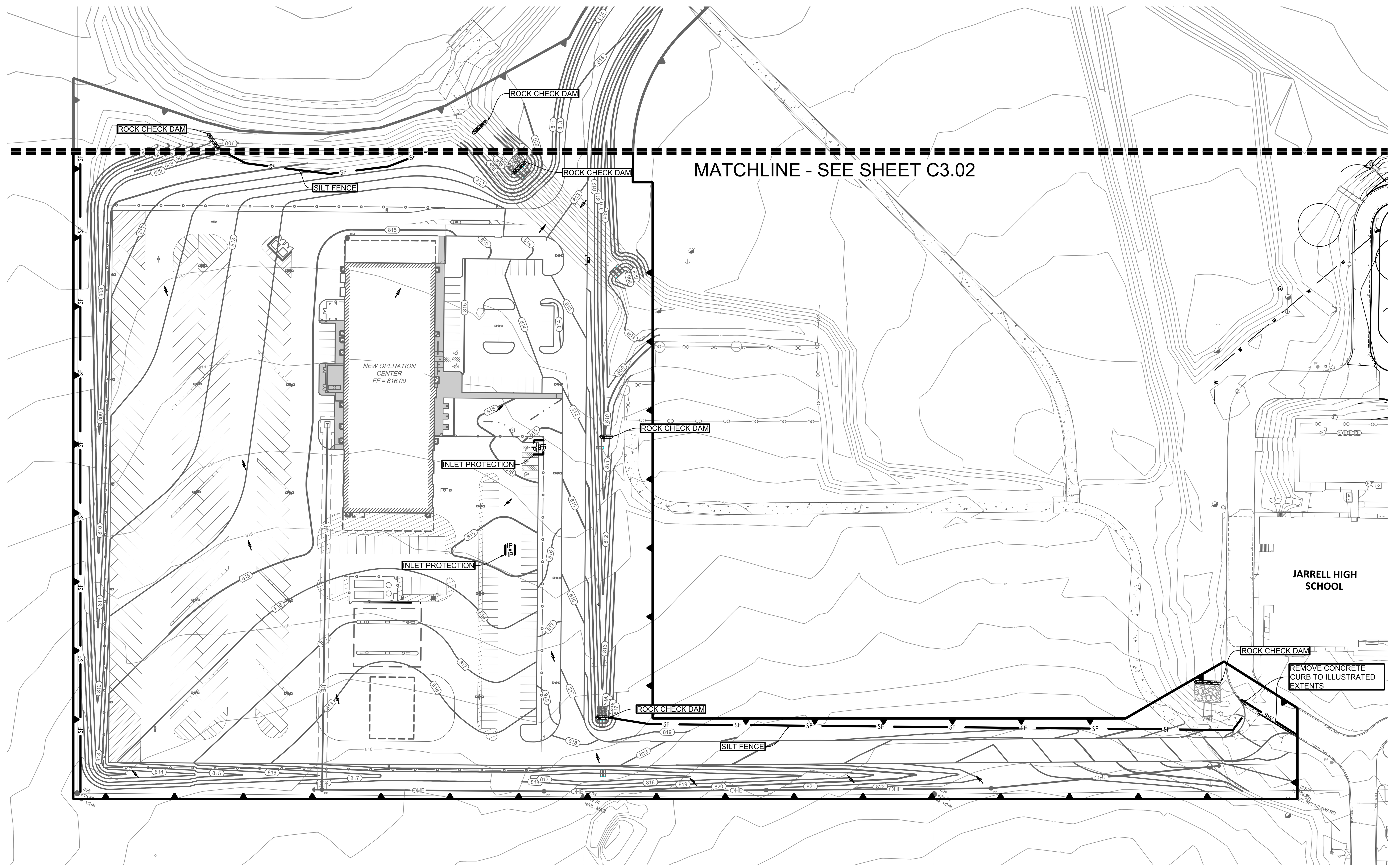
GRAPHIC SCALE
0 60 120 FEET

LEGEND

INLET PROTECTION	— IP — IP —
SILT FENCE	— SF —
LIMITS OF DISTURBANCE	
CONSTRUCTION EXIT	
ROCK CHECK DAM	
EXISTING FLOW ARROW	
PROPOSED FLOW ARROW	

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.



Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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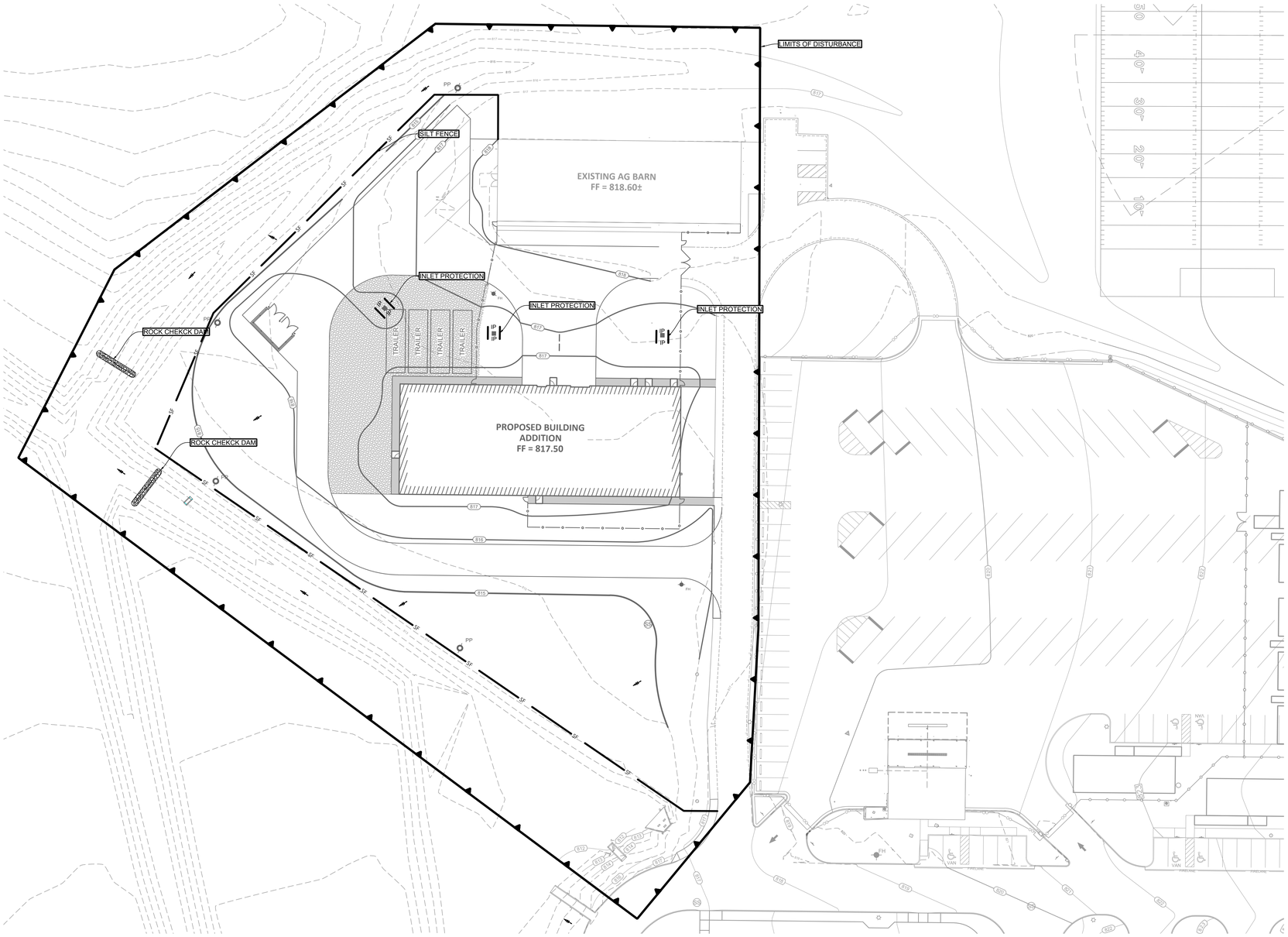
EROSION CONTROL & DEMOLITION PLAN

100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C2.00
Date: 03/20/2024	



GRAPHIC SCALE

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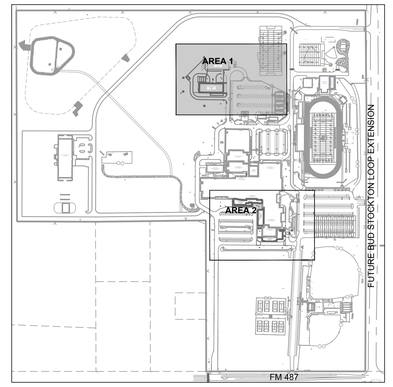

KEY MAP
N.T.S.

Revision / Date

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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JARRELL HS ADDITIONS
PACKAGE 1 -
EROSION CONTROL
PLAN AREA 1

Job. No.	Sheet No.
531023304	C2.00
Drawn By: AM	
Date: 03/08/2024	

****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 4WARD LAND SURVEYING. 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.

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 SEDIMENT 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.

LEGEND

INLET PROTECTION	IP — IP
SILT FENCE	SF
STRAW WATTLE	SW
LIMITS OF DISTURBANCE	
ROCK CHECK DAM	
EXISTING FLOW ARROW	

SITE DATA

TOTAL LAND AREA: 119.54 AC
DISTURBED AREA: 4.01 AC
IMPERVIOUS: 1.20 AC
IMPERVIOUS DEMO: 0.03 AC (1,597.51 SF)
PERVIOUS: 2.61 AC
GRAVEL: 0.20 AC (8,761.98 SF)

MATERIAL STORAGE - NOTICE TO CONTRACTOR ***

THE CONTRACTOR SHALL NOTE ON SITE PLAN THE LOCATION OF ALL MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREAS,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.

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. MATERIALS AND PROCEDURE TO BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 9200 - TURF AND GRASSES.

NOTE - SWPPP

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

!!!CAUTION!!!

EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY.
VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES
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811
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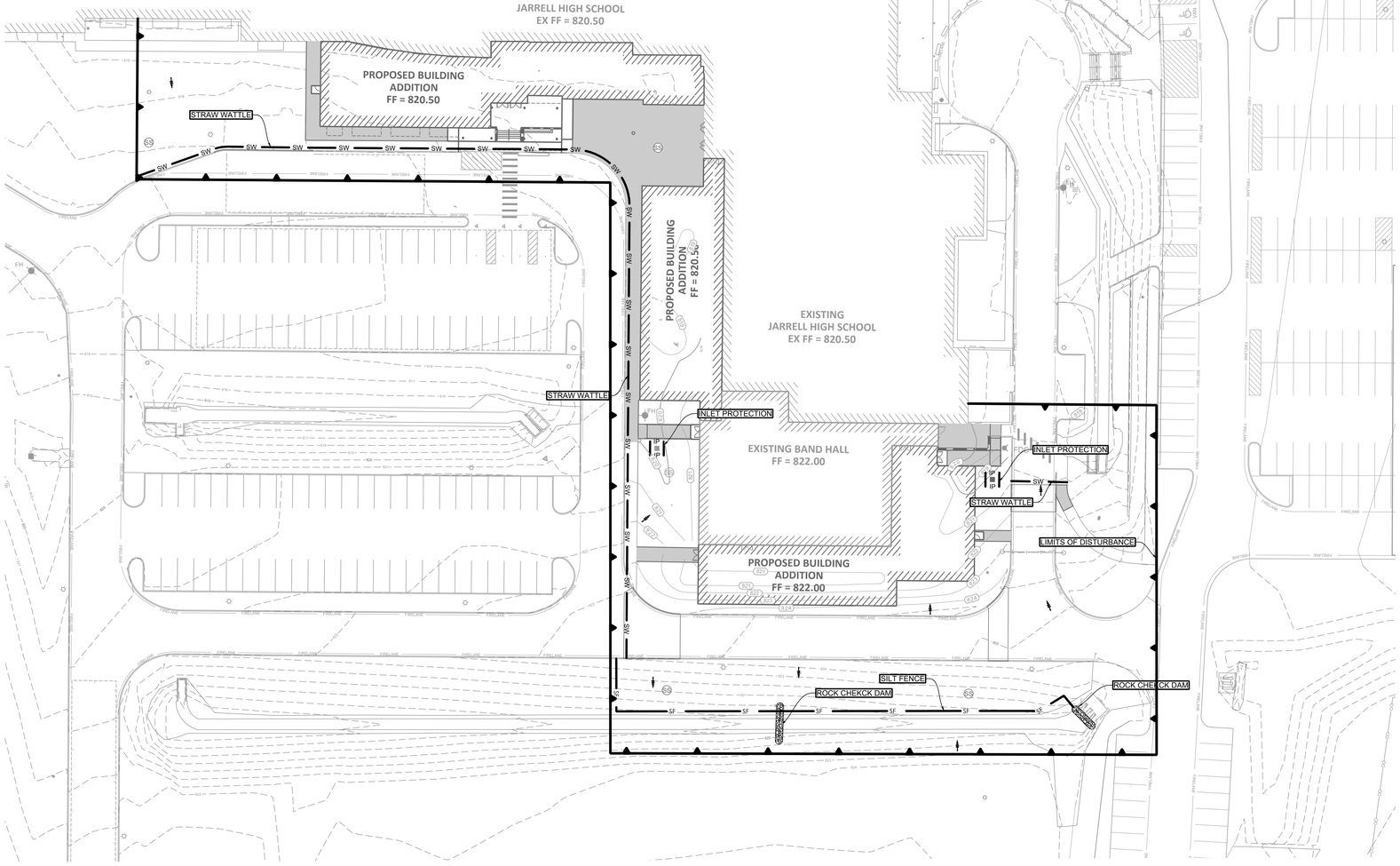

GRAPHIC SCALE

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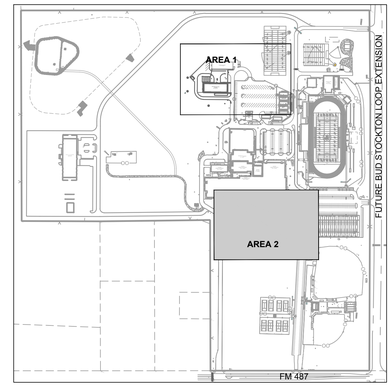

KEY MAP
N.T.S.

LEGEND

INLET PROTECTION	IP — IP
SILT FENCE	SF
STRAW WATTLE	SW
LIMITS OF DISTURBANCE	
ROCK CHECK DAM	
EXISTING FLOW ARROW	

Revision / Date

Project:

ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
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JARRELL HS ADDITIONS
PACKAGE 1 -
EROSION CONTROL PLAN
AREA 2

Job. No. 53102304	Sheet No. C2.01
Drawn By: AM	
Date: 03/08/2024	

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.

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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 SECTION 5 OF 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.
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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.

SITE DATA

TOTAL LAND AREA: 119.54 AC
DISTURBED AREA: 2.03 AC
IMPERVIOUS: 1.41 AC
IMPERVIOUS DEMO: 0.41 AC (17,914.9 SF)
PERVIOUS: 0.62 AC (27,074.35 SF)

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.

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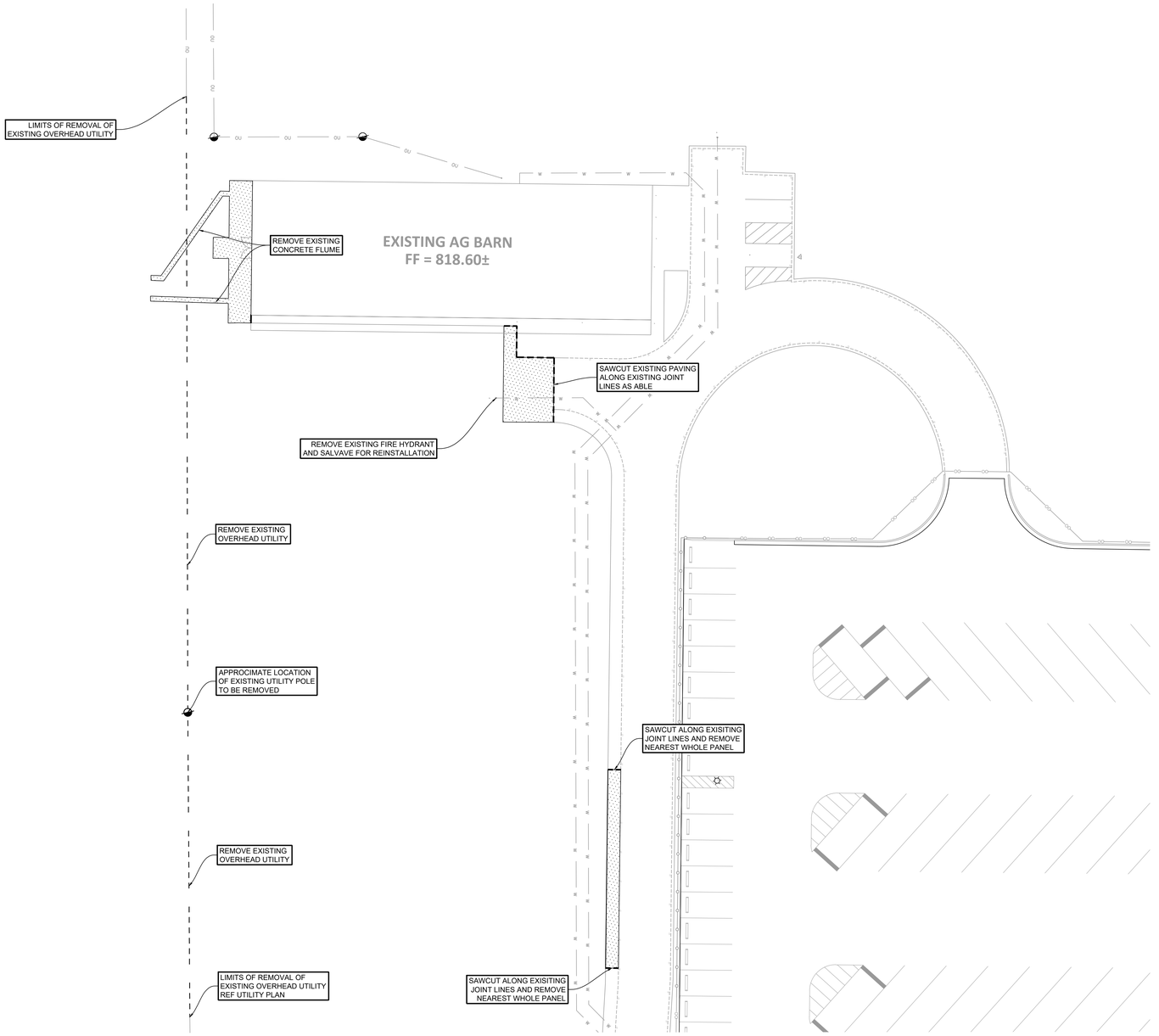


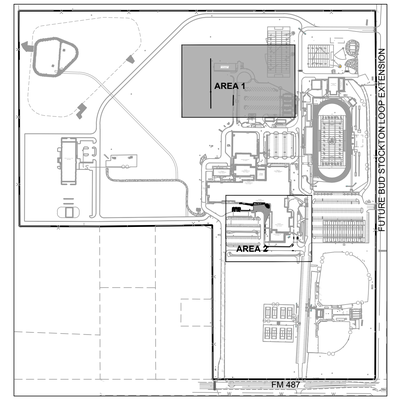
GRAPHIC SCALE

0 30 60 FEET

LEGEND

PAVEMENT REMOVAL

SAWCUT



KEY MAP
N.T.S.

NOTICE TO CONTRACTORS - UTILITIES

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** IMPORTANT DEMOLITION NOTE ***

IT IS NOT KNOWN BY LANGAN, THE INTEGRITY OF THE EXISTING IRRIGATION SYSTEM. THEREFORE, PRIOR TO ANY DEMOLITION, THE IRRIGATION CONTRACTOR SHALL MEET WITH DISTRICT MAINTENANCE PERSONNEL TO LOCATE LIMITS OF COVERAGE AND EXISTING SYSTEM FAILURES. WITH AN UNDERSTANDING OF PROPOSED IMPROVEMENTS, THE DISTRICT AND CONTRACTOR SHALL DETERMINE WHERE TO PRESERVE THE EXISTING IRRIGATION SYSTEM TO QUANTIFY PROPOSED INSTALLATION LIMITS. THE CONTRACTOR SHALL THEN CAP AND/OR TERMINATE THE EXISTING MAINLINE, CONTROL WIRES, AND LATERALS WITHIN APPROPRIATE IRRIGATION BOXES. ANY COMPONENTS OF THE EXISTING SYSTEM TO BE SALVAGED SHALL BE DETERMINED BY THE DISTRICT.

!!!CAUTION!!!

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

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

Revision / Date

Project:

ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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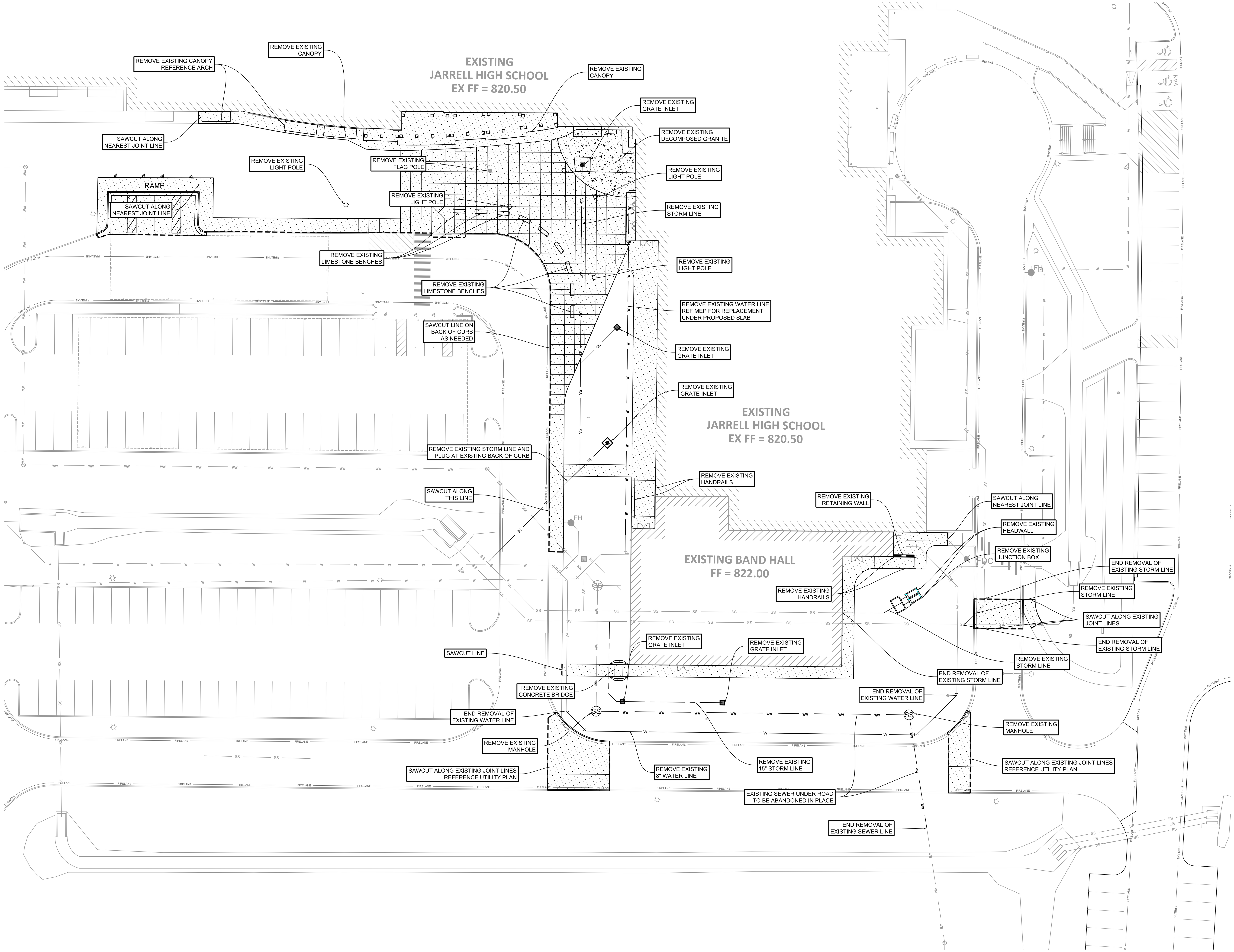
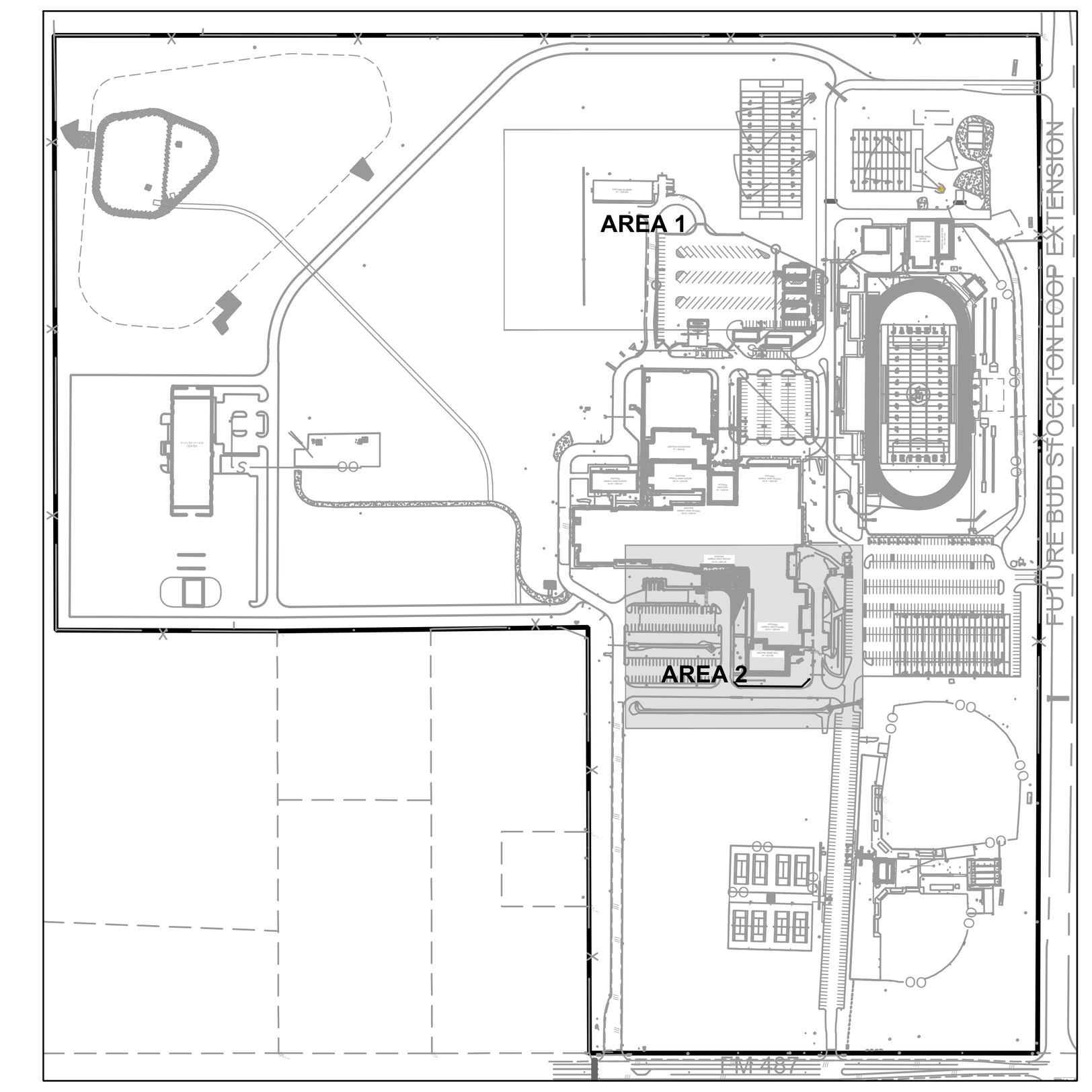
JARRELL HS ADDITIONS
PACKAGE 1 -
DEMOLITION PLAN
AREA 1

Job. No. 53102304	Sheet No. C3.00
Drawn By: AM	
Date: 03/05/2024	



LEGEND

PAVEMENT REMOVAL	
SAWCUT	



KEY MAP
N.T.S.

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 **

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** IMPORTANT DEMOLITION NOTE ***

IT IS NOT KNOWN BY LANGAN, THE INTEGRITY OF THE EXISTING IRRIGATION SYSTEM. THEREFORE, PRIOR TO ANY DEMOLITION, THE IRRIGATION CONTRACTOR SHALL MEET WITH DISTRICT MAINTENANCE PERSONNEL TO LOCATE LIMITS OF COVERAGE AND EXISTING SYSTEM FAILURES. WITH AN UNDERSTANDING OF PROPOSED IMPROVEMENTS, THE DISTRICT AND CONTRACTOR SHALL DETERMINE WHERE TO PRESERVE THE EXISTING IRRIGATION SYSTEM TO QUANTIFY PROPOSED INSTALLATION LIMITS. THE CONTRACTOR SHALL THEN CAP AND/OR TERMINATE THE EXISTING MAINLINE, CONTROL WIRES, AND LATERALS WITHIN APPROPRIATE IRRIGATION BOXES. ANY COMPONENTS OF THE EXISTING SYSTEM TO BE SALVAGED SHALL BE DETERMINED BY THE DISTRICT.

!!!CAUTION!!!
EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY. VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES BY GROUND PENETRATING RADAR, VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

811
Know what's **below.**
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THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

Revision / Date

Project:
ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024
TBPE Registration #: F-13709

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JARRELL HS ADDITIONS PACKAGE 1 - DEMOLITION PLAN AREA 2

Job. No. 531023304	Sheet No.
Drawn By: AM	C3.01
Date: 03/08/2024	

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%)

NOTICE TO CONTRACTORS - UTILITIES

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SYMBOL KEY

1. PROPOSED FIRE HYDRANT REFER TO UTILITY PLAN (TYP)
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 REFER TO MEP PLANS
8. PROPOSED LAYDOWN CURB/ MAINTENANCE CROSSING REFER TO PAVING DETAILS (TYP)
9. PROPOSED MOW STRIP REFER TO PAVING DETAILS (TYP)

SIGNAGE SYMBOL KEY

A	"STOP" SIGN (R1-1)
B	"DO NOT ENTER" SIGN (R5-1)
F	ACCESSIBLE PARKING SIGNAGE IN BOLLARD
H	VAN ACCESSIBLE PARKING SIGNAGE IN BOLLARD

PARKING COUNT SUMMARY

PROPOSED BUS SPACES
88 - PROPOSED SPACES

PROPOSED CAR SPACES
132 - PROPOSED SPACES
5 - PROPOSED ACCESSIBLE SPACES

226 - TOTAL PROPOSED SPACES

WPAP CALCULATIONS

SITE AREA: 119.54 ACRES

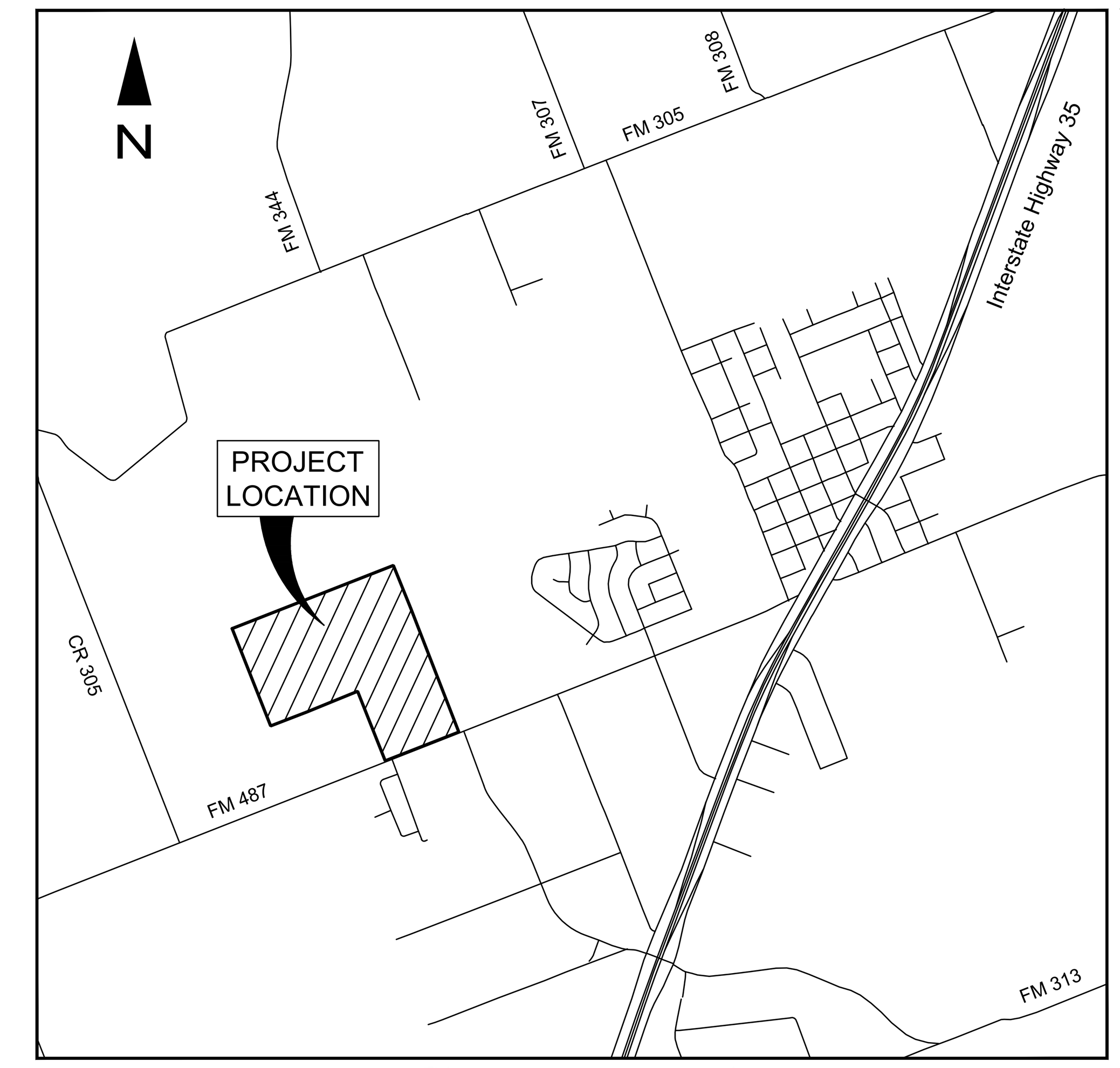
IMPERVIOUS SUMMARY

STRUCTURES/ROOFTOPS	28,982 SQ FT = 0.67 AC
PARKING, ACCESS DRIVES & SIDEWALKS	349,687 SQ FT = 8.03 AC
OTHER IMPERVIOUS COVER	5,415 SQ FT = 0.12 AC
TOTAL IC	384,084 SQ FT = 8.82 AC

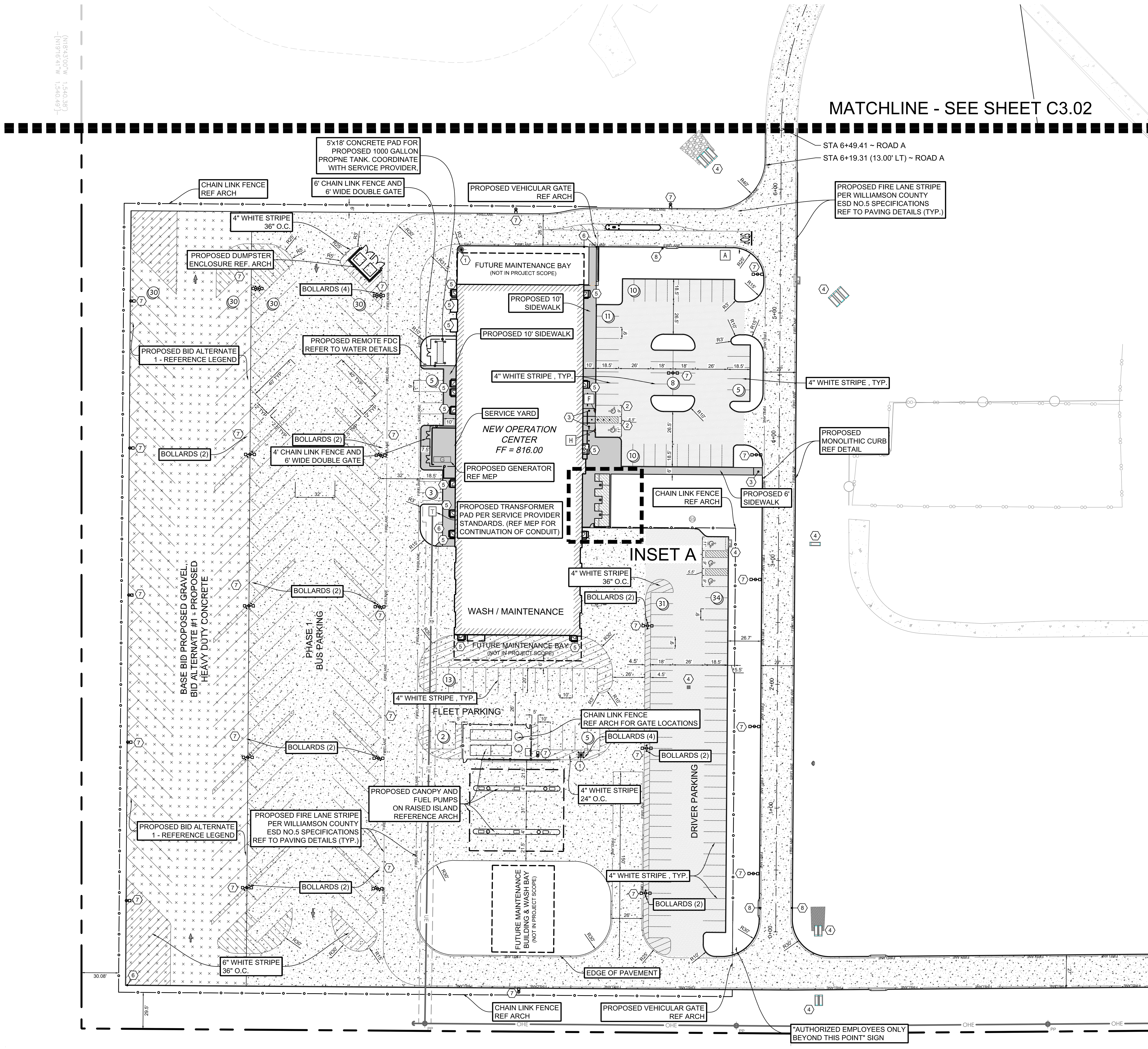
!!!CAUTION!!!
EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY. VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES BY VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

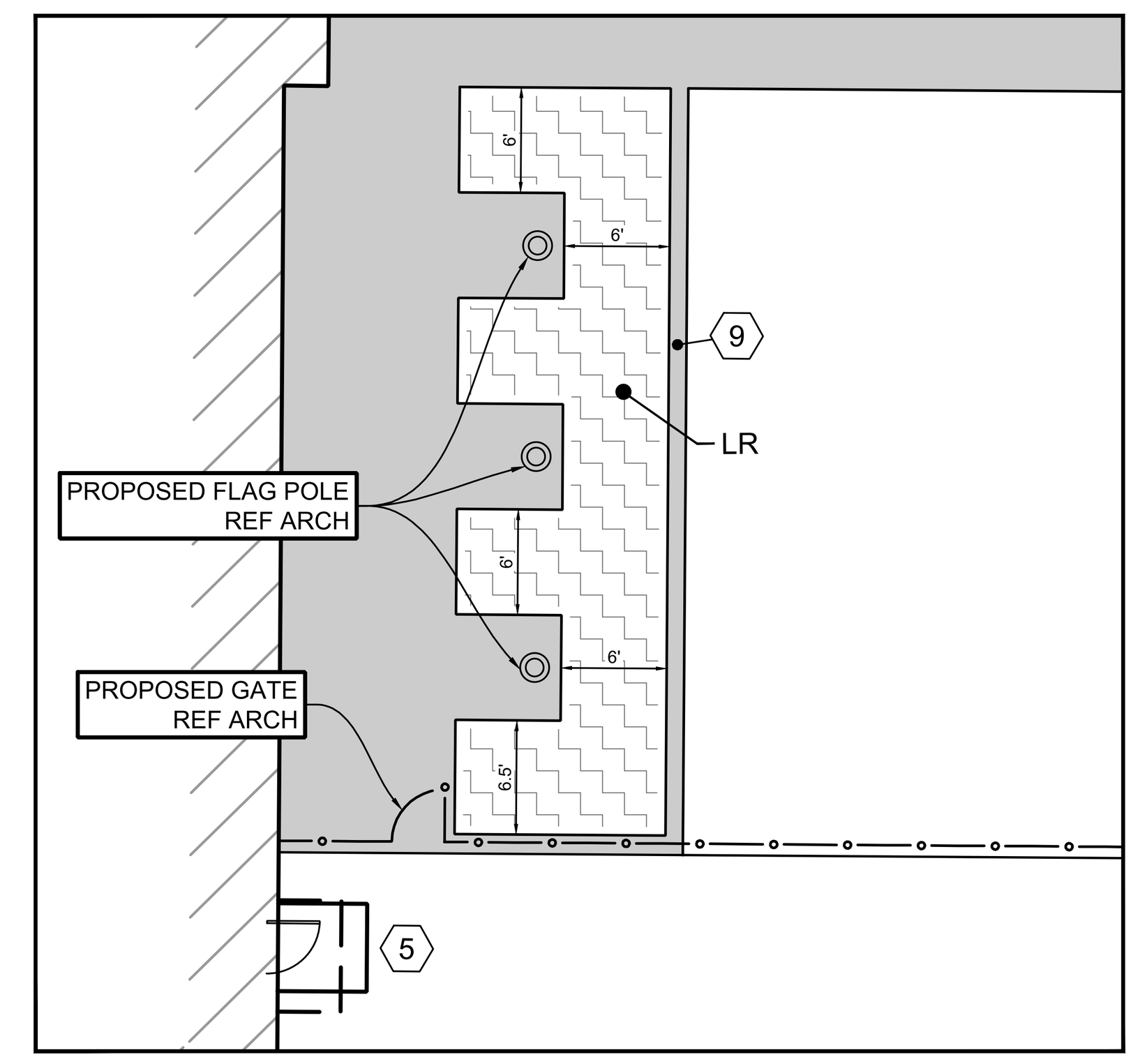
LEGEND

- PROPOSED FACE AND BACK OF CURB
- PROPOSED HEAVY DUTY PAVEMENT. 6" REINFORCED MIN. 3,600 PSI CONCRETE WITH #3 REBAR @ 18" O.C.E.W. OVER 4" FLEXIBLE BASE. REFERENCE GEOTECH REPORT
- PROPOSED LIGHT DUTY PAVEMENT. 5" REINFORCED MIN. 3,600 PSI CONCRETE WITH #3 REBAR @ 18" O.C.E.W. OVER 4" FLEXIBLE BASE. REFERENCE GEOTECH REPORT
- BASE BID: 6" COMPACTED TxDOT ITEM 247 TYPE A GRADE 1-2. BID ALTERNATE 1 - PROPOSED HEAVY DUTY PAVEMENT PER DESCRIPTION ABOVE
- PROPOSED SIDEWALK. REFERENCE PAVING DETAILS FOR PANEL SCHEDULE
- PROPOSED SIGN
- PAINTED TRAFFIC ARROW
- FIRE LANE STRIPING
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- PROPOSED LIGHTING
- ACCESSIBLE ROUTE
- PARKING COUNT



SITE MAP
1" = 2,000'





INSET "A"
SCALE: 1"=10'

GRAPHIC SCALE
0 40 80 FEET

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Landscape Material List

SYM.	KEY	QTY.	COMMON NAME / SCIENTIFIC NAME	O.C.	ROOT	SIZE	HEIGHT	SPREAD	COMMENT
	LR	331 sf	Giant Lily Turf / Liriope gigantea	15"	Cont.	1 gal.	3'	3'	Surrounded with hardwood mulch

In Accordance to the Current Edition of The American Standard for Nursery Stock

Revision / Date

Project: NEW OPERATIONS CENTER FOR JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

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STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

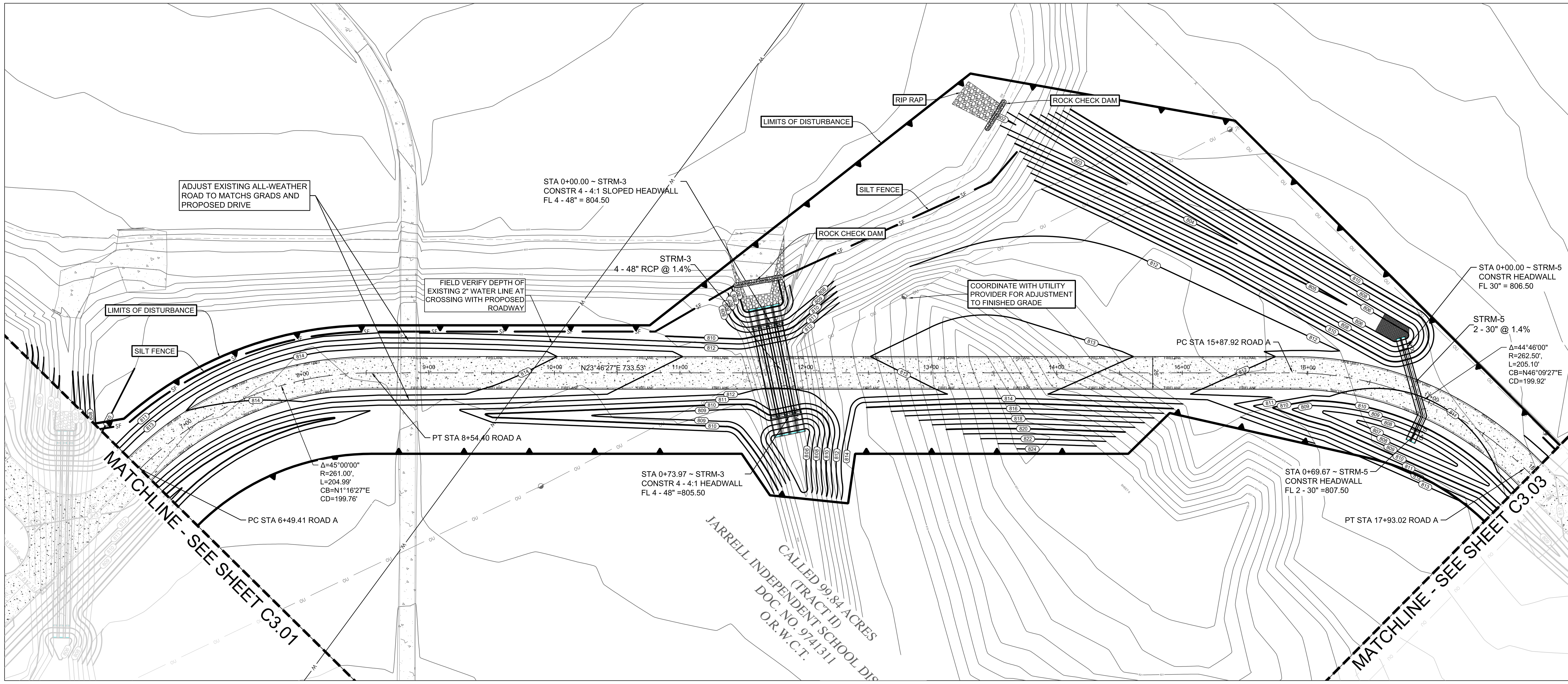
TBPE Registration #: F-13709

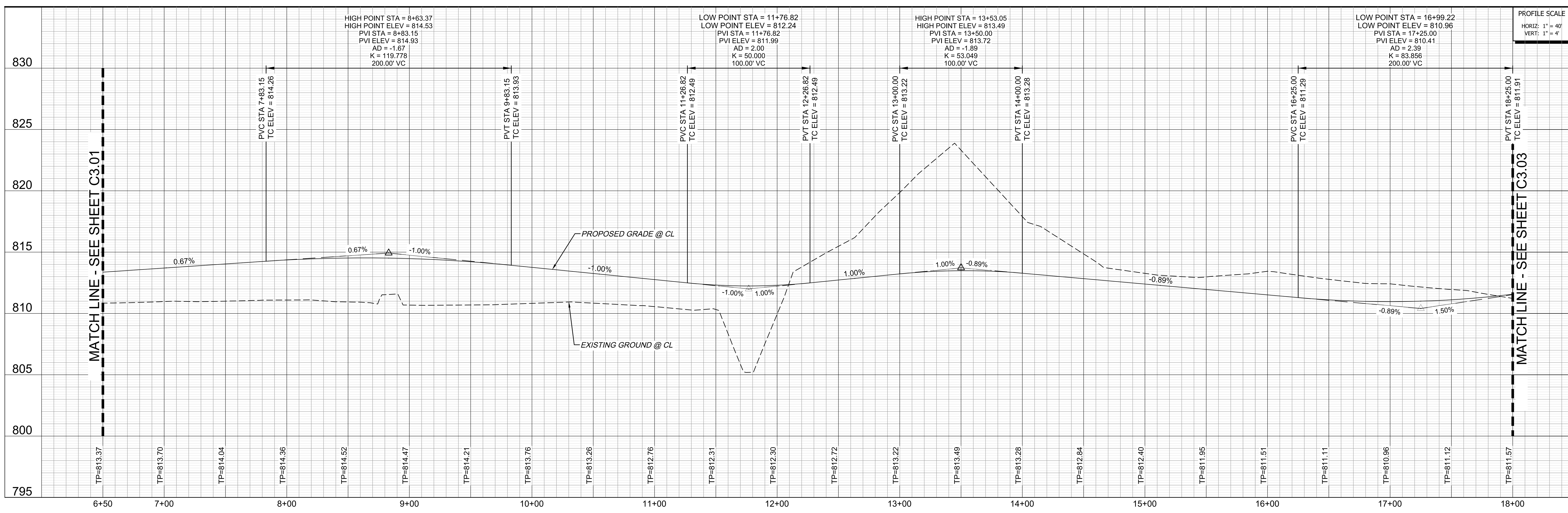
SITE PLAN

100% CD SUBMITTAL

Job. No. 531023303
Drawn By: NF
Date: 03/20/2024

Sheet No.
C3.01





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Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
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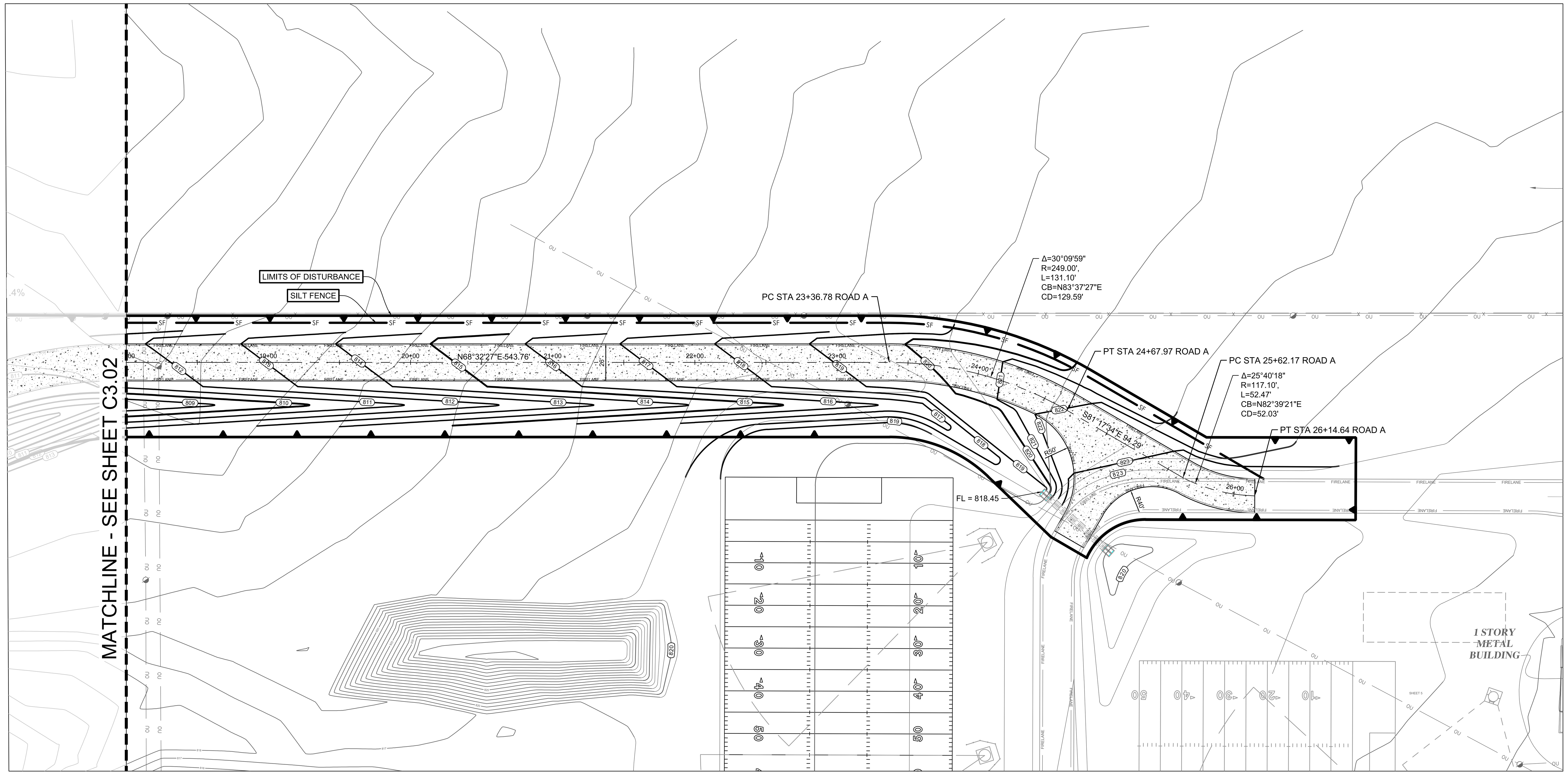
PAVING PLAN PROFILE
(1 OF 2)

100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C3.02
Date: 03/20/2024	

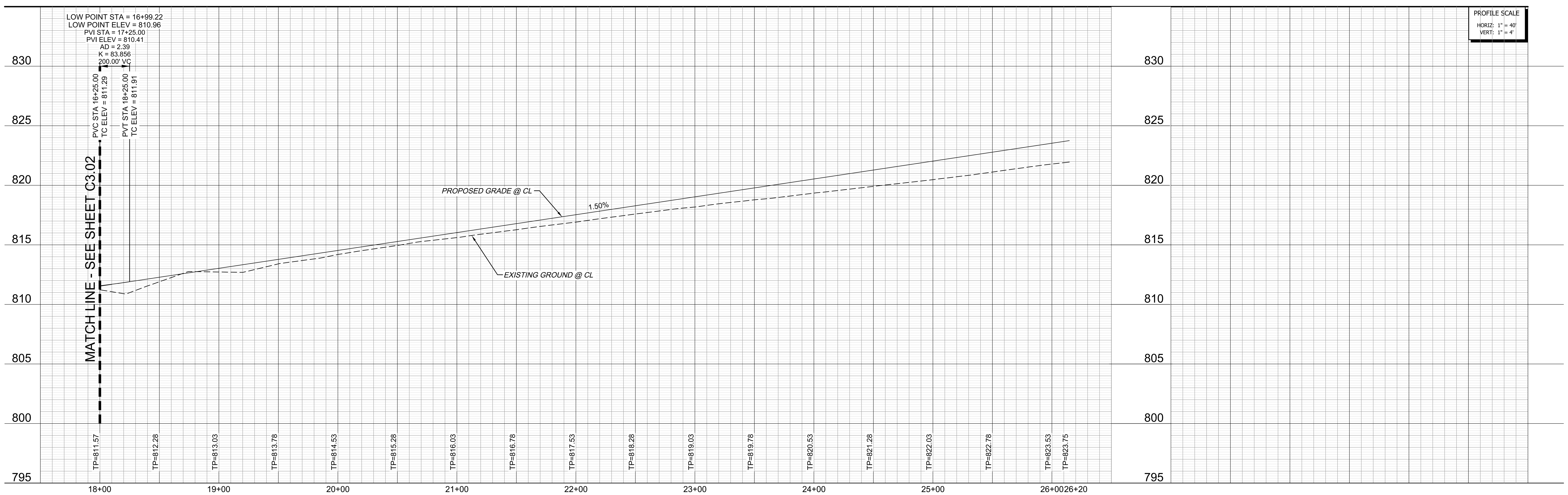


GRAPHIC SCALE

0 40 80 FEET

LEGEND

PROPOSED EDGE OF PAVEMENT	
PROPOSED HEAVY DUTY PAVEMENT, 6" REINFORCED MIN. 3,600 PSI CONCRETE WITH #3 REBAR @ 18" O.C.E.W. OVER 4" FLEXIBLE BASE. REFERENCE GEOTECH REPORT	
TP	TOP OF PAVEMENT
PROPOSED CONTOUR	
EXISTING CONTOUR	



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Revision / Date

Project: NEW OPERATIONS CENTER FOR JARRELL ISD 1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

MATTHEW S. HARDY 134448 LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS — 3-11-2024

TBPE Registration #: F-13709

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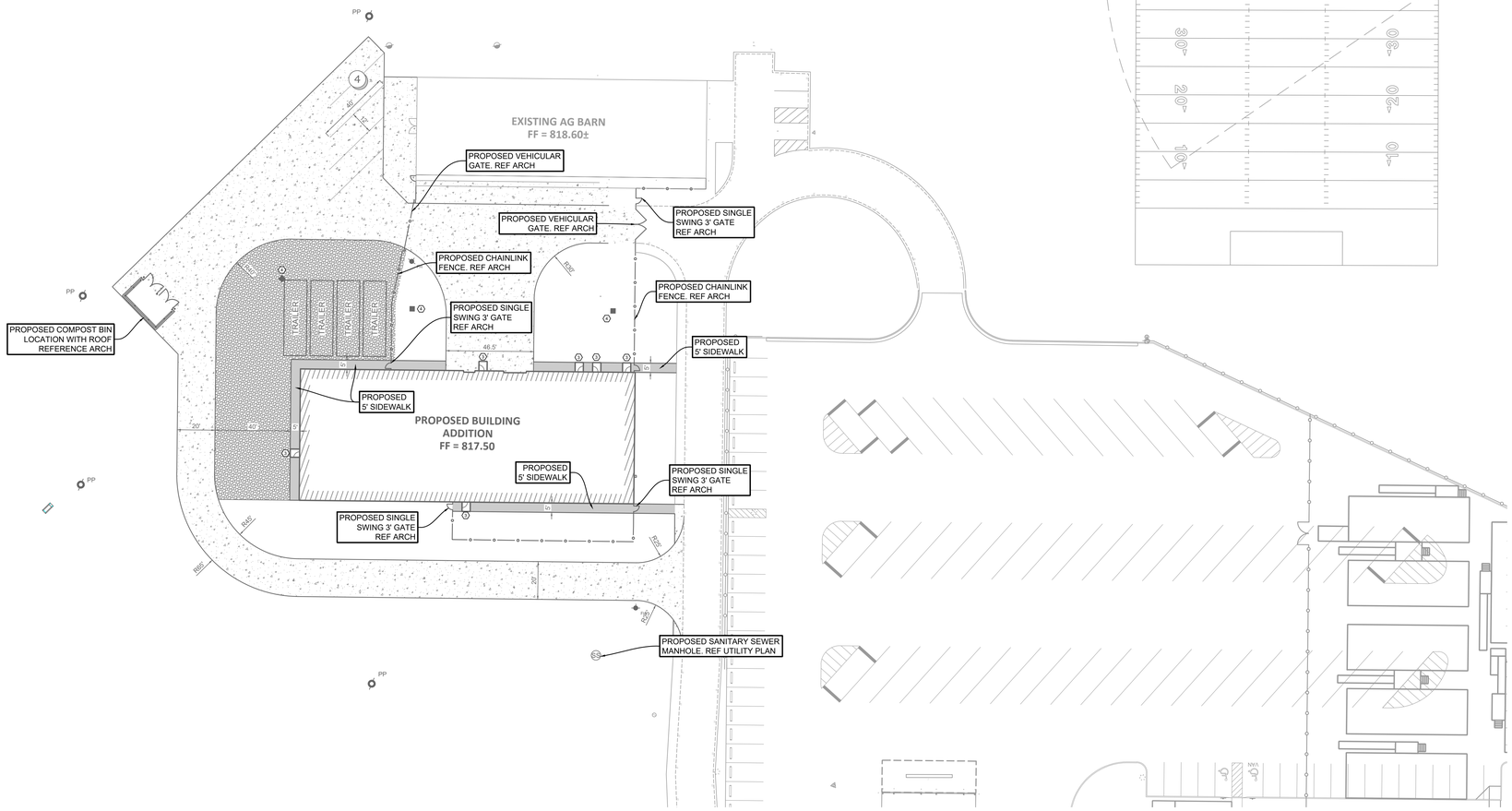
PAVING PLAN PROFILE (2 OF 2)

100% CD SUBMITTAL

Job No. 531023303	Sheet No.
Drawn By: NF	C3.03
Date: 03/20/2024	



KEY MAP
N.T.S.

LEGEND

PROPOSED FACE AND BACK OF CURB	═
PROPOSED ACCESS DRIVE PAVEMENT 6.5" REINFORCED PCC 6" RECOMPACTED SUBGRADE NO. 3 BARS @ 18" O.C.E.W. REF GEOTECH RECOMMENDATIONS	▨
PROPOSED SIDEWALK REF PAVING DETAILS	▨
PROPOSED GRAVEL REF PAVING DETAILS	▨
PROPOSED SIGN	–o–
PROPOSED RETAINING WALL	▬
FIRE LANE STRIPING	—— FIRELANE ——
PROPOSED FIRE HYDRANT	● FH
PROPOSED SANITARY MANHOLE	SS
ACCESSIBLE ROUTE	● ● ● ● ●
PARKING COUNT	①

SYMBOL KEY

1	INSTALL BARRIER FREE RAMP (BFR) REFER TO PAVING DETAILS (TYP)
2	CURB TRANSITION REFER TO PAVING DETAILS (TYP)
3	PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
4	PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)
5	EXISTING LIGHT POLE

WPAP CALCULATIONS

SITE AREA: 119.54 ACRES

IMPERVIOUS SUMMARY	
DEMOLITION	1,598 SQ FT = 0.03 AC
STRUCTURES/ROOFTOPS	12,345 SQ FT = 0.28 AC
PARKING, ACCESS DRIVES & SIDEWALKS	26,867 SQ FT = 0.62 AC
COMPACTED GRAVEL	8,762 SQ FT = 0.20 AC
NET TOTAL IC INCREASE	46,376 SQ FT = 1.06 AC

STANDARD ACCESSIBILITY REQUIREMENTS

PARKING:

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

RAMPS:

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Revision / Date

Project:

ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

MATTHEW S. HARDY
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TBPE Registration #: F-13709

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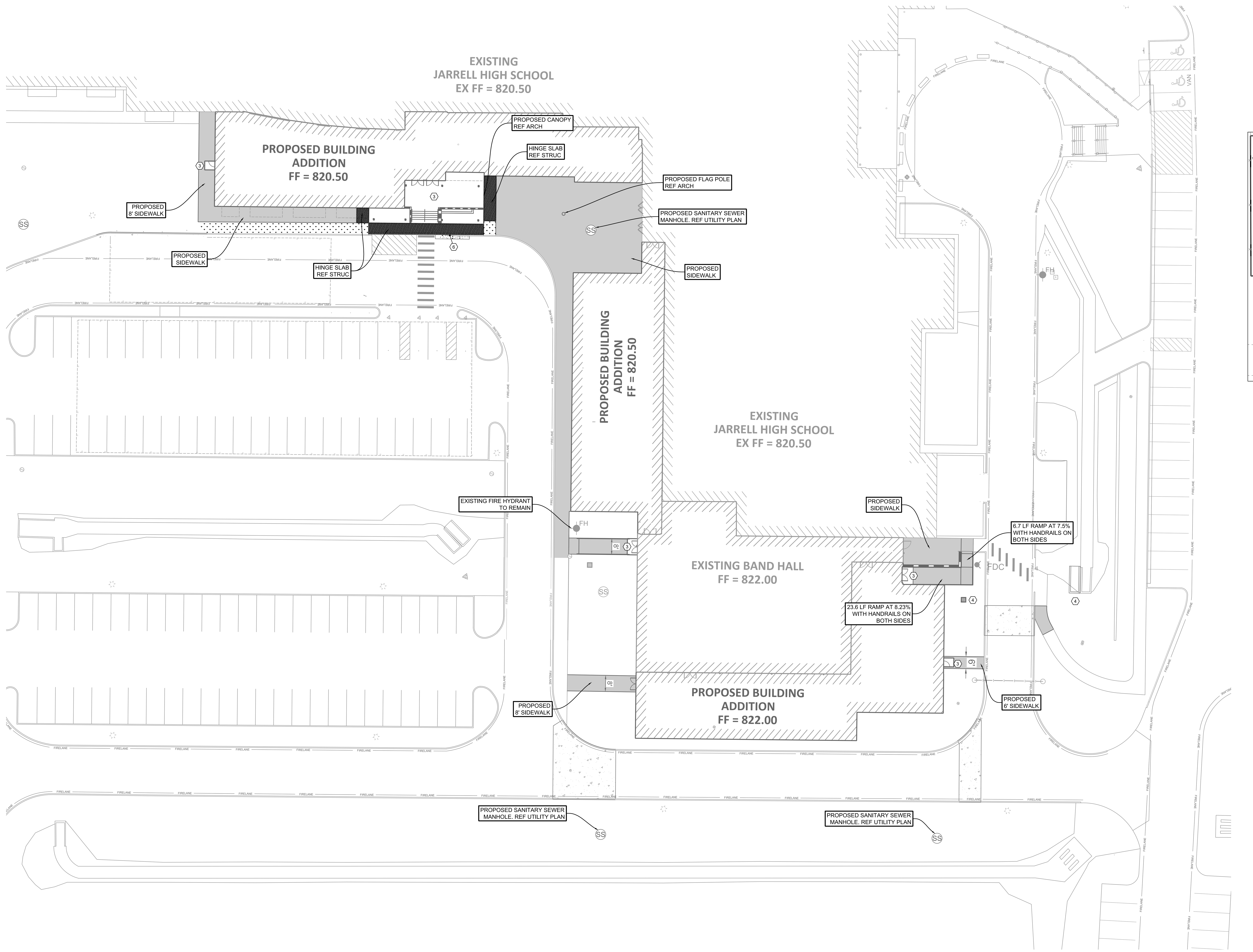
JARRELL HS ADDITIONS
PACKAGE 1 -
SITE PLAN AREA 1

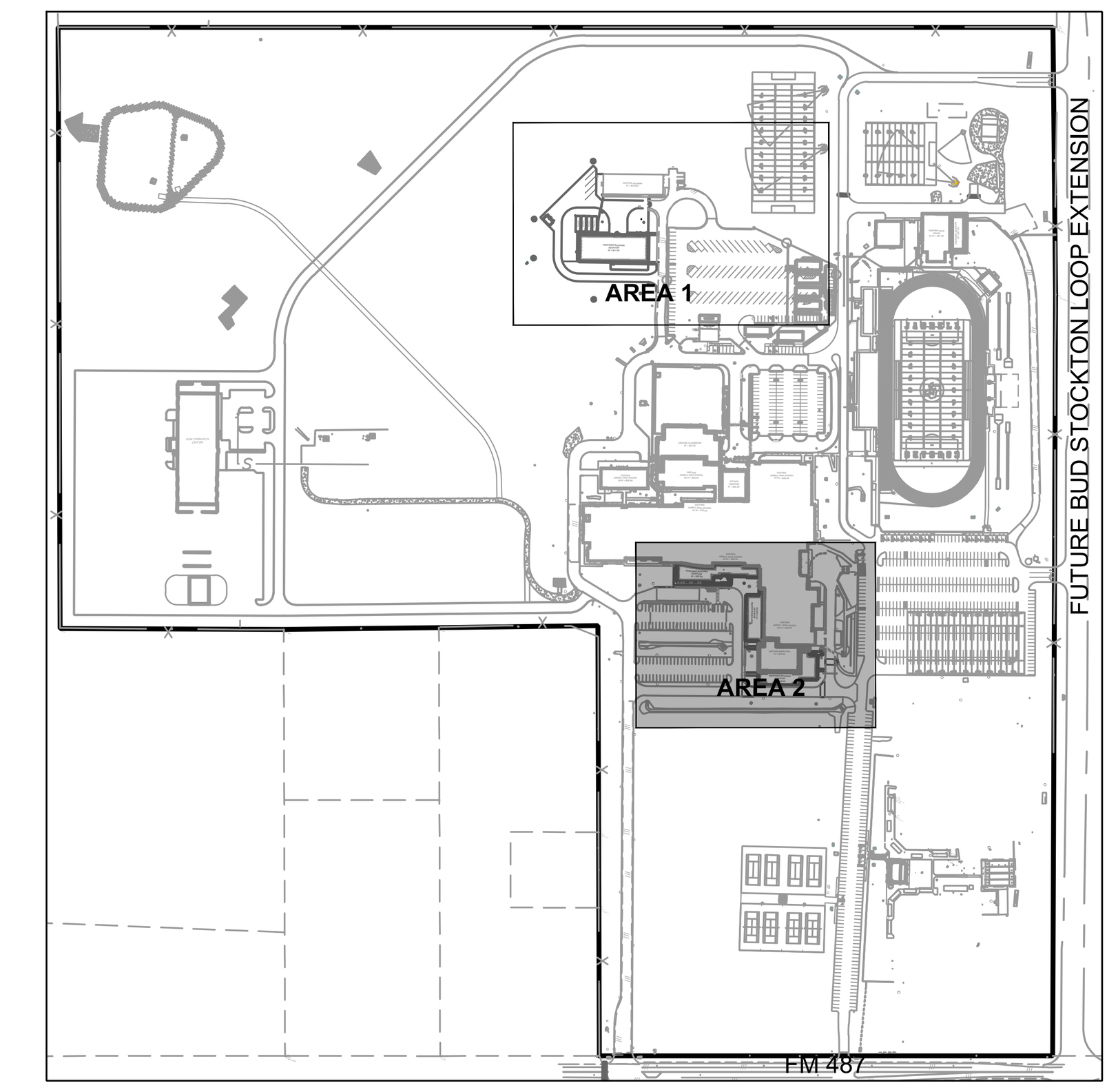
Job. No.
531023304

Drawn By:
AM

Date:
03/08/2024

Sheet No.
C4.01





KEY MAP
N.T.S.

LEGEND

PROPOSED FACE AND BACK OF CURB	
PROPOSED ACCESS DRIVE PAVEMENT 6.5" REINFORCED PCC 6" RECOMPACTED SUBGRADE NO. 3 BARS @ 18" O.C.E.W. REF GEOTECH RECOMMENDATIONS	
PROPOSED SIDEWALK REF PAVING DETAILS	
PROPOSED SIGN	
PROPOSED RETAINING WALL	
FIRE LANE STRIPING	FIRELANE
PROPOSED FIRE HYDRANT	FH
PROPOSED SANITARY MANHOLE	SS
ACCESSIBLE ROUTE	
PARKING COUNT	1

SYMBOL KEY

1. INSTALL BARRIER FREE RAMP (BFR) REFER TO PAVING DETAILS (TYP)
2. CURB TRANSITION REFER TO PAVING DETAILS (TYP)
3. PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
4. PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)
5. EXISTING LIGHT POLE

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%)

WPAP CALCULATIONS

SITE AREA: 119.54 ACRES

IMPERVIOUS SUMMARY	
DEMOLITION	17,915 SQ FT = 0.41 AC
STRUCTURES/ROOFTOPS	19,825 SQ FT = 0.46 AC
PARKING, ACCESS DRIVES & SIDEWALKS	10,585 SQ FT = 0.24 AC
NET TOTAL IC INCREASE	12,495 SQ FT = 0.29 AC

NOTICE TO CONTRACTORS - UTILITIES

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!!!CAUTION!!!
EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY. VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES BY GROUND PENETRATING RADAR, VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

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Revision / Date

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

Huckabee
AUSTIN • DALLAS • FORT WORTH • HOUSTON • WACO
www.huckabee-inc.com
800.687.1229

JARRELL HS ADDITIONS
PACKAGE 1 -
SITE PLAN AREA 2

Job. No. 531023304	Sheet No.
Drawn By: AM	C4.02
Date: 03/08/2024	

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

- SOME IMPERVIOUS AREAS ADJACENT TO THE BUILDING HAVE BEEN DESIGNED LESS THAN 2% TO ALLOW FOR CONSTRUCTION TOLERANCES WHILE MAINTAINING COMPLIANCE WITH ADA REQUIREMENTS. WE UNDERSTAND THAT THE BUILDING OFFICIAL HAS THE AUTHORITY TO APPLY THE MINIMUM SLOPE REQUIREMENTS OF IBC-1804 AT HIS OR HER DISCRETION. APPROVAL OF THIS PLAN WILL BE REGARDED AS COMPLIANCE WITH THE IBC-1804 REQUIREMENT.

GENERAL SITE GRADING NOTE

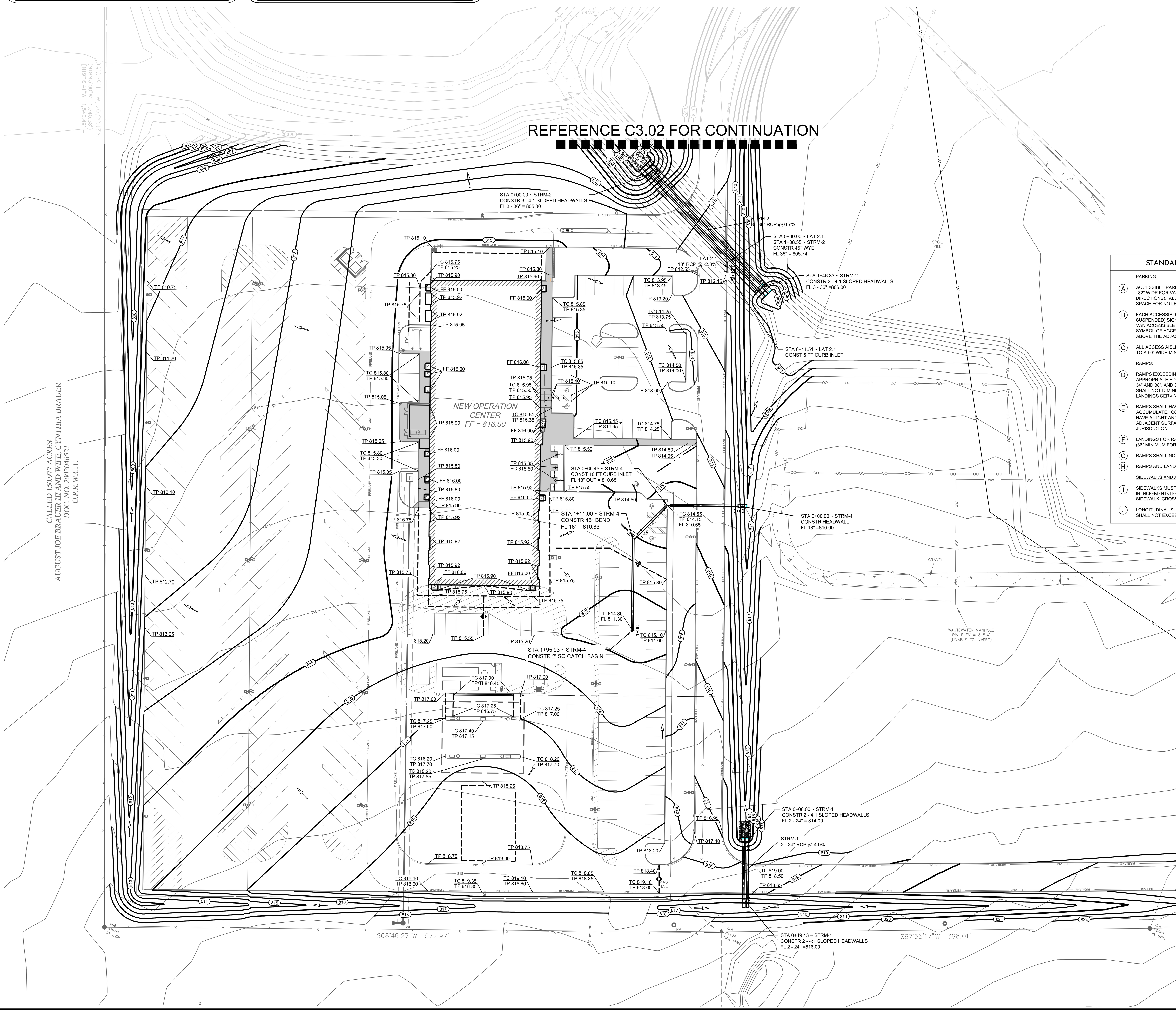
- *AS PART OF THE BASE BID THE CONTRACTOR SHALL PROVIDE/IMPORT ALL SELECT FILL AND TOPSOIL MATERIAL NECESSARY TO ACHIEVE FINAL GRADE PER PLAN.*
- *ALL AREAS WITHIN CONSTRUCTION LIMITS NOT COVERED WITH AN IMPERVIOUS MATERIAL SHALL BE COVERED WITH TOPSOIL. THE TOPSOIL SHALL BE IN CONFORMANCE WITH THE TOPSOIL 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 AAA23-128-00 AND DATED DECEMBER 14, 2023 OR ANY SUPPLEMENTAL ADDENDUMS.*

GRAPHIC SCALE

0 40 80 FEET

LEGEND

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



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Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

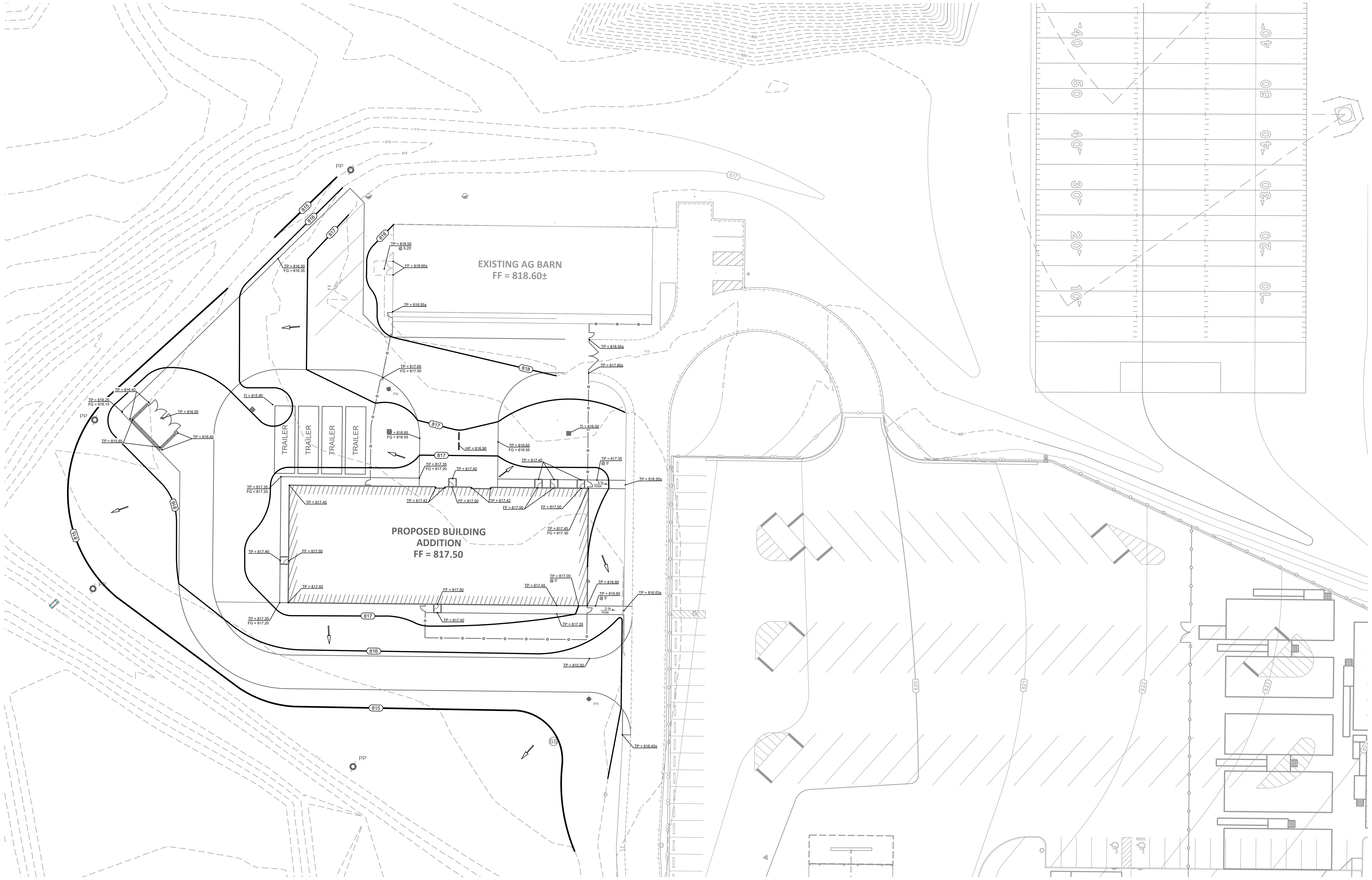
TBPE Registration #: F-13709

Huckabee
www.huckabee-inc.com

GRADING & DRAINAGE PLAN

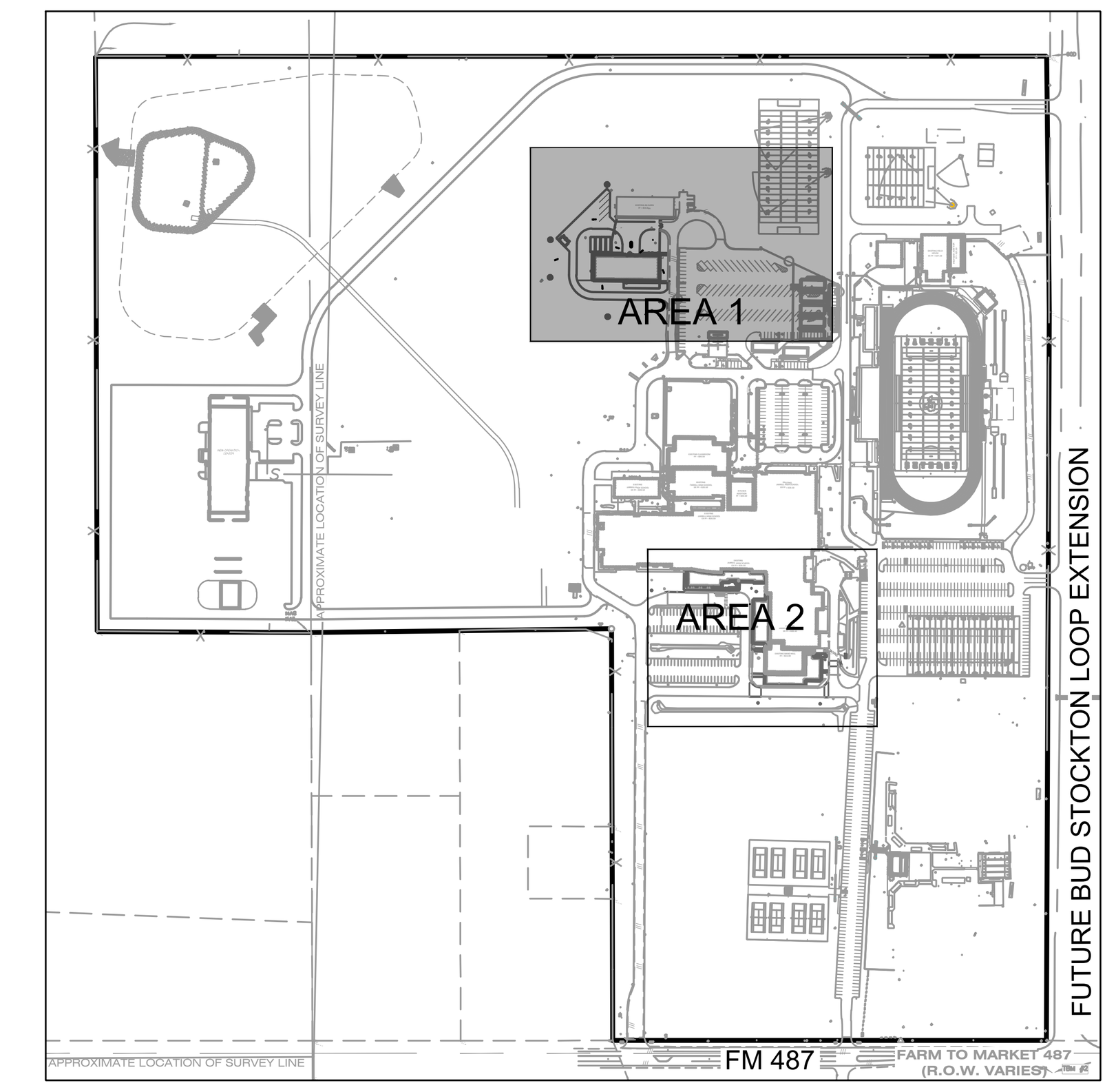
100% CD SUBMITTAL

Job No. 531023303	Sheet No.
Drawn By: NF	C4.01
Date: 03/20/2024	



GRAPHIC SCALE

0 30 60 FEET



KEY MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	
EXISTING CONTOUR	100
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GRADE BREAK	
ACCESSIBLE ROUTE	
SPOT GRADE	FG=100.50
PROPOSED RETAINING WALL	
PROPOSED FLOW ARROW	
FG	FINISHED GRADE
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TC	TOP OF CURB
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FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
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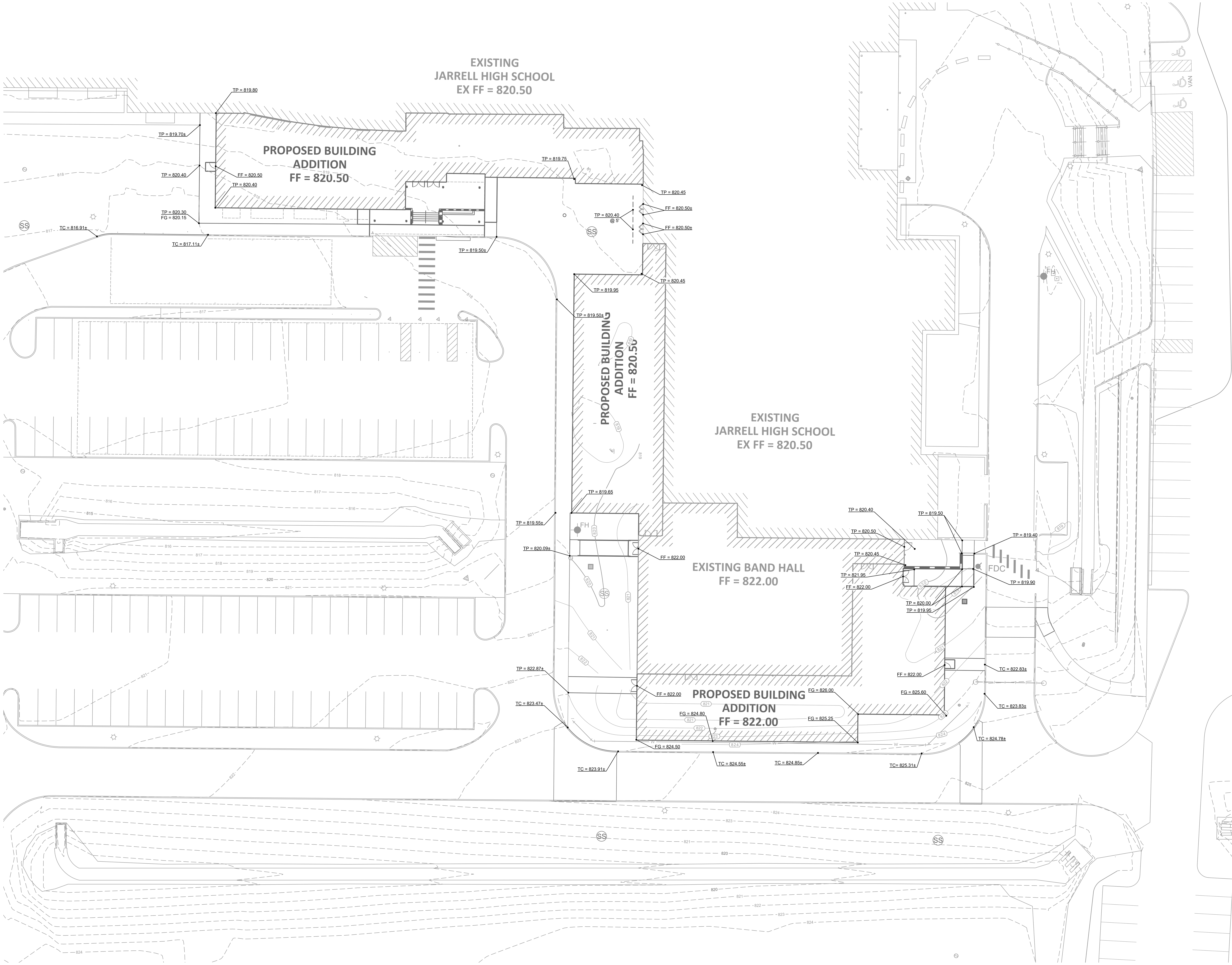
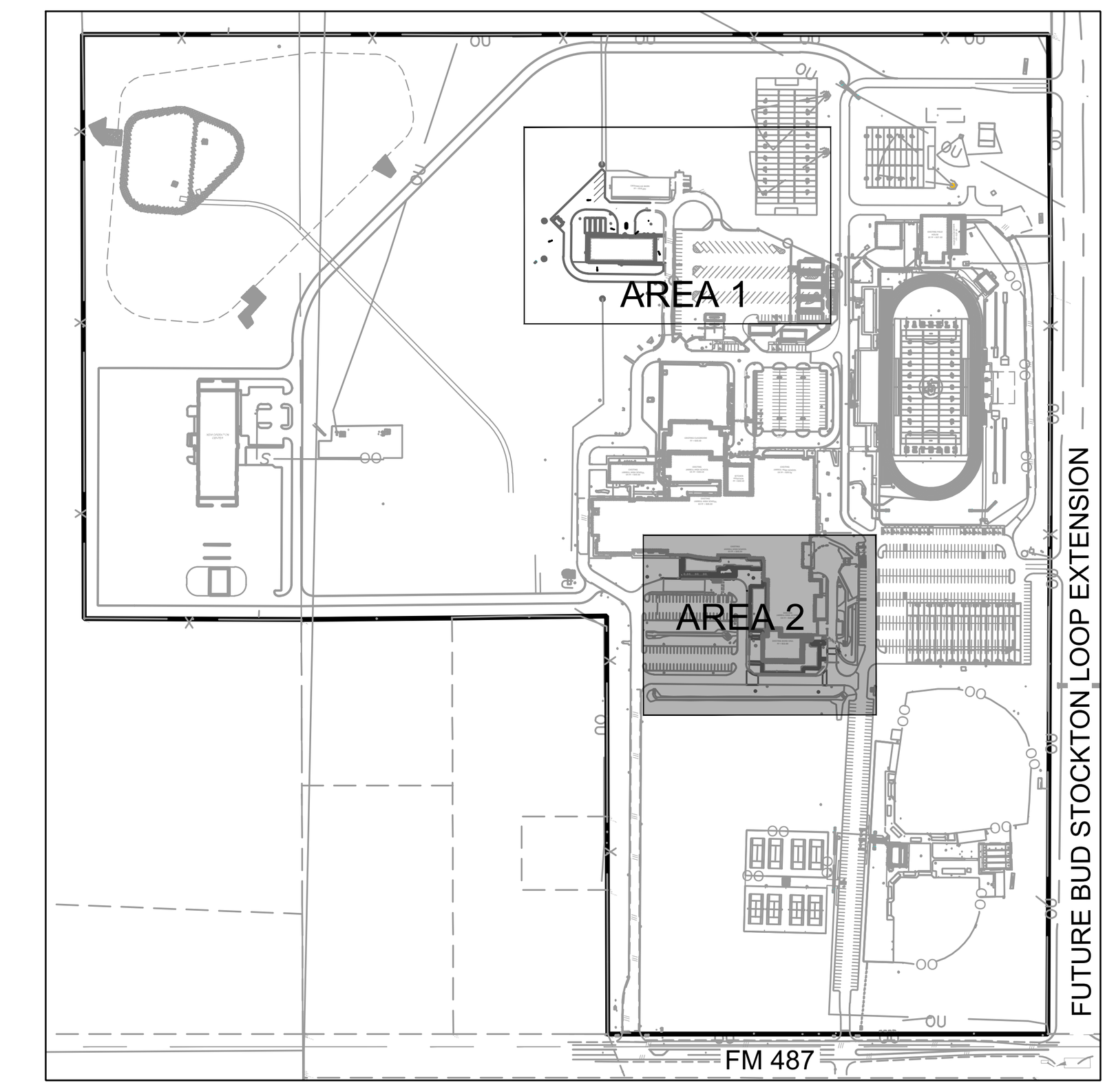
JARRELL HS ADDITIONS PACKAGE 1 - GRADING PLAN AREA 1

Job. No. 531023304	Sheet No.
Drawn By: AM	C5.00
Date: 03/08/2024	





KEY MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	(100)
EXISTING CONTOUR	—100—
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GRADE BREAK	
ACCESSIBLE ROUTE	
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PROPOSED RETAINING WALL	
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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 ALPHA, REPORT No. A2201008 AND DATED JUNE 8, 2022 OR ANY SUPPLEMENTAL ADDENDUMS.*

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.

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VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES
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811
Know what's **below.**
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Revision / Date

Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

MATTHEW S. HARDY
134446
LICENSED PROFESSIONAL ENGINEER
3-11-2024
TBPE Registration #: F-13709

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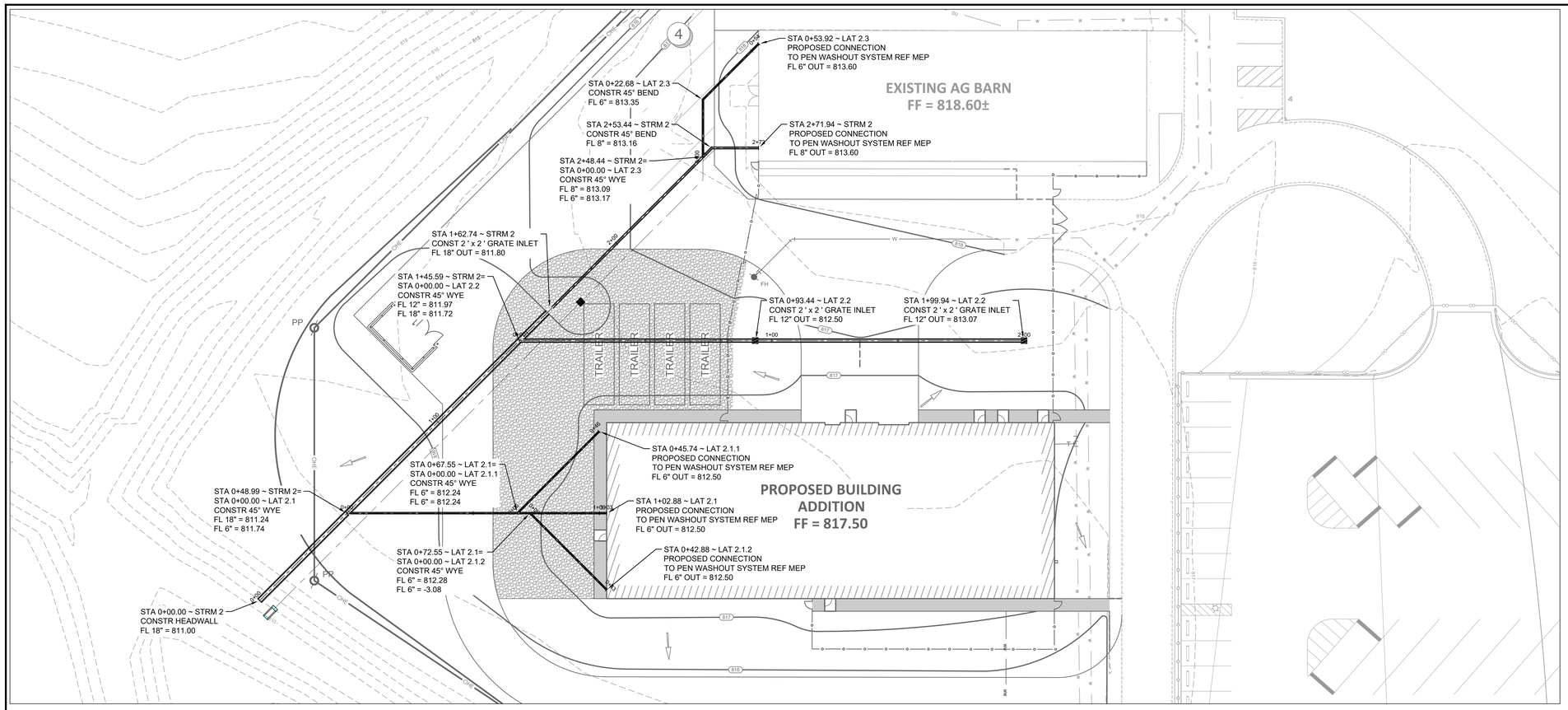
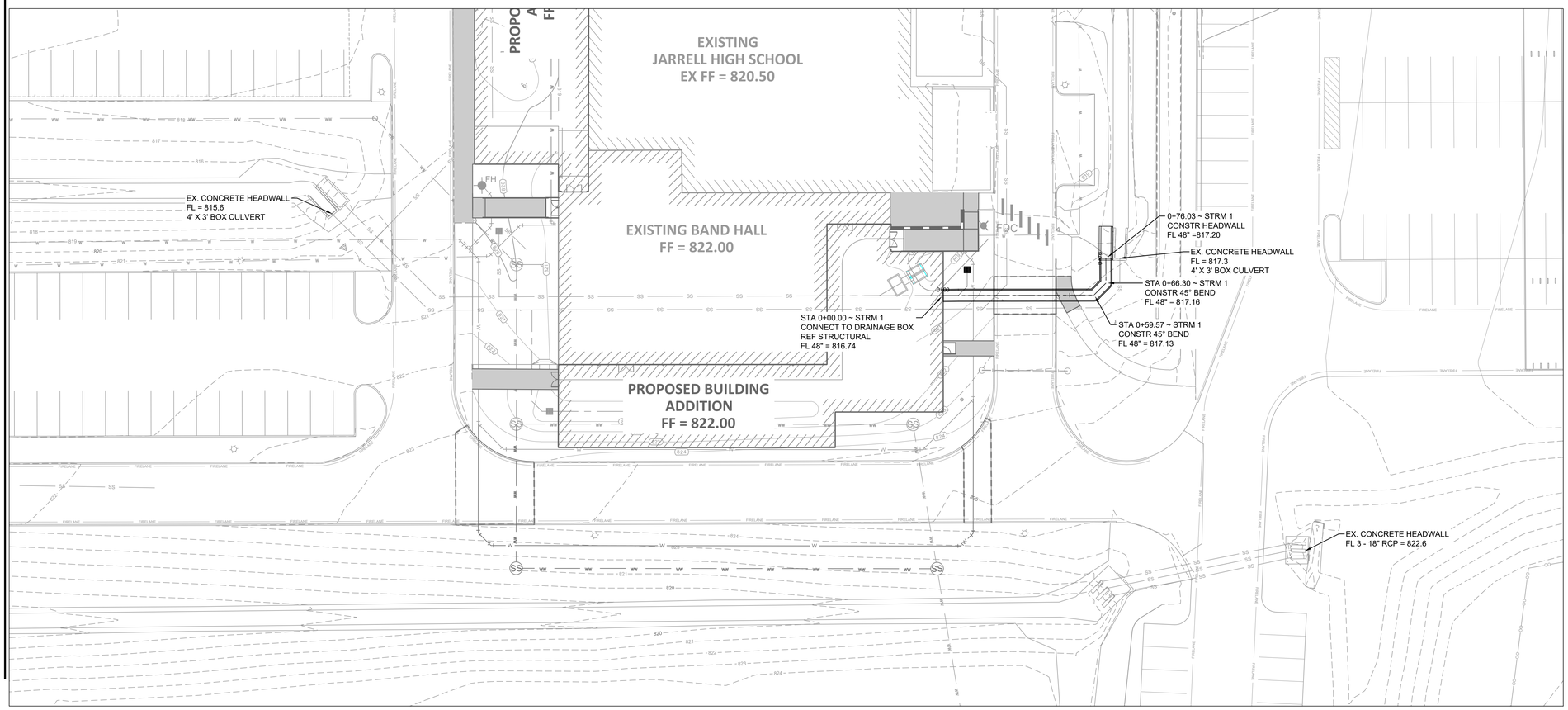
JARRELL HS ADDITIONS
PACKAGE 1 -
GRADING PLAN AREA 2

Job. No. 531023304	Sheet No.
Drawn By: AM	C5.01
Date: 03/08/2024	

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.





GRAPHIC SCALE
0 20 40 FEET

LEGEND

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

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AT JARRELL HIGH SCHOOL
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STATE OF TEXAS
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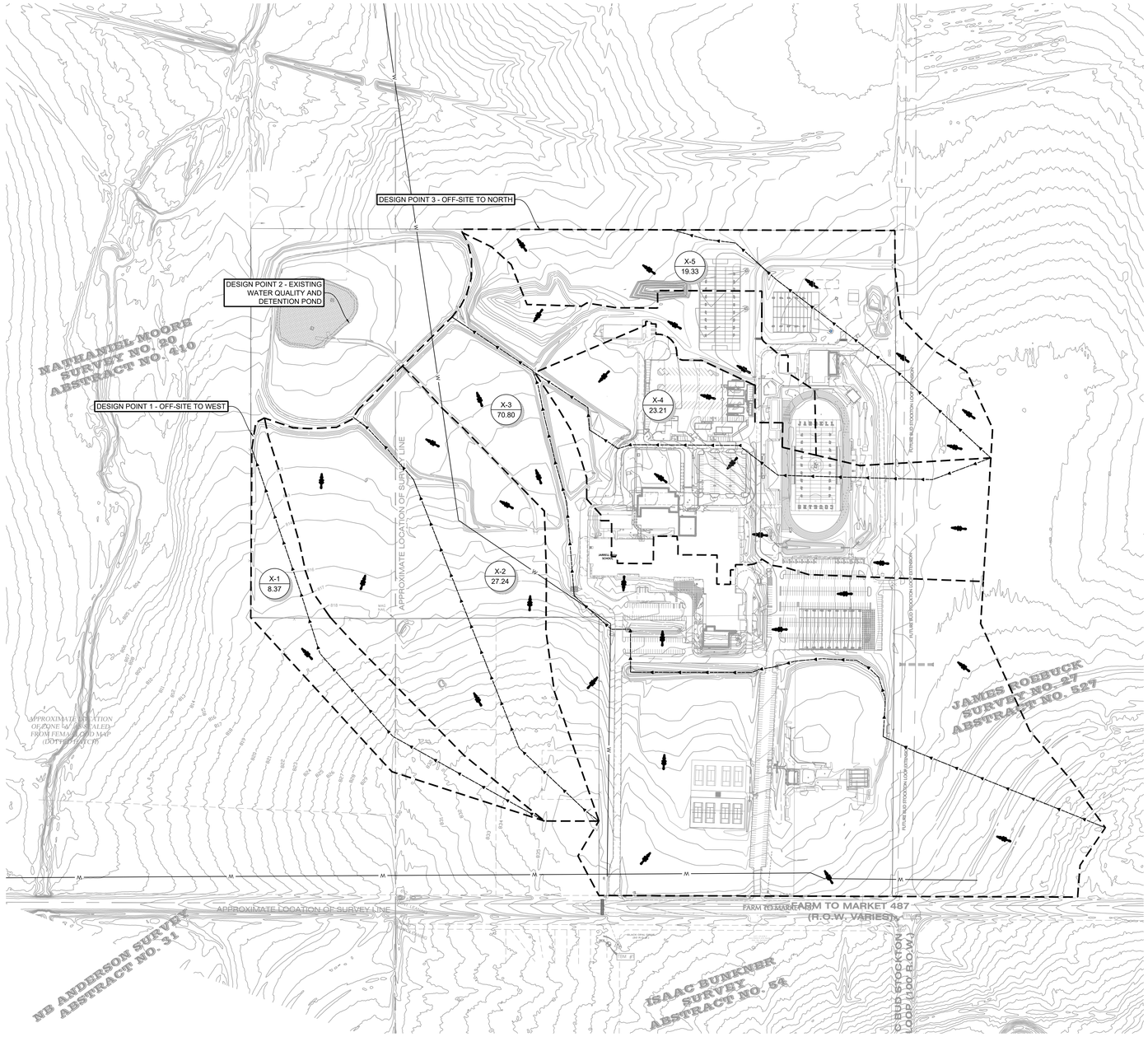
JARRELL HS ADDITIONS
PACKAGE 1 -
DRAINAGE PLAN

Job. No. 531023304	Sheet No. C6.02
Drawn By: AM	
Date: 03/08/2024	



GRAPHIC SCALE

0 200 400 FEET

LEGEND

DRAINAGE BASIN — BASIN NAME / ACRES (DA-00 / 1.00)

DRAINAGE AREA

EXISTING FLOW ARROW

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****OFF-SITE TOPOGRAPHIC INFO****

OFF-SITE TOPOGRAPHIC INFORMATION WAS ACQUIRED FROM THE WILLIAMSON COUNTY GIS DEPARTMENT THROUGH THE LIDAR REQUEST SYSTEM.

PRE-DEVELOPMENT DRAINAGE AREA CALCULATIONS

Drainage Area Designation	Drainage Area	Runoff Coefficient "C"				Time of Concentration	2-Year Rainfall Intensity (I2)	2-Year Peak Discharge (Q2)	10-Year Rainfall Intensity (I10)	10-Year Peak Discharge (Q10)	25-Year Rainfall Intensity (I25)	25-Year Peak Discharge (Q25)	100-Year Rainfall Intensity (I100)	100-Year Peak Discharge (Q100)
-	(ac)	2- Yr	10- Yr	25- Yr	100- Yr	(min)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)
X-1	8.37	0.32	0.37	0.41	0.48	28	3.08	8.14	4.60	14.10	5.70	19.36	7.54	30.04
X-2	27.24	0.31	0.36	0.40	0.47	27	3.14	26.77	4.68	46.37	5.79	63.66	7.66	98.82
X-3	70.80	0.39	0.45	0.49	0.56	23	3.45	95.42	5.15	162.54	6.35	219.35	8.39	333.35
X-4	23.21	0.50	0.56	0.61	0.68	28	3.10	35.81	4.63	60.21	5.72	80.34	7.57	120.08
X-5	19.33	0.35	0.41	0.45	0.52	25	3.25	22.22	4.85	38.13	5.99	51.85	7.92	79.56
Total	148.95							188.37		321.34		434.56		661.85

Note: Calculations based on the Rational Method: Q = C*I*A

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	0.15	100	0.010	4.06	11.5	1879	0.014	Unpaved	1.91	16.4	-	-	0.0		28
X-2	0.15	100	0.005	4.06	15.1	1471	0.020	Unpaved	2.28	10.7	344	5.00	1.1		27
X-3	0.15	100	0.030	4.06	7.4	1295	0.039	Unpaved	3.19	6.8	2546	5.00	8.5		23
X-4	0.15	100	0.005	4.06	15.1	1567	0.013	Paved	2.32	11.3	370	5.00	1.2		28
X-5	0.15	100	0.005	4.06	15.1	1210	0.012	Paved	2.23	9.1	341	5.00	1.1		25

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.

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Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS — MATTHEW S. HARDY — 134449 — LICENSED PROFESSIONAL ENGINEER — 3-11-2024

TBPE Registration #: F-13709

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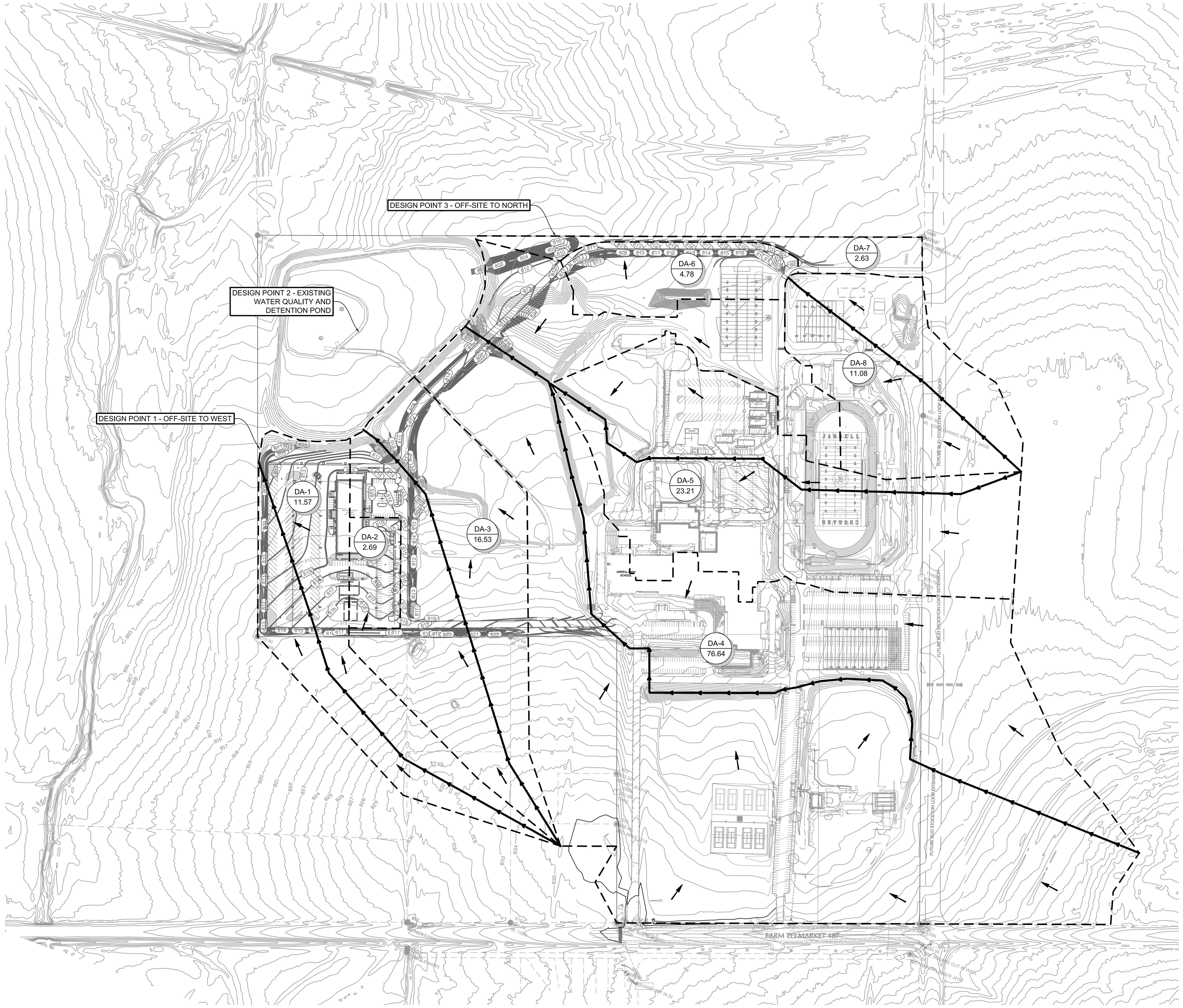
EXISTING DRAINAGE AREA MAP

100% CD SUBMITTAL

Job. No. 531023303
Drawn By: NF
Date: 03/20/2024
Sheet No. C5.00



GRAPHIC SCALE

0 40 80 FEET

LEGEND

DRAINAGE BASIN — BASIN NAME / ACRES (DA-00 / 1.00)

DRAINAGE AREA

PROPOSED FLOW ARROW

POST-DEVELOPMENT DRAINAGE AREA CALCULATIONS														
Drainage Area Designation	Drainage Area	Runoff Coefficient "C"				Time of Concentration	2-Year Rainfall Intensity (I2)	2-Year Peak Discharge (Q2)	10-Year Rainfall Intensity (I10)	10-Year Peak Discharge (Q10)	25-Year Rainfall Intensity (I25)	25-Year Peak Discharge (Q25)	100-Year Rainfall Intensity (I100)	100-Year Peak Discharge (Q100)
-	(ac)	2- Yr	10- Yr	25- Yr	100- Yr	(min)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)	(in/hr)	(cfs)
DA-1	11.57	0.43	0.48	0.53	0.60	10	5.02	24.7	7.51	42.0	9.22	56.1	12.14	84.4
DA-2	2.69	0.54	0.61	0.65	0.73	11	4.84	7.0	7.23	11.8	8.88	15.6	11.68	23.0
DA-3	16.53	0.35	0.41	0.45	0.52	12	4.67	27.2	6.97	46.7	8.57	63.2	11.27	96.6
DA-4	76.64	0.39	0.44	0.48	0.56	13	4.51	133.2	6.73	227.2	8.28	305.8	10.89	463.8
DA-5	23.21	0.50	0.56	0.61	0.68	14	4.37	50.5	6.52	84.8	8.01	112.5	10.55	167.3
DA-6	4.78	0.37	0.43	0.47	0.54	15	4.23	7.5	6.31	12.9	7.77	17.4	10.23	26.4
DA-7	2.63	0.36	0.42	0.46	0.53	16	4.11	3.9	6.13	6.7	7.54	9.1	9.93	13.9
DA-8	11.08	0.37	0.43	0.47	0.54	17	3.99	16.5	5.95	28.2	7.33	38.0	9.65	57.9
Total	149.13							270.7		460.3		617.7		933.3

Note: Calculations based on the Rational Method: Q = C*I*A

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)
DA-1	0.15	100	0.010	4.06	11.5	1879	0.014	Unpaved	1.91	16.4	-	-	0.0	28
DA-3	0.15	100	0.010	4.06	11.5	1357	0.020	Unpaved	2.28	9.9	344	5.00	1.1	23
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DA-5	0.15	100	0.005	4.06	15.1	1567	0.013	Paved	2.32	11.3	341	5.00	1.1	28
DA-8	0.15	100	0.005	4.06	15.1	1064	0.01	Unpaved	1.61	11.0	-	-	0.0	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.

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PROPOSED DRAINAGE AREA MAP

100% CD SUBMITTAL

Job. No. 531023303

Drawn By: NF

Date: 03/20/2024

Sheet No. C5.01

WATER AND SEWER GENERAL NOTES

1. ALL WATER MAINS UNLESS OTHERWISE NOTED SHALL HAVE A MINIMUM COVER OF 48" BELOW FINISHED GRADE. PROVIDE VALVE EXTENSIONS TO ALL VALVES ON LINES DEEPER THAN 48".
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.
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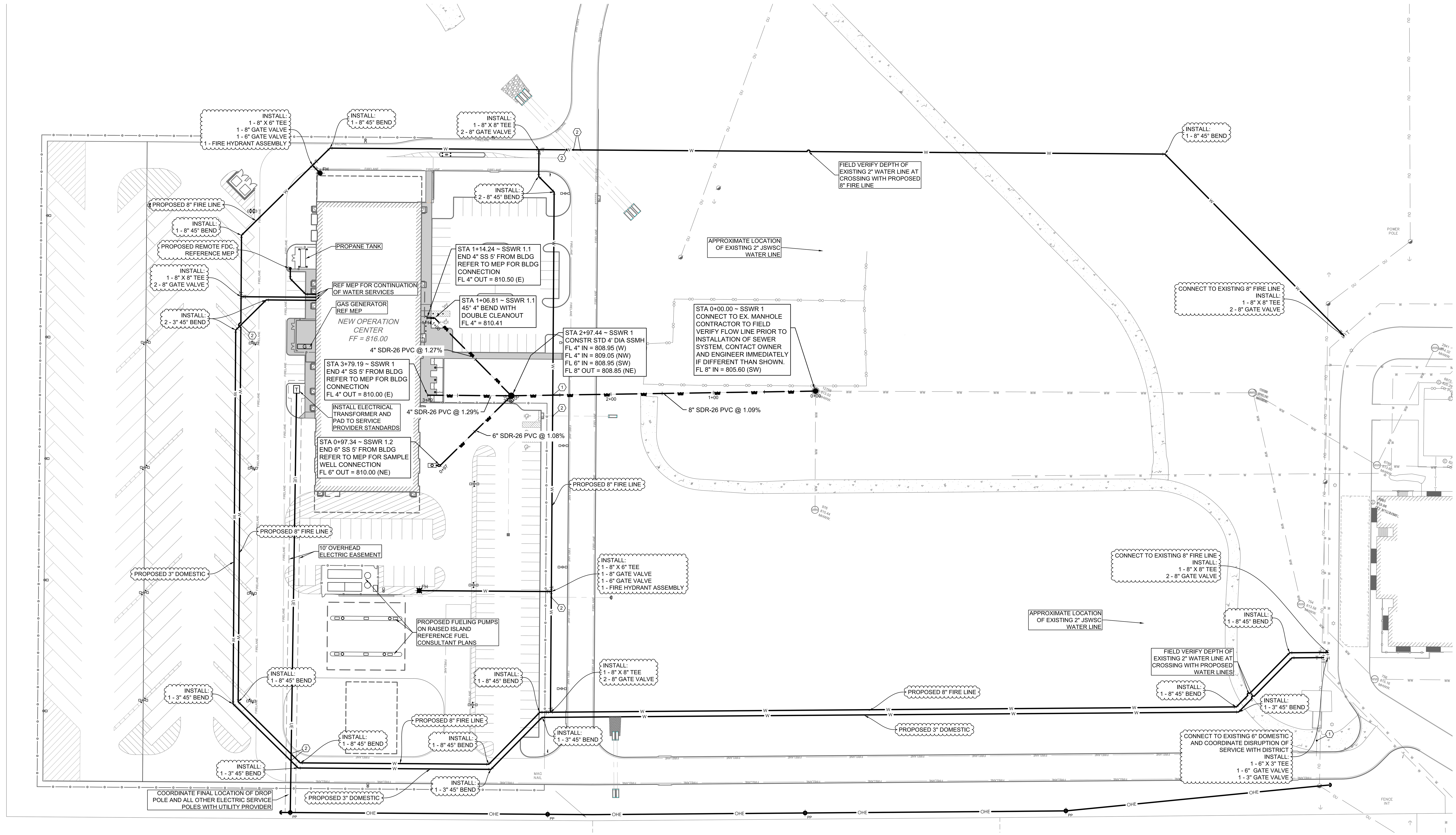
GRAPHIC SCALE
0 40 80 FEET

SYMBOL KEY

1 WATER-SEWER CROSSING
2 UTILITY CROSSING

LEGEND

EXISTING OVERHEAD UTILITY	UG
PROPOSED OVERHEAD UTILITY	OHE
PROPOSED UNDERGROUND UTILITY	UE
EXISTING WATER	W
EXISTING SANITARY SEWER	WW
PROPOSED SANITARY SEWER	WW
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	



Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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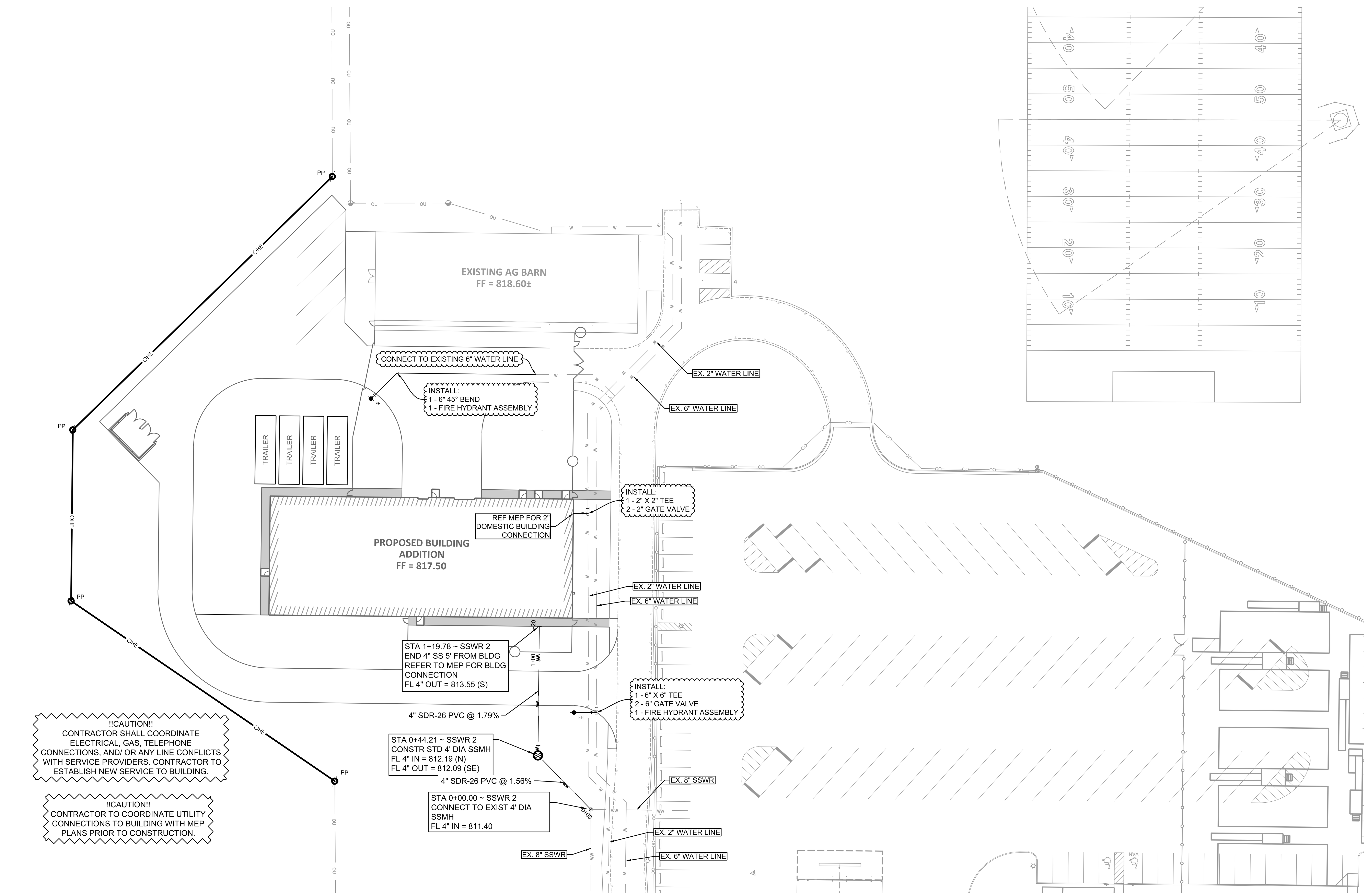
UTILITY PLAN

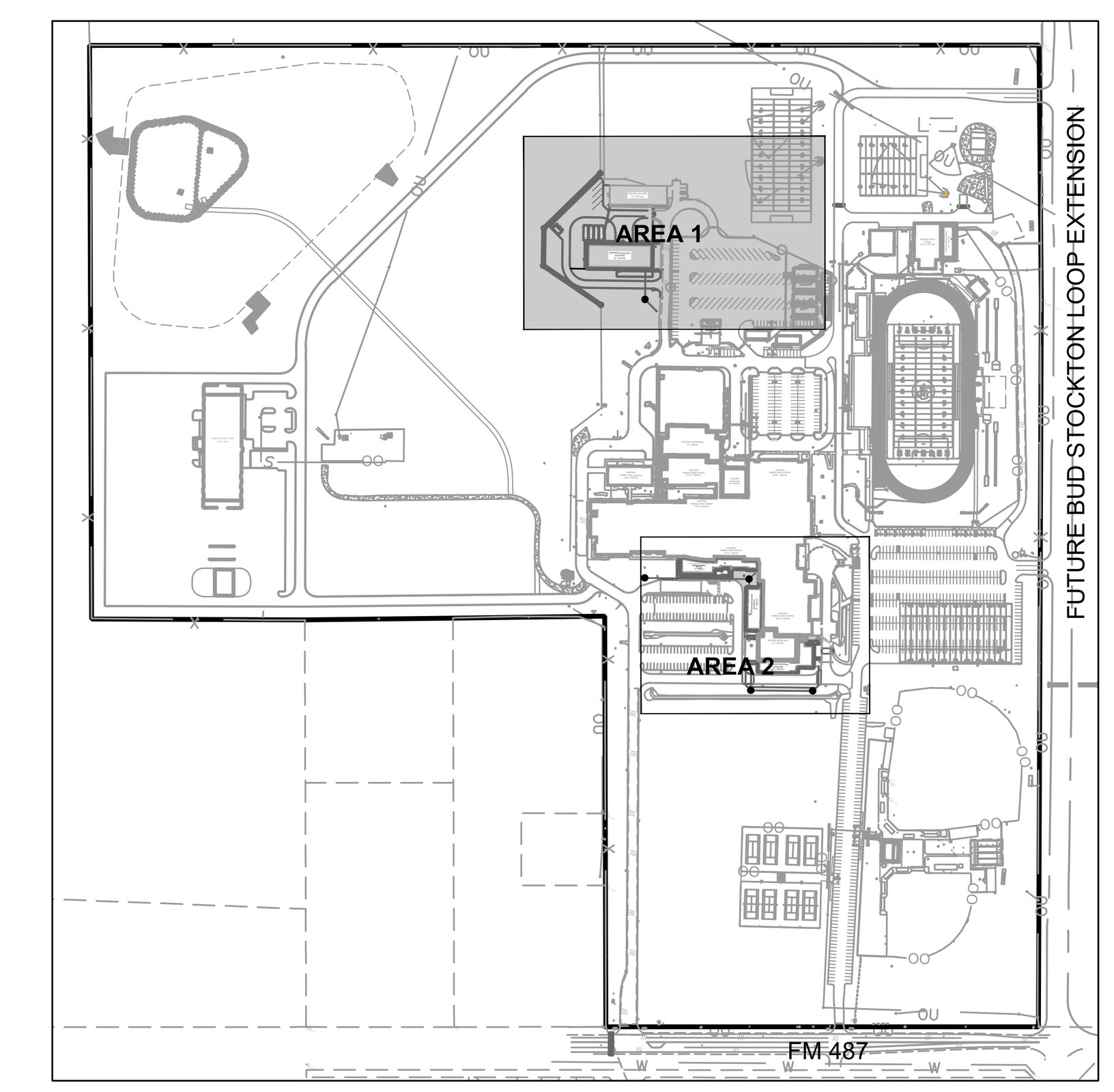
100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C6.00
Date: 03/20/2024	



GRAPHIC SCALE

0 30 60 FEET



KEY MAP
N.T.S.

LEGEND

PROPOSED UNDERGROUND ELECTRIC	UE
PROPOSED GAS	GAS
PROPOSED SANITARY SEWER	WW
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED POWER POLE	PP
PROPOSED MANHOLE	

SYMBOL KEY

1. WATER-SANITARY SEWER CROSSING PER CITY AND TCEQ STANDARDS. ENCASE ALL PORTIONS OF SEWER WITHIN NINE FEET OF WATER LINE IN MIN. 150 PSI PIPE TWO NOMINAL SIZES LARGER THAN CARRIER PIPE. SUPPORT BY SPACERS AT 5' INTERVALS AND SEAL AT BOTH ENDS WITH CEMENT GROUT OR MANUFACTURED SEAL.
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WATER AND SEWER GENERAL NOTES

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Revision / Date

Project:

ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL FOR JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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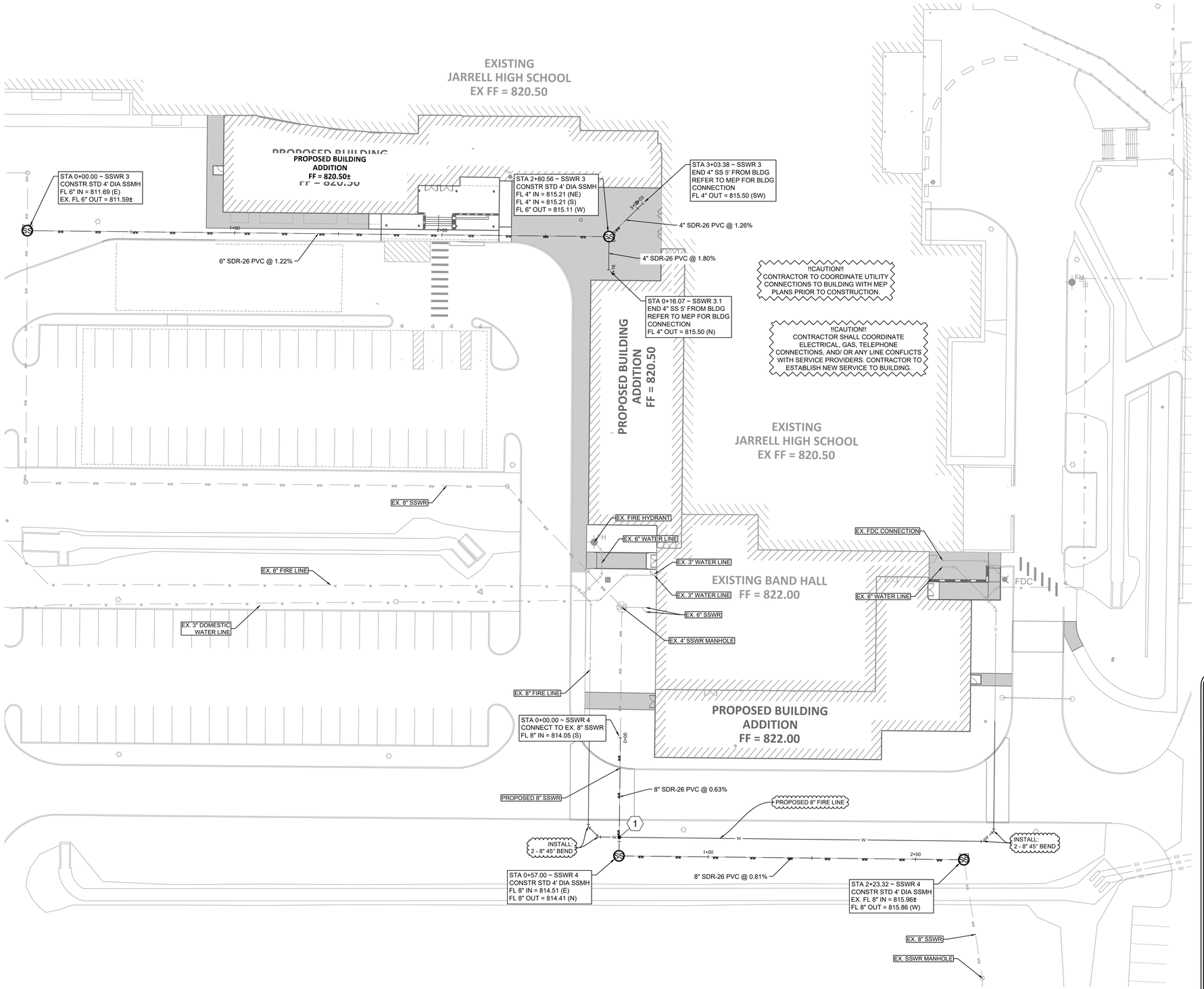
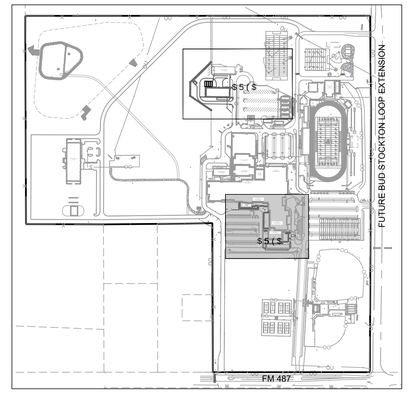
JARRELL HS ADDITIONS
PACKAGE 1 -
UTILITY PLAN AREA 1

Job. No. 531023304	Sheet No.
Drawn By: AM	C7.00
Date: 03/08/2024	





!!CAUTION!!
CONTRACTOR TO COORDINATE UTILITY CONNECTIONS TO BUILDING WITH MEP PLANS PRIOR TO CONSTRUCTION.

!!CAUTION!!
CONTRACTOR SHALL COORDINATE ELECTRICAL, GAS, TELEPHONE CONNECTIONS, AND/ OR ANY LINE CONFLICTS WITH SERVICE PROVIDERS. CONTRACTOR TO ESTABLISH NEW SERVICE TO BUILDING.

KEY MAP
N.T.S.

LEGEND

PROPOSED UNDERGROUND ELECTRIC	—— UE ——
PROPOSED GAS	—— GAS ——
PROPOSED SANITARY SEWER	—— WW ——
PROPOSED WATER	—— W ——
PROPOSED FIRE HYDRANT	● FH
PROPOSED MANHOLE	SS

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:$7(5 $1' 6(:(5 *(1(5$/ 127(6

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Project:
ADDITIONS AND RENOVATIONS
AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN
[illegible]

MATTHEW S. HARDY
134448
3-11-2024
TBPE Registration #: F-13709

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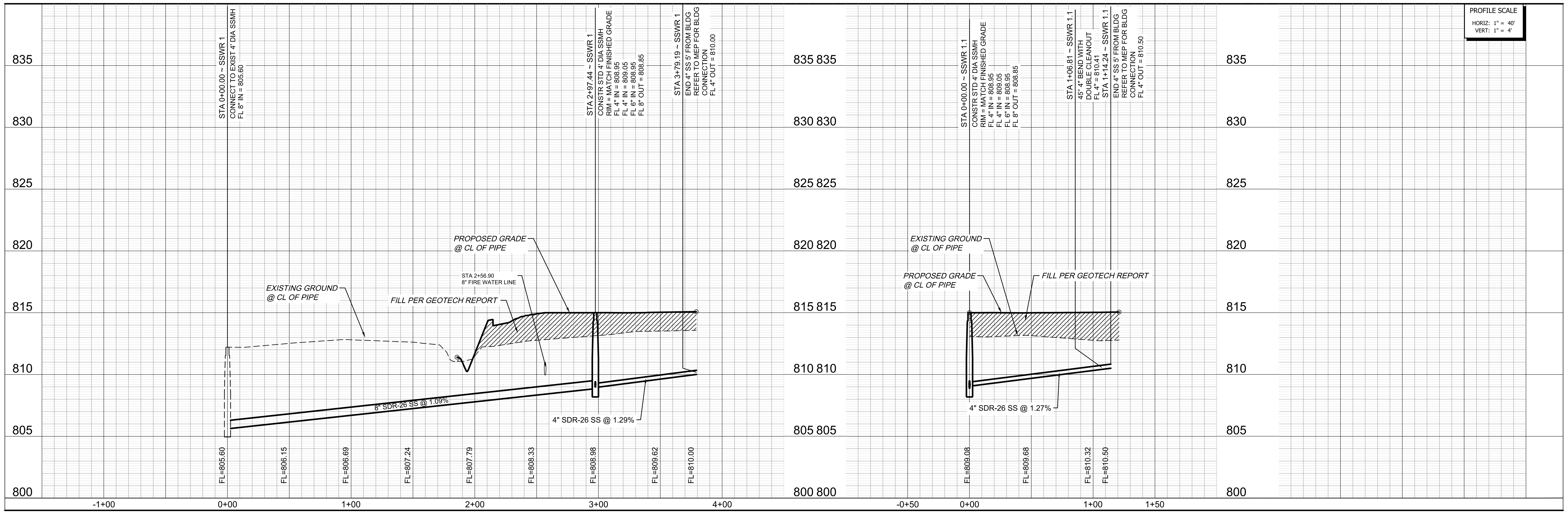
JARRELL HS ADDITIONS
PACKAGE 1 -
UTILITY PLAN AREA 2

Job. No. 531023304	Sheet No. C7.01
Drawn By: AM	
Date: 03/08/2024	

SSWR 1 STA 0+00 TO END

SSWR 1.1 STA 0+00 TO END



SSWR 1.2 STA 0+00 TO END

TBM #1 - SQUARE CUT ON TOP OF CONCRETE DRAINAGE INLET ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF BLACK OPAL DRIVE, ±200' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±196' SOUTHEAST OF THE SOUTHWEST CORNER OF CALLED 19.71 ACRE TRACT. ELEVATION = 835.98'

TBM #2 - SQUARE CUT ON TOP OF CONCRETE WALL ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF C. BUDD STOCKTON LOOP, ±90' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±90' SOUTHEAST OF THE SOUTHEAST CORNER OF CALLED 99.84 ACRE TRACT. ELEVATION = 844.55'

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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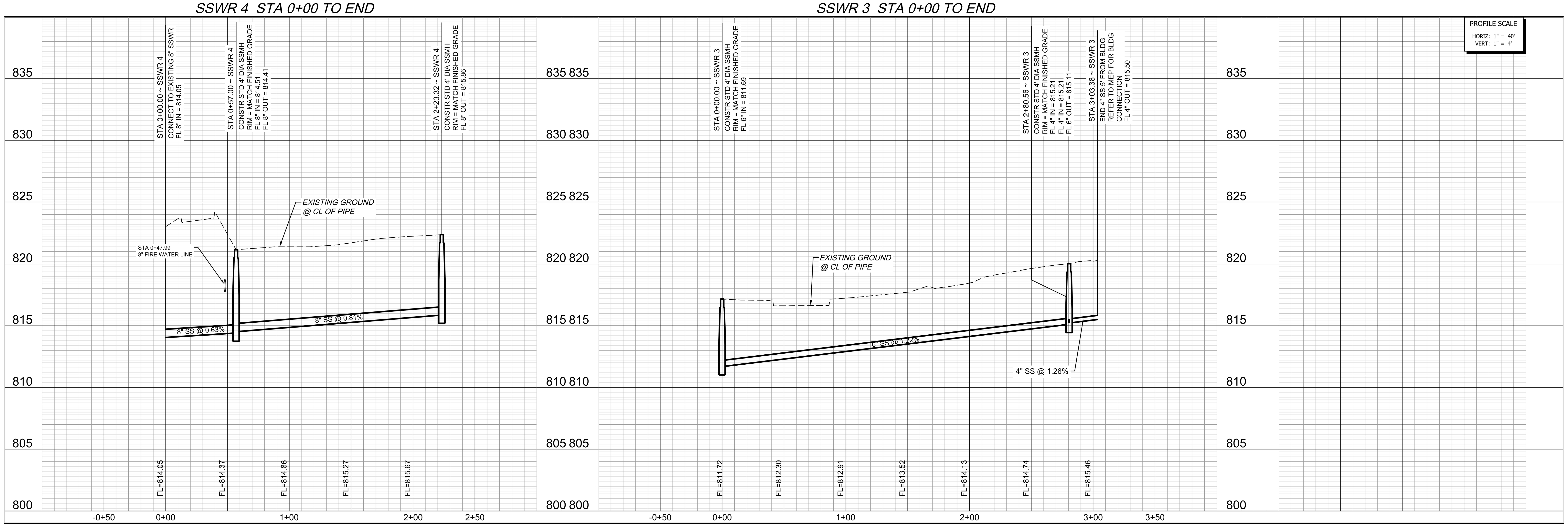
UTILITY PROFILE

100% CD SUBMITTAL

Job. No. 531023303	Sheet No. C6.01
Drawn By: NF	
Date: 03/20/2024	

SSWR 4 STA 0+00 TO END

SSWR 3 STA 0+00 TO END



SSWR 2 STA 0+00 TO END

TBM #1 - SQUARE CUT ON TOP OF CONCRETE DRAINAGE INLET ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF BLACK OPAL DRIVE, ±200' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±196' SOUTHEAST OF THE SOUTHWEST CORNER OF CALLED 19.71 ACRE TRACT. ELEVATION = 835.98'

TBM #2 - SQUARE CUT ON TOP OF CONCRETE WALL ON THE SOUTH SIDE OF FARM TO MARKET ROAD 487, WEST SIDE OF C. BUDD STOCKTON LOOP, ±90' SOUTHEAST OF A POWER POLE IN THE NORTH MARGIN OF FARM TO MARKET ROAD 487, ±90' SOUTHEAST OF THE SOUTHEAST CORNER OF CALLED 99.84 ACRE TRACT. ELEVATION = 844.55'

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

THESE PLANS ARE SUBJECT TO REVIEW & APPROVAL BY JURISDICTIONAL ENTITIES.

Revision / Date

Project:
ADDITIONS AND RENOVATIONS AT JARRELL HIGH SCHOOL
FOR
JARRELL I.S.D.
1100 FM 487, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED PROFESSIONAL ENGINEER
3-11-2024
TBPE Registration #: F-13709

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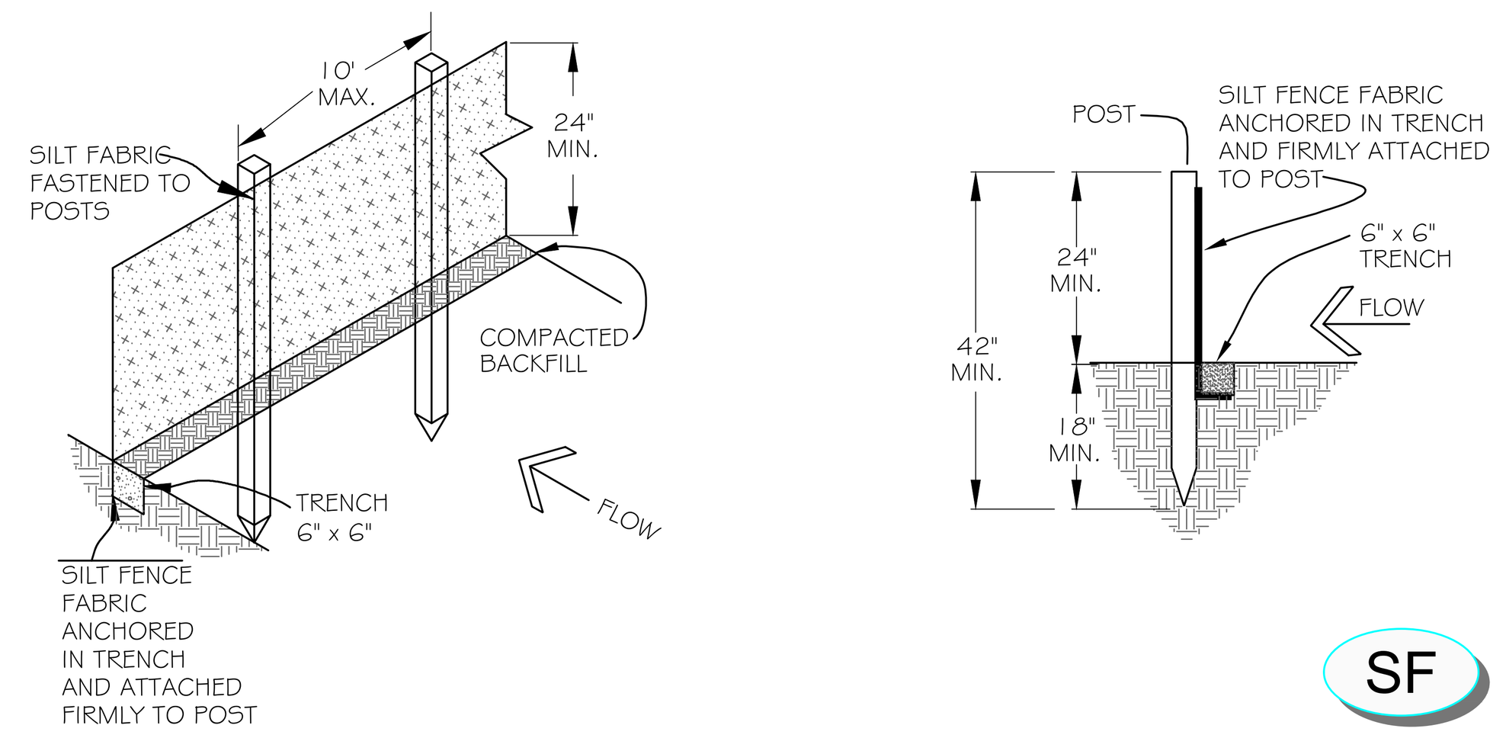
JARRELL HS ADDITIONS
PACKAGE 1 -
UTILITY PROFILE

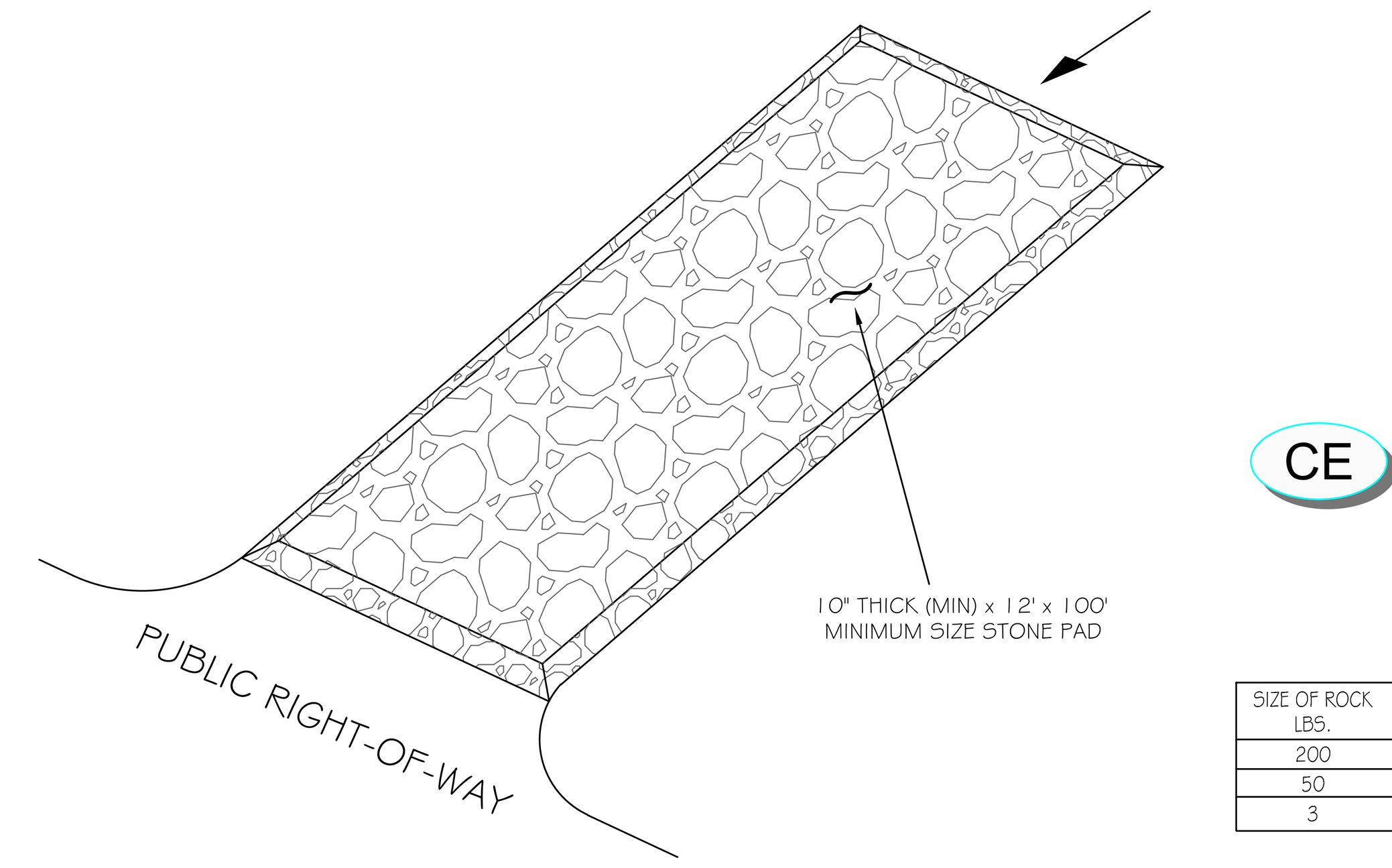
Job. No.: 531023304
Drawn By: AM
Date: 03/08/2024
Sheet No.: C7.02



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.



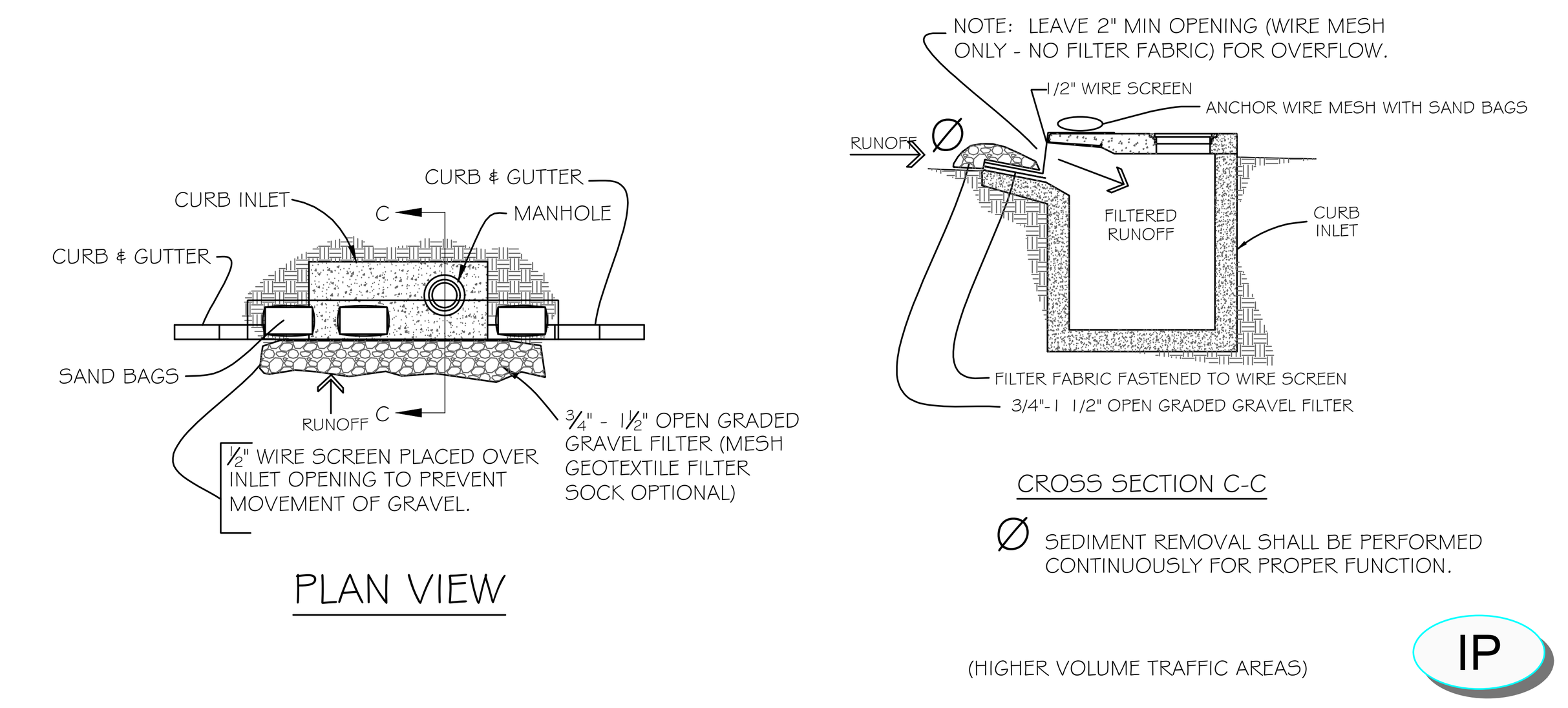
SIZE OF ROCK LBS.	% SMALLER BY WEIGHT
200	100
50	35-65
3	0

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.

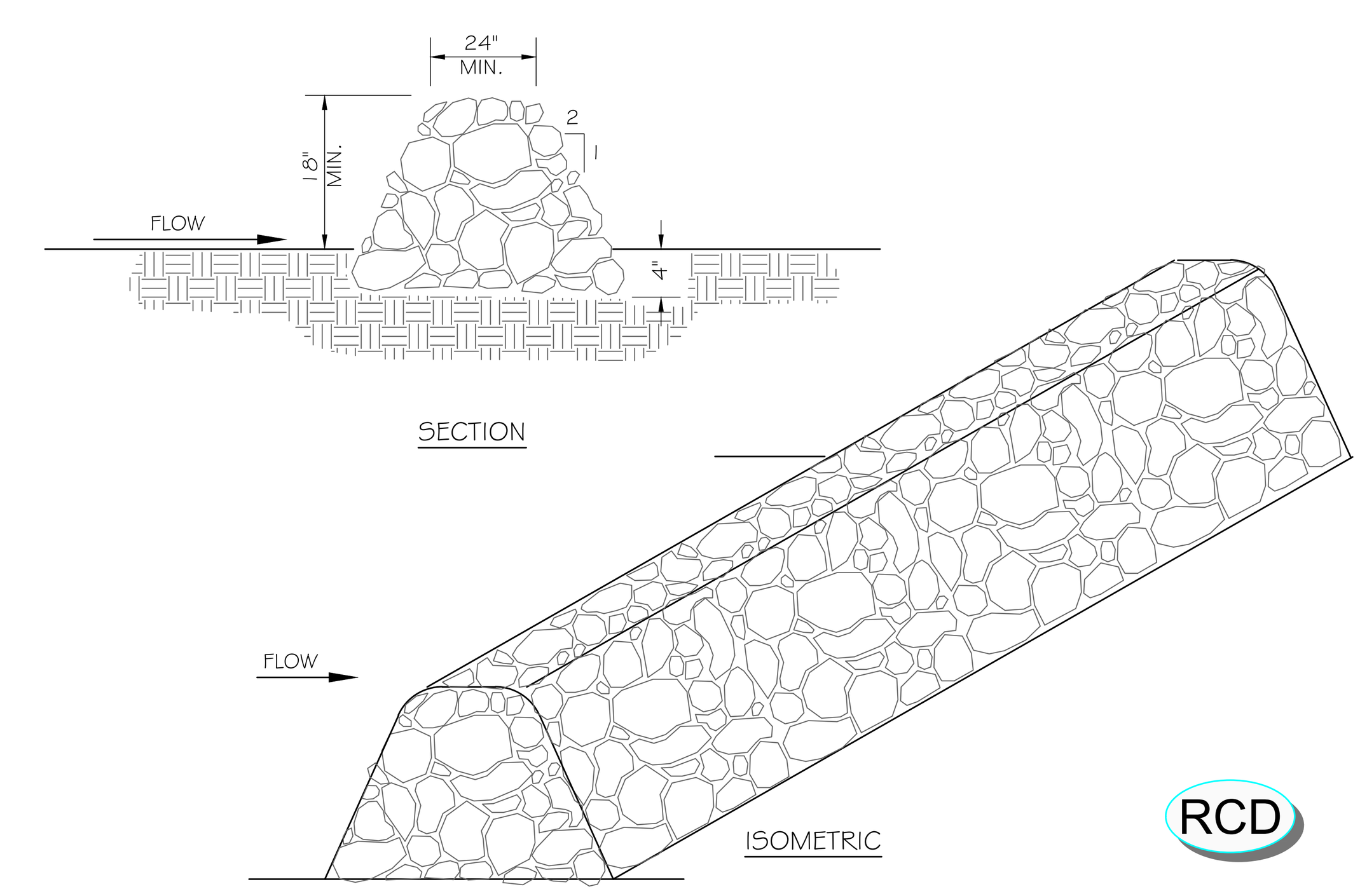
TEMPORARY CONSTRUCTION EXIT POINT

N.T.S.



INLET PROTECTION

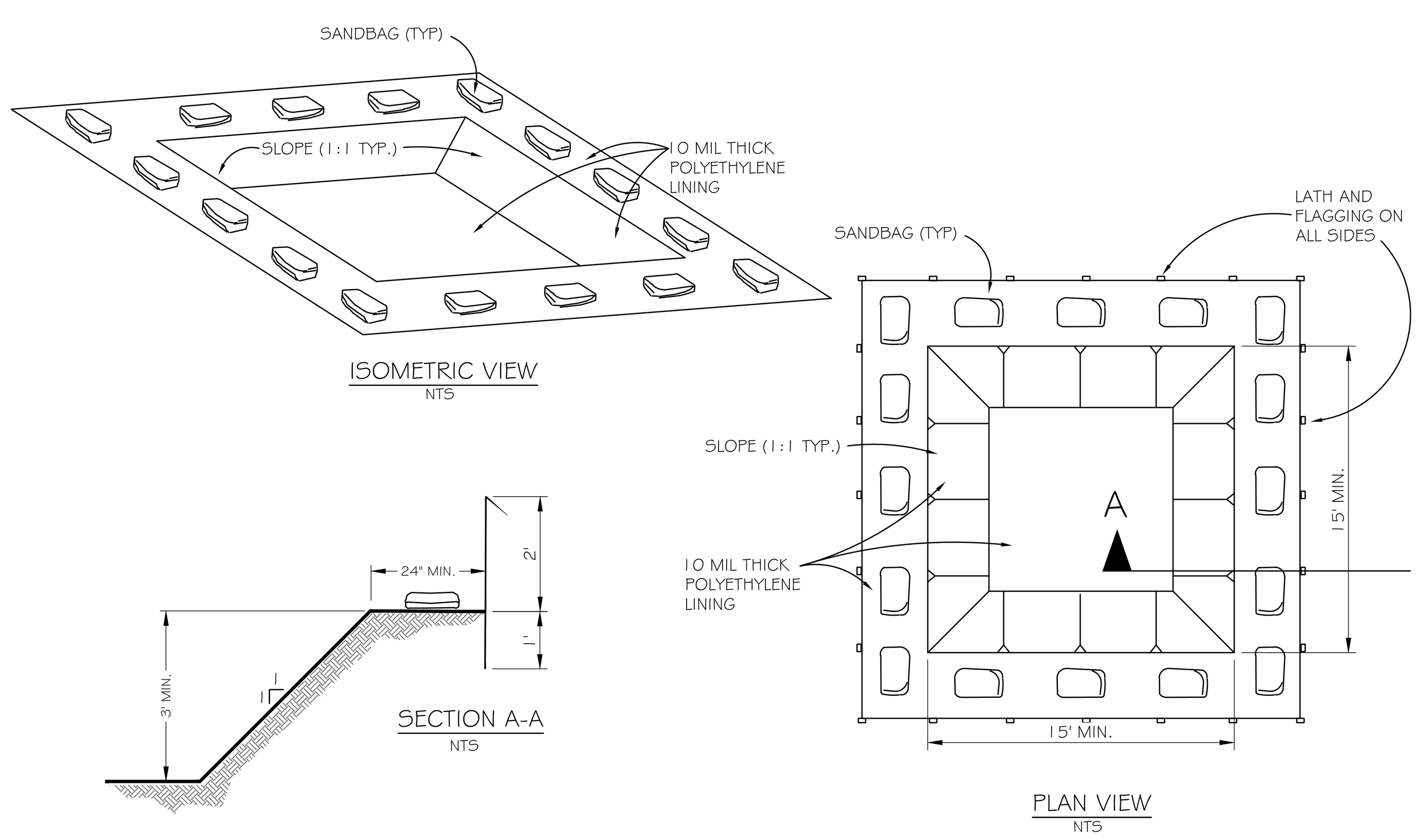
N.T.S.



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

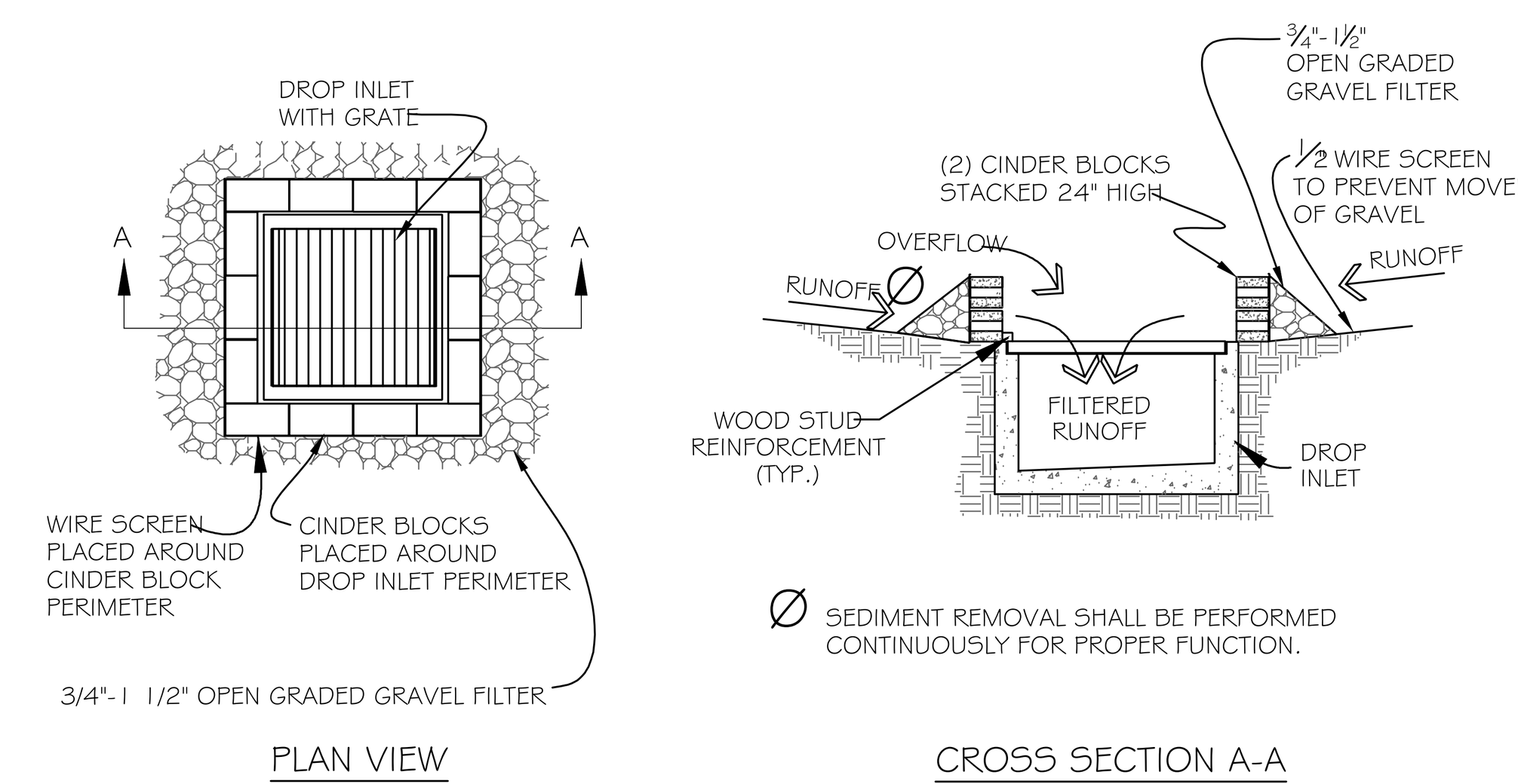
N.T.S.



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.

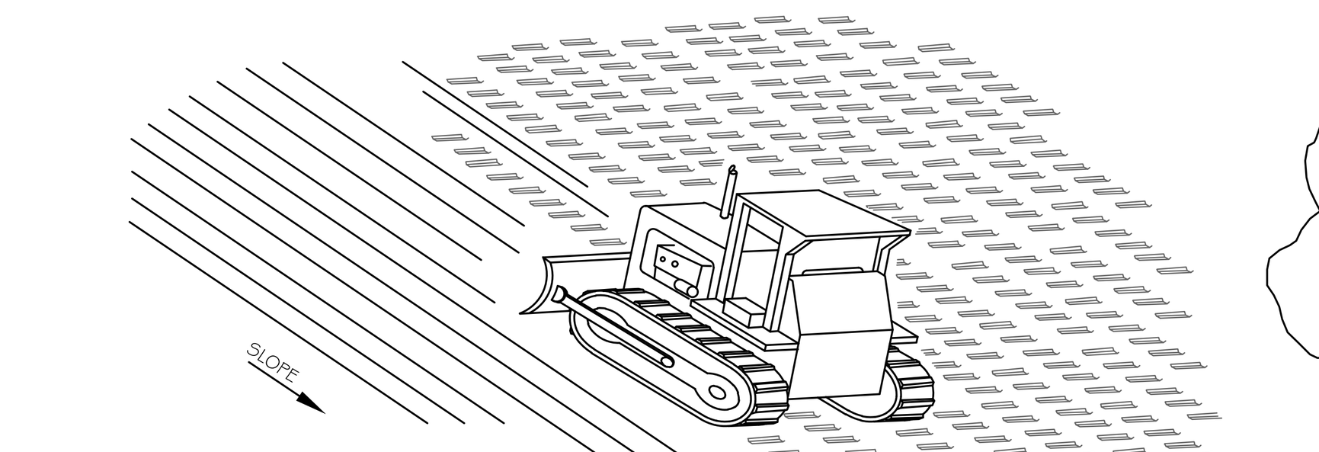
TEMPORARY CONCRETE WASHOUT AREA

N.T.S.



GRATE INLET PROTECTION

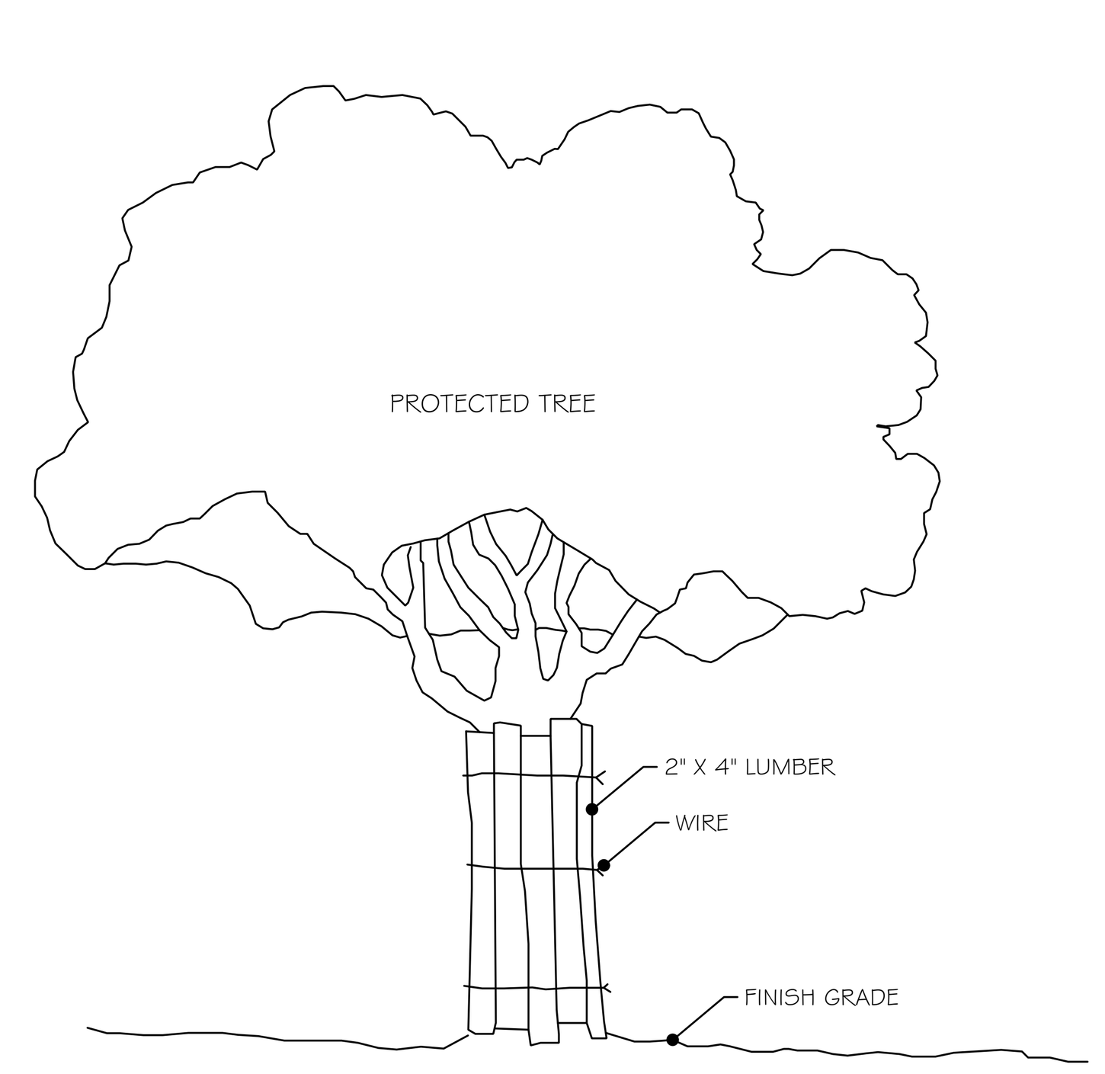
N.T.S.



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

TRACKING DETAIL

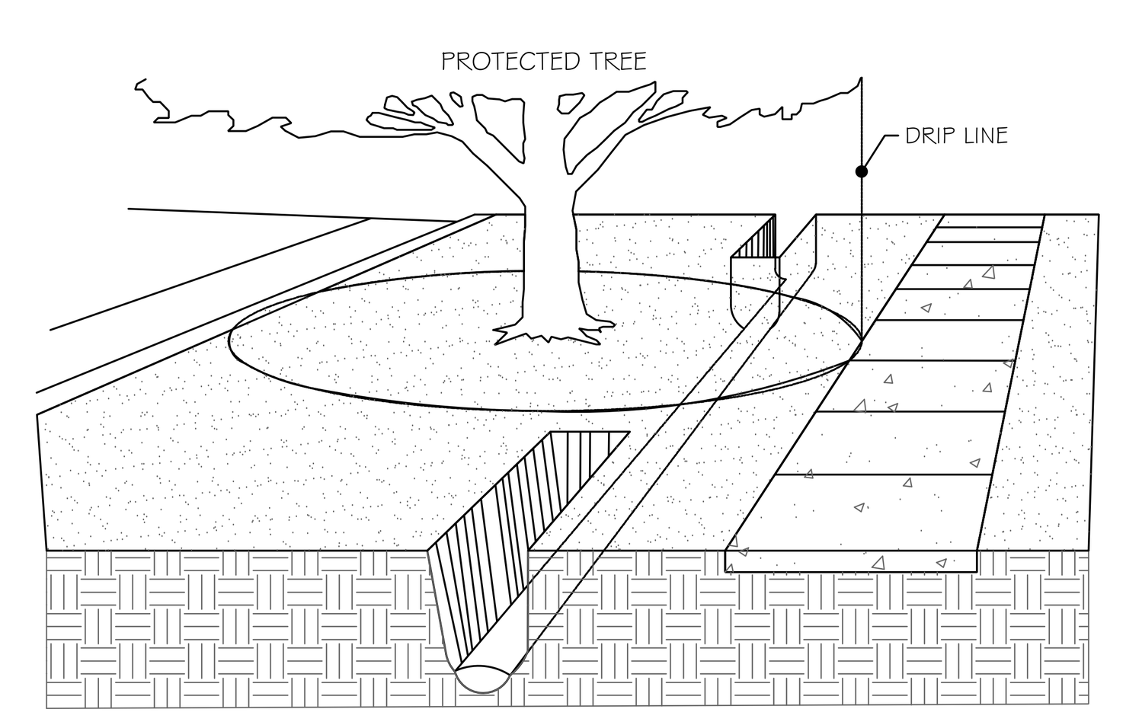
N.T.S.



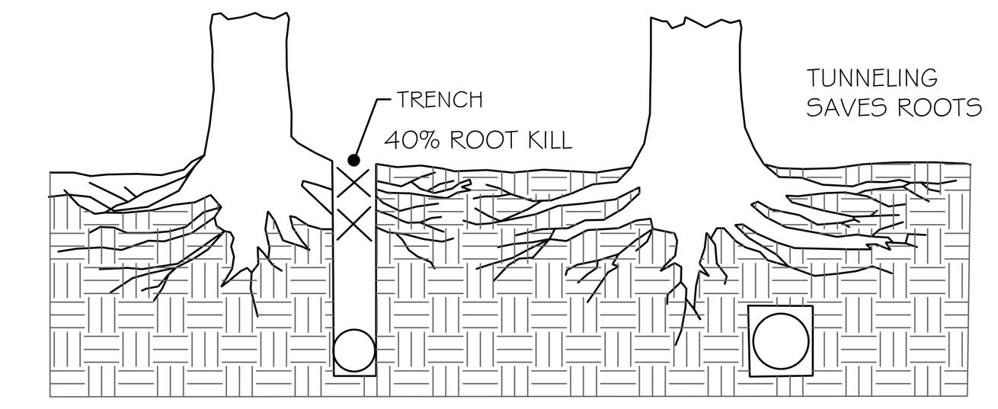
In situations where a protected tree remains in the immediate area of intended construction and the tree may be in danger of being damaged by construction equipment or other activity, the contractor or subcontractor shall protect the tree with 2" x 4" lumber encircled with wire or other means that do 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.

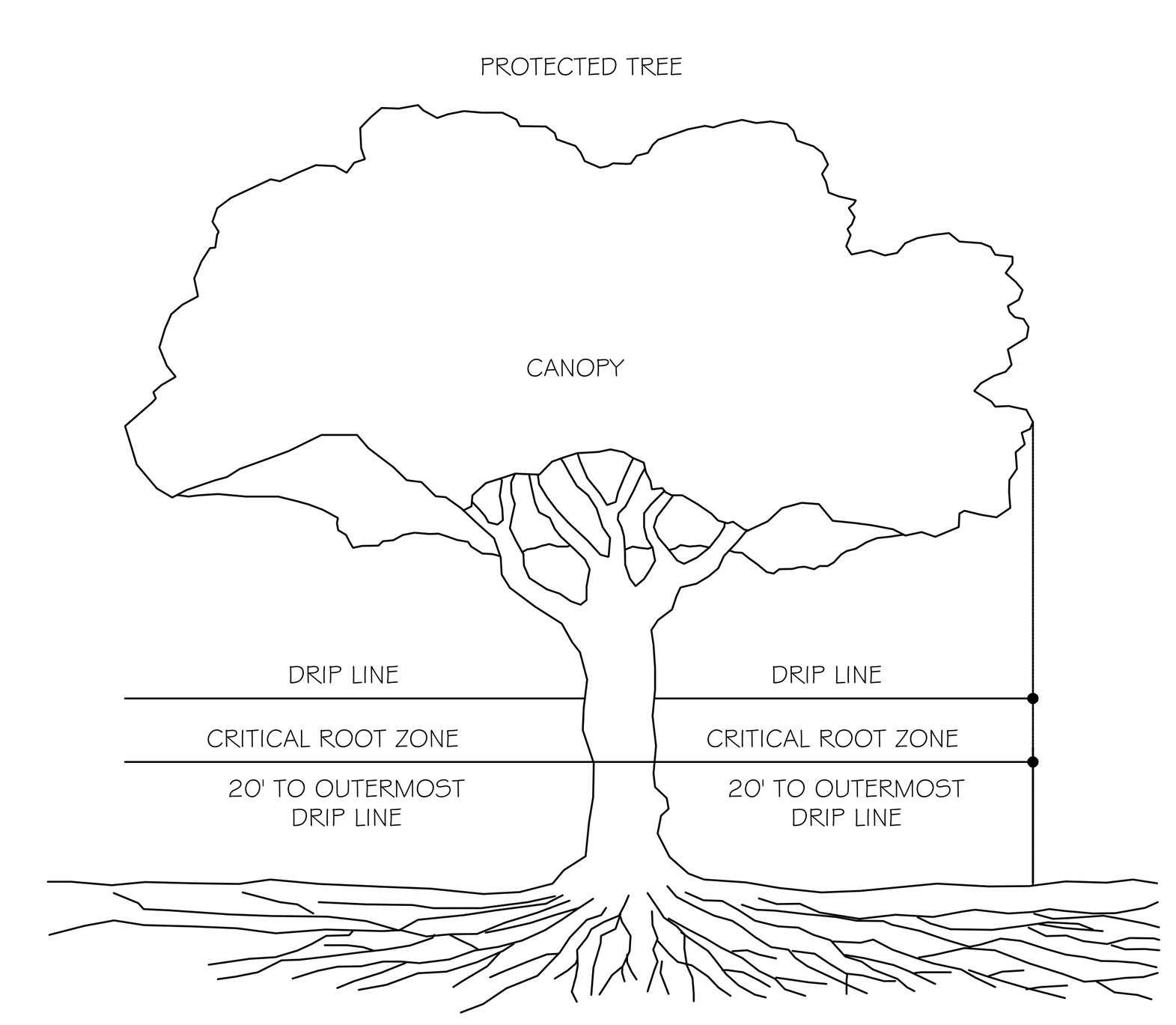


BORING: Boring of utilities under protected trees shall be required in those circumstances where it is not possible to trench around the critical root zone of the protected tree. When required, the length of the bore shall be the width of the critical root zone at a minimum and shall be a minimum depth of 48 inches.



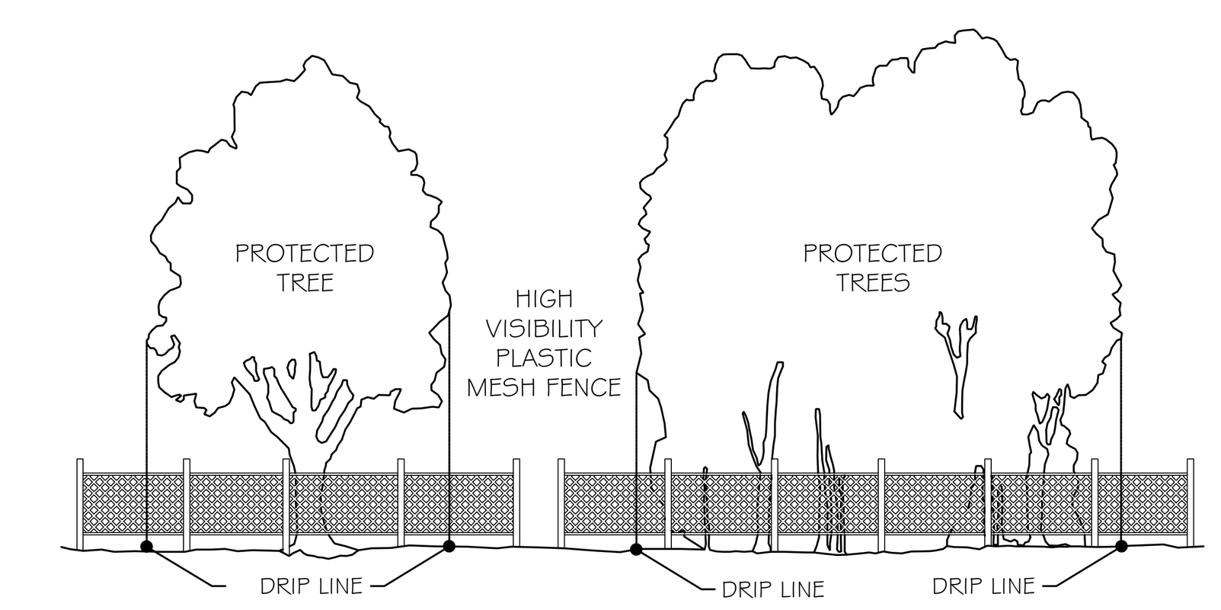
BORING AND TUNNELING

N.T.S.



CRITICAL ROOT ZONE AREA

N.T.S.



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

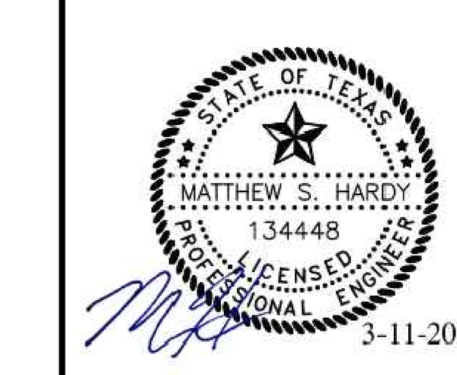
TREE PROTECTION FENCING

N.T.S.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN



3-11-2024

TBPE Registration #: F-13709

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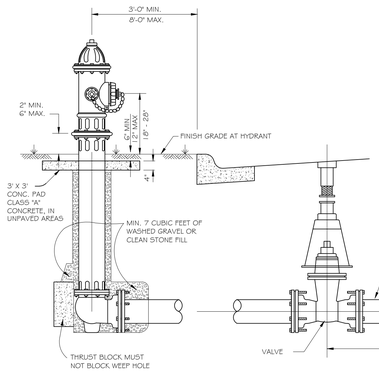
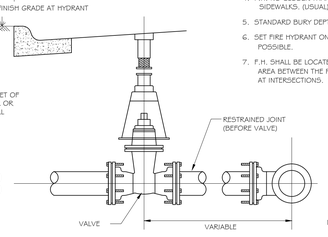
EROSION CONTROL DETAILS

100% CD SUBMITTAL

Job. No. 531023303	Sheet No.
Drawn By: NF	C7.00
Date: 03/20/2024	



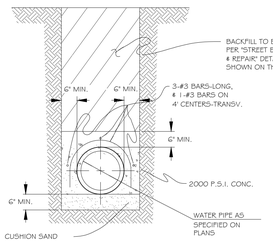


NOTES:

1. IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-502. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
2. ALL JOINTS SHALL BE MECHANICAL JOINTS.
3. TYPICAL VALVE: ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
4. F.H. NO CLOSER THAN 1.8' TO EXISTING OR PROPOSED SIDEWALKS. (USUAL)
5. STANDARD BURY DEPTH 5' FEET
6. SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE
7. F.H. SHALL BE LOCATED MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADII AT INTERSECTIONS. (SEE PLAN VIEW)

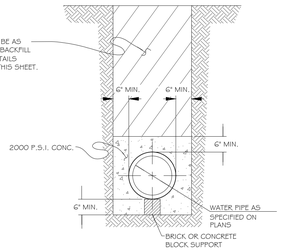
TYPICAL FIRE HYDRANT INSTALLATION

N.T.S.



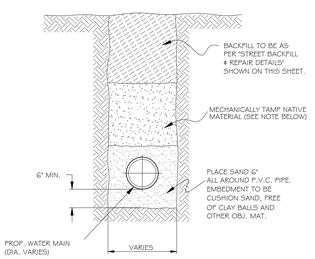
CAP DETAIL

N.T.S.

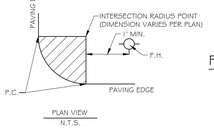


ENCASEMENT DETAIL

N.T.S.



P.V.C., C-900, CL-150, DR18 & R.C.C.P.

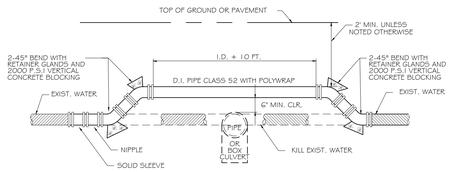


PLAN VIEW
N.T.S.

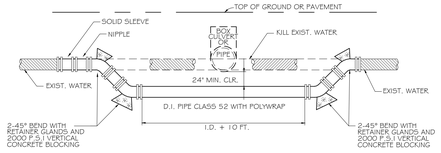
PIPE EMBEDMENT DETAIL (12" DIA. AND SMALLER)

N.T.S.

* MECHANICALLY TAMP NATIVE MATERIAL (Ø'S CLODS OR SMALLER IN 6"-8" LIFTS) TO 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY THE STD. PROCTOR TEST, ASTM D698 WITH MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION TO BE NEAR OPTIMUM OR 4% ABOVE PROCTOR OPTIMUM VALUE.



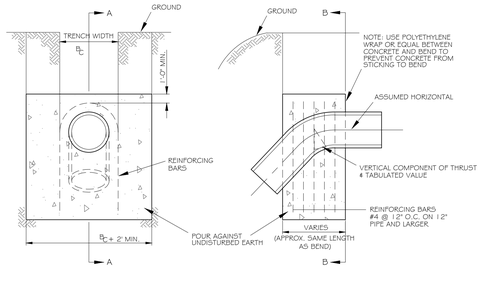
WATER MAIN ADJUSTMENT ABOVE PIPE



WATER MAIN ADJUSTMENT BELOW PIPE

WATER MAIN ADJUSTMENT DETAILS

N.T.S.



ELEVATION B-B

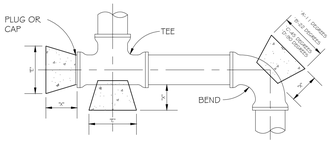
△	11.25°		22.50°		30°		45°		67.50°		90°		△
I.D. (IN.)	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	I.D. (IN.)
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4,6,8
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10,12
16,18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16,18
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.8	49.0	24.5	53.1	26.5	30
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	76.4	38.2	36
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60
66	50.1	25.0	98.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0	78
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96

VERTICAL THRUST BLOCK NOTES:

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I. FOR 24" I.D. PIPE AND SMALLER AND 150 P.S.I. ON 30" I.D. AND LARGER.
2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED, THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.
3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
4. CONCRETE FOR BLOCKING SHALL BE 2000 P.S.I. CONCRETE.
5. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.

DIMENSIONS OF CONCRETE FOR VERTICAL THRUST BLOCKS AT FITTINGS

N.T.S.



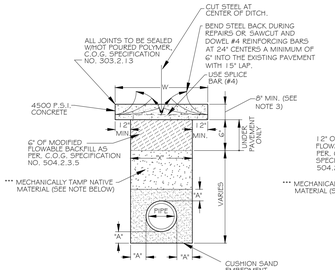
PIPE SIZE	X DIA. FT.	11 1/4 DEGREES		22 1/2 DEGREES		45 DEGREES		90 DEGREES		TEE & PLUG	
		"A"	MIN. AREA	"B"	MIN. AREA	"C"	MIN. AREA	"D"	MIN. AREA	"E"	MIN. AREA
4"	1.5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.00	1.00
6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70
8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02
10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71
12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79
14"	1.5	1.03	1.81	1.90	3.60	2.66	7.07	3.61	13.06	3.04	9.246
16"	2.0	1.18	2.36	2.17	4.71	3.04	9.23	4.13	17.06	3.47	12.06
18"	2.0	1.33	2.99	2.44	5.96	3.42	11.69	4.65	21.59	3.91	15.27
20"	2.0	1.48	3.70	2.71	7.35	3.80	14.43	5.16	26.86	4.34	18.85
21"	2.0	1.55	4.07	2.85	8.11	3.99	15.91	5.42	29.39	4.56	20.78
24"	2.0	1.77	5.32	3.25	10.59	4.56	20.77	6.20	38.39	5.21	27.14
27"	2.5	1.99	6.73	3.66	13.40	5.13	26.29	6.97	48.58	5.86	34.35
30"	2.5	2.22	8.31	4.07	16.55	5.70	32.46	7.74	59.98	6.51	42.41
33"	2.5	2.44	10.06	4.47	20.02	6.27	39.28	8.52	72.57	7.16	51.31
36"	2.5	2.66	11.97	4.88	23.83	6.84	46.74	9.29	86.37	7.81	61.07
39"	3.0	2.88	14.05	5.29	27.97	7.41	54.86	10.07	101.36	8.47	71.68
42"	3.0	3.10	16.30	5.69	32.43	7.98	63.62	10.85	117.56	9.12	83.13

HORIZONTAL THRUST BLOCK NOTES:

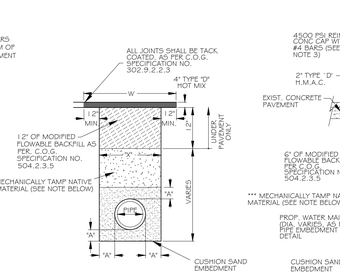
1. RETAINER GLANDS OR OTHER RESTRAINING DEVICES MAY BE REQUIRED AS NEEDED.
2. ALL CALCULATIONS ARE BASED ON A WATER LINE PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING VALUE OF 2,500 POUNDS PER SQUARE FOOT.
3. 2000 PSI. CONCRETE SHALL BE USED FOR ALL BLOCKING.
4. THE MINIMUM VERTICAL DIMENSIONS OF ALL BLOCKING SHALL BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 TIMES THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW THE PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "X" DIMENSION FOR 11 1/4° BEND.
5. FOR 22-1/2°, 45°, 90°, AND TEE AND PLUGS, THE VERTICAL DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENSION SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA.
6. ALL MINIMUM AREAS ARE IN SQUARE FEET.

DIMENSIONS OF CONCRETE FOR HORIZONTAL THRUST BLOCKING AT FITTINGS

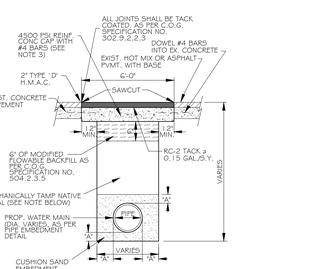
N.T.S.



CONCRETE PAVEMENT REPAIR



ASPHALT PAVEMENT REPAIR



CONCRETE PAVING WITH ASPHALT OVERLY REPAIR

NOTE:
CRUSHED STONE SHALL BE USED TO REPLACE SOFT, SPONGY OR OTHERWISE UNSUITABLE MATERIAL AT PIPE GRADE.

WATER PAVEMENT BACKFILL & REPAIR

N.T.S.

NOTE:
1.) FULL-DEPTH SAWCUT TO REPAIR ASPHALT OR CONCRETE PAVEMENT PRIOR TO OPENING THE DITCH IN ORDER TO ENSURE A NEAT STRAIGHT EDGE.
2.) MODIFIED FLOWABLE BACKFILL MAY BE UTILIZED IN-LIEU OF NATIVE MATERIAL.
3.) DEPTH OF CONCRETE REPAIR SHALL MATCH EXISTING PAVING DEPTH OR 8" MINIMUM.

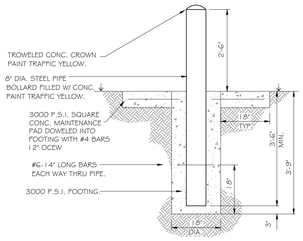
NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES (PVC-DR18)	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH (W)		WIDTH OF PVMT. REPLACEMENT *
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	(W) CONC. & ASPHALT **
6	6.9	6	24	19	48
8	9.05	6	24	21	48
10	11.10	6	26	24	48
12	13.20	6	30	26	50
16+	VARIES	8	*	*	*

NOTE:
* REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARY BASED ON DEPTH AND SOIL MATERIAL.
*** MECHANICALLY TAMP NATIVE MATERIAL (Ø'S CLODS OR SMALLER IN 6"-8" LIFTS) TO 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY THE STD. PROCTOR TEST, ASTM D698 WITH MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION TO BE NEAR OPTIMUM TO 4% ABOVE PROCTOR OPTIMUM VALUE.

NOTE:
(A) CONCRETE FOR PAVING REPAIRS SHALL BE MADE WITH A MINIMUM OF 6 1/2 SACKS OF CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS.
(B) ALL REINFORCING STEEL SHALL BE NEW, MEAT, BILLET-STEEL PER ASTM DESIGNATION A-615, GRADE 60, AND SHALL BE DETAILED AND PLACED PER ACI MANUALS SP-66 AND 316, LATEST ADDITIONS. ALL REINFORCING STEEL SHALL HAVE MINIMUM 15 INCH LAP SPLICES, UNLESS NOTED OTHERWISE ON THE PLANS.
(C) THE CONTRACTOR SHALL USE A LIQUID MEMBRANE-FORMING CURING COMPOUND PER COG ITEM ITEM 303.2.12.1.1.

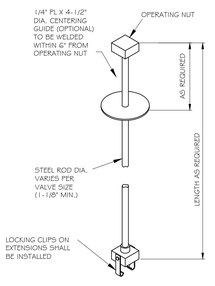
TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

N.T.S.



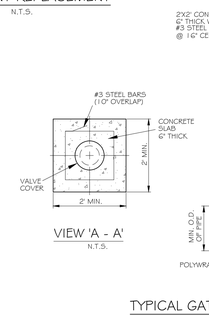
BOLLARD DETAIL

N.T.S.



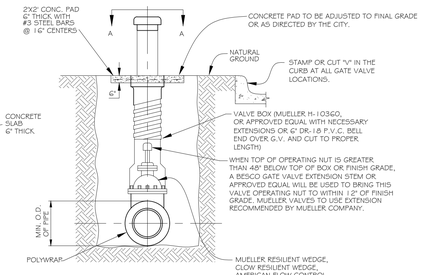
GATE VALVE EXTENSION STEM

N.T.S.



VIEW 'A - A'

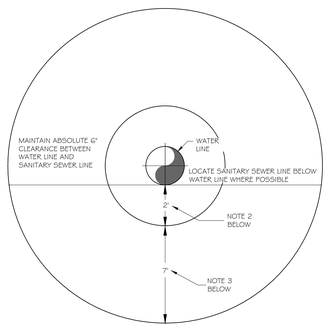
N.T.S.



TYPICAL GATE VALVE SETTING AND BOX

N.T.S.

NOTES
1. THE SANITARY SEWER LINE SHALL BE LOCATED BELOW THE WATER LINE.
2. ONE WATER PIPE SEGMENT SHALL BE CENTERED OVER THE SANITARY SEWER PIPE SUCH THAT THE JOINTS OF THE WATER PIPE ARE EQUIDISTANT AND AT LEAST 9' HORIZONTALLY FROM THE CENTERLINE OF THE SANITARY SEWER PIPE.
3. WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 1 CWA CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE SANITARY SEWER PIPE.
4. MAINTAIN 9' SEPARATION BETWEEN FIRE HYDRANTS AND SANITARY SEWER LINES.
5. MAINTAIN 9' SEPARATION BETWEEN SANITARY SEWER MANHOLES AND WATER LINES.
6. REFER TO TNRCC CHAPTER 317.13 "DESIGN CRITERIA FOR SEWERAGE SYSTEMS- SEPARATION DISTANCES" AS WELL AS CHAPTER 290.44 "WATER HYGIENE- WATER DISTRIBUTION".



1 - WHEN POSSIBLE, LOCATE WATER LINE ABOVE SANITARY SEWER.

2- WHEN SEWER LINE IS WITHIN 6" - 2' OF THE WATER LINE CONSTRUCT SEWER OF C-900, CLASS 150 (DR-18) PIPE WITH JOINTS DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE. CENTER ONE JOINT OF WATER PIPE OVER SANITARY SEWER PIPE
-OR-
NON-PRESSURE RATED SEWER PIPE (AS INDICATED ON THE PLANS) ENCASED IN C-900, CLASS 150 (DR-18) PIPE 2 NOMINAL SIZES LARGER THAN WASTEWATER PIPE, SUPPORTED BY SPACERS AT 5' INTERVALS, SEALED AT BOTH ENDS WITH CEMENT GROUT OR A MANUFACTURED SEAL. CENTER ONE JOINT OF WATER PIPE OVER SANITARY SEWER PIPE.

3 - WHEN SEWER LINE IS WITHIN 2' - 9' OF THE WATER LINE, SEWER MAY BE CONSTRUCTED OF NON-PRESSURE RATED PIPE (AS INDICATED ON THE PLANS) ENCASED IN CEMENT STABILIZED BACKFILL PER TCEQ STANDARDS.
-OR-
NON-PRESSURE RATED SEWER PIPE (AS INDICATED ON THE PLANS) ENCASED IN C-900, CLASS 150 (DR-18) PIPE 2 NOMINAL SIZES LARGER THAN WASTEWATER PIPE, SUPPORTED BY SPACERS AT 5' INTERVALS, SEALED AT BOTH ENDS WITH CEMENT GROUT OR A MANUFACTURED SEAL. CENTER ONE JOINT OF WATER PIPE OVER SANITARY SEWER PIPE.
-OR-
CONSTRUCT SEWER OF C-900, CLASS 150 (DR-18) PIPE WITH JOINTS DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE. CENTER ONE JOINT OF WATER PIPE OVER SANITARY SEWER PIPE

4 - USE STANDARD PIPE MATERIAL AS INDICATED ON THE PLANS IF THE WATER LINE AND SEWER LINE SEPARATION DISTANCE IS GREATER THAN 9'.

WET UTILITY SEPARATION

N.T.S.

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL
ENGINEER
3-11-2024

TBPE Registration #: F-13709

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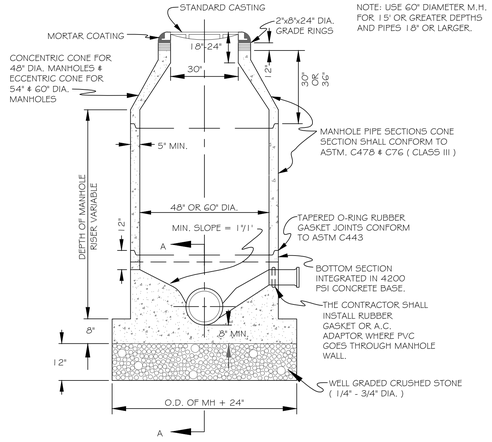
WATER DETAILS

100% CD SUBMITTAL

Job. No. 531023303
Sheet No. C7.01
Drawn By: NF
Date: 03/20/2024

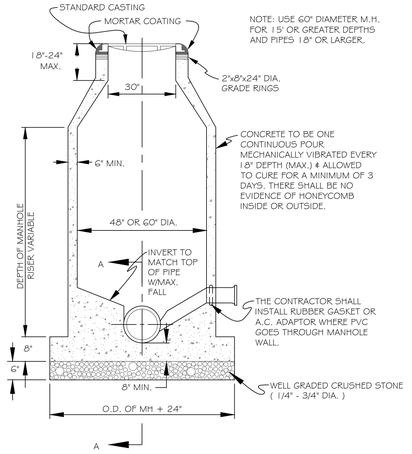


NOTE: USE 60" DIAMETER M.H. FOR 15' OR GREATER DEPTHS AND PIPES 18" OR LARGER.

SEE CONCRETE MANHOLE NOTES.

PRECAST CONCRETE MANHOLE (ASTM C478)

N.T.S.



NOTE: USE 60" DIAMETER M.H. FOR 15' OR GREATER DEPTHS AND PIPES 18" OR LARGER.

SEE CONCRETE MANHOLE NOTES.

POURED IN PLACE CONCRETE MANHOLE

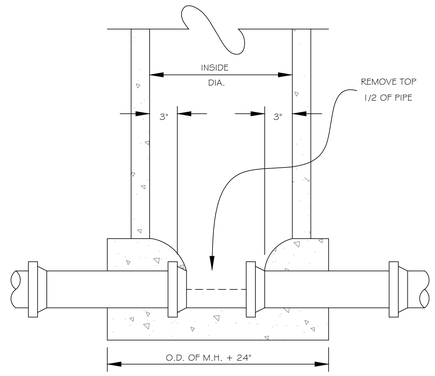
N.T.S.

CONCRETE MANHOLE NOTES:

1. CONCRETE FOR ALL PRECAST AND POURED IN PLACE MANHOLES SHALL BE MIN. 6 SACK 4000 P.S.I. SULPHATE RESISTANT CONCRETE, SUCH AS : TYPE II OR TYPE V CEMENT
2. THE DIAMETER OF THE CONCRETE BASE SHALL NOT BE LESS THAN THE INSIDE DIAMETER OF THE MANHOLE PLUS 2 FT.
3. STEPS SHALL NOT BE INSTALLED IN MANHOLE.
4. ALL NEW MANHOLES SHALL BE MARKED WITH "MH" STAMPED OR CUT IN THE CURB.
5. USE DROP CONNECTIONS WHEN CONNECTING LINE EXCEEDS 24" ABOVE THE MANHOLE FLOWLINE.
6. USE OUTSIDE DROP CONNECTIONS ON ALL NEW MANHOLES.
7. USE INSIDE DROP CONNECTION ON EXISTING MANHOLES ONLY.
8. MANHOLE WALLS SHALL BE CORE DRILLED FOR SEWER CONNECTIONS.

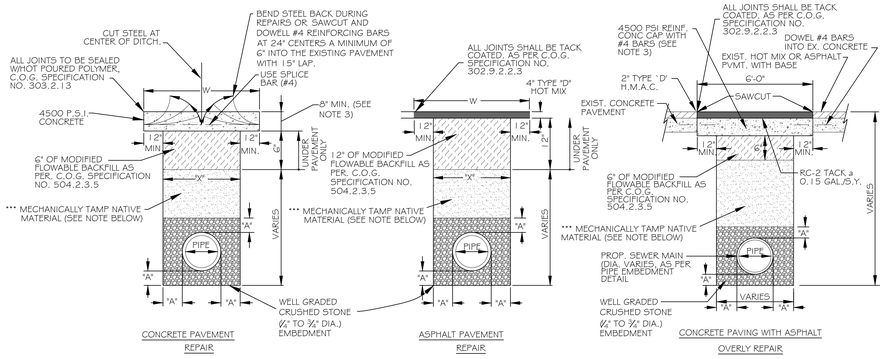
MANHOLE ABANDONMENT

1. REMOVE FRAME, LID AND CONE.
2. CUT AND PLUG ALL ABANDONED SEWER MAINS AT MANHOLE.
3. FILL BOTTOM 12" OF MANHOLE WITH 2000 PSI CONCRETE.
4. BACKFILL AND COMPACT MANHOLE CAVITY WITH SAND AND/OR GRAVEL.
5. REPAIR SURFACE TO MATCH EXISTING AS PER CITY STANDARDS.



WASTEWATER MANHOLE SECTION "A-A"

N.T.S.



NOTE:
CRUSHED STONE SHALL BE USED TO REPLACE SOFT, SPONGY OR OTHERWISE UNSUITABLE MATERIAL AT PIPE GRADE.

WASTEWATER PIPE PAVEMENT BACKFILL & REPAIR

N.T.S.

NOTE:
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2.) MODIFIED FLOWABLE BACKFILL MAY BE UTILIZED IN-LIEU OF NATIVE MATERIAL.
3.) DEPTH OF CONCRETE REPAIR SHALL MATCH EXISTING PAVING DEPTH OR 8" MINIMUM.

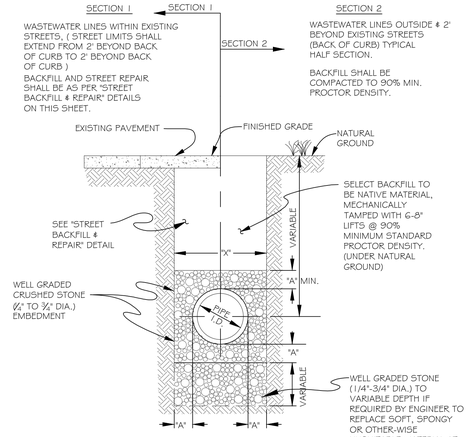
NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES (PVC-SDR35)	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH ('X')		WIDTH OF PVMT. REPLACEMENT *
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	('W') CONC. & ASPHALT **
4	4.67	6	24	18	42
6	6.74	6	24	19	48
8	8.99	6	24	21	48
10	11.27	6	28	24	48
12	13.27	6	30	26	50
15	16.45	8	37	33	57
18	20.73	8	41	37	61
21	24.42	8	45	41	65
24	27.21	8	48	44	68
27	30.61	8	51	47	71

NOTE:
* REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARY BASED ON DEPTH AND SOIL MATERIAL.
*** MECHANICALLY TAMP NATIVE MATERIAL (6"Ø CLODS OR SMALLER IN 6"-8" LIFTS) TO 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY THE STD. PROCTOR TEST, ASTM D698 WITH MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION TO BE NEAR OPTIMUM TO 4% ABOVE PROCTOR OPTIMUM VALUE.

NOTE:
(A) CONCRETE FOR PAVING REPAIRS SHALL BE MADE WITH A MINIMUM OF 6 1/2 SACKS OF CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS.
(B) ALL REINFORCING STEEL SHALL BE NEW, NEAT, BILLET-STEEL PER ASTM DESIGNATION A-615, GRADE 60, AND SHALL BE DETAILED AND PLACED PER ACI MANUALS SP-66 AND 318, LATEST ADDITIONS. ALL REINFORCING STEEL SHALL HAVE MINIMUM 15 INCH LAP SPLICES, UNLESS NOTED OTHERWISE ON THE PLANS.
(C) THE CONTRACTOR SHALL USE A LIQUID MEMBRANE-FORMING CURING COMPOUND PER COG ITEM ITEM 303.2.12.1.1.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

N.T.S.



WASTEWATER PIPE EMBEDMENT DETAIL

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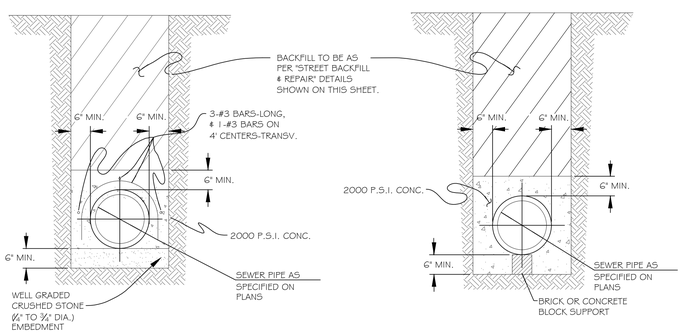
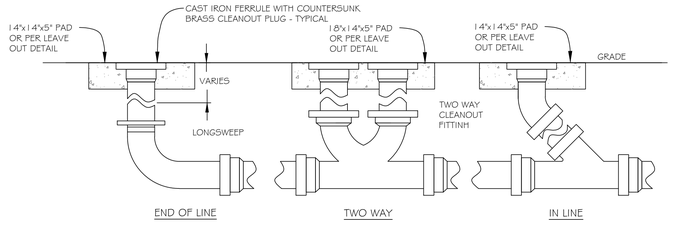


CAP DETAIL

N.T.S.

ENCASEMENT DETAIL

N.T.S.



NOTE: ALL PADS TO BE CONCRETE WITH CHAMFERED EDGES

EXTERIOR CLEANOUT DETAIL

NTS

Revision / Date

Project:
NEW OPERATIONS CENTER
FOR
JARRELL ISD
1247 C BUD STOCKTON LOOP, JARRELL, TEXAS 76537

LANGAN

STATE OF TEXAS
MATTHEW S. HARDY
134448
LICENSED
PROFESSIONAL ENGINEER
3-11-2024

TBPE Registration #: F-13709

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SANITARY SEWER DETAILS

100% CD SUBMITTAL

Job. No. 531023303
Drawn By: NF
Date: 03/20/2024
Sheet No. C7.02

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

I Toni Hicks, Ed.D,
Print Name

Superintendent,
Title - Owner/President/Other

of Jarrell Independent School District,
Corporation/Partnership/Entity Name

have authorized Matt Hardy, 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:

Toni Hicks
Applicant's Signature

3/7/24
Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Toni Hicks 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 7 day of March, 2024.

DIANE HODDE
Notary Public, State of Texas
Comm. Expires 02-27-2028
Notary ID 125100406

Diane Hodde
NOTARY PUBLIC

Diane Hodde
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2/27/2028

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Jarrell High School
Regulated Entity Location: 1100 W. FM 487, Jarrell, Texas
Name of Customer: Jarrell ISD
Contact Person: Toni Hicks, Ed.D Phone: 512-746-2124
Customer Reference Number (if issued):CN 600794234
Regulated Entity Reference Number (if issued):RN 101519049

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	119.5 Acres	$ 10,000
Sewage Collection System	X L.F.	$ 650
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	2 Tanks	$ $1,300
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 03/11/2024

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

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 600794234		RN 101519049

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:*

Jarrell 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: Independent School District

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:

108 E. Avenue F							
City	Jarrell	**State**	TX	**ZIP**	76537	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	toni.hicks@jarrellisd.org

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 746-2124		(512) 746-2518

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.)*

Jarrell High School

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	1100 FM 487							
	City	Jarrell	**State**	TX	**ZIP**	76537	**ZIP + 4**	
24. County								

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

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**
Jarrell			TX		76537

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:	30.818889		**28. Longitude (W) In Decimal:**	-97.628611	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	49	08	97	37	43

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.)*

Public Education

34. Mailing Address:	**108 E. Ave F**							
	City	**Jarrell**	**State**	**TX**	**ZIP**	**76537**	**ZIP + 4**	

35. E-Mail Address:	**toni.hicks@jarrellisd.org**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 746-2124		**(512) 746-2518**

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
		101519049		
☐ 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:	Matt Hardy, PE	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(817) 328-3240		( ) -	mhardy@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	**Job Title:**	Project Manager		
Name *(In Print):*	Matt Hardy, PE			**Phone:**	(817) 328- **3240**
Signature:				**Date:**	**3/11/24**