Water Pollution Abatement Plan Modification

New Braunfels High School Phase 2

2551 TX-337 Loop,
New Braunfels, Texas 78130

Prepared for:
TCEQ

Applicant: Richard Underwood, P.E.

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Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any 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:

    A. 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;

    B. 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;

    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

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

Modification of a Previously Approved Plan Checklist

X **Edwards Aquifer Application Cover Page (TCEQ-20705)**

X **General Information Form (TCEQ-0587)**

Attachment A - Road Map
Attachment B - USGS / Edwards Recharge Zone Map
Attachment C - Project Description

X **Geologic Assessment Form (TCEQ-0585)**

Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
Attachment B - Stratigraphic Column
Attachment C - Site Geology
Attachment D - Site Geologic Map(s)

X **Modification of a Previously Approved Plan (TCEQ-0590)**

Attachment A - Original Approval Letter and Approved Modification Letters
Attachment B - Narrative of Proposed Modification
Attachment C - Current Site Plan of the Approved Project

X **Application Form (include any applicable to the proposed modification):**

Aboveground Storage Tank Facility Plan (TCEQ-0575)
Organized Sewage Collection System Application (TCEQ-0582)
Underground Storage Tank Facility Plan (TCEQ-0583)
Water Pollution Abatement Plan Application (TCEQ-0584)
Lift Station / Force Main System Application (TCEQ-0624)

X **Temporary Stormwater Section (TCEQ-0602)**

Attachment A - Spill Response Actions
Attachment B - Potential Sources of Contamination
Attachment C - Sequence of Major Activities
Attachment D - Temporary Best Management Practices and Measures
Attachment E - Request to Temporarily Seal a Feature (if requested)
Attachment F - Structural Practices
Attachment G - Drainage Area Map
Attachment H - Temporary Sediment Pond(s) Plans and Calculations
Attachment I - Inspection and Maintenance for BMPs
Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

X **Permanent Stormwater Section (TCEQ-0600), if necessary**

Attachment A - 20% or Less Impervious Cover Declaration (if requested for multi-family, school, or small business site)
Attachment B - BMPs for Upgradient Stormwater

Attachment C - BMPs for On-site Stormwater
Attachment D - BMPs for Surface Streams
Attachment E - Request to Seal Features, if sealing a feature
Attachment F - Construction Plans
Attachment G - Inspection, Maintenance, Repair and Retrofit Plan
Attachment H - Pilot-Scale Field Testing Plan (if requested)
Attachment I -Measures for Minimizing Surface Stream Contamination

X **Agent Authorization Form (TCEQ-0599), if application submitted by agent**

X **Application Fee Form (TCEQ-0574)**

X **Check Payable to the "Texas Commission on Environmental Quality"**

X **Core Data Form (TCEQ-10400)**

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: New Braunfels High School Phase 2						**2. Regulated Entity No.: RN102402526**			
3. Customer Name: New Braunfels ISD						**4. Customer No.: CN600397814**			
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):**			53.05
9. Application Fee:	$8,000		**10. Permanent BMP(s):**			2			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Comal		**14. Watershed:**			Guadalupe River			

Application Distribution

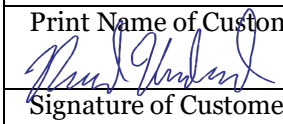
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which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

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

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

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

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	_X_	___	___	___
Region (1 req.)	___	_X_	___	___	___
County(ies)	___	_X_	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	_X_ 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 _X_ 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. **Richard Underwood, P.E. (Authorized Agent)**
Print Name of Customer/Authorized Agent  01/14/2025 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.

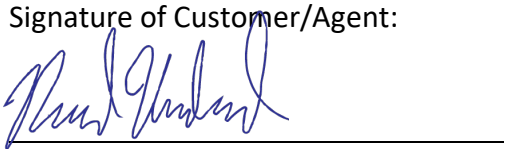
Signature

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: Richard Underwood, P.E.

Date: 01/13/2025

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: New Braunfels High School Phase 2
2. County: Comal
3. Stream Basin: Guadalupe River Basin
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Joe Mansfield
   Entity: New Braunfels ISD
   Mailing Address: 1000 N Walnut
   City, State: New Braunfels, TX Zip: 78130
   Telephone: 8406435700 FAX: _____
   Email Address: josephmansfield@nbisd.org

8. Agent/Representative (If any):

   Contact Person: Richard Underwood, P.E.
   Entity: Kimley-Horn & Associates Inc.
   Mailing Address: 10101 Reunion Place, Suite 400
   City, State: San Antonio, TX Zip: 78216
   Telephone: 2103213415 FAX: _____
   Email Address: richard.underwood@kimley-horn.com

9. Project Location:

   ☒ The project site is located inside the city limits of New Braunfels.
   ☐ 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.

    2551 Loop 337, New Braunfels, TX 78130

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: _____

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:

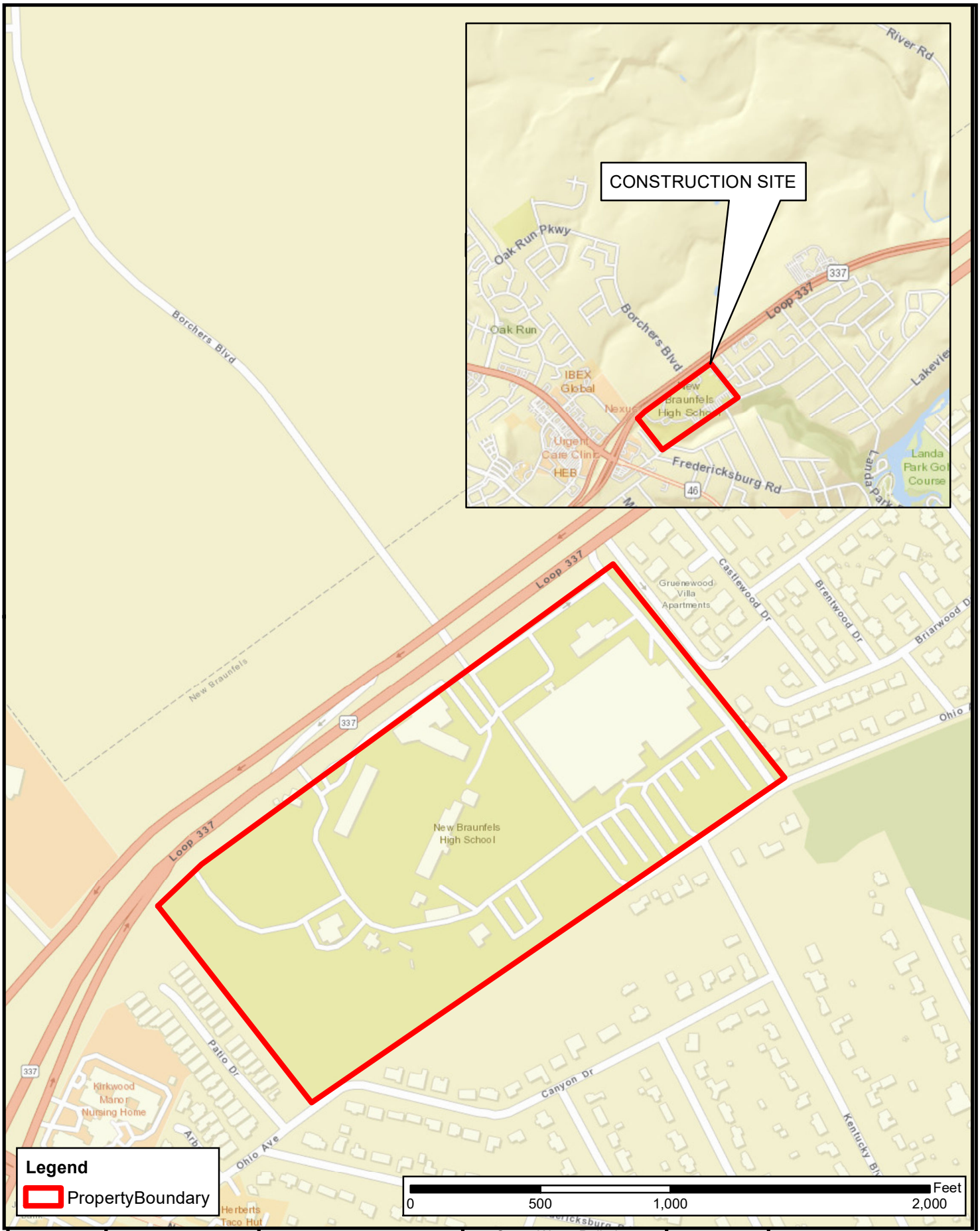
- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an 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.

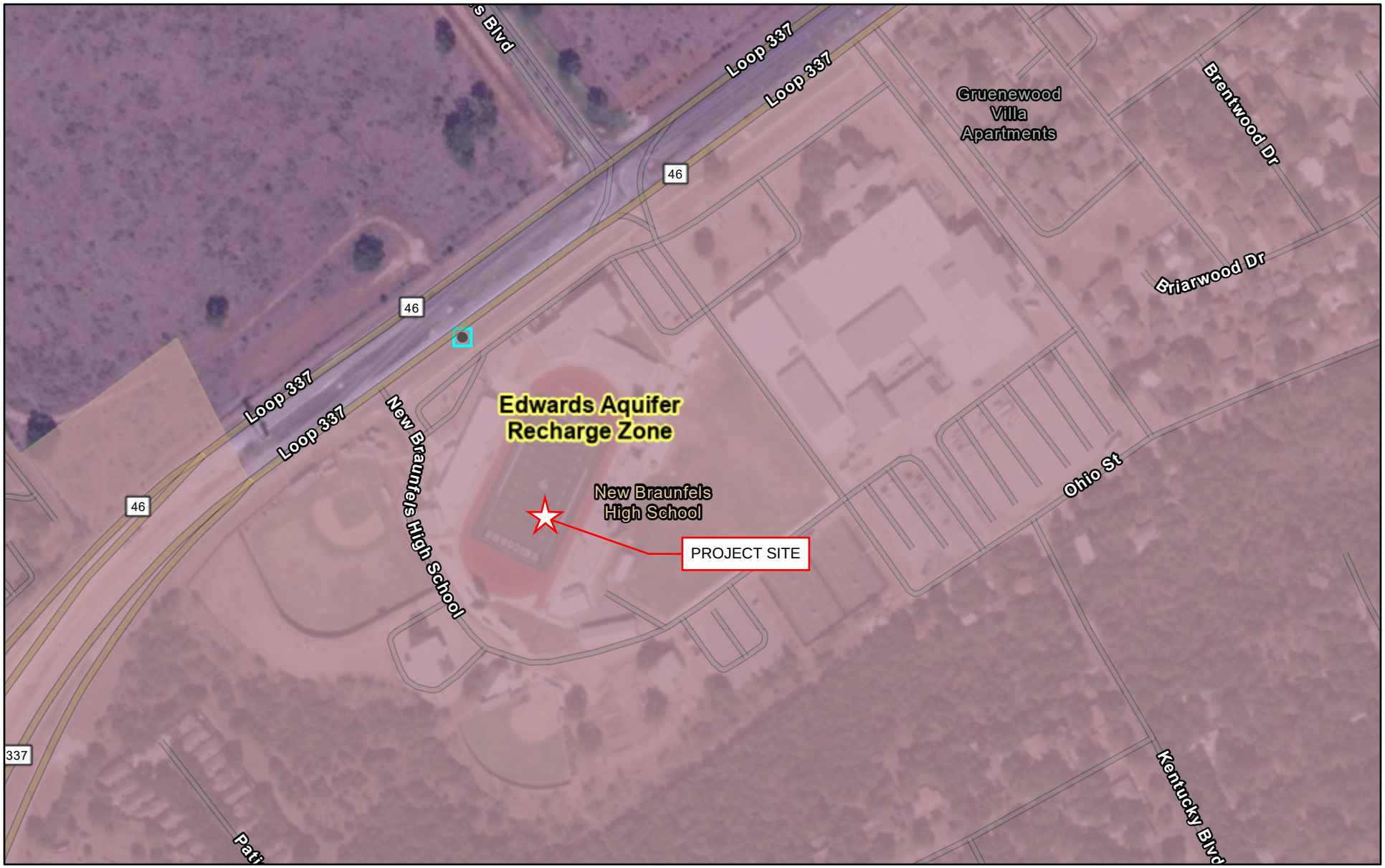
21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.



SHEET 1 OF 2 SHEETS	DATE: 07/18/2022 DESIGN: ME DRAWN: ME CHECKED: BE KHA NO.: 066017050	Attachment A Road Map	Storm Water Pollution Prevention Plan New Braunfels High School New Braunfels, Texas

Kimley»Horn

Attachment B - USGS/Edwards Recharge Zone Map



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0 0.03 0.07 0.13 mi

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Edwards Aquifer Label

City/Place

Groundwater Conservation Districts

Comal Trinity GCD

Edwards Aquifer Authority

TX Counties

7.5 Minute Quad Grid

TCEQ_EDWARDS_OFFICIAL_MAPS

Esri Community Maps Contributors, City of New Braunfels, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin,

Web AppBuilder for ArcGIS

TCEQ | Maxar | Esri Community Maps Contributors, City of New Braunfels, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau,

APPENDIX

PROJECT DESCRIPTION

This modification is being submitted for the proposed additions to New Braunfels High School for New Braunfels I.S.D. Phase 2 in New Braunfels, Comal County, Texas. The site is located at 2551 TX-337 Loop, as shown in the Road Map (Attachment A).

A previous Water Pollution Abatement Plan (WPAP) was modified and approved on March 17, 2011 and included 29.96 acres of impervious cover, including the proposed Greenhouse addition (records not available upon request per TCEQ).

Another WPAP modification was approved in 2016 and decreased the overall impervious cover from 29.96 acres to 29.92 acres. The existing percentage of impervious cover is 53.42% of the site. All work for the 2016 modification has been completed. The water quality pond has been inspected, and a letter of substantial completion was submitted to the TCEQ. (Records not available upon request per TCEQ).

Then a WPAP Exception (#13001148) was approved in 2020 for the renovation and construction of facilities around the high school's baseball fields. The site's impervious cover increased to 58.16% of the entire 56-acre site (net increase of 2.59 ac). The total previous cover is 29.98 acres. (See Appendix A).

Another WPAP modification (#13001727) was approved June 16, 2023, for the additional improvements to school buildings, athletic courts, athletic fields, locker room, associated parking, and drive aisles. The site's impervious cover was approved at 58.16% (32.57 ac).

Kimley-Horn has been made aware of New Braunfels ISD conversions of the existing football (±2 acres), baseball (±3 acres), and softball (±1 acre) fields to artificial turf. Kimley-Horn has confirmed with the designer of these field conversions that the fields were designed to be self-cleaning synthetic turf with liner to meet the requirements of TCEQ to not require additional BMP measures. Please see the design plans for the baseball and softball fields submitted as a supplemental document to this application. Kimley-Horn has no access to any records related to the football field conversion. Utilizing TCEQ guidance for self-treating artificial turf fields, the following is understood. The baseball field is estimated to treat 2.72 acres of artificial turf, resulting in a removal of 2640 lbs of TSS. The Softball field is estimated to treat 0.95 acres of artificial turf, resulting in a removal of 922 lbs of TSS. The football field is estimated to treat 3.44 acres of artificial turf, resulting in a removal of 3339 lbs of TSS. Please see the added TSS removal calculation sheets that document this estimation added to the permanent stormwater section of this application. Kimley-Horn has not been able to identify documentation of any TCEQ records associated with these conversions.

Between the field conversions, there was a gap of 4.43 acres of additional impervious cover between the last approved WPAP and the existing impervious cover of this WPAP modification. This 4.43 acres is associated with a required Lm of 3,976 lbs of TSS. The artificial turf BMPS above total 6,901 lbs of TSS removal.

With the above established, this WPAP modification uses 37.00 acres as the existing impervious cover number considering the prior WPAP and the field conversions and impervious cover update above. This WPAP modification application covers the removal of 10.95 acres of existing impervious cover, and the placement of 14.71 acres of new impervious cover, netting an increase of 3.76 acres of additional impervious cover within the project area. This proposed modification is intended to document how the proposed water quality bmp's associated with only the new 3.76 acres of additional impervious construction identified in this project comply with TCEQ's requirements.

The existing high school consists of school buildings, athletic facilities, associated parking, and drive aisles. Generally, the site sheet flows from the north to the southeast property line. The overall site drains into an existing private storm system and then discharges into a filtration / sedimentation and detention pond, currently being rebuilt per the modification approved in 2023. Runoff from north and west will continue to overland flow off site

and exits the property without detention or treatment.

The surrounding area has been fully developed, and the property is zoned as R-2 for Single Family and Two Family Residential. The site is not within the limits of any 100-yr flood plain and does not have a Critical Water Quality Zone. The site is however, located within the Edward's Aquifer Recharge Zone.

The proposed high school Phase 2 improvements include additional school buildings, athletic courts, athletic fields, locker rooms, associated parking, and drive aisles. The site's impervious cover will increase to 76.83% of the entire 53.05-acre site (40.76 ac). The existing sand filter pond will remain to continue to treat the Phase 1 storm improvements, as well as 16.60 acres shown in PR-A1 shown on sheet C8.12 of Phase 2. A new, private storm system will convey runoff from the redeveloped Phase 2 portions of the site to a proposed underground detention system, with a proprietary media cartridge filter (Jellyfish) water quality structure just before entry, in the southernmost parking lot. The proposed system will outfall to the level spreader constructed with Phase 1 and will runoff to the drainage channel southeast of the site. The proposed improvements include a new artificial turf practice football field on the south-west side of the existing drainage channel. This field will be treated by a second proprietary media cartridge filter (Jellyfish) water quality structure. A portion of the site to the north and west will continue to overland flow off site to Loop 337 as before, in the existing condition. Please reference the Proposed Phase II Drainage Area Map to see the above description in detail.

ATTACHMENT C
Project Description

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.

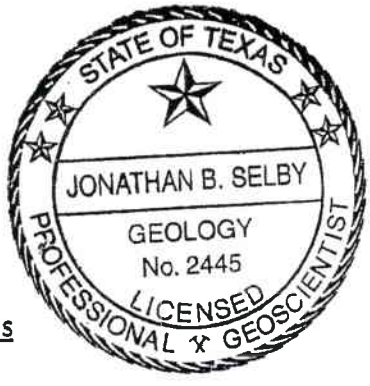
Print Name of Geologist: Jonathan B. Selby

Telephone: 512-658-7178

Date: 07/19/2016

Fax: none

Representing: Jonathan B. Selby; #2455



Signature of Geologist:

Regulated Entity Name: NBISD New Braunfels High School Improvements

Project Information

1. Date(s) Geologic Assessment was performed: 07/16/2016
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ 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)
Comfort-Rock outcrop complex (CrD)	D	1.67
Eckrant-Rock outcrop complex (ErG)	D	1.67
Rumple-Comfort association (RUD)	C	3.0

** 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" = 100'
   Site Geologic Map Scale: 1" = 100'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

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.

    ☐ 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.

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: NBISD New Braunfels High School Improvements

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)	FOR PIT	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
	N	W				X	Y	Z		10						≥40	≥40	<1.6	≥1.6	
S1	29.717307	-98.152687	MB	30				25'						5	35	X		X		Hillside
S2	29.716845	-98.151788	MB	30				20'						5	35	X		X		Hillside
S3	29.718071	-98.15111	MB	30				20'						5	35	X		X		Hillside
S4	29.719122	-98.149965	MB	30				20'						5	35	X		X		Hillside

* DATUM:

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

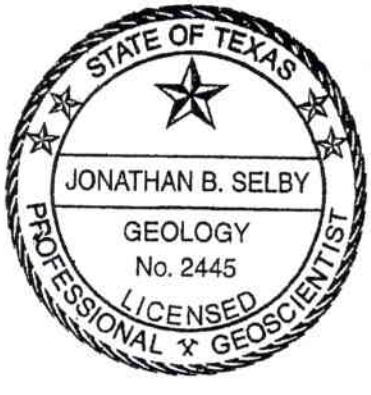
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

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

Date: 07/19/2016

Sheet ___1___ of __1____

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



STRATIGRAPHIC COLUMN

NBISD New Braunfels High School Improvements

2551 Loop 337 New Braunfels TX, 78130

SYSTEM	FORMATION	THICKNESS	GENERAL DESCRIPTION
Cretaceous	Pearson (Kep)	~50' – 75'	**Cyclic and Marine Members, Undivided** Limestone, dolomite and chert: limestone is fine-grained, massive to thin bedded; dolomite is fine-grained, grayish brown and porous; chert nodules common. Vuggy.
Cretaceous	Kainer (Kek)	100'	Massively bedded cyclic subtidal to tidal flat mudstone to grainstone dolomitic limestone

SITE GEOLOGY

NBISD New Braunfels High School Improvements
2551 Loop 337 New Braunfels TX, 78130

Description:

The site is located at 2551 Loop 337, New Braunfels, Texas. The site, which slopes to the east and southeast, is located on the Cretaceous Pearson Formation (Kep) which dips gently to the southeast. Regional geologic maps do not indicate any faults transect the site.

Soils:

The soil types on-site are: The Comfort-Rock outcrop complex (CrD), with 1 to 8 percent slopes, averaging 20 inches in thickness and possesses moderately slow permeability (0.06 – 0.20 in/hr). The Eckrant-Rock outcrop complex (ErG), with 8 to 30 percent slopes, averaging 20 inches in thickness and possesses moderately slow permeability (0.20 – 0.60 in/hr). The Rumple-Comfort association (RUD), with 1 to 8 percent slopes, averaging 36 inches in thickness and possesses moderately slow permeability (0.20 – 0.60 in/hr).

Features:

The site was investigated according to TCEQ guidelines.

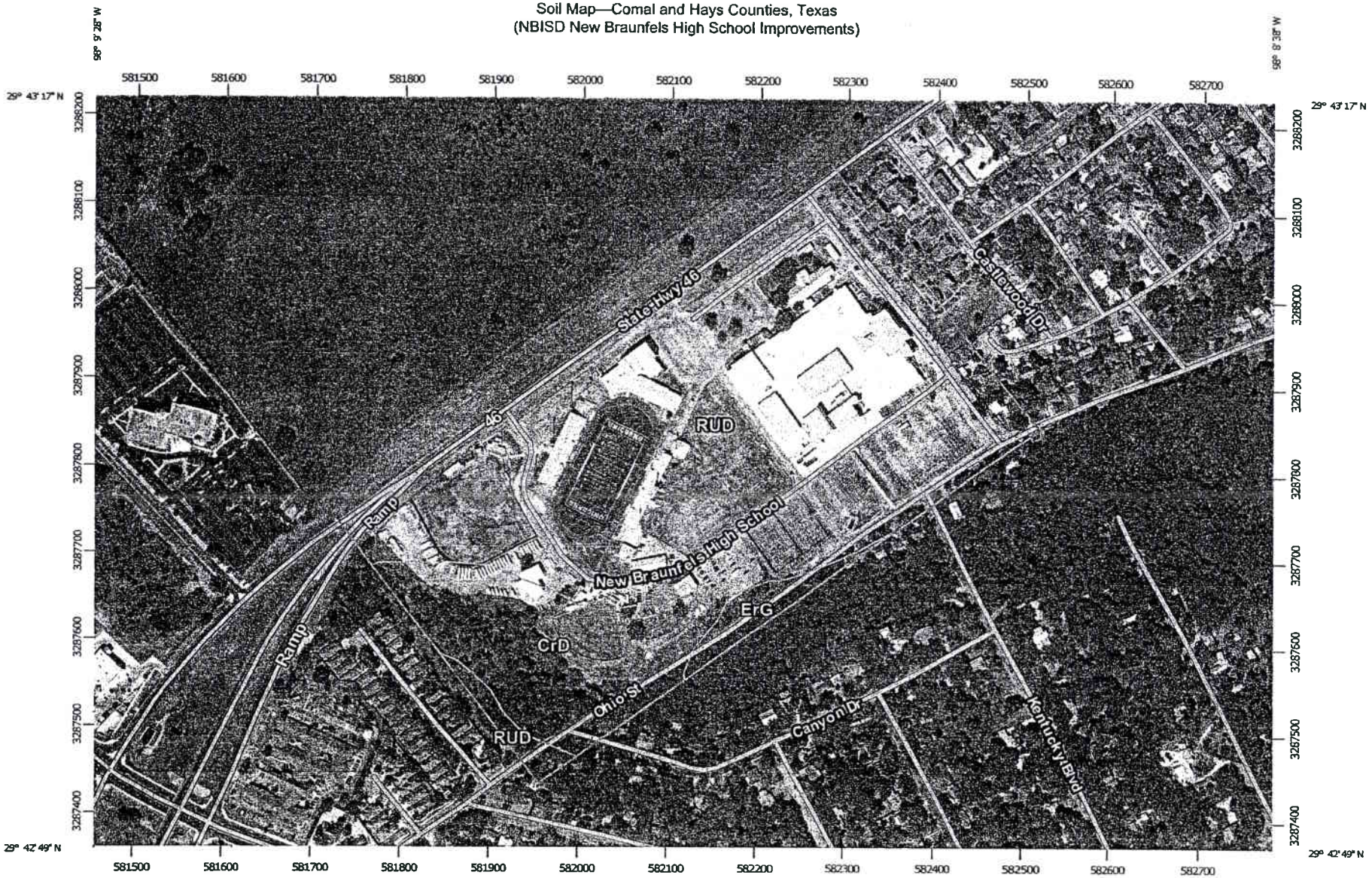
There are four boreholes located on the site. All boreholes were plugged according to regulations.

S1- Borehole 1 was drilled to a depth of 25'. Voids were discovered between 9' - 14½' and 19' – 23'. These voids are not connected to any visible recharge feature at the surface.

S2, S3 & S4- Boreholes 2-4 were drilled to a depth of 20'. No voids were penetrated during drilling.

No solution cavities, caves, sinkholes, faults, fractured outcrops, other karst-related features or water wells were discovered. No recharge features were discovered. Therefore, on a relative basis, recharge on-site is low.

Soil Map—Comal and Hays Counties, Texas
(NBISD New Braunfels High School Improvements)



Map Scale: 1:6,070 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 11, Sep 24, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2011—Feb 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Comal and Hays Counties, Texas (TX604)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CrD	Comfort-Rock outcrop complex, 1 to 8 percent slopes	11.4	17.1%
ErG	Eckrant-Rock outcrop complex, 8 to 30 percent slopes	1.7	2.5%
RUD	Rumple-Comfort association, 1 to 8 percent slopes	53.8	80.4%
Totals for Area of Interest		66.9	100.0%

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.

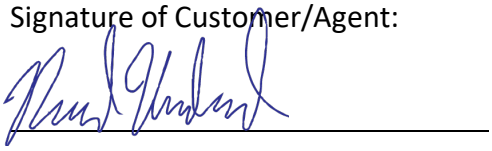
Signature

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: Richard Underwood, P.E.

Date: 01/14/2025

Signature of Customer/Agent:



Project Information

1. Current Regulated Entity Name: New Braunfels High School Phase 2
   Original Regulated Entity Name: New Braunfels High School Phase 2
   Regulated Entity Number(s) (RN): RN102402526
   Edwards Aquifer Protection Program ID Number(s): _____
   ☒ The applicant has not changed and the Customer Number (CN) is: CN600397814
   ☐ 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	56.57	53.05
Type of Development	Commercial	Commercial
Number of Residential Lots	N/A	N/A
Impervious Cover (acres)	32.57	40.76
Impervious Cover (%	58.16	76.83
Permanent BMPs	Sand Filter	2 Jellyfish Filters
Other	_____	_____

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	N/A	N/A
Pipe Diameter	N/A	N/A
Other	N/A	N/A

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	N/A	N/A
Volume of ASTs	N/A	N/A
Other	N/A	N/A

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	N/A	NA/
Volume of USTs	N/A	N/A
Other	N/A	N/A

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.

Attachment A

Original Approval Letter

(Unavailable upon request per TCEQ staff)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 16, 2023

Clint McClain
New Braunfels ISD
1000 N Walnut
New Braunfels, Texas 78130

Re: Modification of an approved Water Pollution Abatement Plan (WPAP)
Additions and Renovation to New Braunfels ISD High School; Located at 2551 Loop 377; New Braunfels, Comal County, Texas
Edwards Aquifer Protection Program ID: 13001727, Regulated Entity No. RN102402526

Dear Mr. McClain:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the application for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by Kimley-Horn & Associates Inc. on behalf of the applicant, New Braunfels ISD on March 30, 2023. Final review of the application was completed after additional material was received on June 2, 2023.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213. The permanent best management practices (BMPs) and measures represented in the application were prepared by a Texas licensed professional engineer (PE). All construction plans and design information were sealed, signed, and dated by a Texas licensed PE. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are **approved,** subject to applicable state rules and the conditions in this letter.

This approval expires two 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 officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of 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 in accordance with 30 TAC §50.139.

BACKGROUND

The New Braunfels ISD High School WPAP (13-97121101A) was approved by letter dated February 16, 2001 and included one (1) sand filter basin and one (1) vegetated filter strip were approved as permanent BMPs.

Subsequent WPAPMODs (13-97121101D, 97121101E, 97121101F, 97121101G, 13000222 and 13001148) were approved between years 2002 and 2020. Total impervious cover was increased to 29.98-acres and three (3) vegetative filter strips and one (1) sand filter basin were designed and constructed to provide treatment.

PROJECT DESCRIPTION

The proposed school project will have an area of approximately 56-acres. The modification will include the construction of school buildings, athletic courts, athletic fields, parking and drives as well as renovations and improvements to existing buildings, the demolition of the existing sand filter basin and construction of a replacement sand filter basin. The impervious cover will be 32.57-acres (58.16 percent). Project wastewater will be disposed of by conveyance to the existing Kuehler 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, one (1) sand filter basin and three (3) previously approved vegetative filter strips (1397121101, 13-97121101D, 13001148), designed using the TCEQ technical guidance, *RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices,* will be constructed and implemented to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 2,325 pounds of TSS generated from the 32.57-acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The permanent BMPS shall be operational prior to occupancy or use of the proposed project. Inspection, maintenance, repair, and retrofit of the permanent BMPs shall be in accordance with the approved application.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial unit of the site is the cyclic and marine members of the Cretaceous Pearson Formation. No sensitive geologic features were identified in the GA. The site assessment conducted on May 19, 2023 by TCEQ staff determined the site to be generally as described by the GA.

SPECIAL CONDITIONS

I. This modification is subject to all the special and standard conditions listed in the approval letter(s) dated February 16, 2001, May 29, 2002, August 17, 2007, August 4, 2008, March 17, 2011, September 28, 2016, July 16, 2020, and June 16, 2020.

STANDARD CONDITIONS

1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and all technical specifications in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, Dam Safety, Underground Injection Control) as required based on the specifics of the plan.

2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

Prior to Commencement of Construction:

3. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the plan holder must submit to the EAPP proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record. A description of the property boundaries shall be included in the deed recordation in the county deed records. TCEQ form, Deed Recordation Affidavit (TCEQ-0625), may be used.

4. The plan holder of any approved Edwards Aquifer protection plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.

5. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity. 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.

6. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, 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. 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.

7. 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 or gravel. 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.

<u>During Construction:</u>

8. This approval does not authorize the installation of temporary or permanent aboveground storage tanks on this project that will have a total storage capacity of five hundred gallons or more of static hydrocarbons or hazardous substances without prior approval of an Aboveground Storage Tank facility application.

9. If any sensitive feature is encountered during construction, replacement, or rehabilitation on this project, all regulated activities must be **immediately** suspended near it and notification must be made to TCEQ EAPP staff. Temporary BMPs must be installed and maintained to protect the feature from pollution and contamination. 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.

10. All water wells, including injection, dewatering, and monitoring wells shall be identified in the geologic assessment and must be in compliance with the requirements of the Texas Department of Licensing and Regulation 16 TAC Chapter §76 and all other locally applicable rules, as appropriate.

11. 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.

12. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.

13. 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.

14. 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:

15. Owners of permanent BMPs and temporary measures must ensure that the BMPs and measures are constructed and function as designed. A Texas licensed PE must certify in writing that the **permanent** BMPs or measures were constructed as designed. The certification letter must be submitted to the EAPP within 30 days of site completion.

16. 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 or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.

The holder of the approved Edwards Aquifer protection plan is responsible for compliance with Chapter §213 and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved Edwards Aquifer protection plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Drew Evans, P.G. of the Edwards Aquifer Protection Program at (210) 403-4053 or the regional office at 512-339-2929.

Sincerely,

Lillian Butler

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

LIB/de

cc: Richard Underwood, P.E., Kimley-Horn and Associates, Inc

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 16, 2020

Mr. Daryl Stoker
New Braunfels Independent School District
430 W. Mill Street
New Braunfels, Texas 78130

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: NBISD High School; Located at 2551 Loop 337 N; New Braunfels, Texas

TYPE OF PLAN: Request for an Exception to the Requirements of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN102402526; Additional ID No. 13001148

Dear Mr. Stoker:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the Exception Request application for the above-referenced project submitted to the San Antonio Regional Office by Gil Engineering Associates, Inc. on behalf of the New Braunfels Independent School District on May 22, 2020. Final review of the Exception Request was completed after additional material was received on June 16, 2020, June 26, 2020 and July 2, 2020. As presented to the TCEQ, the Exception Request proposed in the submittal is in general compliance with the requirements of 30 TAC Chapter 213. Therefore, the request for exception is 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.*

PROJECT DESCRIPTION

The project site consists of the existing 56-acre New Braunfels Independent School District High School site. This project proposes the addition of 0.06 acres of impervious cover for concrete walkways, restroom, concession building, and parking associated with the existing baseball field. Total site impervious cover will increase to 29.98 acres (53.53 percent). Project wastewater will be disposed of by conveyance to the existing Kuehler Wastewater Treatment Plant owned and operated by New Braunfels Utilities.

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 15-foot engineered vegetative filter strip, 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 54 pounds of TSS generated from the 0.06 acres of impervious cover. The approved measure meets 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 site is located on the Person Formation. Four (4) non-sensitive manmade features in bedrock were noted by the project geologist. The TCEQ did not conduct a site assessment.

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 San Antonio 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 Exception 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 Exception 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 Exception 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 San Antonio 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 Exception, 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 San Antonio 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. No wells exist on site. 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. 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 San Antonio 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 San Antonio 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 San Antonio 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 Dianne Pavlicek-Mesa, P.G. of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/dpm

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

cc: Mr. Victor Gil, P.E., Gil Engineering Associates
Mr. Robert Camareno, City of New Braunfels
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. H. L. Saur, Comal Trinity Groundwater Conservation District
Mr. Roland Ruiz, Edwards Aquifer Authority

NARRATIVE OF PROPOSED MODIFICATION

The proposed modification will increase the amount of impervious cover from 37.00 acres to 40.76 acres. This changes the overall site's impervious cover of 69.75% to 76.83%. The WPAP permitted in 2023 included 32.57 acres. This proposed modification has used 37.00 acres of existing impervious cover for the start of the analysis as Kimley-Horn has been made aware of New Braunfels ISD conversions of the existing football (±2 acres), baseball (±3 acres), and softball (±1 acre) fields to artificial turf. In addition, additional survey was obtained at the southwest corner of the site detailing an additional ±1.30 of existing impervious cover associated with the existing Ohio Avenue ROW that was previously excluded from previous WPAP analysis. This proposed modification will facilitate a net increase of impervious cover to 8.19 acres from the previous TCEQ approval and 3.76 acres from existing conditions. Kimley-Horn has not been able to identify documentation of any TCEQ records associated with the field conversions. This proposed modification is intended to document how the proposed water quality bmp's associated with only the new 3.76 acres of additional impervious construction identified in this project comply with TCEQ's requirements.

Generally, the site sheet flows from the north to the southeast property line. The overall developed portion of the site drains into an existing private storm system and then discharges into a filtration / sedimentation and detention pond. Runoff from the football field is currently routed to the southeast via overland flow and exits the property without detention or treatment. The site is not within the limits of any 100-yr flood plain and does not have a Critical Water Quality Zone. The site is however, located within the Edward's Aquifer Recharge Zone.

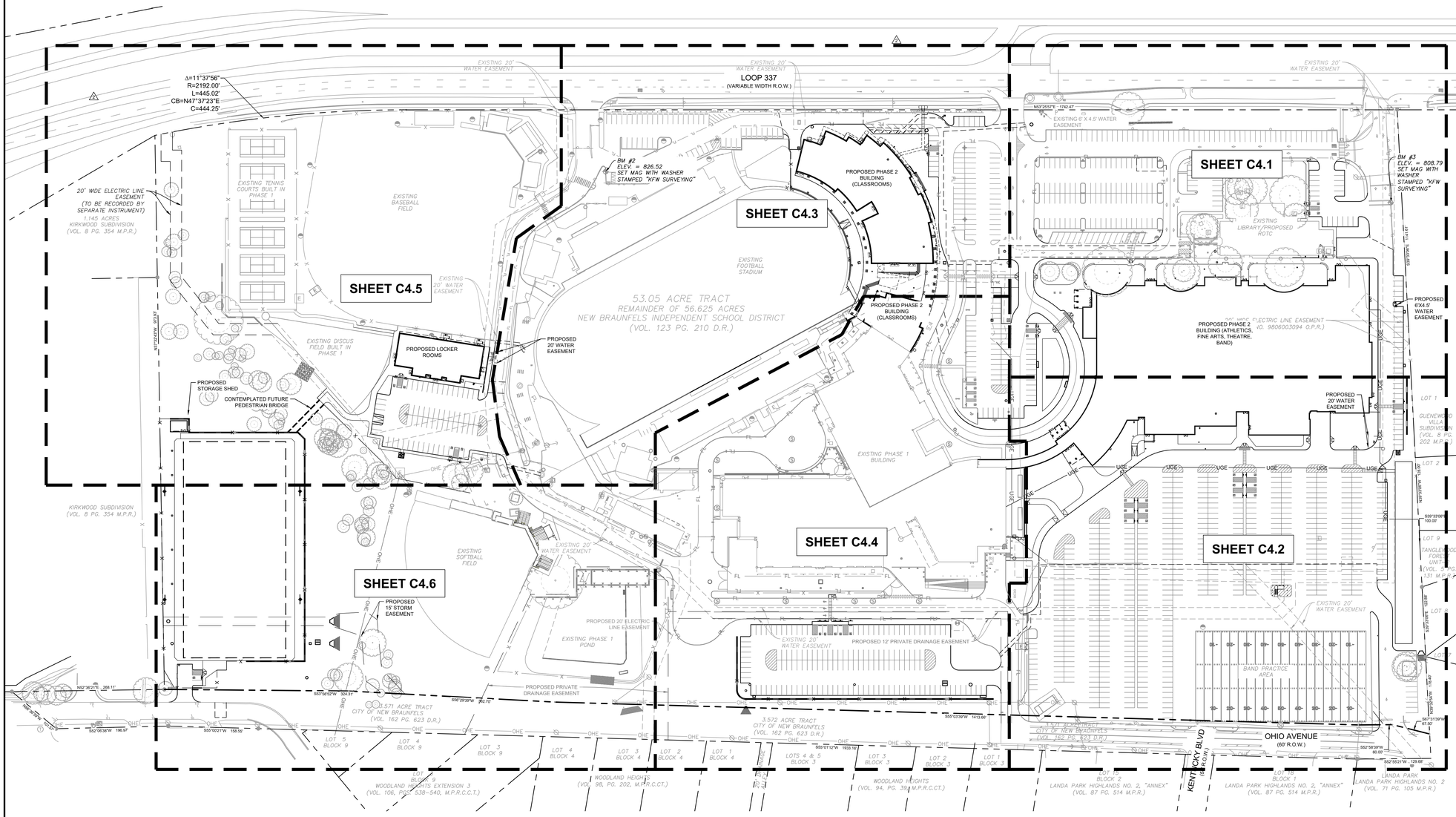
The proposed high school Phase 2 improvements include additional school buildings, athletic courts, athletic fields, locker rooms, associated parking, and drive aisles. The site's impervious cover will increase to 76.83% of the entire 53.05-acre site (40.76 ac). The existing sand filter pond will remain to continue to treat the Phase 1 storm improvements, as well as some of the west portion of phase 2. A new, private storm system will convey runoff from the redeveloped Phase 2 portions of the site to a proposed underground detention system, with a proprietary media cartridge filter (Jellyfish) water quality structure just before entry, in the southernmost parking lot. The proposed system will outfall to the level spreader constructed with phase 1 and will runoff to the drainage channel southeast of the site. The proposed improvements include a new artificial turf practice football field on the south-west side of the existing drainage channel. This field will be treated by another Jellyfish water quality structure. A portion of the site to the north and west will continue to overland flow off site to Loop 337 as before, in the existing condition. Please reference the Proposed Phase II Drainage Area Map to see the above description in detail.

There are no factors affecting the surface water or ground water quality.

ATTACHMENT B
Narrative of Proposed Modification

ATTACHMENT C

Site Plan



GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND

- PROPERTY BOUNDARY
- PROPOSED SAWCUT LINE
- FL — PROPOSED FIRE LANE
- PROPOSED GUARD RAIL
- PROPOSED RETAINING WALL (TRIANGLE INDICATE FACE OF WALL)
- PROPOSED BUILDING CANOPY
- PROPOSED PARKING COUNT
- PROPOSED ACCESSIBLE PARKING SPACE
- PROPOSED BARRIER FREE RAMP
- PROPOSED SANITARY SEWER MANHOLE
- CI — PROPOSED CURB INLET
- PROPOSED FIRE HYDRANT
- PROPOSED POWER POLE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE

NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. REFER TO ARCHITECTURAL CONSTRUCTION DRAWINGS FOR EXACT BUILDING DIMENSIONS. REFER TO LANDSCAPE ARCHITECT'S PLANS FOR DIMENSIONS AND DETAIL OF HARDSCAPE.
3. ALL CURB RADII ARE 3 FEET UNLESS DIMENSIONED OTHERWISE.
4. BUILDING, MECHANICAL EQUIPMENT AND SIGNS ARE SHOWN HEREON FOR REFERENCE ONLY. REFER TO CONSTRUCTION PLANS OF THOSE ITEMS FOR LOCATIONS AND DIMENSIONS.
5. ALL CONSTRUCTION SPECIFICATIONS WITHIN CITY RIGHT-OF-WAY AND EASEMENTS SHALL COMPLY WITH CITY OF NEW BRAUNFELS STANDARDS. PRIOR APPROVAL TO USE ANY NON-STANDARD MATERIAL IS REQUIRED.

SITE DATA TABLE

GENERAL SITE DATA	
LEGAL DESCRIPTION	BEING A PART OF 2086 ACRE OUT OF VARIOUS SURVEYS (ANDREAS SANCHEZ SURVEY NO 286, ABSTRACT NO. 528, J.M. VERAMENDI SURVEY NO. 1, ABSTRACT NO. 2, J.M. VERAMENDI SURVEY NO. 2 ABSTRACT NO. 3) AS CONVEYED BY HARRY LANDA, ET UX, TO DEAN WORD, ET UX, BY DEED DATED THE 5TH DAY OF DECEMBER 1941, AND RECORDED IN VOLUME 74, AT PAGES 510-512, OF THE DEED RECORDS OF COMAL COUNTY, TEXAS.
ZONING	R2
SITE ACREAGE	52.63
ADDRESS	2551 TX-337 LOOP NEW BRAUNFELS, TX 78130
BUILDING DATA	
PROPOSED BUILDING SQUARE FOOTAGE	196,446 SF
PROPOSED BUILDING HEIGHT	VARIES, REFER TO ARCHITECTURAL PLANS
PARKING DATA	
REQUIRED PARKING SPACES	ONE FOR EACH TWO TEACHERS (107 TEACHERS) = 54 SPACES ONE FOR EACH TWO EMPLOYEES (160 EMPLOYEES) = 80 SPACES ONE FOR EACH TEN STUDENTS (2200 STUDENTS) = 220 SPACES ONE FOR EACH BUS (15 BUSES) = 15 SPACES TOTAL = 369 SPACES
STANDARD SPACES PROVIDED	1173
ACCESSIBLE SPACES PROVIDED	25
ACCESSIBLE VAN SPACES PROVIDED	12
TOTAL SPACES PROVIDED	1206

RETAINING WALL NOTES

1. RETAINING WALLS SHOWN IN THIS PLAN SET ARE SHOWN FOR SITE GRADING PURPOSES ONLY AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEVATIONS AT THE TOP AND BOTTOM OF THE WALLS. STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFORMED BY OTHERS AND ARE NOT A PART OF THIS PLAN SET.
2. THE WALL TYPE OR SYSTEM IS TO BE SELECTED BY OWNER, AND THEN CONTRACTOR SHALL PROVIDE THE STRUCTURAL WALL DESIGN SIGNED/SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS. CONTRACTOR IS ALSO RESPONSIBLE FOR SUBMITTALS AND PERMITTING OF THE WALL DESIGN (INCLUDING RAILINGS AND OTHER WALL SAFETY DEVICES) THROUGH THE AGENCIES HAVING JURISDICTION.
3. THE TOP OF WALL (TW) AND BOTTOM OF WALL (BW) ELEVATIONS SHOWN IN THIS PLAN SET ARE ELEVATIONS OF THE FINISHED SURFACE (NOT THE WALL ITSELF). THE STRUCTURAL WALL DESIGN WILL SET THE TOP AND BOTTOM ELEVATIONS OF THE ACTUAL WALL (INCLUDING THE PORTIONS OF THE WALL AND FOUNDATIONS/FOOTINGS THAT WILL BE BURIED BENEATH THE FINISHED SURFACE) SO THAT THE FINISHED SURFACE ELEVATIONS SHOWN IN THIS PLAN SET CAN BE ACHIEVED.
4. REFER TO THE "RETAINING WALLS" SECTION OF THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION.

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

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

REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
137843
REGISTERED
PROFESSIONAL
ENGINEER
12/19/2024

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800.687.1229

OVERALL DIMENSION CONTROL PLAN

PACKAGE 2 VOLUME 01

Job No. 018935-02-02	Sheet No. C4.0
Drawn By: RAU	
Date: 12/19/2024	

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 16, 2020

Mr. Daryl Stoker
New Braunfels Independent School District
430 W. Mill Street
New Braunfels, Texas 78130

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: NBISD High School; Located at 2551 Loop 337 N; New Braunfels, Texas

TYPE OF PLAN: Request for an Exception to the Requirements of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN102402526; Additional ID No. 13001148

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GEOLOGY

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STANDARD CONDITIONS

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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 San Antonio 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. No wells exist on site. 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. 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 San Antonio 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 San Antonio 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 San Antonio 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 Dianne Pavlicek-Mesa, P.G. of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/dpm

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

cc: Mr. Victor Gil, P.E., Gil Engineering Associates
Mr. Robert Camareno, City of New Braunfels
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. H. L. Saur, Comal Trinity Groundwater Conservation District
Mr. Roland Ruiz, Edwards Aquifer Authority

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.

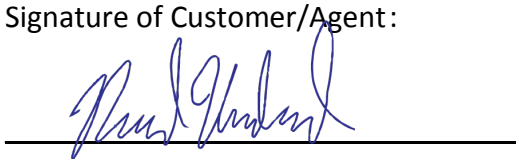
Signature

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: Richard Underwood, P.E.

Date: 01/14/2025

Signature of Customer/Agent:



Regulated Entity Name: New Braunfels High School Phase 2

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots: ____
   ☐ Residential: Number of Living Unit Equivalents: ____
   ☑ Commercial
   ☐ Industrial
   ☐ Other: ____

2. Total site acreage (size of property): 53.05

3. Estimated projected population: NA

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	293,592	÷ 43,560 =	6.75
Parking	744,035	÷ 43,560 =	17.08
Other paved surfaces	868,155	÷ 43,560 =	16.93
Total Impervious Cover	1,905,782	÷ 43,560 =	40.76

Total Impervious Cover 40.76 **÷ Total Acreage** 53.05 **X 100 =** 76.83 **% 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	5,500 Gallons/day
_____ % Industrial	_____ Gallons/day
_____ % Commingled	_____ Gallons/day

TOTAL gallons/day 5,500 (average)

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 North Kuehler 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" = 20 '.

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): FEMA 48091C0435F Dated 9-2-2009

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 _____ (#) 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.

Attachment A – Factors Affecting Surface Water Quality

Factors that could affect the quality of the water discharges for ultimate land use are:

- Oil, grease, and fuel from vehicle drippings;
- Dirt from vehicles;
- Trash and litter;
- Hydrocarbons from asphalt paving operations.

Attachment B – Volume and Character of Stormwater

While the impervious cover on the site increases, an underground detention system, with water quality controls, has been designed to reduce the peak flows from the site to below the existing conditions at the time of construction. The weighted curve number for the proposed improvements would be 96 after development. The curve number was obtained from the City of New Braunfels Drainage and Erosion Control Design manual.

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.

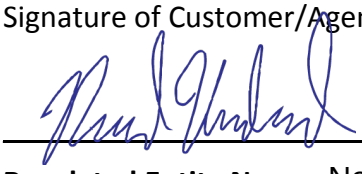
Signature

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: Richard. Underwood P.E.

Date: 01/14/2025

Signature of Customer/Agent:



Regulated Entity Name: New Braunfels High School Phase 2

Project Information

Potential Sources of Contamination

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

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

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

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

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

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

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

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

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

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

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

Sequence of Construction

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

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

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

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

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    ☑ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

ATTACHMENT A – Spill Report Actions

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

Education

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

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

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

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

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

General Measures

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

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

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

(4) Train employees in spill prevention and cleanup.

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

(6) Spills should be covered and protected from stormwater run-on during rainfall to the extent that it doesn't compromise cleanup activities.

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

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

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

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

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

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

Cleanup

(1) Clean up leaks and spills immediately.

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

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

Minor Spills

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

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

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

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

(5) Contain the spread of the spill.

(6) Recover spilled materials.

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

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

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

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

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

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

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements on 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

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

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

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

ATTACHMENT B – Potential Sources of Contamination

Sources of contamination during construction that could potentially affect surface and groundwater quality are as follows:

Potential Source	Preventative Measure
Asphalt Products used on this project	After placement of Asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The Contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain event.
Oil, grease, fuel and Hydraulic fluid drippings	Vehicle maintenance when possible will be performed within the construction staging area.
Miscellaneous trash and litter	Trash containers will be placed throughout the site to encourage proper trash disposal.
Construction Debris	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addresses on a case-by-case basis

ATTACHMENT C – Sequence of Major Events

The installation of erosion and sedimentation controls shall occur prior to any excavation of materials or major disturbances on the site.

The sequence of major construction activities will be as follows. Approximate acreage to be disturbed is listed in parentheses next to each activity.

1. Install all temporary erosion controls. (24.24 acres)
2. Clear and grub strip topsoil. (15.0 acres)
3. Grading (15.0 acres)
4. Rough Cut Drive Aisles and building pads (10.0 acres)
5. Install wet/dry utilities (4.0 acres)
6. Install paving improvements (8.0 acres)
7. Complete restoration of site vegetation. (3.0 acres)
8. Remove and dispose of temporary erosion controls when restoration has been accepted.

Maximum total construction time is not expected to exceed 12 months.

ATTACHMENT D – Temporary Best Management Practices and Measures

Also refer to the TCEQ Site Plan for details of TBMP's.

Silt fencing will be installed prior to the commencement of construction to prohibit runoff of sediment. The silt fence shall be placed perpendicular to direction of flow, where feasible, to maximize efficiency. If there are any, potentially sensitive features, a silt fence will surround the site as specified by TCEQ Guidance Manual Chapter 5.

Bagged gravel inlet filters will be used and maintained in a condition to prevent runoff of sediment from flowing into drains during construction.

Stabilized construction entrance will be installed prior to the commencement of construction and will be used and maintained in a condition that will prevent tracking or flowing of sediment onto public roadway.

a.) Silt fence will not be placed on the upstream side of the site because there will be no stormwater that originates upgradient of the site. All upgradient stormwater is captured in onsite storm water system that discharges to an existing 24" stub. All storm water is discharged to an existing 5'X3' SBC.

b.) Silt fencing and bagged gravel inlet filters will be used on-site to filter out pollutants and restrict sediment from leaving the site. Silt fencing will be placed in existing and proposed channels and downstream of flow on site. Bagged gravel inlet filters will be placed around proposed inlets to capture any suspended solids.

c.) Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. Silt Fencing, bagged gravel inlet filters and construction entrance measures prevent sediment and pollution by filtering and routing water. These filtered pollutants are then removed and prevented from entering surface streams, sensitive features, or the aquifer.

d.) BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMP's. Silt fencing and bagged gravel inlet filters will be placed to intercept and detain water with sediment or pollution from entering or leaving the site to any unprotected areas. The BMP's will filter out sediment and pollution while allowing filtered water to flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

e.) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

APPENDIX

Vehicle and Equipment Maintenance

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

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

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

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

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

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

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

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

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

Vehicle and Equipment Fueling

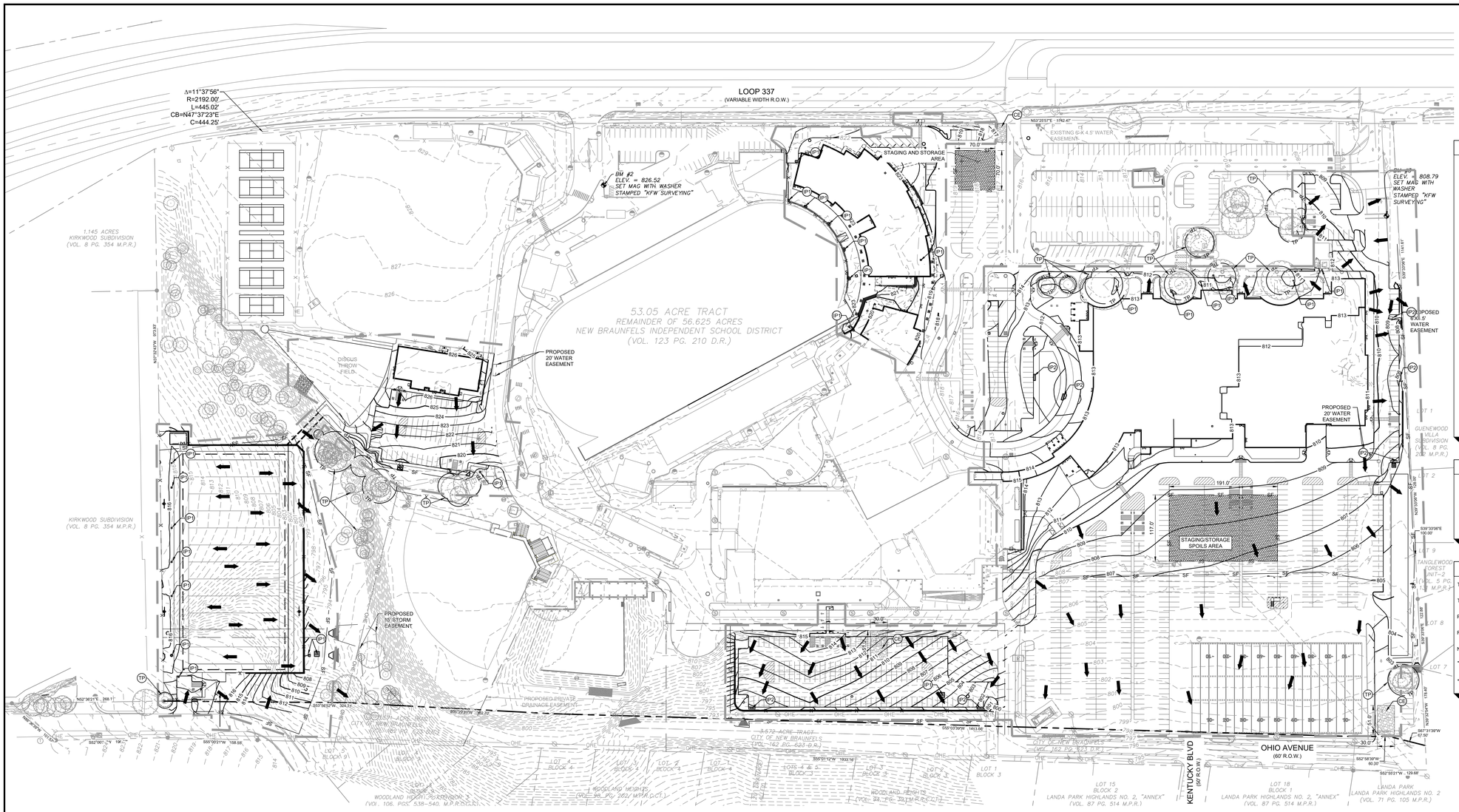
(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

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

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

ATTACHMENT F – Structural Practices

The structural practices that will be used to divert and store flows, and limit runoff discharge or pollutants will be the use of silt fences, inlet protection, and construction entrance stabilization.



GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND

		PROPERTY BOUNDARY
650		EXISTING CONTOUR
650		PROPOSED CONTOUR
		PROPOSED LIMITS OF DISTURBANCE
		DRAINAGE BOUNDARY
		DIRECTION OF OVERLAND FLOW W/GRADE
SF	SF	SILT FENCE (SEE DETAIL SHEET C3.2)
	SC	SILT FENCE STONE OVERFLOW (SEE DETAIL SHEET C3.2)
ST 4.30		NAME DRAINAGE BASIN AREA
	CE	CONSTRUCTION EXIT (SEE DETAIL SHEET C3.2)
	CD	CHECK DAM (SEE DETAIL SHEET C3.3)
	ST	PROPOSED SEDIMENT TRAP W/ TEMPORARY HYDRO MULCH AND SEED (SEE DETAIL SHEET C3.3)
	IS	INTERCEPTOR SWALE (SEE DETAIL SHEET C3.3)
	IP1	GRATE INLET PROTECTION
	IP2	CURB INLET PROTECTION
TP	TP	TREE PROTECTION (SEE DETAIL SHEET LP2.00)
	NB	ROCK BERM (SEE DETAIL SHEET C3.2)

NOTES

1. AREAS CONTAINED WITHIN THE PROPERTY BOUNDARIES WILL BE AREAS OF DISTURBANCE AND SOIL STABILIZATION. ALL SOILS WITHIN THESE LIMITS SHALL BE STABILIZED BY VEGETATION OR STRUCTURE.
2. REFERENCE LANDSCAPE PLANS, FOR THE TREE PRESERVATION AND MITIGATION PLAN.
3. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

SITE DATA

TOTAL LOT AREA	56.0 AC	2,439,000 SF
TOTAL AREA DISTURBED *	24.92 AC	1,085,397 SF
PAVED AREA	15.03 AC	654,494 SF
ROOFED AREA	4.14 AC	180,339 SF
NEW LANDSCAPED AREA	2.21 AC	96,140 SF

* DOES NOT INCLUDE ANY OFF-SITE DISPOSAL OR BORROW AREAS - CONTRACTOR TO UPDATE AS NECESSARY DURING CONSTRUCTION.
* NO SINGLE DRAINAGE AREA EXCEEDS 10 ACRES, THEREFORE SEDIMENTATION BASIN IS NOT REQUIRED.

EROSION CONTROL IMPLEMENTATION SEQUENCE

1. UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE AREAS/CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS. IN ADDITION, NOTE ALL AREAS WHERE FILL IS IMPORTED FROM OR SOIL IS EXPORTED TO ON THE SITE MAPS.
2. DOWN SLOPE PROTECTIVE MEASURES MUST ALWAYS BE IN PLACE BEFORE SOIL IS DISTURBED. ACTIVITIES ARE PRESENTED IN THE ORDER OR SEQUENCE IN WHICH THEY ARE REQUIRED TO BE COMPLETED.
3. CONTRACTOR SHALL FILE THE NOTICE OF INTENT ("NOI") AS PRIMARY OPERATOR AND SIGN ALL REQUIRED STATE CERTIFICATIONS AND DOCUMENTATION AND OBTAIN LOCAL PERMITS FROM THE CITY. CONTRACTOR SHALL INSTALL THE SWPPP INFORMATION SIGN AND POST REQUIRED DOCUMENTS NEAR THE PLANNED CONSTRUCTION EXIT AND WITHIN EASY ACCESS TO THE GENERAL PUBLIC WITHOUT ENTERING THE SITE.
4. STAKE/FLAG THE LIMITS OF DISTURBANCE ("LOD") AND TREE SAVE AREAS (WHERE STAKING IS NOT POSSIBLE/PRACTICAL, THE LOD MUST BE CONSPICUOUSLY, AND PROMINENTLY, MARKED TO DENOTE THE BOUNDARY). CONSTRUCTION FENCING MAY BE USED TO MARK THE LOD WHERE THE CONSTRUCTION FENCING IS IMMEDIATELY ADJACENT TO THE LOD. LOD MUST REMAIN CONSPICUOUSLY MARKED THROUGHOUT THE ENTIRE CONSTRUCTION PROJECT.
5. CONTRACTOR SHALL SCHEDULE AND CONDUCT, AS NEEDED, AN ON-SITE MEETING WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST THREE (3) DAYS PRIOR TO THE MEETING DATE.
6. INSTALL PERIMETER SEDIMENT CONTROL BMPS IN THE VICINITY OF, AND DOWN GRADIENT FROM, THE LOCATION OF THE PLANNED CONSTRUCTION EXIT, CONSTRUCTION OFFICE TRAILER, AND TEMPORARY PARKING AND STORAGE AREAS. CLEAR ONLY THE MINIMUM AREA ABSOLUTELY NECESSARY TO INSTALL THESE PERIMETER CONTROL BMPS.
7. INSTALL STABILIZED CONSTRUCTION EXIT AND SET THE PROJECT OFFICE TRAILER.
8. INSTALL REMAINING PERIMETER SEDIMENT CONTROL BMPS INCLUDING CONSTRUCTION FENCING, PERIMETER SILT FENCE, STONE OVERFLOWS, INLET PROTECTION, ETC., AS SHOWN ON THE SITE MAPS. CLEAR ONLY THE MINIMUM AREA NECESSARY TO INSTALL PERIMETER CONTROL BMPS.
9. PREPARE TEMPORARY PARKING AND STORAGE AREA.
10. GENERAL CONTRACTOR, AS REQUIRED, SHALL SCHEDULE AND CONDUCT THE STORMWATER PRE-CONSTRUCTION MEETING WITH THE CEC, OWNER'S CONSTRUCTION MANAGER, AGENCY(IES) AND SUBCONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.
11. CONSTRUCT AND STABILIZE THE SEDIMENT TRAP WITH APPROPRIATE OUTFALL STRUCTURES (TEMPORARY OR PERMANENT), AS SPECIFIED ON THE SITE MAPS. CONTRACTOR SHALL FOLLOW THE BUILDING PAD FOUNDATION PREPARATION, PER THE GEOTECHNICAL REPORT, AS IT PERTAINS TO THE EARTHWORK FOR THE BUILDING PAD.
12. INSTALL HYDRAULIC CONTROL STRUCTURES (DIVERSION DIKES, DIVERSION SWALES, CHECK DAMS, ETC.), AS SPECIFIED ON THE SITE MAPS.

EROSION CONTROL IMPLEMENTATION SEQUENCE (CONT.)

13. STABILIZE SIDE SLOPES AND FLOW LINE OF HYDRAULIC CONTROL STRUCTURES (DIVERSION DIKES AND SWALES) WITH SEED, FERTILIZER AND ROLLED EROSION CONTROL PRODUCTS OR OTHER EROSION RESISTANT LINING, AS SPECIFIED IN THE SWPPP.
14. BEGIN CLEARING, GRUBBING, AND STRIPPING THE SITE, (PHASE CLEARING, GRUBBING, AND STRIPPING TO THE EXTENT PRACTICAL TO MINIMIZE THE AMOUNT OF AREA DISTURBED AT ANY POINT IN TIME)
15. BEGIN GRADING THE SITE AND BEGIN RETAINING WALL CONSTRUCTION.
16. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES. AT ANY POINT, INSTALL OFF-SITE BMPS AND BEGIN THE UTILITY SERVICE AND CITY RIGHT TURN LANE CONSTRUCTION, AFTER CONTACTING SAWS AND THE CITY THAT WORK HAS COMMENCED.
17. TEMPORARILY STABILIZE, THROUGHOUT CONSTRUCTION IMMEDIATELY FOLLOWING THE COMPLETION OF THE MOST RECENT LAND DISTURBING/GRADING ACTIVITY, ANY DISTURBED AREAS, INCLUDING MATERIAL STOCKPILES THAT ARE SCHEDULED OR LIKELY TO REMAIN INACTIVE FOR 14 DAYS OR MORE.
18. IMMEDIATELY PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
19 BEGIN INSTALLING UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
20 INSTALL RIP RAP AROUND OUTLET STRUCTURES AS EACH OUTLET STRUCTURE IS INSTALLED.
21 INSTALL INLET PROTECTION AT ALL STORM SEWER STRUCTURES AS EACH INLET STRUCTURE IS INSTALLED.
22 PREPARE SITE FOR PAVING.
23 BEGIN PAVING SITE.
24 FINALIZE CONSTRUCTION, LANDSCAPING, AND SITE STABILIZATION. OBTAIN CONCURRENCE FROM THE OWNER, ENGINEER, AND LOCAL INSPECTOR, THAT ALL SITE AREAS HAVE BEEN FULLY STABILIZED AND ALL CONSTRUCTION HAS BEEN COMPLETED, THEN:

A. REMOVE ALL REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS).
B. STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF TEMPORARY BMPS, AND
C. FILE THE NOTICE OF TERMINATION WITH TCEQ AND FOLLOW CLOSE-OUT PROCEDURES WITH THE CITY.

NOTE: THE SEQUENCE OF CONSTRUCTION SHOWN ABOVE IS A GENERAL OVERVIEW AND IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND ALL OTHER APPLICABLE LAWS.

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

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
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STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
REGISTERED
PROFESSIONAL ENGINEER
12/19/2024

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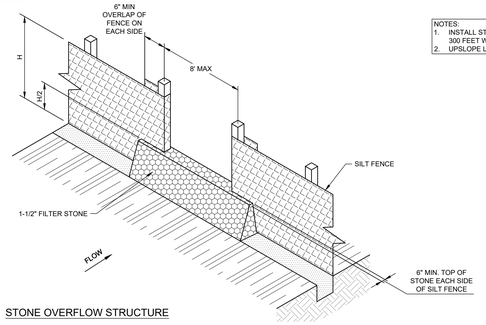
EROSION CONTROL PLAN

PACKAGE 2 VOLUME 01

Job No. 01935-02-02	Sheet No. C3.0
Drawn By: HSW	
Date: 12/19/2024	



NOTES:
1. INSTALL STONE OVERFLOW STRUCTURES AT ALL LOW POINTS AND EVERY 300 FEET WHERE NO LOW POINT IS APPARENT.
2. UPSLOPE LENGTHS OF SILT FENCE SHALL BE A MINIMUM OF 10 FEET.

SO STONE OVERFLOW STRUCTURE

D1 SILT FENCE / STONE OVERFLOW STRUCTURE DETAIL
N.T.S.

SITE MAP - GENERAL NOTES

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS, FLOW ARROWS, AND SLOPES.
4. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
5. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
6. SANITARY SEWER EFFLUENT IS DISPOSED OF VIA AN ONSITE SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.

TEMPORARY EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST THREE (3) DAYS PRIOR TO THE MEETING DATE.
5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST, OR ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT DEPARTMENT AND THE DRAINAGE UTILITY DEPARTMENT. MINOR CHANGES OR ADDITIONAL CONTROL MEASURES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES AT NO ADDITIONAL COST TO THE OWNER.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.

PERMANENT EROSION CONTROL NOTES

ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW.

A. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL SHALL BE PLACED IN ALL DRAINAGE CHANNELS (EXCEPT ROCK) AND BETWEEN THE CURB AND THE RIGHT-OF-WAY LINE.

B. THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE APPLIED OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS:

BROADCAST SEEDING:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF 2 POUNDS PER 1000 SQUARE FEET OF UNHULLED BERMUDA AND 7 POUNDS PER 1000 SQUARE FOOT OF WINTER RYE WITH A PURITY OF 95% WITH 90% GERMINATION.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET WITH A PURITY OF 95% WITH 85% GERMINATION.
   A. FERTILIZER SHALL BE A PELLETED OR GRANULAR SLOW RELEASE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT THE RATE OF 1 POUND PER 1000 SQUARE FEET.
   B. MULCH TYPE USED SHALL BE HAY, STRAW OR MULCH APPLIED AT A RATE OF 45 POUNDS PER 1000 SQUARE FEET.

HYDRAULIC SEEDING:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF 1 POUND PER 1000 SQUARE FEET OF UNHULLED BERMUDA AND 7 POUNDS PER 1000 SQUARE FOOT OF WINTER RYE WITH A PURITY OF 95% WITH 90% GERMINATION.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1000 SQUARE FEET WITH A PURITY OF 95% WITH 85% GERMINATION.
   A. FERTILIZER SHALL BE A WATER SOLUBLE FERTILIZER WITH AN ANALYSIS OF 15-15-15 AT THE RATE OF 1.5 POUNDS PER 1000 SQUARE FEET.
   B. MULCH TYPE USED SHALL BE HAY, STRAW OR MULCH APPLIED AT A RATE OF 45 POUNDS PER 1000 SQUARE FEET, WITH SOIL TACKIFIER AT A RATE OF 1.4 POUNDS PER 1000 SQUARE FEET.
   C. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX (6) INCHES. THE IRRIGATION SHALL OCCUR AT TEN-DAY INTERVALS DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
   D. RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
   E. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE ENVIRONMENTAL CRITERIA MANUAL.

SITE MAPS - SITE SPECIFIC NOTES

1. CONSTRUCTION ENTRANCE SHALL BE LOCATED SO AS TO PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE FLOW OF TRAFFIC IN AND OUT OF THE SITE. ADDITIONALLY, CONSTRUCTION ENTRANCE SHALL BE LOCATED TO COINCIDE WITH THE PHASING OF THE PAVEMENT REPLACEMENT.
2. THE NATURE OF THIS SITE'S CONSTRUCTION CONSISTS OF:
   A. CLEARING AND GRUBBING
   B. PRELIMINARY GRADING
   C. UTILITY INSTALLATION
   D. PAVEMENT CONSTRUCTION
   E. BUILDING CONSTRUCTION
   F. FINAL GRADING AND STABILIZATION
3. THE SUBSURFACE CONDITIONS ON-SITE CONSIST GENERALLY OF BROWN CLAYS, REDDISH CLAYS, TAN CLAYS, CLAYEY SAND, TAN SAND, AND TAN LIMESTONE, PER REPORT NO. ANA22-051-00, PREPARED BY RABA KISTNER, INC. ON JANUARY 24, 2023.
4. STORM WATER ON-SITE WILL LEAVE THE SITE VIA SURFACE FLOW AND UNDERGROUND PIPE.
5. POST CONSTRUCTION STORM WATER POLLUTION CONTROL MEASURES INCLUDE STABILIZATION BY PERMANENT PAVING, OR LANDSCAPING.
6. VELOCITY DISSIPATION DEVICES (RIP-RAP) WILL BE USED.
7. DISTURBED PORTIONS OF SITE MUST BE STABILIZED. STABILIZATION PRACTICES MUST BE INITIATED WITHIN 14 DAYS IN PORTIONS OF THE SITE WHERE CONSTRUCTION HAS BEEN EITHER TEMPORARILY OR PERMANENTLY CEASED, UNLESS EXCEPTED WITHIN THE TPDES PERMIT. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF STABILIZATION OR PERMANENT DRAINAGE FACILITIES.
8. ACCORDING TO COMMUNITY PANEL NO. 48091C0435F, DATED 9/29/2010 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN ZONE "AE" WHICH IS DEFINED BY FEMA AS "1% ANNUAL FLOOD CHANCE AREA WITH BASE FLOOD ELEVATIONS DETERMINED". THE REMAINDER OF THE PROPERTY IS WITHIN ZONE "X" (UN-SHADED) DEFINED BY FEMA AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN."
9. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP/SITE MAP TO INCLUDE BMP'S FOR ANY OFF-SITE MATERIAL WASTE, BORROW OR EQUIPMENT STORAGE AREAS.
10. CONTRACTOR SHALL INSPECT DISTURBED AREAS, MATERIAL STORAGE AREAS EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND VEHICLE ENTRY AND EXIT AREAS AT LEAST ONCE EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.5 INCHES OR GREATER.

REVISION / DATE
CITY AND TCEQ REVISIONS 12.16.2024

NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Project: NEW BRAUNFELS

Kimley»Horn
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STATE OF TEXAS
RICHARD J. UNDERWOOD
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REGISTERED
PROFESSIONAL ENGINEER
12/19/2024

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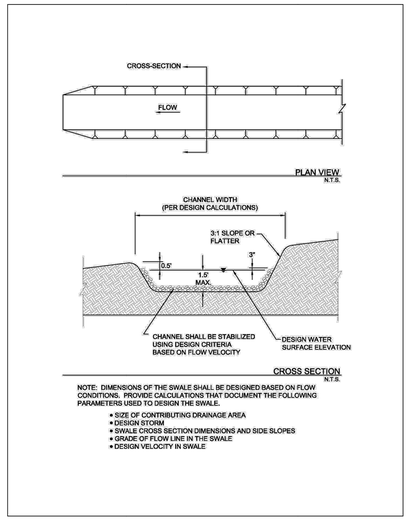
EROSION CONTROL DETAILS (1 OF 2)

PACKAGE 2 VOLUME 01

Job No. 01935-02-02
Drawn By: HSW
Date: 12/19/2024
Sheet No. C3.1

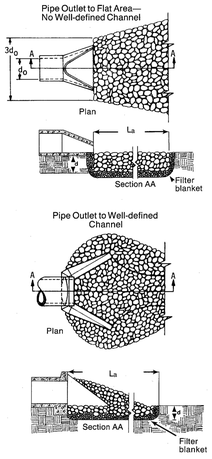


NOTE: DIMENSIONS OF THE SWALE SHALL BE DESIGNED BASED ON FLOW CONDITIONS. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THIS SWALE.

- SIZE OF CONTRIBUTING DRAINAGE AREA
- DESIGN STORM
- SWALE CROSS SECTION DIMENSIONS AND SIDE SLOPES
- GRADE OF FLOW LINE IN THE SWALE
- DESIGN VELOCITY IN SWALE

Figure 2.11 Schematics of Interceptor Swale

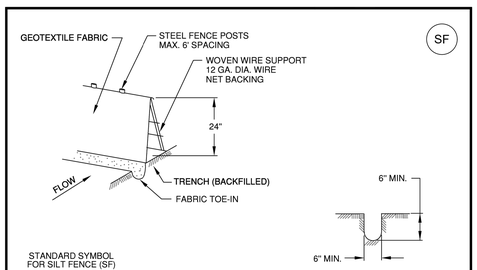
IS Interceptor Swale
April 2010, Revised 9/2014
CC-35



Notes
1. L_a is the length of the riprap apron.
2. d = 1.5 times the maximum stone diameter but not less than 6".
3. In a well-defined channel extend the apron up the channel banks to an elevation of 6" above the maximum tailwater depth or to the top of the bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.

Figure 1-11 Riprap Outlet Design (North Carolina, 1993)

RR 1-24

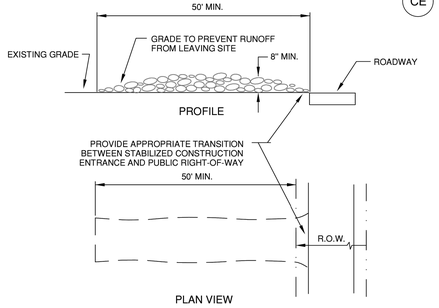


SF

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 1".
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 CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW 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 IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 inches. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING
DRAWN BY: H Shadrock
APPROVED BY:
STANDARD DRAWING:
SILT FENCE
UPDATED: 4-29-03 SCALE: N.T.S. SHEET: 1 OF 1 DRAWING NO. 501

CE



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

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING
DRAWN BY: H Shadrock
APPROVED BY:
STANDARD DRAWING:
STABILIZED CONSTRUCTION ENTRANCE
UPDATED: 4-30-03 SCALE: N.T.S. SHEET: 1 OF 1 DRAWING NO. 506

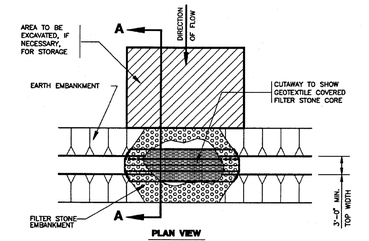


Figure 1-40 Schematic Diagram of a Sediment Trap (NCTCOG, 1993)

ST 1-103

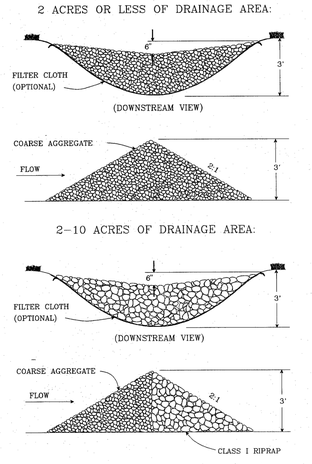


Figure 1-31 Diagram of a Rock Check Dam (VA Dept. of Conservation, 1992)

CD 1-83

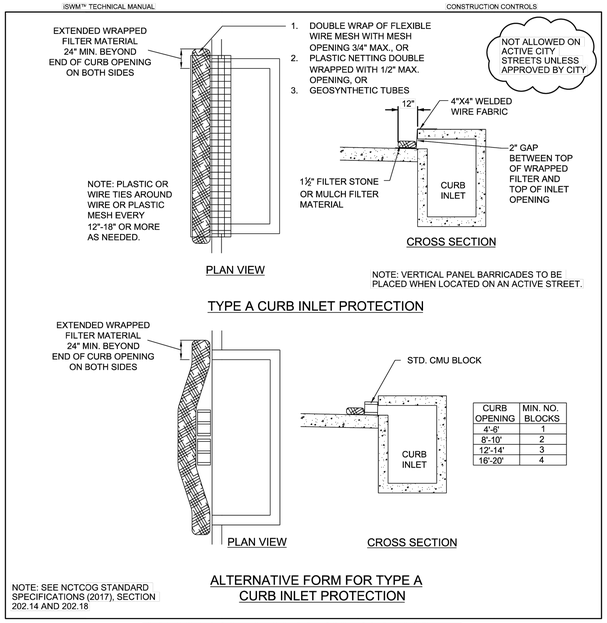


FIGURE 3.6 STANDARD CONSTRUCTION DETAIL - FILTER TUBE CURB INLET PROTECTION

IP2

INLET PROTECTION REVISED

RB

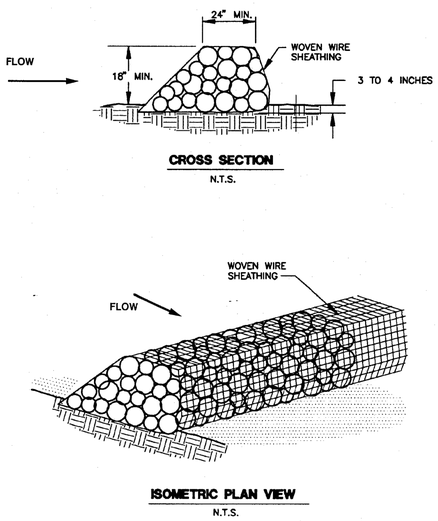


Figure 1-28 Schematic Diagram of a Rock Berm (NCTCOG, 1993)

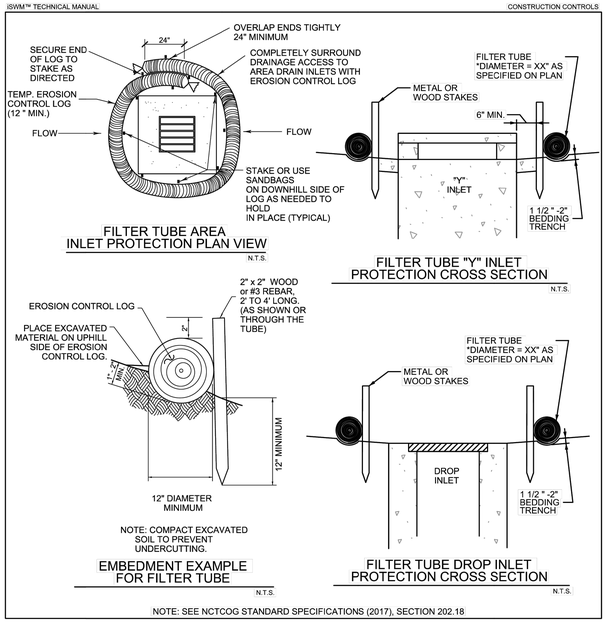


FIGURE 3.13 STANDARD CONSTRUCTION DETAIL - FILTER TUBE AREA INLET PROTECTION

IP1

INLET PROTECTION REVISED

REVISION	DATE	CITY AND TCEQ REVISIONS
1	12.16.2024	

Project: NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
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WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
117943
REGISTERED
PROFESSIONAL ENGINEER
12/19/2024

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EROSION CONTROL DETAILS (2 OF 2)

PACKAGE 2	VOLUME 01
Job No. 019354-02-02	Sheet No. C3.2
Drawn By: HSW	
Date: 12/19/2024	

ATTACHMENT I – Inspection and Maintenance for BMP's

PROJECT NAME: New Braunfels High School Phase 2
ADDRESS: 2551 TX 337 Loop
CITY, STATE: New Braunfels, TX

TEMPORARY BMP'S

SILT FENCE

- Inspections: Inspect all fencing weekly, and after any rainfall.
- Sediment Removal: Remove sediment when buildup reaches 6 inches.
- Replace any torn fabric or install a second line of fencing parallel to the torn section.
- Replace or repair any section crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

BAGGED GRAVEL INLET FILTER

- Inspections: Should be made weekly, and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
- Sediment Removal: Remove sediment when buildup reaches 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- Check placement of device to prevent gaps between device and curb.
- Inspect filter fabric and patch or replace if torn or missing.
- Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized

STABILIZED CONSTRUCTION ENTRANCE

- The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public roadways. This may require periodic top dressing with additional stone as conditions demand, as well as repair and clean out of any measure devices used to trap sediment.
- All sediment that is spilled, dropped, washed or tracked onto public roadway must be removed immediately by contractor.

TEMPORARY SEDIMENT TRAP

- Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

The stabilized construction entrance will be removed once the driveway to the proposed site is complete. Disposal of accumulated silt shall be accomplished following Texas Commission on Environmental Quality guidelines and specifications.

Maintenance records shall be kept on the installation, maintenance, or removal of items necessary for the proper operation of the facilities.
All inspections shall be documented.

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

EDWARDS AQUIFER CONTRIBUTING ZONE
STORMWATER QUALITY MAINTENANCE PLAN

INSTALLATION		MAINTENANCE		REMOVAL	
DATE	**CONTROL TYPE**	**DATE**	**CONTROL TYPE**	**DATE**	**CONTROL TYPE**

Note: Reference Contributing Zone Application Attachment N Maintenance Plan and Schedule for BMP's

ATTACHMENT J – Schedule of Interim and Permanent Soil Stabilization Practices

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

SOIL STABILIZATION PRACTICES:

_____ HYDROMULCHING
_____ TEMPORARY SEEDING
__X__ PERMANENT PLANTING, SODDING, OR SEEDING
__X__ MULCHING
_____ SOIL RETENTION BLANKET
_____ BUFFER ZONES
__X__ PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed areas, in which construction activity has ceased temporarily or permanently, shall be stabilized within 14 days unless activities are scheduled to resume and done within 21 days.

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.

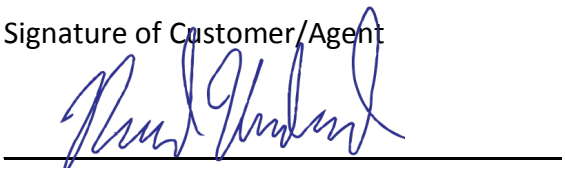
Signature

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: Richard Underwood, P.E.

Date: 01/14/2025

Signature of Customer/Agent



Regulated Entity Name: New Braunfels High School Phase 2

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

ATTACHMENT B – BMPs for Upgradient Stormwater

Permanent water quality features have been installed and sized for upgradient stormwater.

ATTACHMENT C – BMPs for On-site Stormwater

Permanent BMPS for the proposed High School Improvements are needed. Proposed BMPS will include a Jellyfish filter for the parking lot south of the phase 1 building, and another Jellyfish filter treating the proposed artificial turf practice field to the south.

ATTACHMENT F – Construction Plans and Design Calculations

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **NBHS Phase 2**
Date Prepared:

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

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

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

where:

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

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

County =	**Comal**	
Total project area included in plan * =	**53.05**	acres
Predevelopment impervious area within the limits of the plan * =	**32.57**	acres
Total post-development impervious area within the limits of the plan* =	**37.00**	acres
Total post-development impervious cover fraction * =	**0.70**	
P =	**33**	inches

$L_{M\ TOTAL\ PROJECT}$ = **3976** lbs.

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

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

This sheet is intended to document the TSS removal associated with the Baseball field conversion to artificial turf by others.

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

Drainage Basin/Outfall Area No. = **Baseball**

Total drainage basin/outfall area =	**2.72**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.72**	acres
Post-development impervious fraction within drainage basin/outfall area =	**1.00**	
$L_{M\ THIS\ BASIN}$ =	**2441**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
Removal efficiency = **85** percent

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

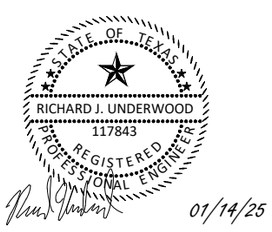
4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

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

where:

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

A_C =	**2.72**	acres
A_I =	**2.72**	acres
A_P =	**0.00**	acres
L_R =	**2640**	lbs



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

Desired $L_{M\ THIS\ BASIN}$ = **2640** lbs.

F = **1.00**

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 =	**4.00**	inches	
Post Development Runoff Coefficient =	**0.82**		
On-site Water Quality Volume =	**32239**	cubic feet	

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

Off-site area draining to BMP =	**0.00**	acres	
Off-site Impervious cover draining to BMP =	**0.00**	acres	
Impervious fraction of off-site area =	**0**		
Off-site Runoff Coefficient =	**0.00**		
Off-site Water Quality Volume =	**0**	cubic feet	
Storage for Sediment =	**6448**		
Total Capture Volume (required water quality volume(s) x 1.20) =	**38687**	cubic feet	

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

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

Required Water Quality Volume for retention basin =	**NA**	cubic feet	
Irrigation Area Calculations:			
Soil infiltration/permeability rate =	**0.1**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**NA**	square feet	
	NA	acres	

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

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

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

9A. Full Sedimentation and Filtration System

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

9B. Partial Sedimentation and Filtration System

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

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

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

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

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

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

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

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

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

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

14. Stormwater Management StormFilter® by CONTECH

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

THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

15. Grassy Swales Designed as Required in RG-348 Pages 3-51 to 3-54

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **NBHS Phase 2**
Date Prepared:

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

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

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

where:

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

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

County =	**Comal**	
Total project area included in plan * =	**53.05**	acres
Predevelopment impervious area within the limits of the plan * =	**32.57**	acres
Total post-development impervious area within the limits of the plan* =	**37.00**	acres
Total post-development impervious cover fraction * =	**0.70**	
P =	**33**	inches

$L_{M\ TOTAL\ PROJECT}$ = **3976** lbs.

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

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

This sheet is intended to document the TSS removal associated with the Football field conversion to artificial turf by others.

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

Drainage Basin/Outfall Area No. = **Football**

Total drainage basin/outfall area =	**3.44**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**3.44**	acres
Post-development impervious fraction within drainage basin/outfall area =	**1.00**	
$L_{M\ THIS\ BASIN}$ =	**3088**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
Removal efficiency = **85** percent

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

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

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

where:

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

A_C =	**3.44**	acres
A_I =	**3.44**	acres
A_P =	**0.00**	acres
L_R =	**3339**	lbs

STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
REGISTERED PROFESSIONAL ENGINEER
01/14/25

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

Desired $L_{M\ THIS\ BASIN}$ = **3339** lbs.

F = **1.00**

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 =	**4.00**	inches	
Post Development Runoff Coefficient =	**0.82**		
On-site Water Quality Volume =	**40773**	cubic feet	

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

Off-site area draining to BMP =	**0.00**	acres	
Off-site Impervious cover draining to BMP =	**0.00**	acres	
Impervious fraction of off-site area =	**0**		
Off-site Runoff Coefficient =	**0.00**		
Off-site Water Quality Volume =	**0**	cubic feet	
Storage for Sediment =	**8155**		
Total Capture Volume (required water quality volume(s) x 1.20) =	**48927**	cubic feet	

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

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

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

Irrigation Area Calculations:

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

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

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

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

9A. Full Sedimentation and Filtration System

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

9B. Partial Sedimentation and Filtration System

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

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

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

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

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

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

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

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

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

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

14. Stormwater Management StormFilter® by CONTECH

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

THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

15. Grassy Swales Designed as Required in RG-348 Pages 3-51 to 3-54

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: New Braunfels High School Phase 2
Date Prepared: 1/21/2025

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

$L_{M\ TOTAL\ PROJECT}$ = 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 =	Comal	
Total project area included in plan * =	53.05	acres
Predevelopment impervious area within the limits of the plan * =	37.00	acres
Total post-development impervious area within the limits of the plan* =	40.76	acres
Total post-development impervious cover fraction * =	0.77	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	3376	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	3	

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

Drainage Basin/Outfall Area No. =	PR-A4.1	
Total drainage basin/outfall area =	2.19	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.19	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1967	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	JF	abbreviation
Removal efficiency =	86	percent

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

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

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

A_C =	2.19	acres
A_I =	2.19	acres
A_P =	0.00	acres
L_R =	2150	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	1967	lbs.
F =	0.91	

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

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity =	1.15	inches per hour
Effective Area =	1.97	acres
Cartridge Length =	54	inches
Peak Treatment Flow Required =	2.29	cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size
Jellyfish Size for Flow-Based Configuration = JFPD0808-12-3
Jellyfish Treatment Flow Rate = 2.41 cfs

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: New Braunfels High School Phase 2
Date Prepared: 1/21/2025

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

$L_{M\ TOTAL\ PROJECT}$ = 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 =	Comal	
Total project area included in plan * =	53.05	acres
Predevelopment impervious area within the limits of the plan * =	37.00	acres
Total post-development impervious area within the limits of the plan* =	40.76	acres
Total post-development impervious cover fraction * =	0.77	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	3376	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	3	

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

Drainage Basin/Outfall Area No. = PR-A5 & PR-A5.1

Total drainage basin/outfall area =	2.33	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.24	acres
Post-development impervious fraction within drainage basin/outfall area =	0.96	
$L_{M\ THIS\ BASIN}$ =	2012	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	JF	abbreviation
Removal efficiency =	86	percent

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

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

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

A_C =	2.33	acres
A_I =	2.24	acres
A_P =	0.09	acres
L_R =	2201	lbs.

01/14/25

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

Desired $L_{M\ THIS\ BASIN}$ =	2012	lbs.
F =	0.91	

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

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity =	1.15	inches per hour
Effective Area =	2.02	acres
Cartridge Length =	54	inches
Peak Treatment Flow Required =	2.34	cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration =	JFPD0808-12-3	
Jellyfish Treatment Flow Rate =	2.41	cfs

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **NBHS Phase 2**
Date Prepared:

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

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

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

where:

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

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

County =	Comal	
Total project area included in plan * =	53.05	acres
Predevelopment impervious area within the limits of the plan * =	32.57	acres
Total post-development impervious area within the limits of the plan* =	37.00	acres
Total post-development impervious cover fraction * =	0.70	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	3976	lbs.

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

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

This sheet is intended to document the TSS removal associated with the Softball field conversion to artificial turf by others.

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

Drainage Basin/Outfall Area No. = Softball

Total drainage basin/outfall area =	0.95	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.95	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	853	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

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

where:

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

A_C =	0.95	acres
A_I =	0.95	acres
A_P =	0.00	acres
L_R =	922	lbs

STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
REGISTERED PROFESSIONAL ENGINEER
01/14/25

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

Desired $L_{M\ THIS\ BASIN}$ = 922 lbs.

F = 1.00

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 =	**4.00**	inches	
Post Development Runoff Coefficient =	**0.82**		
On-site Water Quality Volume =	**11260**	cubic feet	

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

Off-site area draining to BMP =	**0.00**	acres	
Off-site Impervious cover draining to BMP =	**0.00**	acres	
Impervious fraction of off-site area =	**0**		
Off-site Runoff Coefficient =	**0.00**		
Off-site Water Quality Volume =	**0**	cubic feet	
Storage for Sediment =	**2252**		
Total Capture Volume (required water quality volume(s) x 1.20) =	**13512**	cubic feet	

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

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

Required Water Quality Volume for retention basin =	**NA**	cubic feet	
Irrigation Area Calculations:			
Soil infiltration/permeability rate =	**0.1**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**NA**	square feet	
	NA	acres	

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

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

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

9A. Full Sedimentation and Filtration System

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

9B. Partial Sedimentation and Filtration System

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

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

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

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

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

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

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

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

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

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

14. Stormwater Management StormFilter® by CONTECH

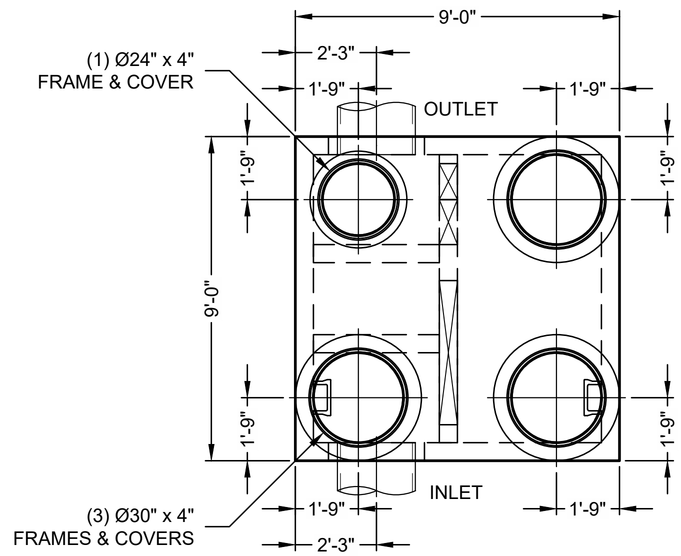
Required Water Quality Volume for Contech StormFilter System =	**NA**	cubic feet

THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

15. Grassy Swales Designed as Required in RG-348 Pages 3-51 to 3-54

APPENDIX B

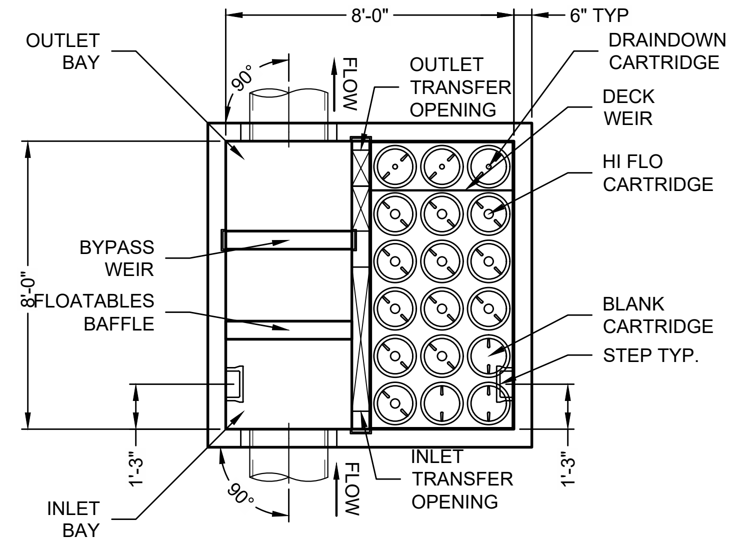
SHOP DRAWINGS



PLAN VIEW

STATE OF TEXAS
MITCHELL T. HARDERT
108405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121



PLAN VIEW

(TOP SLAB NOT SHOWN FOR CLARITY)

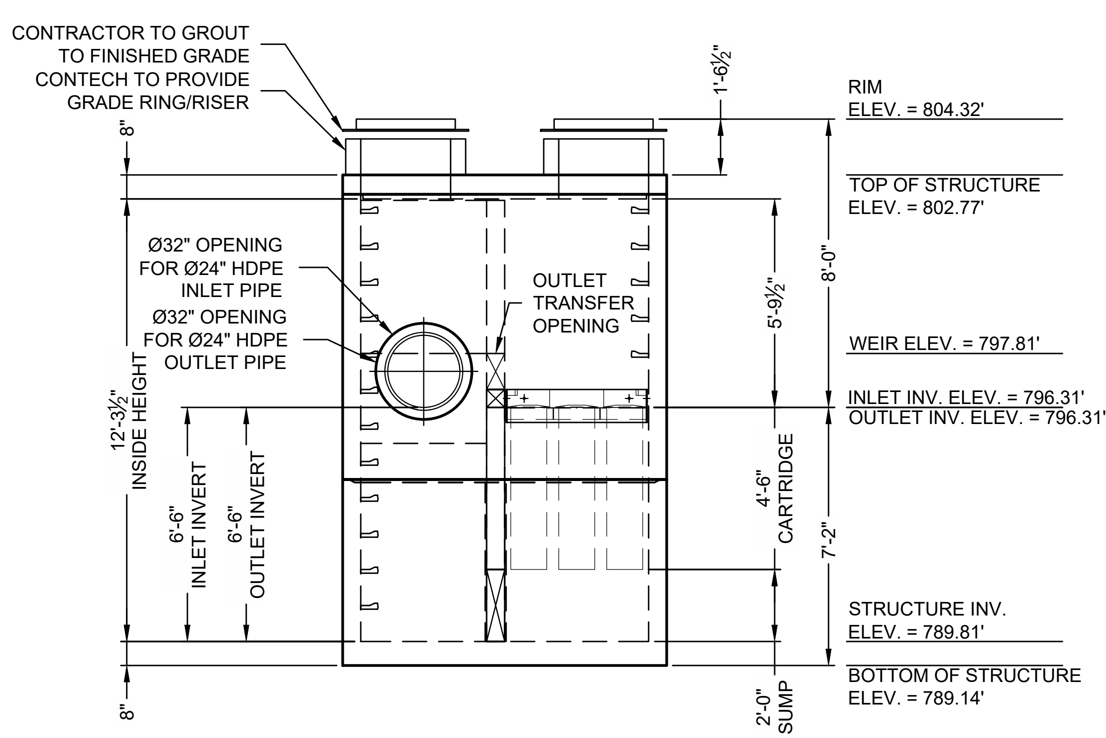
MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
12	54" HI-FLO CARTRIDGE (70 mm ORIFICE)	CONTECH
3	54" DRAINDOWN CARTRIDGE (35 mm ORIFICE)	CONTECH
3	CARTRIDGE BLANK (NO ORIFICE)	CONTECH
1	JELLYFISH VAULT 18-CARTRIDGE DECK, STANDARD	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
3	Ø30" X 4" FRAME & COVER, EJ #41600483	CONTRACTOR
1	Ø24" X 4" FRAME & COVER, EJ #41600389	CONTRACTOR
4 PLCS.	GRADE RING/RISER	CONTRACTOR
17	STEPS	CONTECH
1	EPA LABEL	CONTECH

SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.29 CFS
PEAK FLOW RATE	17.23 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS

Approved By	Date		Rev.	Date	By	Description
MTH	7/2/24	KOONTZ BRYANT JOHNSON WILLIAMS				
Project No. KBJW-30873-001	Rev. -	Formerly CBC Engineers				



ELEVATION VIEW

GENERAL NOTES:

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. WWW.ContechES.COM
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 1' - 6.5", AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ACCORDING TO THE PROVISIONS IN THE ACTIVATION CHECKLIST AND THE QUOTED SCOPE OF WORK. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (800) 338-1122.

STRUCTURE WEIGHT

APPROXIMATE HEAVIEST PICK OF (3) PIECES = 25,000 LBS.

CONTECH
CONTRACT
DRAWING

SLY
5635 / 492043
LAYOUT 7
CLASS 800

MARK	DATE	REVISION DESCRIPTION	BY

8' X 8' JELLYFISH* - 798667-10
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF1

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX
Jellyfish® Filter

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: MSB	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 10
SHEET: 1 OF 2	

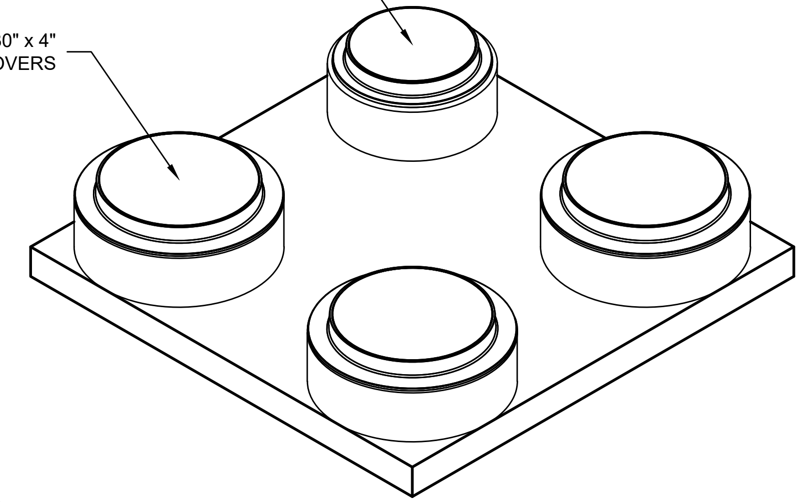
I:\MERLIN\PROJECTACTIVE\798000\798667\798667-10-JELLYFISH\DRAWINGS\798667-10 JFPD0808-CONFAB.DWG 6/28/2024 10:41 AM

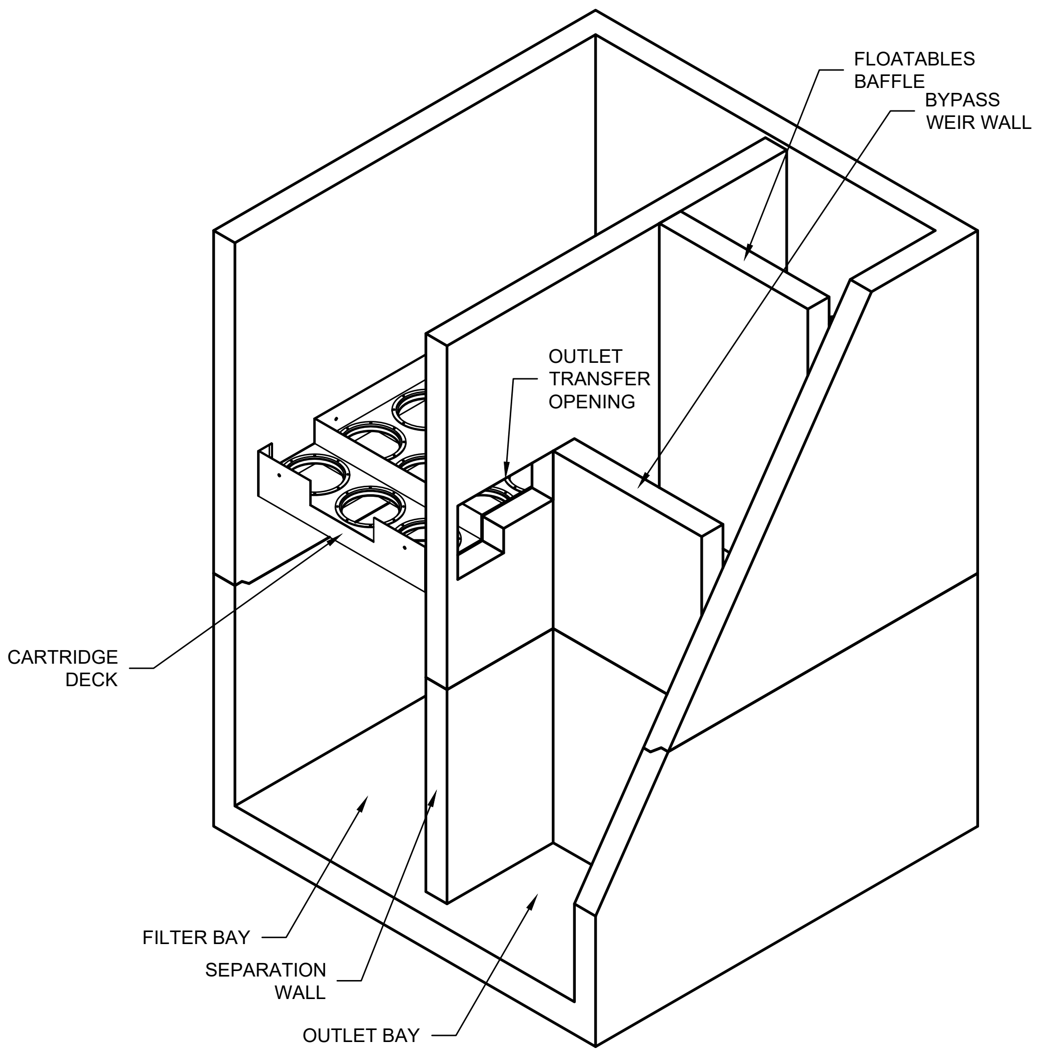
ISOMETRIC VIEWS ARE REPRESENTATIONAL. SEE DETAILED FABRICATION DRAWING FOR SITE SPECIFIC DIMENSIONS

Approved By	Date	KOONTZ BRYANT JOHNSON WILLIAMS	Rev.	Date	By	Description
MTH	7/2/24					
Project No. KBJW-30873-001	Rev. -	Formerly CBC Engineers				

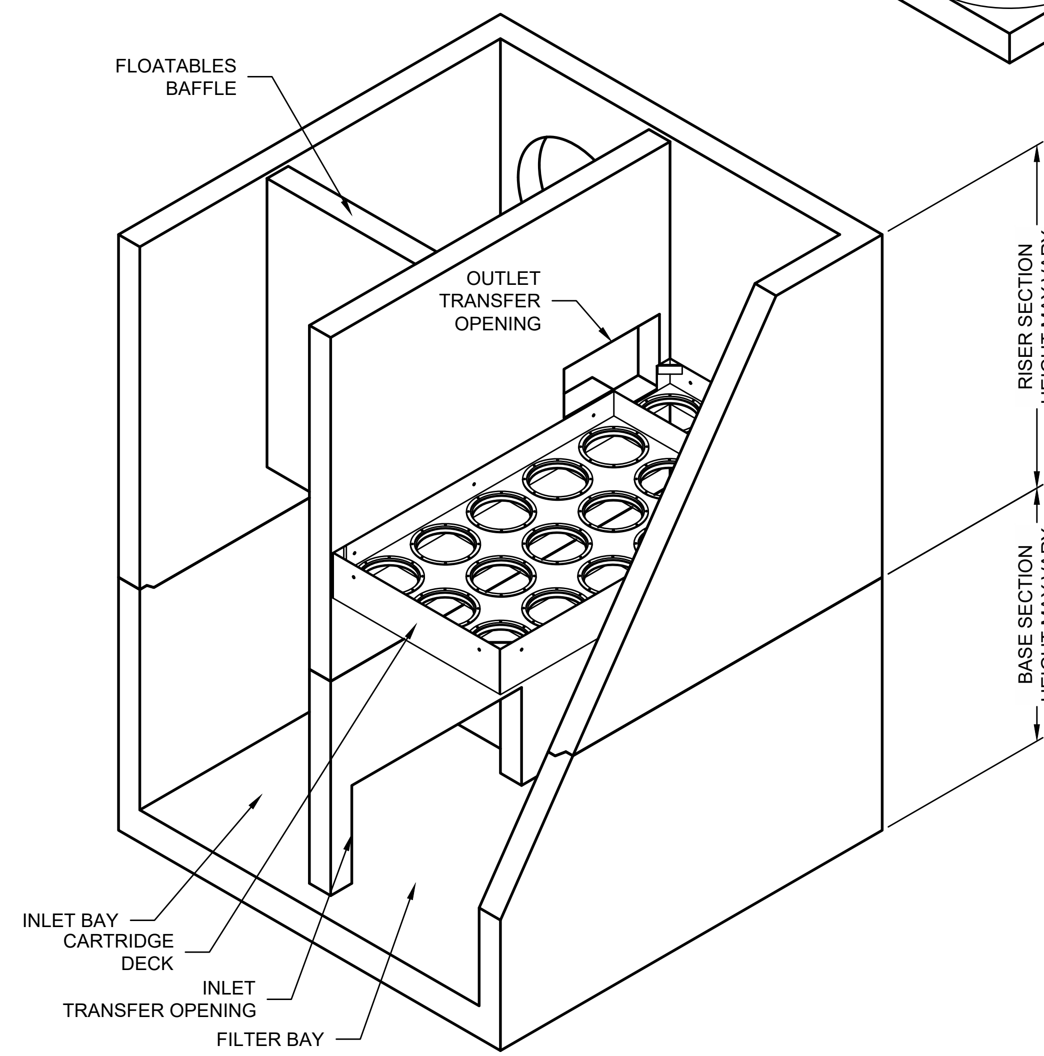
STATE OF TEXAS
MITCHELL T. HARDERT
108405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121





NW ISOMETRIC VIEW



SE ISOMETRIC VIEW

CONTECH
CONTRACT
DRAWING

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MARK	DATE	REVISION DESCRIPTION	BY

8' X 8' JELLYFISH* - 798667-10
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF1

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

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

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: MSB	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 10
SHEET: 2 OF 2	

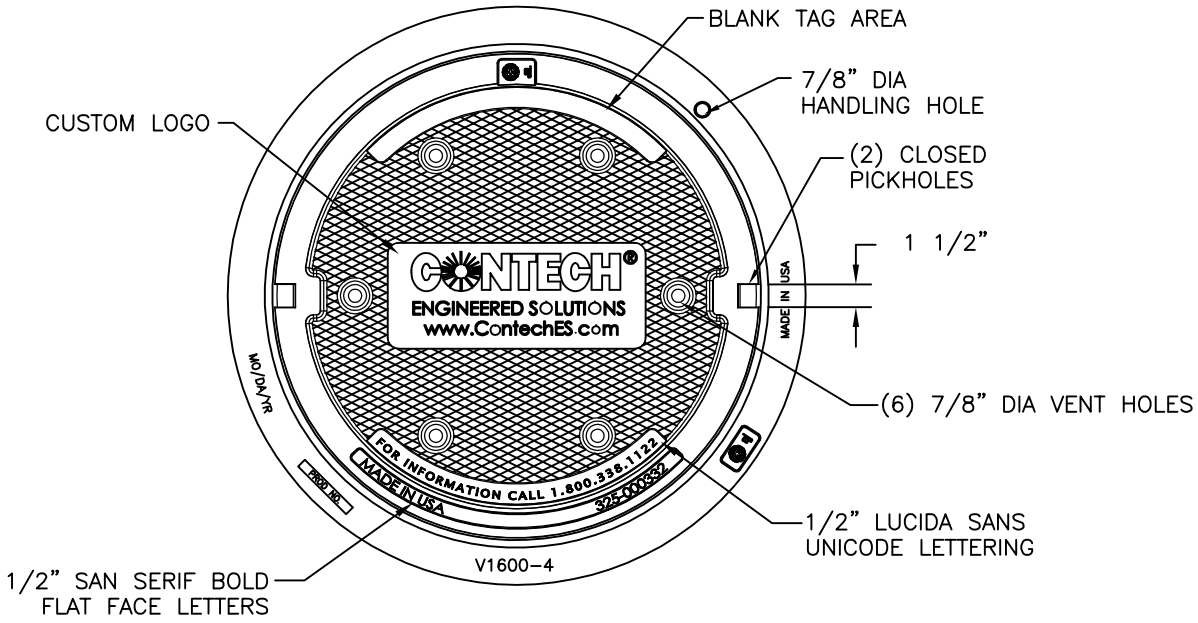
I:\MERLIN\PROJECTACTIVE\798000\798667\798667-10-JELLYFISH\DRAWINGS\798667-10 JFPD0808-CONFAB.DWG 6/28/2024 10:41 AM

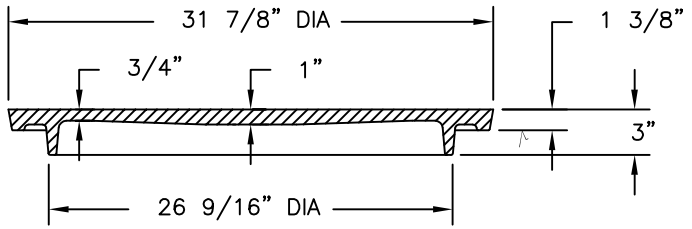
1810B4 V1600-4 Assembly

Approved By	Date
MTH	7/2/24
Project No.	Rev.
KBJW-30873-001	-

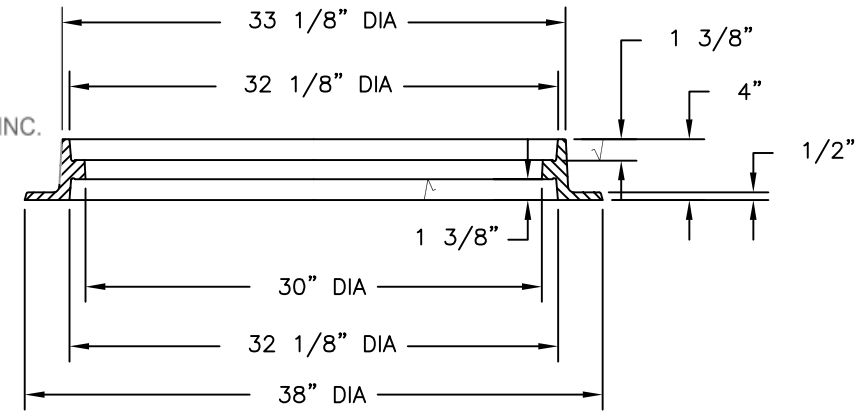
Formerly CBC Engineers

Rev.	Date	By	Description





COVER SECTION



FRAME SECTION

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number

41600483

Design Features

-Materials
  Cover
    Gray Iron (CL35B)
  Frame
    Gray Iron (CL35B)

-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√ Designates Machined Surface

Certification

-
- ASTM A48
-
-Country of Origin: USA

Major Components

00180783
41600410

Drawing Revision

05/09/2007 Designer: SMH
6/26/2017 Revised By: DAE

Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

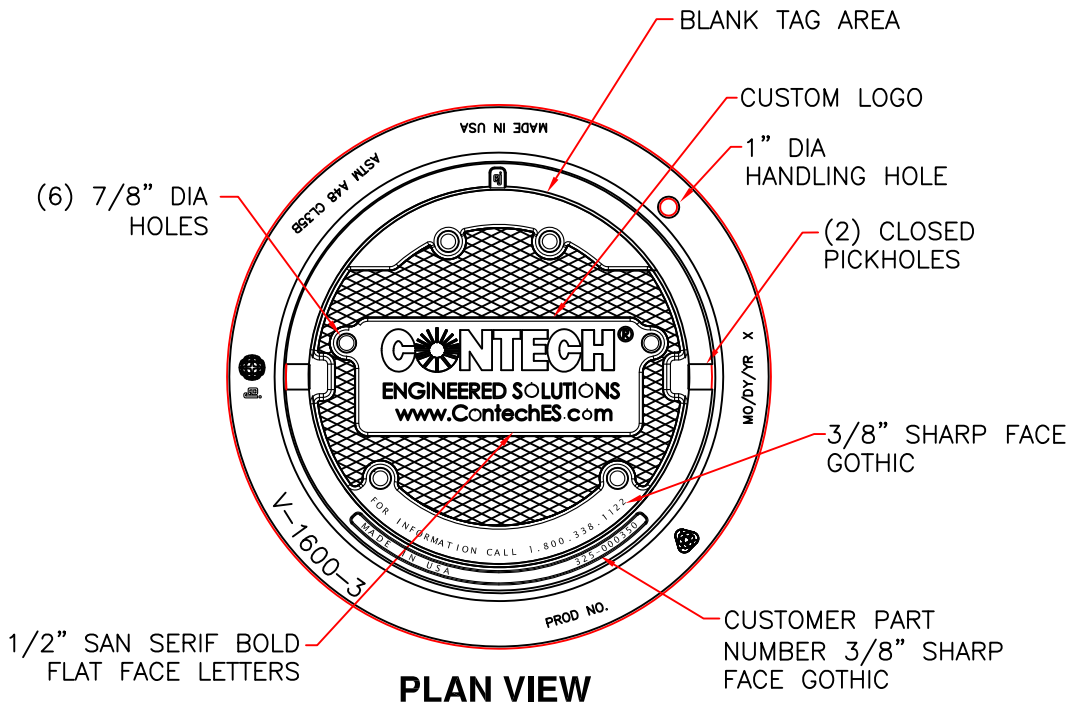
800 626 4653
ejco.com

V1600-3 V1610-3 Assembly

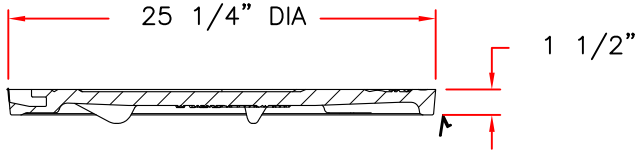
Approved By	Date
MTH	7/2/24
Project No.	Rev.
KBJW-30873-001	-

Formerly CBC Engineers

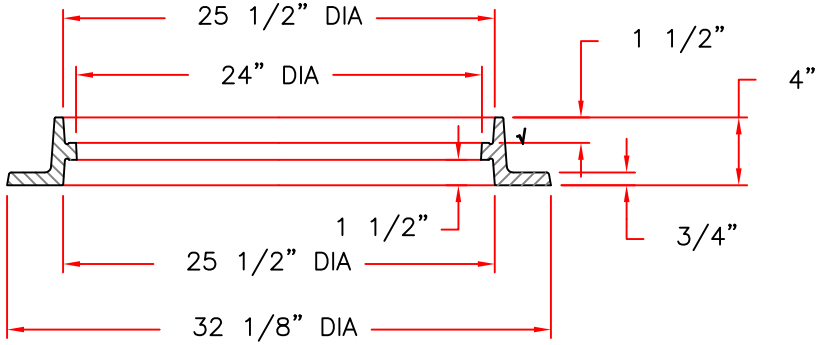
Rev.	Date	By	Description



PLAN VIEW



COVER SECTION



RING SECTION

STATE OF TEXAS
MITCHELL T HARDERT
108405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number

41600389

Design Features

-Materials
  Frame
    Gray Iron (CL35B)
  Cover
    Gray Iron (CL35B)

-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√Designates Machined Surface

Certification

-
-ASTM A48
-
-Country of Origin: USA

Major Components

41600310
41600374

Drawing Revision

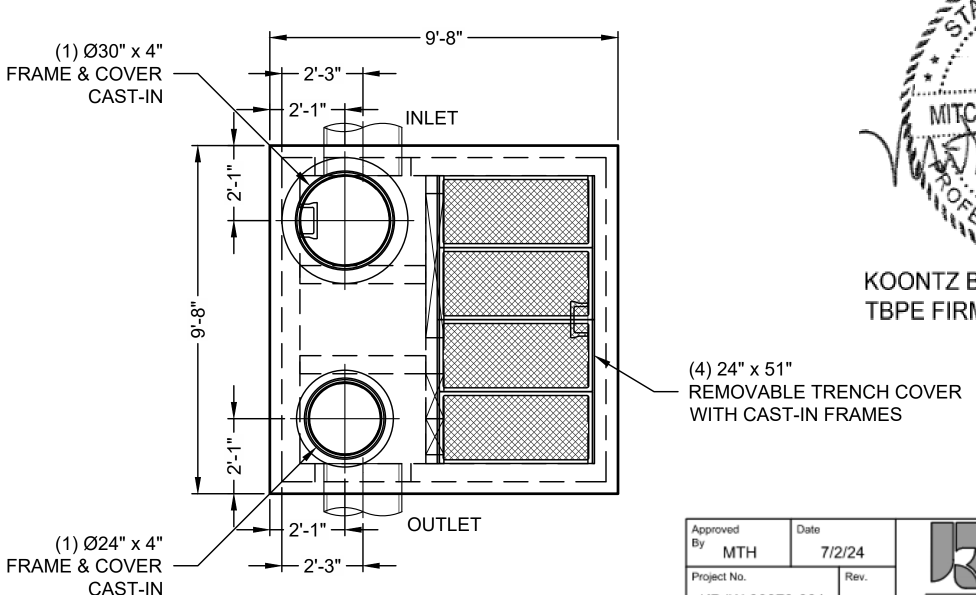
05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

Disclaimer

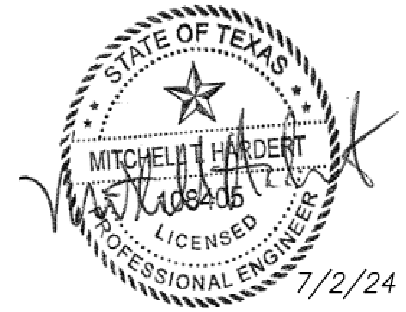
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

800 626 4653
ejco.com

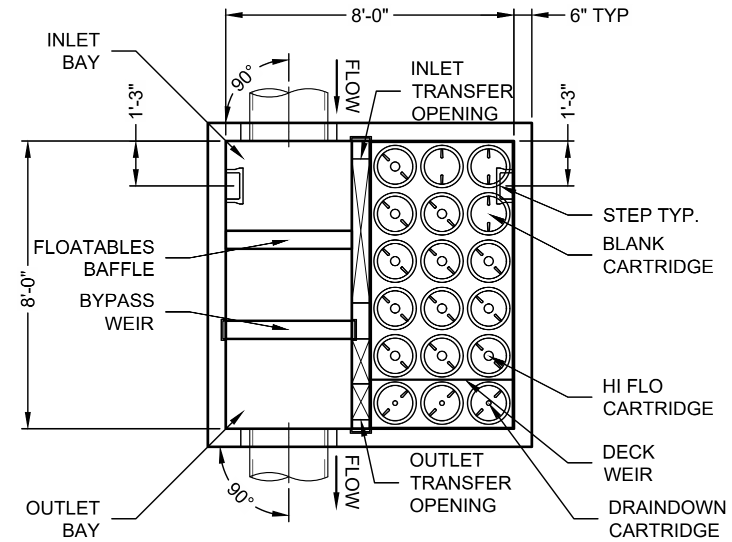


PLAN VIEW



KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

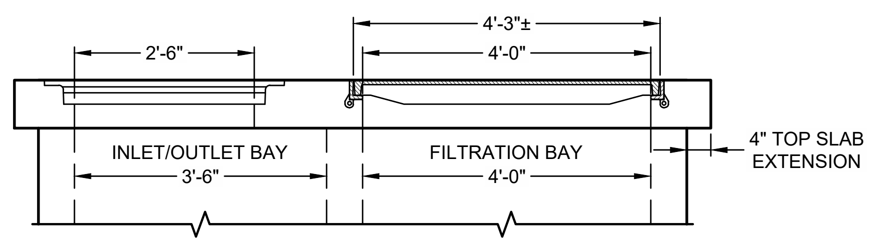
Approved By	Date		Rev.	Date	By	Description
MTH	7/2/24	KOONTZ BRYANT JOHNSON WILLIAMS				
Project No. KBJW-30873-001	Rev. -	Formerly CBC Engineers				



PLAN VIEW

(TOP SLAB NOT SHOWN FOR CLARITY)

TRENCH COVERS SHIPPED SEPARATELY. TOP SLAB IS NOT TO BE LIFTED WITH COVERS INSTALLED.



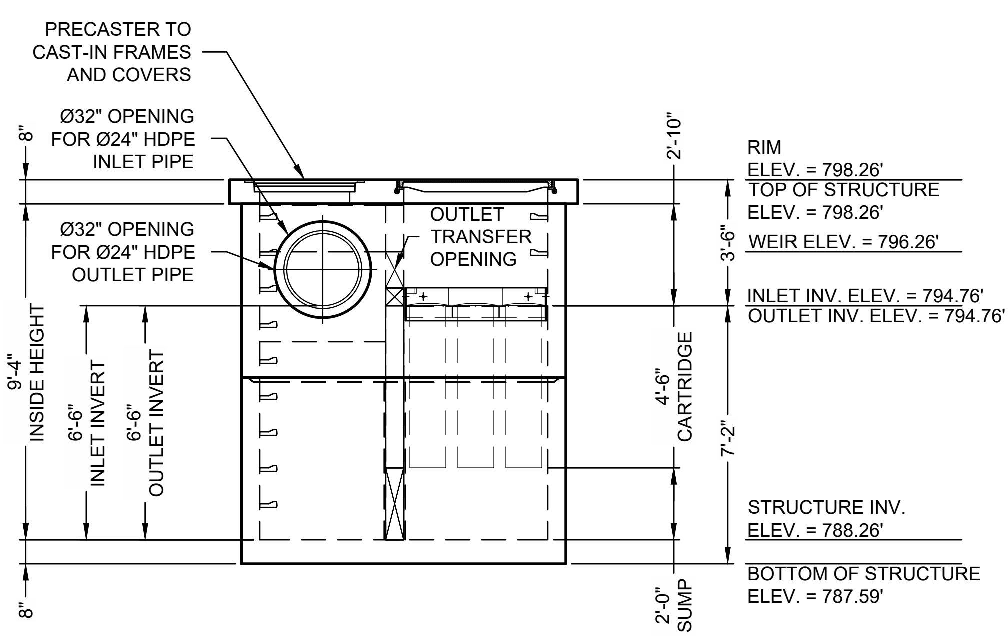
TRENCH COVER DETAIL

MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
12	54" HI-FLO CARTRIDGE (70 mm ORIFICE)	CONTECH
3	54" DRAINDOWN CARTRIDGE (35 mm ORIFICE)	CONTECH
3	CARTRIDGE BLANK (NO ORIFICE)	CONTECH
1	JELLYFISH VAULT 18-CARTRIDGE DECK, STANDARD	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
1	Ø30" X 4" FRAME & COVER, EJ #41600483	CONTRACTOR
1	Ø24" X 4" FRAME & COVER, EJ #41600389	CONTRACTOR
4	24" X 51" TRENCH COVER, EJ #47514031	CONTRACTOR
4 PCS.	2.5" X 48" TRENCH FRAME, EJ #47300311	CONTECH
11	STEPS	CONTECH
1	STEP, LANE P-14850 (FOR LADDER ATTACHMENT)	CONTECH
1	REMOVABLE, LANE 4-STEP POLY LADDER	CONTECH

SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.34 CFS
PEAK FLOW RATE	16.14 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS



ELEVATION VIEW

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. WWW.ContechES.COM
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 0' - 0", AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ACCORDING TO THE PROVISIONS IN THE ACTIVATION CHECKLIST AND THE QUOTED SCOPE OF WORK. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (800) 338-1122.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK OF (3) PIECES = 20,500 LBS.

CONTECH
CONTRACT
DRAWING

SLY
5635 / 492043
LAYOUT 7
CLASS 600

MARK	DATE	REVISION DESCRIPTION	BY

8' X 8' JELLYFISH* - 798667-15
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF2

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

Jellyfish® Filter

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: RKD	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 15
SHEET: 1 OF 2	

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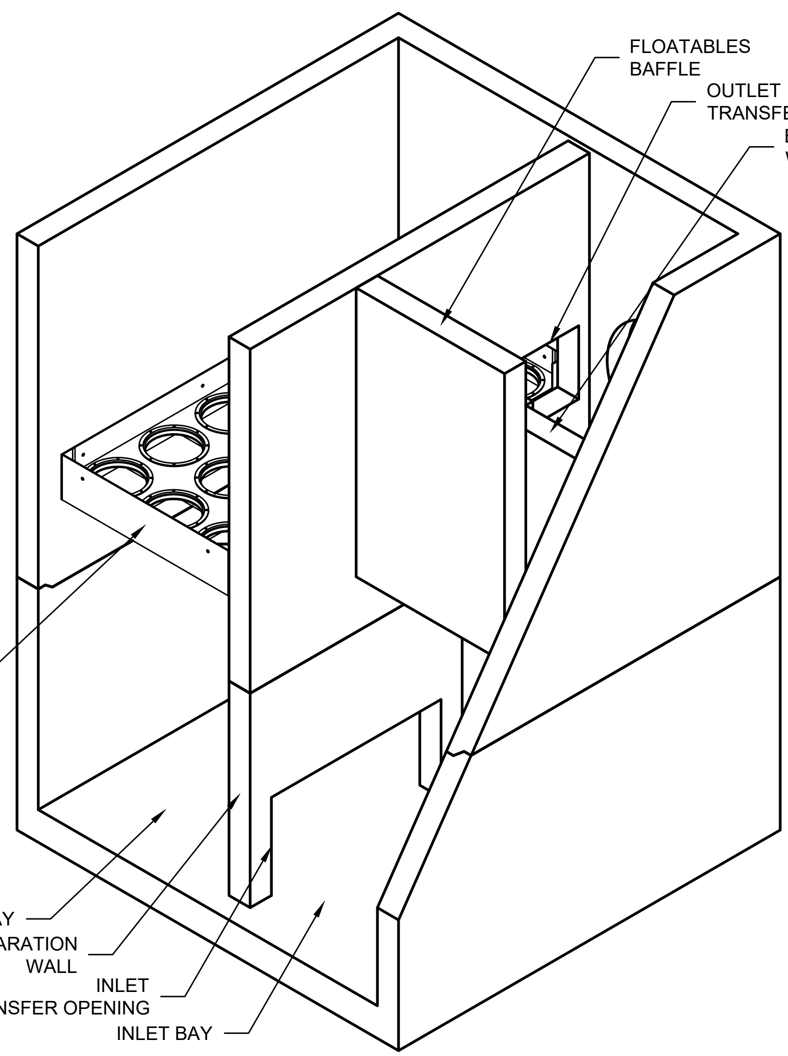
ISOMETRIC VIEWS ARE REPRESENTATIONAL. SEE DETAILED FABRICATION DRAWING FOR SITE SPECIFIC DIMENSIONS

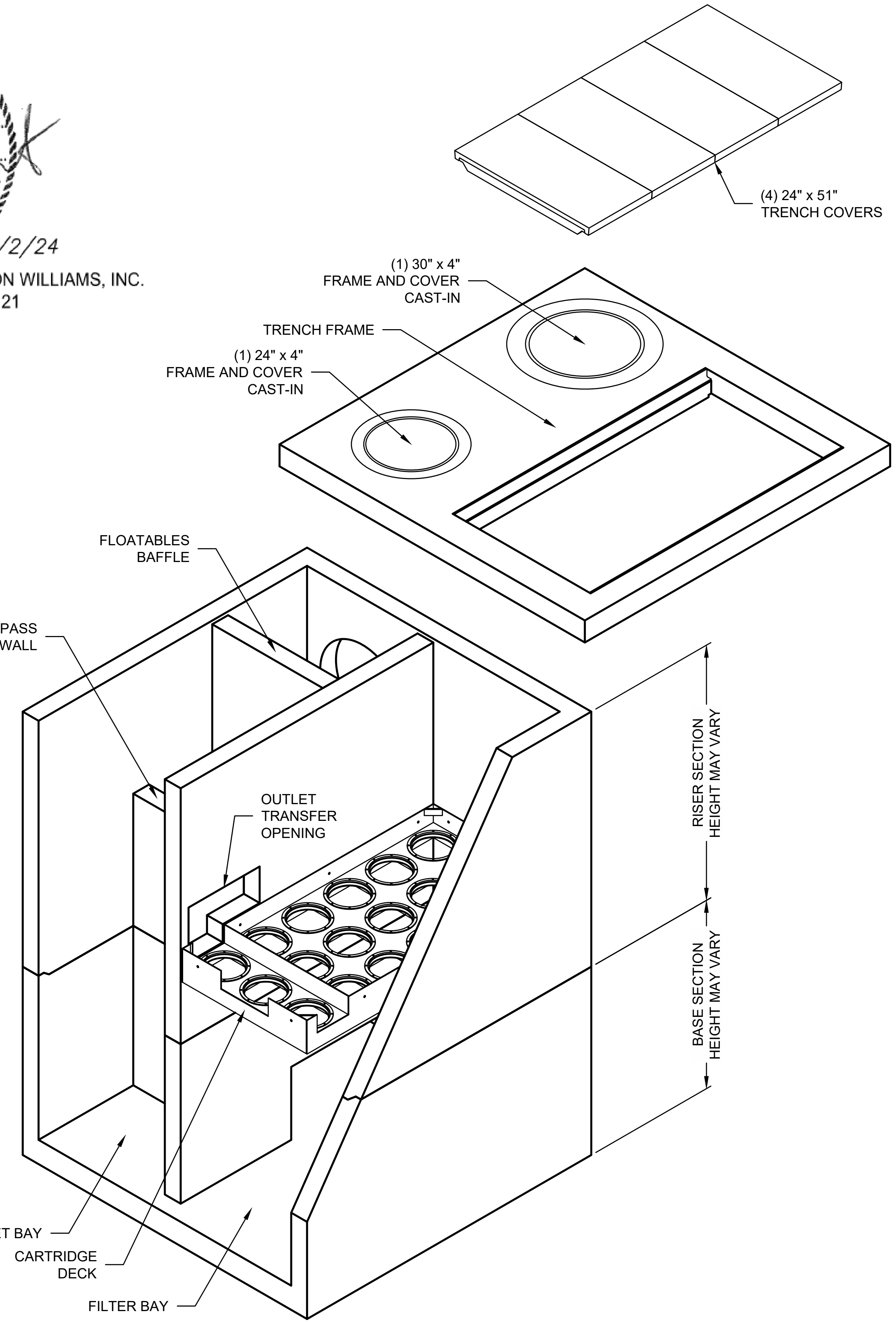
Approved By	Date	KOONTZ BRYANT JOHNSON WILLIAMS	Rev.	Date	By	Description
MTH	7/2/24					
Project No. KBJW-30873-001	Rev. -	Formerly CBC Engineers				

STATE OF TEXAS
MITCHELL T. HARDERT
108405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121



NW ISOMETRIC VIEW



SE ISOMETRIC VIEW

CONTECH
CONTRACT
DRAWING

MARK	DATE	REVISION DESCRIPTION	BY

8' X 8' JELLYFISH* - 798667-15
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF2

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

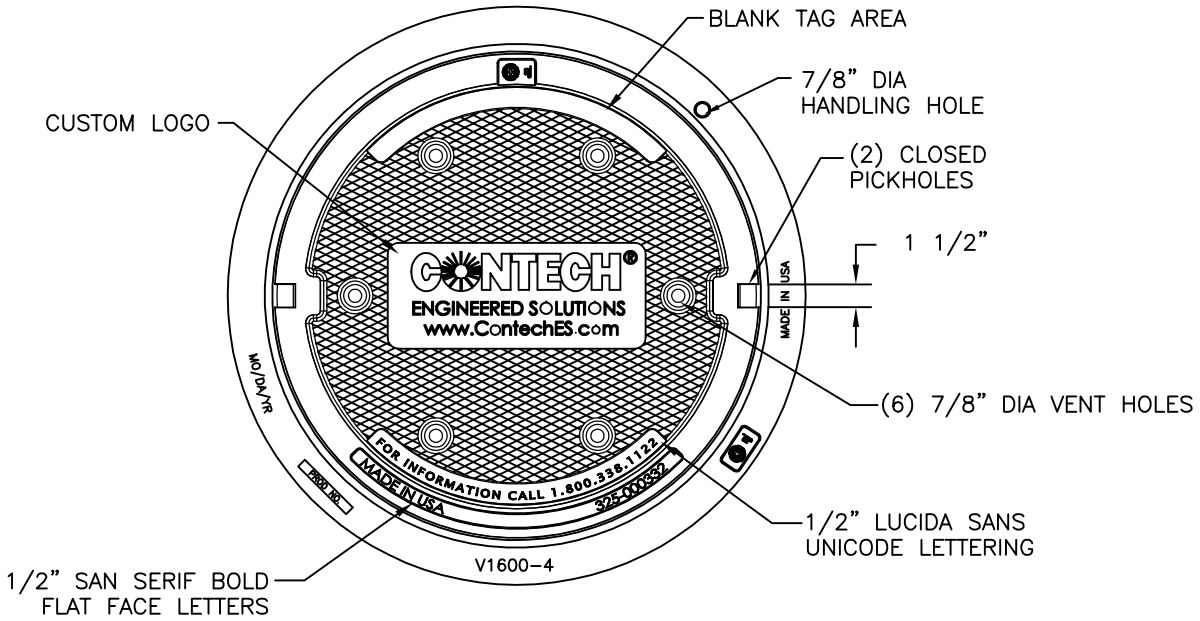
Jellyfish® Filter

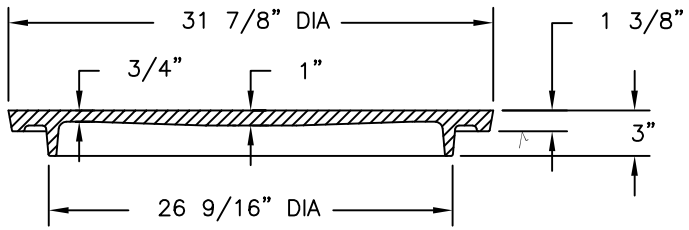
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: RKD	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 15
SHEET: 2 OF 2	

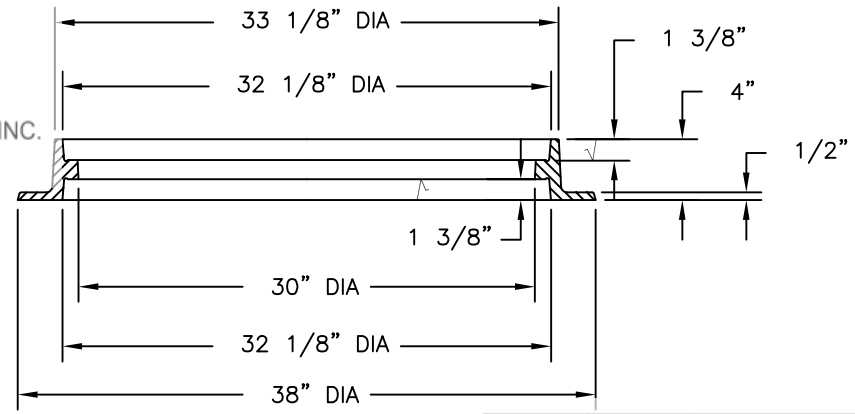
DRAWING2.DWG 6/28/2024 2:21 PM

1810B4 V1600-4 Assembly





COVER SECTION



FRAME SECTION

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By	Date	Rev.	Date	By	Description
MTH	7/2/24				
Project No.	Rev.				
KBJW-30873-001	-				

Formerly CBC Engineers

Product Number

41600483

Design Features

-Materials
  Cover
    Gray Iron (CL35B)
  Frame
    Gray Iron (CL35B)

-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√ Designates Machined Surface

Certification

-
- ASTM A48
-
-Country of Origin: USA

Major Components

00180783
41600410

Drawing Revision

05/09/2007 Designer: SMH
6/26/2017 Revised By: DAE

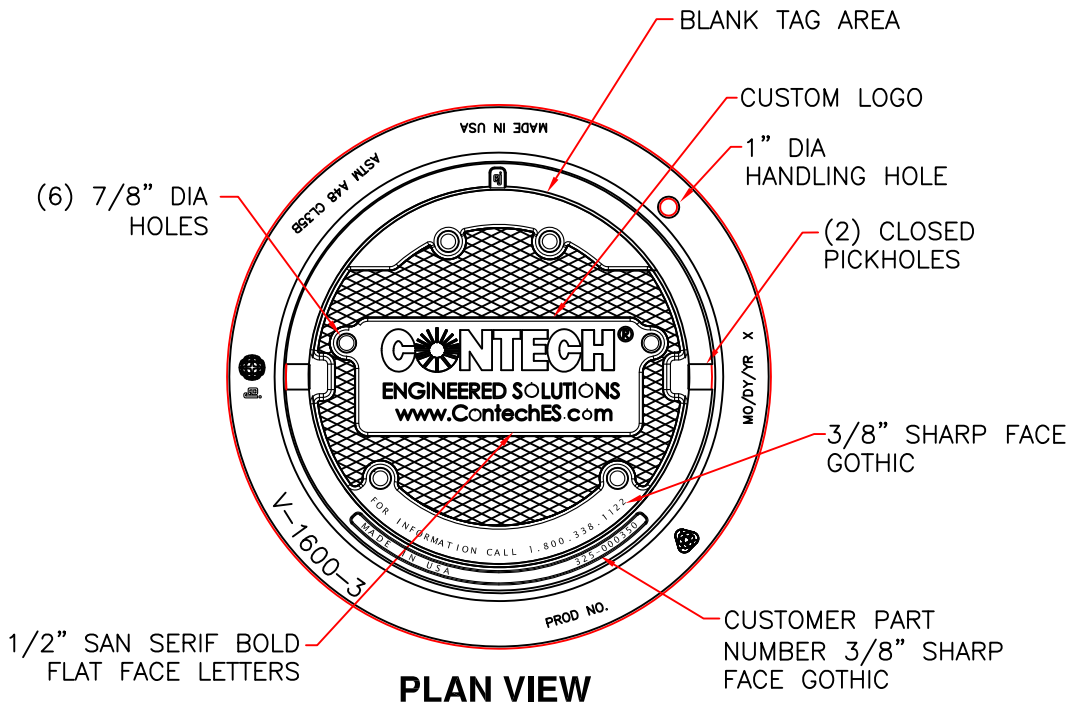
Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

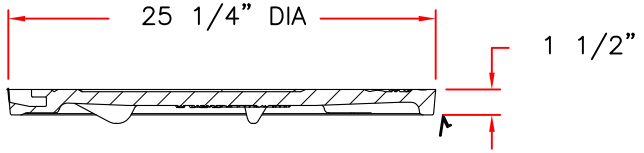
Contact

800 626 4653
ejco.com

V1600-3 V1610-3 Assembly



PLAN VIEW



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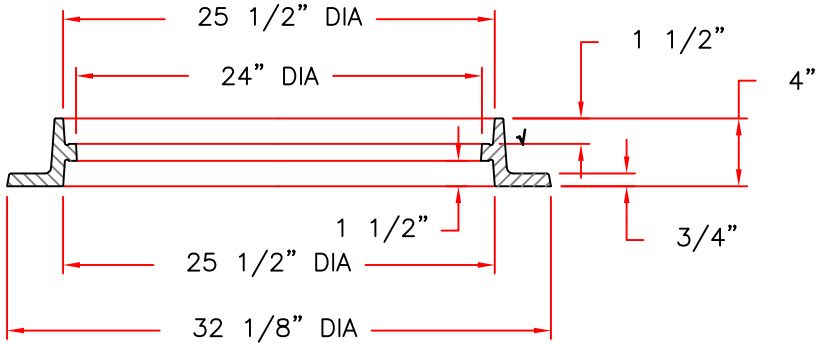


RING SECTION

STATE OF TEXAS
MITCHELL T HARDERT
104405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By	Date	Rev.	Date	By	Description
MTH	7/2/24				
Project No.	Rev.				
KBJW-30873-001	-				

Formerly CBC Engineers

Product Number

41600389

Design Features

-Materials
  Frame
    Gray Iron (CL35B)
  Cover
    Gray Iron (CL35B)

-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√Designates Machined Surface

Certification

-
-ASTM A48
-
-Country of Origin: USA

Major Components

41600310
41600374

Drawing Revision

05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

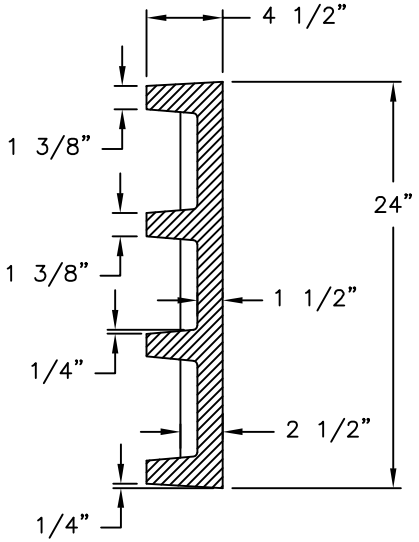
Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

800 626 4653
ejco.com

V7514 Trench Cover



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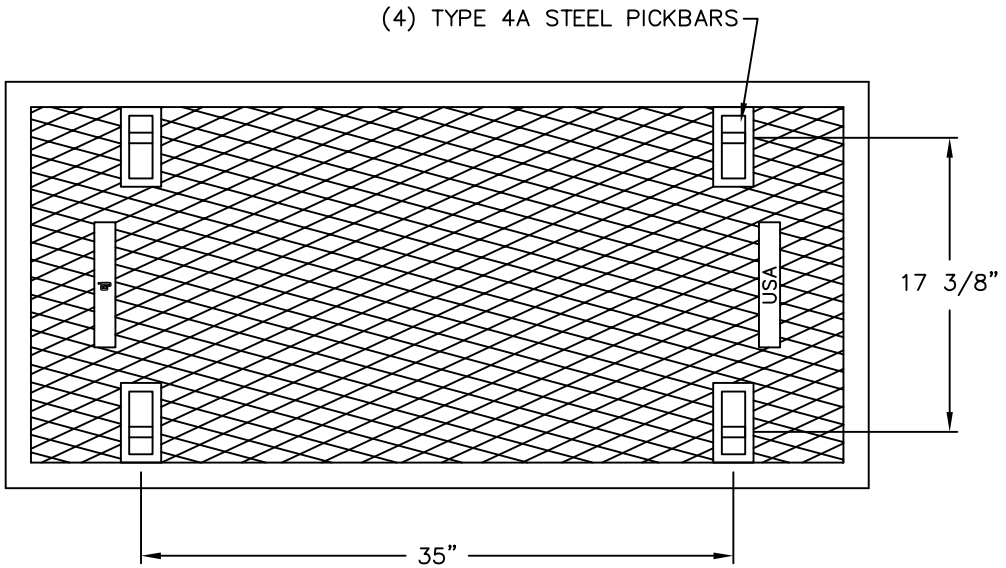
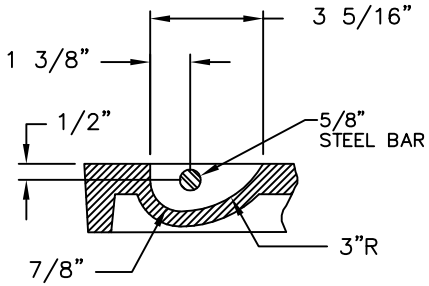


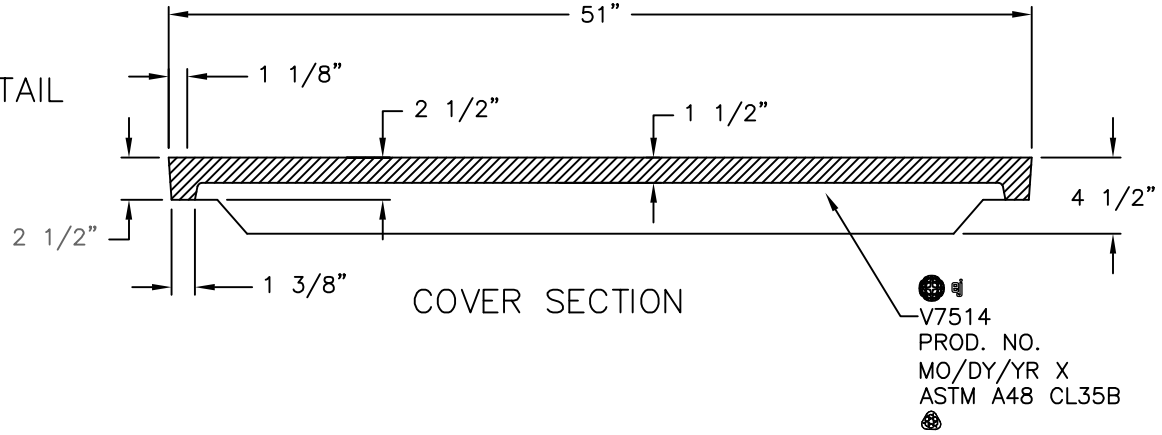
COVER TOP VIEW



TYPE 4A PICKBAR DETAIL

Approved By	Date	Rev.	Date	By	Description
MTH	7/2/24				
Project No. KBJW-30873-001	Rev. -				

Formerly CBC Engineers



COVER SECTION

STATE OF TEXAS
MITCHELL T HARDERT
109405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number

47514031

Design Features

-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification

- ASTM A48
-
-
-Country of Origin: USA

Estimated Weight:

- 650 lbs

Drawing Revision

08/19/2009 Designer: SBB
4/18/2018 Revised By: DAE

Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

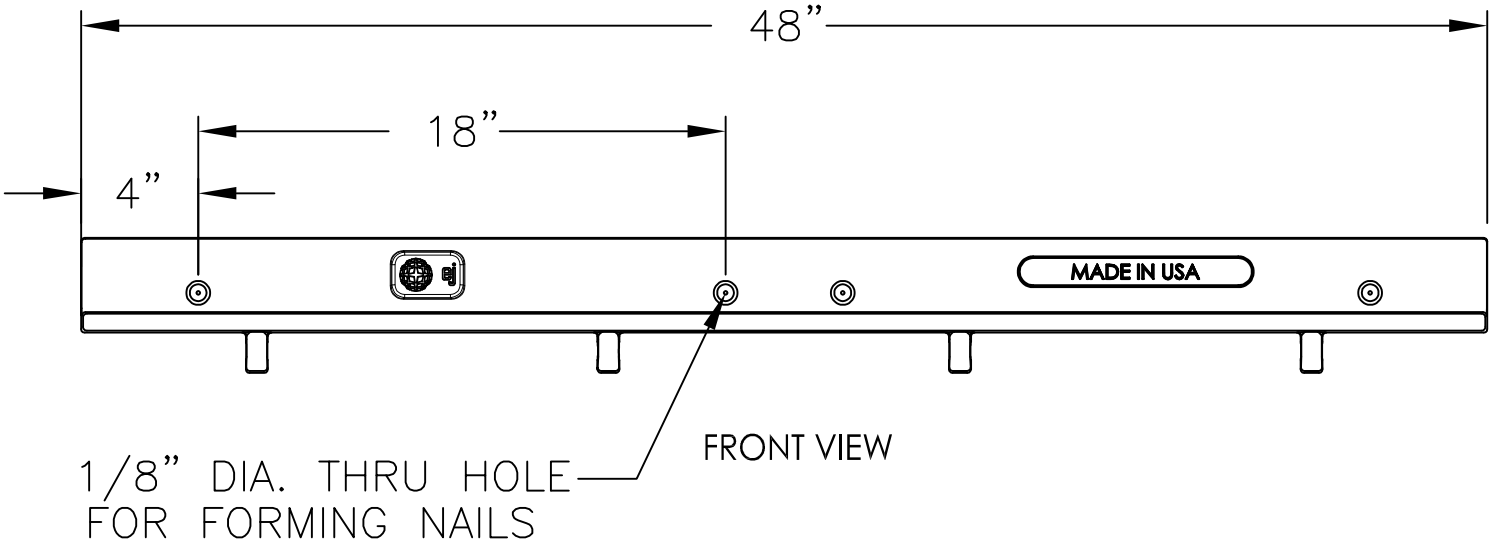
800 626 4653
ejco.com

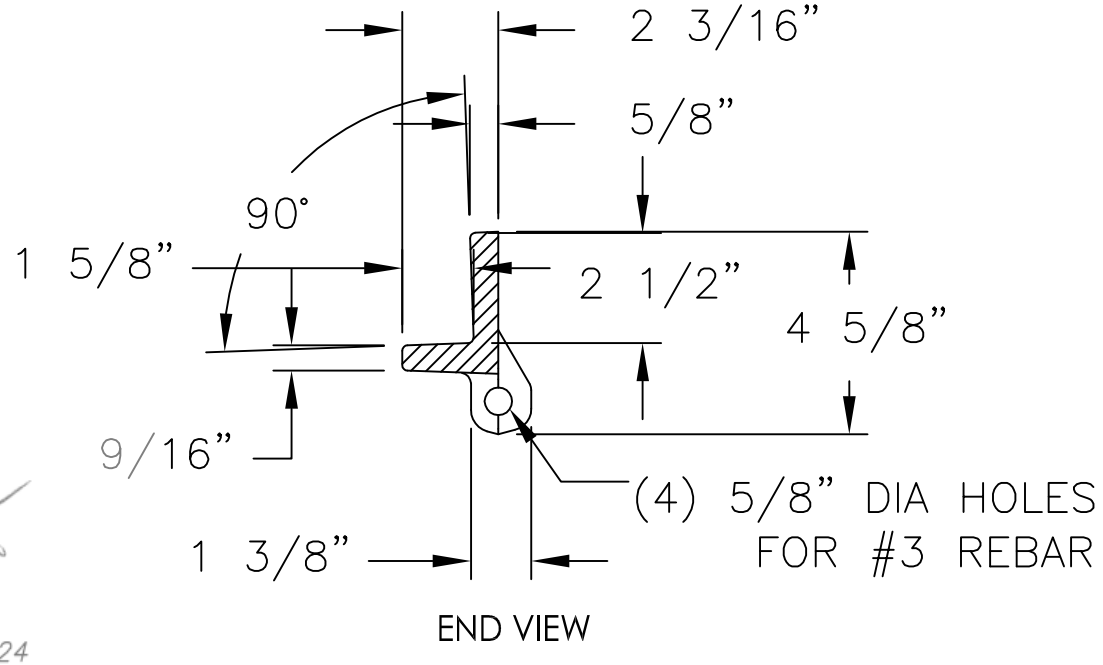
V7300-3 Trench Rail

Approved By	Date
MTH	7/2/24
Project No.	Rev.
KBJW-30873-001	-

Formerly CBC Engineers

Rev.	Date	By	Description





STATE OF TEXAS
MITCHELL T HARDERT
108405
LICENSED
PROFESSIONAL ENGINEER
7/2/24

KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number

47300311

Design Features

-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√Designates Machined Surface

Certification

- ASTM A536
-
-
-Country of Origin:USA

Estlmated Welght:

- 38 lbs

Drawing Revision

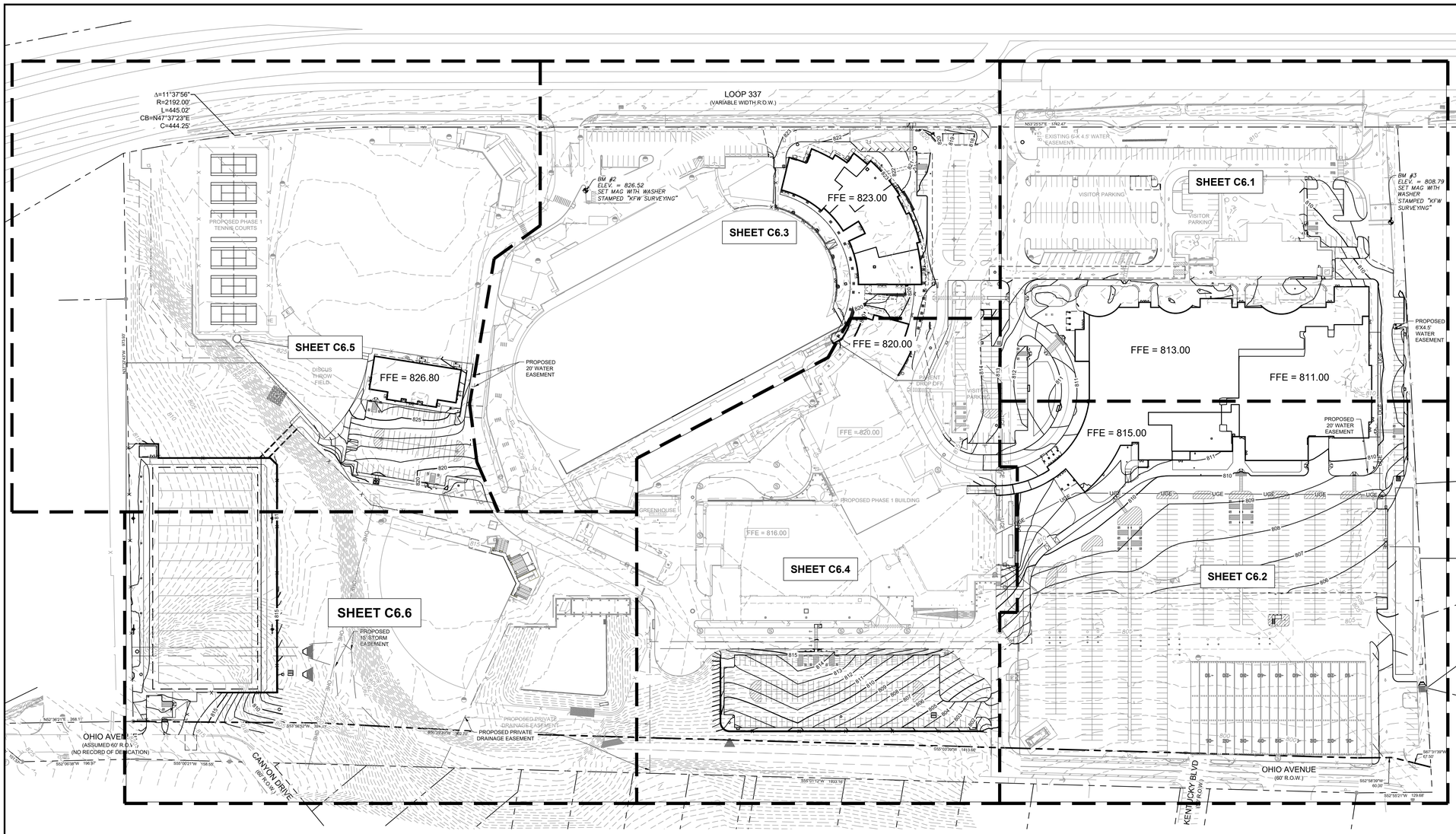
4/16/2005 Designer: SBB
4/18/2018 Revised By: DAE

Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

800 626 4653
ejco.com



GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND

	PROPERTY BOUNDARY
XXX.XX	PROPOSED SPOT ELEVATION
SW	SIDEWALK
FG	FINISHED GRADE
TC	TOP OF CURB
TG	TOP OF GRATE
ME	MATCH EXISTING
815	PROPOSED CONTOURS
815	EXISTING CONTOURS
HP HP HP	PROPOSED HIGH POINT
	PROPOSED SWALE
	DIRECTION OF INTENDED FLOW
	PROPOSED CURB RAMP

NOTES

1. ALL SPOT GRADES ARE TO TOP OF PAVEMENT (TP) OR TOP OF GRATE (TG), UNLESS OTHERWISE NOTED AS TC (TOP OF CURB). CONTRACTOR TO ADD 6" FOR TOP OF CURB AS NECESSARY.
2. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
3. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES, LOADING ZONES AND SIDEWALK LANDINGS SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS.
4. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS UNLESS OTHERWISE NOTED. RUNNING SLOPE MAY EXCEED 5% IN PUBLIC R.O.W. IF EXISTING ROAD SLOPE EXCEEDS 5%.
5. GENERAL CONTRACTOR TO REFERENCE NOTE 1 REGARDING SPOT ELEVATIONS, COORDINATE WITH DIRT AND LANDSCAPE SUBCONTRACTORS REGARDING PROPOSED SOD AND HYDROMULCH LOCATIONS TO ENSURE ADEQUATE CUT FOR FUTURE VEGETATION.
6. EXISTING MANHOLE TOPS, VALVE BOXES, ETC. ARE TO BE ADJUSTED AS REQUIRED TO MATCH PROPOSED GRADES. IF NECESSARY, READJUSTMENTS SHALL BE PERFORMED UPON COMPLETION OF PAVING AND FINE GRADING TO ENSURE A SMOOTH TRANSITION.
7. RETAINING WALL DESIGN BY OTHERS SHALL TAKE INTO CONSIDERATION THE SURROUNDING PROPOSED IMPROVEMENTS, SUCH AS LIGHT POLES AND PARKING. CONTRACTOR SHALL PROVIDE CONSTRUCTION PLANS, INCLUDING STRUCTURAL DESIGN AND HANDRAIL, FOR THE RETAINING WALL IN CONFORMANCE WITH CITY STANDARDS. CONTRACTOR SHALL SUBMIT THE PLANS FOR OWNER, ARCHITECT, AND ENGINEER REVIEW AND CONTRACTOR SHALL OBTAIN CITY PERMIT.

RETAINING WALL NOTES

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REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

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REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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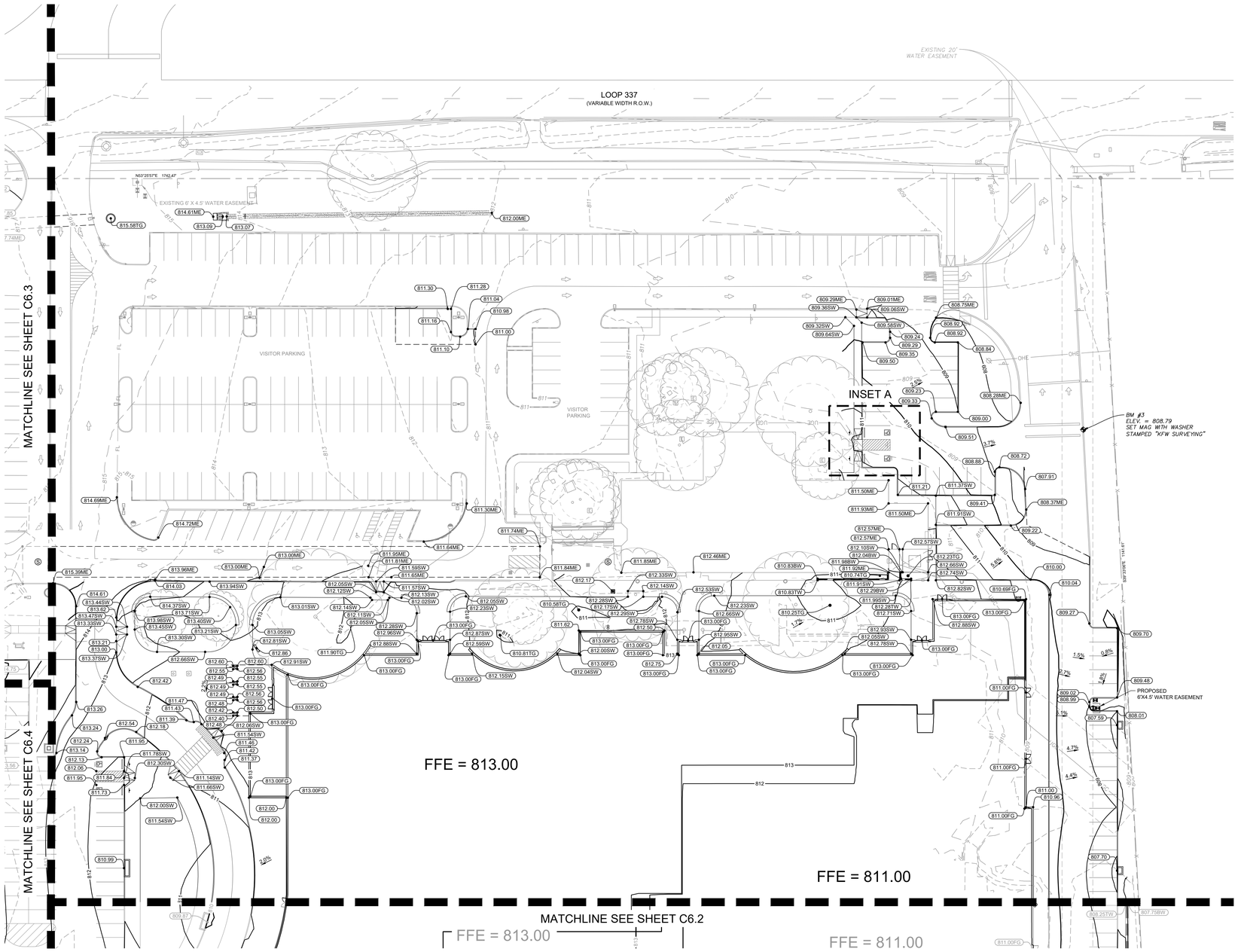
OVERALL GRADING PLAN

PACKAGE 2 VOLUME 01

Job No. 01935-02-02	Sheet No. C6.0
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPERTY BOUNDARY
XXX.XX	PROPOSED SPOT ELEVATION
SW	SIDEWALK
FG	FINISHED GRADE
TC	TOP OF CURB
TG	TOP OF GRATE
ME	MATCH EXISTING
815	PROPOSED CONTOURS
815	EXISTING CONTOURS
HP HP HP	PROPOSED HIGH POINT
	PROPOSED SWALE
	DIRECTION OF INTENDED FLOW
	PROPOSED CURB RAMP

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KEY MAP
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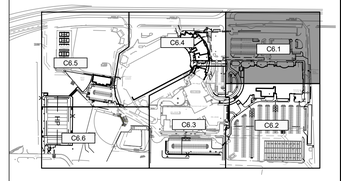

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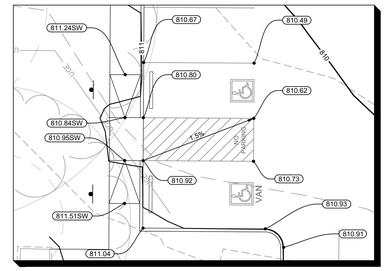
INSET A
SCALE 1:10



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DATE 12.16.2024
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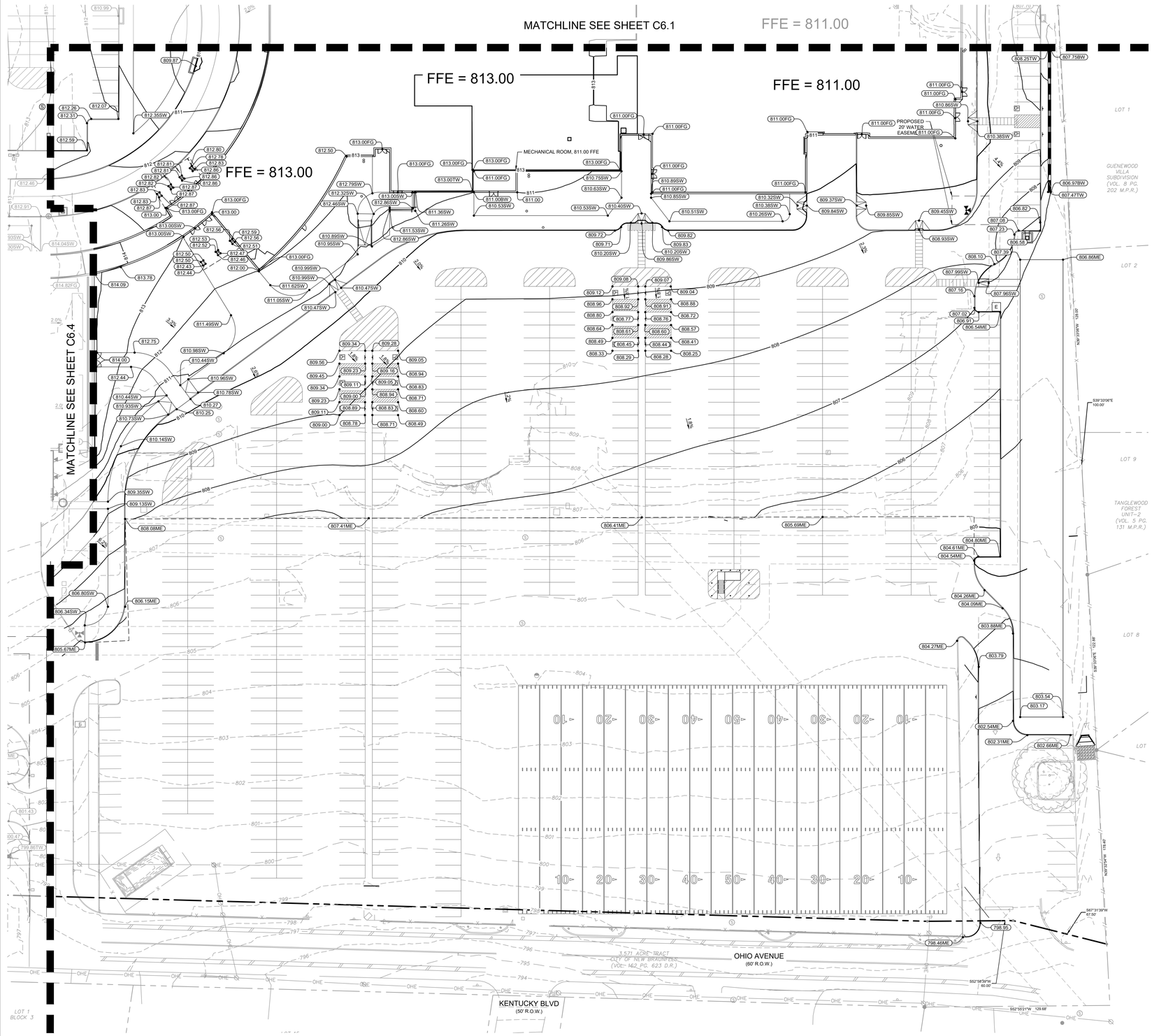
GRADING PLAN
(1 OF 6)

PACKAGE 2	VOLUME 01
Job No. 019305-02-02	Sheet No. C6.1
Drawn By: RAU	
Date: 01/16/2025	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPERTY BOUNDARY
XXX.XX	PROPOSED SPOT ELEVATION
SW	SIDEWALK
FG	FINISHED GRADE
TC	TOP OF CURB
TG	TOP OF GRATE
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HP HP HP	PROPOSED HIGH POINT
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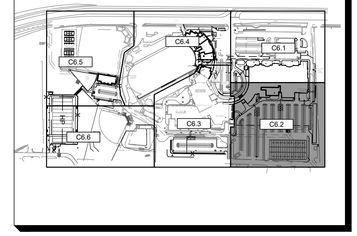

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CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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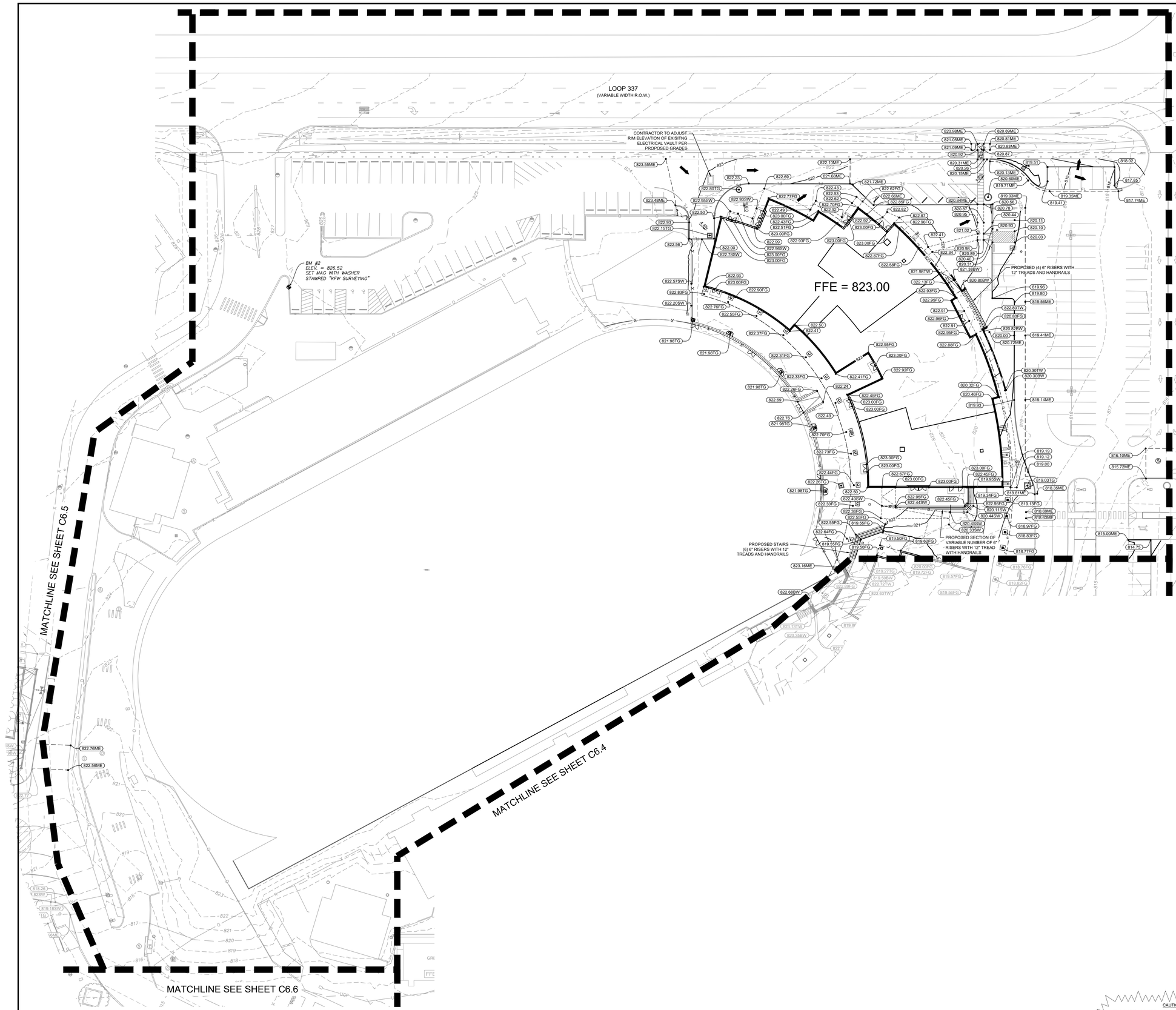
GRADING PLAN (2 OF 6)

PACKAGE 2 | **VOLUME 01**

Job No. 01935-02-02	Sheet No. C6.2
Drawn By: RAU	
Date: 12/19/2024	



LEGEND

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SW	SIDEWALK
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TG	TOP OF GRATE
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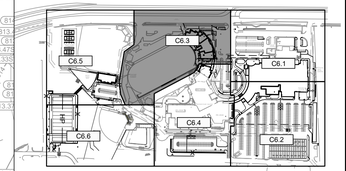

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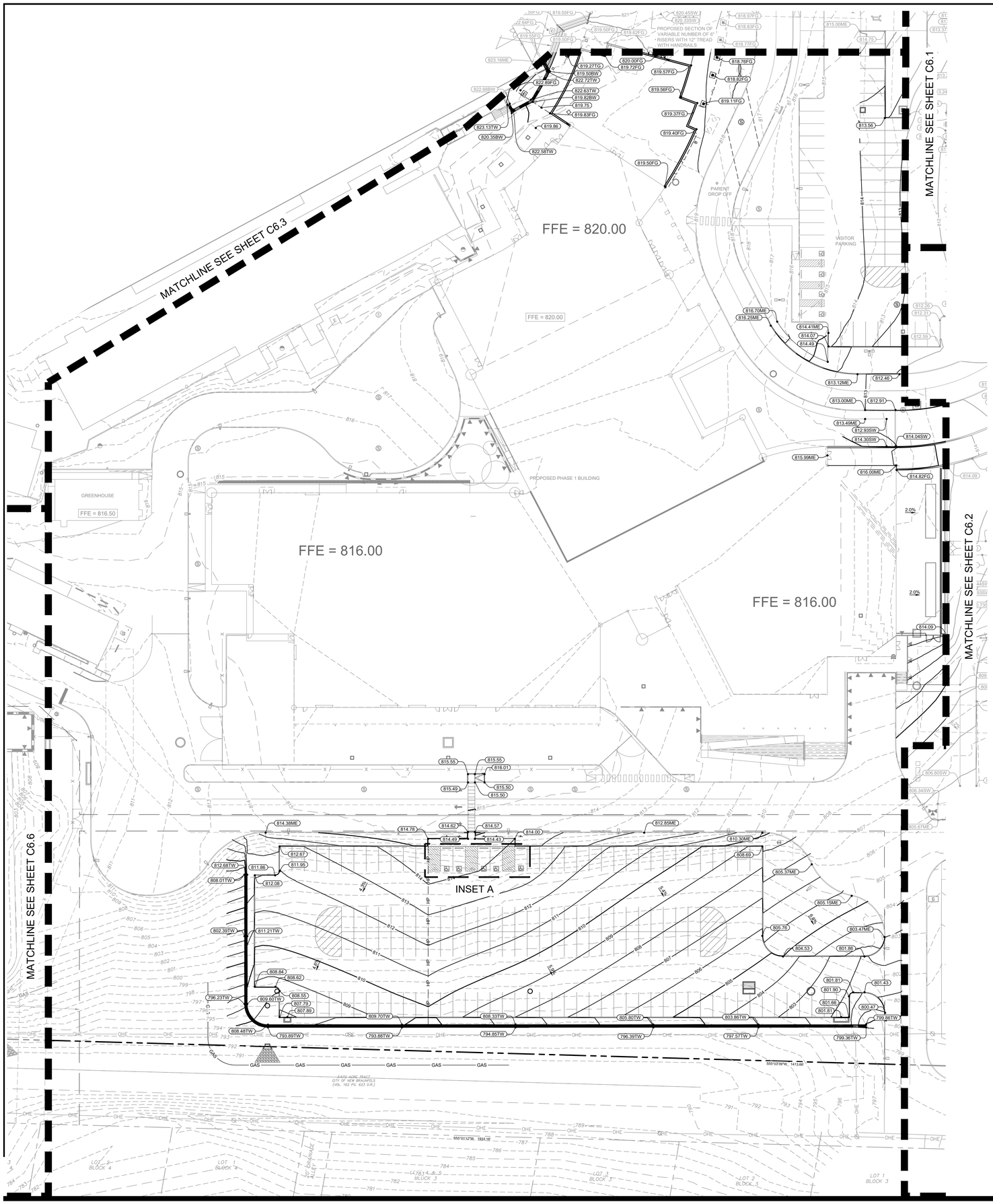
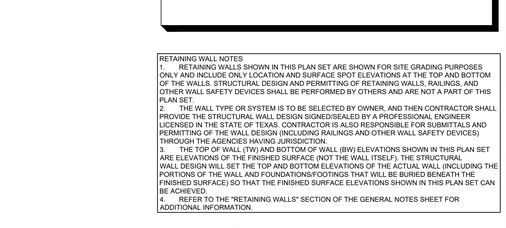
GRADING PLAN (3 OF 6)

PACKAGE 2	VOLUME 01
Job No. 01935-02-02	Sheet No. C6.3
Drawn By: RAU	
Date: 12/19/2024	





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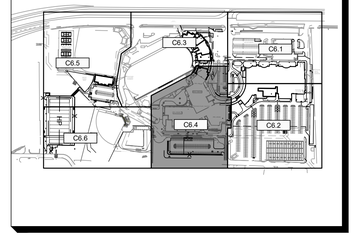

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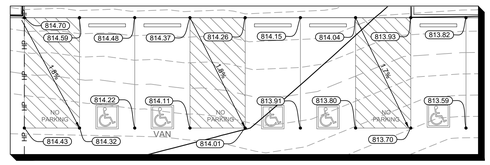
4. REFER TO THE "RETAINING WALLS" SECTION OF THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION.

INSET A

SCALE 1:10



REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

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

REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
REGISTERED PROFESSIONAL ENGINEER
12/19/2024

Huckabee
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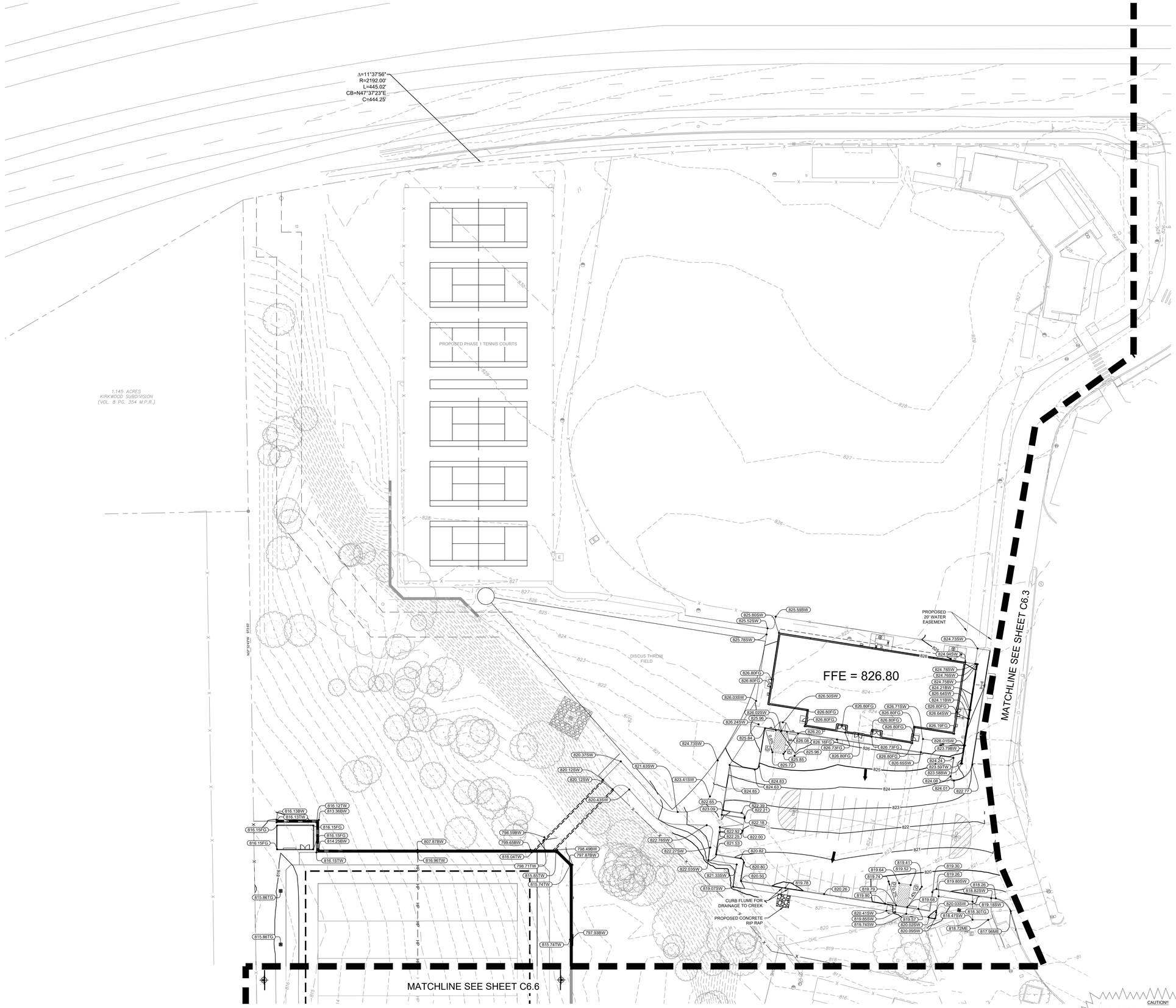
GRADING PLAN (4 OF 6)

PACKAGE 2	VOLUME 01
Job No. 01935-02-02	Sheet No. C6.4
Drawn By: RAU	
Date: 12/19/2024	



LEGEND

▬ ▬ ▬	PROPERTY BOUNDARY
XXX.XX	PROPOSED SPOT ELEVATION
SW	SIDEWALK
FG	FINISHED GRADE
TC	TOP OF CURB
TG	TOP OF GRATE
ME	MATCH EXISTING
—815—	PROPOSED CONTOURS
– – 815 – –	EXISTING CONTOURS
— HP — HP — HP —	PROPOSED HIGH POINT
— · · — · · —	PROPOSED SWALE
➡	DIRECTION OF INTENDED FLOW
⊠	PROPOSED CURB RAMP

NOTES

1. ALL SPOT GRADES ARE TO TOP OF PAVEMENT (TP) OR TOP OF GRATE (TG), UNLESS OTHERWISE NOTED AS TC (TOP OF CURB). CONTRACTOR TO ADD 6" FOR TOP OF CURB AS NECESSARY.
2. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
3. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES, LOADING ZONES AND SIDEWALK LANDINGS SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS.
4. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS UNLESS OTHERWISE NOTED. RUNNING SLOPE MAY EXCEED 5% IN PUBLIC R.O.W. IF EXISTING ROAD SLOPE EXCEEDS 5%.
5. GENERAL CONTRACTOR TO REFERENCE NOTE 1 REGARDING SPOT ELEVATIONS, COORDINATE WITH DIRT AND LANDSCAPE SUBCONTRACTORS REGARDING PROPOSED SOD AND HYDROMULCH LOCATIONS TO ENSURE ADEQUATE CUT FOR FUTURE VEGETATION.
6. EXISTING MANHOLE TOPS, VALVE BOXES, ETC. ARE TO BE ADJUSTED AS REQUIRED TO MATCH PROPOSED GRADES. IF NECESSARY, READJUSTMENTS SHALL BE PERFORMED UPON COMPLETION OF PAVING AND FINE GRADING TO ENSURE A SMOOTH TRANSITION.
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KEY MAP

N.T.S.

RETAINING WALL NOTES

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1	12.16.2024	CITY AND TCEQ REVISIONS

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FOR NEW BRAUNFELS I.S.D.
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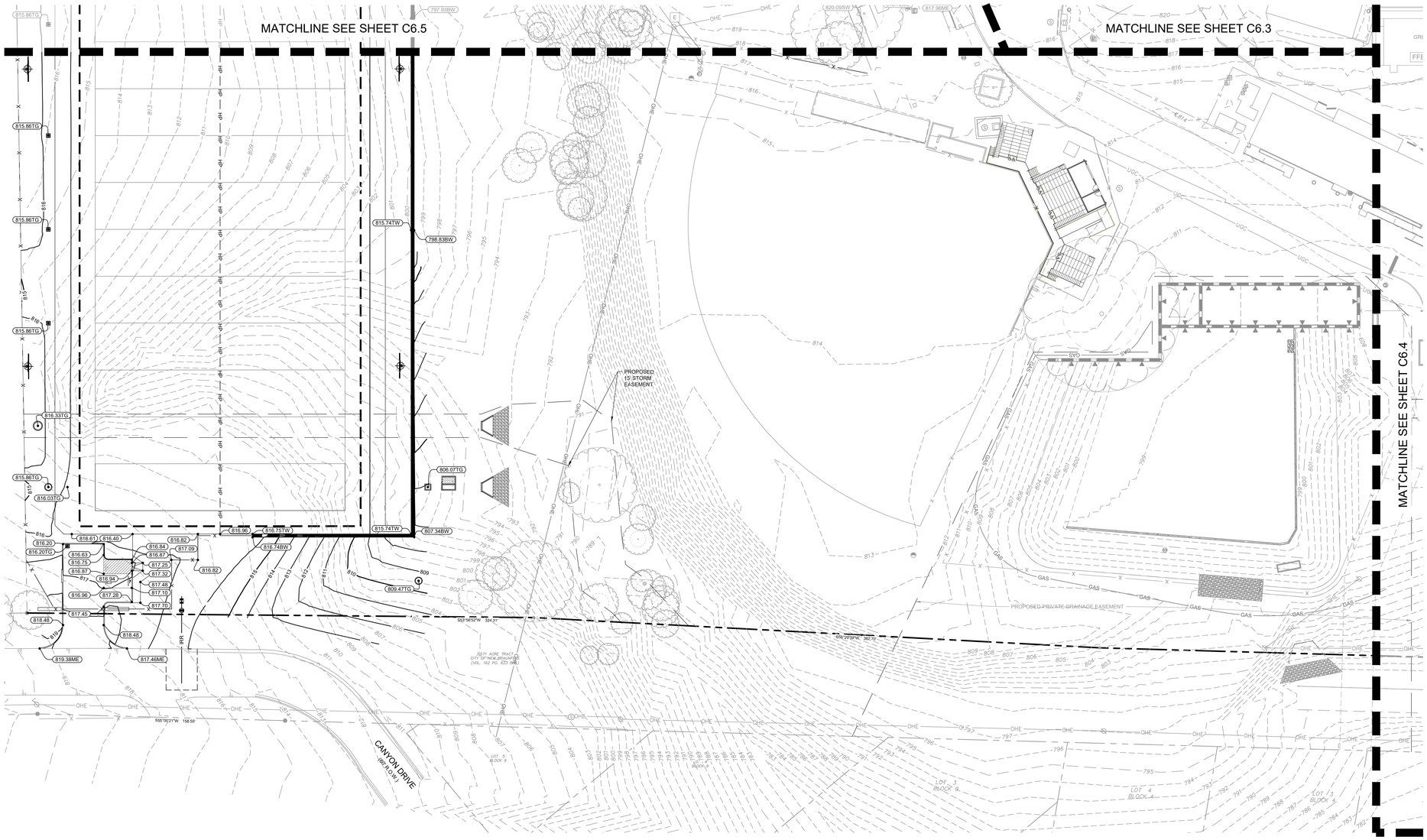
GRADING PLAN
(5 OF 6)

PACKAGE 2 **VOLUME 01**

Job No. 01935-02-02	**Sheet No.**
Drawn By: RAU	C6.5
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPERTY BOUNDARY
XXX.XX	PROPOSED SPOT ELEVATION
SW	SIDEWALK
FG	FINISHED GRADE
TC	TOP OF CURB
TG	TOP OF GRATE
ME	MATCH EXISTING
815	PROPOSED CONTOURS
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KEY MAP
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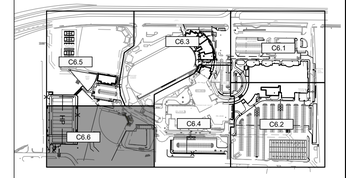

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CITY AND TCEQ REVISIONS	12.16.2024

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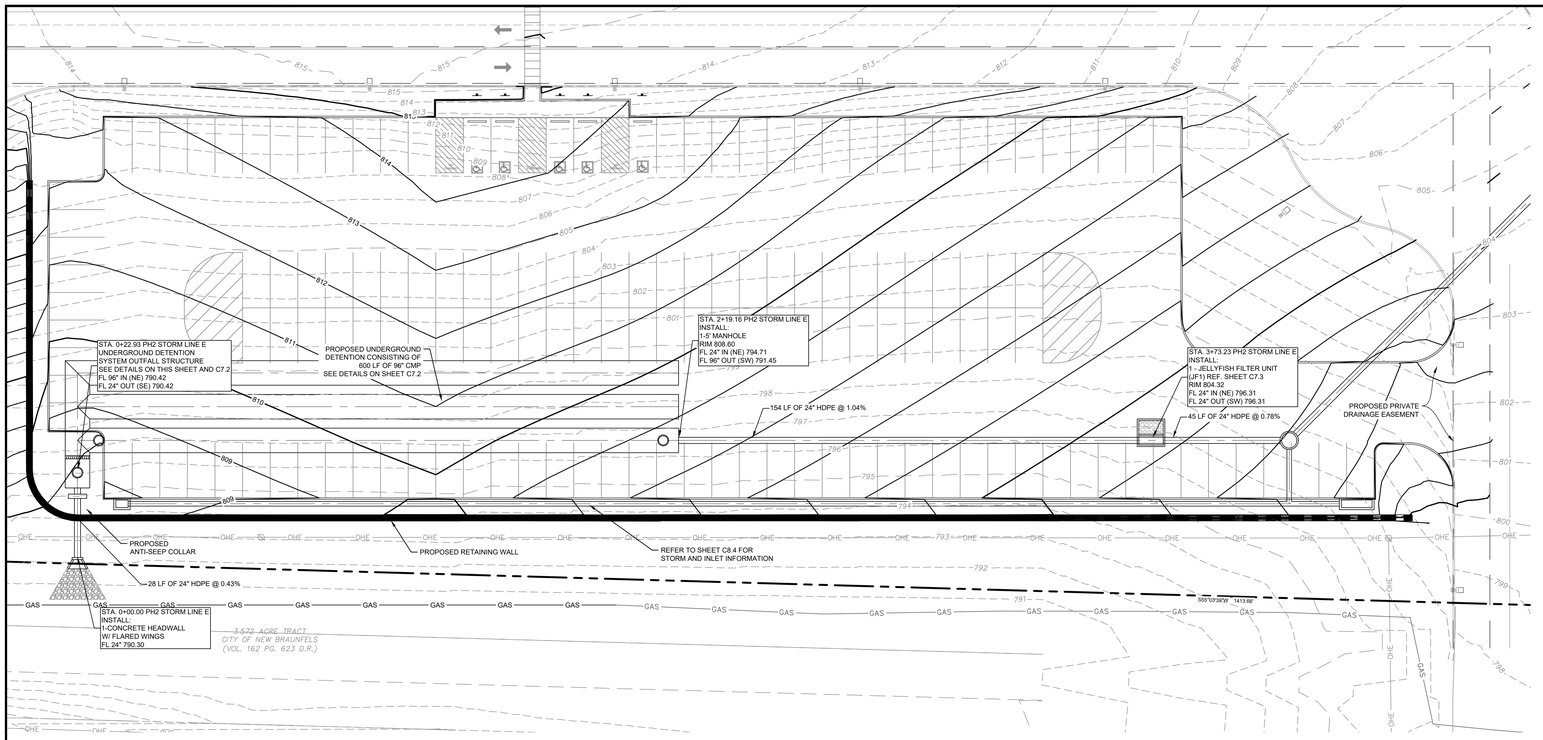
GRADING PLAN (6 OF 6)

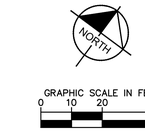
PACKAGE 2	VOLUME 01
Job No. 01935-02-02	Sheet No. C6.6
Drawn By: RAU	
Date: 12/19/2024	



POND INFORMATION			
STORM EVENT YEAR	ELEVATION (FT.)	FLOW (cfs)	STORAGE VOLUME (FT3)
2	793.35	1.82	10,924
10	794.25	6.84	16,019
25	794.85	10.13	19,569
50	795.18	11.48	21,496
100	796.11	14.70	26,865
Top of Pipe	798.42	N/A	40,739

NOTE: ADDITIONAL STORAGE ABOVE 100 YR STORM ELEVATION IS INTENDED TO SATISFY CITY FREEBOARD REQUIREMENTS

POND STAGE STORAGE TABLE			
STAGE ELEVATION, FT.)	AREA (SQ. FT.)	INC. VOL (CU. FT.)	CUM. VOL (CU. FT.)
790.42	N/A		-
791.32	N/A	1,318	1,318
792.22	N/A	3,685	5,003
793.12	N/A	4,619	9,622
794.02	N/A	5,069	14,691
794.92	N/A	5,277	19,968
795.82	N/A	5,277	25,245
796.72	N/A	5,072	30,317
797.62	N/A	4,614	34,931
798.52	N/A	3,717	38,648
799.42	N/A	2,090	40,738

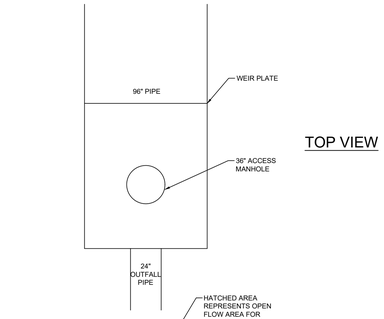


LEGEND

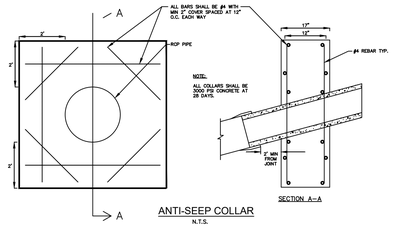
- PROPERTY BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- SD — PROPOSED STORM DRAIN (<12")
- PROPOSED STORM DRAIN (>/=12")
- PROPOSED ROCK RIPRAP
- CI GI — PROPOSED CURB INLET/GRATE INLET
- MH JB — PROPOSED MANHOLE/JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED DRAINAGE EASEMENT
- BW — FINISHED GRADE AT BASE OF WALL
- TW — TOP OF WALL

POND NOTES & MAINTENANCE REQUIREMENTS

1. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
2. STORM AND POND MAINTENANCE SHALL FOLLOW THE MAINTENANCE TABLE BELOW.
3. POND SHALL BE RETURNED TO ORIGINAL CONDITIONS IF VOLUME IS DECREASED BY MORE THAN 10% OR IF POND TAKES LONGER THAN 60 HOURS TO COMPLETELY DRAIN OUT
4. RETAINING WALL DESIGN BY OTHERS SHALL TAKE INTO CONSIDERATION THE SURROUNDING PROPOSED IMPROVEMENTS, SUCH AS LIGHT POLES AND PARKING. CONTRACTOR SHALL PROVIDE CONSTRUCTION PLANS, INCLUDING STRUCTURAL DESIGN AND HANDRAIL, FOR THE RETAINING WALL IN CONFORMANCE WITH CITY STANDARDS. CONTRACTOR SHALL SUBMIT THE PLANS FOR OWNER, ARCHITECT, AND ENGINEER REVIEW AND CONTRACTOR SHALL OBTAIN CITY PERMIT.
5. REFER TO SHEET C7.2 FOR MAINTENANCE NOTES



WEIR PLATE STRUCTURE DETAIL
(N.T.S.)



ANTI-SEEP COLLAR
N.T.S.

NEW BRAUNFELS HIGH SCHOOL MAINTENANCE SCHEDULE												
Maintenance Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Non-Structural Controls												
Litter Control	X	X	X	X	X	X	X	X	X	X	X	X
Landscape Management	X				X				X			
Detention Pond			X	X	X	X						
Mow or Weed-Eat Banks										X		
INSPECTION	X	X	X	X	X	X	X	X	X	X	X	X
"X" Identifies the months in which the activity will be performed (at a minimum)												

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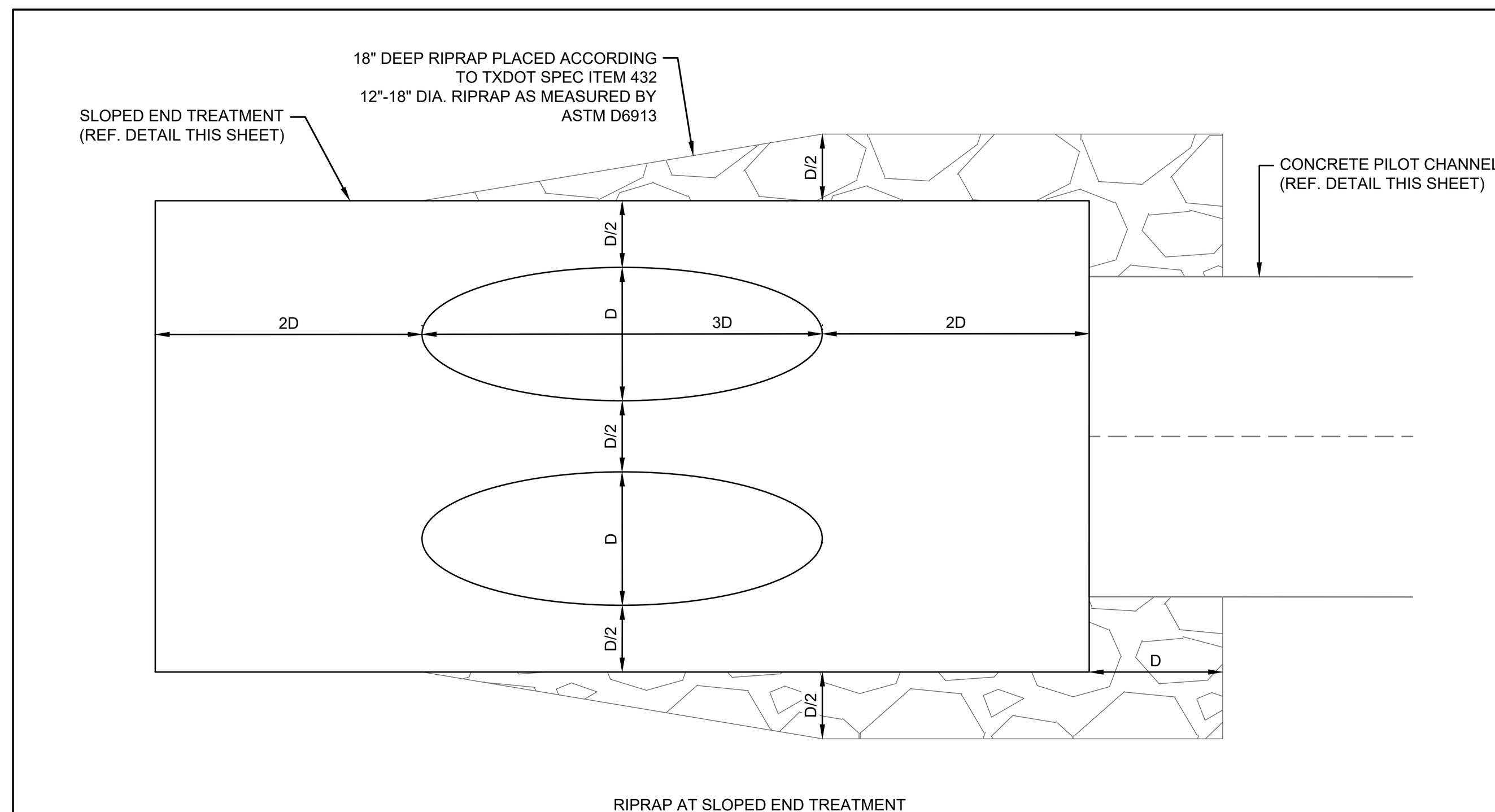
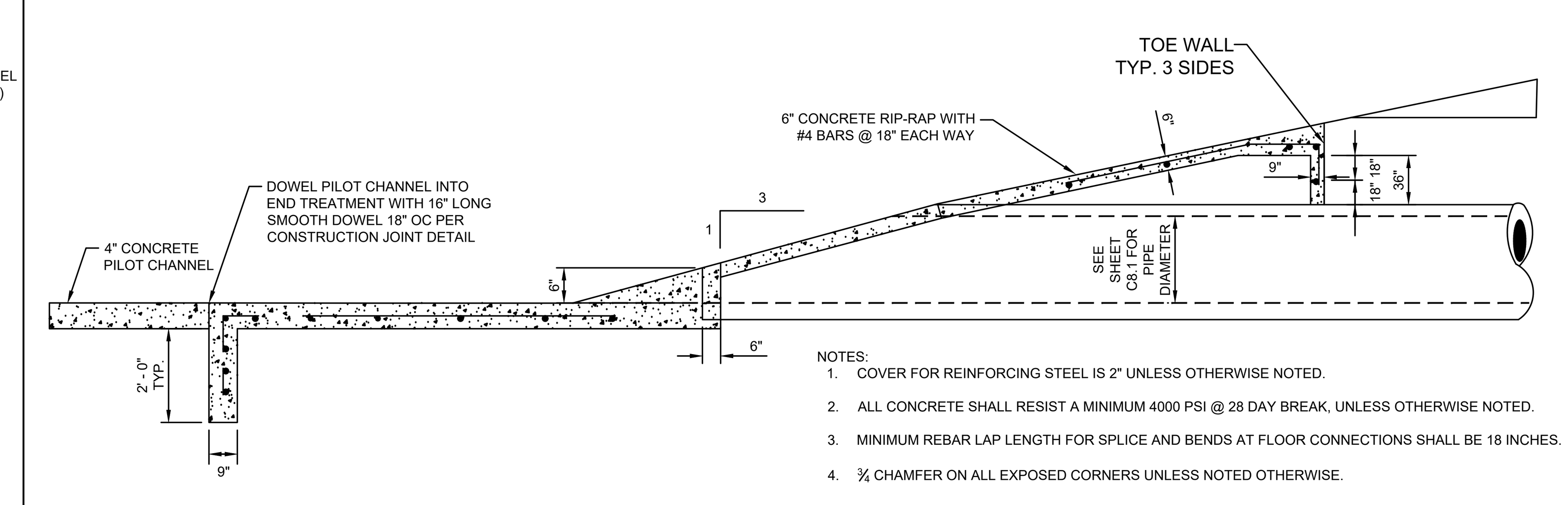
DETENTION AND WATER QUALITY PLAN

PACKAGE 2 VOLUME 01

Job No. 018535-02-02
Drawn By:
Date: 12/19/2024
Sheet No. C7.0

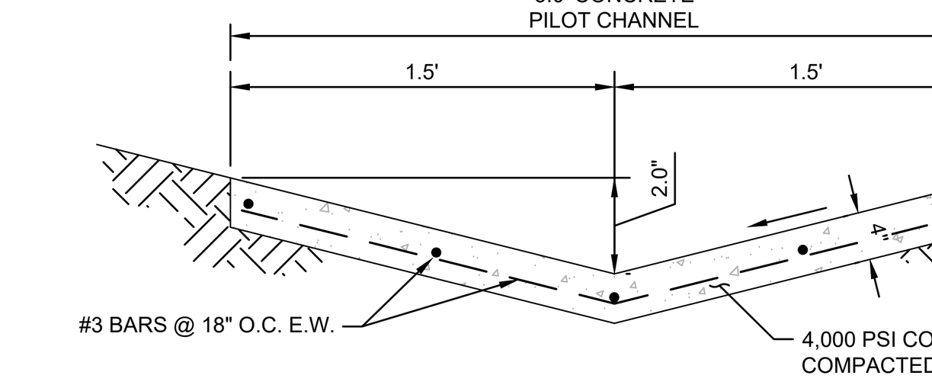


RIPRAP AT SLOPED END TREATMENT
N.T.S.



NOTES:
1. COVER FOR REINFORCING STEEL IS 2" UNLESS OTHERWISE NOTED.
2. ALL CONCRETE SHALL RESIST A MINIMUM 4000 PSI @ 28 DAY BREAK, UNLESS OTHERWISE NOTED.
3. MINIMUM REBAR LAP LENGTH FOR SPLICE AND BENDS AT FLOOR CONNECTIONS SHALL BE 18 INCHES.
4. ¾ CHAMFER ON ALL EXPOSED CORNERS UNLESS NOTED OTHERWISE.

GENERAL SLOPED END TREATMENT (OUTFALL)
N.T.S.

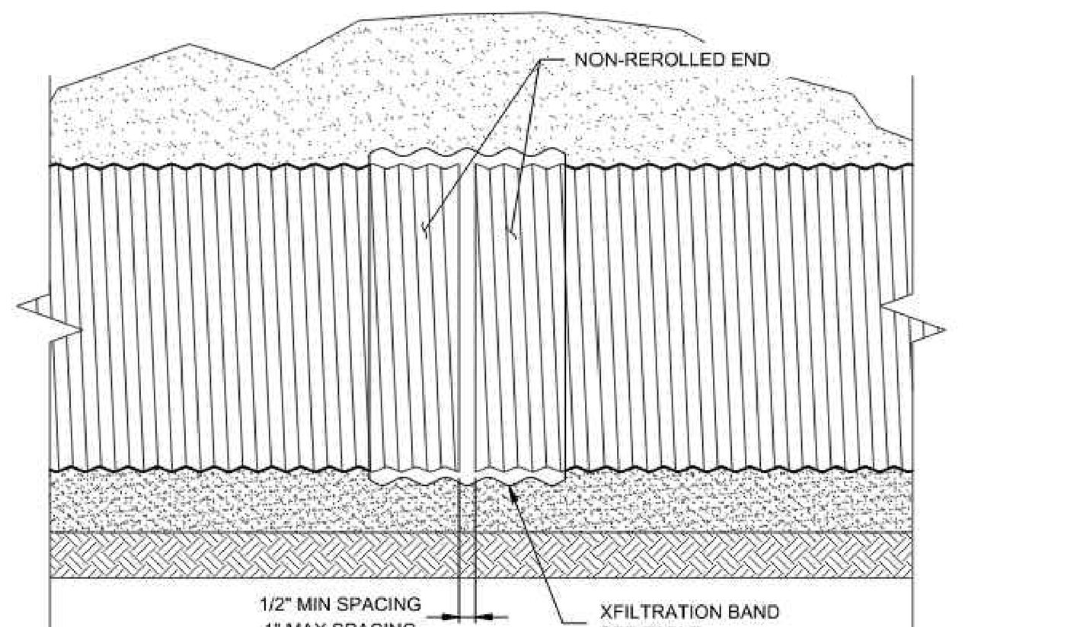


CONCRETE PILOT CHANNEL DETAIL
N.T.S.

NOTE: CONTRACTOR SHALL INSTALL A CONTRACTION JOINT EVERY 5' AND AN EXPANSION JOINT EVERY 10'

TRENCH EXCAVATION SAFETY PROTECTION:

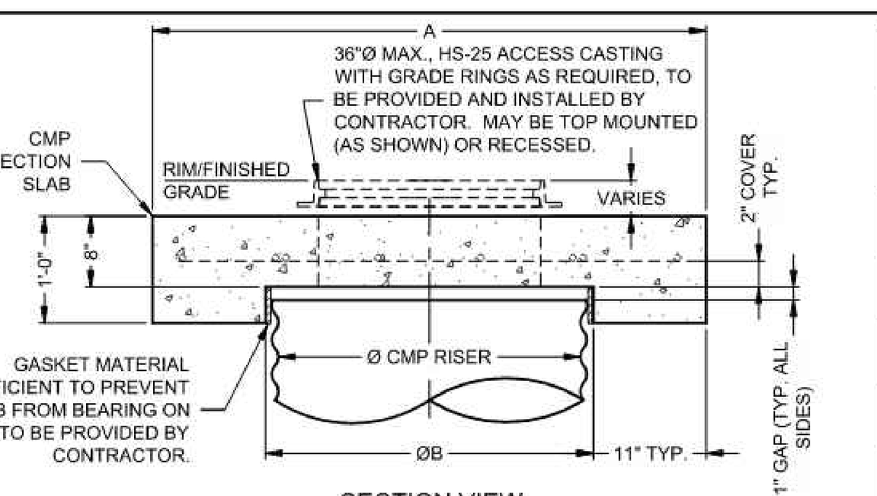
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



XFILTRATION BAND

DIAMETER	BAND	FASTENER
12"Ø TO 60"Ø	5-C OR H-12	STD. PLANT FASTENER WITH NO GASKET
66"Ø TO 96"Ø	5-C OR H-12	STD. PLANT FASTENER WITH NO GASKET
102"Ø +	5-C, 10-C OR H-12	STD. PLANT FASTENER WITH NO GASKET

XFILTRATION JOINT DETAIL
NOT TO SCALE



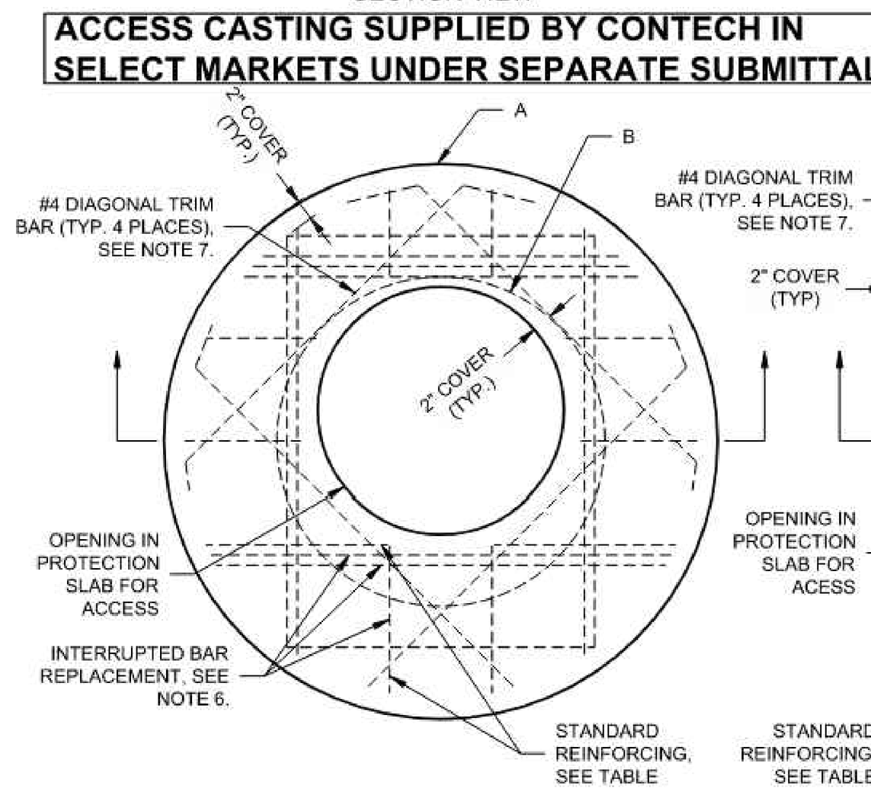
SECTION VIEW

ACCESS CASTING SUPPLIED BY CONTECH IN SELECT MARKETS UNDER SEPARATE SUBMITTAL

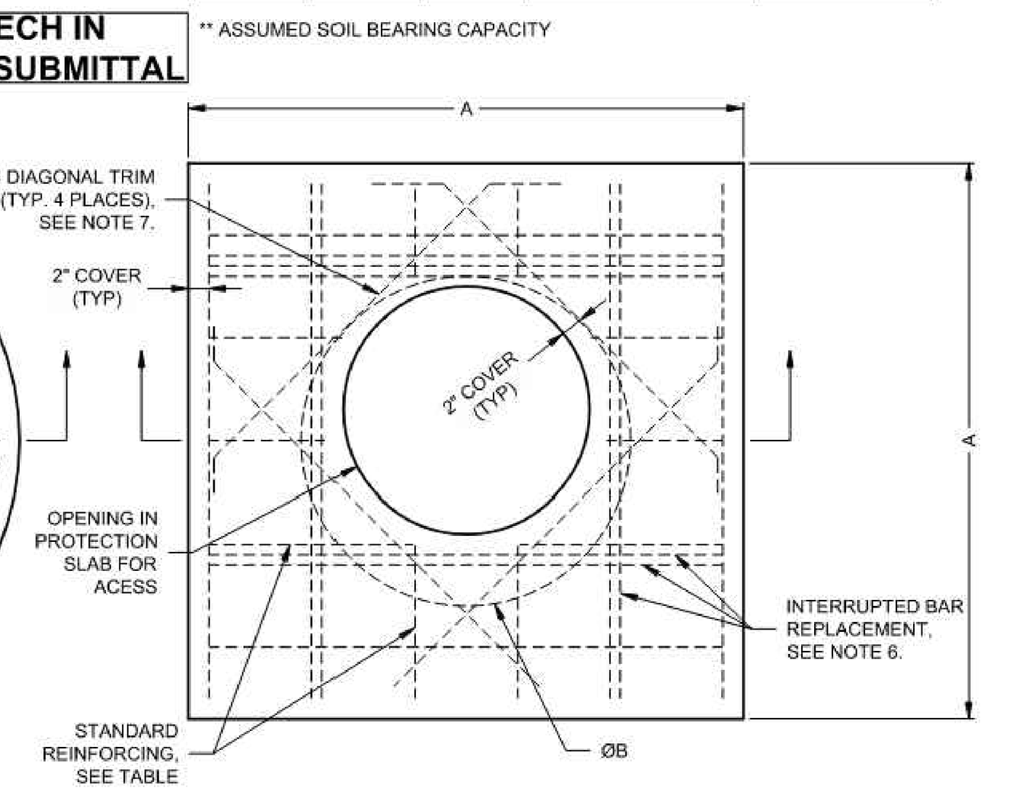
REINFORCING TABLE

Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'Ø 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 8" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENDWELL, NY.

MANHOLE CAP DETAIL
NOT TO SCALE

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
A QUIKRETE COMPANY
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH PROPOSAL DRAWING

96"Ø XFILTRATION RETENTION SYSTEM - 798667-020
NEW BRAUNFELS HIGH SCHOOL - PHASE 2
NEW BRAUNFELS, TX
SITE DESIGNATION: UDS

PROJECT No.: 798667 SEQ. No.: 020 DATE: 12/9/2024
DESIGNED: RKD DRAWN: RKD
CHECKED: RKD APPROVED: RKD
SHEET NO.: P5 OF 5

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

Slope	Dia of Pipe (D)	Values for One Pipe: W	X	Y	L	Reinf (Lbs)	Conc (CY) (1)	Values to be Added for Each Addt'l Pipe: X and W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	4' - 7 ½"	2' - 6"	2' - 10"	3' - 3 ¼"	88	0.6	1' - 9"	20	0.2
	15"	5' - 5 ¾"	2' - 9 ½"	3' - 4"	3' - 10 ¼"	103	0.7	2' - 2"	24	0.3
	18"	6' - 4 ¼"	3' - 1"	3' - 10"	4' - 5"	124	0.9	2' - 8"	32	0.3
	21"	7' - 2 ¾"	3' - 4 ½"	4' - 4"	5' - 0"	143	1.1	3' - 1"	43	0.4
	24"	8' - 2 ½"	3' - 9 ½"	4' - 10"	5' - 7"	164	1.3	3' - 7"	50	0.5
	27"	9' - 1"	4' - 1"	5' - 4"	6' - 2"	179	1.5	3' - 11"	56	0.6
	30"	9' - 11 ½"	4' - 4 ½"	5' - 10"	6' - 8 ¾"	203	1.7	4' - 4"	65	0.8
	33"	10' - 10"	4' - 8"	6' - 4"	7' - 3 ¾"	224	2.0	4' - 8"	71	0.9
	36"	11' - 8 ¼"	4' - 11 ½"	6' - 10"	7' - 10 ¾"	249	2.2	5' - 1"	81	1.0
	42"	13' - 5 ¼"	5' - 6 ½"	7' - 10"	9' - 0 ½"	298	2.8	5' - 10"	97	1.3
	48"	15' - 9"	6' - 1 ½"	9' - 4"	10' - 9 ¼"	360	3.8	6' - 7"	117	1.7
	54"	17' - 5 ¾"	6' - 8 ½"	10' - 4"	11' - 11 ¼"	427	4.5	7' - 6"	151	2.1
	60"	19' - 2 ¾"	7' - 3 ½"	11' - 4"	13' - 1"	481	5.3	8' - 3"	174	2.5
	66"	20' - 11 ½"	7' - 10 ½"	12' - 4"	14' - 3"	544	6.2	8' - 9"	194	2.9
	72"	22' - 8 ½"	8' - 5 ½"	13' - 4"	15' - 4 ¾"	601	7.1	9' - 4"	213	3.3
3:1	12"	6' - 3"	2' - 6"	4' - 3"	4' - 11"	118	0.8	1' - 9"	22	0.2
	15"	7' - 5"	2' - 9 ½"	5' - 0"	5' - 9 ¼"	137	1.1	2' - 2"	28	0.3
	18"	8' - 6 ¾"	3' - 1"	5' - 9"	6' - 7 ¾"	170	1.3	2' - 8"	37	0.5
	21"	9' - 8 ¾"	3' - 4 ½"	6' - 6"	7' - 6"	195	1.6	3' - 1"	48	0.6
	24"	11' - 0"	3' - 9 ½"	7' - 3"	8' - 4 ½"	227	2.0	3' - 7"	58	0.7
	27"	12' - 2"	4' - 1"	8' - 0"	9' - 2 ¾"	251	2.3	3' - 11"	67	0.8
	30"	13' - 4"	4' - 4 ½"	8' - 9"	10' - 1 ¼"	293	2.7	4' - 4"	77	1.0
	33"	14' - 5 ¾"	4' - 8"	9' - 6"	10' - 11 ¾"	318	3.1	4' - 8"	84	1.2
	36"	15' - 7 ¾"	4' - 11 ½"	10' - 3"	11' - 10"	351	3.5	5' - 1"	96	1.4
	42"	17' - 11 ½"	5' - 6 ½"	11' - 9"	13' - 6 ¾"	432	4.5	5' - 10"	119	1.7
	48"	21' - 1 ¾"	6' - 1 ½"	14' - 0"	16' - 2"	537	6.1	6' - 7"	146	2.3
	54"	23' - 5 ½"	6' - 8 ½"	15' - 6"	17' - 10 ¾"	630	7.3	7' - 6"	186	2.9
	60"	25' - 9 ¼"	7' - 3 ½"	17' - 0"	19' - 7 ½"	719	8.7	8' - 3"	219	3.4
	66"	28' - 1"	7' - 10 ½"	18' - 6"	21' - 4 ¼"	811	10.1	8' - 9"	242	3.9
	72"	30' - 4 ¾"	8' - 5 ½"	20' - 0"	23' - 1 ¼"	924	11.7	9' - 4"	272	4.4
4:1	12"	7' - 10 ¾"	2' - 6"	5' - 8"	6' - 6 ½"	148	1.1	1' - 9"	24	0.3
	15"	9' - 4"	2' - 9 ½"	6' - 8"	7' - 8 ½"	181	1.5	2' - 2"	32	0.4
	18"	10' - 9 ½"	3' - 1"	7' - 8"	8' - 10 ¼"	221	1.9	2' - 8"	42	0.5
	21"	12' - 2 ¾"	3' - 4 ½"	8' - 8"	10' - 0"	260	2.3	3' - 1"	57	0.7
	24"	13' - 9 ½"	3' - 9 ½"	9' - 8"	11' - 2"	301	2.8	3' - 7"	67	0.9
	27"	15' - 3"	4' - 1"	10' - 8"	12' - 3 ¾"	334	3.3	3' - 11"	77	1.0
	30"	16' - 8 ¼"	4' - 4 ½"	11' - 8"	13' - 5 ¾"	385	3.8	4' - 4"	89	1.3
	33"	18' - 1 ¾"	4' - 8"	12' - 8"	14' - 7 ½"	425	4.5	4' - 8"	101	1.4
	36"	19' - 7"	4' - 11 ½"	13' - 8"	15' - 9 ¼"	472	5.1	5' - 1"	115	1.7
	42"	22' - 5 ¾"	5' - 6 ½"	15' - 8"	18' - 1"	583	6.5	5' - 10"	141	2.1
	48"	26' - 6 ¼"	6' - 1 ½"	18' - 8"	21' - 6 ¾"	730	8.9	6' - 7"	175	2.8
	54"	29' - 5"	6' - 8 ½"	20' - 8"	23' - 10 ¼"	875	10.7	7' - 6"	226	3.6
	60"	32' - 3 ¾"	7' - 3 ½"	22' - 8"	26' - 2"	996	12.7	8' - 3"	264	4.3
	66"	35' - 2 ½"	7' - 10 ½"	24' - 8"	28' - 5 ¾"	1,140	14.9	8' - 9"	300	4.9
	72"	38' - 1 ¼"	8' - 5 ½"	26' - 8"	30' - 9 ½"	1,297	17.3	9' - 4"	334	5.6
6:1	12"	11' - 2"	2' - 6"	8' - 6"	9' - 9 ¾"	224	1.9	1' - 9"	28	0.4
	15"	13' - 2 ¼"	2' - 9 ½"	10' - 0"	11' - 6 ½"	268	2.5	2' - 2"	37	0.5
	18"	15' - 2 ½"	3' - 1"	11' - 6"	13' - 3 ¼"	330	3.2	2' - 8"	50	0.7
	21"	17' - 2 ¾"	3' - 4 ½"	13' - 0"	15' - 0 ¼"	387	3.9	3' - 1"	69	0.9
	24"	19' - 4 ½"	3' - 9 ½"	14' - 6"	16' - 9"	453	4.8	3' - 7"	80	1.2
	27"	21' - 4 ¾"	4' - 1"	16' - 0"	18' - 5 ¾"	512	5.7	3' - 11"	96	1.4
	30"	23' - 5 ¼"	4' - 4 ½"	17' - 6"	20' - 2 ½"	593	6.7	4' - 4"	110	1.7
	33"	25' - 5 ½"	4' - 8"	19' - 0"	21' - 11 ¼"	675	7.8	4' - 8"	127	2.0
	36"	27' - 5 ¾"	4' - 11 ½"	20' - 6"	23' - 8"	735	9.0	5' - 1"	144	2.3
	42"	31' - 6 ¼"	5' - 6 ½"	23' - 6"	27' - 1 ½"	922	11.5	5' - 10"	179	3.0
	48"	37' - 3 ½"	6' - 1 ½"	28' - 0"	32' - 4"	1,191	15.9	6' - 7"	231	4.0
	54"	41' - 4 ¼"	6' - 8 ½"	31' - 0"	35' - 9 ½"	1,424	19.2	7' - 6"	300	5.0
	60"	45' - 4 ¾"	7' - 3 ½"	34' - 0"	39' - 3"	1,631	22.9	8' - 3"	353	6.0

DATE:
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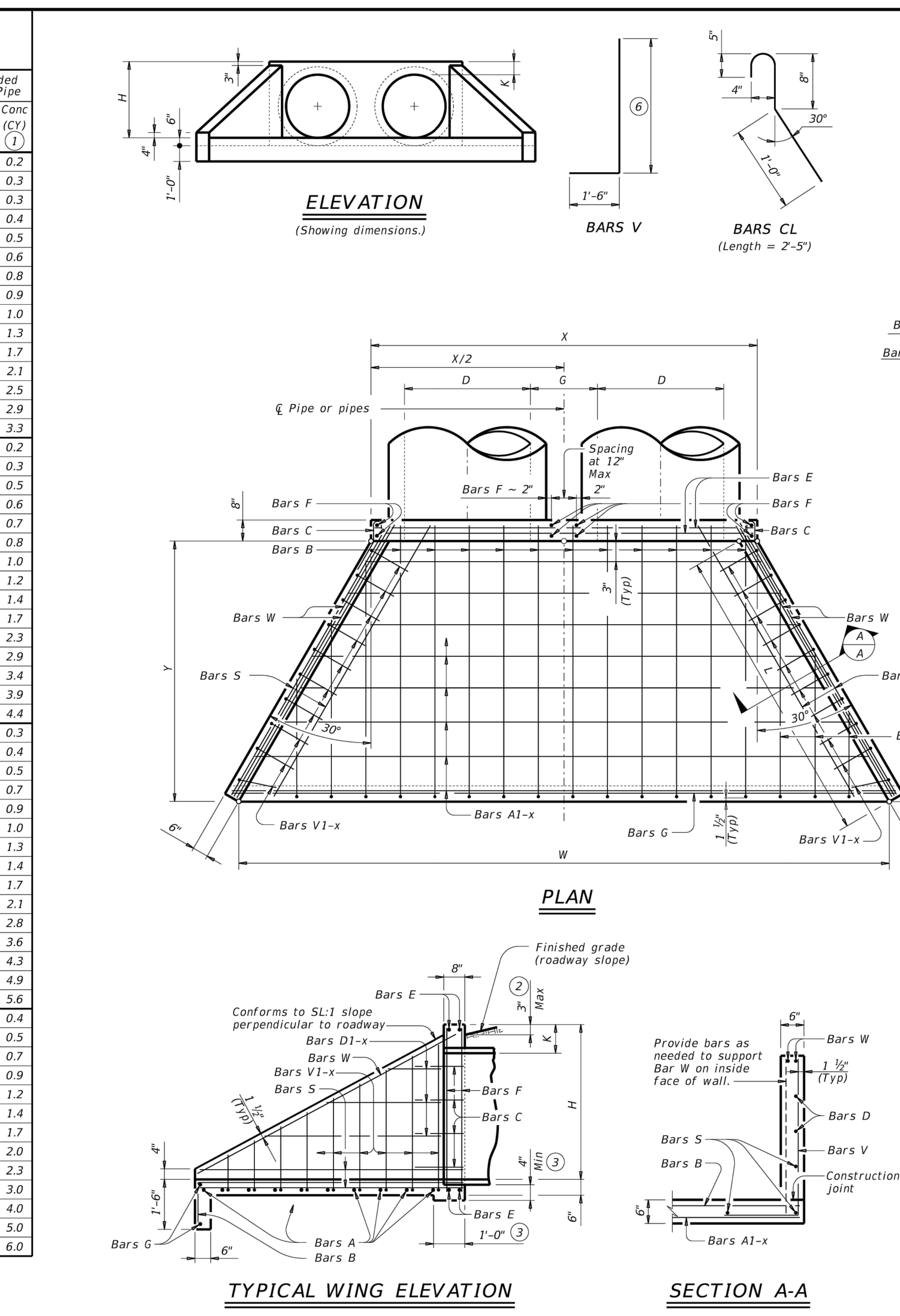
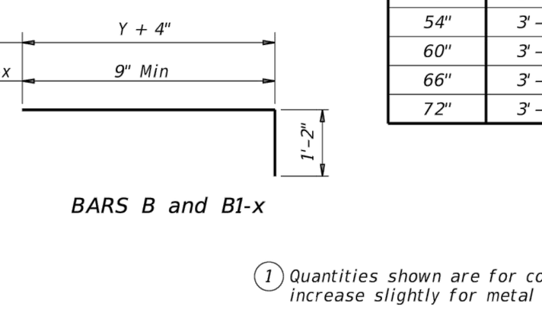


TABLE OF REINFORCING STEEL (5)

Bar	Size	Spa	No.
A	#4	1' - 0"	~
B	#3	1' - 6"	~
C	#4	1' - 0"	~
D	#3	1' - 0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
S	#4	~	6
V	#4	1' - 0"	~
W	#5	~	4



BARS B and B1-x

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (4)	H
12"	0' - 9"	1' - 0"	2' - 0"
15"	0' - 11"	1' - 0"	2' - 3"
18"	1' - 2"	1' - 0"	2' - 6"
21"	1' - 4"	1' - 0"	2' - 9"
24"	1' - 7"	1' - 0"	3' - 0"
27"	1' - 8"	1' - 0"	3' - 3"
30"	1' - 10"	1' - 0"	3' - 6"
33"	1' - 11"	1' - 0"	3' - 9"
36"	2' - 1"	1' - 0"	4' - 0"
42"	2' - 4"	1' - 0"	4' - 6"
48"	2' - 7"	1' - 3"	5' - 3"
54"	3' - 0"	1' - 3"	5' - 9"
60"	3' - 3"	1' - 3"	6' - 3"
66"	3' - 3"	1' - 3"	6' - 9"
72"	3' - 4"	1' - 3"	7' - 3"

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

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

(3) Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.

(4) Dimensions shown are usual and maximum.

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

(6) Min Length = $6" + 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right)$

Max Length = $12 \times H - 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right) - 1"$

(7) Lengths of wings based on SL:1 slope along this line.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

CH-FW-0

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

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

REVISION	DATE	
1	12.16.2024	CITY AND TCEQ REVISIONS

Project: NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS FOR NEW BRAUNFELS I.S.D. NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS — RICHARD J. UNDERWOOD — 137843 — REGISTERED PROFESSIONAL ENGINEER — 12/19/2024

Huckabee
AUSTIN • DALLAS • FORT WORTH • HOUSTON • WACO
www.huckabee-inc.com
800.687.1229

DETENTION AND WATER QUALITY DETAILS

PACKAGE 2 — VOLUME 01
Job No.: 01935-02-02
Sheet No.: C7.1
Drawn By:
Date: 12/19/2024

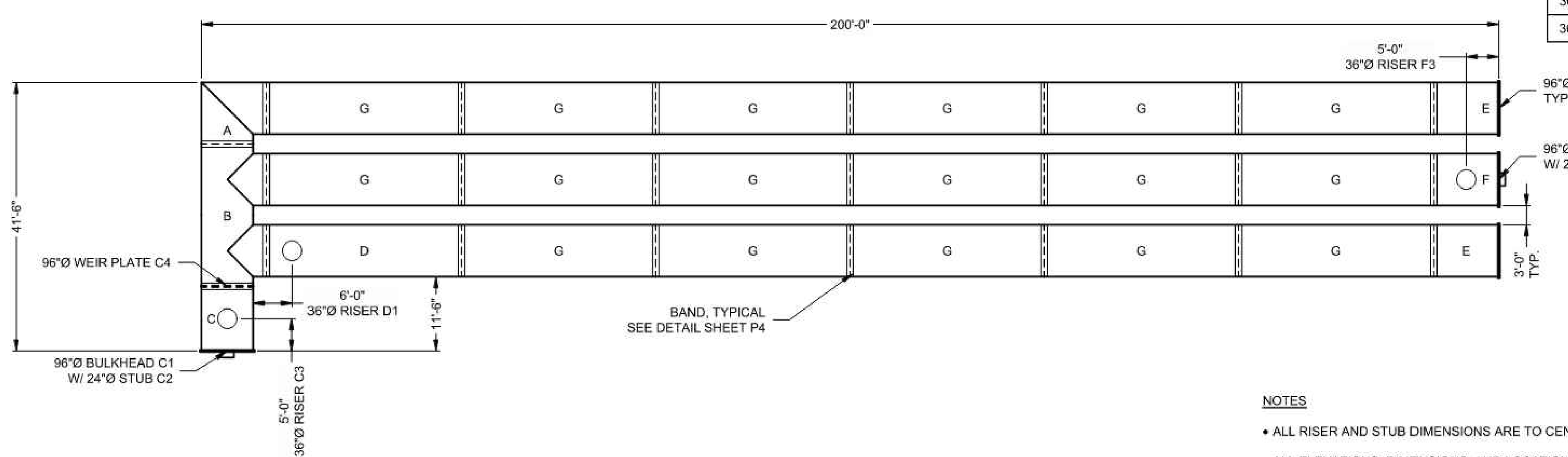
STUB INFORMATION

PIECE	STUB INVERT	SYSTEM INVERT
24"Ø STUB C2	790.42	790.42
24"Ø STUB F2	794.71	790.42

RISER INFORMATION

PIECE	RIM ELEV.	SYSTEM INVERT
36"Ø RISER C3	TBD	TBD
36"Ø RISER D1	TBD	TBD
36"Ø RISER F3	TBD	TBD

NORTH ARROW PROVIDED FOR REFERENCE ONLY.
REFER TO ENGINEERED SITE PLANS FOR EXACT LOCATION AND ORIENTATION



THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (5) PAGES INCLUDING THE FOLLOWING:

- **PIPE STORAGE = 30,460 CF**
- **MAINLINE PIPE GAGE = 16**
- **WALL TYPE = SOLID W/ XFILTRATION**
- **DIAMETER = 96"**
- **FINISH = ALT2**
- **CORRUGATION = 5x1**

CUSTOMER _______ DATE _______

ASSEMBLY

SCALE: 1" = 20'
STRUCTURAL BACKFILL STORAGE: 10,592 CF
TOTAL STORAGE PROVIDED: 41,052 CF
LOADING: H20
PIPE INV. = 790.42'±

ASSUMES 18" OF PERIMETER WITH 40% VOIDS

ASSUMES 6" STONE ABOVE PIPE AND NONE BELOW

STONE STORAGE VOLUME OF SYSTEM WILL BE ACHIEVED THROUGH THE USE OF CONTECH'S XFILTRATION JOINTS

NOTES

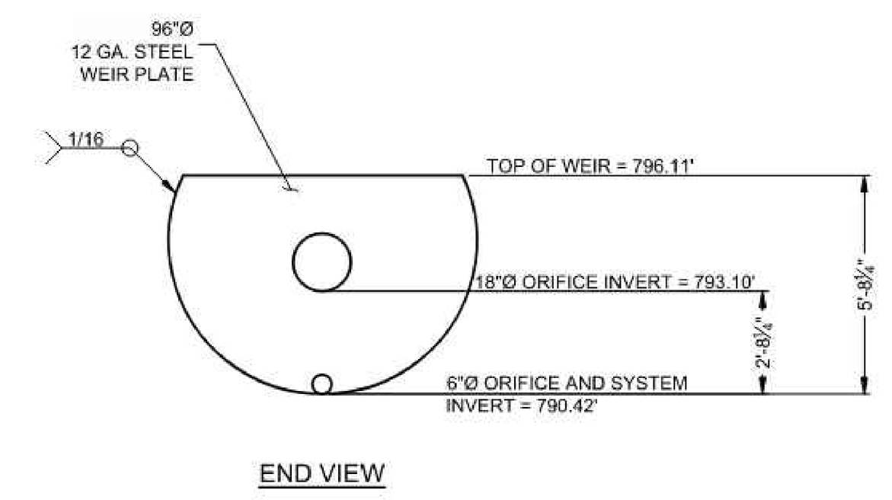
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.
- BULKHEADS SHALL BE CONSTRUCTED USING 12 GAGE OR HEAVIER MATERIAL, WITH BOTH THE WATER AND SOIL SIDE FINAL COATINGS MATCHING THE SPECIFIED CMP COATING. BULKHEAD PLATES MUST BE FULLY WELDED TO THE CONNECTING PIPE. THE DESIGN OF BULKHEADS SHALL ADHERE TO CHAPTER 8 OF THE NCSPA CSP DESIGN MANUAL, MEETING THE HEIGHT OF COVER DESIGN REQUIREMENTS WITH APPROPRIATE REINFORCEMENTS OR A MINIMUM REQUIRED PLATE THICKNESS. ADDITIONALLY, REINFORCING MEMBERS SHALL BE POST-COATED WITH ZINC RICH PAINT IN ACCORDANCE WITH AASHTO M36 FOR GALVANIZED AND ALUMINUM CMP SYSTEMS, OR AASHTO M245 FOR POLYMER CMP SYSTEMS.

MARK	DATE	REVISION DESCRIPTION	BY

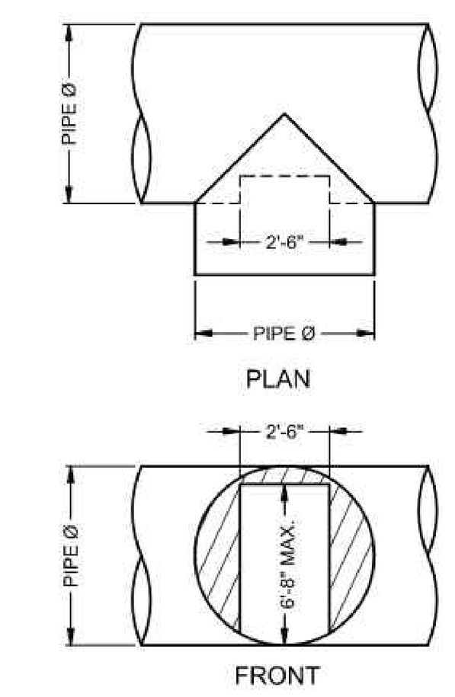
CONTECH ENGINEERED SOLUTIONS LLC — 9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069 — 800-338-1122 513-645-7000 513-645-7993 FAX — CONTECH CMP DETENTION SYSTEMS — CONTECH PROPOSAL DRAWING

96"Ø XFILTRATION RETENTION SYSTEM - 798667-020
NEW BRAUNFELS HIGH SCHOOL - PHASE 2
NEW BRAUNFELS, TX
SITE DESIGNATION: UDS

PROJECT No.: 798667 | SEQ. No.: 020 | DATE: 12/9/2024 | DESIGNED: RKD | DRAWN: RKD | CHECKED: RKD | APPROVED: RKD | SHEET NO.: P1 OF 5

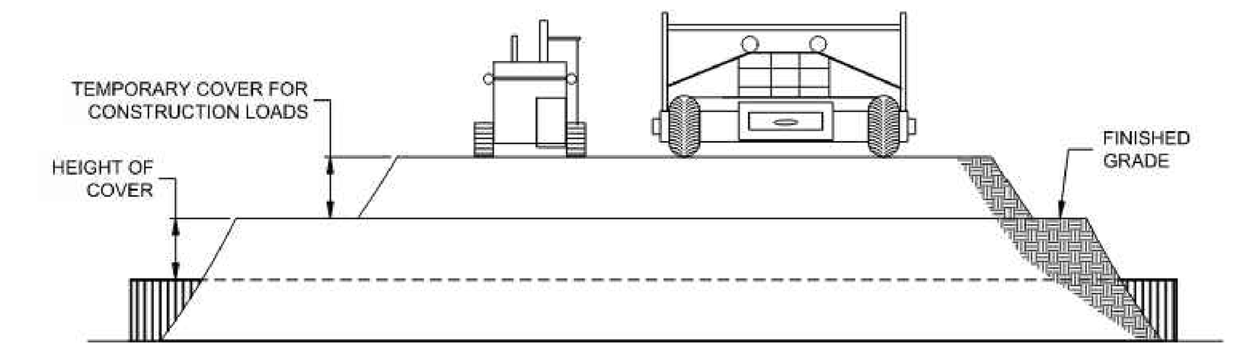


WEIR PLATE DETAIL
PART C4
NOT TO SCALE



96"Ø to 144"Ø FITTING REINFORCEMENT MAY BE REQUIRED BASED ON HEIGHT OF COVER AND LIVE LOAD CONDITION

TYPICAL MANWAY DETAIL
NOT TO SCALE



CONSTRUCTION LOADS

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

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

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

CONSTRUCTION LOADING DIAGRAM
NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

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

ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

MATERIAL SPECIFICATION
NOT TO SCALE

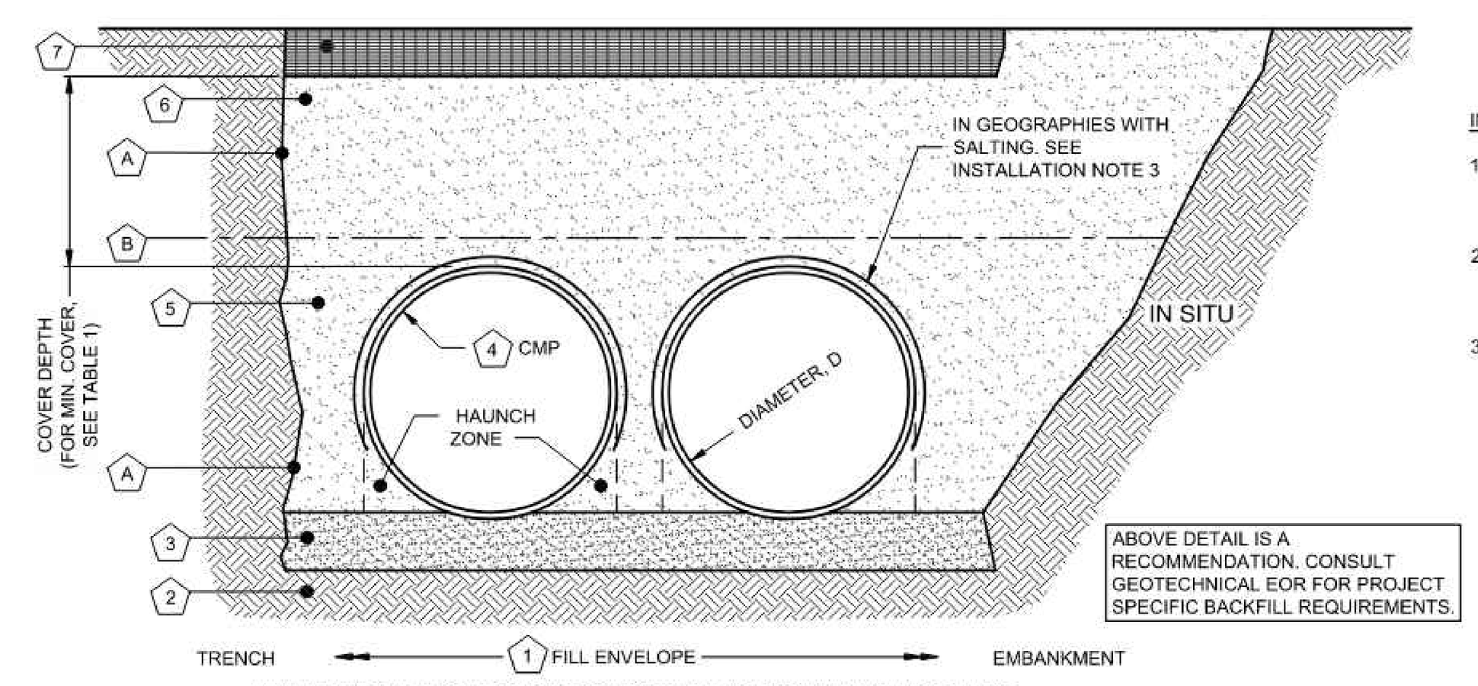
96"Ø XFILTRATION RETENTION SYSTEM - 798667-020
NEW BRAUNFELS HIGH SCHOOL - PHASE 2
NEW BRAUNFELS, TX
SITE DESIGNATION: UDS

PROJECT No.: 798667 | SEQ. No.: 020 | DATE: 12/9/2024 | DESIGNED: RKD | DRAWN: RKD | CHECKED: RKD | APPROVED: RKD | SHEET NO.: P2 OF 5

TABLE 1:

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

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.



INSTALLATION NOTES

1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2:

XFILTRATION© JOINT STANDARD BACKFILL SPECIFICATIONS

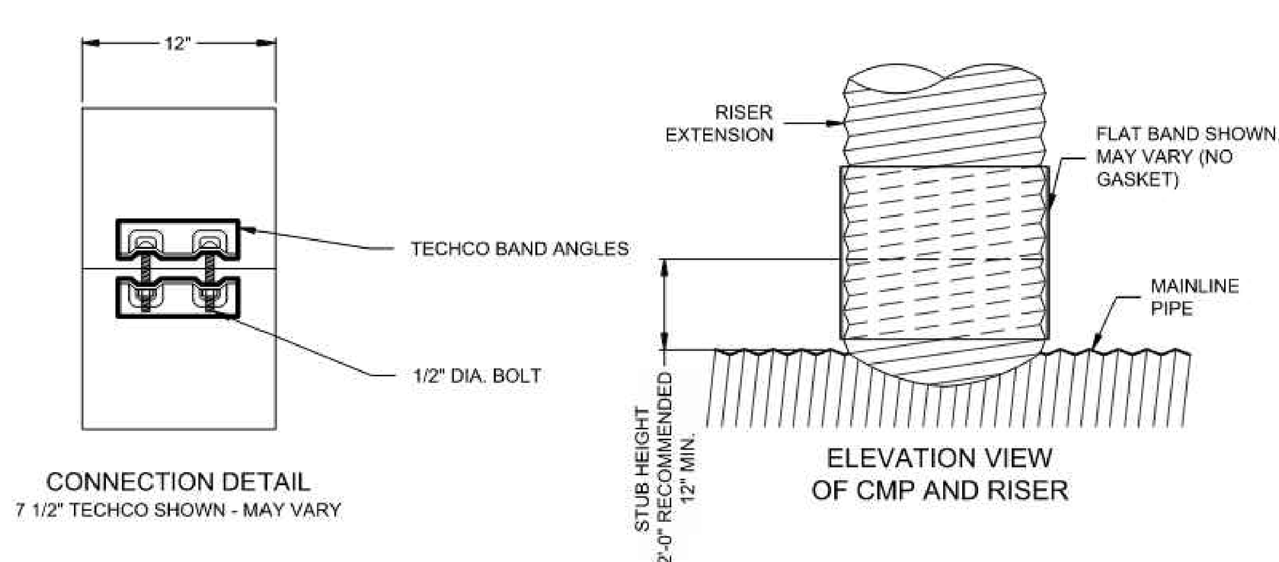
	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM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

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- * APPROVED REGIONAL EQUIVALENTS FOR SECTION 5 INCLUDE CA-7, MIDOT 6AA, 6A, OR 5G, PROVIDED THEY MEET THE PARTICLE SIZES INDICATED.

MANUFACTURER RECOMMENDED BACKFILL
NOT TO SCALE

96"Ø XFILTRATION RETENTION SYSTEM - 798667-020
NEW BRAUNFELS HIGH SCHOOL - PHASE 2
NEW BRAUNFELS, TX
SITE DESIGNATION: UDS

PROJECT No.: 798667 | SEQ. No.: 020 | DATE: 12/9/2024 | DESIGNED: RKD | DRAWN: RKD | CHECKED: RKD | APPROVED: RKD | SHEET NO.: P3 OF 5

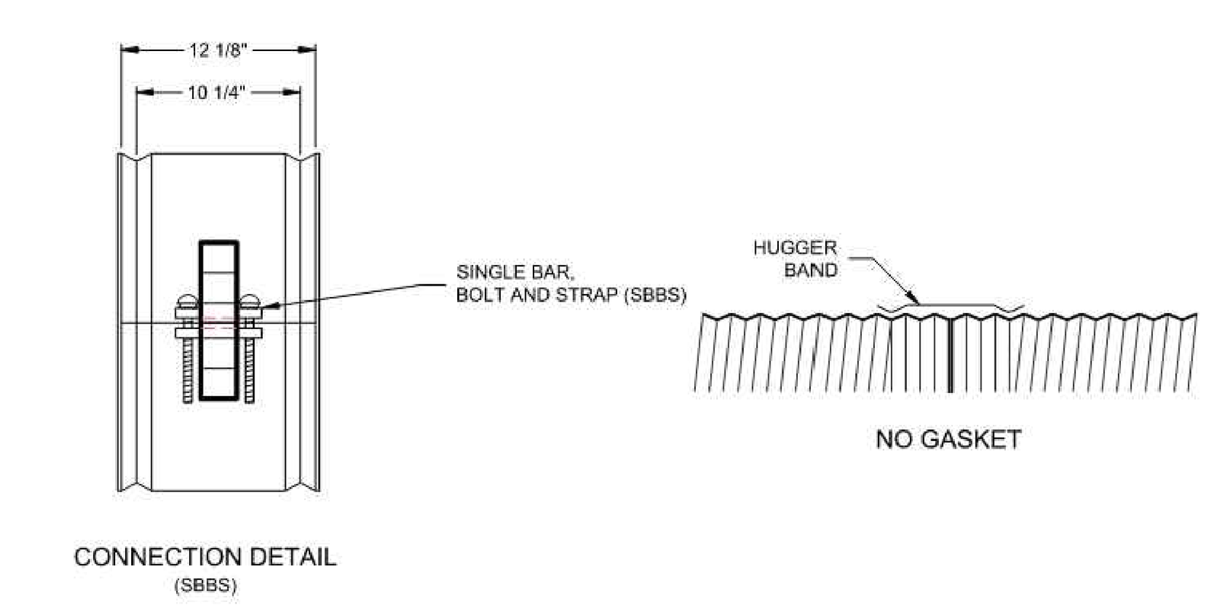


PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. **DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.**
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL
NOT TO SCALE



2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 96" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

H-12 HUGGER BAND DETAIL
NOT TO SCALE

96"Ø XFILTRATION RETENTION SYSTEM - 798667-020
NEW BRAUNFELS HIGH SCHOOL - PHASE 2
NEW BRAUNFELS, TX
SITE DESIGNATION: UDS

PROJECT No.: 798667 | SEQ. No.: 020 | DATE: 12/9/2024 | DESIGNED: RKD | DRAWN: RKD | CHECKED: RKD | APPROVED: RKD | SHEET NO.: P4 OF 5

REVISION	DATE	
1	12.16.2024	CITY AND TCEQ REVISIONS

Project: NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE : 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS — RICHARD J. UNDERWOOD — 117843 — REGISTERED PROFESSIONAL ENGINEER — 01/16/2025

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DETENTION SYSTEM DETAILS
PACKAGE 2 VOLUME 01
Job No.: 01935-02-02
Drawn By:
Date: 01/16/2025
Sheet No.: C7.2

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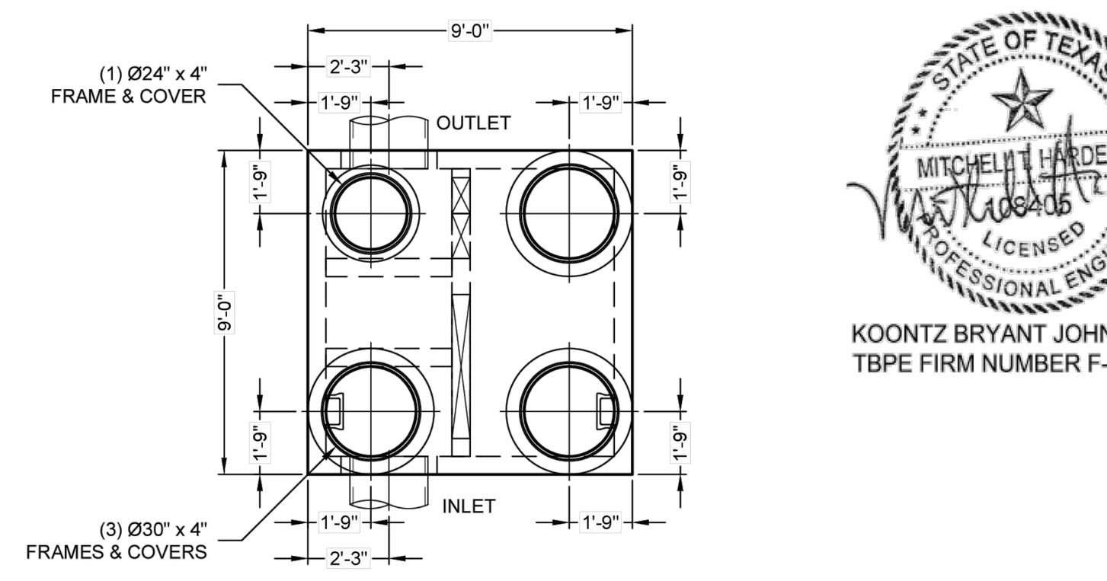
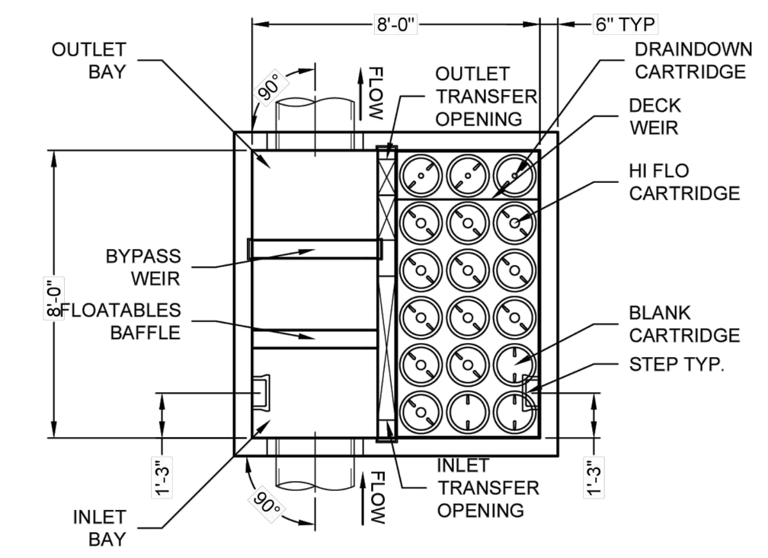


PLAN VIEW

MITCHELL HADERT
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121
7/2/24



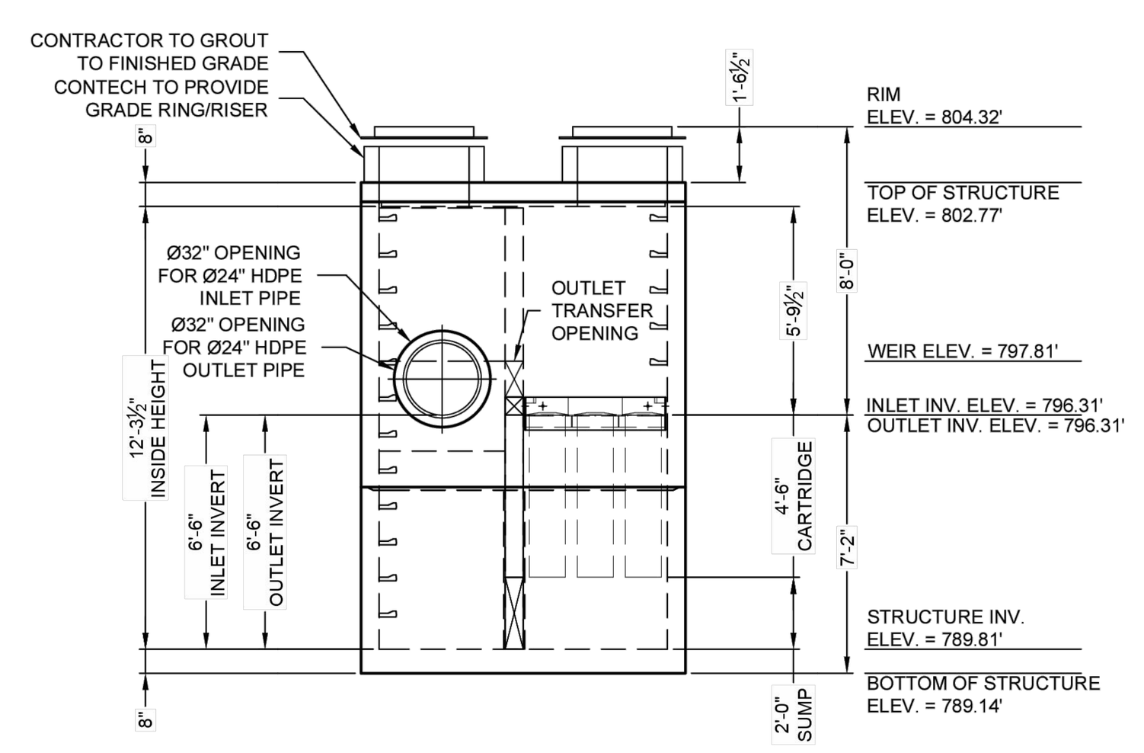
PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)

MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
12	54" HI-FLO CARTRIDGE (70 mm ORIFICE)	CONTECH
3	54" DRAINDOWN CARTRIDGE (35 mm ORIFICE)	CONTECH
3	CARTRIDGE BLANK (NO ORIFICE)	CONTECH
1	JELLYFISH VAULT 18-CARTRIDGE DECK, STANDARD	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
3	Ø30" X 4" FRAME & COVER, EJ #41600483	CONTRACTOR
1	Ø24" X 4" FRAME & COVER, EJ #41600389	CONTRACTOR
4 PLCS.	GRADE RING/RISER	CONTRACTOR
17	STEPS	CONTECH
1	EPA LABEL	CONTECH

SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.29 CFS
PEAK FLOW RATE	17.23 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS



ELEVATION VIEW

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. WWW.ContechES.COM
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 1' - 6.5", AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ACCORDING TO THE PROVISIONS IN THE ACTIVATION CHECKLIST AND THE QUOTED SCOPE OF WORK. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (800) 338-1122.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK OF (3) PIECES = 25,000 LBS.

CONTECH CONTRACT DRAWING

SLY
5635 / 492043
LAYOUT 7
CLASS 800

8' X 8' JELLYFISH* - 798667-10
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF1

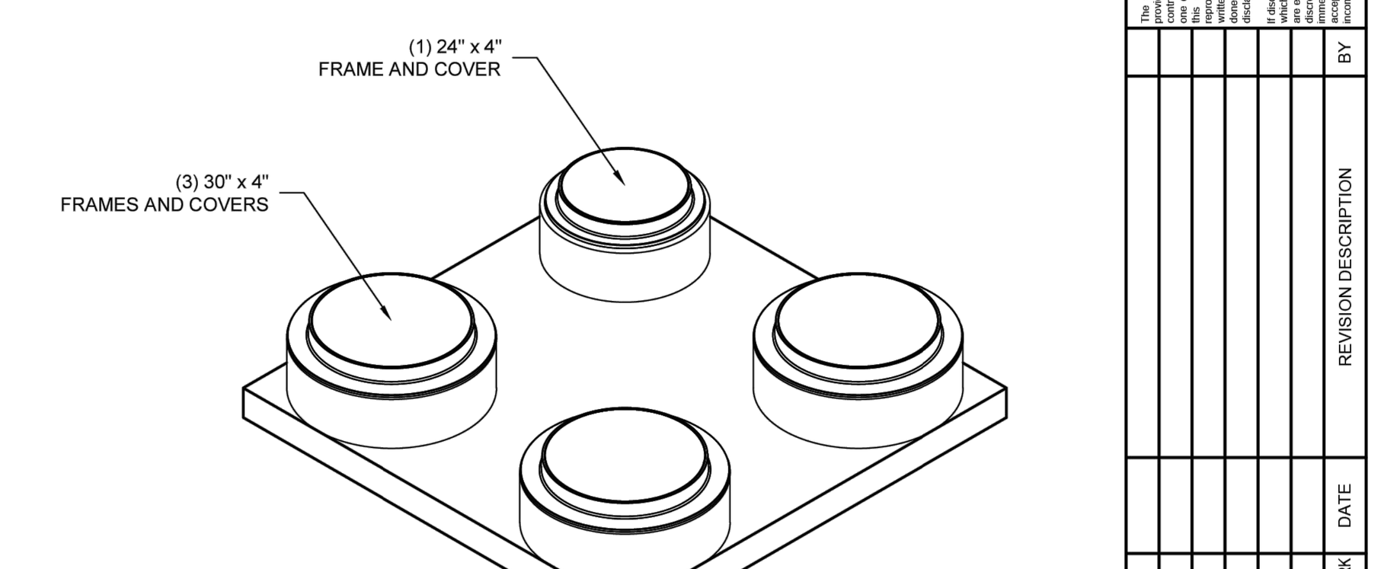
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

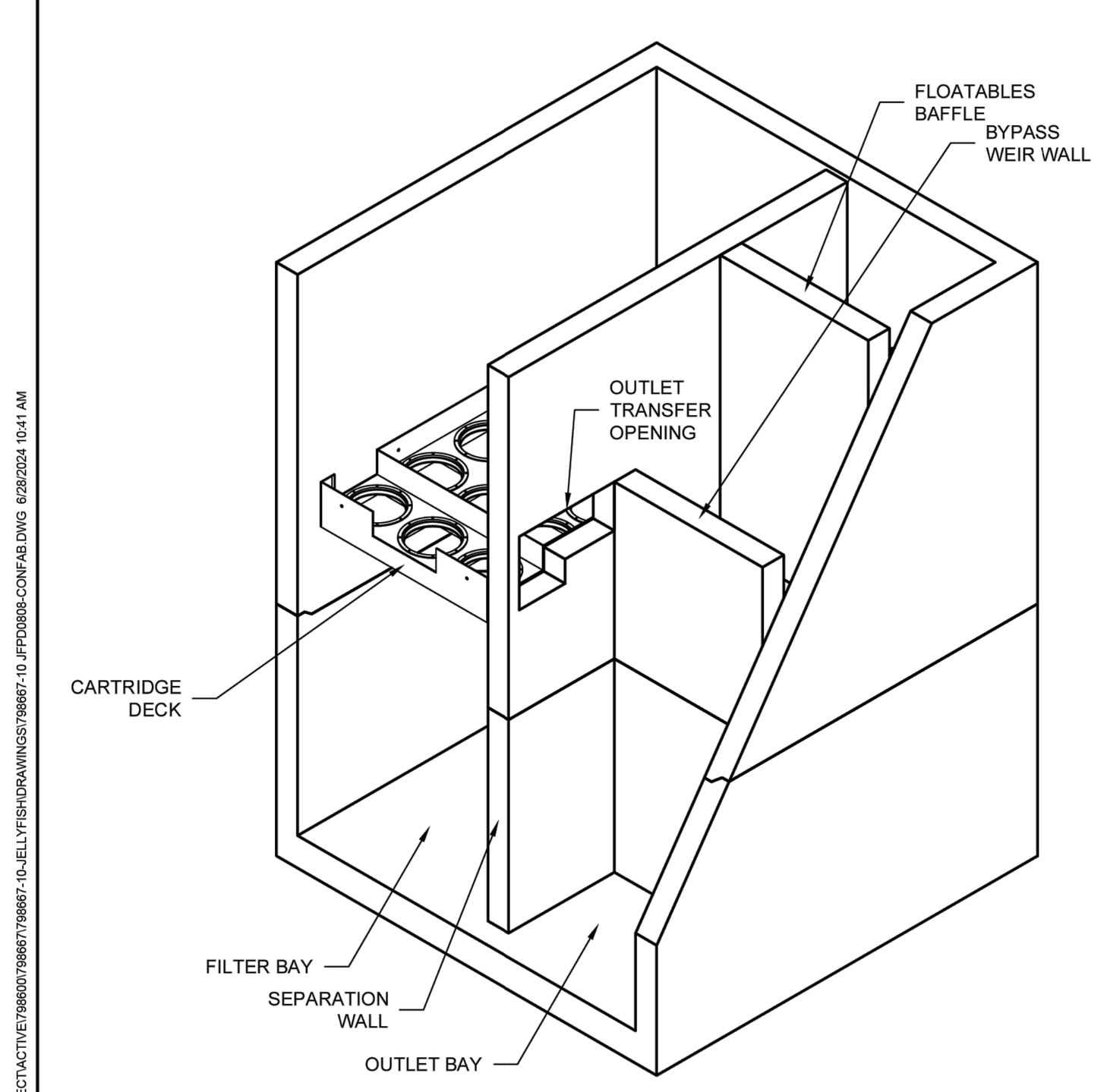
Jellyfish Filter

DATE: 06/28/2024
DESIGNED: RKD
DRAWN: MAA
CHECKED: MSB
APPROVED: RKD
PROJECT No.: 798667
SEQUENCE No.: 10
SHEET: 1 OF 2

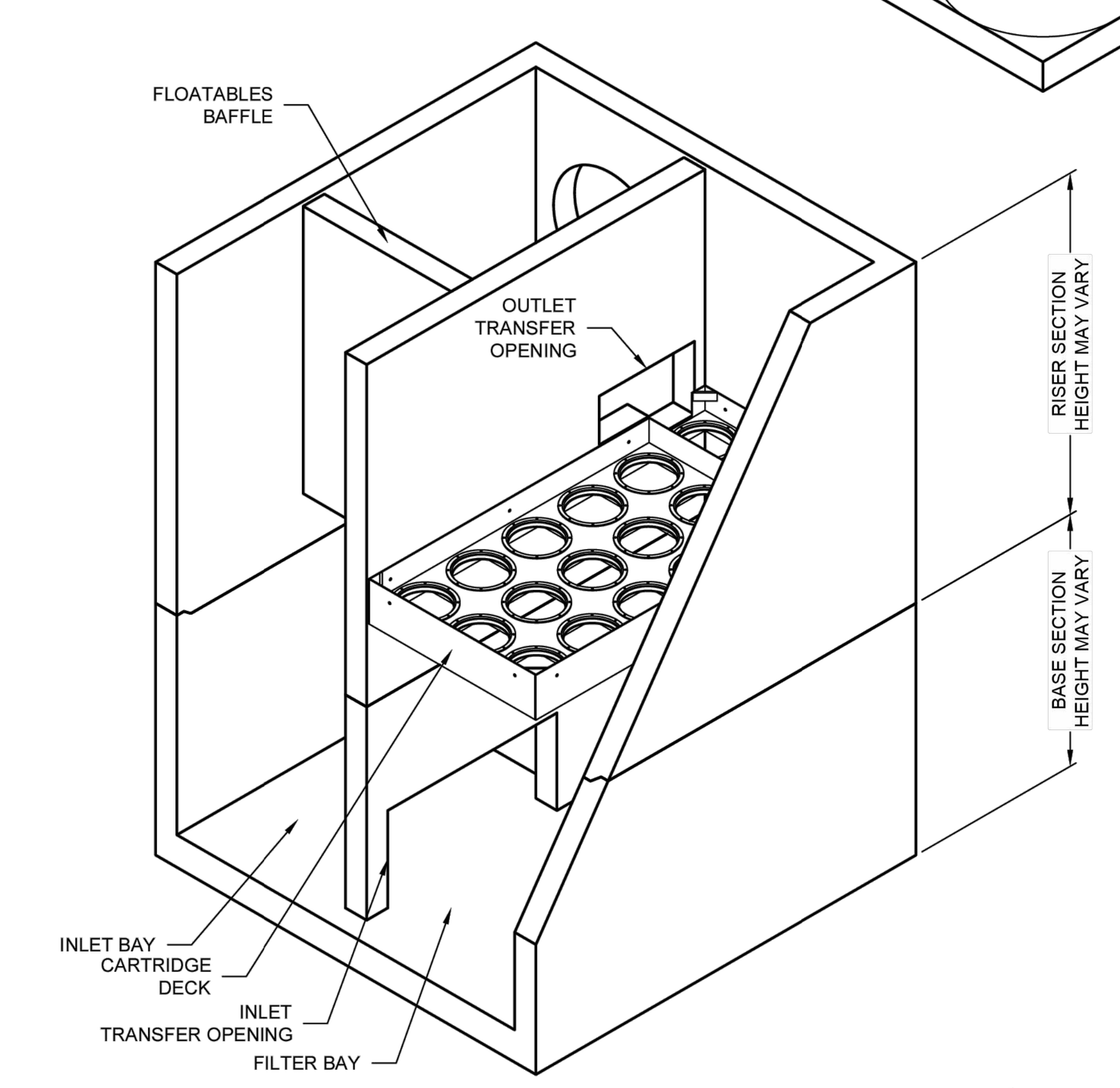
ISOMETRIC VIEWS ARE REPRESENTATIONAL. SEE DETAILED FABRICATION DRAWING FOR SITE SPECIFIC DIMENSIONS

MITCHELL HADERT
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121
7/2/24





NW ISOMETRIC VIEW



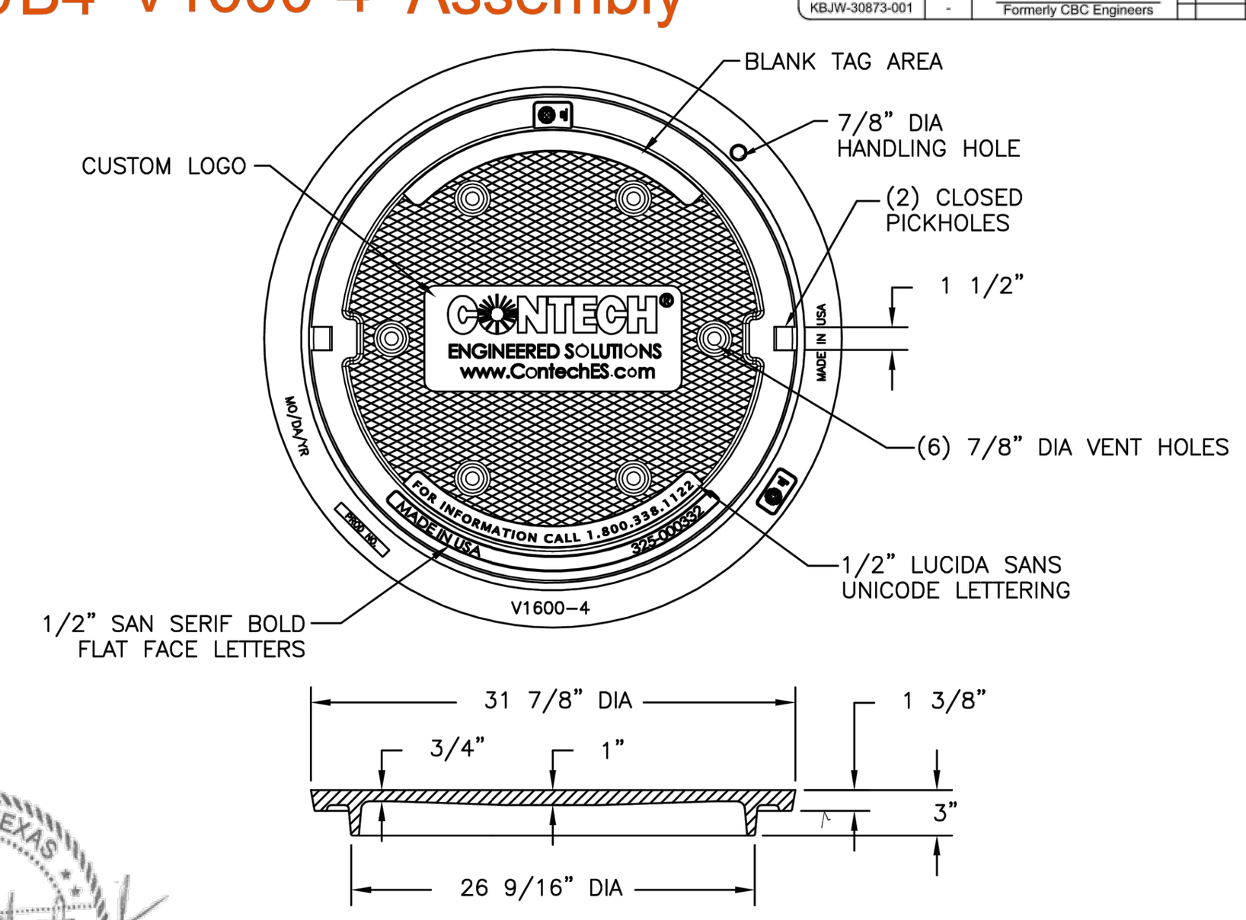
SE ISOMETRIC VIEW

CONTECH CONTRACT DRAWING

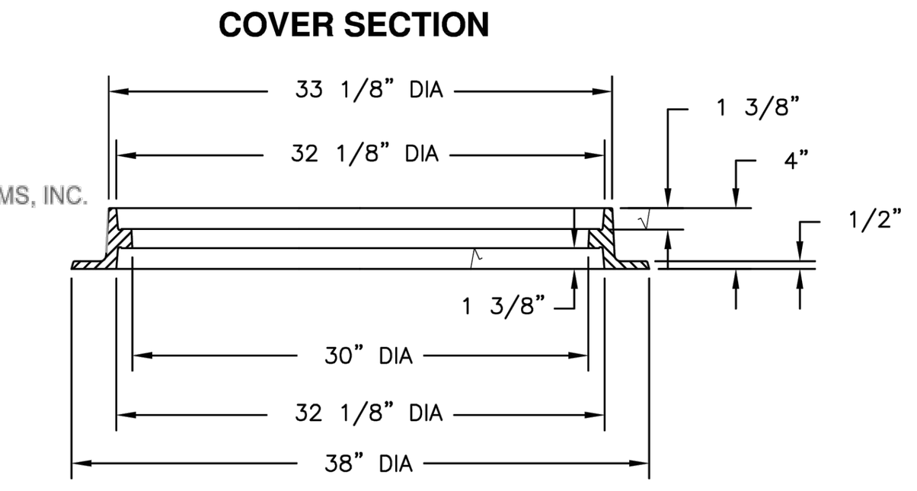
8' X 8' JELLYFISH* - 798667-10
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF1

DATE: 06/28/2024
DESIGNED: RKD
DRAWN: MAA
CHECKED: MSB
APPROVED: RKD
PROJECT No.: 798667
SEQUENCE No.: 10
SHEET: 2 OF 2

1810B4 V1600-4 Assembly



COVER SECTION



FRAME SECTION

MITCHELL HADERT
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121
7/2/24

Product Number
41600483

Design Features
-Materials
Cover
Gray Iron (CL35B)
Frame
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

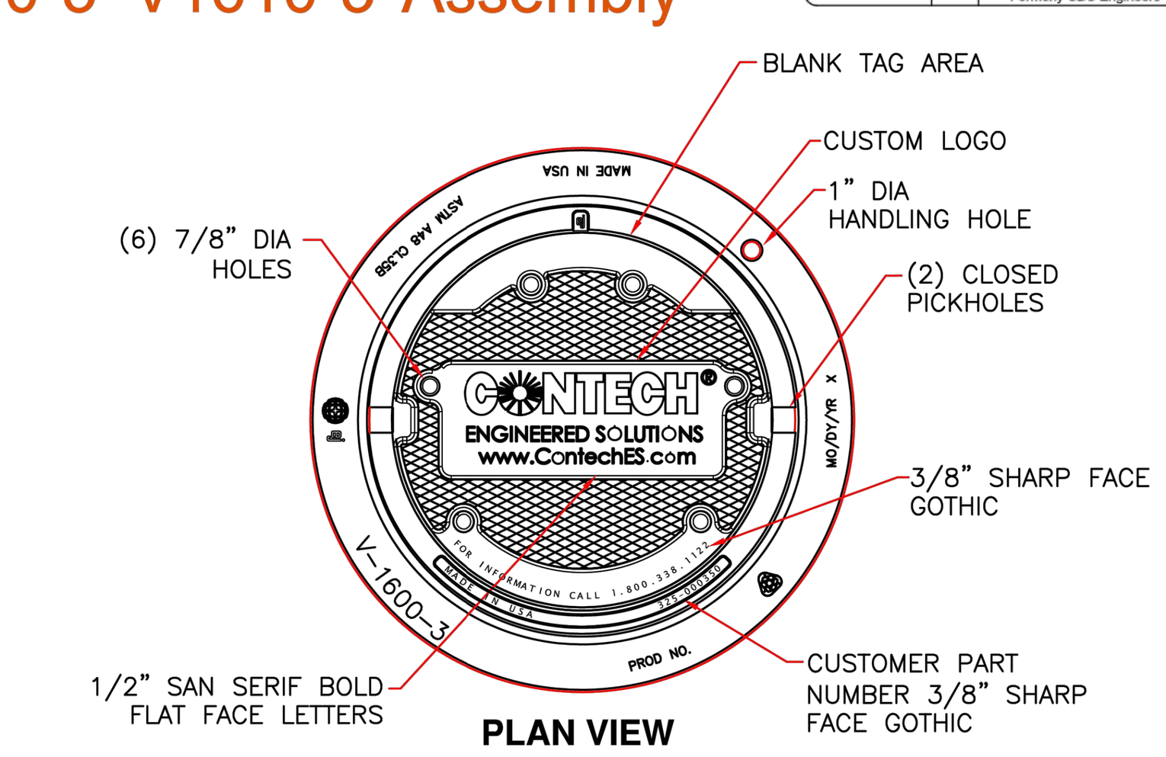
Major Components
00180783
41600410

Drawing Revision
05/09/2007 Designer: SMH
6/26/2017 Revised By: DAE

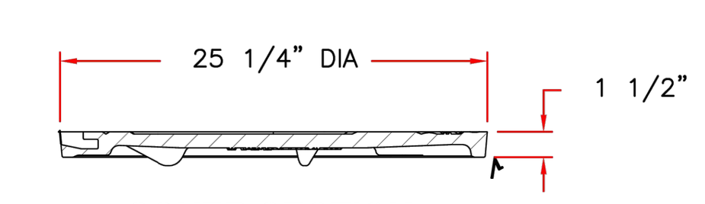
Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact
800 626 4653
ejco.com

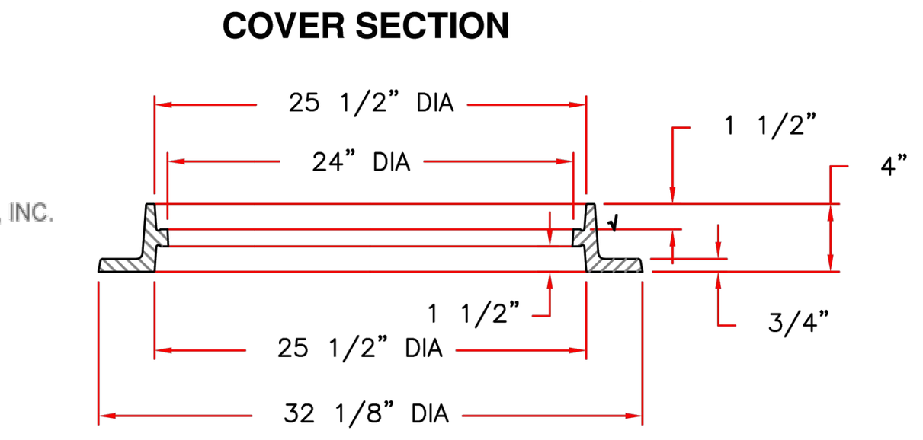
V1600-3 V1610-3 Assembly



PLAN VIEW



COVER SECTION



RING SECTION

MITCHELL HADERT
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121
7/2/24

Product Number
41600389

Design Features
-Materials
Frame
Gray Iron (CL35B)
Cover
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

Major Components
41600310
41600374

Drawing Revision
05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact
800 626 4653
ejco.com

REVISION	DATE	
1	12.16.2024	CITY AND TCEQ REVISIONS

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
137843
LICENSED PROFESSIONAL ENGINEER
01/16/2025

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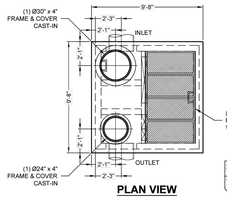
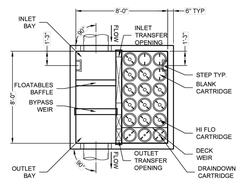
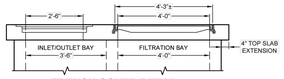
DETENTION SYSTEM DETAILS

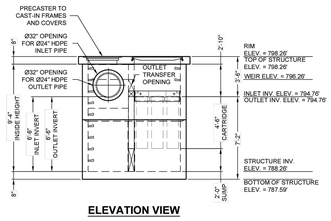
PACKAGE 2 VOLUME 01

Job No.: 01935-02-02
Drawn By:
Date: 01/16/2025
Sheet No.: C7.3









PLAN VIEW

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By	Date	Rev.	Date	By	Description
MTH	7/2/24				
Project No. KBJW-30873-001	Rev. -				

KOONTZ BRYANT JOHNSON WILLIAMS
Formerly CBC Engineers

PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)

TRENCH COVERS SHIPPED SEPARATELY. TOP SLAB IS NOT TO BE LIFTED WITH COVERS INSTALLED.

TRENCH COVER DETAIL

ELEVATION VIEW

MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
12	54" HI-FLO CARTRIDGE (70 mm ORIFICE)	CONTECH
3	54" DRAINDOWN CARTRIDGE (35 mm ORIFICE)	CONTECH
3	CARTRIDGE BLANK (NO ORIFICE)	CONTECH
1	JELLYFISH VAULT 18-CARTRIDGE DECK, STANDARD	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
1	Ø30" X 4" FRAME & COVER, EJ #41600483	CONTRACTOR
1	Ø24" X 4" FRAME & COVER, EJ #41600389	CONTRACTOR
4	24" X 51" TRENCH COVER, EJ #47514031	CONTRACTOR
4 PCS.	2.5" X 48" TRENCH FRAME, EJ #47300311	CONTECH
11	STEPS	CONTECH
1	STEP, LANE P-14850 (FOR LADDER ATTACHMENT)	CONTECH
1	REMOVABLE, LANE 4-STEP POLY LADDER	CONTECH

SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.34 CFS
PEAK FLOW RATE	16.14 CFS
RETURN PERIOD OF PEAK FLOW	25 YRS

GENERAL NOTES:

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. WWW.ContechES.COM
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 0' - 0", AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ACCORDING TO THE PROVISIONS IN THE ACTIVATION CHECKLIST AND THE QUOTED SCOPE OF WORK. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (800) 338-1122.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK OF (3) PIECES = 20,500 LBS.

CONTECH
CONTRACT
DRAWING

SLY
5635 / 492043
LAYOUT 7
CLASS 600

MARK | DATE | REVISION DESCRIPTION | BY

8' X 8' JELLYFISH* - 798667-15
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF2

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX
Jellyfish® Filter

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: RKD	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 15
SHEET: 1 OF 2	

ISOMETRIC VIEWS ARE REPRESENTATIONAL. SEE DETAILED FABRICATION DRAWING FOR SITE SPECIFIC DIMENSIONS

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By	Date	Rev.	Date	By	Description
MTH	7/2/24				
Project No. KBJW-30873-001	Rev. -				

Formerly CBC Engineers

NW ISOMETRIC VIEW

SE ISOMETRIC VIEW

CONTECH
CONTRACT
DRAWING

MARK | DATE | REVISION DESCRIPTION | BY

8' X 8' JELLYFISH* - 798667-15
NEW BRAUNFELS HS
NEW BRAUNFELS, TX
SITE DESIGNATION: JF2

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
Jellyfish® Filter

DATE: 06/28/2024	
DESIGNED: RKD	DRAWN: MAA
CHECKED: RKD	APPROVED: RKD
PROJECT No.: 798667	SEQUENCE No.: 15
SHEET: 2 OF 2	

1810B4 V1600-4 Assembly

COVER SECTION

FRAME SECTION

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By MTH Date 7/2/24 Project No. KBJW-30873-001 Rev. -
Formerly CBC Engineers

Product Number
41600483

Design Features
-Materials
Cover
Gray Iron (CL35B)
Frame
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

Major Components
00180783
41600410

Drawing Revision
05/09/2007 Designer: SMH
6/26/2017 Revised By: DAE

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc.

Contact
800 626 4653
ejco.com

V1600-3 V1610-3 Assembly

PLAN VIEW

COVER SECTION

RING SECTION

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Approved By MTH Date 7/2/24 Project No. KBJW-30873-001 Rev. -
Formerly CBC Engineers

Product Number
41600389

Design Features
-Materials
Frame
Gray Iron (CL35B)
Cover
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

Major Components
41600310
41600374

Drawing Revision
05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

Disclaimer
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V7514 Trench Cover

COVER SECTION

COVER TOP VIEW

TYPE 4A PICKBAR DETAIL

Approved By MTH Date 7/2/24 Project No. KBJW-30873-001 Rev. -
Formerly CBC Engineers

COVER SECTION

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number
47514031

Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification
- ASTM A48
-
-
-Country of Origin: USA

Estimated Weight:
- 650 lbs

Drawing Revision
08/19/2009 Designer: SBB
4/18/2018 Revised By: DAE

Disclaimer
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Contact
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V7300-3 Trench Rail

Approved By MTH Date 7/2/24 Project No. KBJW-30873-001 Rev. -
Formerly CBC Engineers

1/8" DIA. THRU HOLE FOR FORMING NAILS

FRONT VIEW

END VIEW

MITCHELL HIBBERT 7/2/24
KOONTZ BRYANT JOHNSON WILLIAMS, INC.
TBPE FIRM NUMBER F-23121

Product Number
47300311

Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification
- ASTM A536
-
-
-Country of Origin: USA

Estimated Weight:
- 38 lbs

Drawing Revision
4/16/2005 Designer: SBB
4/18/2018 Revised By: DAE

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REVISION | DATE | CITY AND TCEQ REVISIONS
△1 | 12.16.2024 |

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn

10101 REUNION PLACE, SUITE 400
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PHONE : 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

RICHARD J. UNDERWOOD
117843
01/16/2025

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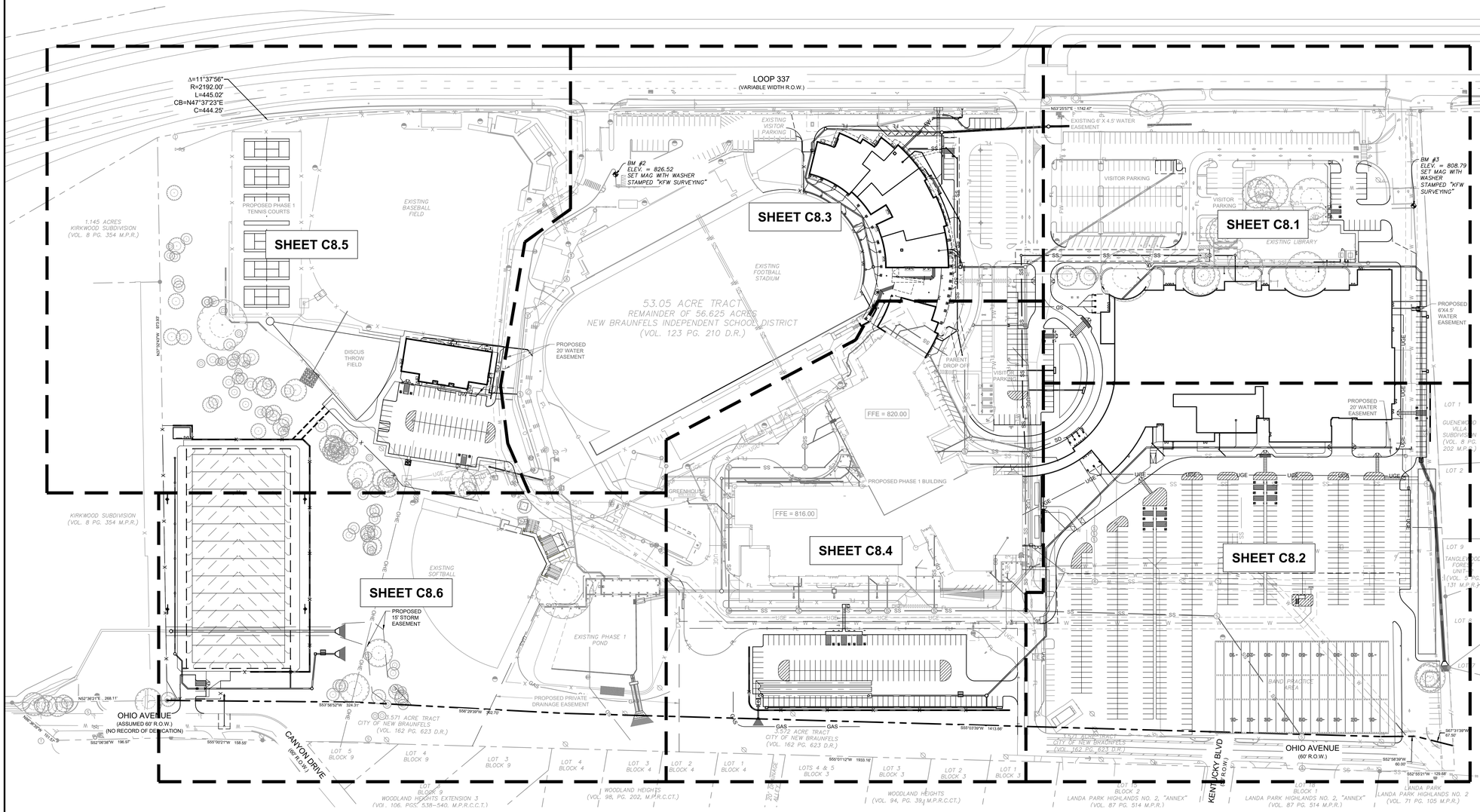
800.687.1229

DETENTION SYSTEM DETAILS

PACKAGE 2 **VOLUME 01**

Job No. 01935-02-02	Sheet No. C7.4
Drawn By:	
Date: 01/16/2025	



GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND

- PROPOSED PROPERTY BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- OHE — PROPOSED OVERHEAD ELECTRIC
- FW — PROPOSED FIRE WATER LINE
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- PROPOSED SEWER MANHOLE
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- PROPOSED GAS METER
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- PROPOSED FIRE HYDRANT
- PROPOSED DOMESTIC WATER LINE
- T — PROPOSED ELECTRIC TRANSFORMER
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING TREE
- EXISTING FIRE HYDRANT

STORM NOTES

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5. DRAIN BASINS TO BE NYLOPLAST OR APPROVED EQUAL.
5. ALL STORM BELOW ELEVATION 802.5 SHALL BE WATERTIGHT GASKETED RCP.

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

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

REVISION
CITY AND TCEQ REVISIONS
DATE 12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
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12/19/2024

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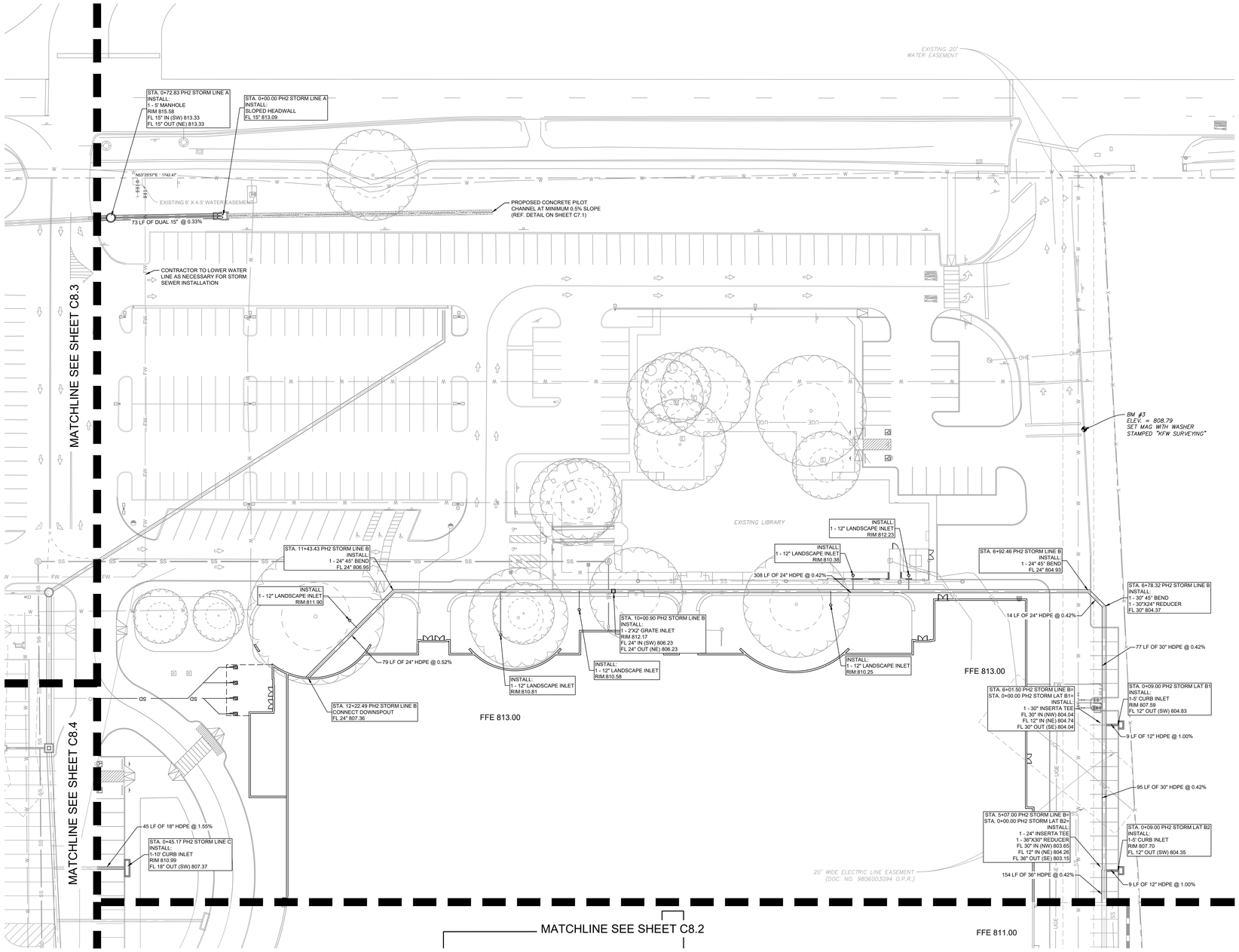
OVERALL STORM DRAINAGE PLAN

PACKAGE 2 | VOLUME 01

Job No. 018935-02-02	Sheet No. C8.0
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

- PROPOSED PROPERTY BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
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- PROPOSED FENCE
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- PROPOSED FIRE HYDRANT
- PROPOSED DOMESTIC WATER LINE
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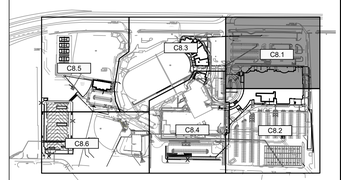
- EXISTING SIGN
- S — EXISTING SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING TREE
- EXISTING FIRE HYDRANT

KEY MAP
N.T.S.



STORM NOTES

1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
2. REFERENCE STORM SEWER NOTES ON SHEET C11.0 FOR PIPE MATERIAL REQUIREMENTS.
3. REFERENCE SHEET C12.5 FOR STORM SEWER DETAILS.
4. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
5. DRAIN BASINS TO BE NYLOPLAST OR APPROVED EQUAL.
6. ALL STORM BELOW ELEVATION 802.5 SHALL BE WATERTIGHT GASKETED RCP.

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
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811 Know what's below. Call before you dig.

REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE : 210-541-9166 FAX: 210-541-8699
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STATE OF TEXAS
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01/16/2025

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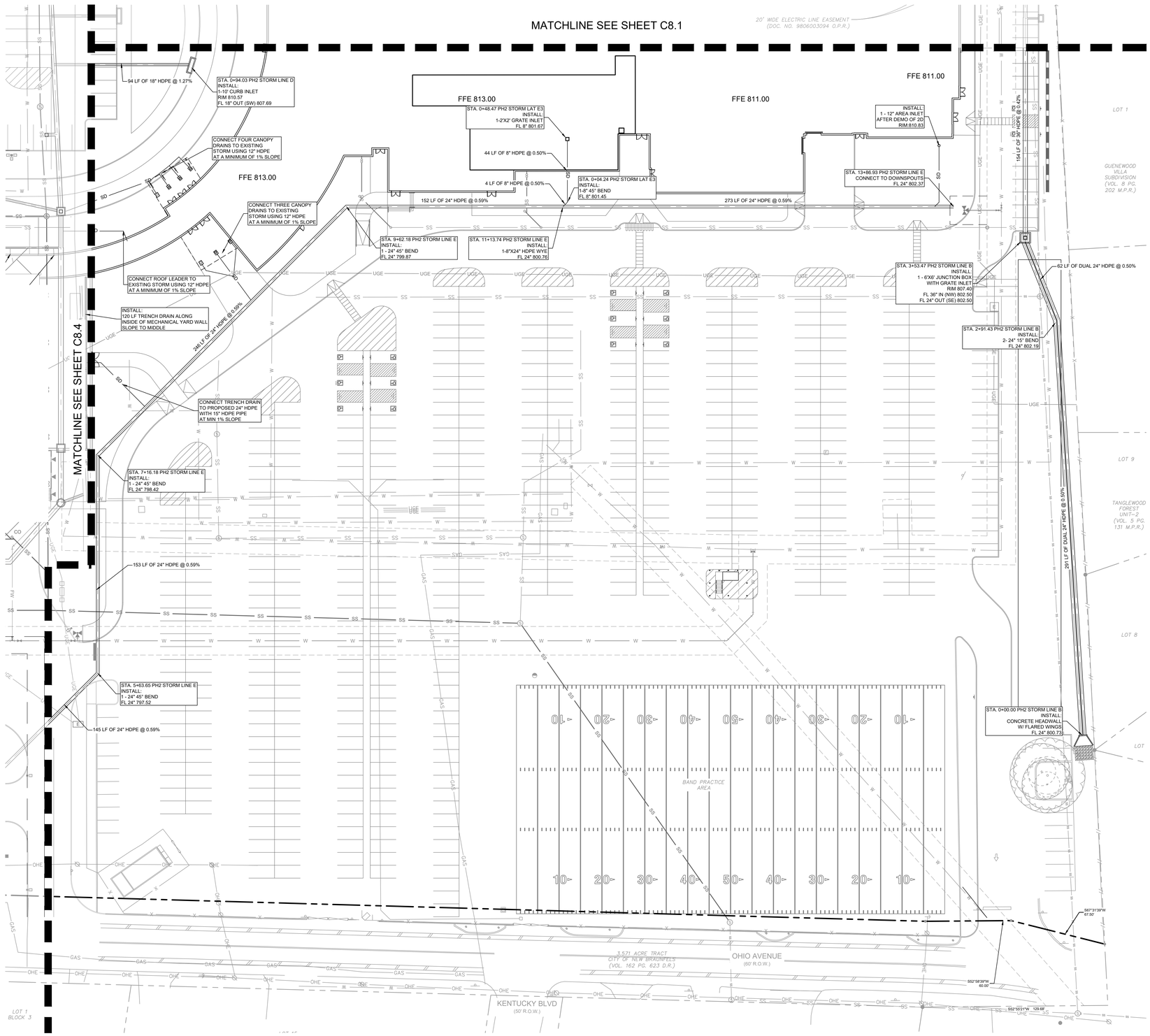
STORM
DRAINAGE PLAN
(SHEET 1 OF 6)

PACKAGE 2 | VOLUME 01

Job No.	Sheet No.
018535-02-02	C8.1
Drawn By: RAU	
Date: 01/16/2025	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPOSED PROPERTY BOUNDARY
	EXISTING PROPERTY LINE
	PROPOSED EASEMENT
	EXISTING EASEMENT
	PROPOSED RETAINING WALL
	PROPOSED FENCE
OHE	PROPOSED OVERHEAD ELECTRIC
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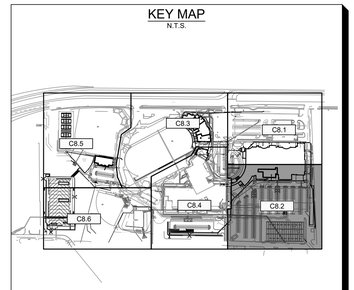
	PROPOSED DOMESTIC WATER LINE
T	PROPOSED ELECTRIC TRANSFORMER
	EXISTING LIGHT POLE
	EXISTING SIGN
S	EXISTING SEWER MANHOLE
	EXISTING POWER POLE
	EXISTING TREE
	EXISTING FIRE HYDRANT

KEY MAP
N.T.S.



STORM NOTES

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2. REFERENCE STORM SEWER NOTES ON SHEET C11.0 FOR PIPE MATERIAL REQUIREMENTS.
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BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
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BM #3
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CITY AND TCEQ REVISIONS	12.16.2024

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12/19/2024

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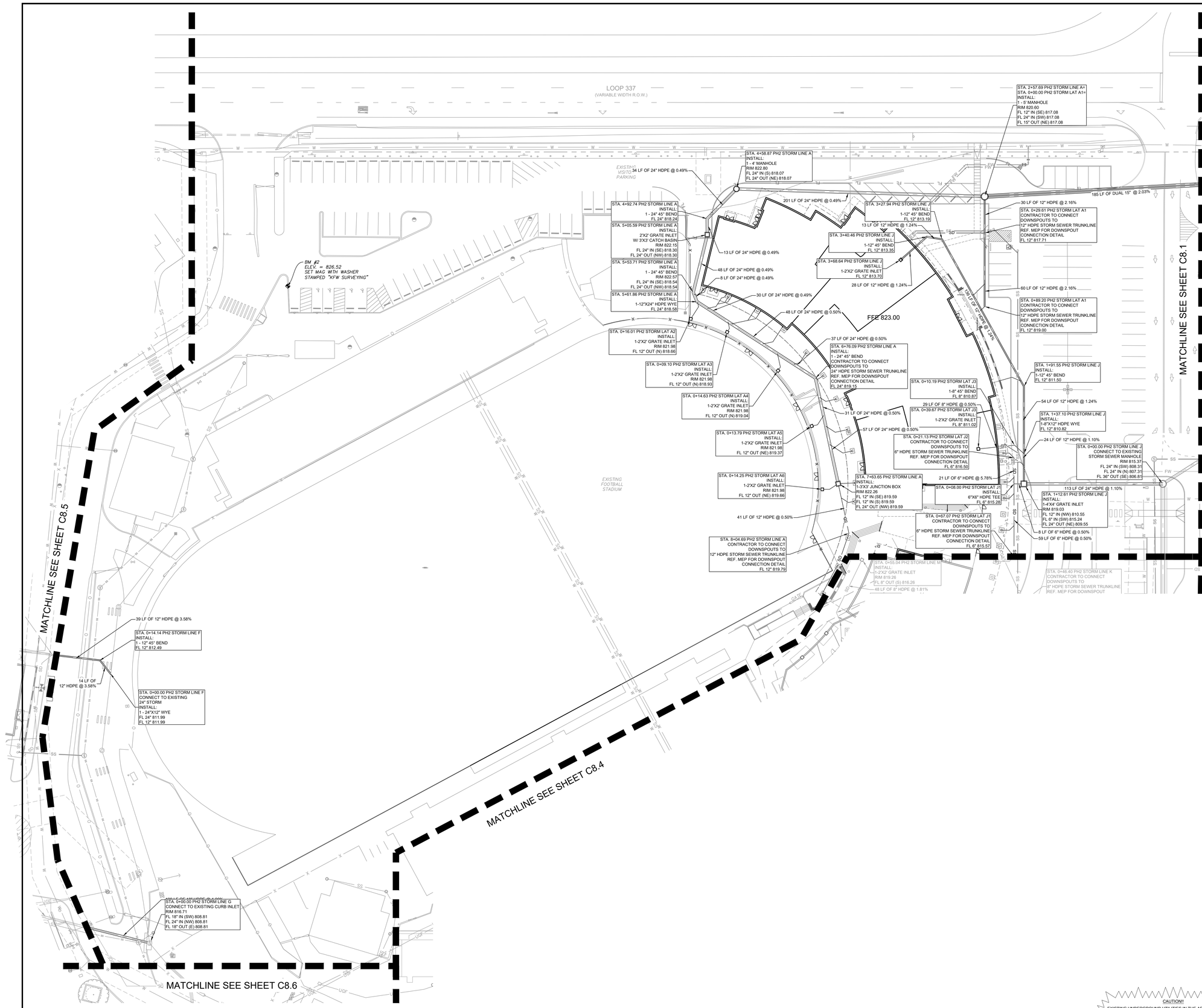
STORM DRAINAGE PLAN (SHEET 2 OF 6)

PACKAGE 2	VOLUME 01
Job No. 01935-02-02	Sheet No. C8.2
Drawn By: RAU	
Date: 12/19/2024	



LEGEND

- PROPOSED PROPERTY BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
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- EXISTING POWER POLE
- EXISTING TREE
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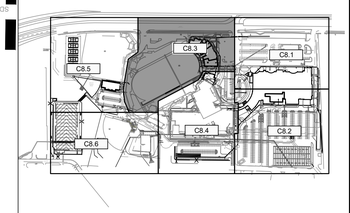
KEY MAP
N.T.S.



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BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

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REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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10101 REUNION PLACE, SUITE 400
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
REGISTERED PROFESSIONAL ENGINEER
12/19/2024

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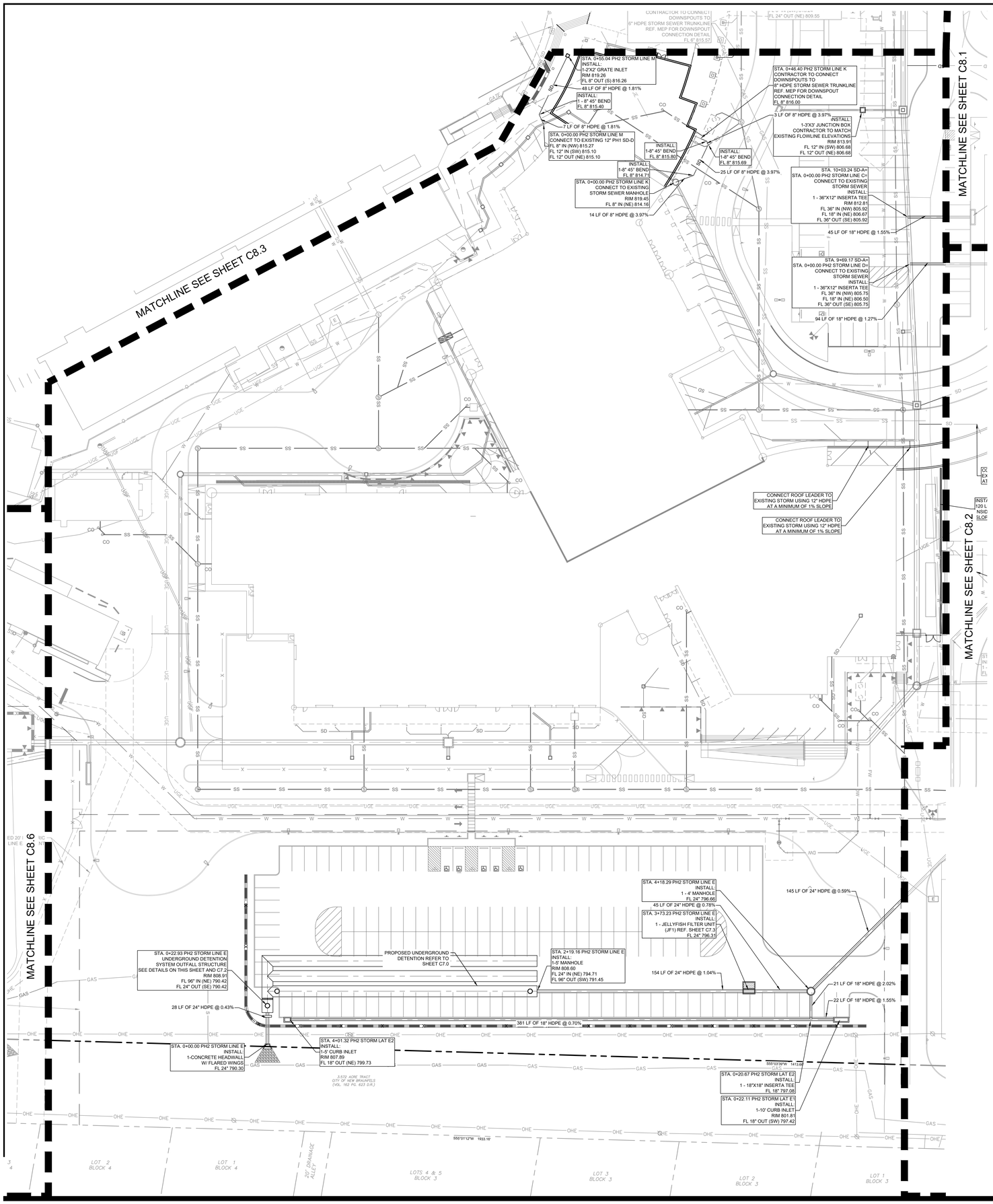
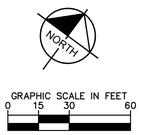
STORM DRAINAGE PLAN (SHEET 3 OF 6)

PACKAGE 2 **VOLUME 01**

Job No.	Sheet No.
01935-02-02	C8.3
Drawn By: RAU	
Date: 12/19/2024	



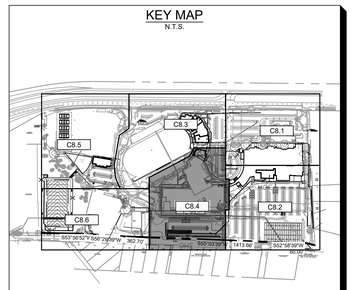


GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

- PROPOSED PROPERTY BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- OHE — PROPOSED OVERHEAD ELECTRIC
- FW — PROPOSED FIRE WATER LINE
- DW — PROPOSED DOMESTIC WATER LINE
- W — PROPOSED COMBINATION WATER LINE
- SS — PROPOSED SANITARY SERVICE LATERAL
- SD — PROPOSED STORM DRAIN (<12")
- PROPOSED STORM DRAIN (>/=12")
- W — EXISTING WATERLINE
- SS — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- EXISTING EDGE OF ASPHALT
- OHE — EXISTING OVERHEAD ELECTRIC
- PROPOSED CONCRETE RIPRAP
- PROPOSED ROCK RIPRAP
- PROPOSED LIGHT POLE
- PROPOSED SEWER CLEANOUT
- PROPOSED SEWER MANHOLE
- CI GI — PROPOSED CURB INLET/GRATE INLET
- MH JB — PROPOSED MANHOLE/JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED GAS METER
- PROPOSED POWER POLE
- PROPOSED BACKFLOW PREVENTER
- PROPOSED FIRE HYDRANT
- PROPOSED DOMESTIC WATER LINE
- T — PROPOSED ELECTRIC TRANSFORMER
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING TREE
- EXISTING FIRE HYDRANT

KEY MAP
N.T.S.



STORM NOTES

1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
2. REFERENCE STORM SEWER NOTES ON SHEET C11.0 FOR PIPE MATERIAL REQUIREMENTS.
3. REFERENCE SHEET C12.5 FOR STORM SEWER DETAILS.
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CITY AND TCEQ REVISIONS	12.16.2024

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FOR NEW BRAUNFELS I.S.D.
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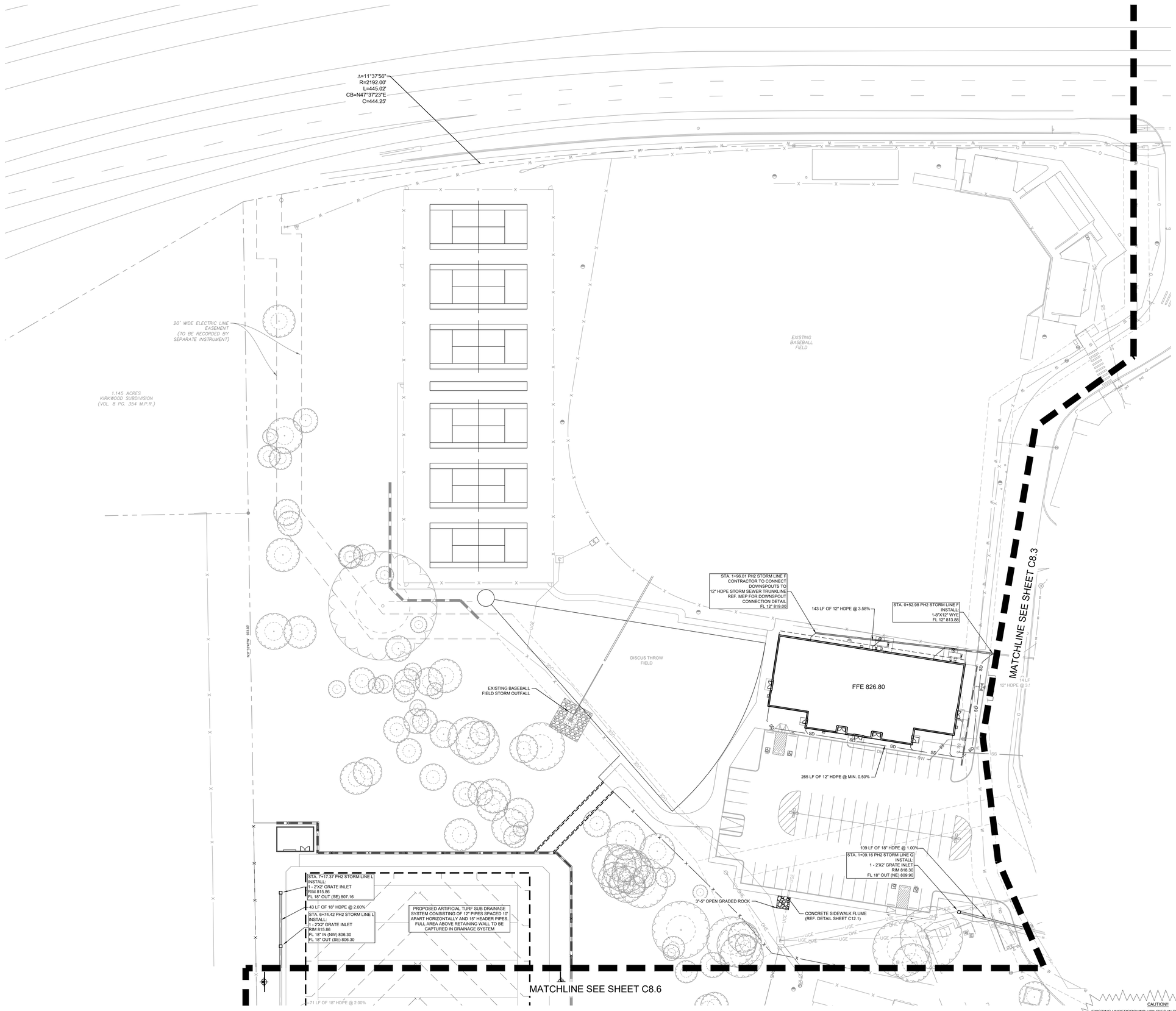
STORM DRAINAGE PLAN (SHEET 4 OF 6)

PACKAGE 2 VOLUME 01

Job No. 01935-02-02	Sheet No. C8.4
Drawn By: RAU	
Date: 12/19/2024	



LEGEND

	PROPOSED PROPERTY BOUNDARY
	EXISTING PROPERTY LINE
	PROPOSED EASEMENT
	EXISTING EASEMENT
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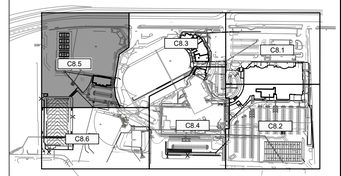
S	EXISTING SEWER MANHOLE
	EXISTING POWER POLE
	EXISTING TREE
	EXISTING FIRE HYDRANT

KEY MAP
N.T.S.



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REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

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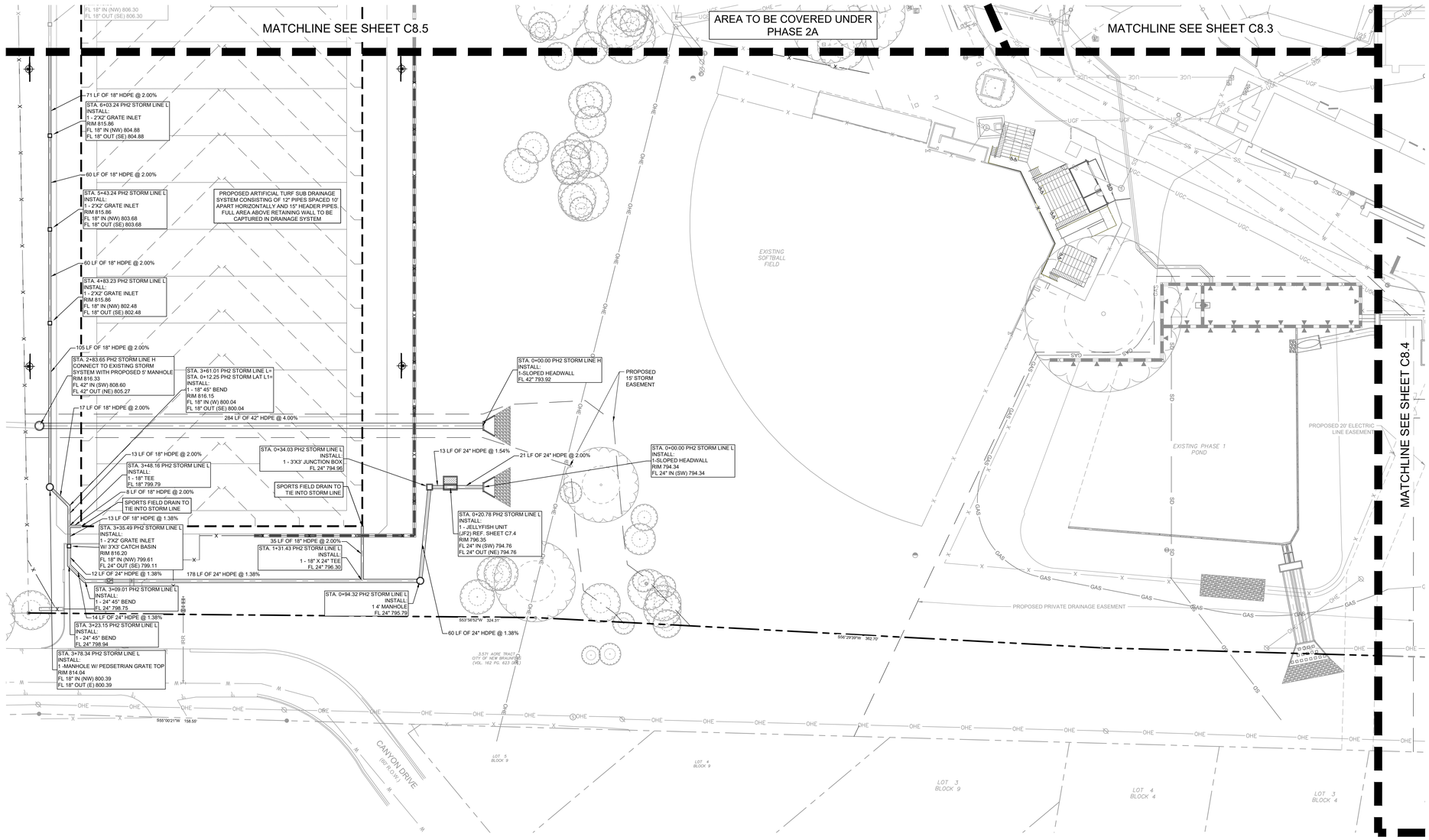
STORM DRAINAGE PLAN (SHEET 5 OF 6)

PACKAGE 2 VOLUME 01

Job No.	Sheet No.
01935-02-02	C8.5
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
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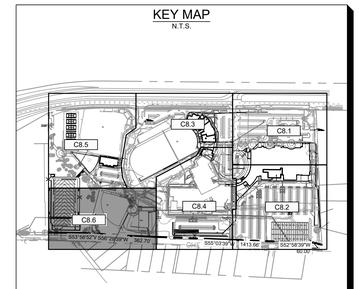
KEY MAP
N.T.S.



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CITY AND TCEQ REVISIONS	12.16.2024

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FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

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STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
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12/19/2024

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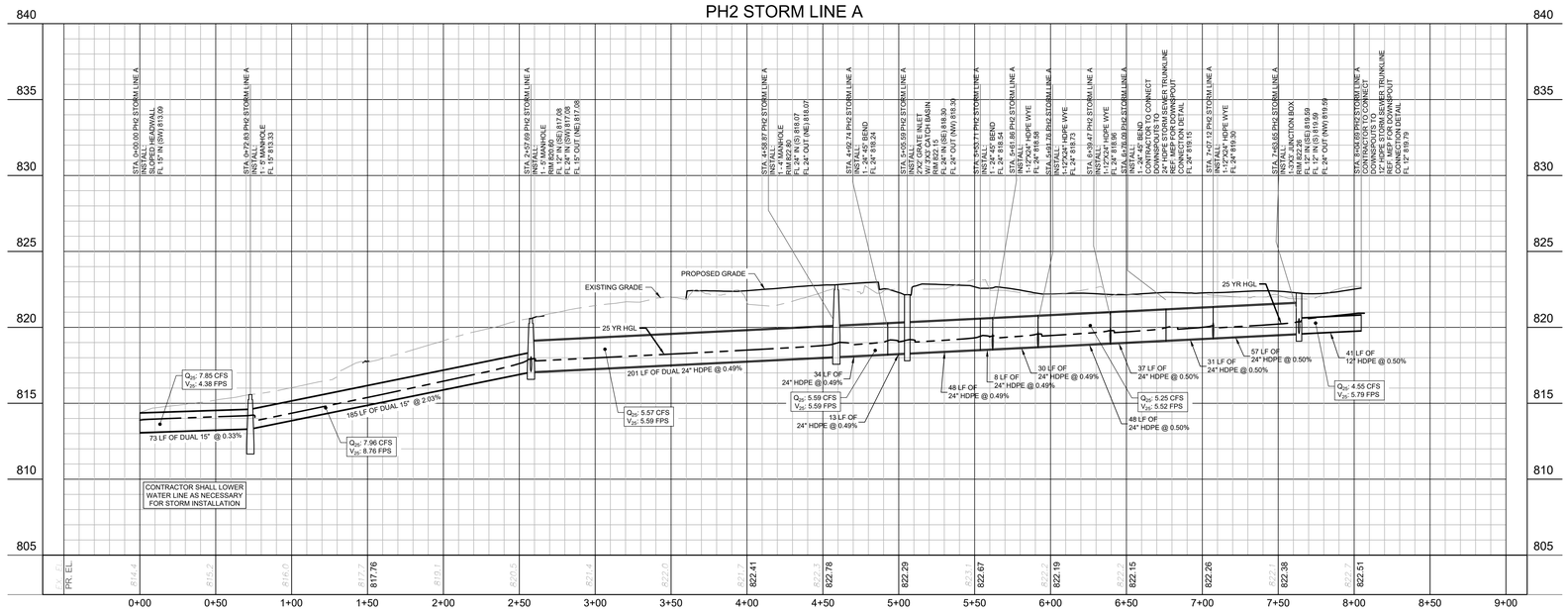
STORM DRAINAGE PLAN (SHEET 6 OF 6)

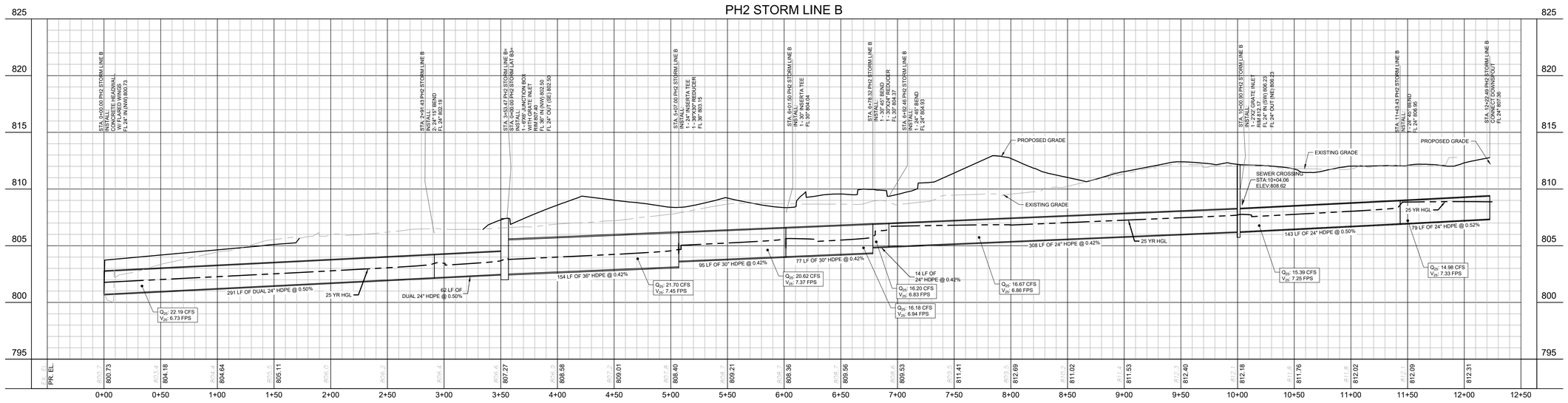
PACKAGE 2	VOLUME 01
Job No. 018535-02-02	Sheet No. C8.6
Drawn By: RAU	
Date: 12/19/2024	

SCALE: 1" = 40 HORIZONTAL
1" = 4' VERTICAL

PH2 STORM LINE A



PH2 STORM LINE B



REVISION	DATE	
1	12.16.2024	CITY AND TCEQ REVISIONS

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12/19/2024

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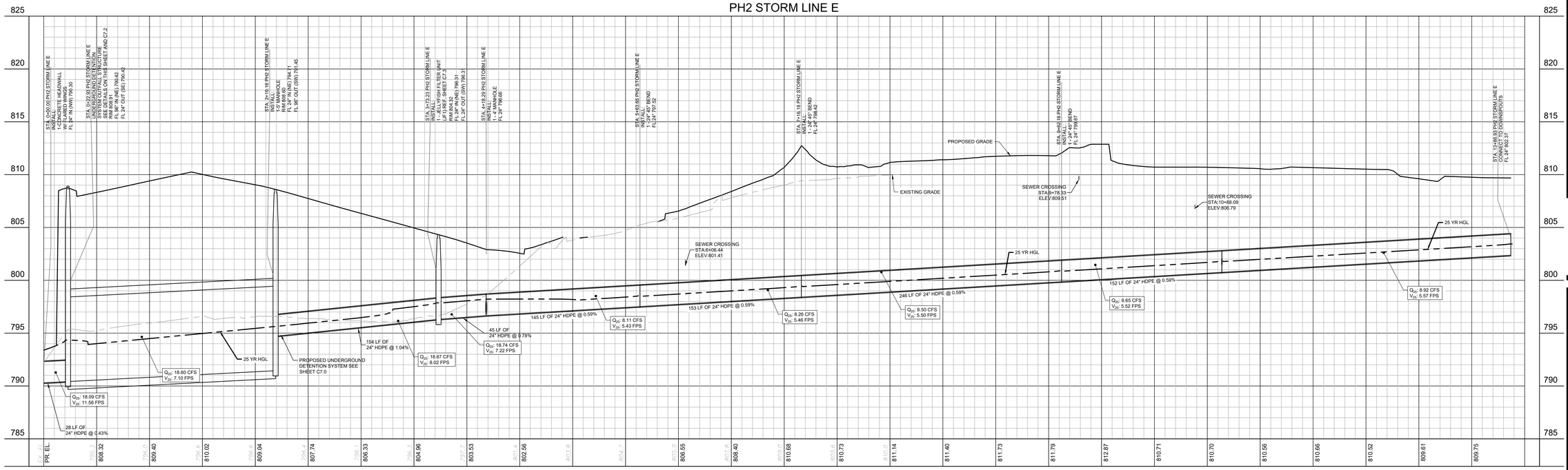
STORM DRAINAGE PROFILES 25 YEAR (1 OF 2) PACKAGE 2 — VOLUME 01

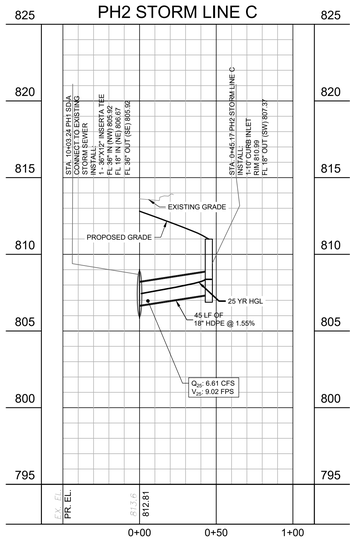
Job No.	Sheet No.
01935-02-02	C8.7
Drawn By: RAU	
Date: 12/19/2024	

SCALE: 1" = 40 HORIZONTAL
1" = 4' VERTICAL

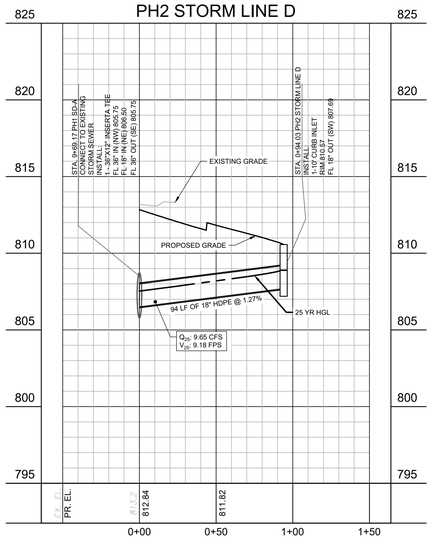
PH2 STORM LINE E



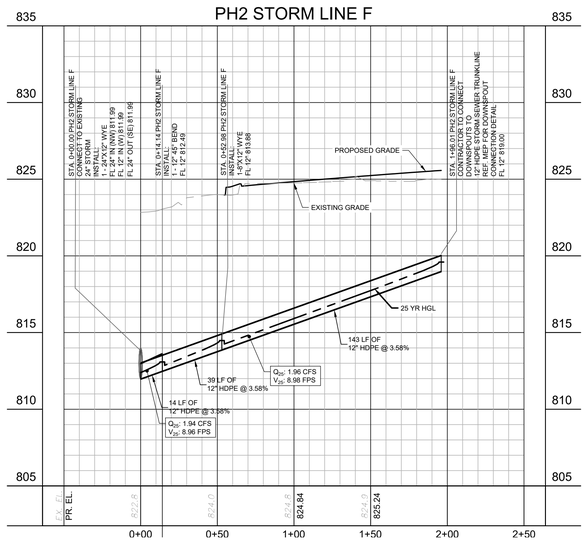
PH2 STORM LINE C



PH2 STORM LINE D



PH2 STORM LINE F



REVISION	DATE
CITY AND TCEQ REVISIONS	12.16.2024

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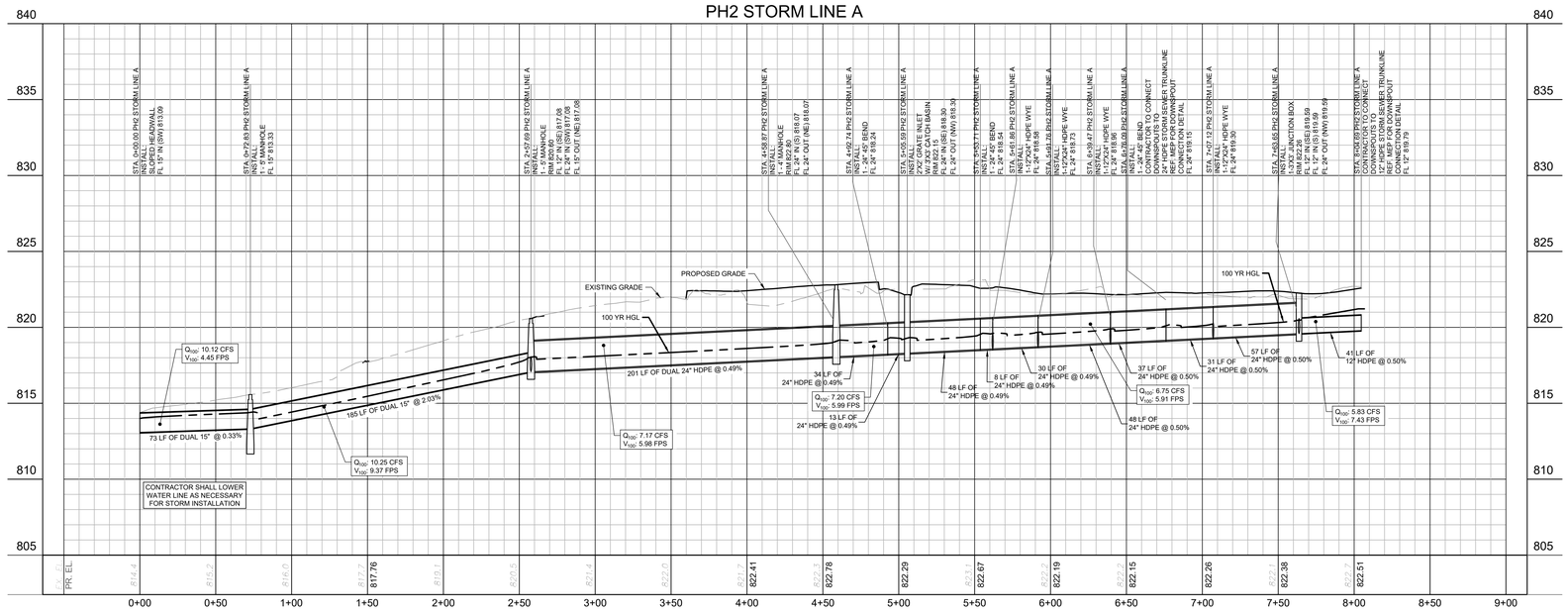
STORM DRAINAGE PROFILES 25 YEAR (2 OF 2) PACKAGE 2
VOLUME 01

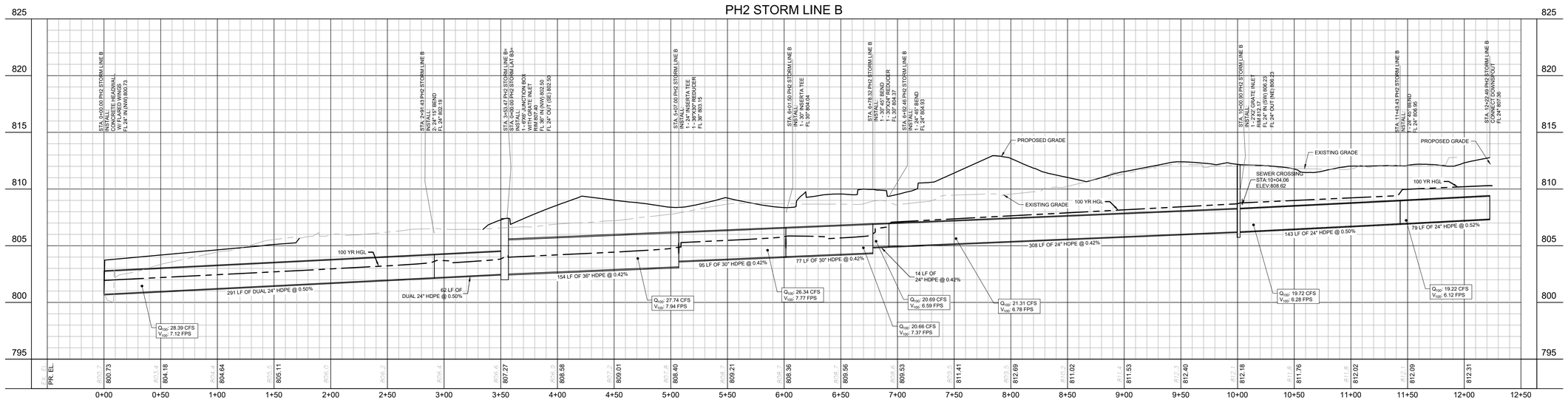
Job No.	Sheet No.
01935-02-02	C8.8
Drawn By: RAU	
Date: 01/16/2025	

SCALE: 1" = 40 HORIZONTAL
1" = 4' VERTICAL

PH2 STORM LINE A



PH2 STORM LINE B



REVISION	DATE	
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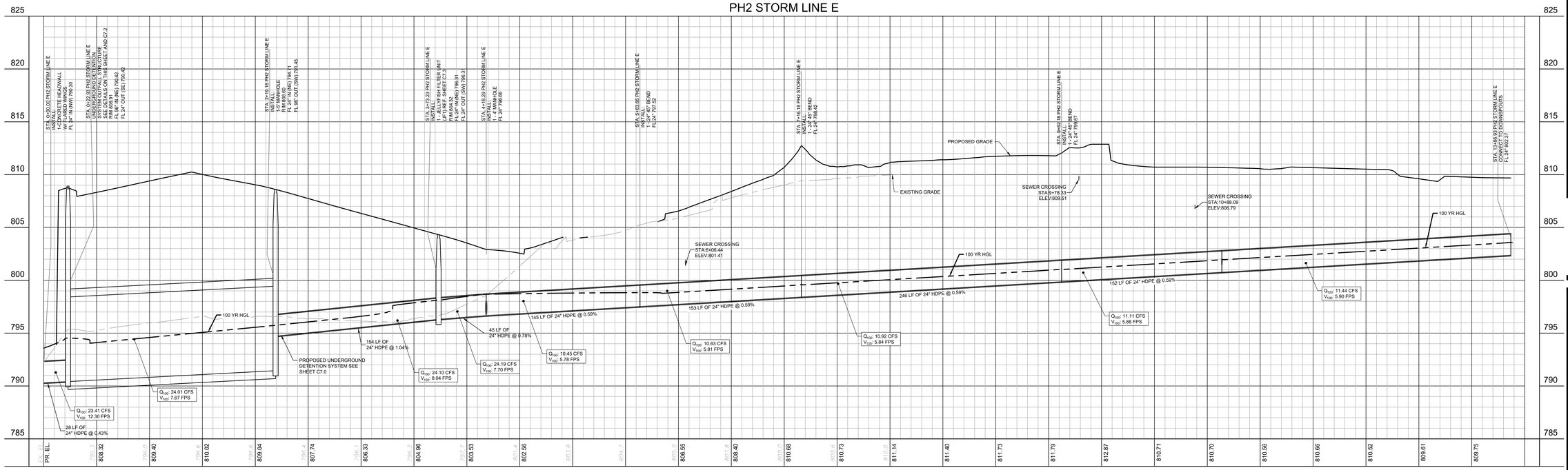
STORM DRAINAGE PROFILES 100 YEAR (1 OF 2) PACKAGE 2 — VOLUME 01

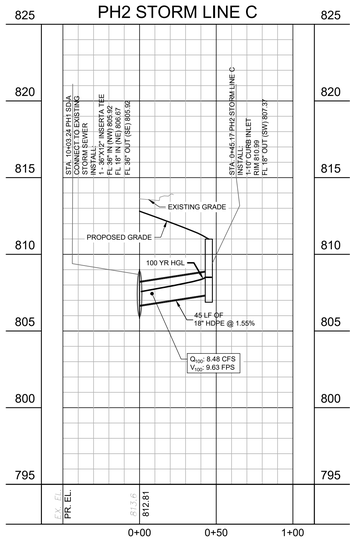
Job No.	Sheet No.
01935-02-02	C8.9
Drawn By: RAU	
Date: 12/19/2024	

SCALE: 1" = 40 HORIZONTAL
1" = 4' VERTICAL

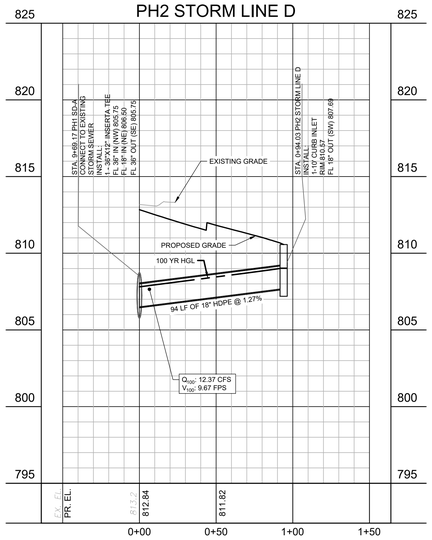
PH2 STORM LINE E



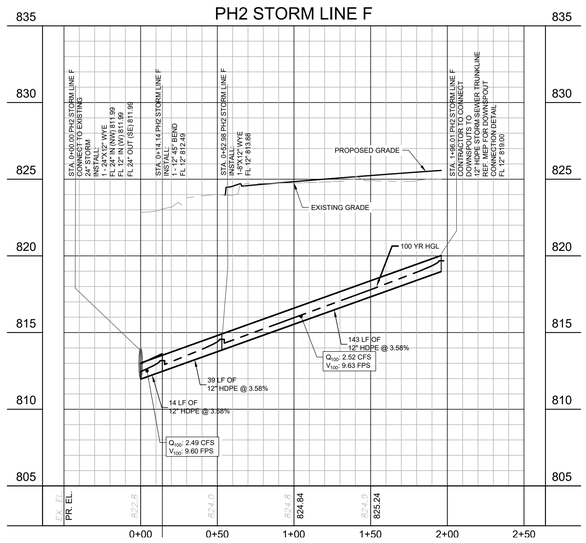
PH2 STORM LINE C



PH2 STORM LINE D



PH2 STORM LINE F



DATE	REVISION
12.16.2024	CITY AND TCEQ REVISIONS

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SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM TBPE FIRM NO. 928

STATE OF TEXAS
RICHARD J. UNDERWOOD
117843
LICENSED
REGISTERED
PROFESSIONAL ENGINEER
01/16/2025

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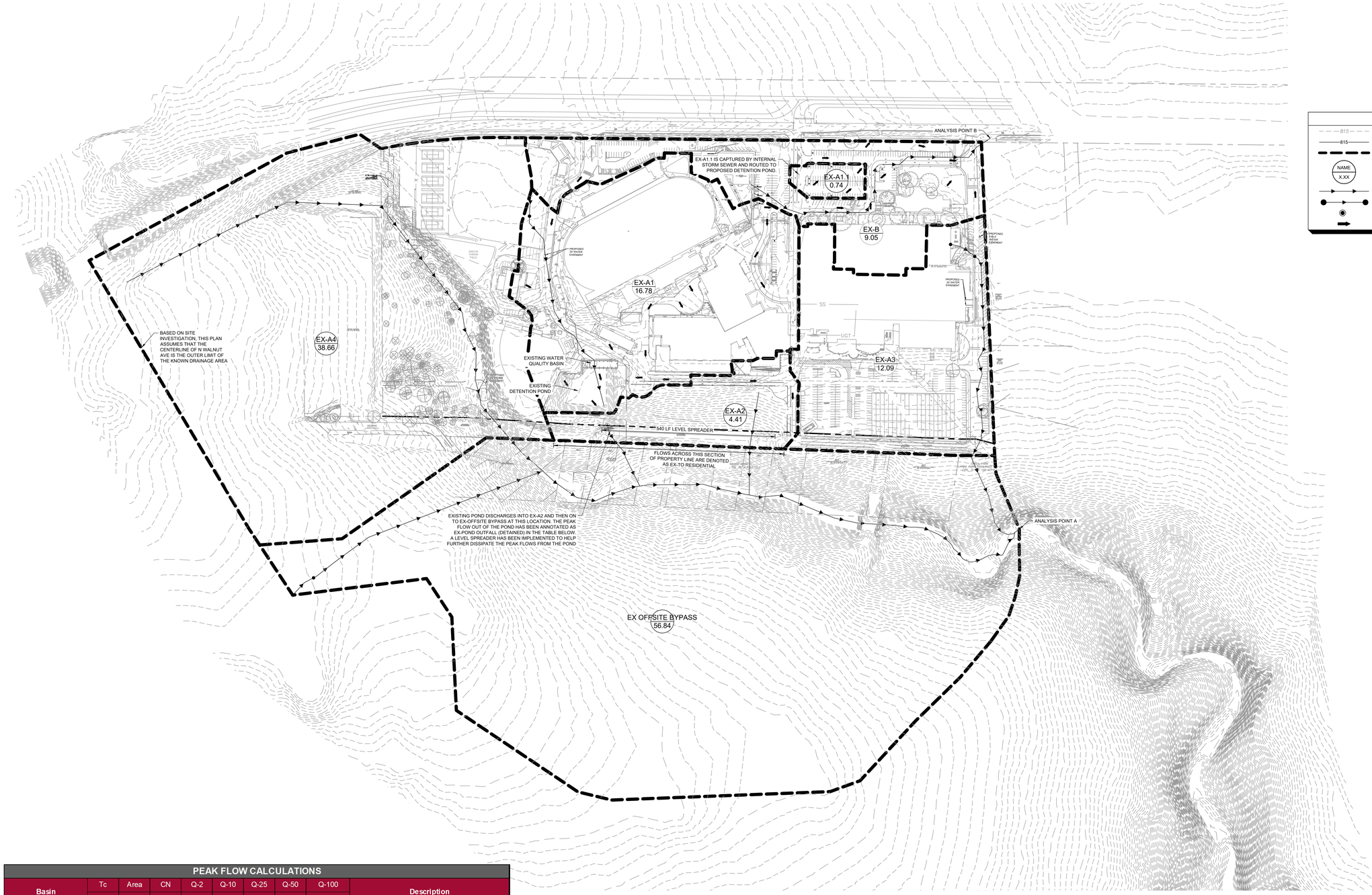
STORM DRAINAGE PROFILES 100 YEAR (2 OF 2) PACKAGE 2
VOLUME 01

Job No.	Sheet No.
01935-02-02	C8.10
Drawn By: RAU	
Date: 01/16/2025	



GRAPHIC SCALE IN FEET
0 75 150 300

LEGEND

815	EXISTING CONTOURS
815	PROPOSED CONTOURS
	DRAINAGE BOUNDARY
NAME / X.XX	DRAINAGE AREA NAME / DRAINAGE AREA ACREAGE
	FLOW PATH
	SHEET FLOW LIMITS
	DISCHARGE POINT
	FLOW DIRECTION

PEAK FLOW CALCULATIONS

Basin	Tc (min)	Area (ac)	CN	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-50 (cfs)	Q-100 (cfs)	Description
EX-A1		16.78	92.48	51.09	91.05	121.27	136.79	179.07	Undetained flows to existing pond
EX-A1.1	10.00	0.74	98.00	2.47	4.18	5.49	6.16	8.00	Undetained flows to existing pond from northern new parking area
EX-TO-PH1-POND (UNDETAINED)	-	-		53.56	95.23	126.76	142.95	187.08	EX-A1 + EX-A1.1 = total undetained flows to existing pond
EX-PH1-POND OUTFALL (DETAINED)	-	0.0		29.5	61.3	91.8	106.7	151.6	Detained flows out of existing pond
EX-A2	10.0	4.4	83.6	10.4	21.0	29.2	33.4	44.8	Sheet flow to residential shared property line
EX-TO RESIDENTIAL	-	0.0		37.1	76.2	114.4	133.4	188.8	EX-PH1-POND OUTFALL + EX-A2 = total discharge flow to residential shared property line
EX-OFFSITE BYPASS	17.1	56.8	92.6	146.6	261.0	347.5	391.9	512.9	Existing Off-site area that bypasses the site to Analysis Point A
EX-A3	12.3	12.1	97.8	40.3	68.3	89.6	100.6	130.7	Existing sheet flow to Ohio Avenue
EX-A4	13.2	38.7	92.6	118.3	210.3	279.9	315.7	413.1	Combination of existing run-on to the school property with undetained on-site flows that bypass existing pond leaving the property and discharging to drainage channel west of the existing pond
EX-POINT A	-	0.0		333.8	591.7	803.7	913.2	1203.9	EX-TO RESIDENTIAL + EX-OFFSITE BYPASS + EX-A3 + EX-A4 = Total Existing Flow to Analysis Point A
EX-B	10.00	9.05	96.45	29.74	50.80	66.83	75.10	97.69	Existing peak flow to Point B

NOTE: THE PEAK FLOWS SHOWN CORRESPOND TO THE OUTPUTS FROM HYDRAFLOW HYDROGRAPHS FROM THE ROUTED MODEL AND CORRESPOND WITH THE TIME OF CONCENTRATION OF THE LARGER DRAINAGE AREA.

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

BENCHMARK LIST

BM #2
ELEVATION: 826.52'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

BM #3
ELEVATION: 808.79'
SET MAG WITH WASHER
STAMPED "KFW SURVEYING"

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

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

REVISION | DATE
CITY AND TCEQ REVISIONS | 12.16.2024

Project:
NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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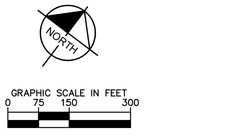
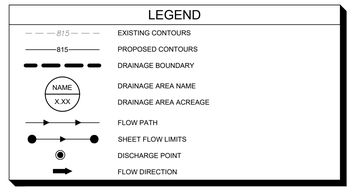
EXISTING DRAINAGE AREA MAP

PACKAGE 2 | VOLUME 01

Job No. 01935-02-02
Drawn By:
Date: 12/19/2024
Sheet No. C8.11





REVISION	DATE	
1	12.16.2024	CITY AND TCEQ REVISIONS

Project: NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

PEAK FLOW CALCULATIONS

Basin	Tc (min)	Area (ac)	CN	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-50 (cfs)	Q-100 (cfs)	Description
PR-A1	12.77	16.60	96.38	54.48	93.12	122.55	137.71	179.16	Undetained flows to existing PH1 pond
SFBL	10.00	1.05	0.00	0.74	0.76	0.77	0.79	0.81	Softball field drainage. Calculation from Report by CEI Engineering Associates Dated 8/23/2023.
PR- TO PH1 POND (UNDETAINED)	-	17.65		54.48	93.12	122.55	137.72	179.67	PR-A1+SFBL=Undetained flows to existing PH1 pond
PR-PH1-POND OUTFALL (DETAINED)	-	-		29.88	59.55	88.04	102.26	142.03	Detained flows out of existing PH1 pond
PR-A2	10.00	3.00	85.34	7.48	14.75	20.29	23.14	30.88	Sheet flow to residential shared property line
PR-A5	10.00	1.41	96.47	4.63	7.91	10.41	11.70	15.22	undetained flows to proposed PH2 pond from southern new parking area
PR-A5.1	10.00	0.92	98.00	3.07	5.20	6.82	7.66	9.95	undetained flows to proposed PH2 pond from portion of new building
PR-TO-PH2-POND (UNDETAINED)	-	2.33		7.71	13.11	17.23	19.36	25.17	PR-A5 + PR-A5.1 = total undetained flows to proposed PH2 pond
PR-PH2-POND OUTFALL (DETAINED)	-	-		1.82	6.84	10.13	11.48	14.70	Detained flows out of Proposed PH2 pond
PR-TO RESIDENTIAL	-	22.98		36.53	76.05	113.07	131.38	181.63	PR-PH1-POND OUTFALL + PR-A2 + PR-PH2-POND OUTFALL = total discharge flow to residential shared property line
PR-OFFSITE BYPASS	17.06	56.84	92.60	146.62	260.97	347.46	391.88	512.92	Proposed Off-site area that bypasses the site to Analysis Point A
PR-A3	12.34	11.72	97.03	38.76	65.95	86.69	97.38	126.61	Proposed sheet flow to Ohio Avenue
PR-A4	13.23	33.36	93.22	103.43	182.59	242.49	273.27	357.20	Combination of proposed run-on to the school property with undetained on-site flows that bypass existing and proposed ponds leaving the property and discharging to drainage channel west of the existing PH1 pond
PR-A4.1	10.00	2.19	95.95	7.15	12.26	16.14	18.15	23.62	Undetained flow from proposed practice field
BSBL	10.00	3.14	0.00	1.76	1.90	2.01	2.11	2.21	Baseball field drainage. Calculation from Report by CEI Engineering Associates Dated 8/23/2023.
PR-TOTAL TO A	-	130.23		323.61	570.83	776.23	881.57	1160.73	PR-TO RESIDENTIAL + PR-OFFSITE BYPASS + PR-TOTAL A3 + PR-A4 + PR-A4.1 + BSBL = Total Proposed Flow to Analysis Point A
PR-B	10.00	8.32	95.06	26.76	46.28	61.10	68.73	89.56	peak flow from northern parking to Point B

NOTE: THE PEAK FLOWS SHOWN CORRESPOND TO THE OUTPUTS FROM HYDRAFLOW HYDROGRAPHS FROM THE ROUTED MODEL AND CORRESPOND WITH THE TIME OF CONCENTRATION OF THE LARGER DRAINAGE AREA.

To Residential Comparison Table

Basin	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-50 (cfs)	Q-100 (cfs)
EX-TO RESIDENTIAL	37.14	76.18	114.38	133.36	188.79
PR-TO RESIDENTIAL	36.53	76.05	113.07	131.38	181.63
Δ	**-0.61**	**-0.13**	**-1.31**	**-1.98**	**-7.16**

Point A Comparison Table

Basin	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-50 (cfs)	Q-100 (cfs)
EX-TOTAL TO A	333.83	591.67	803.70	913.15	1203.87
PR-TOTAL TO A	323.61	570.83	776.23	881.57	1160.73
Δ	**-10.22**	**-20.84**	**-27.47**	**-31.58**	**-43.14**

Point B Comparison Table

Basin	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-50 (cfs)	Q-100 (cfs)
EX-B	29.74	50.80	66.83	75.10	97.69
PR-TOTAL TO B	26.76	46.28	61.10	68.73	89.56
Δ	**-2.98**	**-4.52**	**-5.73**	**-6.37**	**-8.13**

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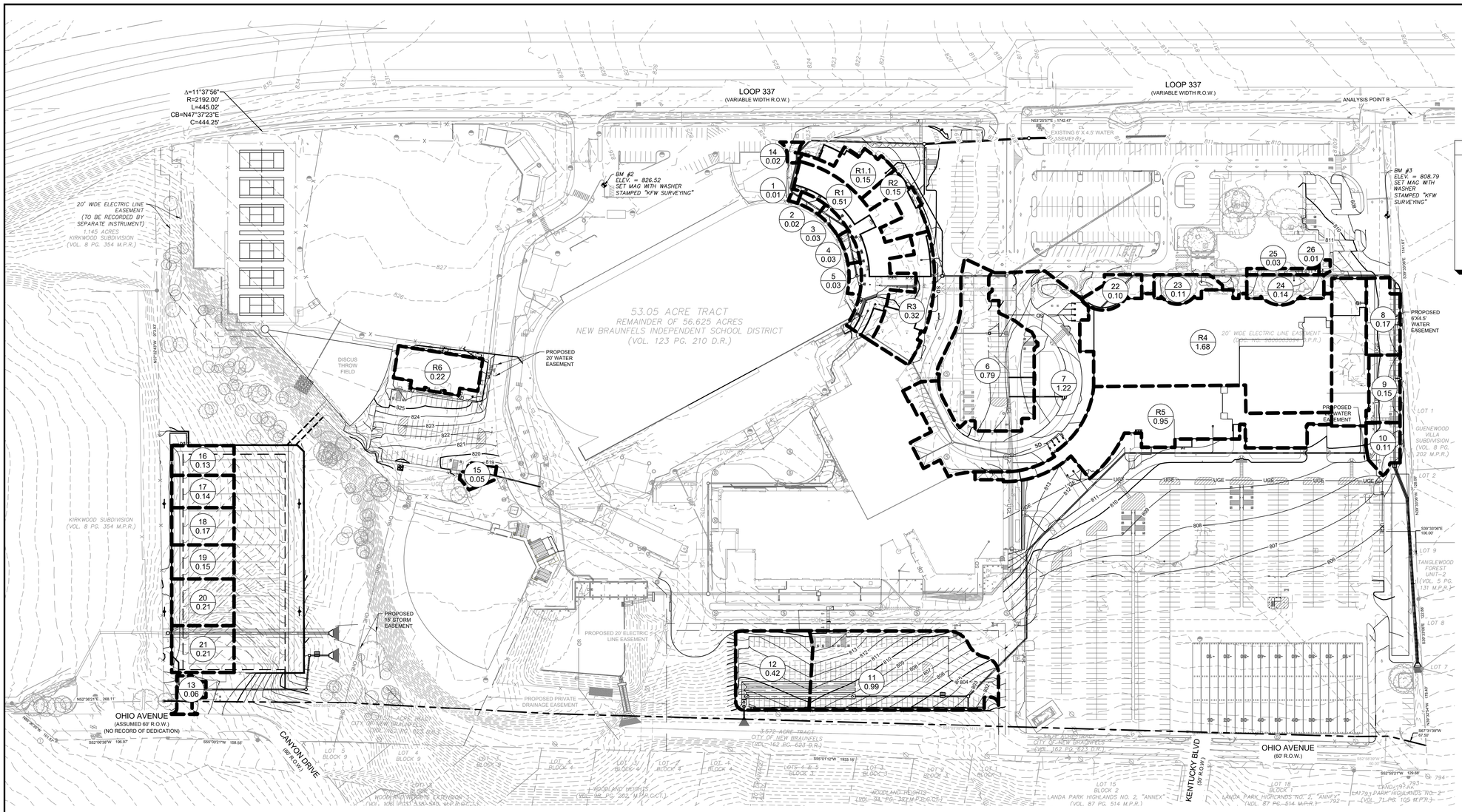
PROPOSED
PHASE II
DRAINAGE AREA
MAP
PACKAGE 2 VOLUME 01

Job No.	Sheet No.
01935-02-02	C8.12
Drawn By: MEE	
Date: 12/19/2024	



GRATE INLET SIZING			
INLET NAME	Q25 (CFS)	MINIMUM OPEN AREA REQUIRED (SQ. FT.)	GRATE SIZE (FT.)
1	0.08	0.0	2x2
2	0.16	0.1	2x2
3	0.24	0.1	2x2
4	0.24	0.1	2x2
5	0.24	0.1	2x2
10	0.88	0.4	2x2
13	0.48	0.2	2x2
14	0.16	0.1	2x2
15	0.28	0.1	2x2
16	1.04	0.5	2x2
17	1.12	0.6	2x2
18	1.36	0.7	2x2
19	1.20	0.6	2x2
20	1.69	0.9	2x2
21	1.69	0.9	2x2
22	0.36	0.2	1x1
23	0.39	0.2	1x1
24	0.50	0.3	1x1

CURB INLET SIZING				
Basin	Q25 (CFS)	L_{REQ} (F.T.)	$L_{PROVIDED}$ (F.T.)	$Q_{capacity}$ (CFS)
6	5.79	5.31	10.00	10.91
7	8.28	7.59	10.00	10.91
8	1.36	1.25	5.00	5.46
9	1.2	1.10	5.00	5.46
11	7.49	6.86	10.00	10.91
12	3.18	2.91	5.00	5.46

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CITY AND TCEQ REVISIONS | 12.16.2024

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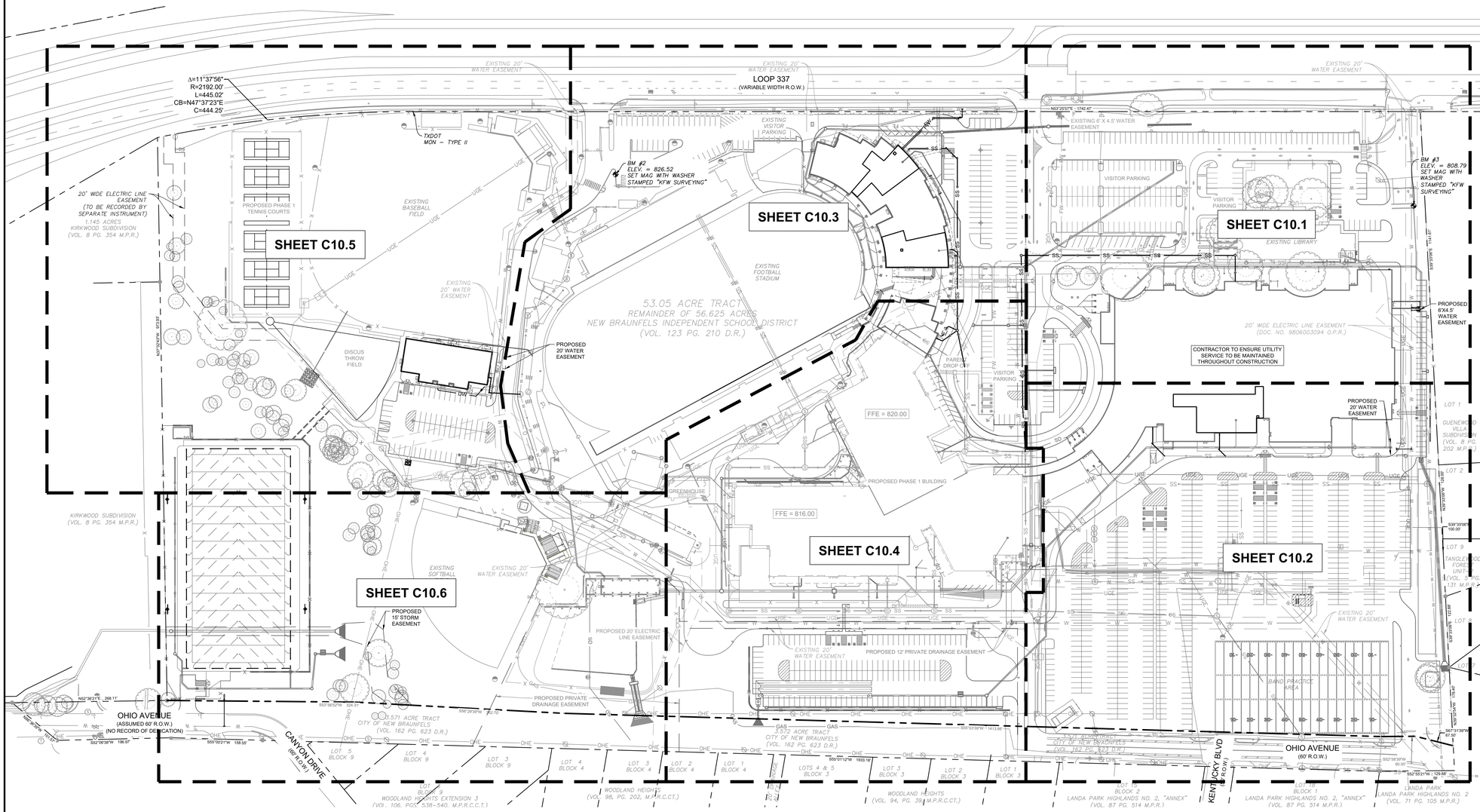
INLET DRAINAGE AREA MAP

PACKAGE 2 | VOLUME 01

Job No. 018935-02-02
Drawn By: MEE
Date: 12/19/2024
Sheet No. C8.13



GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND

	PROPERTY BOUNDARY
SS	PROPOSED SANITARY SERVICE LATERAL
	PROPOSED MEP LINE
W	PROPOSED WATER LINE
GAS	PROPOSED GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND COMMUNICATION LINE
	PROPOSED STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
OHE	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING STORM DRAIN LINE
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED CLEANOUT
	PROPOSED FIRE HYDRANT
	PROPOSED WATER METER
	PROPOSED BACKFLOW PREVENTER
	PROPOSED VALVE
	PROPOSED FITTING
	PROPOSED GAS METER
	PROPOSED POWER POLE
E	PROPOSED TRANSFORMER
CI	PROPOSED CURB INLET
	EXISTING SANITARY SEWER MANHOLE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER METER
	EXISTING VALVE
	EXISTING POWER POLE

NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
2. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
3. UTILITY CONNECTIONS TERMINATE 5' FROM BUILDING ENVELOPE. SEE ARCHITECT AND MEP PLANS FOR CONTINUATION.
4. VALVES 12" AND UNDER WILL BE RESILIENT SEAT GATE VALVES (RSGV).
5. WATER METER AND SERVICE TO BE INSTALLED BY CONTRACTOR AT OWNERS EXPENSE.
6. FIRE SPRINKLER LINE SHALL BE SIZED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR.
7. REFER TO NBUD DESIGN GUIDELINES FOR ALL WATER METER AND FIRE HYDRANT DETAILS.
8. REFER TO NBUD STANDARD CONSTRUCTION DETAILS FOR ALL SANITARY SEWER MANHOLES AND CLEANOUTS.
9. ALL FITTINGS SHALL BE OF DOMESTIC MANUFACTURE AND SHALL BE MECHANICALLY RESTRAINED.
10. CONTRACTOR SHALL REFER AND ADHERE TO ALL TCEQ DESIGN GUIDELINES (CHAPTER 217 AND 290) FOR ALL UTILITY CROSSINGS REQUIREMENTS.
11. CONTRACTOR TO CHECK THAT EXISTING WATER LINES MEET NBUD MINIMUM COVER. IF NOT, CONTRACTOR TO INSTALL 45DEG VERTICAL BENDS WHERE NECESSARY TO MAINTAIN MINIMUM COVER.
12. REFERENCE WATER AND SANITARY SEWER NOTES ON SHEET C11.0 FOR ADDITIONAL REQUIREMENTS.
13. REFERENCE SHEET C12.4 SEWER STANDARD DETAILS.
14. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
15. NO VALVES, HYDRANTS, CLEANOUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALK, OR DRIVEWAYS.
16. ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-115-5. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
17. NBU BACKFLOW PREVENTION NOTE:
TCEQ (CSI) CUSTOMER SERVICE INSPECTION WILL BE COMPLETED BY NBU WATER PROTECTION SPECIALIST PERSONNEL WHERE ADDITIONAL BACKFLOW PREVENTION ASSEMBLIES MAY BE REQUIRED TO BE INSTALLED PER WATER SERVICE(S) AND/OR WATER USING EQUIPMENT. ANY QUESTIONS REGARDING BACKFLOW PREVENTION AND CROSS CONNECTION CONTROL, CONTACT NBU BACKFLOW PREVENTION SPECIALIST AT 830.608.8880.

PROPOSED STRUCTURE TOTALS

SEWER	
STRUCTURE	TOTAL
WASTEWATER MAINS	1071 LF
PRIVATE WASTEWATER SERVICES	415 LF
PRIVATE MANHOLES	4
PRIVATE CLEANOUTS	16
WATER	
STRUCTURE	TOTAL
FIRE HYDRANTS	1
BACKFLOW PREVENTERS	5
WATER VALVES	8
WATER MAINS	0 LF
8" FIRE SERVICE	332 LF
6" FIRE SERVICE	26 LF
4" DOMESTIC SERVICE	67 LF
3" DOMESTIC SERVICE	90 LF
2" IRRIGATION SERVICE	55 LF
2" DOMESTIC METER	1
2 IRRIGATION METER	1

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PAVEMENT REPAIR NOTE:
REFERENCE SHEET C5.0 PAVING PLAN FOR PROPOSED PAVEMENT REPLACEMENT AND RESTORATION.

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY, THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD88 (GEOID 12A)

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DATE: 12.16.2024

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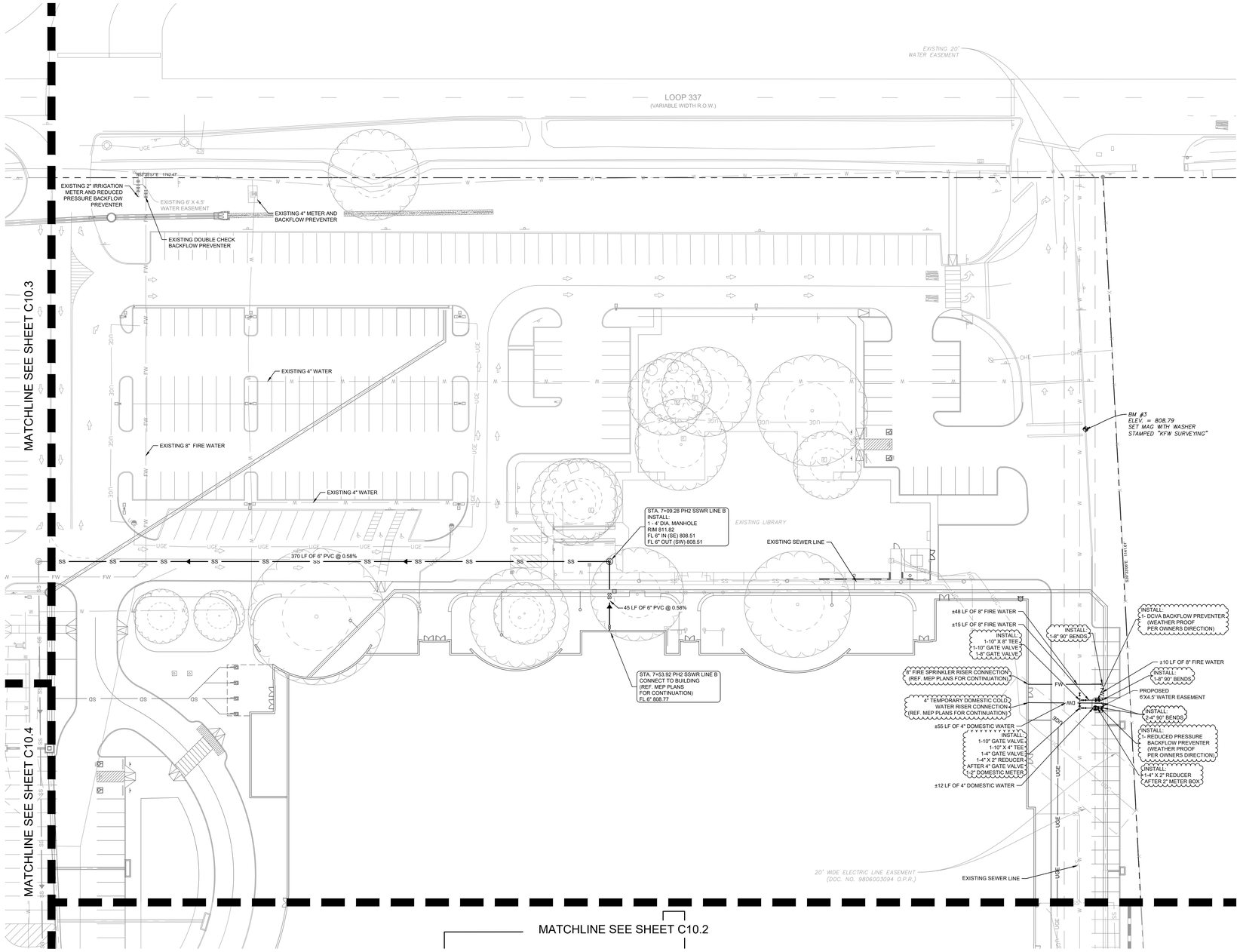
OVERALL UTILITY PLAN

PACKAGE 2 | VOLUME 01

Job No. 018935-02-02	Sheet No. C10.0
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPERTY BOUNDARY
SS	PROPOSED SANITARY SERVICE LATERAL
	PROPOSED MEP LINE
W	PROPOSED WATER LINE
FW	PROPOSED FIRE WATER LINE
GAS	PROPOSED GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND COMMUNICATION LINE
SD	PROPOSED STORM DRAIN (<12")
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SS	EXISTING SANITARY SEWER LINE
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GAS	EXISTING GAS LINE
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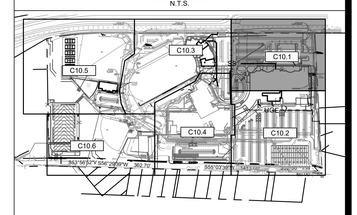

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FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

Kimley»Horn
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PHONE: 210-541-9166 FAX: 210-541-8699
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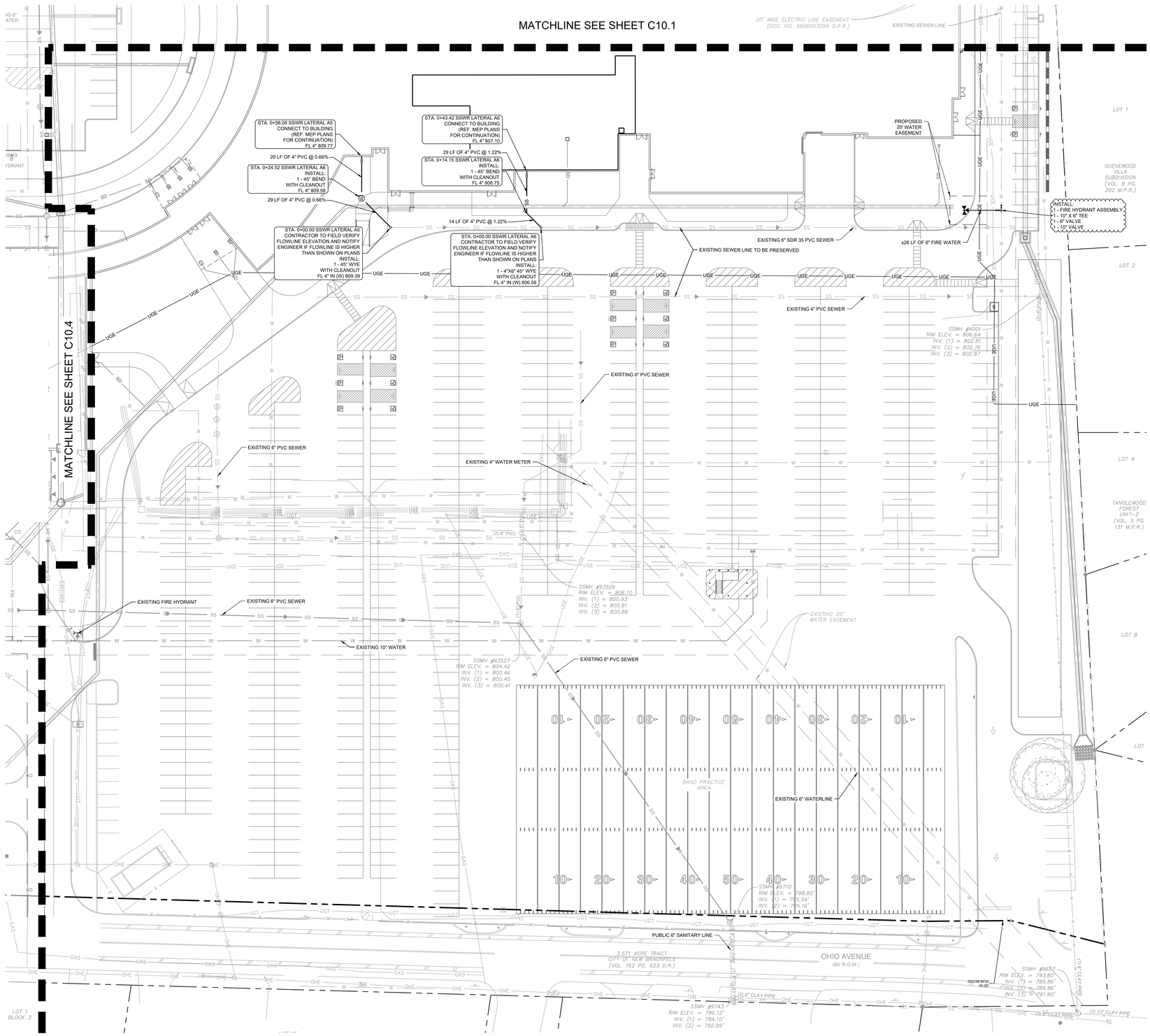
UTILITY PLAN
(SHEET 1 OF 6)

PACKAGE 2 VOLUME 01

Job No.	Sheet No.
01935-02-02	C10.1
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

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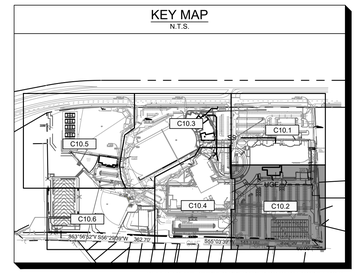

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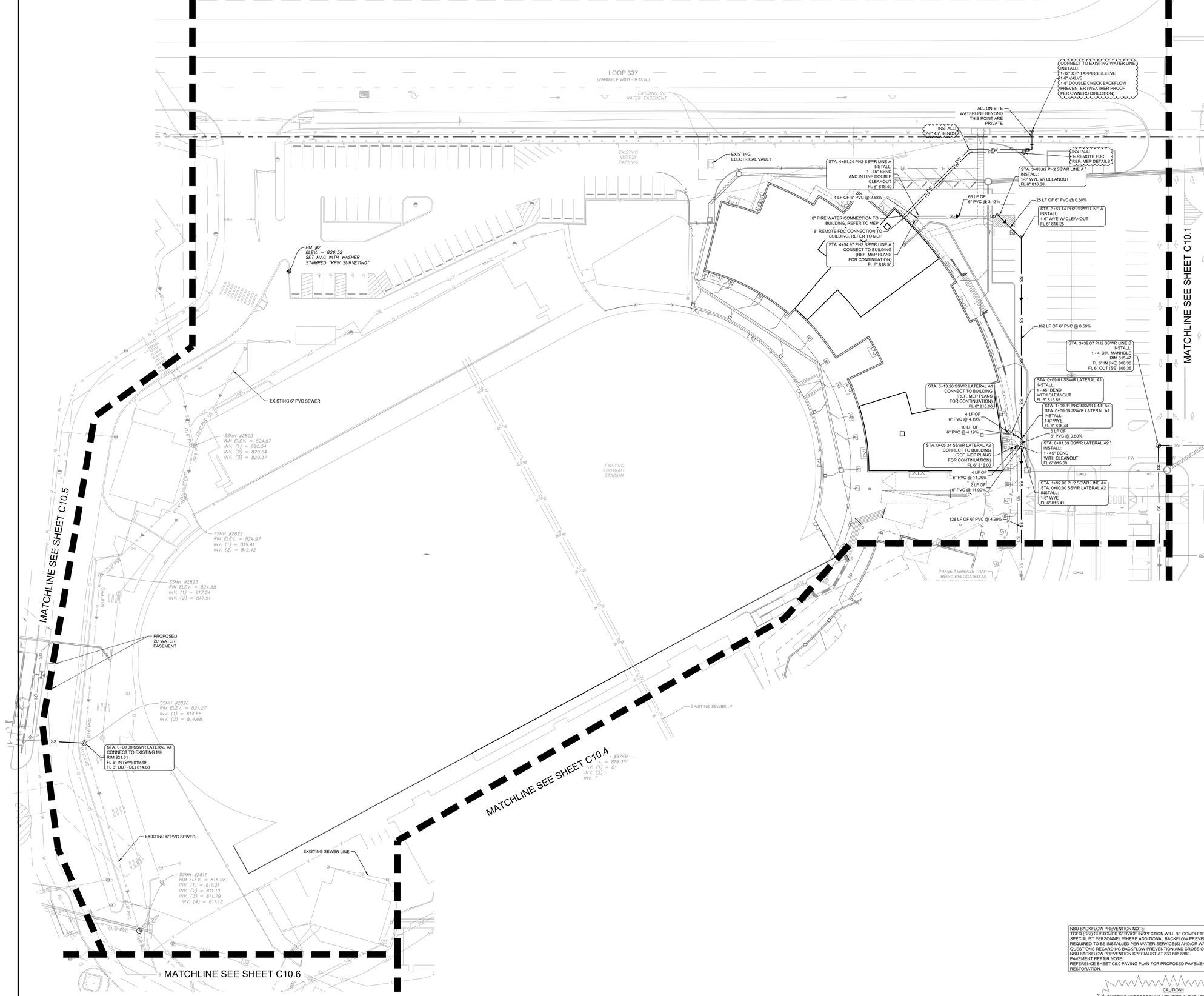
UTILITY PLAN
(SHEET 2 OF 6)

PACKAGE 2 | VOLUME 01

Job No. 01935-02-02	Sheet No. C10.2
Drawn By: RAU	
Date: 12/19/2024	



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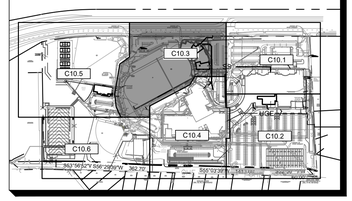

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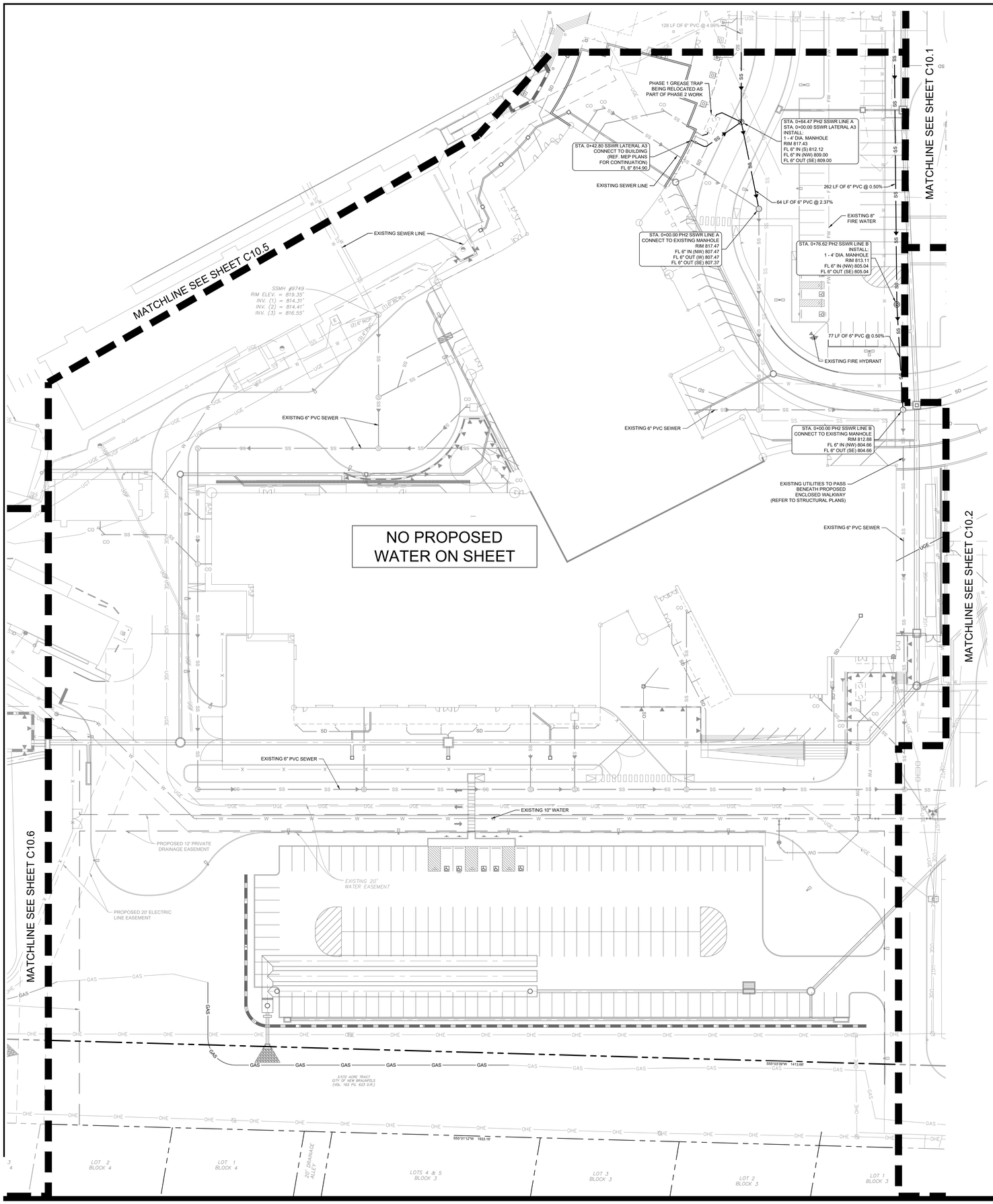
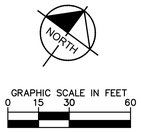
UTILITY PLAN
(SHEET 3 OF 6)

PACKAGE 2 | VOLUME 01

Job No.	Sheet No.
01935-02-02	C10.3
Drawn By: RAU	
Date: 12/19/2024	





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KEY MAP

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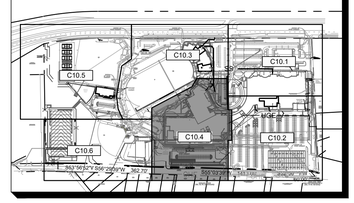

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BENCHMARK LIST

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SET MAG WITH WASHER
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CITY AND TCEQ REVISIONS	12.16.2024

Project: NEW BRAUNFELS HIGH SCHOOL ADDITIONS AND RENOVATIONS
FOR NEW BRAUNFELS I.S.D.
NEW BRAUNFELS, TEXAS

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© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
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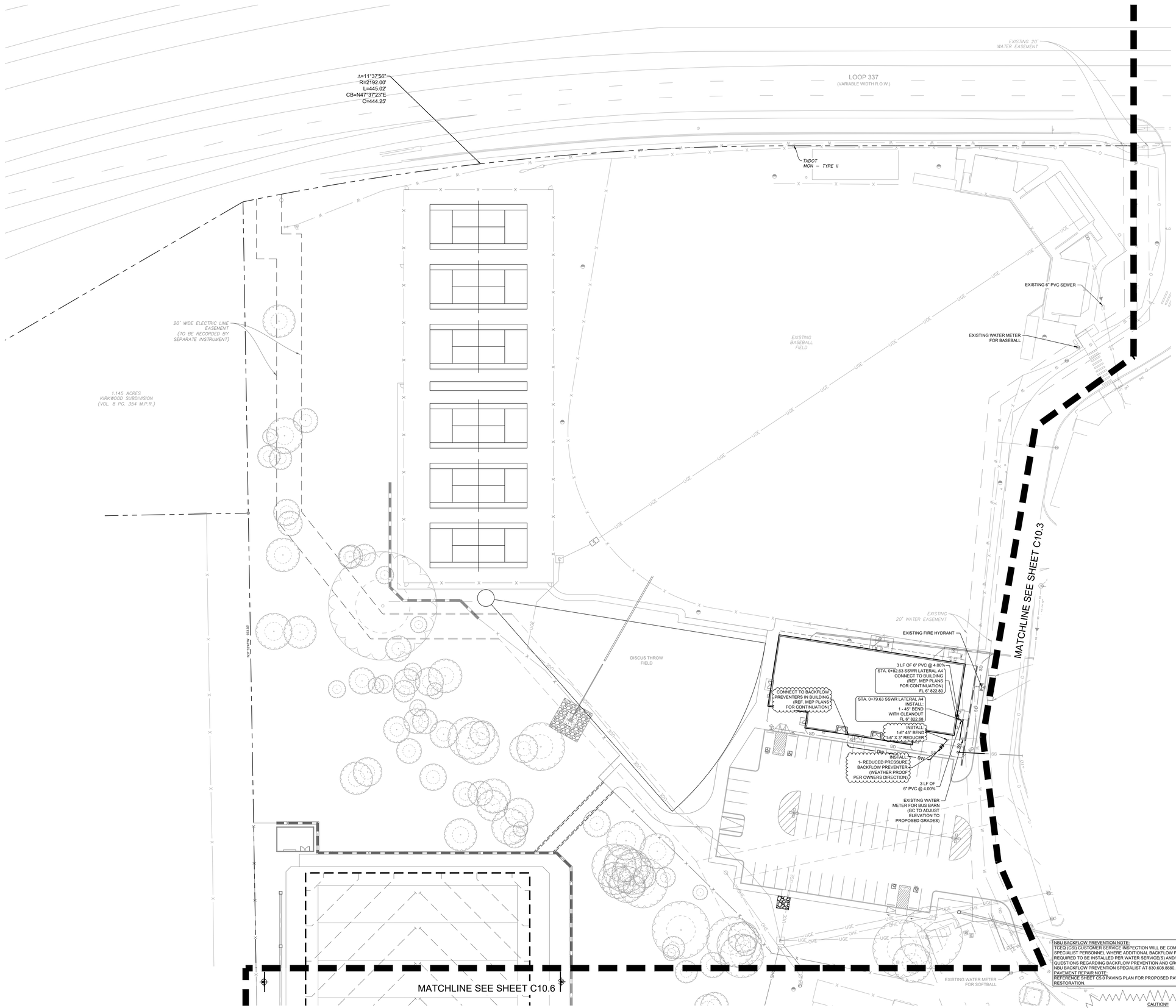
UTILITY PLAN
(SHEET 4 OF 6)

PACKAGE 2 VOLUME 01

Job No. 01935-02-02	Sheet No. C10.4
Drawn By: RAU	
Date: 12/19/2024	



GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

	PROPERTY BOUNDARY
SS	PROPOSED SANITARY SERVICE LATERAL
	PROPOSED MEP LINE
W	PROPOSED WATER LINE
FW	PROPOSED FIRE WATER LINE
GAS	PROPOSED GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
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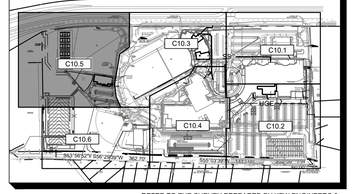

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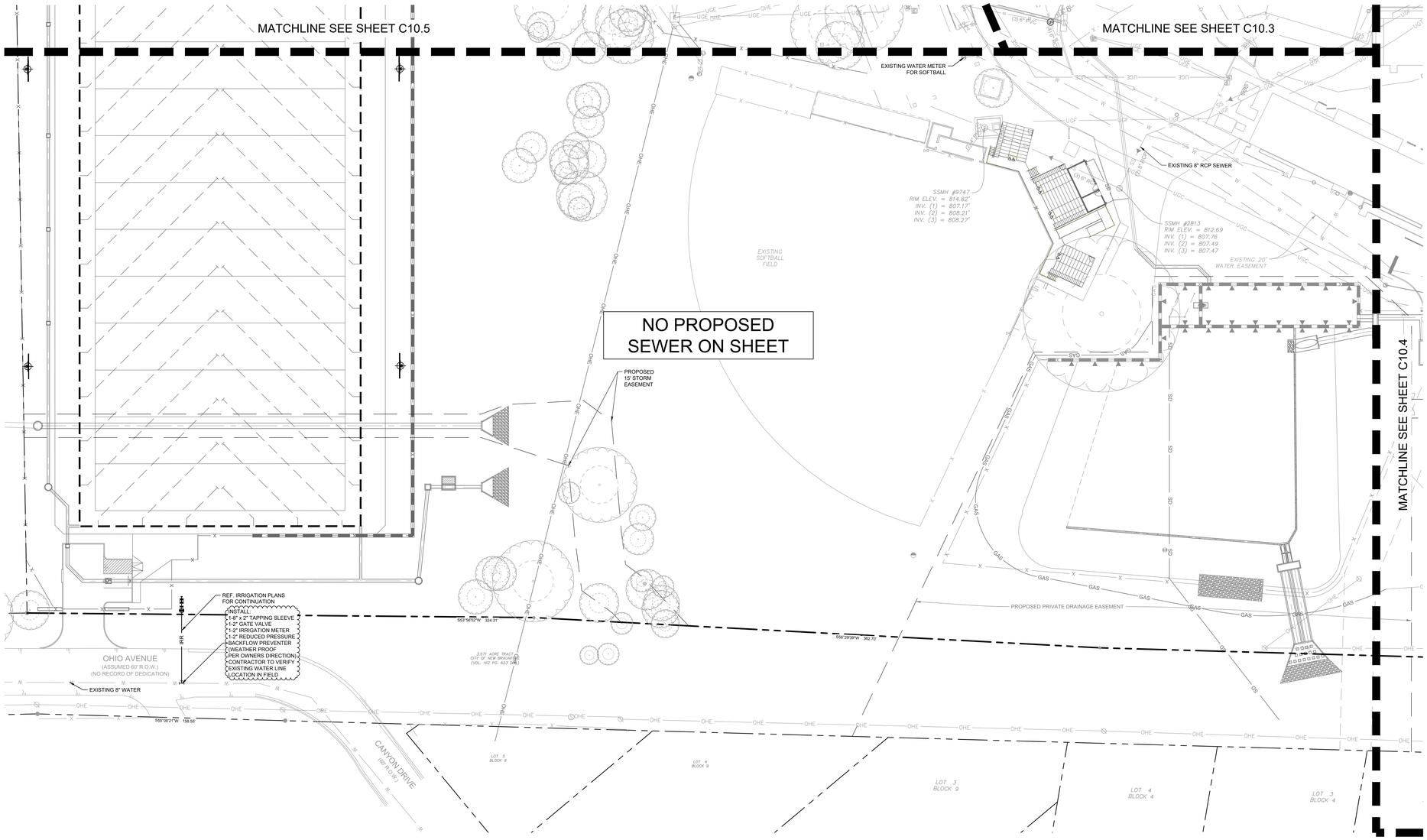
UTILITY PLAN
(SHEET 5 OF 6)

PACKAGE 2 VOLUME 01

Job No.	Sheet No.
01935-02-02	C10.5
Drawn By: RAU	
Date: 12/19/2024	



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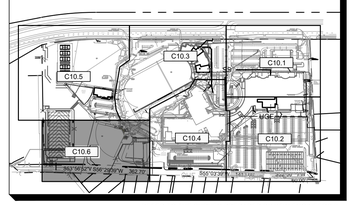

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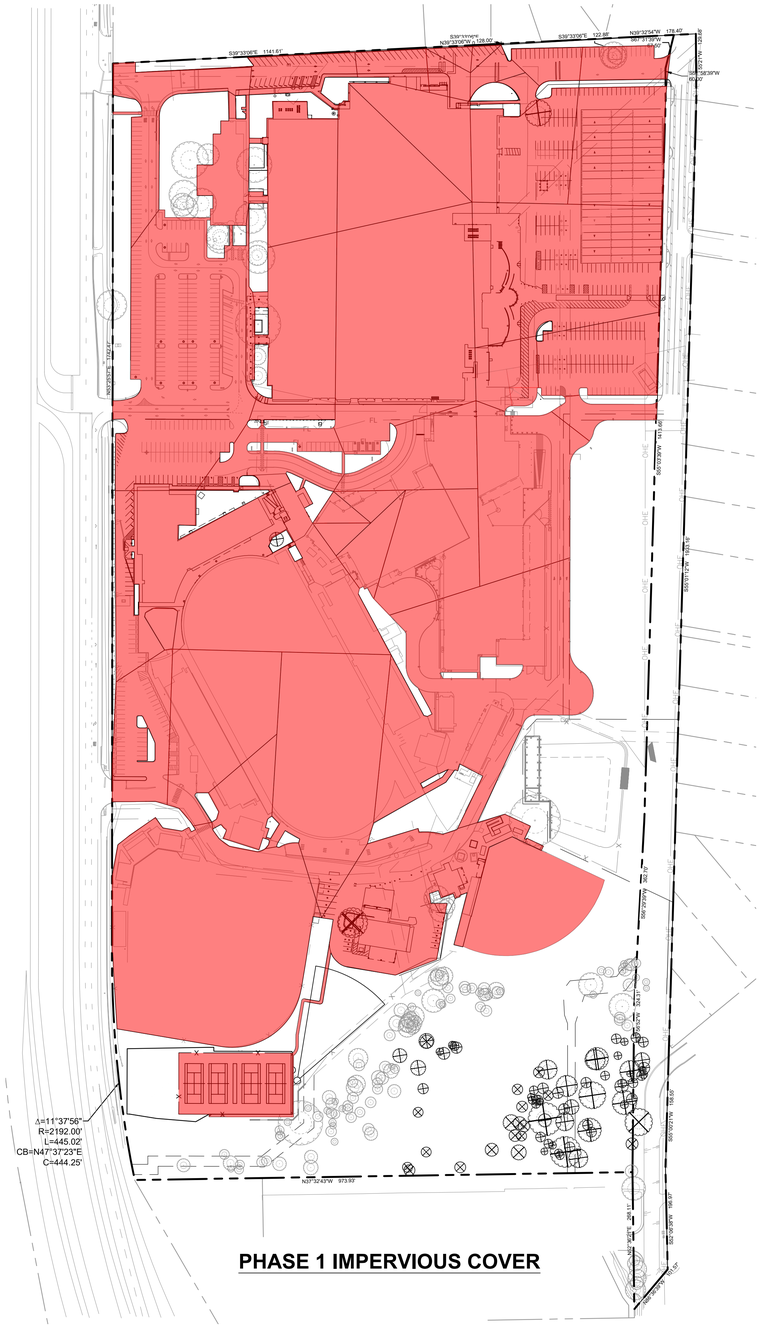
UTILITY PLAN (SHEET 6 OF 6)

PACKAGE 2 **VOLUME 01**

Job No. 01935-02-02	Sheet No. C10.6
Drawn By: RAU	
Date: 12/19/2024	



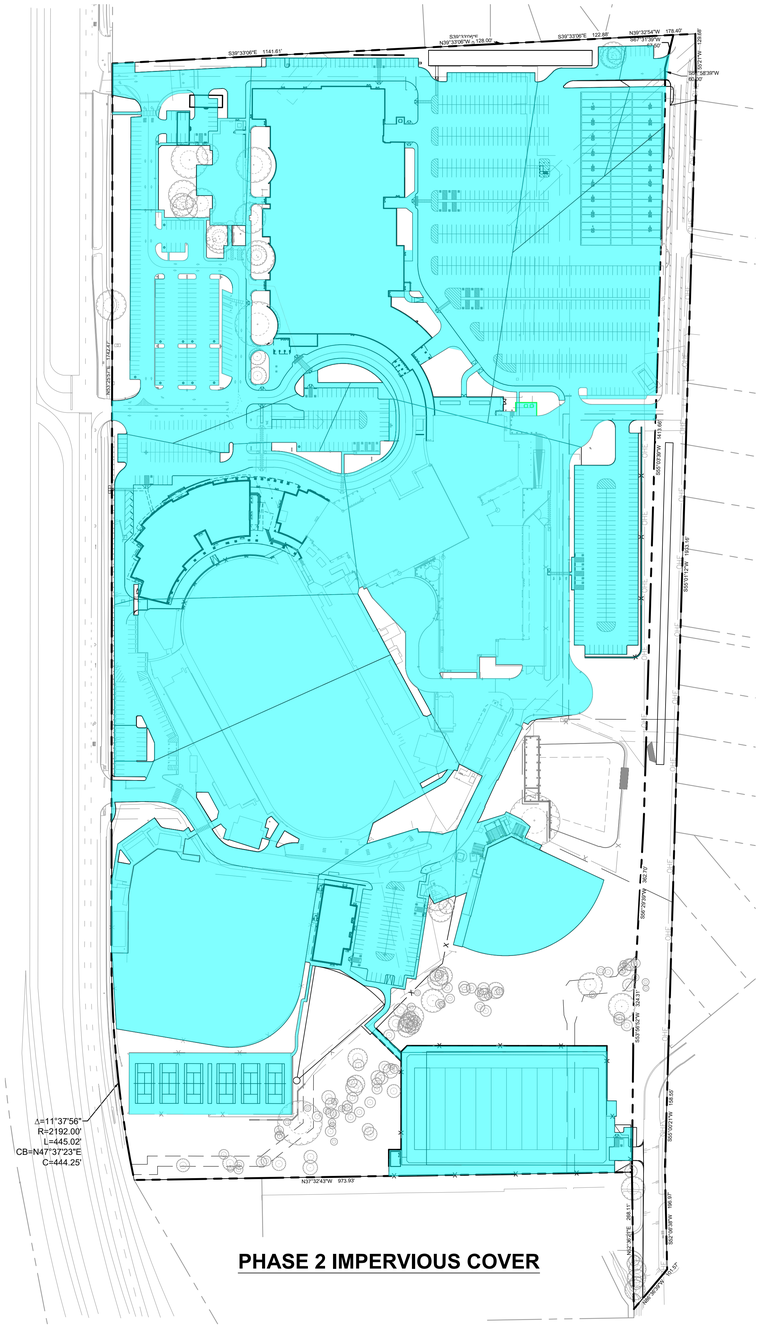
PHASE 1 IMPERVIOUS COVER

69.75% IMPERVIOUS COVER

ANALYZED BOUNDARY
± 2,310,869 SF

PROPOSED IMPERVIOUS AREA
± 1,611,932 SF

PROPOSED PERVIOUS AREA
± 698,937 SF



PHASE 2 IMPERVIOUS COVER

76.83% IMPERVIOUS COVER

ANALYZED BOUNDARY
±2,310,869 SF

PROPOSED IMPERVIOUS AREA
± 1,775,524 SF

PROPOSED PERVIOUS AREA
± 535,345 SF

NORTH

GRAPHIC SCALE IN FEET
0 60 120 240

REVISION	DATE	CITY AND TCEQ REVISIONS
1	12.16.2024	

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PRELIMINARY
FOR REVIEW ONLY
Not for construction purposes.
Kimley»Horn
Engineer RICHARD A. UNDERWOOD
P.E. No. 117843 Date 01/14/2025

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IMPERVIOUS COVER EXHIBIT

PACKAGE 2 VOLUME 01

Job No.	Sheet No.
01935-02-02	EX-I
Drawn By:	
Date: 01/14/2025	

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

I Paul McLarty,
Print Name

CFO,
Title - Owner/President/Other

of New Braunfels ISD,
Corporation/Partnership/Entity Name

have authorized Richard Underwood, P.E.
Print Name of Agent/Engineer

of Kimley-Horn & Associates
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

4/16/24
Date

THE STATE OF Texas §

County of Comal §

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 16th day of April, 2024.

NOTARY PUBLIC

BRENDA GARRETT
My Notary ID # 131245516
Expires August 10, 2025

Brenda Garrett
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 8/10/25

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: New Braunfels High School Phase 2
Regulated Entity Location: 2551 TX 337 Loop New Braunfels Tx
Name of Customer: New Braunfels ISD
Contact Person: Joseph Mansfield Phone: (840)643-5700
Customer Reference Number (if issued):CN 600397814
Regulated Entity Reference Number (if issued):RN 102402526

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	53.05 Acres	$ 8,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 01-14-2025

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 600397814		RN 102402526

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:*

NBISD

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (*if applicable*)
0153150601	17429237443		

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

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

13. Independently Owned and Operated?
☐ Yes ☒ No

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

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

15. Mailing Address: 1117 N Academy Ave

City	New Braunfels	State	TX	ZIP	781320	ZIP + 4	

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

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

SECTION III: Regulated Entity Information

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

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

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

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

New Braunfels High School Phase 2

23. Street Address of the Regulated Entity: *(No PO Boxes)*	2551 Tx 337 Loop							
	City	New Braunfels	**State**	TX	**ZIP**	78130	**ZIP + 4**	
24. County	Comal							

Enter Physical Location Description if no street address is provided.

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

27. Latitude (N) In Decimal:	29.717860		**28. Longitude (W) In Decimal:**	-98.153540		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	
29	43	4.296	98	9	12.744	

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	9903	611110	

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

High School

34. Mailing Address:	2551 Loop 337						
	City	New Braunfels	**State**	TX	**ZIP**	78130	**ZIP + 4**	8502
35. E-Mail Address:	dstoker@nbisd.org						

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(840) 643-5700		( ) -

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

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

SECTION IV: Preparer Information

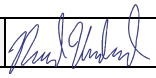
40. Name:	Richard Underwood	**41. Title:**	Project Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 541-9166		( ) -	richard.underwood@kimley-horn.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:	Kimley-Horn	**Job Title:**	Project Engineer
Name *(In Print):*	Richard Underwood	**Phone:**	(210) 541-9166

Signature:		Date:	01/14/2025