

Organized Sewage Collection System (SCS) Plan

NBISD Elementary School 11

Word Pkwy, Veramendi Master Planned Development, New Braunfels, TX 78130

Prepared For: *Texas Commission on Environmental Quality (TCEQ)*

Applicant: Richard Underwood, P.E.

Kimley»Horn

10101 Reunion Place, Suite 400
San Antonio, TX 78216
(210) 541-9166



Organized Sewage Collection System Plan Checklist

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- **General Information Form (TCEQ-0587)**
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- **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: NBISD – Elementary School 11					2. Regulated Entity No.:					
3. Customer Name: New Braunfels Independent School District					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):		11.53	
9. Application Fee:						10. Permanent BMP(s):		Batch Detention Basin		
11. SCS (Linear Ft.):		978		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.

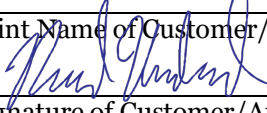
Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

San Antonio Region					
County:	Bexar	Comal	Kinney	Medina	Uvalde
Original (1 req.)	—	<u>X</u>	—	—	—
Region (1 req.)	—	<u>X</u>	—	—	—
County(ies)	—	<u>X</u>	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input checked="" type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA <input type="checkbox"/> Medina	<input type="checkbox"/> EAA <input type="checkbox"/> Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park <input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input checked="" type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> 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.

Print Name of Customer/Authorized Agent



10-17-2023

Signature of Customer/Authorized Agent

Date

****FOR TCEQ INTERNAL USE ONLY****

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

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.

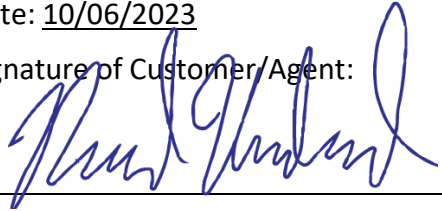
Signature

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: 10/06/2023

Signature of Customer/Agent:



A handwritten signature in blue ink, appearing to read 'Richard Underwood', is written over a horizontal line.

Project Information

1. Regulated Entity Name: NBISD - Elementary School 11
2. County: Comal
3. Stream Basin: Guadalupe River Basin
4. Groundwater Conservation District (If applicable): Edwards Aquifer
5. Edwards Aquifer Zone:
 - Recharge Zone
 - Transition Zone
6. Plan Type:
 - WPAP
 - SCS
 - Modification
 - AST
 - UST
 - Exception Request

7. Customer (Applicant):

Contact Person: Mark Liggett

Entity: New Braunfels ISD

Mailing Address: 1000 N Walnut

City, State: New Braunfels, TX

Zip: 78130

Telephone: 8406435700

FAX: _____

Email Address: _____

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: 78130

Telephone: 2103213415

FAX: _____

Email Address: richard.underwood@kimley-horn.com

9. Project Location:

- The project site is located inside the city limits of _____.
- The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of New Braunfels.
- 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.

From the TCEQ regional office, turn left and proceed approximately 1.5 miles to IH-35 North and turn left. Travel approximately 14.5 miles to exit 184 toward TX-337 and turn left. Proceed approximately 4.8 miles to Word Pkwy on the left. The project site is located approximately 0.15 miles northeast of the Word Pkwy and TX-337 intersection.

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:

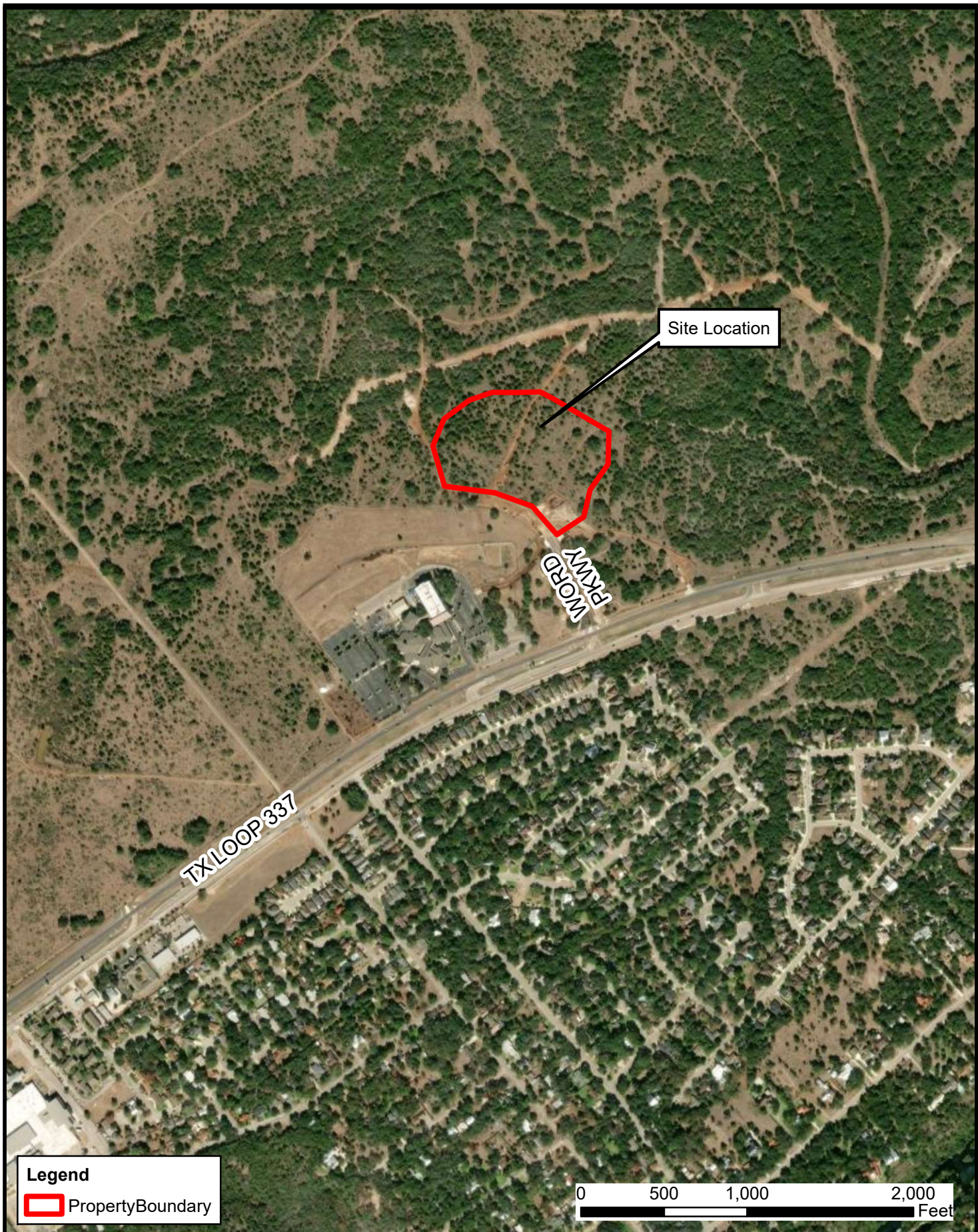
- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- For a UST Facility Plan or Modification or an AST Facility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

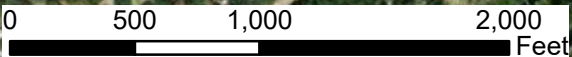
20. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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



Legend

 Property Boundary



SHEET	DATE:	08/22/2023
1	DESIGN:	ME
	DRAWN:	ME
	CHECKED:	BE
OF 1 SHEET	KHA NO.:	066017070

Aerial Map

Aerial Map
 New Braunfels
 Elementary School #11
 Veramendi Development
 New Braunfels, TX 78130



Kimley»Horn

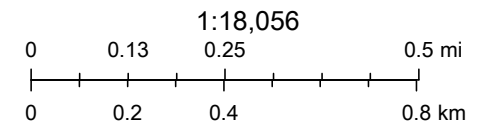
This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

Attachment B: USGS/Edwards Aquifer Recharge Zone Map



8/22/2023, 8:33:41 AM

- City/Place
- Edwards Aquifer Authority
- Edwards Aquifer Label
- Groundwater Conservation Districts
- TX Counties
- Comal Trinity GCD
- Edwards Aquifer Boundary
- 7.5 Minute Quad Grid
- Edwards Aquifer Boundary central line



City of New Braunfels, BCAD, Comal County, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, TCEQ

Web AppBuilder for ArcGIS

Project Description

This sewer collection system application is being submitted for the proposed elementary school to be built by New Braunfels Independent School District in the Veramendi Master Planned Development in New Braunfels, the county seat of Comal County, Texas. The site is located along Word Parkway, as shown in the Road Map (Attachment A).

A previous Water Pollution Abatement Plan (WPAP) was submitted by Pape Dawson Engineers in November of 2018, encompassing Phase 1 of Word Parkway. Additionally, a modification for the WPAP and a previously submitted Organized Sewage Collection System (SCS) was approved on April 29, 2022 for the extension of Word Parkway.

The existing site is undeveloped; however, the Veramendi Development is currently being built out including streets and public infrastructure. This includes the current construction of Word Parkway (along the southern edge of the site) and the street being built along the eastern edge of the site (drive to Veramendi Apartments). As these streets are being constructed, public gravity-fed sewer lines are being installed to service the proposed developments in this area. The proposed sewer system for the Elementary School will tie into the existing gravity-fed City of New Braunfels public main west of the site. The proposed on-site improvements include two new lines that wrap around the west and south/east sides of the proposed school and tie into the existing public main.

The proposed elementary school will encompass a main academic building consisting of three wings including two academic wings and an administrative wing. Additionally, a gymnasium, cafeteria, a courtyard, and associated parking are proposed on the site. The site Generally, the site sheet flows from the south to the northwest.

The NBISD – Elementary School 11 Sewage Collection System (SCS) application proposes the construction of approximately 978 linear feet (LF) of sewer main to serve the proposed development. The proposed alignment will consist of 978 LF of 6-inch (6”) PVC, SDR 26 gravity sewer main, see included plan and profile exhibits for details. Regulated activities proposed include excavation, construction of sewer mains, backfill, and compaction.

This project will result in 56 LUEs for the elementary school development. Approximately 11,760 gpd average flow is anticipated for this development based on 210 gpd/LUE. The sewage flow will be disposed of by conveyance to the existing Gruene Wastewater Treatment Center operated by New Braunfels Utilities (NBU). No naturally occurring sensitive features were identified in the Geologic Assessment.

***Geologic Site Assessment (WPAP)
for Regulated Activities / Development
on the Edwards Aquifer Recharge / Transition Zone***

***The Veramendi Subdivision
+/- 2,400 Acres
New Braunfels, Texas***

FROST GEOSCIENCES CONTROL # FGS-E10139

May 9, 2017

Prepared exclusively for

***ASA Properties, LLC
2021 SH 46, Suite 101
New Braunfels, Texas 78132***

Frost GeoSciences

***Geotechnical ▪ Construction Materials
Forensics ▪ Environmental***

13402 Western Oak • Helotes, Texas 78023 • Phone: (210) 372-1315 • Fax: (210) 372-1318



Frost GeoSciences

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Forensics - Environmental

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Helotes, Texas 78023
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www.frostgeosciences.com
TBPE Firm Registration # F-9227
TBPG Firm Registration # 50040

May 9, 2017

ASA Properties, LLC
2021 SH 46, Suite 101
New Braunfels, Texas 78132

Attn: Mr. Max Hartford

Re: Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
The Veramendi Subdivision
+/- 2,400 Acres
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-EI0139

Dear Sir:

Attached is a copy of the Geologic Assessment Report completed for the above referenced project site as it relates to 30 TAC §213.5(b)(3), effective June 1, 1999. Our investigation was conducted and this report was prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The results of our investigation, along with any recommendations for Best Management Practices (BMP's), are provided in the following report.

If you have any questions regarding this report, or if Frost GeoSciences, Inc. may be of additional assistance to you on this project, please feel free to call our office. It has been a pleasure to work with you and we wish to thank you for the opportunity to be of service to you on this project. We look forward to being of continued service.



Sincerely,
Frost GeoSciences, Inc.



Steve Frost, C.P.G., P.G.
President, Senior Geologist

Distribution: (1) ASA Properties, LLC
(5) Pape Dawson Engineers

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 Plate 4: Official Edwards Aquifer Recharge Zone Map

 Plate 5: FEMA Flood Map

 Plate 6: 1973 Aerial Photograph, 1"=2000'

 Plate 7: Geologic Map

 Plate 8: 2010 Aerial Photograph, 1"=2000'

 Plate 9: 2010 Aerial Photograph with PRF's, 1"=500M

B: Site Photographs

C: Site Geologic Map

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

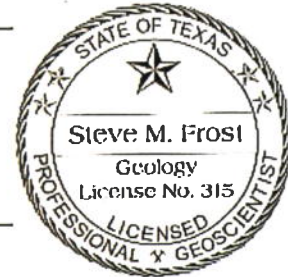
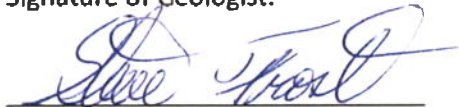
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Steve Frost, C.P.G., P.G. Telephone: (210) 372-1315

Date: May 9, 2017 Fax: (210) 372-1318

Representing: Frost GeoSciences, Inc.

Signature of Geologist:



Regulated Entity Name: The Veramendi Subdivision

Project Information

1. Date(s) Geologic Assessment was performed: June 16 through November 23, 2010

2. Type of Project:

WPAP

AST

SCS

UST

3. Location of Project:

Recharge Zone

Transition Zone

Contributing Zone within the Transition Zone

- 4. **Attachment A - Geologic Assessment Table.** Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
- 5. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Rumple-Comfort Association Undulating (RUD)	C/D	1 to 2
Comfort Rock Outcrop Complex Undulating (CrD)	D/D	0 to 2
Brickett-Rock Outcrop Comfort Complex Undulating (R/D)	C/D/D	0 to 2
Levittsville Silty Clay, 1 to 3 Percent Slopes (LzB)	B	2+
Medley-Eckman Assoc. (MED/AIEC)	D	1-2
Orin Soils	A	2+

Frequently Flooded (Or)

*** 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" = 400 '
 - Site Geologic Map Scale: 1" = 400 '
 - Site Soils Map Scale (if more than 1 soil type): 1" = 2000 '
- 9. Method of collecting positional data:
 - Global Positioning System (GPS) technology.
 - Other method(s). Please describe method of data collection: 2010 Aerial Photograph
- 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 9 (#) 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.

Stratigraphic Column

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations, and members modified from Rose (1972); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970). CU, confining unit; AQ, aquifer]

Hydrogeologic subdivision		Group, formation, or member	Hydro-logic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/ permeability type		
Upper Cretaceous	Upper confining units	Eagle Ford Group	CU	30 – 50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/ low permeability		
		Buda Limestone	CU	40 – 50	Buff, light gray, dense mudstone	Porcelaneous limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability		
		Del Rio Clay	CU	40 – 50	Blue-green to yellow-brown clay	Fossiliferous; <i>Ilymatogyra arietina</i>	None	None/primary upper confining unit		
Lower Cretaceous	Edwards aquifer	Georgetown Formation	Karst AQ; not karst CU	2 – 20	Reddish-brown, gray to light tan marly limestone	Marker fossil; <i>Waconella wacoensis</i>	None	Low porosity/low permeability		
									Person Formation	Cyclic and marine members, undivided
		Leached and collapsed members, undivided	AQ	70 – 90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable		
		Regional dense member	CU	20 – 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier		
		Kaiser Formation	Grainstone member	AQ	50 – 60	<i>Millolid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few		Not fabric/ recrystallization reduces permeability
			Kirschberg evaporite member	AQ	50 – 60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neopar and travertine frame	Probably extensive cave development		Majority fabric/one of the most permeable
			Dolomitic member	AQ	110 – 130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, <i>Toucasia</i> abundant	Caves related to structure or bedding planes		Mostly not fabric; some bedding plane-fabric/water-yielding
			Basal nodular member	Karst AQ; not karst CU	50 – 60	Shaly, nodular limestone; mudstone and <i>millolid</i> grainstone	Massive, nodular and mottled, <i>Exogyra texana</i>	Large lateral caves at surface; a few caves near Cibolo Creek		Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface
		Lower confining unit	Upper member of the Glen Rose Limestone	CU; evaporite beds AQ	350 – 500	Yellowish tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development		Some water production at evaporite beds/relatively impermeable

GEOLOGIC ASSESSMENT TABLE PROJECT NAME: The Veramendi Subdivision FGS-E10139

1	LOCATION		FEATURE CHARACTERISTICS										EVALUATION			PHYSICAL SETTING		
	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12
	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NOFT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY
S-1	29° 43.144'	98° 09.282'	CD	5	Kcp	25	60	1.5	-	-	-	-	F	10	15	15	X	Hillside
S-2	29° 43.193'	98° 09.291'	CD	5	Kcp	20	20	1	-	-	-	-	F	10	15	15	X	Hillside
S-3	29° 43.218'	98° 09.362'	SC	20	Kep	2	3	2	-	-	-	-	F	12	32	32	X	Hillside
S-4	29° 43.253'	98° 09.412'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-5	29° 43.035'	98° 08.837'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Drainage
S-6	29° 43.050'	98° 08.902'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Drainage
S-7	29° 43.060'	98° 08.978'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Drainage
S-8	29° 43.000'	98° 09.153'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-9	29° 43.497'	98° 08.917'	CD	5	Kep	65	200	6+	-	-	-	-	F	10	15	15	X	Hillside
S-10	29° 43.610'	98° 08.893'	CD	5	Kep	4	4	2	-	-	-	-	F	10	15	15	X	Hillside
S-11	29° 43.545'	98° 09.052'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-12	29° 43.298'	98° 09.381'	SC	20	Kep	2	2.5	1.5	-	-	-	-	O/F	12	32	32	X	Hillside
S-13	29° 43.539'	98° 09.168'	SC	20	Kep	0.25	1	1.5	-	-	-	-	O/F	10	30	30	X	Hillside
S-14	29° 43.500'	98° 09.079'	CD	5	Kcp	4	4	2	-	-	-	-	X	10	15	15	X	Hillside
S-15	29° 43.497'	98° 09.096'	MB	30	Kcp	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-16	29° 43.464'	98° 09.138'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-17	29° 43.449'	98° 09.174'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-18	29° 43.424'	98° 09.245'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-19	29° 43.371'	98° 09.270'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-20	29° 43.339'	98° 09.324'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-21	29° 43.298'	98° 09.381'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside
S-22	29° 43.708'	98° 09.881'	CD	5	Kep	40	50	1.5	-	-	-	-	C/F	10	15	15	X	Hillside
S-23	29° 43.750'	98° 09.884'	SC	20	Kep	1.5	2	2	-	-	-	-	O/F	12	32	32	X	Hillside
S-24	29° 44.199'	98° 09.510'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Floodplain
S-25	29° 44.247'	98° 09.560'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Floodplain

* DATUM 1927 North American Datum (NAD27) Date May 9, 2017 Sheet 1 of 7

GEOLOGIC ASSESSMENT TABLE												PROJECT NAME: The Veramendi Subdivision												FGS-E10139	
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING							
1	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12							
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY							
						X	Y	Z							< 40	> 40	< 1.5	> 1.5							
S-26	29° 44.148'	98° 09.382'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Floodplain							
S-27	29° 43.909'	98° 09.970'	SC	20	KeD	0.5	1	3	-	-	-	-	O/F	12	32	32	X	Hillside							
S-28	29° 44.178'	98° 09.317'	MB	30	KeD	0.3	3	7	-	-	-	-	X	7	37	37	X	Floodplain							
S-29	20° 44.103'	98° 09.493'	MB	30	KeD	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hillside							
S-30	29° 44.160'	98° 09.483'	CD	5	KeD	55	55	4	-	-	-	-	O/F	10	15	15	X	Hillside							
S-31	29° 43.939'	98° 10.082'	SC	20	KeD	2	3	3.5	-	-	-	-	O/F	12	32	32	X	Hillside							
S-32	29° 44.000'	98° 10.049'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-33	29° 44.056'	98° 09.963'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-34	29° 44.107'	98° 09.888'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-35	29° 44.147'	98° 09.825'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-36	29° 44.184'	98° 09.671'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-37	29° 44.118'	98° 09.782'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Floodplain							
S-38	29° 44.222'	98° 09.450'	SCZ	30	KeD	500	800	-	-	-	-	-	N/C	20	50	50	X	Floodplain							
S-39	29° 44.121'	98° 09.285'	MB	30	KeD	150	1225	-	-	-	-	-	N	4	34	34	X	Hillside							
S-40	29° 43.882'	98° 09.046'	MB	30	KeD	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hilltop							
S-41	29° 43.857'	98° 08.925'	MB	30	KeD	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hillside							
S-42	29° 43.845'	98° 08.907'	CD	5	KeD	100	140	5	-	-	-	-	F	10	15	15	X	Hillside							
S-43	29° 43.657'	98° 08.735'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-44	29° 43.656'	98° 08.736'	SC	20	KeD	1	1	2	-	-	-	-	O/F	12	32	32	X	Hillside							
S-45	29° 43.680'	98° 08.719'	MB	30	KeD	30	75	-	-	-	-	-	C	7	37	37	X	Hillside							
S-46	29° 43.693'	98° 08.7138'	MB	30	KeD	20	20	-	-	-	-	-	F	7	37	37	X	Hillside							
S-47	29° 43.692'	98° 08.737'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-48	29° 43.718'	98° 08.743'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Hillside							
S-49	29° 43.766'	98° 08.678'	OPR	5	KeD	10	20	-	N 40°	10	1/2	0.08	C/F	20	35	35	X	Drainage							
S-50	29° 43.770'	98° 08.672'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	X	Drainage							

* DATUM 1927 North American Datum (NAD27) Date May 9, 2017 Sheet 2 of 7

GEOLOGIC ASSESSMENT TABLE PROJECT NAME: The Veramendi Subdivision FGS-EI0139

FEATURE	LOCATION		FEATURE CHARACTERISTICS										EVALUATION			PHYSICAL SETTING			
	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12	
	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY	
S-51	29° 43.771'	98° 08.654'	MB	30	KeD	3	20	3	-	-	-	-	C	25	55	55	<1.6	X	Drainage
S-52	29° 43.773'	98° 08.625'	O ^{PR}	5	KeD	10	15	-	N 115°	-	1 / 1.5	0.08	C/F	25	30	30	>1.6	X	Drainage
S-53	29° 43.775'	98° 08.617'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Drainage
S-54	29° 43.818'	98° 08.588'	SCZ	30	KeD	10	100	-	-	-	-	-	O/F	7	37	37	<1.6	X	Hillside
S-55	29° 43.883'	98° 08.597'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Drainage
S-56	29° 43.937'	98° 08.605'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Drainage
S-57	29° 43.925'	98° 08.452'	CD	5	KeD	10	15	1.5	-	-	-	-	F	10	15	15	<1.6	X	Hillside
S-58	29° 43.930'	98° 08.372'	CD	5	KeD	30	40	2	-	-	-	-	F	10	15	15	<1.6	X	Hillside
S-59	29° 43.975'	98° 08.580'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Drainage
S-60	29° 44.029'	98° 08.493'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-61	29° 44.044'	98° 08.428'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-62	29° 44.005'	98° 08.297'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-63	29° 44.012'	98° 08.195'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Floodplain
S-64	29° 43.956'	98° 08.983'	C	30	KeD	2	3	5+	-	-	-	-	N	30	60	60	<1.6	X	Hillside
S-65	29° 43.958'	98° 08.095'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Floodplain
S-66	29° 43.897'	98° 08.002'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Floodplain
S-67	29° 43.882'	98° 07.978'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-68	29° 43.818'	98° 07.985'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-69	29° 43.768'	98° 07.996'	SC	20	KeD	10+	20	0.75	-	-	-	-	N	9	29	29	<1.6	X	Floodplain
S-70	29° 43.775'	98° 07.961'	O ^{VR}	5	KeD	3	15	2	-	-	3 / 1	0.06	N	9	14	14	<1.6	X	Floodplain
S-71	29° 43.758'	98° 07.937'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-72	29° 43.782'	98° 07.870'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed
S-73	29° 43.755'	98° 07.905'	SC	20	KeD	1	1.5	6+	-	-	-	-	N	9	29	29	<1.6	X	Cliff
S-74	29° 43.782'	98° 07.855'	SCZ	30	KeD	30	600	-	-	-	-	-	N/O/F	9	39	39	<1.6	X	Floodplain
S-75	29° 43.830'	98° 07.785'	MB	30	KeD	3	3	7	-	-	-	-	X	7	37	37	<1.6	X	Streambed

* DATUM 1927 North American Datum (NAD27) Date May 9, 2017 Sheet 3 of 7

GEOLOGIC ASSESSMENT TABLE													PROJECT NAME: The Veramendi Subdivision													FGS-E10139												
LOCATION			FEATURE CHARACTERISTICS										EVALUATION			PHYSICAL SETTING																						
1	2*	3*	2A	2B	3	4			5A	5	6	7	8A	8B	9	10	11	12																				
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NOFT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY																				
						X	Y	Z							< 40	> 40	< 1.5	> 1.5																				
S-76	29° 43.882'	98° 07.978'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				
S-77	29° 43.748'	98° 08.053'	WZSHZ	30	KeP	100	100	-	-	-	-	-	O/F	35	65	65	X	Hilltop																				
S-78	29° 43.876'	98° 08.041'	MB	30	KeP	0.75	0.75	?	-	-	-	-	N	35	65	65	X	Hillside																				
S-79	29° 43.868'	98° 08.030'	CD	5	KeP	100	100	4	-	-	-	-	F	10	15	15	X	Hillside																				
S-80	29° 44.001'	98° 07.965'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-81	29° 44.079'	98° 07.992'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-82	29° 44.158'	98° 08.022'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-83	29° 44.232'	98° 08.069'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-84	29° 44.305'	98° 08.113'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-85	29° 44.385'	98° 08.165'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				
S-86	29° 44.434'	98° 08.303'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-87	29° 43.614'	98° 08.322'	CD	5	KeP	5	8	1	-	-	-	-	F	10	15	15	X	Hillside																				
S-88	29° 43.943'	98° 08.271'	SC	20	KeP	2	2.5	1	-	-	-	-	F	12	32	32	X	Hillside																				
S-89	29° 43.984'	98° 08.235'	SCZ	20	KeP	30	120	-	-	-	-	-	N/O	10	30	30	X	Hillside																				
S-90	29° 44.169'	98° 08.185'	CD	5	KeP	4	6	1	-	-	-	-	F	10	15	15	X	Hillside																				
S-91	29° 44.009'	98° 08.301'	O/F	5	KeP	12	150	-	N 140°	-	1 / 2	0.08	C/F	25	30	30	X	Floodplain																				
S-92	29° 44.060'	98° 08.378'	SH	20	KeP	30	60	3	-	-	-	-	F	19	39	39	X	Hillside																				
S-93	29° 44.217'	98° 07.989'	CD	5	KeP	2	2.5	0.5	-	-	-	-	F	10	15	15	X	Hillside																				
S-94	29° 44.051'	98° 07.985'	CD	5	KeP	50	150	5	-	-	-	-	N/F	10	15	15	X	Floodplain																				
S-95	29° 44.456'	98° 08.434'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-96	29° 44.476'	98° 08.503'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Floodplain																				
S-97	29° 44.538'	98° 08.649'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				
S-98	29° 44.540'	98° 08.710'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				
S-99	29° 44.506'	98° 08.731'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				
S-100	29° 44.416'	98° 08.732'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed																				

* DATUM 1927 North American Datum (NAD27) Date May 9, 2017 Sheet 4 of 7

GEOLOGIC ASSESSMENT TABLE **PROJECT NAME:** The Veramendi Subdivision **FGS-EI0139**

LOCATION		FEATURE CHARACTERISTICS										EVALUATION			PHYSICAL SETTING			
1	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z								< 40	< 1.6	
S-101	29° 44.416'	98° 08.732'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-102	29° 44.230'	98° 08.773'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-103	29° 44.188'	98° 08.802'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-104	29° 44.167'	98° 08.857'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-105	29° 44.162'	98° 08.946'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-106	29° 44.156'	98° 09.033'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-107	29° 44.152'	98° 09.118'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-108	29° 44.185'	98° 09.217'	MB	30	KeP	3	3	?	-	-	-	-	X	7	37	37	X	Streambed
S-109	29° 44.449'	98° 09.285'	SH	20	KeP	5	10	1	-	-	-	-	F	12	32	32	X	Hillside
S-110	29° 44.393'	98° 09.229'	OP	5	KeP	20	40	-	N 45°	10	1 / 1	0.08	N/C	25	40	40	X	Streambed
S-111	29° 44.391'	98° 09.183'	OP	5	KeP	20	150	-	N 40°	10	1 / 1	0.08	N/C	25	40	40	X	Streambed
S-112	29° 44.388'	98° 09.129'	OP	5	KeP	4	300	-	-	-	3 / 1	0.06	N/C	20	25	25	X	Floodplain
S-113	29° 44.425'	98° 09.202'	SC	20	KeP	0.75	1	2.5	-	-	-	-	O/F	15	35	35	X	Hillside
S-114	29° 44.409'	98° 08.986'	SH	20	KeP	10	12	1	-	-	-	-	F	12	32	32	X	Hillside
S-115	29° 44.570'	98° 09.098'	MB	30	KeP	0.75	0.75	?	-	-	-	-	N	35	65	65	X	Hillside
S-116	29° 44.270'	98° 09.232'	SC	20	KeP	1	1	3	-	-	-	-	F	12	32	32	X	Hillside
S-117	29° 44.351'	98° 09.339'	MB	30	KeP	30	50	6	-	-	-	-	N	15	45	45	X	Streambed
S-118	29° 44.265'	98° 09.030'	CDZ	5	KeP	300	1000	-	-	-	-	-	F	10	15	15	X	Floodplain
S-119	29° 44.168'	98° 09.619'	MB	30	KeP	3	75	3	-	-	-	-	C	15	45	45	X	Streambed
S-120	29° 44.242'	98° 08.913'	OP	5	KeP	40	350	-	N 50°	10	1 / 2	0.08	C	25	40	40	X	Streambed
S-121	29° 44.629'	98° 09.090'	SC	20	KeP	2	2	1.5	-	-	-	-	F	12	32	32	X	Hillside
S-122	29° 44.743'	98° 08.887'	CD	5	KeP	30	70	4	-	-	-	-	F	10	15	15	X	Drainage
S-123	29° 44.660'	98° 08.712'	OP	5	KeP	50	150	-	N 70°	-	1 / 2	0.08	F	20	25	25	X	Streambed
S-124	29° 44.675'	98° 08.695'	CD	5	KeP	80	170	8	-	-	-	-	F	10	15	15	X	Hillside
S-125	29° 44.127'	98° 09.046'	SC	20	KeP	2	3	1	-	-	-	-	F	12	32	32	X	Floodplain

* DATUM 1927 North American Datum (NAD27) Date May 9, 2017 Sheet 5 of 7

GEOLOGIC ASSESSMENT TABLE PROJECT NAME: The Veramendi Subdivision FGS-E10139

1	LOCATION		FEATURE CHARACTERISTICS										EVALUATION		PHYSICAL SETTING			
	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z								< 40	< 1.6	
S-126	29° 44.557'	98° 08.645'	SCZ	20	KeP	30	600	-	-	-	-	-	C/N	15	35	35	X	Floodplain
S-127	29° 44.821'	98° 08.588'	MB	30	KeP	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hilltop
S-128	29° 44.670'	98° 08.013'	CD	5	KeP	60	65	4	-	-	-	-	F	10	15	15	X	Hillside
S-129	29° 44.659'	98° 07.990'	MB	30	KeP	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hilltop
S-130	29° 44.656'	98° 07.991'	MB	30	KeP	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hilltop
S-131	29° 44.338'	98° 07.805'	CD	5	KeP	70	90	3	-	-	-	-	F	10	15	15	X	Hillside
S-132	29° 44.382'	98° 07.502'	CD	5	KeP	20	70	3	-	-	-	-	F	10	15	15	X	Hillside
S-133	29° 45.186'	98° 08.255'	OPR	5	KeP	40	100	-	N 65°	-	1/2	0.08	N	20	25	25	X	Drainage
S-134	29° 44.881'	98° 07.761'	OPR	5	KeP	30	100	-	N 40°	10	1/2	0.08	N	20	35	35	X	Drainage
S-135	29° 44.916'	98° 07.704'	OPR	5	KeP	40	60	-	N 140°	-	1/2	0.08	N	20	25	25	X	Drainage
S-136	29° 44.580'	98° 07.125'	OPR	5	KeP	15	20	-	N 7°	-	1/2	0.08	N	20	25	25	X	Drainage
S-137	29° 44.336'	98° 07.793'	MB	30	KeP	0.75	0.75	7	-	-	-	-	N	35	65	65	X	Hillside

* DATUM 1927 North American Datum (NAD27)

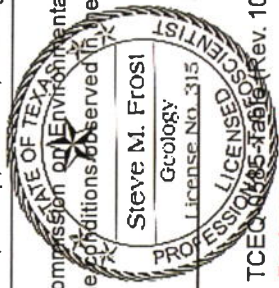
2A TYPE	2B POINTS
C	30
SC	20
SF	20
F	20
O	5
MB	30
SW	30
SH	20
CD	5
Z	30

8A INFILLING
 None, exposed bedrock
 Coarse - cobbles, breakdown, sand, gravel
 Loose or soft mud or soil, organics, leaves, sticks, dark colors
 Fines, compacted clay-rich sediment, soil profile, gray or red colors
 Vegetation. Give details in narrative description
 Flowstone, cements, cave deposits
 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 213.

Steve M. Frost



Signature _____ Date May 9, 2017 Sheet 6 of 7

GEOLOGIC ASSESSMENT TABLE PROJECT NAME: The Veramendi Subdivision FGS-EI0139

LOCATION		FEATURE CHARACTERISTICS										EVALUATION			PHYSICAL SETTING			
1	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z								< 40	< 1.6	
S-138	29° 44.382'	98° 07.687'	SH	20	Kep	30	40	2	-	-	-	-	F	15	35	35	X	Hillside
S-139	29° 44.661'	98° 07.779'	O ^{PH}	5	Kep	8	10	-	N 70°	-	1 / 2	0.08	C/F	15	20	20	X	Hillside
S-140	29° 45.001'	98° 08.094'	SC	20	Kep	2	4	2	-	-	-	-	O/F	12	32	32	X	Hillside
S-141	29° 45.176'	98° 08.164'	SC	20	Kep	0.25	2.5	2	-	-	-	-	O/F	12	32	32	X	Hillside
S-142	29° 43.319'	98° 09.171'	SH	20	Kep	100	150	4	-	-	-	-	F	15	35	35	X	Hillside
S-143	29° 44.622'	98° 07.369'	SCZ	20	Kep	30	2,800	-	-	-	-	-	N/O	12	32	32	X	Cliff
S-144	29° 45.163'	98° 08.014'	SCZ	20	Kep	30	3,600	-	-	-	-	-	N/O	12	32	32	X	Cliff
S-145	29° 44.287'	98° 09.495'	CDZ	30	Kep	600	1,000	-	-	-	-	-	O/F	30	60	60	X	Streambed
S-146	29° 44.969'	98° 08.534'	F	20	Kep	-	-	-	N 55°	-	-	-	-	15	35	35	X	Hillside
S-147	29° 45.017'	98° 08.031'	F	20	Kep	-	-	-	N 45°	-	-	-	-	15	35	35	X	Hillside
S-148	29° 43.175'	98° 09.430'	MB	30	Kep	3	3	7	-	-	-	-	X	7	37	37	X	Hillside

* DATUM 1927 North American Datum (NAD27)

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

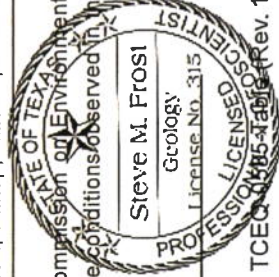
N None, exposed bedrock
 C Coarse - cobbles, breakdown, sand, gravel
 O Loose or soft mud or soil, organics, leaves, sticks, dark colors
 F Fines, compacted clay-rich sediment, soil profile, gray or red colors
 V Vegetation. Give details in narrative description
 FS Flowstone, cements, cave deposits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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understand 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 213.

Steve M. Frosi



Signature Steve M. Frosi Date May 9, 2017 Sheet 7 of 7

LOCATION

The project site consists of approximately 2,400 acres of land located along and north of Loop 337 and east and west of River Road in New Braunfels, Texas. An overall view of the area is shown on copies of the site plan, a street map, the USGS Topographic Map, the Edwards Aquifer Recharge Zone Map, the Flood Insurance Rate Map (FIRM), a 1973 aerial photograph from the USDA at a scale of 1"=2000', a geologic map, a 2010 aerial photograph at a scale of 1"=2000', and a 2010 aerial photograph at a scale of 1"=500M, Plates 1 through 9 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Mr. Steve Frost, C.P.G., President and Senior Geologist with Frost GeoSciences, Inc and several employees of Frost GeoSciences, Inc. including Ms. TG Bey, Biologist, Mr. Reza Eshmary, Geologist, James Akers, and Spencer Templen. Mr. Frost is a Licensed Professional Geoscientist in the State of Texas (License # 315) and is a Certified Professional Geologist with the American Institute of Professional Geologist (Certification # 10176).

Frost GeoSciences, Inc. researched the geology of the area in the immediate vicinity of the project site. The research included, but was not limited to, the Geologic Atlas of Texas, San Antonio Sheet, FIRM maps, Edwards Aquifer Recharge Zone Maps, USGS 7.5 Minute Quadrangle Maps, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the USGS Water-Resources Investigations Report 94-4117, and the USDA Soil Survey of Comal & Hays County, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 50 feet or less, depending on vegetation thickness, was used to inspect the project site. A 2010 aerial photograph, in conjunction with a hand held Garmin eTrex Summit Global Positioning System with an Estimated Potential Error ranging from 7 to 12 feet, was used to navigate around the property and identify the locations of potential recharge features, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any potential

recharge features noted in the field were identified on the Site Geologic Map in Appendix C of this report. A copy of a 2010 aerial photograph at an approximate scale of 1"=500M, indicating the locations of the potential recharge features, is included on Plate 9 in Appendix A. The Geologic Assessment Form (Rev. 2-11-15), Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included on pages 1-11 of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the USGS 7.5 Minute Quadrangle Maps, New Braunfels West, Texas Sheet (1988), New Braunfels East, Texas Sheet (1994), Sattler, Texas Sheet (1994), and Hunter, Texas Sheet (1994), the elevation of the project site ranges from 630 feet at the eastern corner of the project site within the River Pasture along the Guadalupe River to 845 feet along the western property lines of Pastures 1 and 3. These elevations are calculated above mean sea level (AMSL). A landing strip and a stock pond are noted within Pasture 1. A residential structure and several associated barns and sheds are visible near the northern limits of Pasture 1. Two stock ponds were noted within Pasture 2. One stock pond and a spillway for a flood control dam was noted within Pasture 3. The surface runoff from the project site flows into unnamed tributaries of Blieders Creek, Blieders Creek, unnamed tributaries of the Guadalupe River, and the Guadalupe River. State Highway 46 (Loop 337) is located immediately south of the project site. River Road separates Pastures 2 and 4 to the west from the River Pasture to the east. A copy of the above referenced USGS 7.5 Minute Quadrangle Map, indicating the location of the project site, is included in this report on Plate 3 in Appendix A.

Recharge / Transition Zone

According to Official Edwards Aquifer Recharge Zone Map, New Braunfels West, Texas Sheet, New Braunfels East, Texas Sheet, Sattler, Texas Sheet, and Hunter, Texas Sheet, (1996),

the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the Official Edwards Aquifer Recharge Zone Map, indicating the location of the project site, is included on Plate 4 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Comal County, Texas, Community Panel Numbers 48091C0270F, 48091C0290F, 48091C0435F, & 48029C0455F (Revised 9/02/09) were reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned panels indicate that portions of the project site is located within the 100 year floodplain. The project site is located within Zone AE, Zone A, Zone X Shaded, and Zone X.

According to the panel legend, Zone AE represents areas within the 100 year floodplain where base flood elevations have been determined. The areas of the property within Zone AE are generally located along Blieders Creek and the Guadalupe River.

Zone A represents areas within the 100 year floodplain where base flood elevations have not been determined. The areas of the property within Zone A are generally areas along tributaries immediately upgradient of areas determined to be within Zone AE.

Zone X shaded represents areas of 0.2% annual chance of flooding, areas of 1% annual chance of flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance of flooding. The areas of the property with Zone X Shaded are generally narrow bands located immediately adjacent to areas determined to be within Zone AE.

Zone X represents areas determined to be outside the 0.2% annual chance floodplain. A copy of the Comal County, Texas, FIRM maps, indicating the location of the project site, is included in this report on Plate 5 in Appendix A.

Soils

According to the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Comal & Hays County, Texas (1982), the project site is located on the Rumble-Comfort Association (RUD), the Comfort - Rock Outcrop Complex, Undulating (CrD), the Brackett - Rock Outcrop - Comfort Complex, Undulating (BID), the Lewisville Silty Clay, 1 to 3 percent slopes (LeB), the Medlin-Eckrant Association (MEC/MED), and the Orif Soils, Frequently Flooded (Or). A copy of the 1973 aerial photograph (approximate scale: 1"=2000') from the USDA Soil Survey of Comal & Hays County, Texas (1982) indicating the location of the project site and the soil types is included on Plate 6 In Appendix A.

The Rumble-Comfort Association (RuD) consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. The surface layer of the Rumble Soil is dark reddish brown very cherty clay loam about 10 inches thick. Rounded chert and limestone cobbles and gravel cover about 20 percent of the surface. The subsoil to a depth of 14 inches is dark reddish-brown very cherty clay, and to a depth of 28 inches it is dark reddish-brown extremely stony clay. The underlying material is indurated fractured limestone. The Comfort Soil is dark brown, neutral, extremely stony clay about 7 inches thick. The subsoil to a depth of 12 inches is dark reddish-brown, mildly alkaline, extremely stony clay. The underlying material is indurated fractured limestone. The soil is noncalcareous throughout. The soils in this association are well drained. Surface runoff is medium, but varies due to the occurrence of caves, fracture zones, and sinks. Permeability is moderately slow. Water erosion is a moderate hazard.

The Comfort-Rock Outcrop Complex consists of shallow, clayey soils and Rock Outcrop on side slopes and on hilltops and ridgetops on uplands in the Edwards Plateau Land Resource Area. The Comfort Extremely Stony Clay makes up 49 to more than 95 percent of the complex, but on the average it makes up 70 percent. Rock Outcrop and areas of soil less than 4 inches deep make up 5 to 36 percent, but the average is 15 percent. Typically, the surface layer of the Comfort soil is dark brown extremely stony clay about 6 inches thick. Cobbles and stones as much as 4 feet across cover about 45 percent of the surface. The subsoil extends to a depth of 13

inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone. The soil is mildly alkaline and noncalcareous throughout. The Comfort Soil is well drained. Surface runoff is slow to medium. Permeability is slow, and the available water capacity is very low. Water erosion is a slight hazard. This soil has a USDA Texture Classification of extremely stony clay, stony clay, very stony clay, and weathered bedrock. The Unified Classification is CH, GC, CL, or SC. The AASHO Classification is A-2-7, and A-7-6. This soil has an average permeability from 0.6 to 0.2 inches/hour.

The Brackett-Rock Outcrop-Comfort Complex consists of shallow, loamy and clayey soils and rock outcrops on uplands in the Edwards Plateau Land Resource Area. The Brackett Soil makes up 30 to 60 percent of the complex, but on the average it makes up 50 percent. Rock Outcrops make up 10 to 40 percent of the complex, but the average is 20 percent. The Comfort Soil makes up 10 to 20 percent, but the average is 15 percent. Typically, the surface layer of the Brackett Soil is grayish brown gravelly clay loam about 6 inches thick. The subsoil extends to a depth of 17 inches. It is very pale brown and pale yellow gravelly clay loam. The underlying material is weakly cemented limestone interbedded with thin layers of indurated limestone. The soil is moderately alkaline and calcareous throughout. Typically, the areas of Rock Outcrop consist of exposures of limestone bedrock. There is some soil material in the narrow fractures in the rock. In some areas, however, the rock is flat and is covered by soil material as much as 3 inches thick. Typically, the surface layer of the Comfort Soil is dark brown extremely stony clay about 4 inches thick. The subsoil extends to a depth of 11 inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone. The soil is moderately alkaline and noncalcareous throughout. The soils in this complex are well drained. Surface runoff is medium to rapid. Permeability is moderately slow in the Brackett Soil and slow in the Comfort Soil. The available water capacity is very low. Water erosion is a severe hazard.

The Lewisville Silty Clay consists of deep, gently sloping soil on stream terraces. Typically, the surface layer is dark grayish brown silty clay about 15 inches thick. The subsoil to a depth of 33 inches

is light brown silty clay, and to a depth of 63 inches is reddish yellow silty clay. The soil is moderately alkaline and calcareous throughout. This soil is well drained, surface runoff is medium, and permeability is moderate.

The Medlin-Eckrant Association consists of very shallow to shallow and deep soils on uplands in the Edwards Plateau Land Resource Area. There are narrow limestone ledges at the top of some slopes. The Medlin and Eckrant soils each make up 20 to 80 of a mapped area. Together, on the average, they make up about 95 percent of the mapped area. A typical area is 50 percent Medlin soil and 45 percent Eckrant soil. Typically, the Medlin soil has a grayish brown surface layer about 11 inches thick that is stony clay in the upper part and clay in the lower part. The subsoil, from 11 to 50 inches, is light yellowish brown clay that has yellowish brown and olive yellow mottles. The underlying material to a depth of 80 inches is light gray shaly clay that has yellow and olive yellow mottles. The soil is moderately alkaline and calcareous throughout. The Medlin soils is well drained. Surface runoff is rapid. Permeability is very slow. Water enters rapidly when the soil is dry and cracked and very slow when it is wet. Water erosion is a severe hazard. Typically, the surface layer of the Eckrant soil is very dark gray extremely stony clay about 16 inches thick. The underlying material is fractured limestone bedrock. The soil is moderately alkaline and noncalcareous throughout. The Eckrant soil is well drained. Surface runoff is rapid. Permeability is moderately slow. Water erosion is a severe hazard.

The Orif Soils, Frequently Flooded consist of deep nearly level soils on flood plains of large creeks and rivers. These soils are adjacent to the stream channels. Typically, the surface layer is grayish brown moderately alkaline gravelly loamy sand about 20 inches thick. The underlying layer to a depth of 60 inches is very gravelly loamy sand stratified with very gravelly sand, very gravelly sandy loam, and loam. These soils are well drained. Flooding occurs several times in most years and is of very brief duration. Floodwaters are swift and destructive. Surface runoff is slow, permeability is rapid.

Narrative Description of the Site Geology

The project site consists of approximately 2,400 acres of land located along and north of Loop 337 and east and west of River Road in New Braunfels, Texas. An overall view of the area is shown on Plates 1 through 9 in Appendix A. The project site exists as ranch land used to graze cattle and is the main ranching operation for the Word-Borchers Ranch. The project site has a very well developed soil layer on the property giving way to relatively few rock outcrops and dense stands of native grasses. Frost GeoSciences, Inc. after finding large piles of bulldozed rubble within 40 year old stands of trees, researched historic aerial photography and made note that the property appears to have undergone numerous episodes of land clearing dating back at least 40 to 50 years. These historic land clearing operations appear to have culled much of the rock rubble from the surface. The majority (80+%) of the 2,400 acre ranch appears to have been bulldozed at some point with many areas having been cleared repeatedly. This clearing process has produced many small non karst closed depressions resulting from pulling trees out and plucking boulders. There are so many of these across the property that it is not practical to itemize them within this report. The areas that have not been cleared historically appear to be along steep slopes and cliffs, and within major drainage areas. The majority of the site appears to support a thick soil cover and as a result very few potential recharge features were encountered when compared to the size of the property.

The variations in the vegetative cover across the project site are visible in the 2010 aerial photographs on Plates 8 and 9 in Appendix A and in the site visit photographs included in Appendix B. One hundred and forty eight Potential Recharge Features (PRF's) were identified during our site inspection. Nineteen of these are considered sensitive by Frost GeoSciences, Inc. The sensitive features are highlighted on the Geologic Assessment Tables on pages 4 through 10.

Non-Karst Closed Depressions (CD)

Potential Recharge Features S-1, S-2, S-10, S-14, S-22, S-57, S-58, S-87, S-90, S-93, and S-118, consist of notable non-karst closed depressions created by historic bulldozing on the property. These

features are typical of the thousands of similar features and appear to have been created by either the removal of trees or the plucking of boulders. Typically these feature are relatively small (less than 10 feet in any dimension and usually only a foot or two deep). Potential Recharge Features S-9, S-30, S-42, S-79, S-122, S-124, S-128, S-131, and S-132 are non-karst closed depressions consisting of excavated stock ponds used to water livestock. These features vary greatly in both size and shape, however, all of these features show evidence of ponding water for prolonged periods of time. PRF's S-9 and S-124 were holding water at the time of our site inspections. Potential Recharge Feature S-94 is a non-karst closed depression consisting of a stream scour adjacent to Blieders Creek. The bottoms of all of these features are lined with clay and show evidence of holding water. These 22 features are not considered sensitive by FGS. These features score a 15 on the Geologic Assessment Table.

Potential Recharge Feature S-145 consists of large non-karst closed depression created behind the Flood Control Dam within Pasture 3. This non-karst closed depression showed evidence of rapid infiltration into the subsurface after several heavy rainfall events during June and September. Due to the overall size of this feature and the rate that the feature drains into the subsurface, additional points were added for a ZONE rating. This feature is considered sensitive by FGS. This feature scores a 60 on the Geologic Assessment Table.

Manmade Features in Bedrock (MB)

Potential Recharge Features S-4 through S-8, S-11, S-15 through S-21, S-24 through S-26, S-28, S-32 through S-37, S-43, S-47, S-48, S-50, S-53, S-55, S-56, S-59 through S-63, S-65 through S-68, S-71, S-72, S-75, S-76, S-80 through S-86, S-95 through S-108, and S-148 are manmade features in bedrock consisting of sanitary sewer manholes along two sewer outfall lines. The two sewer outfall lines combine within Blieders Creek at Potential Recharge Feature S-67. These 64 features are not considered sensitive by FGS. These features score a 37 on the Geologic Assessment Table.

Potential Recharge Features S-29, S-40, S-41, S-78, S-115, S-127, S-129, S-130, and S-137

consist of existing or recently drilled water wells. PRF's S-40 and S-127 are operational and in use at this time. PRF's S-29, S-78, and S-129 are wells associated with old windmills and do not appear to be operational at this time. The remaining PRF's are recently drilled wells consisting of open holes with no casing. These appear to be associated with either testing the groundwater availability or are planned as future water supply wells for livestock. These 9 features are considered sensitive by FGS. These features score a 65 on the Geologic Assessment Table.

Potential Recharge Feature S-39 consists of an area that had been excavated down to bedrock and used as quarry materials for roads on the ranch. This feature is not considered sensitive by FGS. This feature scores a 34 on the Geologic Assessment Table.

Potential Recharge Feature S-45 consists of an area of limestone cobbles and boulders. It is believed that the cobbles and boulders were the left over spoils from the excavation of a nearby sanitary sewer lift station. This feature is not considered sensitive by FGS. This feature scores a 37 on the Geologic Assessment Table.

Potential Recharge Feature S-46 consists of an old abandoned sanitary sewer lift station. The lift station was abandoned after the remaining sewer outfall line was constructed. This feature is not considered sensitive by FGS. This feature scores a 37 on the Geologic Assessment Table.

Potential Recharge Features S-51 and S-119 consist of areas along existing sewer lines that occur within stream channels where the scour of the stream has eroded compacted material out of the sewer trench. The scour at PRF S-51 also occurs in conjunction with an area of highly weathered and altered limestone increasing the probability of rapid infiltration into the subsurface. These 2 features are considered sensitive by FGS. These features score a 45 and 55 respectively on the Geologic Assessment Table.

Potential Recharge Feature S-117 consists of a large erosion scour located at the discharge pipe for the flood control dam along Blieders Creek. This feature was inspected after heavy rains in September and did not show evidence of standing water. This feature is considered sensitive by FGS. This feature scores a 45 on the Geologic Assessment Table.

Cave (C)

Potential Recharge Feature S-64 consists of a relatively small cave located near a hilltop in Pasture 2. The cave opening is approximately 2 feet wide and 3 feet long and has an initial drop of approximately 5 feet. An area of stressed vegetation around the cave opening indicated that the air inside the cave may not be suitable for long term or even short term occupation so no attempt was made to investigate the interior of the cave beyond what could be seen from the surface. A deflated area approximately 30 feet wide, 50 feet long and 3 feet deep was noted around the cave entrance. This is likely the result of soil erosion into the cave. This feature is considered sensitive by FGS. This feature scores a 60 on the Geologic Assessment Table.

Solution Cavity (SC)

Potential Recharge Features S-3, S-12, S-13, S-23, S-27, S-31, S-44, S-69, S-73, S-74, S-88, S-113, S-116, S-121, S-125, S-140, and S-141 consist of solution cavities of various dimensions. A machete was used to probe the depth of the features and determine the nature of the infilling. These cavities all contained a hard clay plug preventing rapid infiltration of water into the subsurface. This was somewhat expected given the extensive soil development across the property. These 17 features are not considered sensitive by FGS. These features score a 29 to 35 on the Geologic Assessment Table.

Potential Recharge Feature S-38 consists of an area of dissolved and scoured limestone outcrop associated with the spillway for the flood control dam. Some of the scours and dissolved limestone extended 3 to 4 feet down and none were noted holding water, even after periods of heavy rains, indicating rapid infiltration into the subsurface. This feature is considered sensitive by FGS. This feature scores a 50 on the Geologic Assessment Table.

Potential Recharge Features S-54, S-126, S-143, and S-144 consists of zones of solution cavities within cliff faces. These represent horizontal features that trend upgradient as they extend into the bedrock cliff. FGS is of the opinion that these features represent discharge features associated with the outlets of subsurface bedding plain features. These 4 features are not considered sensitive by FGS. These features score between a 32 and 37 on the Geologic Assessment Table.

Sinkhole (SH)

Potential Recharge Features S-77 consists of three small closed depressions (sinkholes) likely resulting from soil deflation within a 100 X 100 foot area and two caves approximately 100 feet apart within the same area. The depressions were infilled with loose soil and leaves, rock rubble and some hard packed clay in areas. Evidence of rapid infiltration into the subsurface was noted in some areas. These features are considered sensitive by FGS. These features score a 65 on the Geologic Assessment Table.

Potential Recharge Features S-92, S-109, S-114, S-138, and S-142 consists of areas believed to be the result of soil deflation into the subsurface creating karst formed closed depressions or sinkholes. For these purposes, it is not believed by FGS that these are sinkholes in the classic sense that a collapse has occurred creating a depression. Rather, FGS believes these features are purely the result of erosion of surface soils into subsurface features. These features all contained small areas in the bottoms with no grasses indicating that water ponds for prolonged periods of time. As a result, it did not appear that these features provide rapid infiltration into the subsurface. These 5 features are not considered sensitive by FGS. These features score a 32 to 39 on the Geologic Assessment Table.

Fault (F)

Potential Recharge Features S-146 and S-147 consist of faults noted on the Bureau of Economic Geology, Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000). Evidence of PRF S-146 was somewhat confirmed in the field with fractures noted at PRF S-133, however, the bearings of the fractures were not the same as the strike of the proposed fault. No fractures or other field evidence associated with PRF S-147 were noted in the field at the time of the on-site inspection. These 2 features are not considered sensitive by FGS. These features score a 35 on the Geologic Assessment Table.

Other Natural Bedrock Feature (O)

Potential Recharge Features S-49, S-52, S-70, S-91, S-112, S-123, S-133, S-134, S-135, S-136, and S-139 consist of natural rock outcrops with either vuggy limestone (O^{VR}) or fractured bedrock (O^{FR}). The

sizes of these outcrops and the strike of the fractures varied greatly. These 11 features are not considered sensitive by FGS. These features score a 14 to 35 on the Geologic Assessment Table.

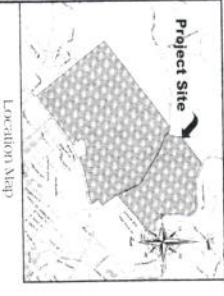
Potential Recharge Features S-110, S-111, and S-120 consist of natural rock outcrops with fractured bedrock (O^{FR}). The sizes of these outcrops and the strike of the fractures varied greatly. These 3 features are considered sensitive by FGS. These features score a 40 on the Geologic Assessment Table.

According to the USGS 7.5 Minute Quadrangle Maps, New Braunfels West, Texas Sheet (1988), New Braunfels East, Texas Sheet (1994), Sattler, Texas Sheet (1994), and Hunter, Texas Sheet (1994), the elevation of the project site ranges from 630 feet at the eastern corner of the project site within the River Pasture along the Guadalupe River to 845 feet along the western property lines of Pastures 1 and 3. These elevations are calculated above mean sea level (AMSL). According to topographic data obtained from Pape Dawson Engineers, the elevations on the project site range from 625 feet at the eastern corner of the project site to 845 feet along the western property lines of Pastures 1 and 3. A copy of the site plan, indicating the boundary of the project site and the elevations, is included on Plate I in Appendix A and on the Site Geologic Map in Appendix C of this report.

According to the Bureau of Economic Geology, Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000), the project site is covered by the Cretaceous Edwards Person Limestone.

The Cyclic and Marine Member of the Cretaceous Edwards Person Limestone consists of mudstone to packstone and milliolid grainstone with chert. The member is characterized by massive beds of limestone to relatively thin beds of limestone with some crossbedding. The Cyclic and Marine Member forms a few caves some that are laterally extensive. Overall thickness ranges from 80 to 90 feet thick.

The Leached and Collapsed Member of the Edwards Person Limestone consists of crystalline limestone, mudstone to grainstone with chert, and collapsed breccia. This member



Site Geologic Map

Geologic Site Assessment (GSA) for Residential Activities Development on the Edwards Aquifer Recharge Enhancement Zone for the The Granddahl Subdivision +/- 2,400 Acres New Braunfels, Texas

Frost Geosciences, Inc. Contract # FGS101039

Legend

- Fill - Fill Material
- Qal - Alluvium
- Km - Alluvial Channel
- Kst - Large Trench Sludge
- NB1 - Black Limestone
- NB2 - Dark Red Clay
- NB3 - Carbonaceous Limestone
- NB4 - Limestone with Limestone
- NB5 - Edwards Aquifer Limestone
- NS - Carboniferous
- NSP - Carboniferous
- NSF - Vertical Recrystallization
- NSV - Vertical Recrystallization
- NSW - Vertical Recrystallization
- NSX - Vertical Recrystallization
- NSY - Vertical Recrystallization
- NSZ - Vertical Recrystallization
- NSAA - Vertical Recrystallization
- NSAB - Vertical Recrystallization
- NSAC - Vertical Recrystallization
- NSAD - Vertical Recrystallization
- NSAE - Vertical Recrystallization
- NSAF - Vertical Recrystallization
- NSAG - Vertical Recrystallization
- NSAH - Vertical Recrystallization
- NSAI - Vertical Recrystallization
- NSAJ - Vertical Recrystallization
- NSAK - Vertical Recrystallization
- NSAL - Vertical Recrystallization
- NSAM - Vertical Recrystallization
- NSAN - Vertical Recrystallization
- NSAO - Vertical Recrystallization
- NSAP - Vertical Recrystallization
- NSAQ - Vertical Recrystallization
- NSAR - Vertical Recrystallization
- NSAS - Vertical Recrystallization
- NSAT - Vertical Recrystallization
- NSAU - Vertical Recrystallization
- NSAV - Vertical Recrystallization
- NSAW - Vertical Recrystallization
- NSAX - Vertical Recrystallization
- NSAY - Vertical Recrystallization
- NSAZ - Vertical Recrystallization

Horizontal Scale: 1 inch = 400 feet
 Vertical Scale: 1 inch = 20 feet
 North Arrow
 Date: 10/1/2011
 Project: The Granddahl Subdivision +/- 2,400 Acres
 Location: New Braunfels, Texas



Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), Effective June 1, 1999

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

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

Regulated Entity Name: NBISD - Elementary School 11

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

Customer Information

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

Contact Person: Mark Liggett

Entity: NBISD

Mailing Address: 1000 N Walnut

City, State: New Braunfels, TX

Zip: 78130

Telephone: 840-643-5700

Fax: _____

Email Address: _____

The appropriate regional office must be informed of any changes in this information within 30 days of the change.

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

Contact Person: Richard Underwood, P.E.

Texas Licensed Professional Engineer's Number: 117843

Entity: N/A

Mailing Address: 10101 Reunion Place, Suite 400

City, State: San Antonio, TX

Zip: 78216

Telephone: 210-321-3415

Fax: _____

Email Address: richard.underwood@kimley-horn.com

Project Information

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

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

5. 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)

6. Existing and anticipated infiltration/inflow is 0 gallons/day. This will be addressed by: N/A.

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

- The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached.
 The WPAP application for this development was submitted to the TCEQ on 10/02/2023, but has not been approved.
 A WPAP application is required for an associated project, but it has not been submitted.
 There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

<i>Pipe Diameter(Inches)</i>	<i>Linear Feet (1)</i>	<i>Pipe Material (2)</i>	<i>Specifications (3)</i>
6"	786 (SSWR Line A)	SDR 26 PVC Pipe	ASTM D-3034
6"	192 (SSWR Line B)	SDR 26 PVC Pipe	ASTM D-3034

Total Linear Feet: 978

- (1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
 (2) Pipe Material - If PVC, state SDR value.
 (3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

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

- Existing
- Proposed

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

- The City of New Braunfels standard specifications.
- Other. Specifications are attached.

11. No force main(s) and/or lift station(s) are associated with this sewage collection system.
- A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.
13. There are no deviations from straight alignment in this sewage collection system without manholes.
- Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes.** A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.
- For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

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

Table 2 - Manholes and Cleanouts

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		

PLEASE SEE NEXT SHEET FOR COMPLETE LIST OF CLEANOUTS AND MANHOLES

Table 2 – Manholes and Cleanouts

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Cleanout</i>
SSWR Line A	C9.1	0+00.00	Existing Manhole
SSWR Line A	C9.1	1+80.41	Proposed Manhole
SSWR Line A	C9.1	2+17.69	Proposed Manhole
SSWR Line A	C9.1	3+01.26	Proposed Manhole
SSWR Line A	C9.1	3+53.58	Proposed Manhole
SSWR Line A	C9.1	5+29.22	Proposed Manhole
SSWR Line A	C9.1	6+65.05	Proposed Manhole
SSWR Line A	C9.1	7+43.99	Proposed Manhole
SSWR Line A	C9.1	7+85.86	Proposed Manhole
SSWR Line B	C9.2	0+81.87	Proposed Manhole
SSWR Line B	C9.2	1+23.96	Proposed Manhole
SSWR Line B	C9.2	1+91.41	Proposed Manhole

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
	Of		
	Of		
	Of		

- 15. Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.
- 16. The maximum spacing between manholes on this project for each pipe diameter is no greater than:

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

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

- 17. All manholes will be monolithic, cast-in-place concrete.
- The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

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

- 18. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 40'.
- 19. The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
- 20. Lateral stub-outs:
 - The location of all lateral stub-outs are shown and labeled.
 - No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

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

22. 100-year floodplain:

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

Table 3 - 100-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

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

Table 4 - 5-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

24. Legal boundaries of the site are shown.

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

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

26. All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.
- There will be no water line crossings.
- There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

<i>Line</i>	<i>Station or Closest Point</i>	<i>Crossing or Parallel</i>	<i>Horizontal Separation Distance</i>	<i>Vertical Separation Distance</i>
Line A	1+99.69	Crossing	0	4.50

27. Vented Manholes:

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

Table 6 - Vented Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

28. Drop manholes:

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

Table 7 - Drop Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>
SSWR Line A	A	1+80.41	C9.1
SSWR Line A	E	5+29.22	C9.1
SSWR Line B	I	0+81.87	C9.2

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

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

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

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

31. Minimum flow velocity (From Appendix A)

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

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

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

Table 8 - Flows Greater Than 10 Feet per Second

<i>Line</i>	<i>Profile Sheet</i>	<i>Station to Station</i>	<i>FPS</i>	<i>% Slope</i>	<i>Erosion/Shock Protection</i>

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

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

Administrative Information

- 34. The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.
- 35. Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

<i>Standard Details</i>	<i>Shown on Sheet</i>
Lateral stub-out marking [Required]	of
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) [Required]	C12.4 of
Alternate method of joining lateral to existing SCS line for potential future connections [Required]	of
Typical trench cross-sections [Required]	C12.4 of
Bolted manholes [Required]	C12.4 of
Sewer Service lateral standard details [Required]	C12.4 of
Clean-out at end of line [Required, if used]	of
Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe >10 fps]	of
Detail showing Wastewater Line/Water Line Crossing [Required, if crossings are proposed]	C12.3 of
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [Required, if Flexible Pipe is used]	C12.4 of

Standard Details	Shown on Sheet
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	C12.4 of

36. All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.
37. All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
- Survey staking was completed on this date: _____
38. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
39. Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Richard Underwood, P.E. (Authorized Agent)

Date: 10/17/2023

Place engineer's seal here:



Signature of Licensed Professional Engineer:

Appendix A-Flow Velocity Table

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

Table 10 - Slope Velocity

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

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

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

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)

n = Manning's roughness coefficient (0.013)

Rh = hydraulic radius (ft)

S = slope (ft/ft)

Engineering Design Report

NBISD – ELEMENTARY SCHOOL 11



OCTOBER 2023 | VERSION 1

Prepared By:

Kimley»»Horn

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PROJECT DESCRIPTION

The purpose of this report is to provide information related to the design and installation of a new 6" sewer main. The 6" sewer main will service the proposed elementary school buildings.

The proposed sewer main will be constructed from the existing sewer manhole located near Word Pkwy and wrap around the front and the west side of the proposed elementary school. The sewer main is a six (6) inch gravity-fed PVC, extending 978 linear feet. The proposed sewer main is designed in accordance with the requirements of TCEQ Chapter 217 Subchapter C per 217.61 (i) (2). The main will discharge into the existing public sewer line near Word Pkwy owned by New Braunfels Utilities (NBU), west of the NBISD property.

The proposed sewer main will be required to provide sewer service for the proposed developments on the elementary school campus, with an approximate service area of 11.5 acres. Development will take place in a single phase.



**Location Exhibit
N.T.S.**

The site chosen for the sewer main is located on the south side of the proposed elementary school location, extending from west to east, with all of the proposed main being on the NBISD property. The proposed sewer main will be located outside of the 100-year flood plain.

CALCULATIONS FOR SIZING SYSTEM

This project will require a load of 56 LUEs for the proposed elementary school campus. The sewage flow will be disposed by a gravity system to the Gruene Wastewater Treatment Center.

FLOW CALCULATIONS

The computations shown in Appendix II are the basis for the design of the proposed main. The following table shows the calculations for the Peak Wet Weather.

Peak Dry Weather Flow (Q_{pd}):	$((18+(0.0206 \cdot F)^{0.5})/[4+(0.0206 \cdot F)^{0.5}]) \cdot F$		
	$Q_{pd} = 14.14$	=	14.1 gpm
Average Dry Weather Flow:	$F=3.3$ (based on NBU Specification for peak dry weather flow – NBU 2.10.3)	=	3.3 gpm
Minimum Dry Weather Flow:	$(0.2 \times (0.0144 \times 3.3)^{0.198}) \times 3.3$	=	0.36 gpd
		=	0.00025 gpm
1 LUE = 210 GPD (Average Sewage Flow)			
= 693 GPD (Peak Flow)			
	Infiltration = 750 Gallons/Acre Served		
	Total LUEs = 56		
		=	20,385 gpd
Average Flow =	$56 \text{ LUEs} \cdot (210 \text{ gpd/LUE}) + (750 \text{ gpd/acre}) \cdot 11.5 \text{ acres}$	=	14.16 gpm
		=	47,433 gpd
Peak Flow =	$56 \text{ LUEs} \cdot (693 \text{ gpd/LUE}) + (750 \text{ gpd/acre}) \cdot 11.5 \text{ acres}$	=	32.95 gpm

CAPACITY CALCULATIONS

**Manning's
Equation:**

$$Q = (k/n)(A)(R^{2/3})(S^{1/2})$$

$$V = Q/A$$

Where: Q = Discharge

k = 1.49 ft^{1/3}/sec (constant)

n = Manning's Roughness Coefficient (unitless)

A = Flow Area (ft²)

R = Hydraulic Radius (Ft)

S = Slope (ft/ft)

V = Velocity of Flow (ft/sec)

Nominal Size = 6"

**Characteristics
of 6" ASTM
D3034, SDR 26,
PVC Sewer Pipe**

Outer Diameter = 6.275"

Minimum Wall Thickness = 0.241"

Inner Diameter = 5.79"

$$A = (\pi(D^2))/4 = (\pi(5.79^2))/4 = 26.33 \text{ in}^2$$

$$= 18.19 \text{ ft}$$

$$P = \pi \cdot D = \pi \cdot 5.79 = 1.52 \text{ ft}$$

$$R = R/P = 0.18 \text{ ft}^2/1.52 \text{ ft} = 0.12 \text{ ft}$$

S = 0.0105

$$= 0.51 \text{ cfs}$$

$$Q = ((1.49 \text{ ft}^{1/3}/\text{sec})/0.013) \cdot 0.18 \text{ ft}^2 \cdot 0.12 \text{ ft}^{2/3} \cdot 0.0105^{1/2} = 229 \text{ gpm}$$

$$v = 0.51 \text{ cfs} / 0.18 \text{ ft}^2 = 2.83 \text{ ft/s}$$

$$Q_{\max} = 0.51 \text{ cfs} (0.90) (7.48 \text{ gallons/1 cf})(60 \text{ sec/1 min}) = 206 \text{ gpm}$$

SUMMARY AND CONCLUSIONS

This project will construct approximately 978 LF of six (6) inch PVC sewer main, beginning at an existing sewer manhole (start of SSWR Line A) located near Word Pkwy to the west of the proposed elementary school and extend east ±180 LF before reaching a proposed manhole and extending to the east again for 37 LF to reach another proposed manhole. The line will then extend to the south for 84 LF before reaching a proposed manhole in which the sewer line continues to the southeast for 52 LF to another proposed manhole. From this manhole the sewer line continues 176 LF before reaching a drop manhole, directly south of the face of the proposed elementary school administration wing. The line continues to the east 136 LF to a proposed manhole from which it continues 79 LF to the northeast to a proposed manhole. SSWR Line A continues 42 LF before ending at a proposed manhole at STA 7+85.86, directly east of the east wing of the proposed elementary school. SSWR Line B begins at the manhole located at STA 1+80.41 along SSWR Line A and continues north 82 LF to a manhole located near in the drive, directly to the west of the west wing of the proposed elementary school building. This line continues north and slightly to the west for 42 LF before reaching a proposed manhole and continuing 67 LF in the same direction before ending at a proposed manhole located at STA 1+91.41. This is the end of the proposed sewer collection system. The proposed main follow design requirements laid forth by the Texas Commission on Environmental Quality (TCEQ) and New Braunfels Utilities (NBU), such as minimum pipe slopes of 0.50% for six (6) inch lines. In addition, with a minimum pipe slope of 1.05%, the system will have significant capacity to convey the projected average and peak flows. All pipes are designed with a slope that will provide a velocity of at least 2 ft/s while flowing full.

NEW BRAUNFELS UTILITIES STANDARD CONSTRUCTION NOTES:

GENERAL NOTES (REVISED 03/2020):

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THE PROJECT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURRENT NEW BRAUNFELS UTILITIES WATER SYSTEMS CONNECTION/CONSTRUCTION POLICY.
2. CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NEW BRAUNFELS UTILITIES ENGINEERING AT 830-698-8971 WITH AT LEAST TWO (2) WORKING DAYS (8 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE CONTRACTOR AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN WATER / WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UTILITY EASEMENTS OR PUBLIC ROW OF PROPOSED DEVELOPMENTS (AS APPLICABLE).
4. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS RESPONSIBILITY SHALL BE CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER AND ALL OTHER PARTIES HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEERS DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.
5. CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY NBU IN WRITING.
6. CONTRACTOR AND / OR CONTRACTORS 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.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND EXISTING UTILITIES (NOT ADJUSTED ON PLANS) COST OF RESTORATION, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.
9. CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
10. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BIDDING SCHEDULE. THIS INCLUDES THE INCURRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
11. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
12. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ, 31 TAC 313.4 AND 31 TAC 313.5.
13. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
14. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.
15. THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE RIGHT OF WAY ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OPERATIONS.
16. OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE, WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRIC LINE. THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN.
17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. CONTRACTORS SHALL CALL THE ONE CALL SYSTEM FOR WATER/WASTEWATER LOCATION.
18. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192 (B), GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
19. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. THE CONTRACTOR METHOD SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF THE TRAFFIC IN ONE DIRECTION. MATERIALS TO BE USED IN CONSTRUCTION SHALL BE REMOVED FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORKDAY.
20. PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATIONS AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:
 - a. WATER MAINS AND SERVICES
 - b. WASTEWATER MAINS AND SERVICES
21. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS PROVIDED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
22. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. WASTEWATER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO NBU CONNECTION AND CONSTRUCTION POLICY MANUAL.
23. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ 31 TAC 217. CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES) WITHIN THE PROJECT WORK AREA IN ORDER TO VERIFY THE CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS FOR THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
24. UTILITY TRENCH COMPACTION WITH STREET R.O.W.
 - a. ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER.
 - b. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE.
 - c. EACH LAYER OF MATERIAL SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-115-E, TEX-114-E, TEX-115-E.
 - d. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR.
 - e. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TEST DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
 - f. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

ADDITIONAL NBU NOTES

- PLEASE NOTE NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRIC, WATER AND WASTEWATER ATTRIBUTES, SOME OF WHICH MUST BE MEASURED PRIOR TO BACKFILL DURING CONSTRUCTION. GPS POINTS ARE REQUIRED FROM THE DEVELOPER'S CONTRACTOR OR ENGINEER. A MINIMUM OF THREE (3) COORDINATE POINTS FOR GEOREFERENCING ARE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE AND ELEVATION POINTS SHALL BE MEASURED TO MAP GRADE. PLEASE REFERENCE NBU'S WATER CONNECTION POLICY FOR ADDITIONAL CAD DELIVERABLE REQUIREMENTS.
1. VERTICAL BENDS AND EDGES OF STEEL CASINGS (IF APPLICABLE) PRIOR TO BACKFILL.
 2. HORIZONTAL BENDS PRIOR TO BACKFILL.
 3. TEES PRIOR TO BACKFILL.
 4. FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL.
 5. FIRE HYDRANTS (TOP FLANGE).
 6. VALVES.
 7. METERS (TOP CENTER OF BOX).
 8. BLOW OFF ASSEMBLIES.
 9. CORNER SLAB OF ALL WATER TANKS AND THE ISOLATION GATE VALVE ON THE WATER TANK.
- REQUIRED MEASUREMENTS FOR THE WASTEWATER SYSTEM INCLUDE:
1. MANHOLES.
 2. CLEANOUTS.
 3. CORNER SLAB OF ALL LIFT STATIONS.
- REQUIRED MEASUREMENTS FOR THE ELECTRIC SYSTEM:
1. POLES.
 2. TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOG).
 3. PULL BOXES.
 4. STREET LIGHTS.
- COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

UTILITY TRENCH COMPACTION

- ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SEAWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL 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 85% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-114-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TEST 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.

UTILITY CROSSING NOTE TO CONTRACTOR

ALL WATER CROSSING SEWER/STORM LATERALS, INDICATED ON THE UTILITY CROSSING TABLE BY AN ASTERISK (*), SHALL BE LOWERED TO MAINTAIN A MINIMUM OF 2' OF CLEARANCE PER WATER LOWERING DETAIL ON SHEET C12-3

WASTEWATER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE

1. IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TEST THE EXISTING MANHOLES BEFORE CONSTRUCTION AFTER THE PROPOSED MANHOLE(S) HAS BEEN BUILT. THE CONTRACTOR SHALL RE-TEST THE EXISTING SYSTEM TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. (NO SEPARATE PAY ITEM).
2. ALL RESIDENTIAL WASTEWATER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND A CLEANOUT SHALL BE INSTALLED AT THE PROPERTY LINE. SERVICES TO LOTS WILL EXTEND FOUR (4) FEET PAST THE UNDERGROUND ELECTRIC CONDUIT IF INSTALLED IN THE FRONT EASEMENT. ALL SEWER CLEANOUTS THAT LEAD TO NBU MAINS SHALL BE INSTALLED WITH A PROTECTIVE UTILITY AND PIVOTING MANHOLE POLE DURING TIME OF CONSTRUCTION.
3. PIPE BEDDING OF WASTEWATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SPECIFICATIONS. SECONDARY BACKFILL OF WASTEWATER LINES SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH, NO ROCKS OR STONES HAVING ANY DIMENSION LARGER THAN 6 INCHES AT THE LARGEST DIMENSION.
4. ALL WASTEWATER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS AS PER 30 TAC 217.53(C)(2).
5. FOR WASTEWATER LINES LESS THAN 24" IN DIAMETER, SELECT BACKFILL MATERIAL SHALL BE PLACED IN TWO LIFTS. A. THE FIRST LIFT SHALL BE SPREAD UNIFORMLY AND SIMULTANEOUSLY ON EACH SIDE AND UNDER THE SHOULDERS OF THE PIPE TO THE MID POINT OR SPRING LINE OF THE PIPE. B. THE SECOND LIFT SHALL BE PLACED TO A DEPTH AS SHOWN ON THE PIPE BACKFILL DETAIL FOR PIPES LARGER THAN 24" 12" MAXIMUM LIFTS SHALL BE USED.
6. ALL MANHOLES MUST BE WATER TIGHT, EITHER MONOLITHIC CAST-IN-PLACE CONCRETE STRUCTURES OR PREFABRICATED MANHOLES APPROVED BY NBU. THE MANHOLES SHALL HAVE WATER TIGHT RINGS AND COVERS. WHEREVER THEY ARE WITHIN THE 10 YEAR FLOODPLAIN, THE MANHOLE COVERS SHALL BE BOLTED EVERY THIRD MANHOLE IN SEQUENCE SHALL HAVE AN ALTERNATE MEANS OF VENTING: 30 TAC 215.5(C)(3)(A) AND 30 TAC 217.55(2).
7. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS TWO INCHES (2") ABOVE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREA. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
8. ALL MANHOLES UNLESS APPROVED BY NBU ENGINEERING, ARE TO HAVE COVERS WITH 32" OPENINGS.
9. WASTEWATER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS OR MECHANICAL "BOOT TYPE" JOINT AS APPROVED BY NBU.
10. WASTEWATER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
11. IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TEST THE EXISTING MANHOLES BEFORE CONSTRUCTION AFTER THE PROPOSED MANHOLE(S) HAS BEEN BUILT. THE CONTRACTOR SHALL RE-TEST THE EXISTING SYSTEM TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. (NO SEPARATE PAY ITEM).
12. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES/MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ 31 TAC 217.53(D)(1)(A)(II).
13. JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC 217.53(D)(1)(A)(II).
14. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE WASTEWATER LINES.
15. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
 - A. PULL MANHOLE
 - B. PERFORM AIR TEST
 - C. CLEANING OF ANY DEBRIS
 - D. FLUSHING OF SYSTEM
 - E. TV INSPECTION (WITHIN 72 HOURS OF FLUSHING).
16. A MINIMUM OF 3 FEET OR COVER IS TO BE MAINTAINED OVER THE WASTEWATER MAIN AND LATERALS AT SUBGRADE. OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
17. WASTEWATER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLE IN ACCORDANCE WITH NBU CONNECTION & CONSTRUCTION POLICY MANUAL.
18. TCEQ AND EPA REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF WASTEWATER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT'S PLAN AND PROFILE SHEETS. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY NBU WATER SYSTEMS.
19. ALL MANHOLES NOT WITHIN PAVED STREETS SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE CONE PER NBU DETAIL DRAWING #229.
20. ALL MANHOLES OVER THE EDWARDS AQUIFER RECHARGE ZONE SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE CONE PER NBU DETAIL DRAWING #229.

BENCHMARK LIST

BM #1	ELEVATION: 826.52'
SET MAG WITH WASHER	STAMPED "NEW SURVEYING"
BM #3	ELEVATION: 808.73'
SET MAG WITH WASHER	STAMPED "NEW SURVEYING"

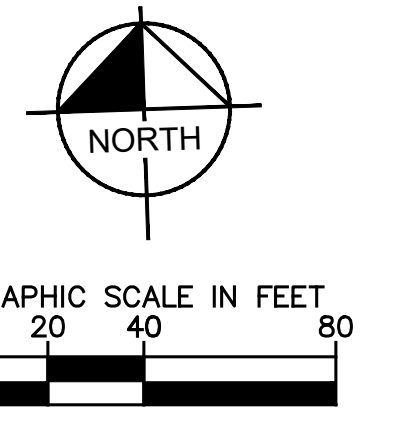
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF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

REFER TO THE SURVEY PREPARED BY KFW ENGINEERS & SURVEYING FOR THE LOCATION OF THESE BENCHMARKS. ACCORDING TO THE SURVEY OF THE ELEVATIONS WERE ESTABLISHED UTILIZING NAVD83 (GEOID 12A)

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

OVERALL SEWER MAIN TRUNK LINE UTILITY PLAN

PACKAGE	VOLUME
Job No: 019355-06-01	Sheet No: C9.0
Drawn By:	
Date: 10/05/2023	



LEGEND	
SS	PROPOSED SANITARY SEWER LINE
W	PROPOSED WATER LINE
GAS	PROPOSED GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND COMMUNICATION LINE
SD	PROPOSED STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
OE	EXISTING OVERHEAD ELECTRIC LINE
SD	EXISTING STORM DRAIN LINE
SM	PROPOSED SANITARY SEWER MANHOLE
SH	PROPOSED CLEANOUT
HF	PROPOSED FIRE HYDRANT
WM	PROPOSED WATER METER
BP	PROPOSED BACKFLOW PREVENTER
GM	PROPOSED VALVE
PM	PROPOSED GAS METER
PP	PROPOSED POWER POLE
TF	PROPOSED TRANSFORMER
CI	PROPOSED CURB INLET
SM	EXISTING SANITARY SEWER MANHOLE
SH	EXISTING CLEANOUT
HF	EXISTING FIRE HYDRANT
WM	EXISTING WATER METER
GM	EXISTING VALVE
PP	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 6" FROM BUILDING ENVELOPE. SEE ARCHITECT AND MEP PLANS FOR CONTINUATION.
4. VALVES 12" AND UNDER WILL BE RESILIENT SEAT GATES (RSVG).
5. WATER METER AND SERVICE TO BE INSTALLED BY NBU AT OWNER'S EXPENSE.
6. FIRE SPRINKLER LINE SHALL BE SIZED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR.
7. REFER TO NBU DESIGN GUIDELINES FOR ALL WATER METER AND FIRE HYDRANT DETAILS.
8. REFER TO NBU 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) REGARDING ALL UTILITY CROSSINGS REQUIREMENTS.
11. CONTRACTOR TO CHECK THAT EXISTING WATER LINES MEET NBU MINIMUM COVER. IF NOT, CONTRACTOR TO INSTALL ADEQUATE VERTICAL BENDS WHERE NECESSARY TO MAINTAIN MINIMUM COVER.
12. REFERENCE WATER AND SANITARY SEWER NOTES ON SHEET C12.3-C12.4 FOR ADDITIONAL REQUIREMENTS.
13. REFERENCE SHEET C12.3-C12.4 WATER AND SEWER STANDARD DETAILS.

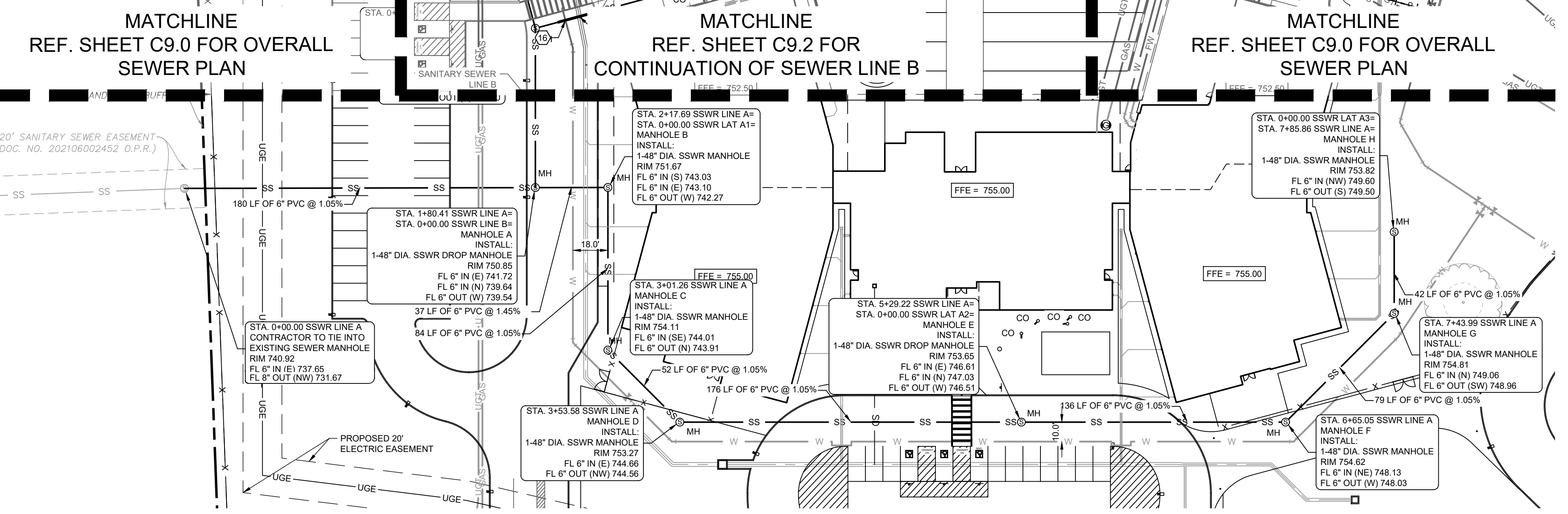
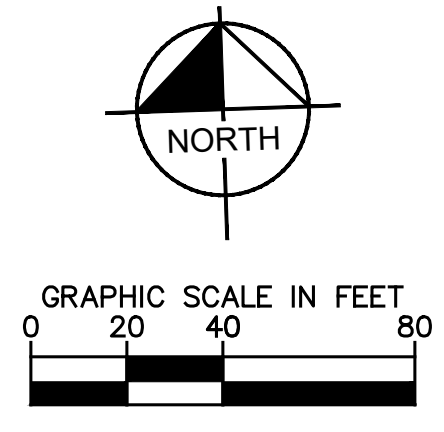
UTILITY CROSSING TABLE

CROSSING ID	HIGHER UTILITY SIZE, TYPE, AND INVERT ELEVATION	LOWER UTILITY SIZE, TYPE, AND CROWN ELEVATION	SPACING BETWEEN PIPES (FT)
1	24" STORM = 743.77	6" SEWER = 742.61	1.16
2	6" STORM = 747.11	6" SEWER = 743.76	3.35
3	6" STORM = 747.83	6" SEWER = 744.02	3.81
4	12" STORM = 747.64	6" SEWER = 746.03	1.61
5	12" STORM = 748.96	6" SEWER = 747.68	1.28
6	6" SEWER = 743.54	24" STORM = 741.49	1.74
7	6" SEWER = 743.56	6" STORM = 742.47	1.09
8	6" SEWER = 743.78	24" STORM = 742.52	1.26
9	6" SEWER = 748.89	12" STORM 747.92	1.77
10	24" STORM = 742.89	6" SEWER = 741.37	1.52
11	18" STORM = 744.15	6" SEWER = 742.47	1.68
12	24" STORM = 739.24	10" WATER = 737.20	2.04
13	6" SEWER = 743.29	10" WATER = 741.23	2.06
14	6" SEWER = 744.58	10" WATER = 742.52	2.06
15	6" SEWER = 743.29	10" WATER = 741.23	2.06
16	10" WATER = 744.05	6" SEWER = 741.24	2.81
17	10" WATER = 747.00	6" SEWER = 742.50	4.50
18	10" WATER = 749.50	24" STORM = 746.70	2.80
19	10" WATER = 749.33	24" STORM = 747.09	2.24
20	12" STORM = 747.46	10" WATER = 745.43	2.33
21	12" STORM = 748.85	10" WATER = 746.82	2.03
22	18" STORM = 743.92	10" WATER = 741.83	2.09
23	18" STORM = 749.11	10" WATER = 741.07	2.04
24	18" STORM = 740.36	10" WATER = 738.32	2.04
25	10" WATER = 743.92	12" STORM = 739.54	4.38
26	10" WATER = 745.86	12" STORM = 738.84	4.01
27	10" WATER = 745.86	12" STORM = 741.52	4.34

Kimley»Horn
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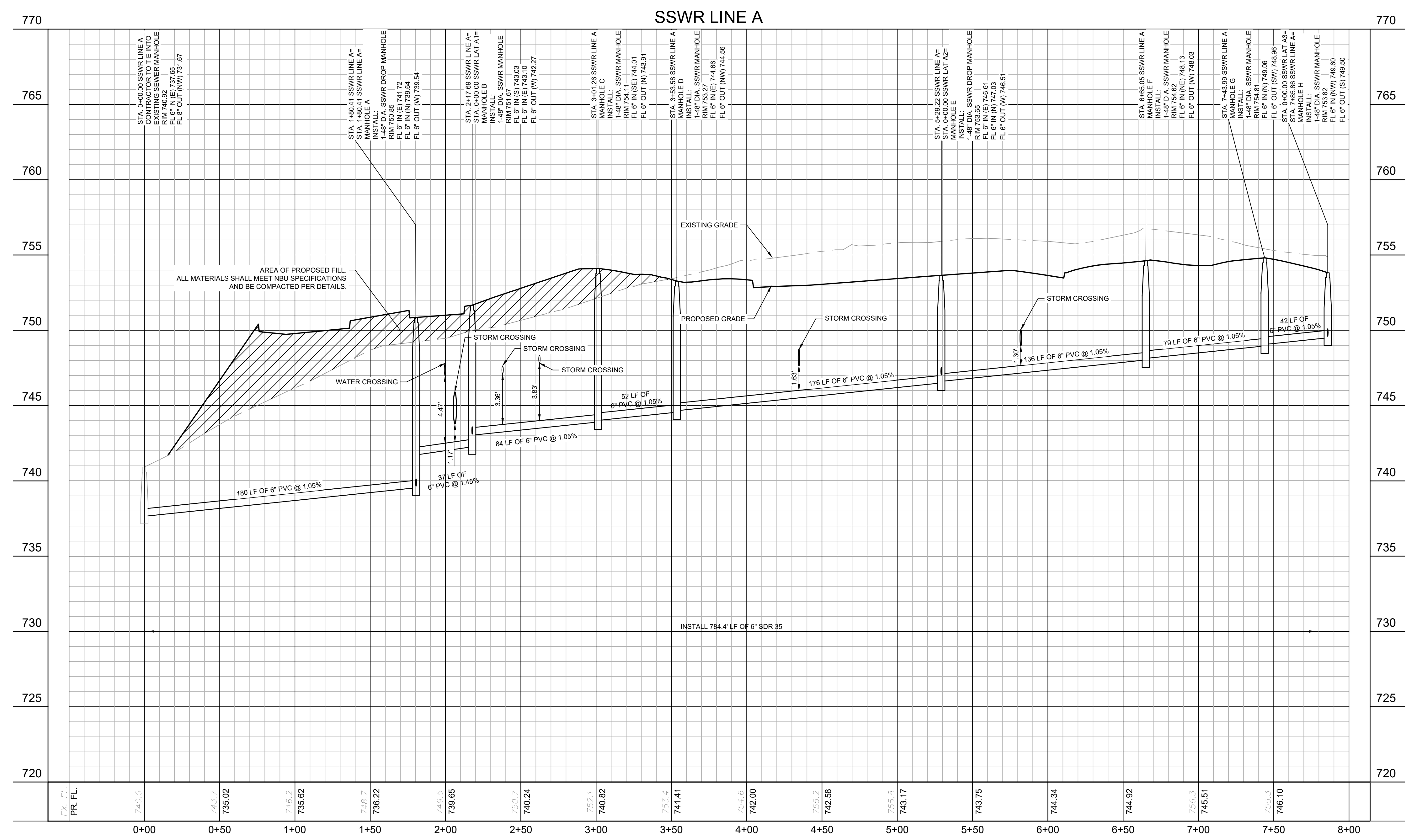
- NOTES**
- CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
 - ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
 - UTILITY CONNECTIONS TERMINATE 5' FROM BUILDING ENVELOPE. SEE ARCHITECT AND MEP PLANS FOR CONTINUATION.
 - VALVES 12" AND UNDER WILL BE RESILIENT SEAT GATE VALVES (RSV).
 - WATER METER AND SERVICE TO BE INSTALLED BY NBU AT OWNERS EXPENSE.
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 - REFERENCE WATER AND SANITARY SEWER NOTES ON SHEET C12.3-C12.4 FOR ADDITIONAL REQUIREMENTS.
 - REFERENCE SHEET C12.3-C12.4 WATER AND SEWER STANDARD DETAILS.

LEGEND

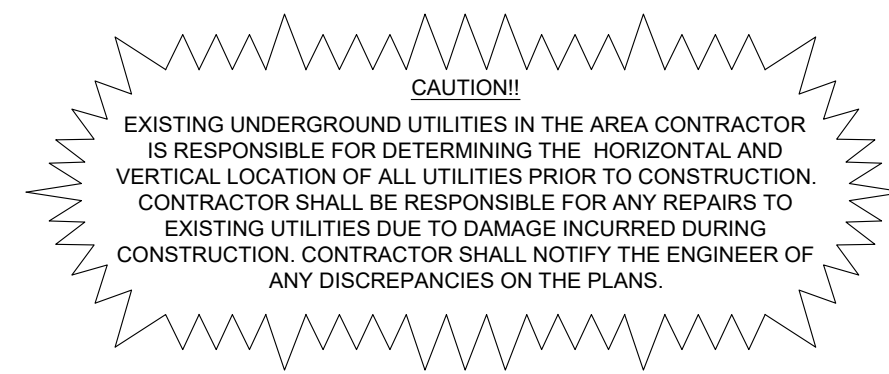
SS	PROPOSED SANITARY SEWER LINE
W	PROPOSED WATER LINE
GAS	PROPOSED GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND COMMUNICATION LINE
SS	PROPOSED STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
OHE	EXISTING OVERHEAD ELECTRIC LINE
SS	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
⊙	PROPOSED TRANSFORMER
⊙	PROPOSED CURB INLET
⊙	EXISTING SANITARY SEWER MANHOLE
⊙	EXISTING CLEANOUT
⊙	EXISTING FIRE HYDRANT
⊙	EXISTING WATER METER
⊙	EXISTING VALVE
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UTILITY CROSSING NOTE TO CONTRACTOR
 ALL WATER CROSSING SEWER/STORM LATERALS, INDICATED ON THE UTILITY CROSSING TABLE BY AN ASTERISK (*), SHALL BE LOWERED TO MAINTAIN A MINIMUM OF 2' OF CLEARANCE PER WATER LOWERING DETAIL ON SHEET C12.3

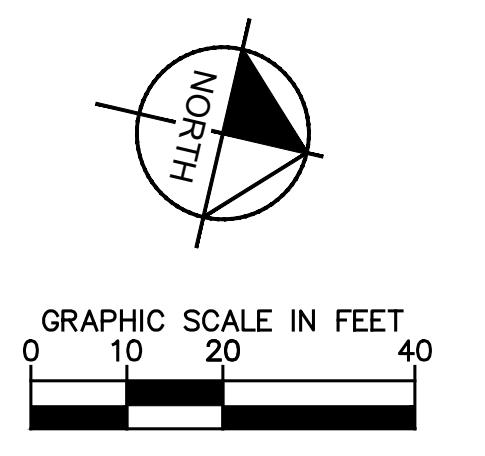
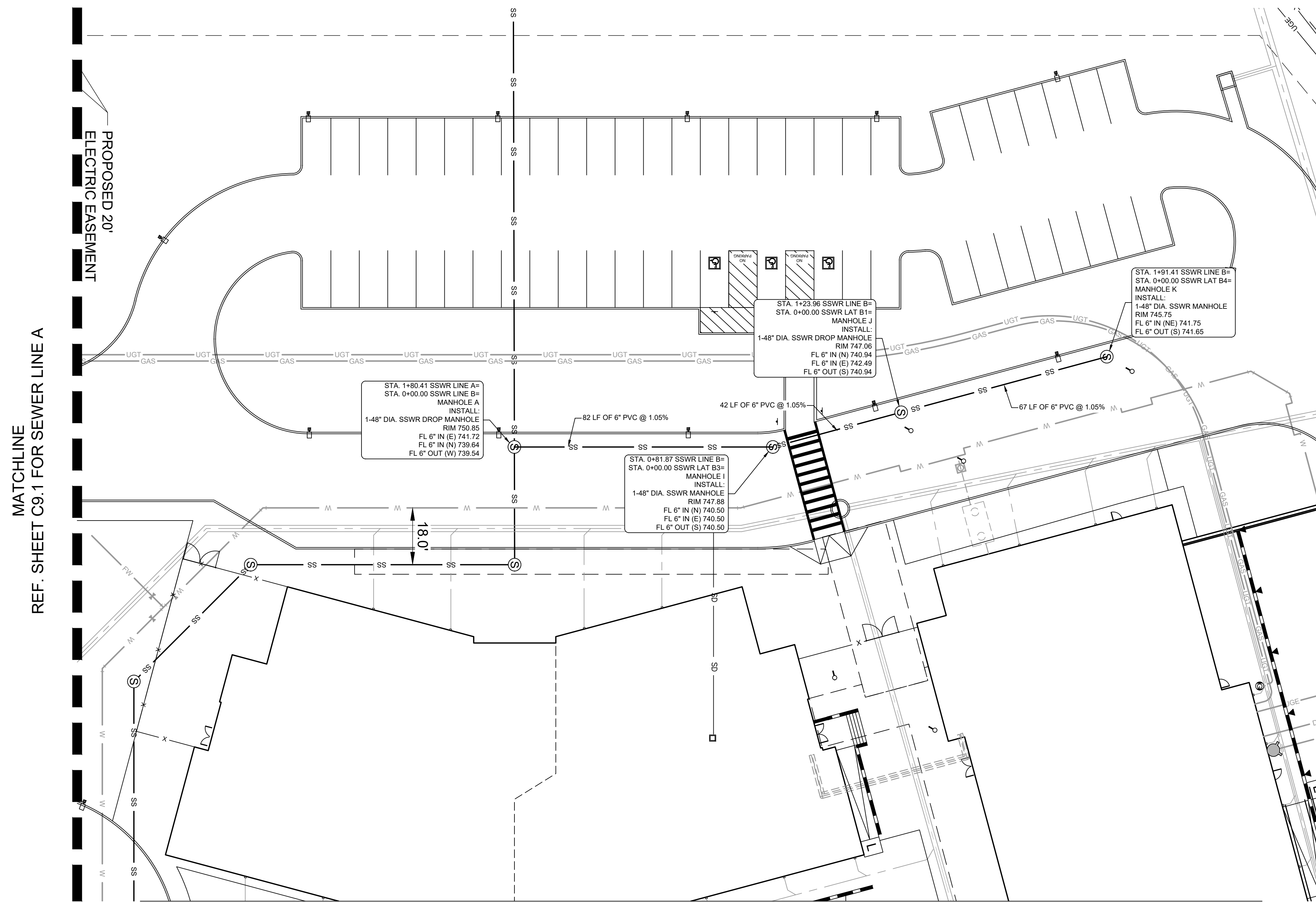


**NEW BRAUNFELS ELEMENTARY SCHOOL #11
 FOR NEW BRAUNFELS I.S.D.
 NEW BRAUNFELS, TEXAS**



SEWER UTILITY PLAN (1 OF 2)

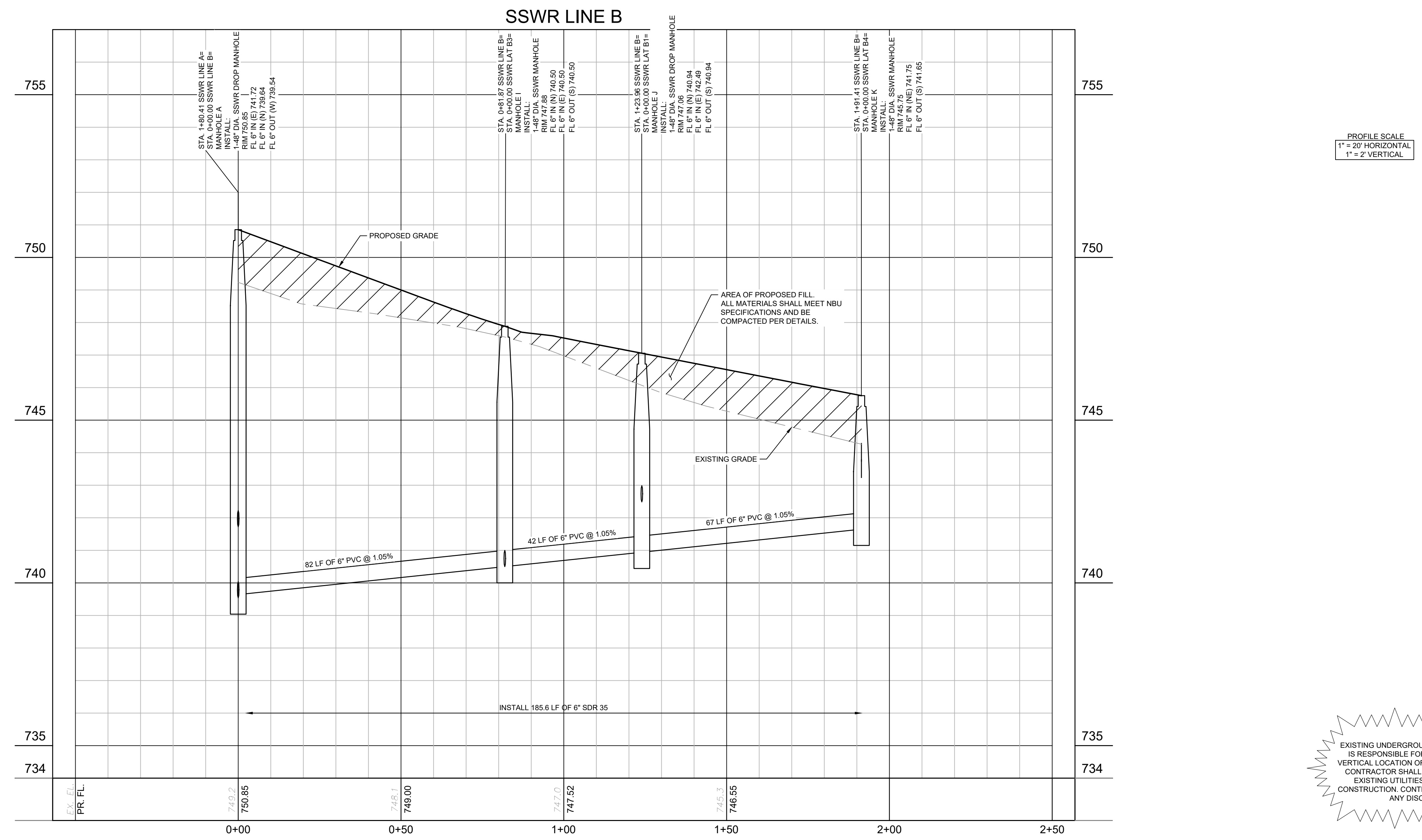
PACKAGE	VOLUME
Job No. 01935-06-01	Sheet No.
Drawn By:	C9.1
Date: 10/05/2023	



LEGEND

SS	PROPOSED SANITARY SEWER LINE
W	PROPOSED WATER LINE
GAS	PROPOSED GAS LINE
UG-E	PROPOSED UNDERGROUND ELECTRIC LINE
UG-T	PROPOSED UNDERGROUND TELECOMMUNICATION LINE
SD	PROPOSED STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
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GAS	EXISTING GAS LINE
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SM	PROPOSED SANITARY SEWER MANHOLE
CL	PROPOSED CLEANOUT
FH	PROPOSED FIRE HYDRANT
WM	PROPOSED WATER METER
BP	PROPOSED BACKFLOW PREVENTER
V	PROPOSED VALVE
FF	PROPOSED FITTING
GM	PROPOSED GAS METER
PP	PROPOSED POWER POLE
TR	PROPOSED TRANSFORMER
CI	PROPOSED CURB INLET
SM	EXISTING SANITARY SEWER MANHOLE
CL	EXISTING CLEANOUT
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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.

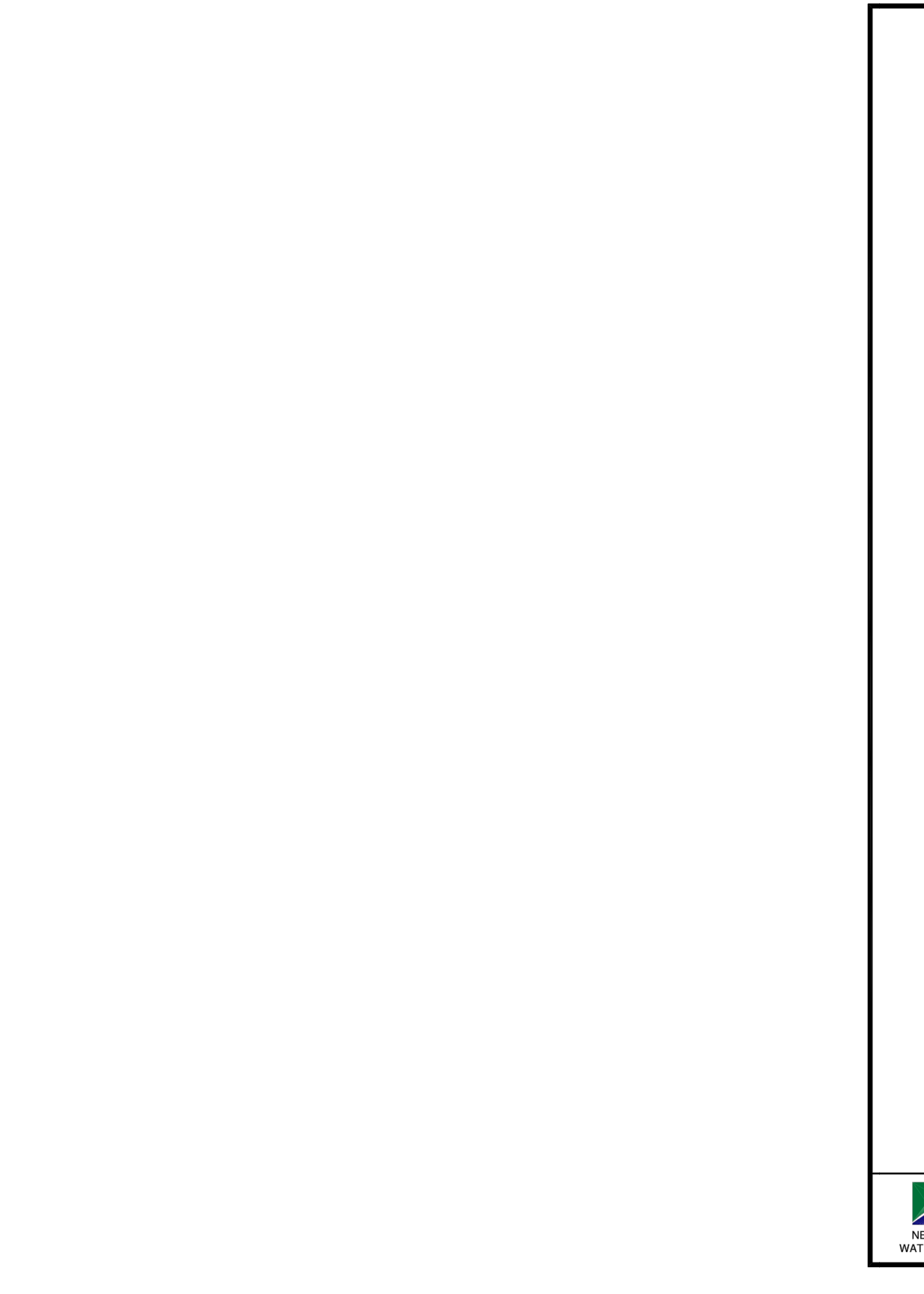
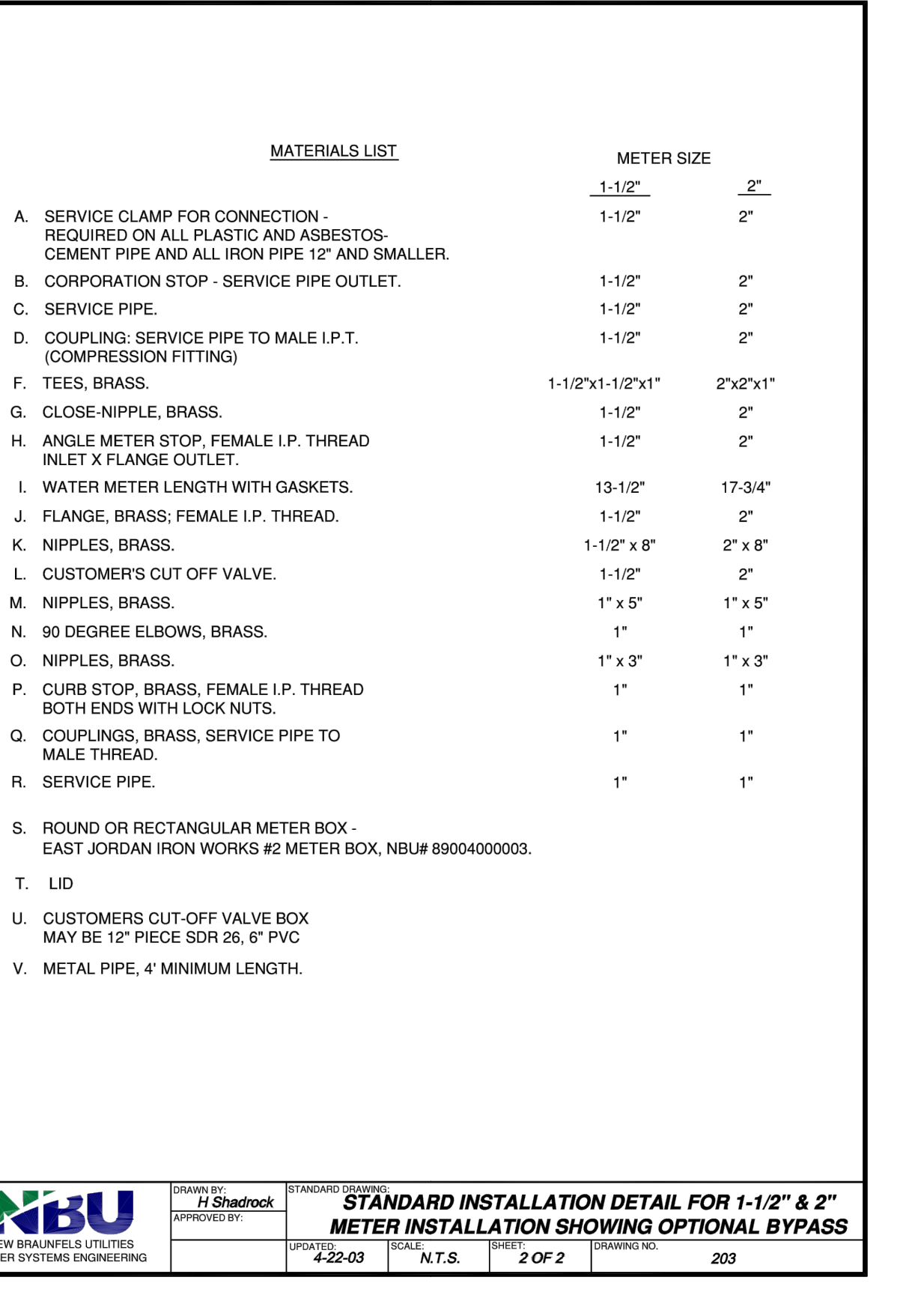
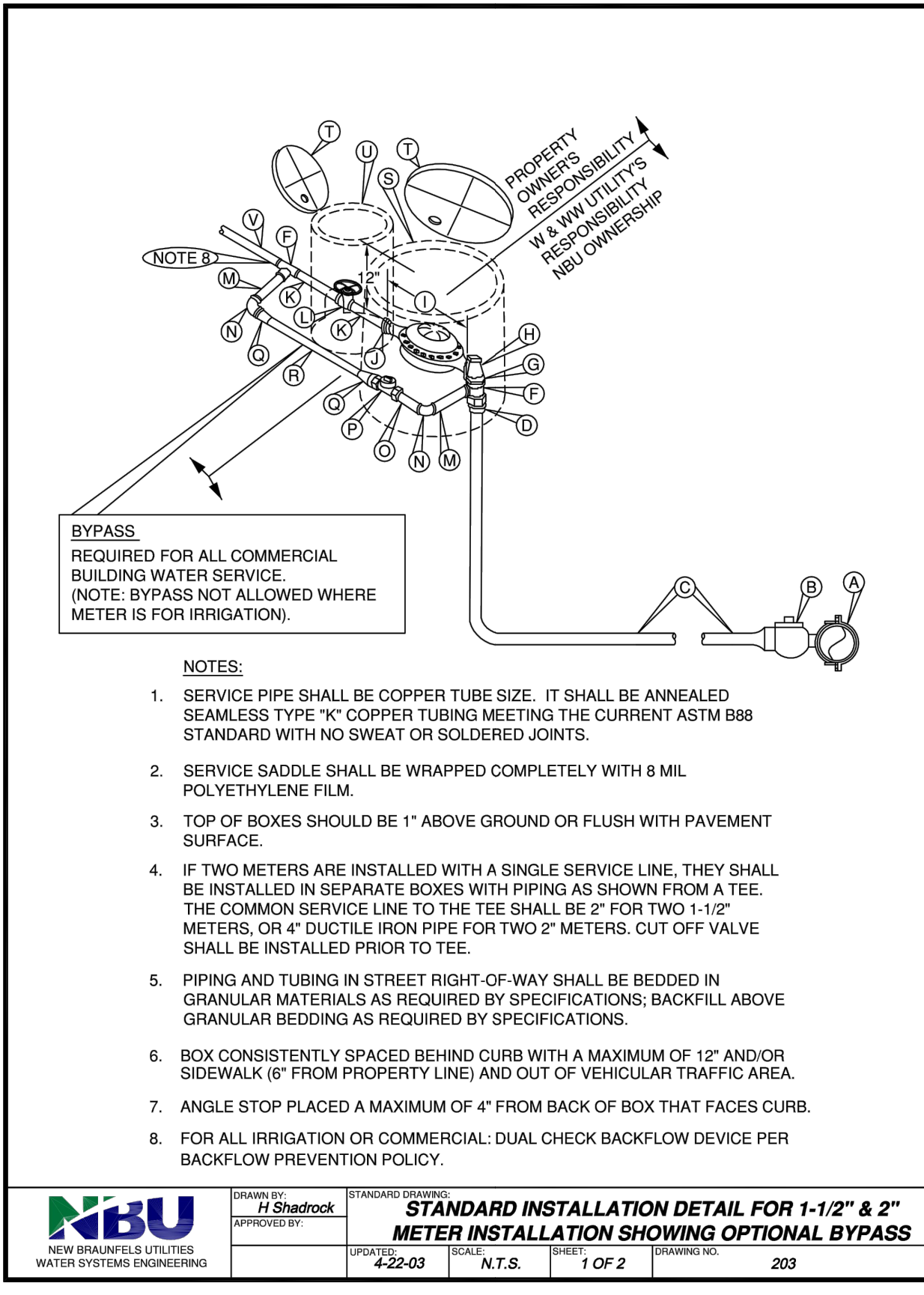
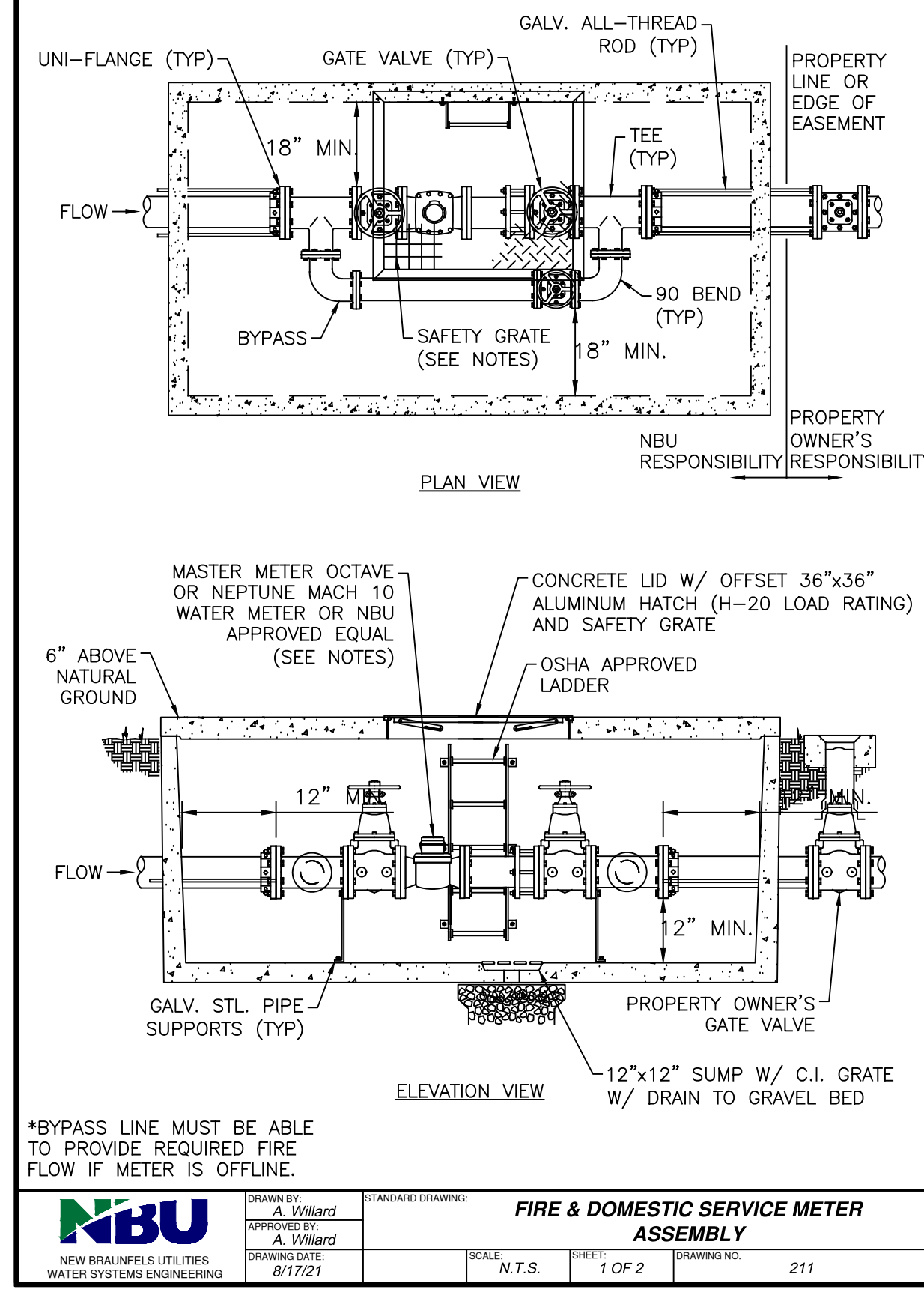
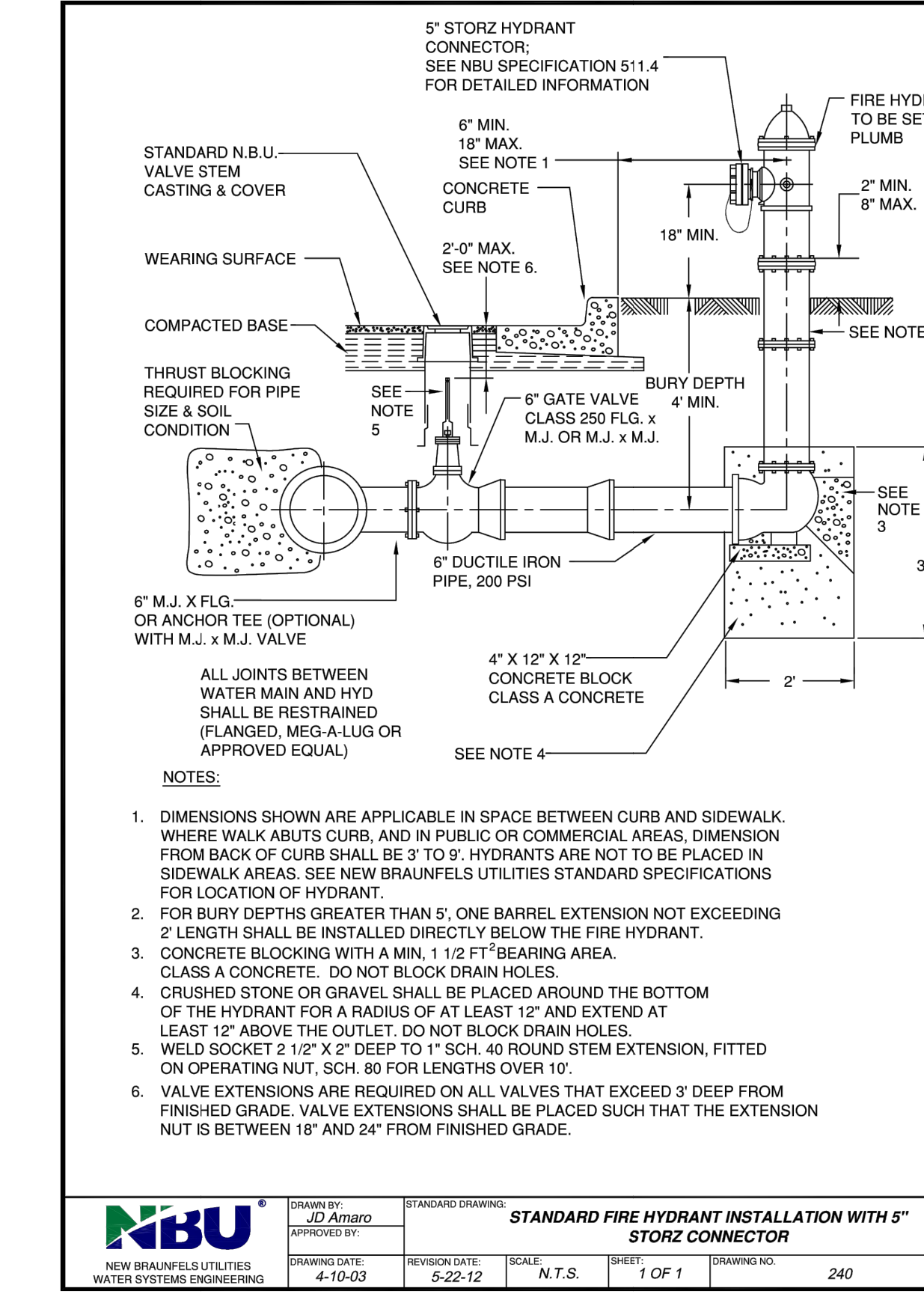
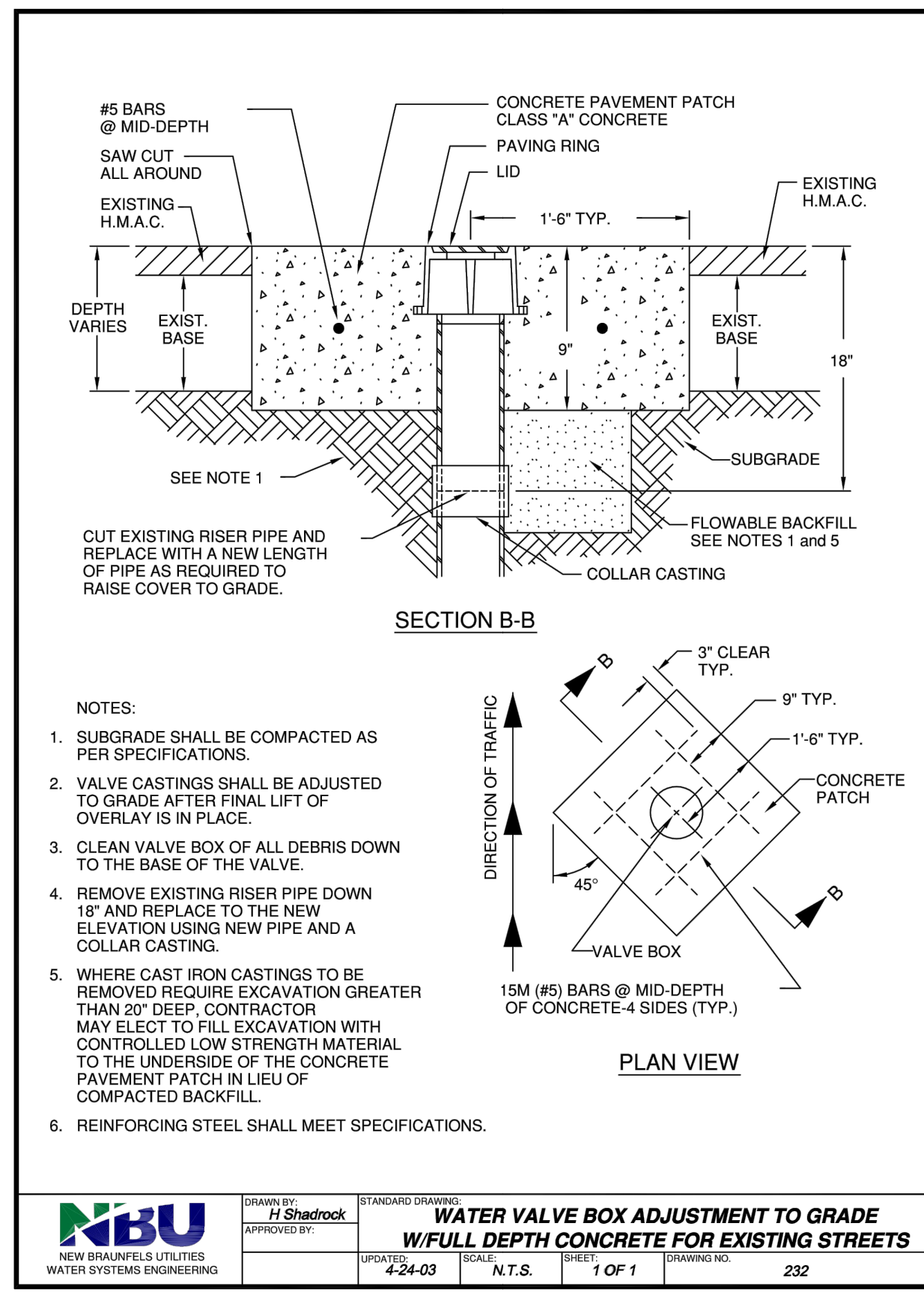
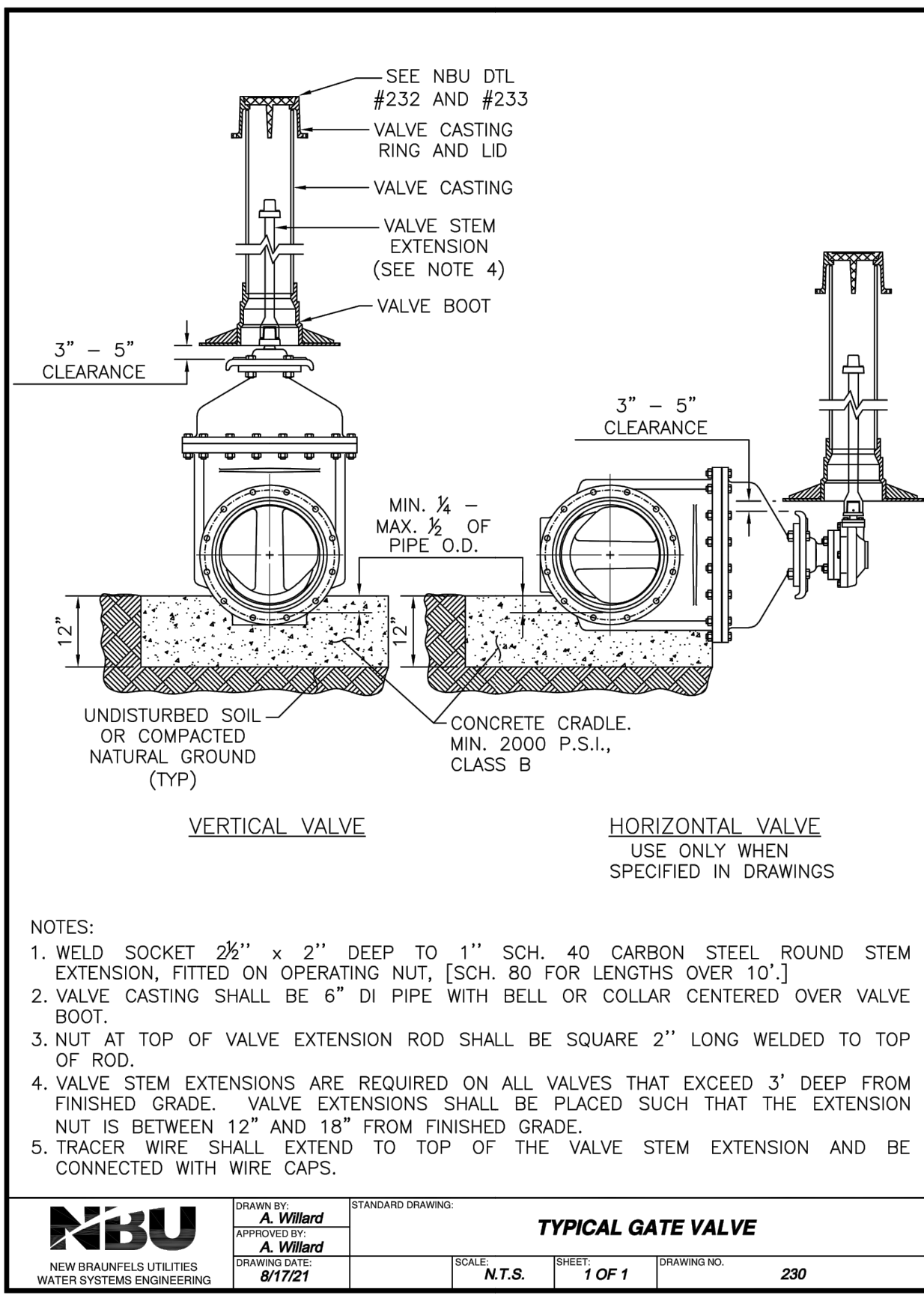
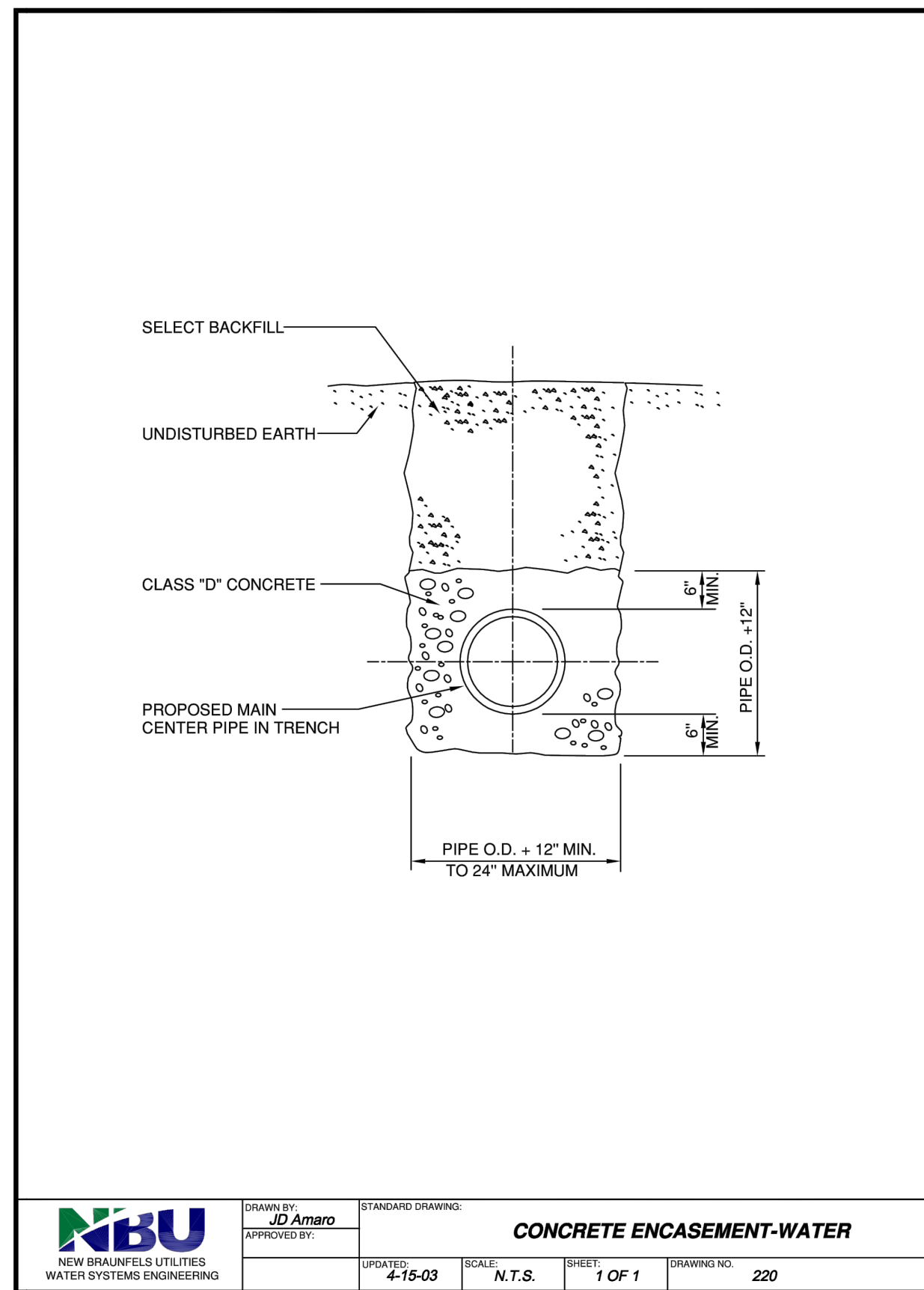
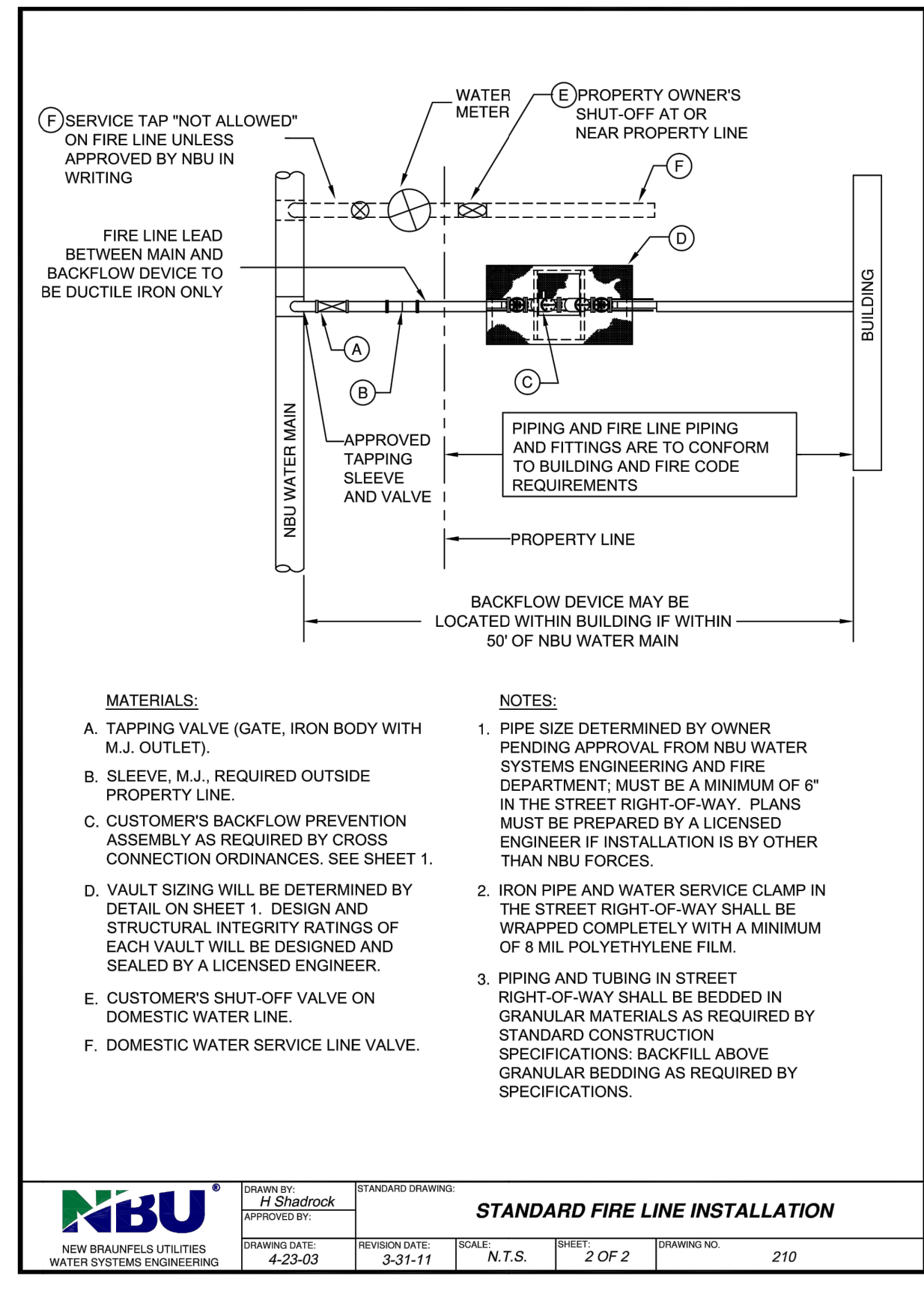
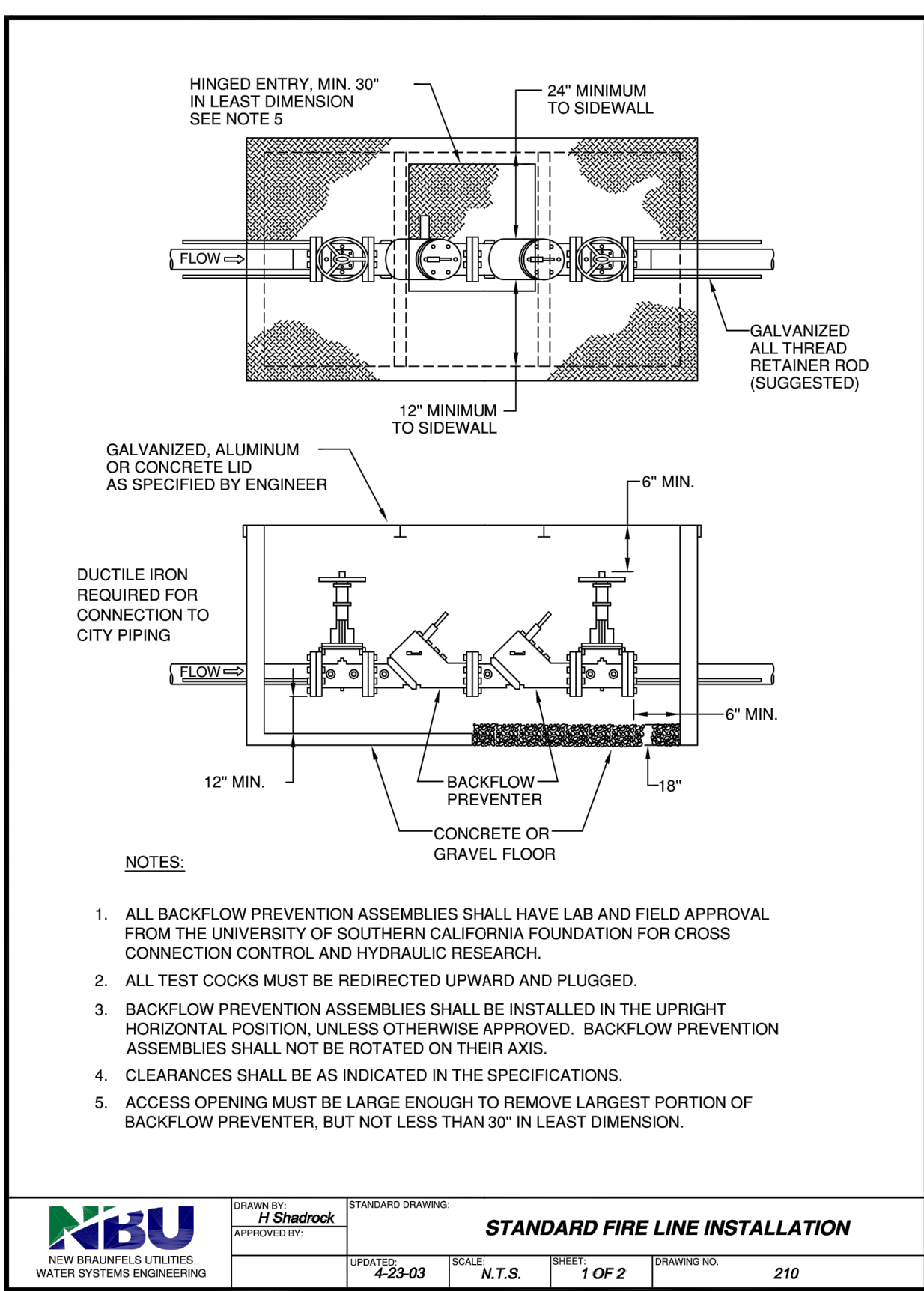
Project: **NEW BRAUNFELS ELEMENTARY SCHOOL #11 FOR NEW BRAUNFELS I.S.D. NEW BRAUNFELS, TEXAS**



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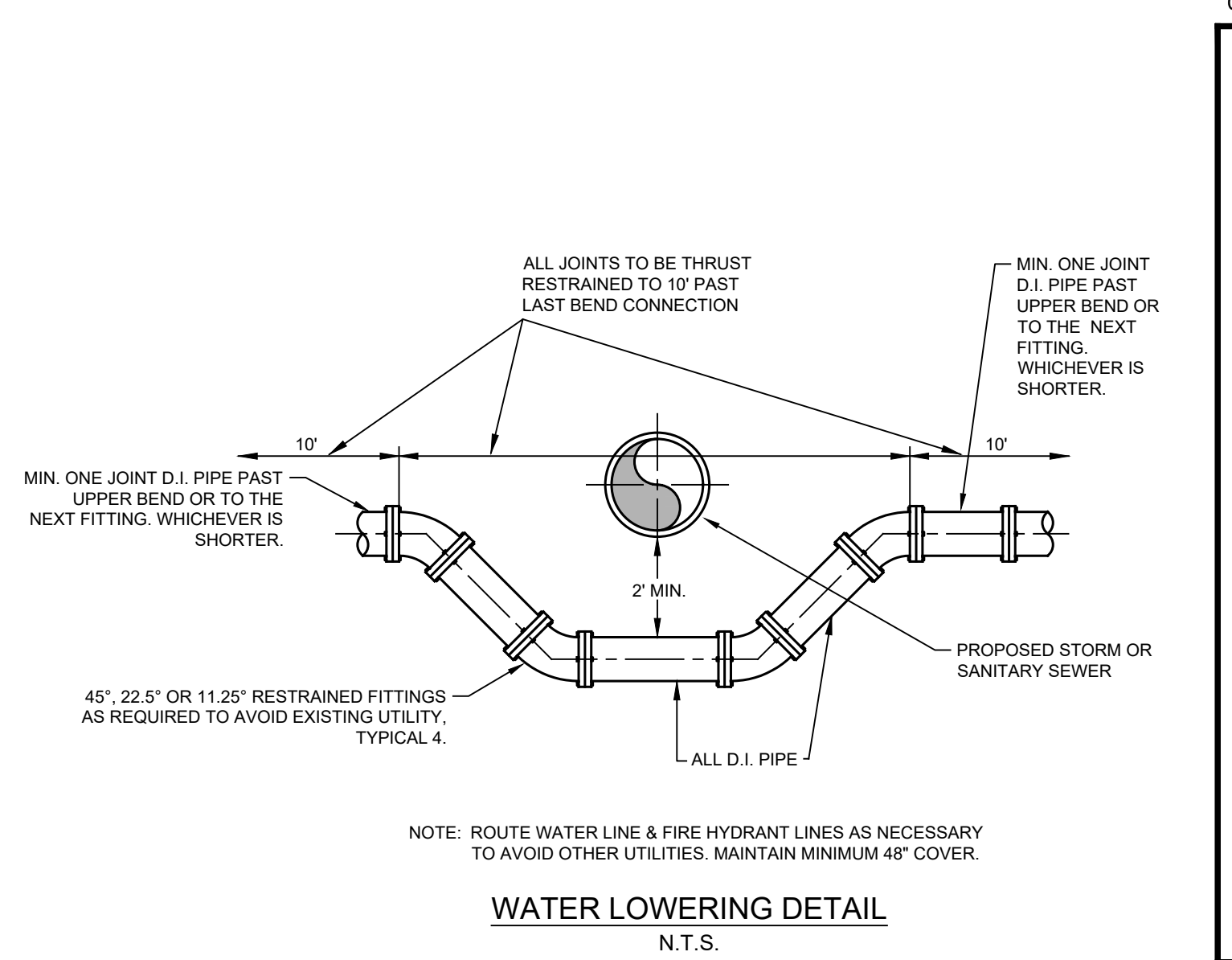
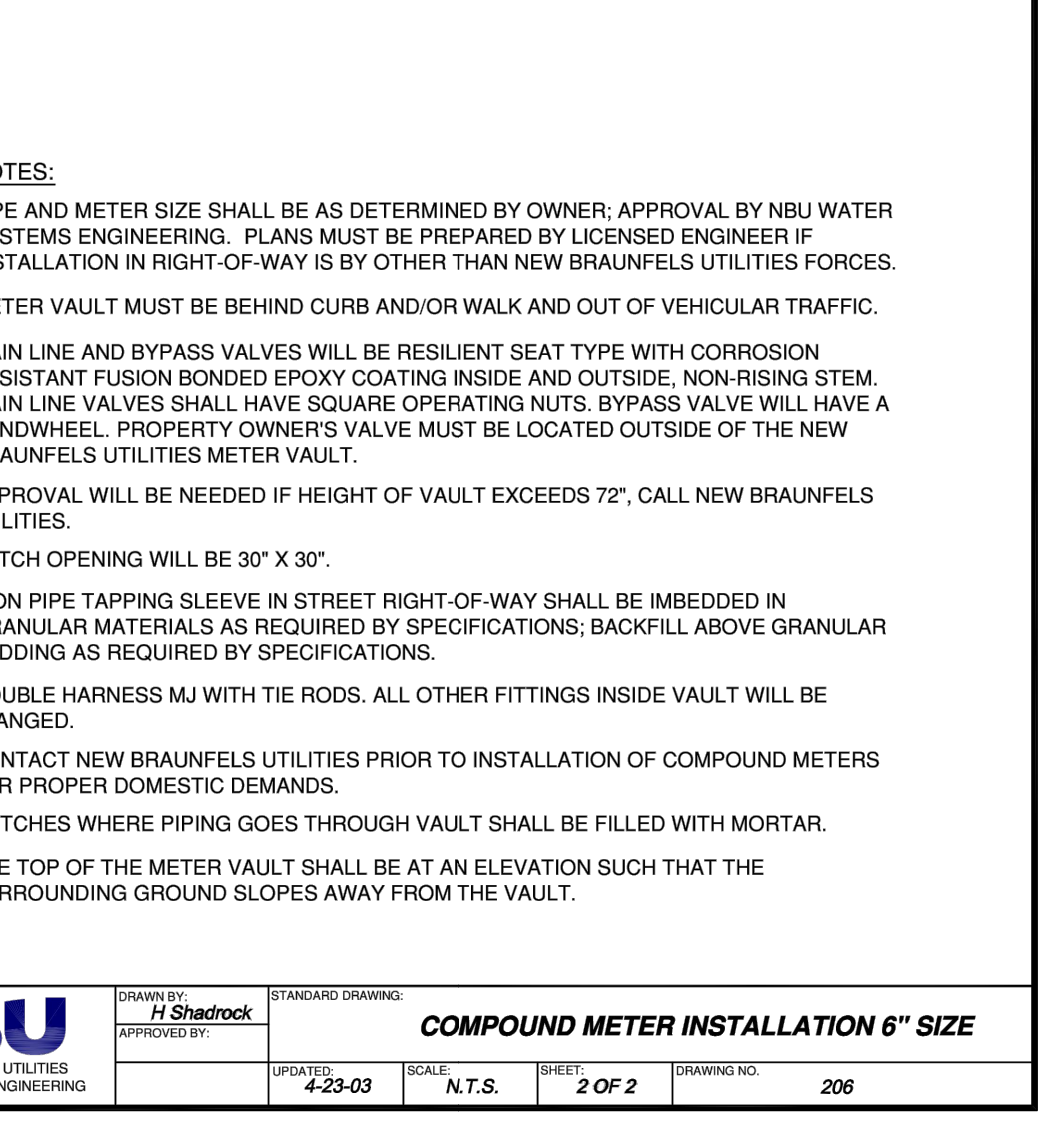
SEWER UTILITY PLAN (2 OF 2)

PACKAGE	VOLUME
Job No. 01935-06-01	Sheet No. C9.2
Drawn By:	Date: 10/05/2023



NO.	NAME	LENGTH
1	6" COMPOUND METER	24"
2	6" FLANGED x PLAIN END	12"
3	6" FLANGED COUPLING ADAPTER	5"
4	NBU 6" GATE VALVE SQUARE NUT	10.5"
5	6" x 6" x 6" FLANGED TEE	10"
6	PROPERTY OWNER'S 6" GATE VALVE SQUARE NUT	10.5"
7	6" FLANGED ELBOW 90°	
8	6" BYPASS GATE VALVE WITH HANDWHEEL	10.5"
9	6" BYPASS DUCTILE IRON PIPE	
10	6" FLANGED SPOOL	

*DIMENSIONS SUBJECT TO CHANGE, CHECK WITH INSPECTOR



DATE

REVISION

NEW BRAUNFELS ELEMENTARY SCHOOL #11 FOR NEW BRAUNFELS I.S.D. NEW BRAUNFELS, TEXAS

Project:



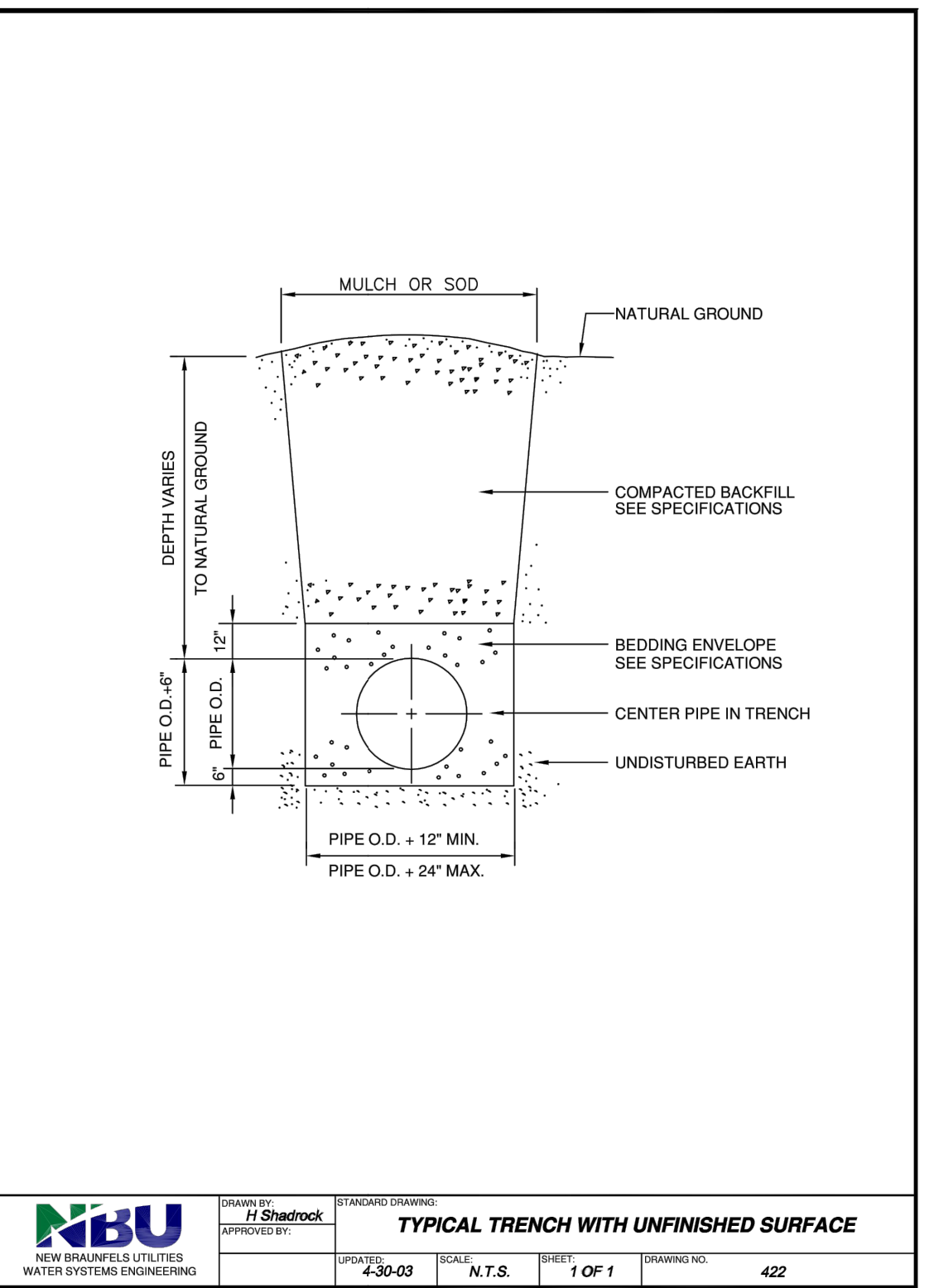
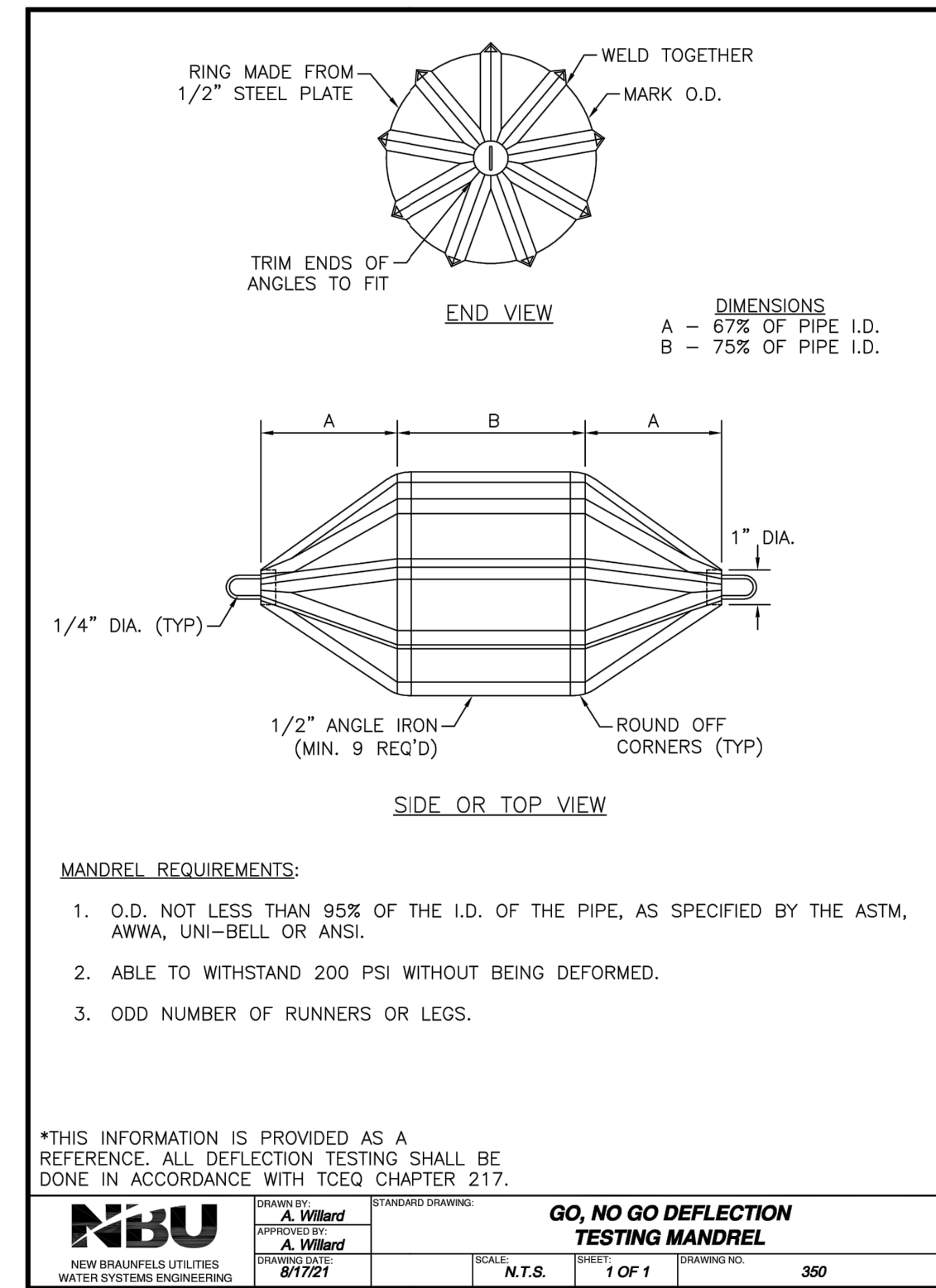
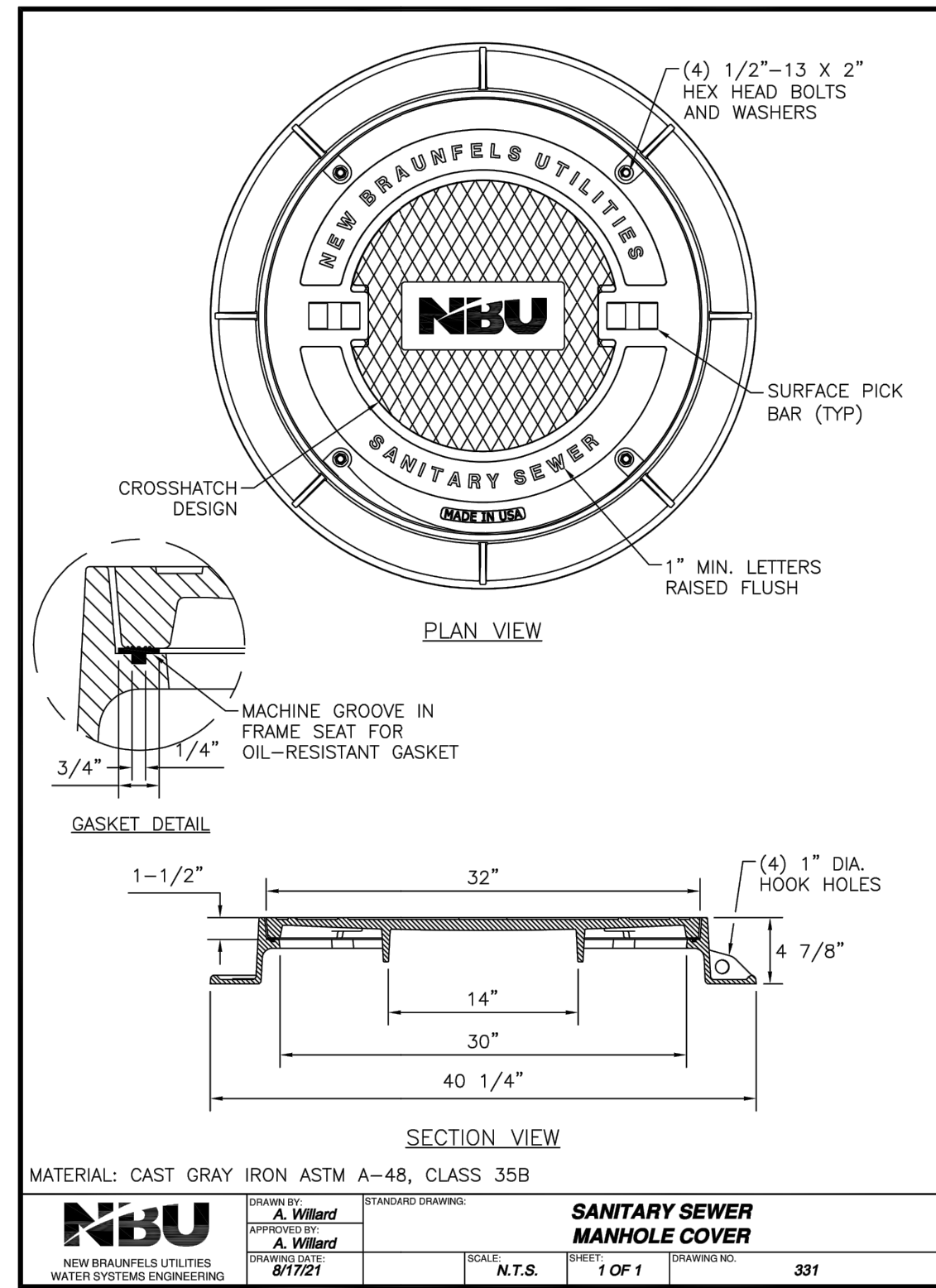
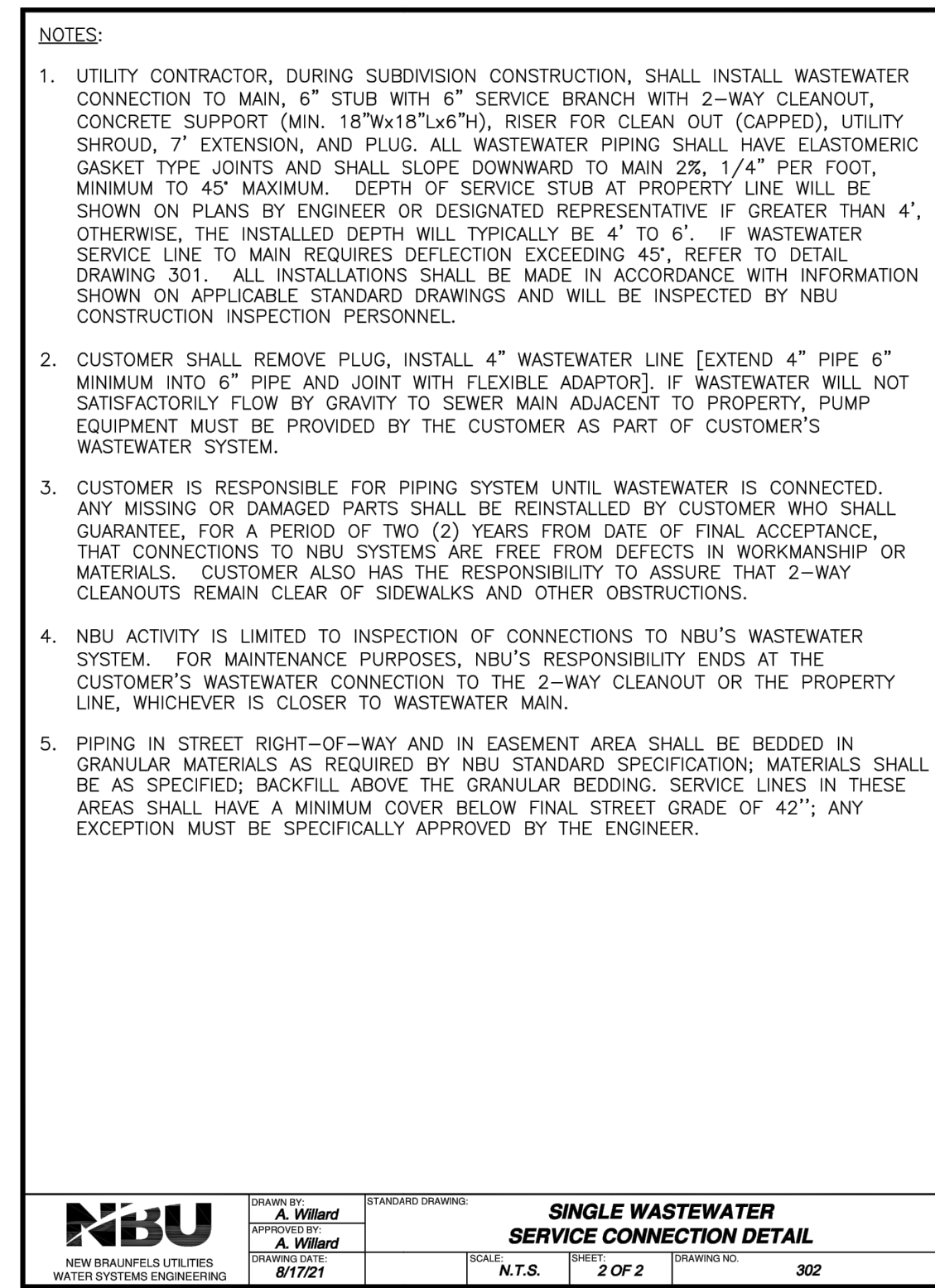
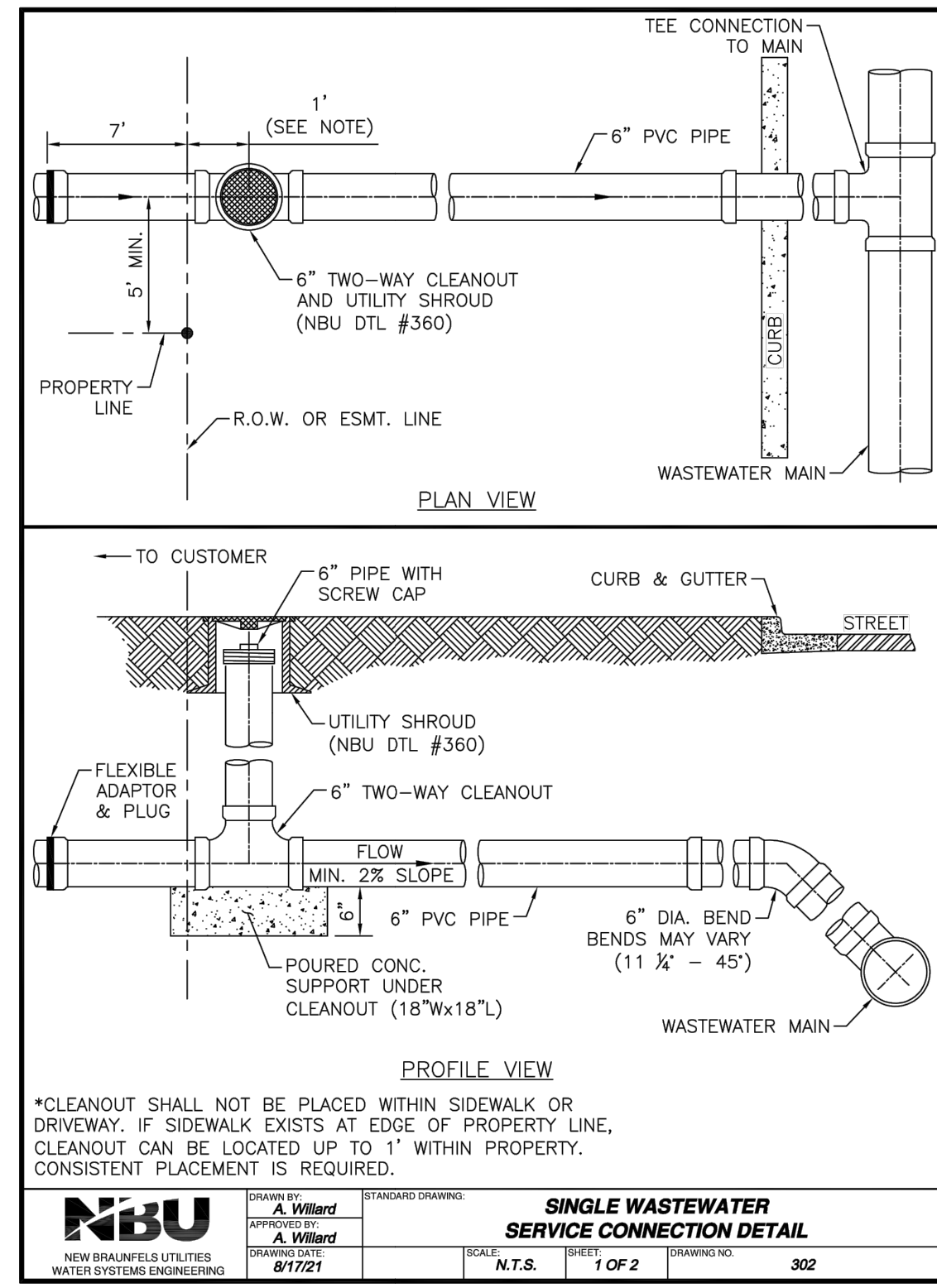
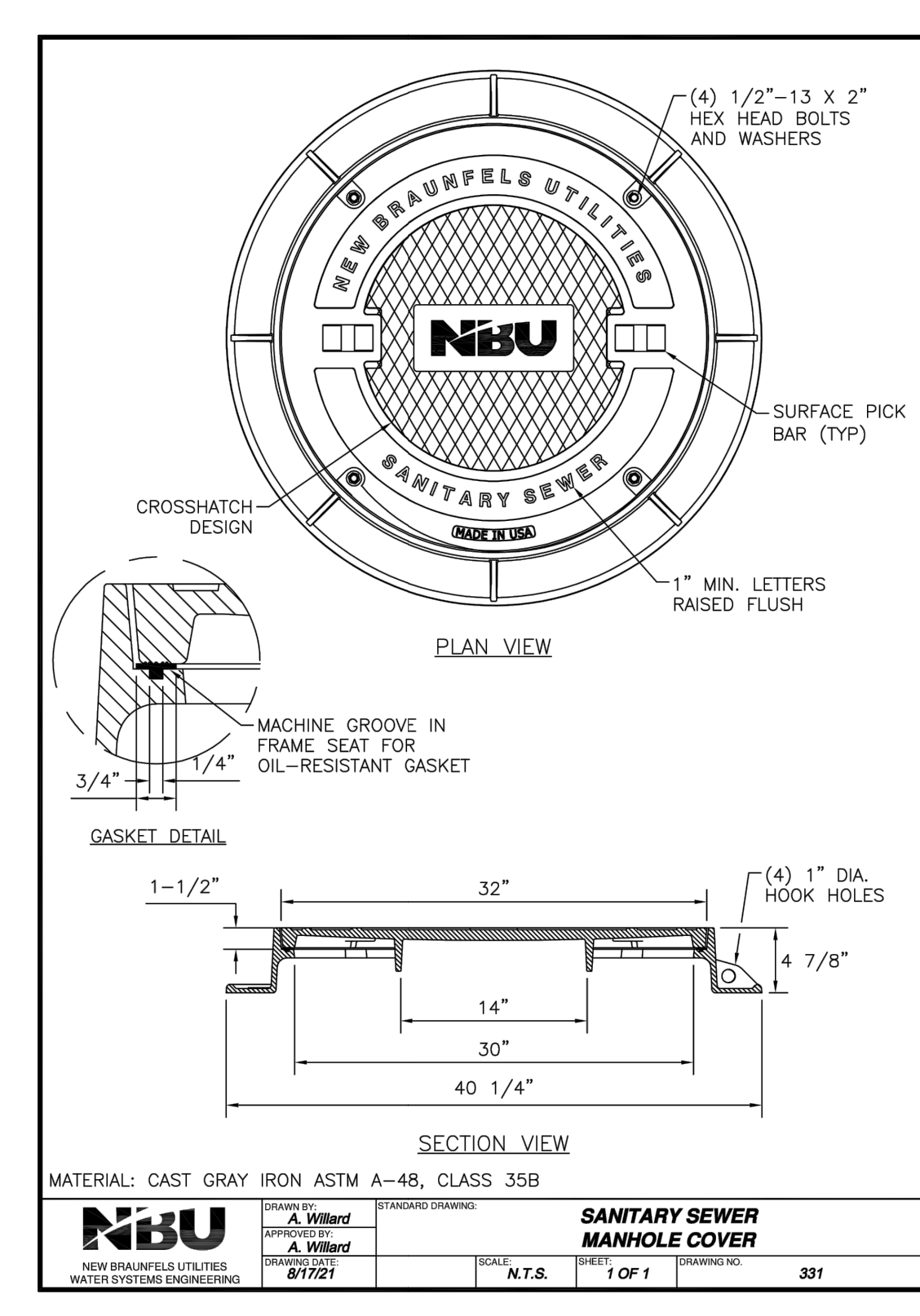
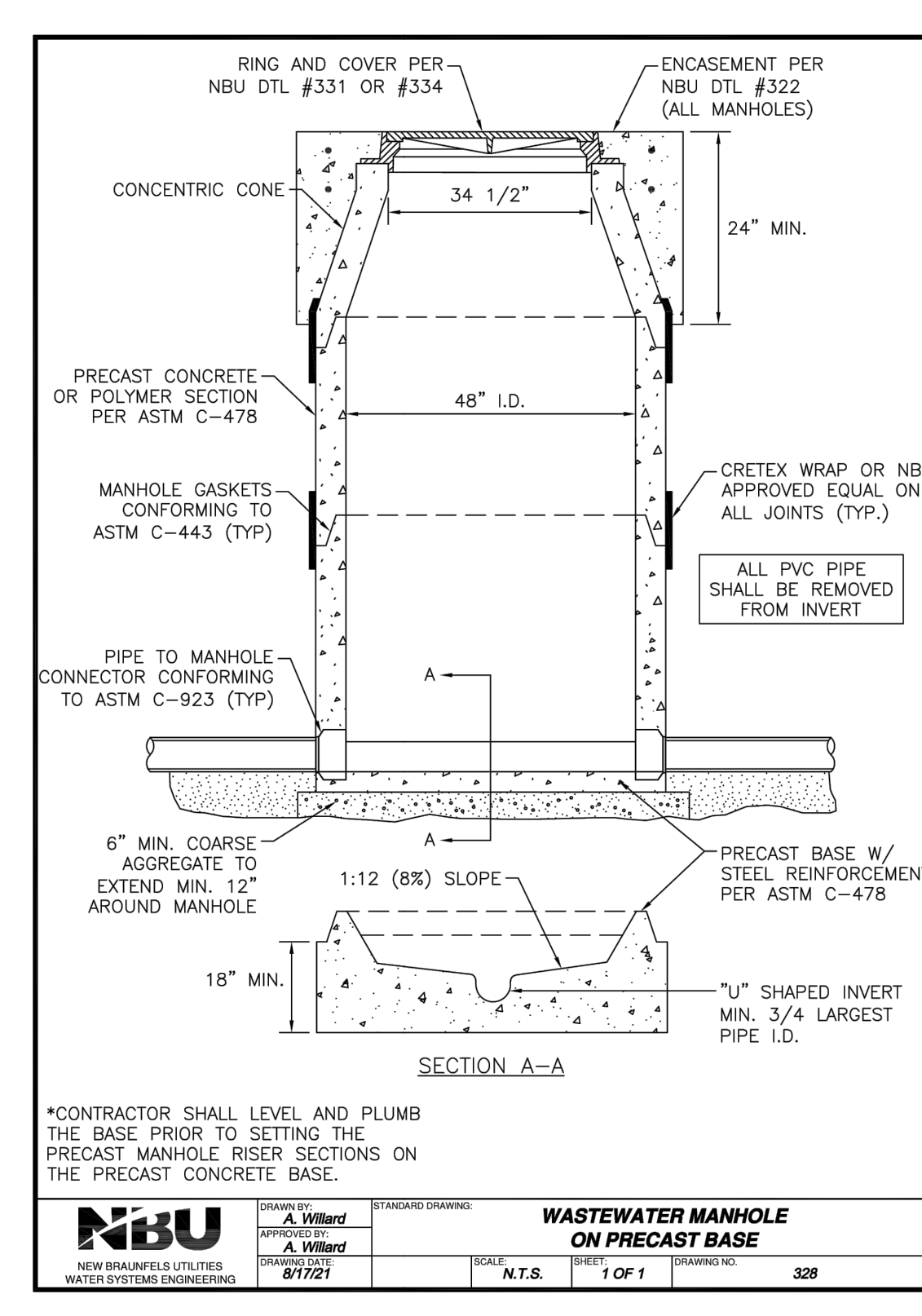
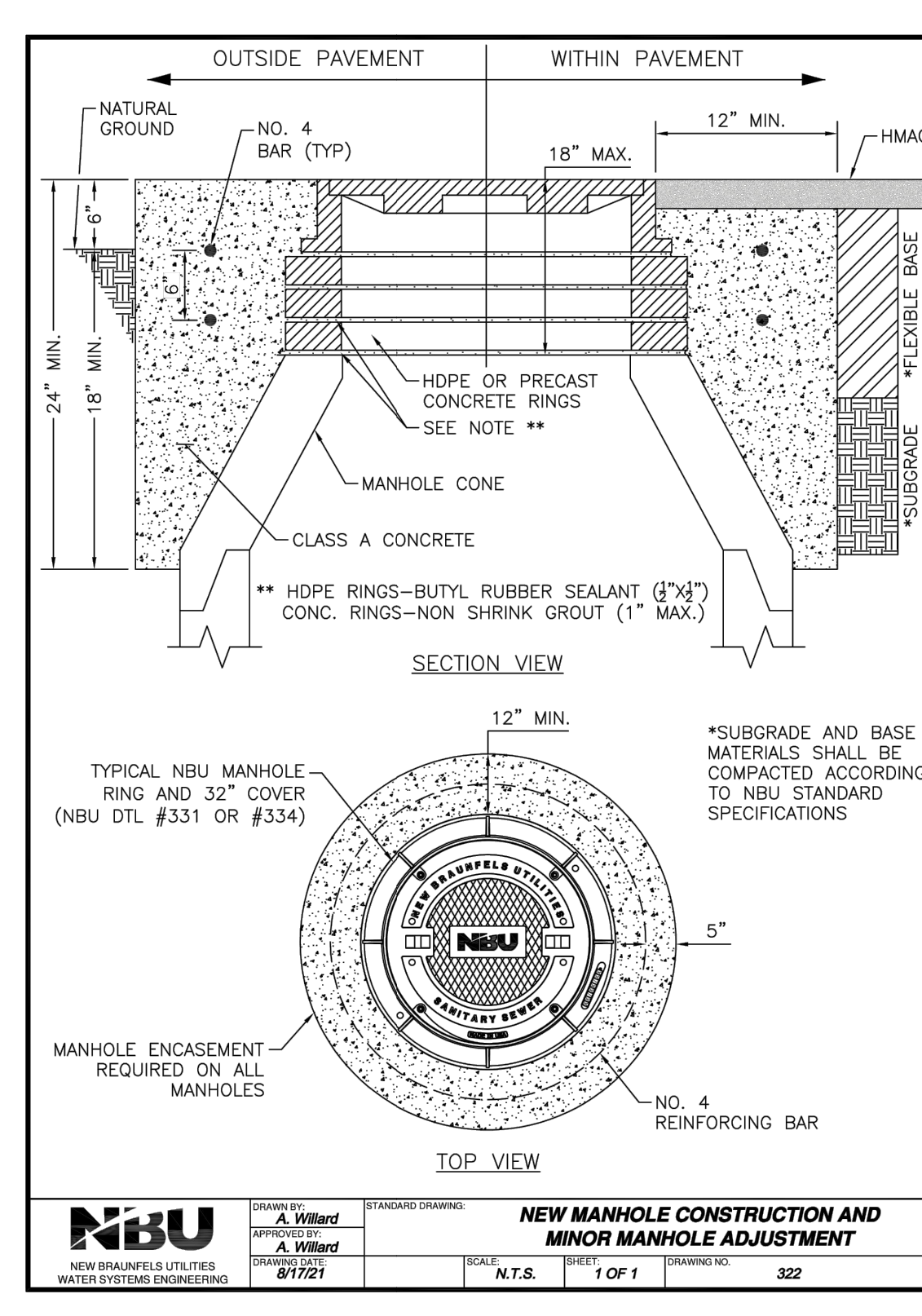
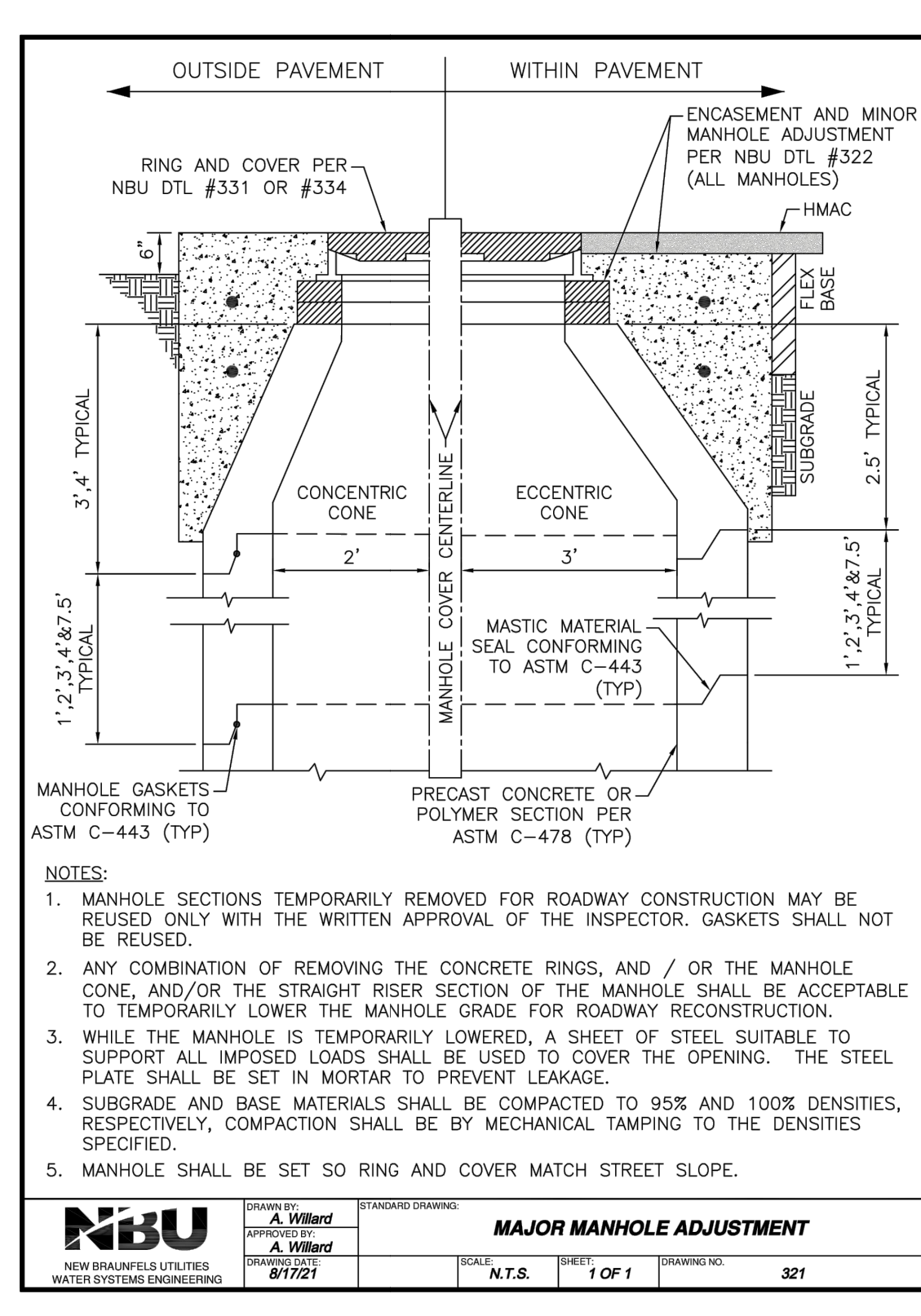
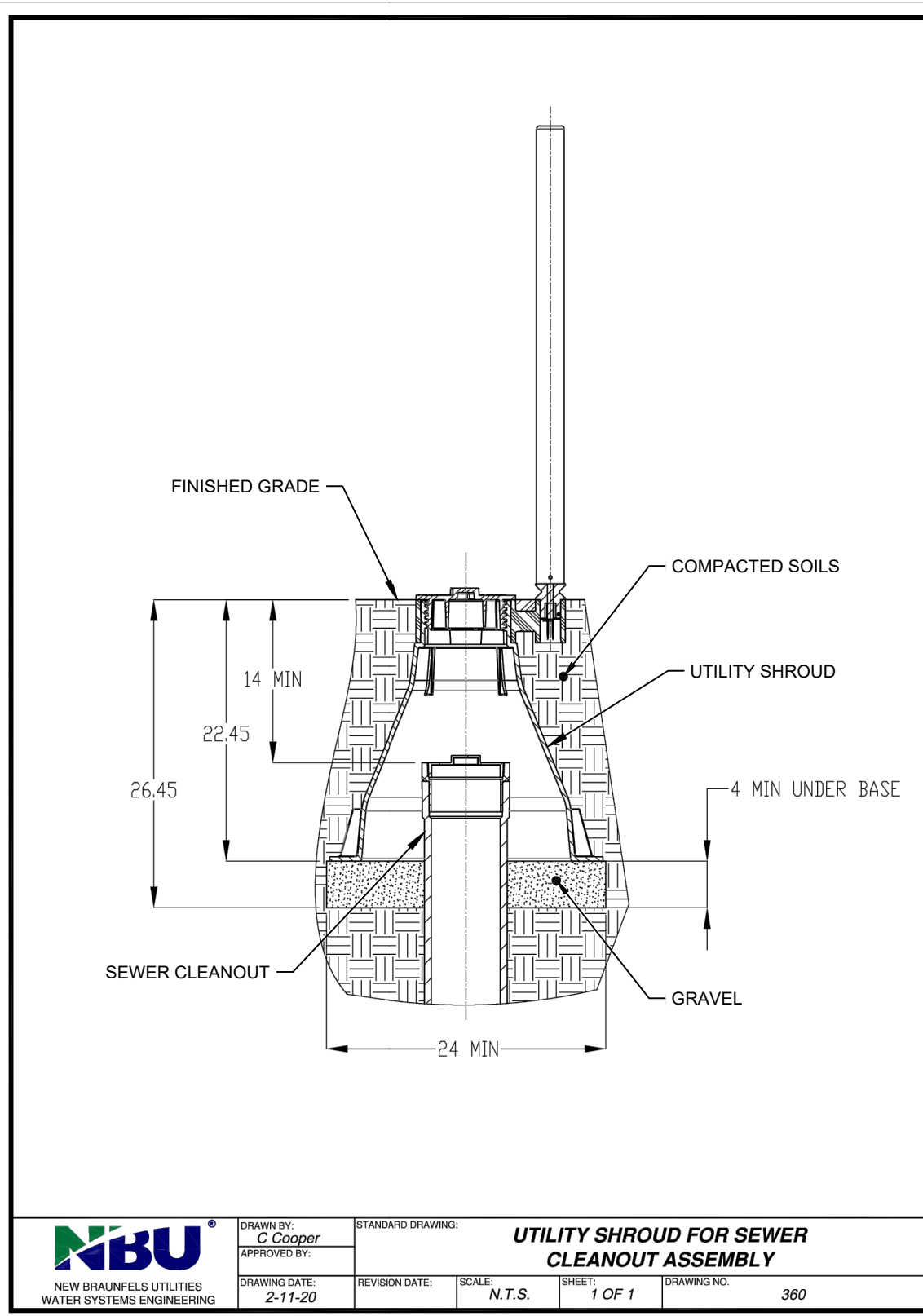
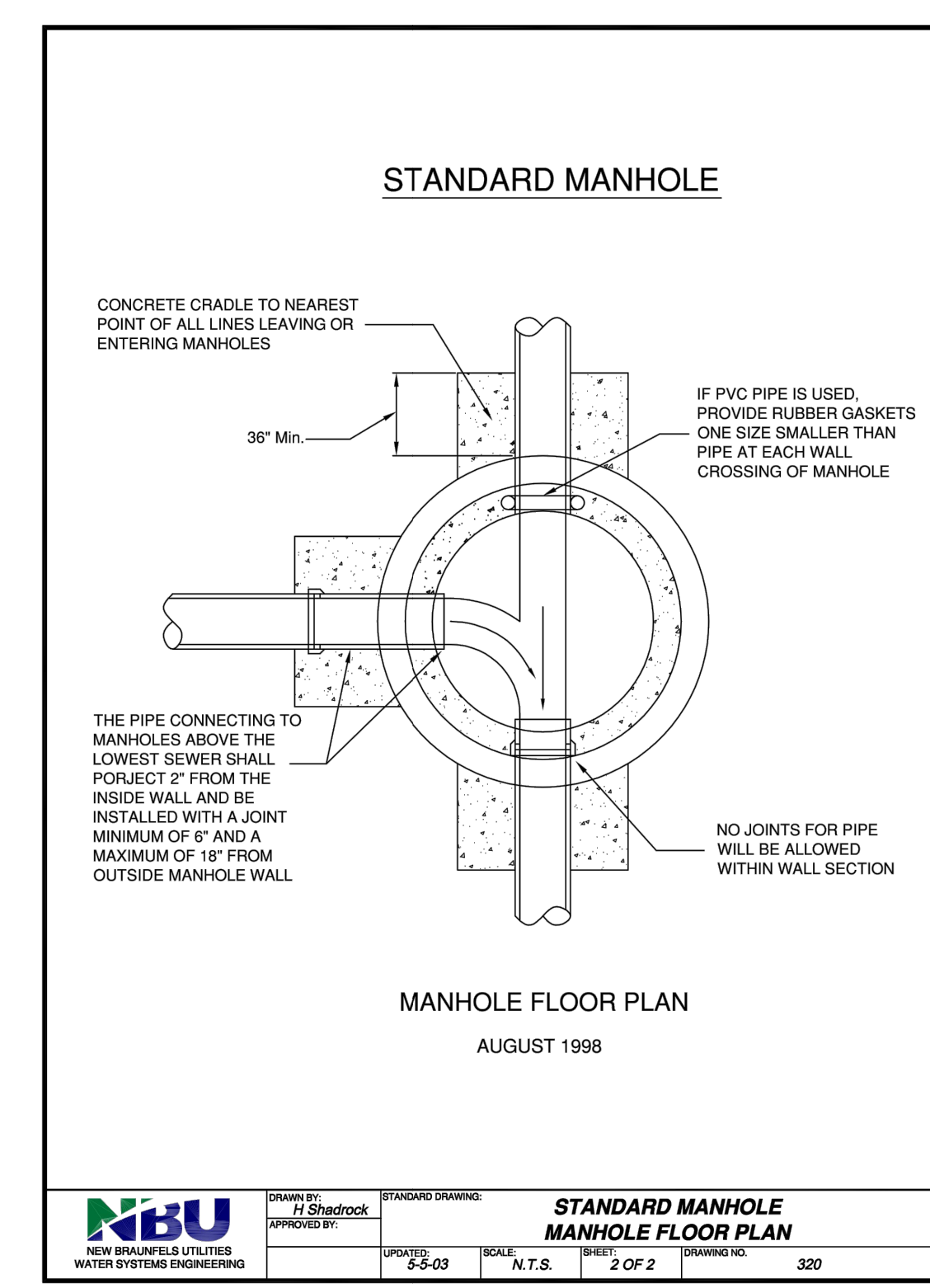
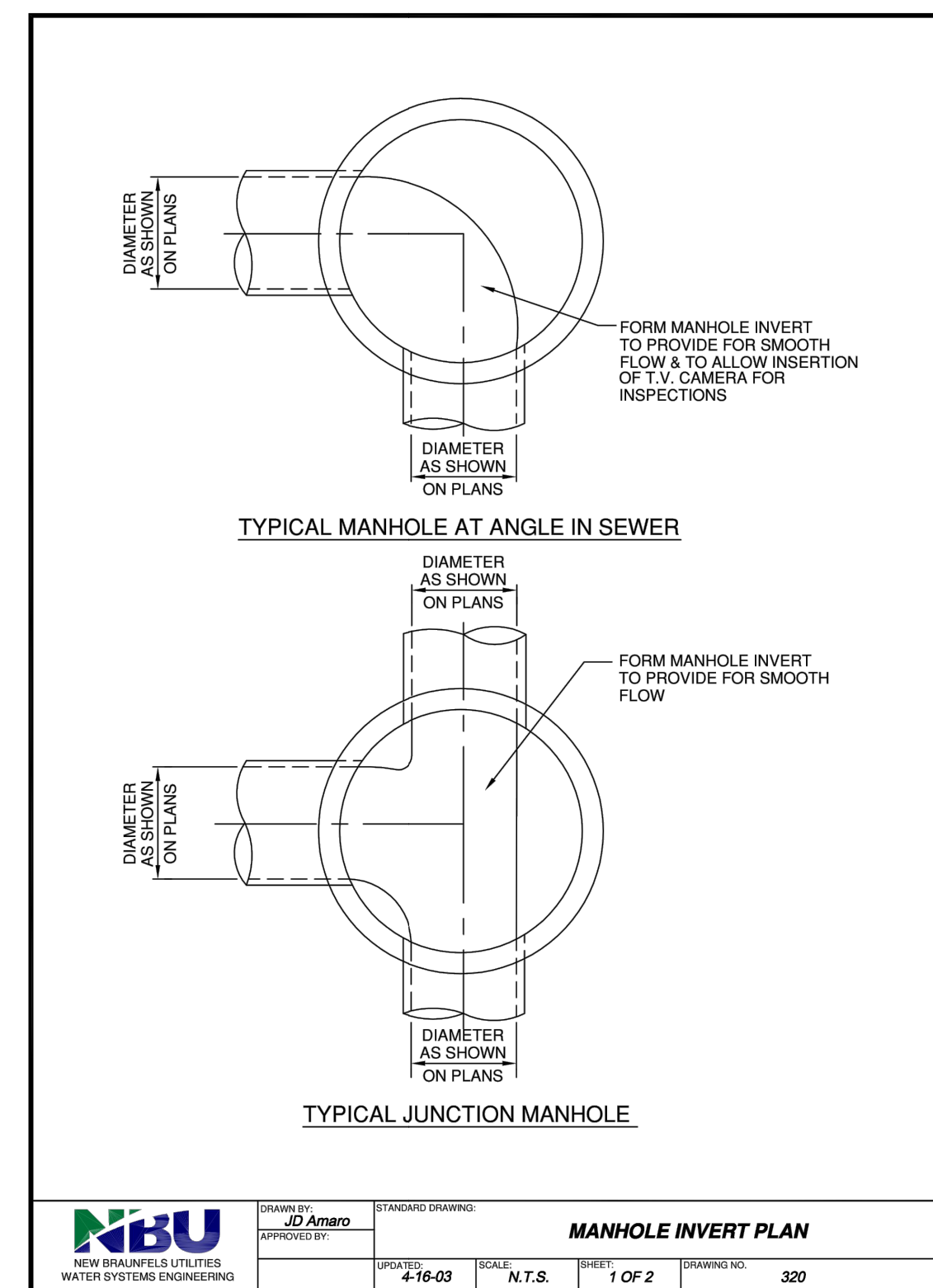
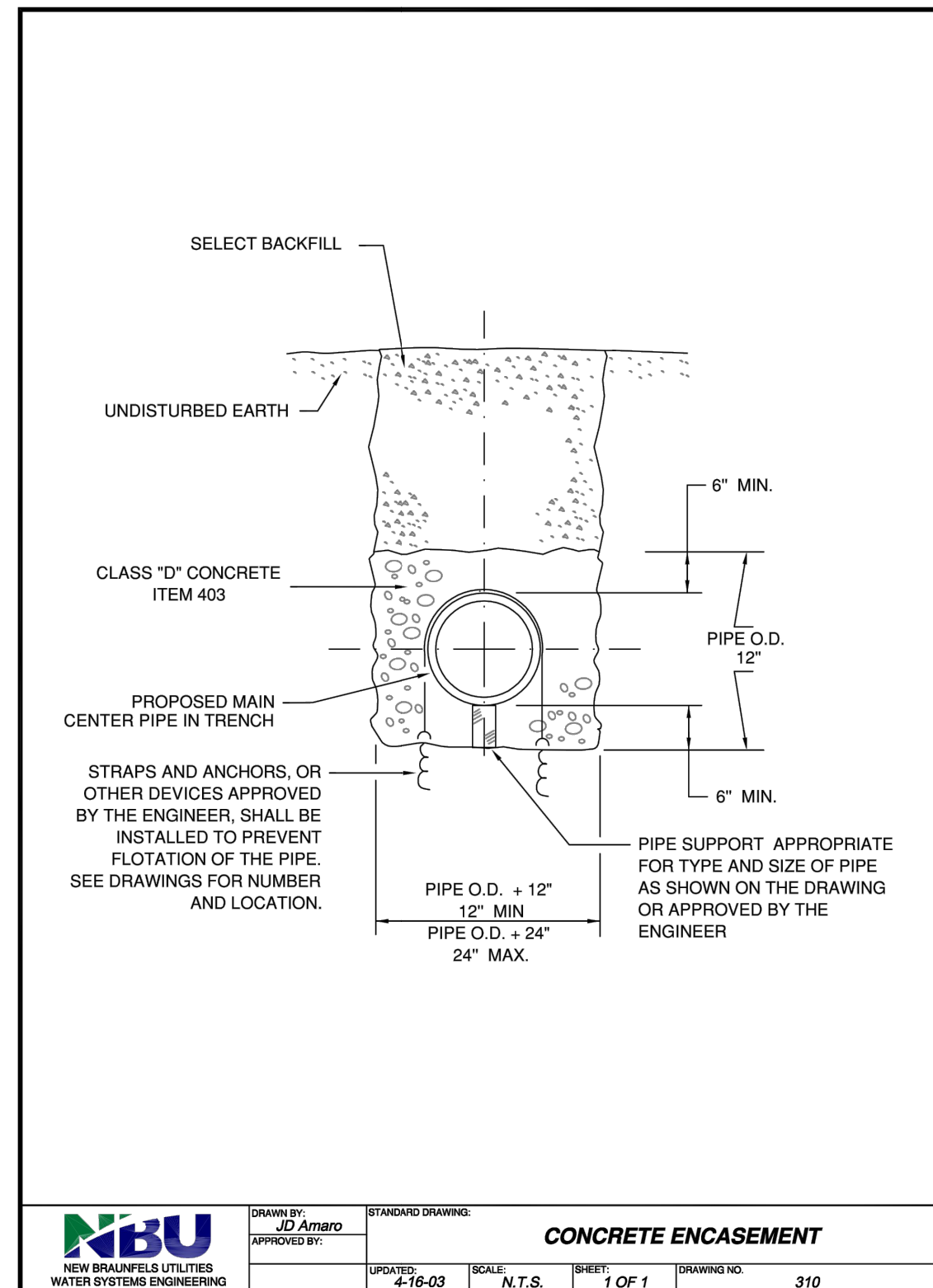
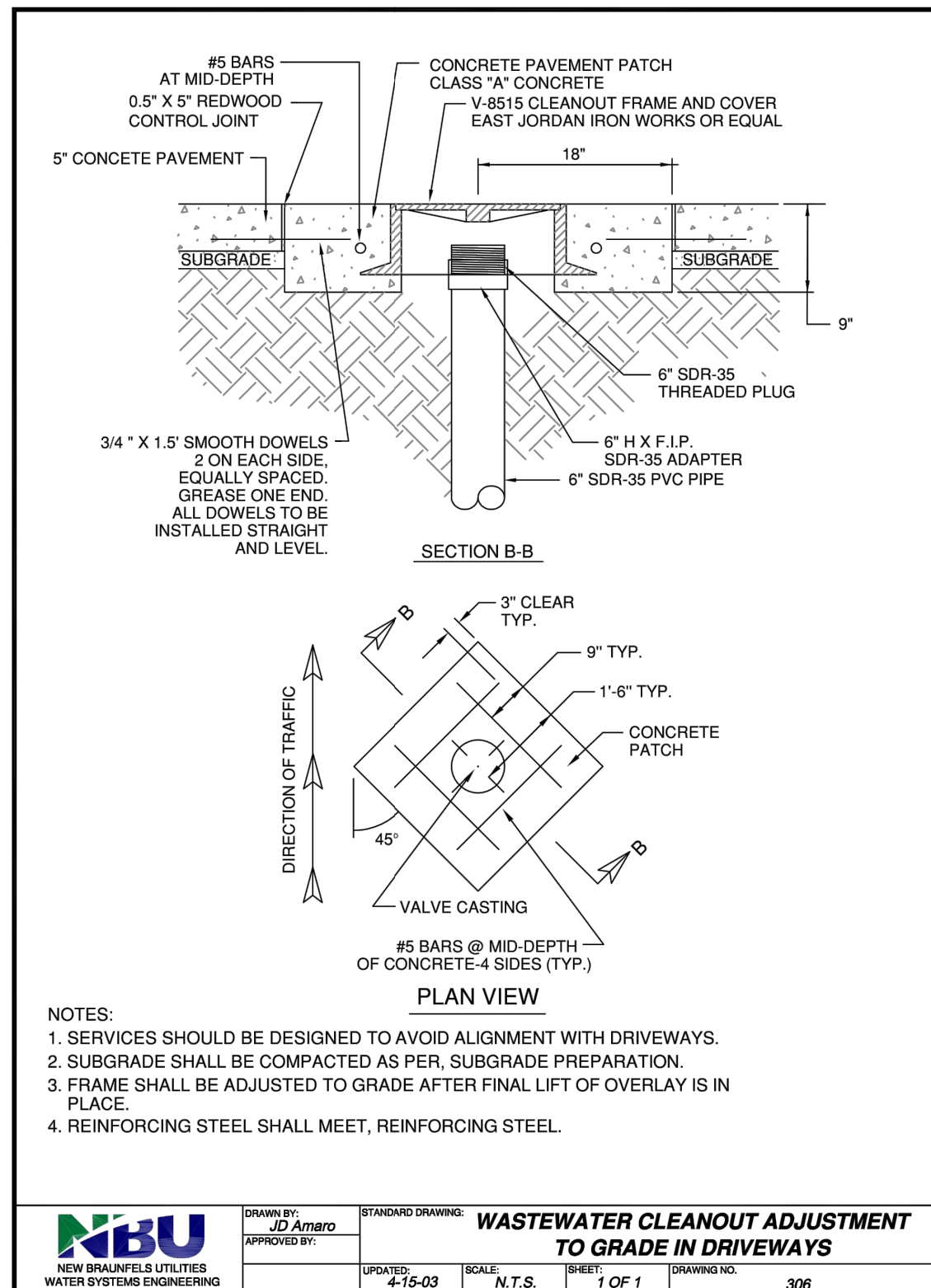
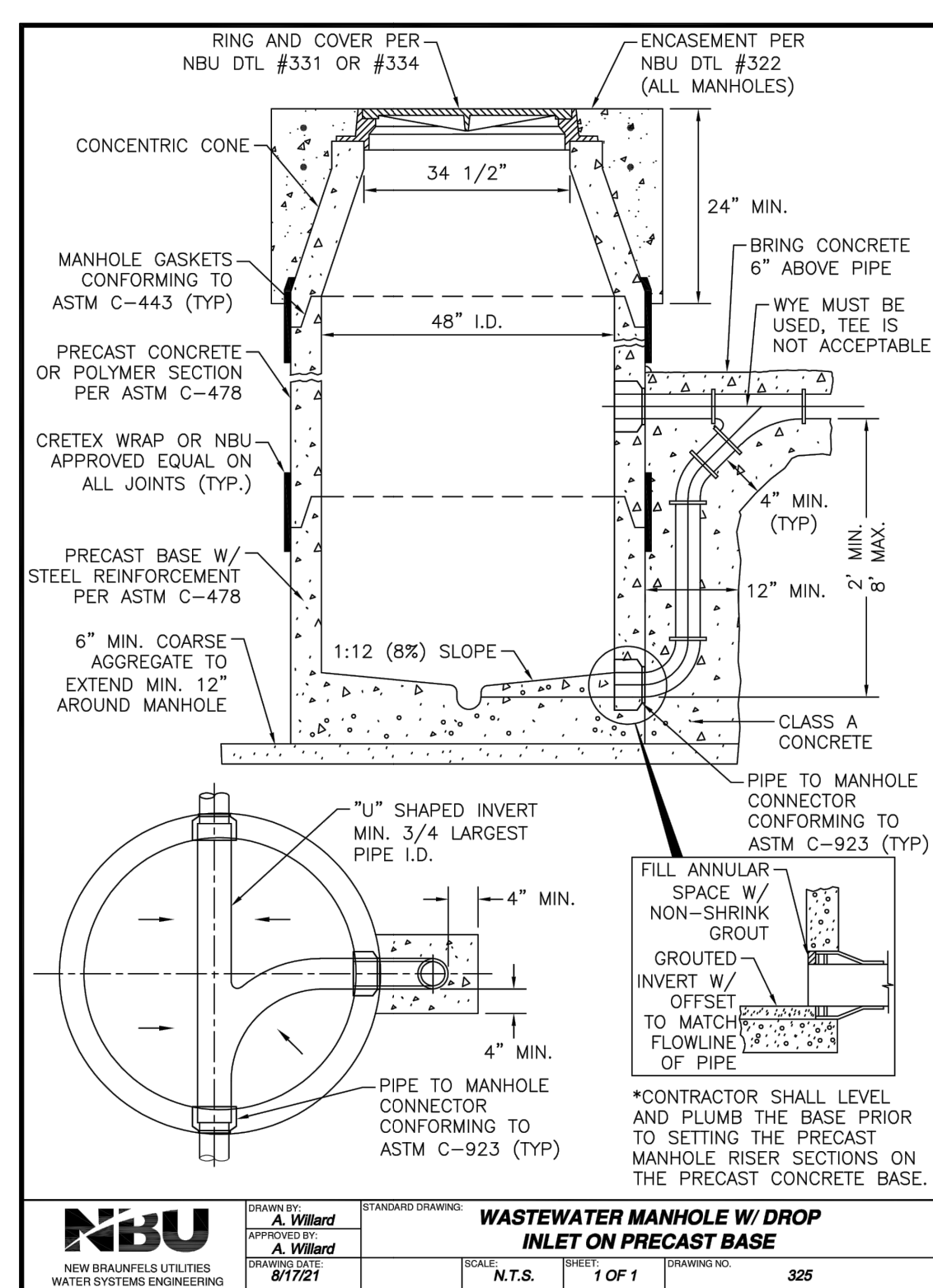
© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 1901 REYNOLDS PLACE, SUITE 400, SAN ANTONIO, TX 78248. PHONE: 781.451.9188 FAX: 781.451.9888 WWW.KIMLEY-HORN.COM TFS# 100100100



4031 N. HALL ST. SUITE 1000 DALLAS, TX 75245 www.huckabee-inc.com 800.687.1279

WATER DETAILS

PACKAGE	VOLUME
Job No. 019350-06-01	Sheet No. C12.3
Drawn By: 10/05/2023	



DATE

REVISION

Project: NEW BRAUNFELS ELEMENTARY SCHOOL #11 FOR NEW BRAUNFELS I.S.D. NEW BRAUNFELS, TEXAS

Kimley-Horn & Associates, Inc.

Huckabee & Associates, Inc.

SANITARY SEWER DETAILS PACKAGE VOLUME Job No. 01955-06-01 Sheet No. C12.4 Date: 10/05/2023

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.

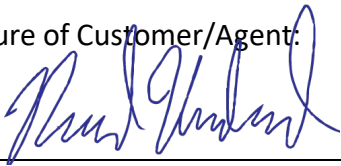
Signature

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: 10/17/2023

Signature of Customer/Agent:



Regulated Entity Name: NBISD Elementary School 11

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

NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
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

NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
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 the contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case-by-case basis.

Attachment C

***NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
Attachment C***

Sequence of Major Events

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

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

1. Install all temporary erosion controls. (11.53 acres)
2. Clear and grub strip topsoil. (11.53 acres)
3. Grading (No additional area will be disturbed by this activity)
4. Rough Cut Drive Aisles and Building Pads. (No additional area will be disturbed by this activity)
5. Install Wet/Dry Utilities (No additional area will be disturbed by this activity)
6. Install paving improvements. (No additional area will be disturbed by this activity)
7. Complete Restoration of Site Vegetation. (No additional area will be disturbed by this activity)
8. Remove and dispose of temporary erosion controls when restoration has been accepted.

Maximum total construction time is not expected to exceed 18 months.

Attachment D

NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
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 batch detention pond.

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.

Attachment F

***NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
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.

Attachment G

***NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
Attachment G***

Drainage Area Map

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. All TBMPs utilized are adequate for the drainage areas served. A Phase One Erosion Control Plan showing the proposed sediment traps and drainage areas has been provided as part of the Water Pollution Abatement Plan.

Attachment I

***NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
Attachment I***

Inspection and Maintenance for BMPs

The existing batch detention basin that the site will drain to is owned and maintained by the developer of the Veramendi Master Planned Development. In turn, the developer is responsible for all inspections and maintenance related to the detention basin.

Attachment J

NBISD – Elementary School 11
Organized Sewage Collection System (SCS) Plan
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
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- 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.

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

I MARIL LIGGETT
Print Name
DIRECTOR OF CONSTRUCTION
Title - Owner/President/Other
of NEW BRAUNFELS I.S.D.
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:

[Handwritten Signature]
Applicant's Signature

9.5.23
Date

THE STATE OF Texas §
County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Mark Liggott 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 5th day of September, 2023

[Handwritten Signature]
NOTARY PUBLIC



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: NBISD - Elementary School 11

Regulated Entity Location: Word Pkwy, New Braunfels, TX

Name of Customer: New Braunfels ISD

Contact Person: Richard Underwood, P.E.

Phone: (210) 321-3415

Customer Reference Number (if issued): CN 600397814

Regulated Entity Reference Number (if issued): RN _____

Austin Regional Office (3373)

Hays

Travis

Williamson

San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

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

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
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	Acres	\$
Sewage Collection System	978 L.F.	\$ 650
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: 10/17/2023

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

<i>Project</i>	<i>Cost per Linear Foot</i>	<i>Minimum Fee- Maximum Fee</i>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

<i>Project</i>	<i>Cost per Tank or Piping System</i>	<i>Minimum Fee- Maximum Fee</i>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

Exception Requests

<i>Project</i>	<i>Fee</i>
Exception Request	\$500

Extension of Time Requests

<i>Project</i>	<i>Fee</i>
Extension of Time Request	\$150



TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission <i>(If other is checked please describe in space provided.)</i>		
<input type="checkbox"/> New Permit, Registration or Authorization <i>(Core Data Form should be submitted with the program application.)</i>		
<input type="checkbox"/> Renewal <i>(Core Data Form should be submitted with the renewal form)</i>		<input type="checkbox"/> Other
2. Customer Reference Number <i>(if issued)</i>	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number <i>(if issued)</i>
CN 600397814		RN

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)			
<i>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).</i>			
6. Customer Legal Name <i>(If an individual, print last name first: eg: Doe, John)</i>		<i>If new Customer, enter previous Customer below:</i>	
NBISD			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number <i>(if applicable)</i>
0153150601	17429237443		
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – <i>as it relates to the Regulated Entity listed on this form. Please check one of the following</i>			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Other: <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant			
15. Mailing Address:	1117 N Academy Ave		
City	New Braunfels	State	TX
ZIP	78130	ZIP + 4	
16. Country Mailing Information <i>(if outside USA)</i>		17. E-Mail Address <i>(if applicable)</i>	
18. Telephone Number	19. Extension or Code	20. Fax Number <i>(if applicable)</i>	

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SECTION III: Regulated Entity Information

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

New Regulated Entity Update to Regulated Entity Name Update to Regulated Entity Information

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

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

NBISD - Elementary School 11

23. Street Address of the Regulated Entity: 158 Word Pkwy.
(No PO Boxes)

City	New Braunfels	State	TX	ZIP	78130	ZIP + 4	
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24. County

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

25. Description to Physical Location: Located approximately 0.15 mi from the intersection of Word Pkwy and Loop 337 in New Braunfels, TX.

26. Nearest City	State	Nearest ZIP Code
New Braunfels	TX	78132

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

27. Latitude (N) In Decimal:	29.729495	28. Longitude (W) In Decimal:	-98.139307		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	43	46.2	98	08	21.5

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
8211		611110	

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

Public Elementary School

34. Mailing Address:

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

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

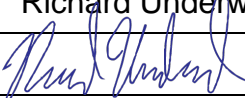
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Richard Underwood, P.E.	41. Title:	Project Manager
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 & Associates	Job Title:	Project Manager
Name (In Print):	Richard Underwood	Phone:	(210)541 9466
Signature:		Date:	10/06/2023