



Transmittal

Date: April 5, 2024
To: TCEQ Reviewer
From: Stacy Mulholland

Reference: Canyon Ranch Unit 3 CZP Modification Application NOD 2 Response

Item No.	Number of Copies	Description
1	1	Edwards Aquifer Application Cover Page
2	1	Modification of a Previously Approved CZP Form
3	1	Contributing Zone Plan Application
4	1	Temporary Stormwater Section
5	1	Agent Authorization Form
6	1	Owner Authorization Form
7	1	Application Fee Form
8	1	TCEQ Client Core Data Form
9	1	TCEQ Owner Core Data Form
10	1	Unit 1 TCEQ Approval Letter
11	1	Unit 2 TCEQ Approval Letter
12	1	Unit 3 Construction Plan Set

Comments:

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: Canyon Ranch Unit 3				2. Regulated Entity No.: RN 111592846					
3. Customer Name: Gram Vikas Partners, Inc.				4. Customer No.: CN 605577949					
5. Project Type: (Please circle/check one)	New	Modification <input checked="" type="checkbox"/> X			Extension	Exception			
6. Plan Type: (Please circle/check one)	WPAP	CZP <input checked="" type="checkbox"/> X	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential <input checked="" type="checkbox"/> X		Non-residential			8. Site (acres):		46.56	
9. Application Fee:	\$6,500		10. Permanent BMP(s):			Batch Detention Ponds, Filter Strips			
11. SCS (Linear Ft.):	N/A		12. AST/UST (No. Tanks):						
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 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.

Stacy Mulholland

Print Name of Customer/Authorized Agent



2/23/2024

Signature of Customer/Authorized Agent

Date

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

Modification of a Previously Approved Contributing Zone Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Modification of a Previously Approved Contributing Zone Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Stacy Mulholland

Date: 02/14/2024

Signature of Customer/Agent:



Project Information

1. Current Regulated Entity Name: Canyon Ranch Unit 3
Original Regulated Entity Name: Canyon Ranch Unit 3
Assigned Regulated Entity Number(s) (RN): 111592846
Edwards Aquifer Protection Program ID Number(s): 13001650
 The applicant has not changed and the Customer Number (CN) is: 605577949
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
2. **Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.
3. A modification of a previously approved plan is requested for (check all that apply):

- Any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
- Any change in the nature or character of the regulated activity from that which was originally approved;
- A change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
- Any development of land previously identified in a contributing zone plan as undeveloped.

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

<i>CZP Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Acres	<u>46.56</u>	<u>46.56</u>
Type of Development	<u>Res</u>	<u>Res</u>
Number of Residential Lots	<u>197</u>	<u>197</u>
Impervious Cover (acres)	<u>24.28</u>	<u>23.26</u>
Impervious Cover (%)	<u>52.14</u>	<u>49.95</u>
Permanent BMPs	<u>1</u>	<u>1</u>
Other	_____	_____

<i>AST Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Number of ASTs	_____	_____
Other	_____	_____

<i>UST Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Number of USTs	_____	_____
Other	_____	_____

5. **Attachment B: Narrative of Proposed Modification.** A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved,

including previous modifications, and how this proposed modification will change the approved plan.

6. **Attachment C: Current Site Plan of the Approved Project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
- The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
 - The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
 - The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
 - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
 - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.
7. Acreage has not been added to or removed from the approved plan.
- Acreage has been added to or removed from the approved plan and is discussed in *Attachment B: Narrative of Proposed Modification*.
8. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.



ATTACHMENT A

ORIGINAL APPROVAL LETTER AND APPROVED MODIFICATION LETTERS

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Bobby Janecka, *Commissioner*
Erin E. Chancellor, *Interim Executive Director*



Texas Commission on Environmental Quality

Protecting Texas by Reducing and Preventing Pollution

December 16, 2022

Mr. Kelly Leach
Gram Vikas Partners, Inc.
1141 N Loop 1604 E #105-114
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Canyon Ranch Unit 3; Located approximately 3.68 miles NE of Hwy 281 and FM 306 intersection; Comal County, Texas

TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer

Regulated Entity No. RN111592846; Additional ID No. 13001650

Dear Mr. Leach:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP for the above-referenced project submitted to the San Antonio Regional Office by BGE, Inc. on behalf of Gram Vikas Partners, Inc. on October 27, 2022. Final review of the CZP was completed after additional material was received on December 1, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The project is on a 46.56-acre site with 24.28 acres (52.14 percent) of impervious cover. The project proposes the construction of 197 single-family residential units and associated streets along with access road widening. Project wastewater will be disposed of by conveyance to the Canyon Ranch Wastewater Treatment Plant owned and operated by Corix Utilities of Texas.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two (2) existing batch detention basins (Unit 1 Pond 13001556 and Unit 2 Pond 13001557) and one (1) proposed batch detention basin (Unit 3 Pond), Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 21,794 pounds of TSS generated from the 24.28 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

- I. The proposed Unit 3 Pond shall be operational prior to first occupancy of the facility.
- II. All sediment and/or media removed from the existing and proposed batch detention basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during

construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

8. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. 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).
10. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
11. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
13. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 5, above.

After Completion of Construction:

14. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive

Mr. Kelly Leach
December 16, 2022
Page 4

director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Dianne Pavlicek-Mesa, P.G., of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,



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

LIB/dpm

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

cc: Ms. Stacy Mulholland, P.E., BGE, Inc.

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

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

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

Signature of New Responsible Party Date

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

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

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



ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

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CANYON RANCH UNIT 3

Contributing Zone Plan Modification (TCEQ-10259)

Attachment B – Narrative of Proposed Modification

The approved Canyon Ranch Unit 3 Contributing Zone Plan is for a single-family residential subdivision located at the northwest corner of the FM 306 and Mystic Canyon intersection. It planned to develop 46.56 acres of the Canyon Ranch development into 197 single family lots. The approved plan increased impervious cover to 24.28 acres and had one BMP for TSS removal: a batch detention pond.

The proposed modification decreases the impervious cover to 23.26 acres and changes the size of the weir structure for the proposed Unit 3 detention pond. The TxDOT widening of FM 306 included in this Contributing Zone Plan accounts for 1.25 acres of impervious cover and remains unchanged from the previously approved application. There were no changes made to the proposed Unit 3 site plan to be permitted with this application, only future phases of Canyon Ranch have been adjusted.

The modifications change the approved plan by changing the overall impervious cover to 23.26 acres, making percentage decrease from 52.14% to 49.95%. The change in impervious cover comes from the portion of Unit 3 that will be treated by the proposed Unit 3 pond. The portion of Unit 3 treated by the existing Unit 1 pond remains unchanged.

The BMP in the modification is the same BMP used in the original plan. The difference between the approved plan and modification is that the weir structure length has decreased.

ATTACHMENT B

Contributing Zone Plan Modification



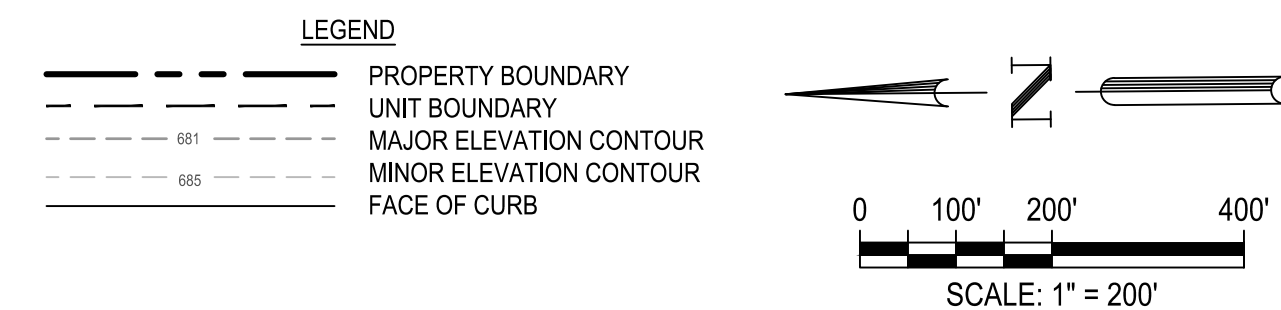
ATTACHMENT C

CURRENT SITE PLAN OF THE APPROVED PROJECT

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G:\TXC\Projects\San Antonio Projects\7278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\02.00 OVERALL SITE PLAN.dwg Layout: OVERALL SITE PLAN Plotted: 2/19/2024 12:03:47 PM By: Lhuck



DEVELOPER:
 GRAM VIKAS PARTNERS, INC.
 CONTACT: KELLY LEACH, PRESIDENT
 114 N. LOOP 1604
 105-114
 SAN ANTONIO, TEXAS 78232
 PHONE: (210) 827-7918

ENGINEER:
 BGE INC.
 7330 SAN PEDRO AVENUE, SUITE 202
 SAN ANTONIO, TX 78216
 PHONE: 210-581-3600

UTILITIES:
 WATER PROVIDED BY: CANYON LAKE WATER, SWJTX
 WASTEWATER: CANYON RANCH MUD OF COMAL COUNTY
 ELECTRIC: PEDERNALES ELECTRIC COOPERATIVE

TOTAL ACREAGE: 400.00

- GENERAL SITE PLAN NOTES**
1. THIS DEVELOPMENT SHALL COMPLY WITH THE COMAL COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS MANUAL AND THE DEVELOPMENT MANUAL.
 2. THIS SITE PLAN SHALL MEET THE COMAL COUNTY STORM WATER REQUIREMENTS.
 3. A HOMEOWNER'S ASSOCIATION WILL BE ESTABLISHED FOR THIS DEVELOPMENT.
 4. WATER SERVICE IS TO BE PROVIDED BY CANYON LAKE WSC, SJWTX.
 5. ALL ROADS WILL BE PUBLICLY OWNED.
 6. ELECTRIC SERVICE TO BE PROVIDED BY PEDERNALES ELECTRIC COOPERATIVE.
 7. SANITARY SEWER SERVICE IS TO BE PROVIDED BY CANYON RANCH MUD OF COMAL COUNTY.
 8. NO PORTION OF THIS SUBDIVISION IS WITHIN SPECIAL FLOOD HAZARD ZONE AS DELINEATED ON THE FLOOD INSURANCE MAP (FIRM) FOR COMAL COUNTY, TEXAS ON MAP NUMBER 48091C0080F RESPECTIVELY, DATED SEPTEMBER 9, 2009 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
 9. DURING THE BUILDING PERMIT STAGE, THE INDIVIDUAL HOME BUILDER/OWNER SHALL BE RESPONSIBLE FOR CONSTRUCTION OF A 5' CONCRETE SIDEWALK ALONG THE FRONTAGE OF THE INDIVIDUAL LOT. THE DEVELOPER OF THIS PROJECT SHALL BE RESPONSIBLE FOR CONSTRUCTION OF CONCRETE SIDEWALK AT COMMON AREAS, DRAINAGE EASEMENT, AND ALL OTHER AREAS WHERE SIDEWALK IS REQUIRED TO BE CONSTRUCTED (SEE TYPICAL STREET SECTION FOR PLACEMENT OF SIDEWALK).
 10. MAINTENANCE OF DRAINAGE EASEMENTS DESIGNATED WITHIN A LOT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. ANY USE, OF ANY EASEMENT, OR ANY PORTION OF IT, INCLUDING LANDSCAPING OR DRAINAGE FEATURES IS SUBJECT TO AND SHALL NOT CONFLICT WITH THE TERMS AND CONDITIONS OF IN THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO THE UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF HAYS COUNTY OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
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 12. CONTRACTOR SHALL REFER TO THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL INVESTIGATION REPORTS PREPARED BY INTEC (PROJECT NO. S201370).

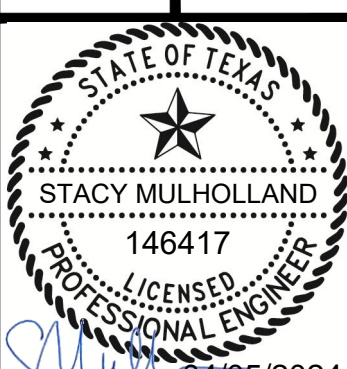
NOTE: CONTRACTOR SHALL AVOID OR MINIMIZE IMPACTS TO JURISDICTIONAL STREAMS.

REV	DATE	DESCRIPTION
DESIGNED BY:	SAR	
REVIEWED BY:	SSM	
DRAWN BY:	SAR	

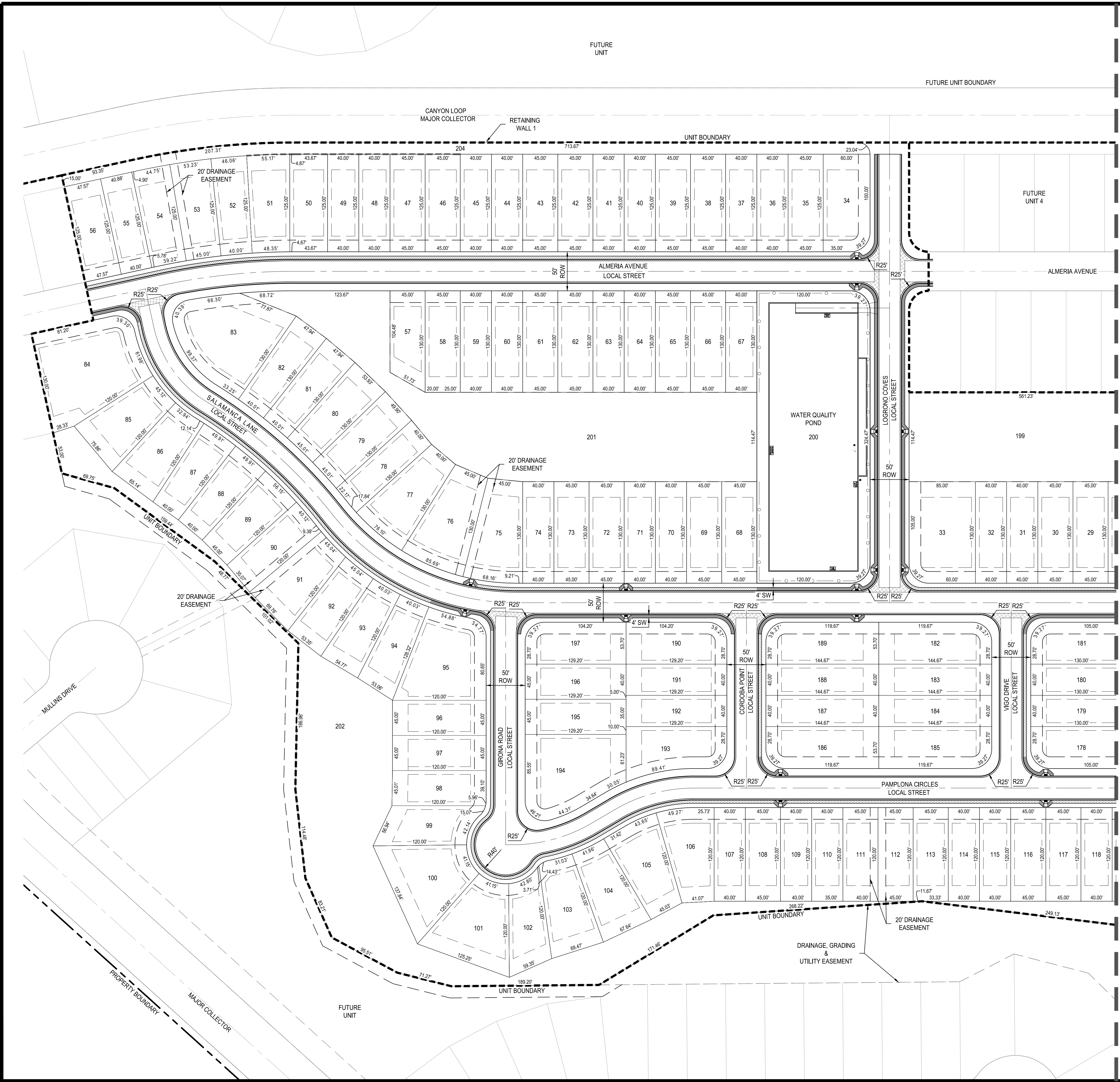


BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 210-581-3600 www.bgeinc.com
 EPC Registration No. P-1046

CANYON RANCH UNIT 3
 OVERALL SITE PLAN



G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\17278-00 - Canyon Ranch\Units - Unit 3\03_CADD\01_Shts\C02.00 OVERALL SITE PLAN.dwg Layout: DETAILED SITE PLAN (SHEET 1 OF 2) Plotted: 2/20/2023 2:20:56 PM By: Srodriquez



LEGEND

- PROPERTY BOUNDARY
- UNIT BOUNDARY
- CONTRACTOR SIDEWALK
- HOMEBUILDER SIDEWALK
- LOT NUMBERS
- SETBACK
- P.U.E.
- RAMP
- ASPHALT VALLEY GUTTER
- RETAINING WALL

SCALE: 1" = 60'

- GENERAL SITE PLAN NOTES**
- THIS DEVELOPMENT SHALL COMPLY WITH THE COMAL COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS MANUAL AND THE DEVELOPMENT MANUAL.
 - THIS SITE PLAN SHALL MEET THE COMAL COUNTY STORM WATER REQUIREMENTS.
 - A HOMEOWNER'S ASSOCIATION WILL BE ESTABLISHED FOR THIS DEVELOPMENT.
 - WATER SERVICE IS TO BE PROVIDED BY CANYON LAKE WSC, SJWTX.
 - ALL ROADS WILL BE PUBLICLY OWNED.
 - ELECTRIC SERVICE TO BE PROVIDED BY PEDERNALES ELECTRIC COOPERATIVE.
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STREET CLASSIFICATION	ASPHALTIC CONCRETE TYPE D, INCHES	ASPHALTIC CONCRETE TYPE B, INCHES	AGGREGATE BASE, INCHES	GEORG	SUBGRADE, INCHES	STRUCTURAL NUMBER
LOCAL STREET (NO BUS TRAFFIC)	2.0	-	8.50	NO	-	2.07
RESIDENTIAL COLLECTOR	3.00	-	18.50	NO	-	3.91
	3.00	-	15.50	YES	-	3.95
	3.00	-	-	NO	-	4.04

NOTE: REFERENCE C01.00 FOR REPORT INFORMATION AND ADDITIONAL NOTES.

UTILITIES:
 WATER PROVIDED BY: CANYON LAKE WATER, SJWTX
 WASTEWATER: CANYON RANCH MUD OF COMAL COUNTY
 ELECTRIC: PEDERNALES ELECTRIC COOPERATIVE

TOTAL ACREAGE: 43.67 ACRES

*COMAL COUNTY TO APPROVE, INSPECT, AND MAINTAIN ALL ROADWAY PAVEMENT

DEVELOPER:
 GRAM VIKAS PARTNERS, INC.
 CONTACT: KELLY LEACH, PRESIDENT
 114 N. LOOP 1604
 105-114
 SAN ANTONIO, TEXAS 78232
 PHONE: (210) 827-7918

ENGINEER:
 BGE INC.
 7330 SAN PEDRO AVENUE, SUITE 202
 SAN ANTONIO, TX 78216
 PHONE: 210-581-3600

PROJECT LAND SUMMARY

UNIT 3	
SITE ACREAGE:	43.67
SINGLE FAMILY RESIDENTIAL LOTS:	197
LOCAL STREET (LF):	6,647 LF
COLLECTOR STREET (LF):	0 LF
DENSITY (LOT/AC):	4.51

STREET TABLE CLASSIFICATIONS

STREET	CLASSIFICATION	LF
SALAMANCA LANE	LOCAL STREET	2,071 LF
ALMERIA AVENUE	LOCAL STREET	1,079 LF
LOGRONO COVES	LOCAL STREET	589 LF
VIGGO DRIVE	LOCAL STREET	237 LF
CORDOBA POINT	LOCAL STREET	237 LF
GIRONA ROAD	LOCAL STREET	310 LF
RONDA LOOP	LOCAL STREET	784 LF
PAMPLONA CIRCLES	LOCAL STREET	1,339 LF
ALICANTE VIEW	LOCAL STREET	832 LF

NOTE: SEE PLAT FOR EASEMENT DIMENSIONS & BUILDING SETBACKS

DATE	APR
DESCRIPTION	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

BGE

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 210-581-3600 www.bgeinc.com
 TUBE Registration No. P-1040

CANYON RANCH UNIT 3

DETAILED SITE PLAN (SHEET 1 OF 2)

STATE OF TEXAS
 STACY MULHOLLAND
 146417
 LICENSED PROFESSIONAL ENGINEER
 04/05/2024
 SHEET C02.01

LEGEND

- PROPERTY BOUNDARY
- UNIT BOUNDARY
- CONTRACTOR SIDEWALK
- HOMEBUILDER SIDEWALK
- 1 LOT NUMBERS
- - - SETBACK
- - - P.U.E.
- RAMP
- ASPHALT VALLEY GUTTER
- RETAINING WALL

N
0 30' 60' 120'
SCALE: 1" = 60'

PROJECT LAND SUMMARY	
UNIT 3	
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	3.00	-	15.50	YES	3.86
	3.00	-	NO	NO	4.04

NOTE: REFERENCE C01.00 FOR REPORT INFORMATION AND ADDITIONAL NOTES.

STREET TABLE CLASSIFICATIONS		
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WASTEWATER: CANYON RANCH MUD OF COMAL COUNTY
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DEVELOPER:

GRAM VIKAS PARTNERS, INC.
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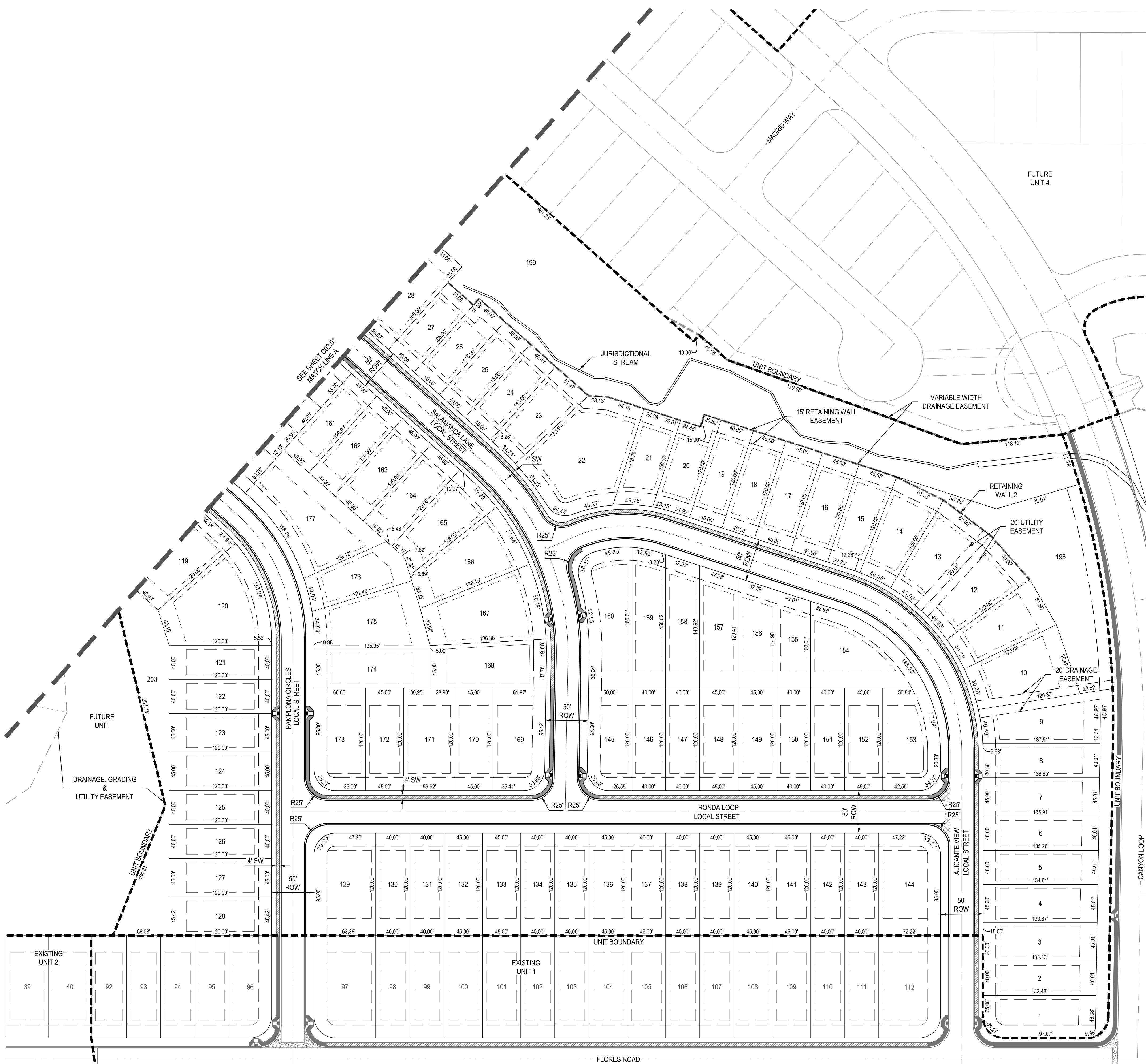
TOTAL ACREAGE: 43.67 ACRES

ENGINEER:

BGE INC.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
PHONE: 210-581-3600

*COMAL COUNTY TO APPROVE, INSPECT, AND MAINTAIN ALL ROADWAY PAVEMENT

NOTE: SEE PLAT FOR EASEMENT DIMENSIONS & BUILDING SETBACKS



REV	DATE	DESCRIPTION

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR



BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 210-581-3600 www.bgeny.com
TXE Registration No. F-11049

CANYON RANCH UNIT 3
DETAILED SITE PLAN (SHEET 2 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024
SHEET
C02.02

Contributing Zone Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Stacy Mulholland

Date: 02/14/2024

Signature of Customer/Agent:



Regulated Entity Name: Canyon Ranch Unit 3

Project Information

1. County: Comal
2. Stream Basin: Guadalupe River
3. Groundwater Conservation District (if applicable): _____
4. Customer (Applicant):

Contact Person: Kelly Leach

Entity: Gram Vikas Partners, Inc.

Mailing Address: 1141 N Loop 1604

City, State: San Antonio, TX

Telephone: (210) 827 - 7918

Email Address: kelly.welovedirt@gmail.com

Zip: 78232

Fax: _____

5. Agent/Representative (If any):

Contact Person: Stacy Mulholland

Entity: BGE Inc

Mailing Address: 7330 San Pedro Ave, Suite 202

City, State: San Antonio, TX

Zip: 78216

Telephone: 210-581-3637

Fax: _____

Email Address: smulholland@bgeinc.com

6. Project Location:

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

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

- 8. **Attachment A - Road Map.** A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.
- 9. **Attachment B - USGS Quadrangle Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000") is attached. The map(s) clearly show:
 - Project site boundaries.
 - USGS Quadrangle Name(s).
- 10. **Attachment C - Project Narrative.** A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:
 - Area of the site
 - Offsite areas
 - Impervious cover
 - Permanent BMP(s)
 - Proposed site use
 - Site history
 - Previous development
 - Area(s) to be demolished

11. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site

- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Not cleared)
- Other: _____

12. The type of project is:

- Residential: # of Lots: 197
- Residential: # of Living Unit Equivalents: _____
- Commercial
- Industrial
- Other: _____

13. Total project area (size of site): 46.56 Acres

Total disturbed area: 47.20 Acres

14. Estimated projected population: _____

15. The amount and type of impervious cover expected after construction is complete is shown below:

Table 1 - Impervious Cover

<i>Impervious Cover of Proposed Project</i>	<i>Sq. Ft.</i>	<i>Sq. Ft./Acre</i>	<i>Acres</i>
Structures/Rooftops	689500	÷ 43,560 =	15.83
Parking	268865.6	÷ 43,560 =	6.17
Other paved surfaces	54628	÷ 43,560 =	1.25
Total Impervious Cover	1012993.6	÷ 43,560 =	23.26

Total Impervious Cover 23.26 ÷ Total Acreage 46.56 X 100 = 49.95% Impervious Cover

16. **Attachment D - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

17. Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

For Road Projects Only

Complete questions 18 - 23 if this application is exclusively for a road project.

N/A

18. Type of project:

- TXDOT road project.
- County road or roads built to county specifications.
- City thoroughfare or roads to be dedicated to a municipality.
- Street or road providing access to private driveways.

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

- Concrete
- Asphaltic concrete pavement
- Other: _____

20. Right of Way (R.O.W.):

Length of R.O.W.: _____ feet.

Width of R.O.W.: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

21. Pavement Area:

Length of pavement area: _____ feet.

Width of pavement area: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

Pavement area _____ acres \div R.O.W. area _____ acres $\times 100 = \text{_____ \%}$ impervious cover.

22. A rest stop will be included in this project.

A rest stop will not be included in this project.

23. Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to be generated by the Proposed Project

24. **Attachment E - Volume and Character of Stormwater.** A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Wastewater to be generated by the Proposed Project

25. Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

N/A

26. Wastewater will be disposed of by:

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

Attachment F - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Canyon Ranch (name) Treatment Plant. The treatment facility is:

Existing.

Proposed.

N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

<i>AST Number</i>	<i>Size (Gallons)</i>	<i>Substance to be Stored</i>	<i>Tank Material</i>
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

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

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

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

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

Table 3 - Secondary Containment

<i>Length (L)(Ft.)</i>	<i>Width(W)(Ft.)</i>	<i>Height (H)(Ft.)</i>	<i>L x W x H = (Ft3)</i>	<i>Gallons</i>

Total: _____ Gallons

30. Piping:

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

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

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

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

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

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

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

Site Plan Requirements

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

34. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 60'.
35. 100-year floodplain boundaries:
- Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Panel 48091C0080F, effective 9/02/2009.
36. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37. A drainage plan showing all paths of drainage from the site to surface streams.
38. The drainage patterns and approximate slopes anticipated after major grading activities.
39. Areas of soil disturbance and areas which will not be disturbed.
40. Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
41. Locations where soil stabilization practices are expected to occur.
42. Surface waters (including wetlands).
 N/A
43. Locations where stormwater discharges to surface water.
 There will be no discharges to surface water.
44. Temporary aboveground storage tank facilities.
 Temporary aboveground storage tank facilities will not be located on this site.

45. Permanent aboveground storage tank facilities.
 Permanent aboveground storage tank facilities will not be located on this site.
46. Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

Practices and measures that will be used during and after construction is completed.

47. Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.
 N/A
48. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
 The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
 A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____.
 N/A
49. Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
 N/A
50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
 The site will be used for low density single-family residential development and has 20% or less impervious cover.
 The site will be used for low density single-family residential development but has more than 20% impervious cover.
 The site will not be used for low density single-family residential development.

51. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

- Attachment I - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- The site will not be used for multi-family residential developments, schools, or small business sites.

52. **Attachment J - BMPs for Upgradient Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53. **Attachment K - BMPs for On-site Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

54. **Attachment L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

N/A

55. **Attachment M - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are

attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

N/A

56. **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan.** A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

- Prepared and certified by the engineer designing the permanent BMPs and measures
- Signed by the owner or responsible party
- Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
- Contains a discussion of record keeping procedures

N/A

57. **Attachment O - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

N/A

58. **Attachment P - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.

N/A

Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.

59. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
60. A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

Administrative Information

61. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.
62. Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.
63. The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.
 - The Temporary Stormwater Section (TCEQ-0602) is included with the application.



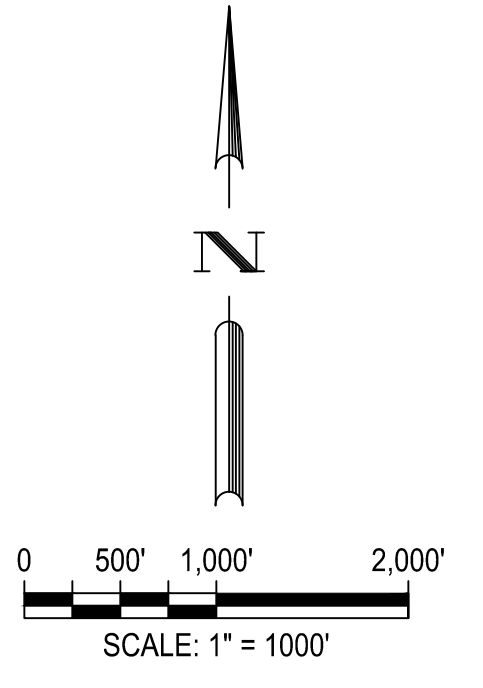
ATTACHMENT A

ROAD MAP





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G:\TXC\Projects\San Antonio Projects\7276-00 - Canyon Ranch\05 - Unit 3\05_Deliverables\01 - Submittals\02_TCEC\03_C2P Submittal Unit 3\EXHIBIT BASE FILES\ATTACHMENT A - ROAD MAP.dwg Layout: Layout1 Plotted: 10/6/2022 7:28:38 AM By: lhuck



LEGEND

-  OVERALL PROPERTY BOUNDARY
-  COUNTY LINE
-  UNIT 3 BOUNDARY
-  PARCEL LINES

REV	DESCRIPTION	DATE	APR

DESIGNED BY: LNH
 REVIEWED BY: SSM
 DRAWN BY: LNH

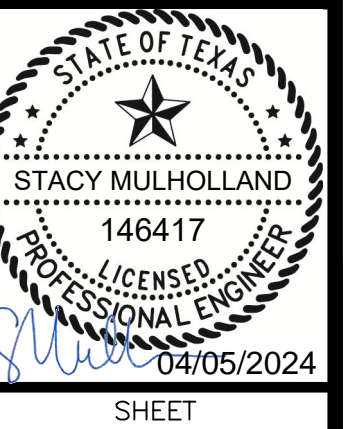


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CANYON RANCH UNIT 3

ATTACHMENT A – ROAD MAP



04/05/2024
 SHEET

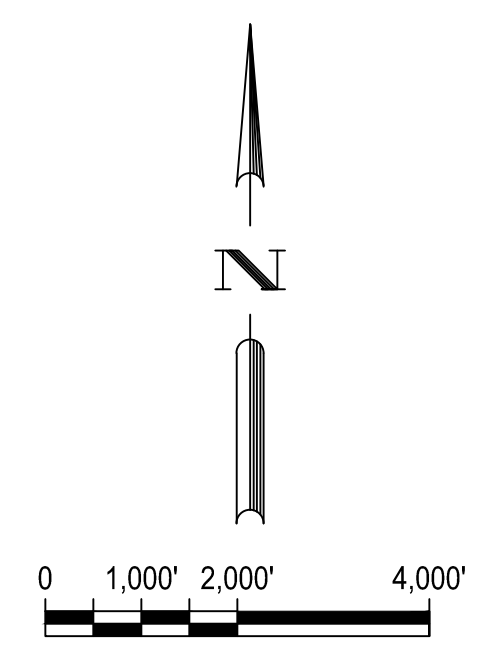
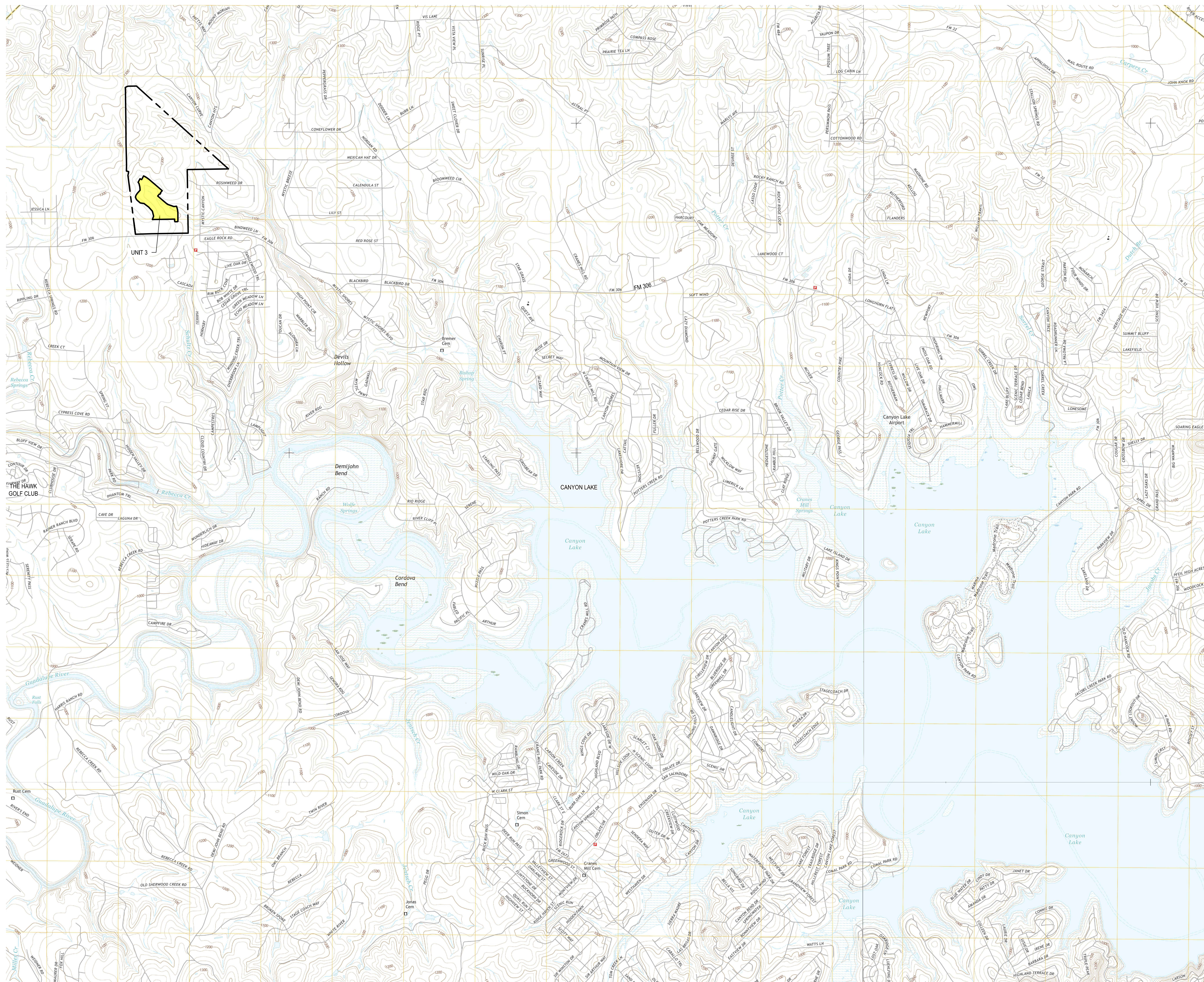


ATTACHMENT B

USGS QUADRANGLE MAP

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- LEGEND**
- OVERALL PROPERTY BOUNDARY
 - EDWARDS AQUIFER RECHARGE ZONE
 - UNIT 3 BOUNDARY

REV	DESCRIPTION	DATE	APR

DESIGNED BY: LNH
 REVIEWED BY: SSM
 DRAWN BY: LNH



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CANYON RANCH UNIT 3

ATTACHMENT B





ATTACHMENT C

PROJECT DESCRIPTION

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Canyon Ranch Unit 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment C – Project Narrative

Canyon Ranch Unit 3 is located at the northwest corner of the FM 306 and Mystic Canyon intersection. The undeveloped 46.56 acres will be developed into multiple single family residential sites. The project lies within the Guadalupe River – Canyon Lake Watershed and does not contain any FEMA 100-yr floodplains.

Canyon Ranch Unit 3 will contain 197 single family residential units and associated roadway access. Included in this Contributing Zone Plan is the FM 306 (TxDOT) widening required by this development. The TxDOT widening accounts for 1.25 acres of impervious cover. This project's scope includes clearing, grubbing, and grading of the overall site, as well as the installation of water, wastewater, and storm sewer lines. Sewage will be disposed of by conveyance to the Canyon Ranch WWTP owned and operated by Corix Utilities (Texas) (Permit Number WQ0015866001). The impervious cover will increase from natural conditions to 49.95%, or 23.26 acres of the 46.56 acre site. The permanent BMPs that will be utilized will be multiple batch detention ponds. Unit 3 proposes a batch detention pond that will treat 9.52 acres of impervious cover. The existing Unit 1 batch detention pond will treat 10.79 acres of impervious cover flowing from Unit 3. There is 1.69 acres of impervious cover that is uncaptured and will be treated by the overtreatment in the Unit 2 pond, Unit 1 pond, and Unit 3 pond. The Unit 1 pond will provide 1,128 lbs of additional TSS removal and the Unit 3 pond will provide 1,470 lbs of additional TSS removal. The unit 2 pond will provide 41 lbs of additional TSS removal to overtreat for a portion the uncaptured area. The required water quality volume of the proposed batch detention pond for Unit 3 is 120,466 CF and the provided water quality volume is 226,306 CF. The Unit 3 pond is overbuilt for anticipation of future units.

The batch detention has been sized appropriately to service all units and are included in the calculations attached. The residential subdivision construction plans submitted with this application include no plans for demolition. The TxDOT widening will remove existing pavement and widen the FM 306 roadway resulting in an additional 1.25 acres of impervious cover. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005). The tables

ATTACHMENT C

Contributing Zone Plan Application

below summarize the TSS removal calculations to show the overall project satisfies TSS removal.

Unit 1 Pond Summary						
Unit	Total Unit Area (AC)	Existing IC (AC)	Proposed IC (AC)	IC Treated by U1 Pond	Total Required TSS Removal per Unit	TSS currently removed by Unit 1 BMP
1	32.34	0	13.85	10.98	12,243	11,433
2	14.55	0	6.03	0.75	5,413	1,242
3	46.56	0	23.26	10.79	20,878	10,813
Future	3.97	0	0.85	0.85	763	337
Total	97.42	0	43.99	23.37	39,297	23,825

Table 1 – Unit 1 Pond Summary: The table above summarizes the Unit 1 Pond TSS removal calculations by Unit, including future treatment.

Unit 2 Pond Summary						
Unit	Total Unit Area (AC)	Existing IC (AC)	Proposed IC (AC)	IC Treated by U2 Pond	Total Required TSS Removal per Unit	TSS currently removed by Unit 2 BMP
2	14.55	0	6.03	3.98	5,413	4,357
Future	7.81	0	3.82	3.82	3,429	3,568
Total	22.36	0	9.85	7.80	8,842	7,925

Table 2 – Unit 2 Pond Summary: This table summarizes the Unit 2 Pond TSS removal calculations by Unit, including future treatment.

Unit 3 BMP Summary					
BMP	BMP Basin (AC)	Existing IC (AC)	Proposed IC (AC)	Required TSS Removal	Provided TSS Removal
Unit 1 Pond	18.26	0	10.79	9,685	10,813
Unit 3 Pond	20.22	0	9.52	8,545	10,015
Uncaptured - Unit 3 (Unit 1 Pond Overtreatment)	4.76	0	1.26	1,131	-
Uncaptured - Unit 3 (Unit 2 Pond Overtreatment)	0.31	0	0.31	278	41
Uncaptured - Unit 3 (Unit 3 Pond Overtreatment)	0.12	0	0.12	108	-
Uncaptured - TxDOT widening (Unit 3 OT)	2.89	0	1.25	1,122	-
TOTAL	46.56	0	23.25	20,869	20,869

Table 3 – Unit 3 BMP Summary: The table above summarizes the Unit 3 Pond TSS removal calculations by BMP, including the TxDOT widening.

ATTACHMENT C

Project Narrative

BMP Summary				
BMP	BMP Basin (AC)	IC	TSS Required	TSS Provided
Unit 1 Pond	42.19	23.37	20,968	23,825
Unit 1 FM 306 VFS	1.44	0.60	539	595
Unit 1 Flores VFS	1.14	0.40	359	323
Unit 2 Pond	17.73	7.80	7,001	7,925
Unit 2 FM 306 VFS	0.66	0.20	180	201
Unit 3 Pond	58.83	24.40	21,901	25,000
Unit 1 Uncaptured	11.06	1.88	1,687	---
Unit 2 Uncaptured	2.72	1.10	987	---
Unit 3 Uncaptured*	8.08	2.94	2,352	---
Total	143.85	62.70	55,974	57,869

*Unit 3 Uncaptured BMP includes TxDOT widening

Table 4 – BMP Summary: This table summarizes the TSS removal calculations by BMP. Future treatment has been estimated in this table to ensure the overall project satisfies TSS removal requirements. This table is to be updated with further submittals as development conditions are further refined.

ATTACHMENT C

Project Narrative



ATTACHMENT D

FACTORS AFFECTING WATER SURFACE QUALITY

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment D— Factors Affecting Surface Water Quality

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site during construction include:

- *Soil erosion due to the clearing of the site;*
- *Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings;*
- *Hydrocarbons from asphalt paving operations;*
- *Miscellaneous trash and litter from construction workers and material wrappings;*
- *Concrete truck washout.*
- *Potential overflow/spills from portable toilets*

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site after development include:

- *Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings;*
- *Dirt and dust which may fall off vehicles; and*
- *Miscellaneous trash and litter.*

ATTACHMENT D

Contributing Zone Plan Application



ATTACHMENT E

VOLUME AND CHARACTER OF STORMWATER

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment E— Volume and Character of Stormwater

The total drainage area accounted for is 46.56 acres. Proposed impervious cover accounts for 23.26 acres of the total drainage area (no existing impervious cover). 9.52 acres of impervious cover will be treated by the batch detention pond in Unit 3. Downstream of the Unit 3 pond, 10.79 acres of impervious cover will be treated by the Unit 1 batch detention pond. The remaining 1.25 acres of impervious cover is the FM 306 (TxDOT) widening required by this development. 1.69 acres of impervious cover is uncaptured and will be treated by the overtreatment in the Unit 2, Unit 1 pond, and Unit 3 pond. The Unit 1 pond will provide 1,128 lbs of additional TSS removal and the Unit 3 pond will provide 1,470 lbs of additional TSS removal. The unit 2 pond will provide 41 lbs of additional TSS removal to overtreat for a portion the uncaptured area.

Drainage area map and calculations for the site are provided with this application.

For an overview of sub-drainage basins on site, please refer to the included drainage map.

ATTACHMENT E

Contributing Zone Plan Application



ATTACHMENT J

BMPS FOR UPGRADIENT STORMWATER

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment J- BMPs for Upgradient Stormwater

An internal underground storm drain system and open channels will convey upgradient storm water into the Devil's Hollow Tributary 1. The upgradient stormwater will not be treated within the proposed subdivision.

ATTACHMENT J

Contributing Zone Plan Application

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ATTACHMENT K

BMPS FOR ON-SITE STORMWATER

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment K- BMPs for Onsite Stormwater

Silt control fences are to be installed to prevent stormwater from carrying sediment offsite during construction. Construction entrances are to be placed to facilitate the arrival and departure of construction vehicles without the addition of undue erosion. Batch detention ponds are to be installed in accordance with construction plans to treat pollutant areas of Unit 3. All PBMPs have been designed in accordance with the TCEQ'S Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site.

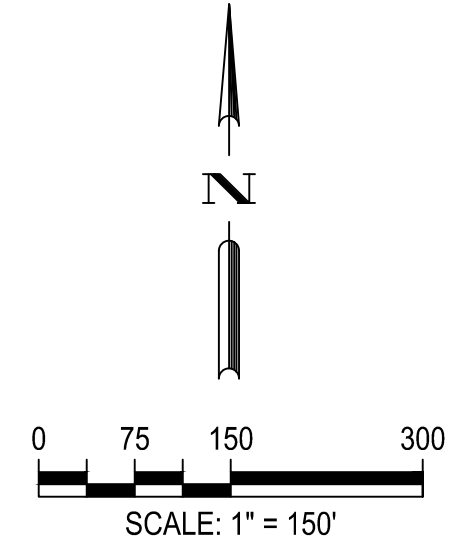
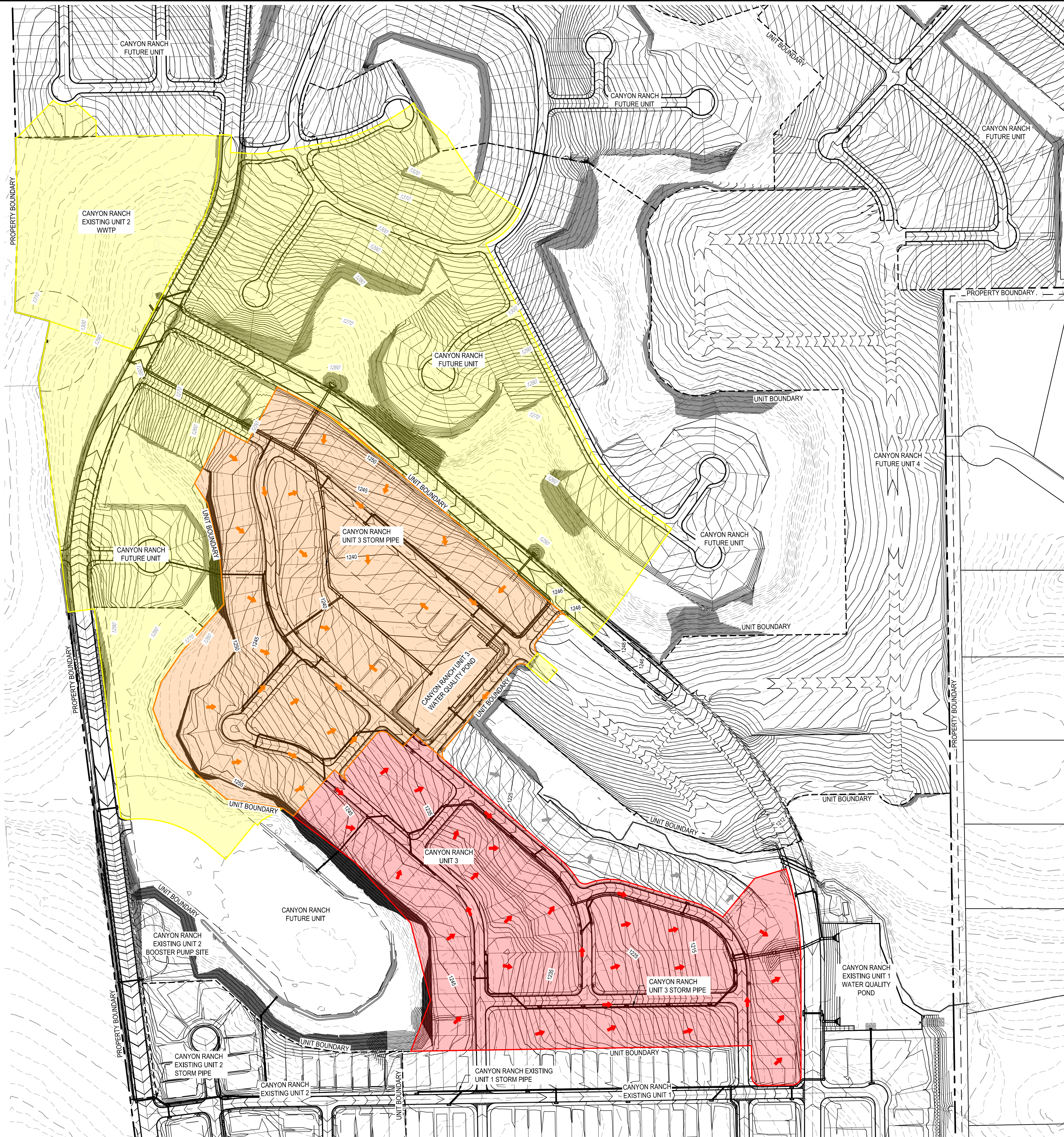
ATTACHMENT K

Contributing Zone Plan Application

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G:\TXC\Projects\San Antonio Projects\2278-00 - Canyon Ranch\05 - Unit 3\03_CADD\04_ Exhibits\FIG 6.0 PERMANENT BMP FLOW MAP.dwg Layout1 Plotted: 2/19/2024 11:05:51 AM By: Lhuck



- LEGEND**
- 1202— 2' PROPOSED CONTOURS
 - 1210— 10' PROPOSED CONTOURS
 - - -1202- - - 2' EXISTING CONTOURS
 - - -1210- - - 10' EXISTING CONTOURS
 - ▭ FLOW TO UNIT 1 POND
 - ▭ FLOW TO UNIT 3 POND
 - - - PROPERTY BOUNDARY
 - - - UNIT BOUNDARY
 - ▭ UNCAPTURED FLOW, ACCOUNTED FOR IN UNIT 3
 - ➔ UNIT 3 FLOW TO UNIT 1 POND
 - ➔ UNCAPTURED FLOW ARROWS
 - ➔ UNIT 3 FLOW TO UNIT 3 POND
 - ▭ FUTURE FLOW TO UNIT 3 POND

Unit 3 BMP Summary			
BMP	BMP TYPE	Impervious Cover (acres)	Required TSS Removal
Unit 1 Pond	Batch Detention	10.79	9,685
Unit 3 Pond	Batch Detention	9.52	8,545
Uncaptured		1.69	1,517
Uncaptured - TxDOT widening		1.25	1,122
TOTAL		23.25	20,869

REV	DESCRIPTION	DATE	APR

DESIGNED BY: LNH
 REVIEWED BY: SSM
 DRAWN BY: LNH



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CANYON RANCH UNIT 3
 PERMANENT BMP FLOW MAP



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 FIG 6.0



ATTACHMENT L

BMPs for SURFACE STREAMS

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CANYON RANCH UNIT 3
Contributing Zone Plan Application (TCEQ-10257)

Attachment L- BMPs for Surface Streams

No BMPs are proposed specifically for surface streams. Proposed on-site BMPs and drainage systems are designed to maintain existing flow patterns.

ATTACHMENT L

Contributing Zone Plan Application

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ATTACHMENT M

CONSTRUCTION PLANS

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

Attachment M- Construction Plan

Construction plans for both temporary and permanent BMPs are attached in the complete plan set.

ATTACHMENT M

Contributing Zone Plan Application

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ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

BATCH DETENTION POND

Inspections should occur at least twice a year. If possible these inspections should be conducted during wet weather to determine if the pond is meeting target detention times. Inspections should check for clogging of the primary outfall mechanism, as well as erosion problems in the upper stage pilot channel, all flow paths, and any erodible areas inside and downstream of the basin. If any slumping or erosion is discovered, immediate regrading or revegetation should be performed to correct the problems. Structural faults discovered during inspection should be identified and repaired immediately. Faults to check for include cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. All inlet/outlet and riser pipes will eventually deteriorate and require replacement.

The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. At the time of mowing, litter and debris should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed. Additionally at this time, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.

ATTACHMENT N

Contributing Zone Plan Application

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

The Logic Controller should be inspected as part of the twice yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset.

VEGETATED FILTER STRIPS

Inspection of the VFS for erosion and damage to vegetation should occur at least twice per year; additional inspection periods, however, should occur after heavy rainfall. The BMPs should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. If areas are found that have bare spots or that need restoration, those areas should be replanted to meet the TCEQ requirements.

Inspections for debris and litter removal should be performed twice per year, at the minimum. Routine periodic checks are preferred. The filter strips should be kept free of obstructions and debris to allow for proper usage and minimal blockage. Additionally, monitoring to ensure channels and preferential flow paths have not developed should be conducted during routine inspection.

Grass areas in and around basins must be mowed at least four times a year to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed. Regular mowing should also include weed control practices; herbicide usage, however, should be kept to a minimum.

*All inspection and maintenance records must be kept at the office of the operator for the previous three years.

ATTACHMENT N

Contributing Zone Plan Application

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CANYON RANCH UNIT 3

Contributing Zone Plan Application (TCEQ-10257)

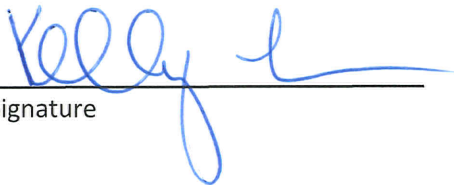
Attachment N- Inspection, Maintenance, Repair, and Retrofit Plan

This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated into a project. It should also be noted that the timing and procedures presented herein are general guidelines. Adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions but may not be altered without TCEQ approval.

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners association covenants, or other binding document.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

I, the owner, have read and understand the requirements of the attached Maintenance Plan and Schedule.



Signature

2/14/2024

Date

ATTACHMENT N

Contributing Zone Plan Application

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ATTACHMENT P

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

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CANYON RANCH UNIT 3
CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

Attachment P - Measures Minimizing Surface Stream Contamination

Any points where discharge from the site is concentrated and erosive velocities exist will include appropriately sized energy dissipators to reduce velocities to non-erosive levels.

ATTACHMENT P

Contributing Zone Plan Application

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Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Stacy Mulholland

Date: 02/14/2024

Signature of Customer/Agent:



Regulated Entity Name: Canyon Ranch

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, Canyon Lake

Temporary Best Management Practices (TBMPs)

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

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

- A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
 - A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
 - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
 - A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
 - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
 - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
 - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
 - There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- N/A
12. **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

18. Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
19. Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21. If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
22. Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.



ATTACHMENT A

SPILL RESPONSE

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment A — Spill Response Actions

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.

ATTACHMENT A

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor will be required to report significant or hazardous spills in reportable quantities to:

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.

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

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

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.

ATTACHMENT A

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

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

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

ATTACHMENT A

Temporary Stormwater Section



ATTACHMENT B

POTENTIAL SOURCES OF CONTAMINATION

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment B – Potential Sources of Contamination

Other potential sources of contamination during construction include:

Potential Source

- Asphalt products used on this project.

Preventative Measure

- 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 foretasted rain.

Potential Source

- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.

Preventative Measure

- Vehicle maintenance when possible will be performed within the construction staging area.
- Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.

ATTACHMENT B

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Potential Source

- Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

Preventative Measure

- Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
- Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
- Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
- A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.

Potential Source

- Miscellaneous trash and litter from construction workers and material wrappings.

Preventative Measure

- Trash containers will be placed throughout the site to encourage proper trash disposal.

Potential Source

- Construction debris.

Preventative Measure

- Construction debris will be monitored daily by 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 B

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Potential Source

- Spills/Overflow of waste from portable toilets.

Preventative Measure

- Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
- Portable toilets will be placed on a level ground surface.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT B

Temporary Stormwater Section



ATTACHMENT C

SEQUENCE OF MAJOR ACTIVITIES

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment C- Sequence of Major Activities

- A. Unit 3 Lot Development (Approximately 46.56 Acres)
 1. *Install temporary erosion and sediment controls and stabilized construction entrance as indicated on erosion control plan.*
 2. *Rough grade all streets.*
 3. *Install all utilities in the right of way.*
 4. *Regrade and compact subgrade.*
 5. *Ensure all underground utility crossings are in place and install first course of base.*
 6. *Install curbs, rip-rap, and miscellaneous concrete.*
 7. *Install second base course.*
 8. *Prior to paving, mandrel, low pressure, hydrostatic, vacuum, and a camera golf ball test must be complete prior to paving.*
 9. *Lay asphalt.*
 10. *Camera inspection to ensure wastewater system is free of debris.*
 11. *Final grade any ditches and parkways.*
 12. *Revegetate disturbed areas, dispose of spoil.*
 13. *Final inspection.*
 14. *Removal of temporary erosion controls.*

ATTACHMENT C

Temporary Stormwater Section



ATTACHMENT D

TEMPORARY BMPS

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment D – Temporary Best Management Practices and Measures

- a. 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.

Upgradient water will be intercepted by curb inlets and routed around the project limits. All TBMPs are adequate for the drainage areas they serve.

- b. 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.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms with silt fencing downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of gravel filter bags downgradient of construction activities for temporary erosion and sedimentation controls (4) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (5) installation of construction staging area(s).

ATTACHMENT D

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

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. By containing the sediment and solids within the Site, they will not enter surface streams and/or sensitive features.

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

There were no naturally-occurring sensitive features observed on the site and no surface streams on, or adjacent, to the project limits. All Temporary BMPs utilized are adequate for the drainage areas served.

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. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

- d. 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.

There were no naturally-occurring sensitive features observed on the site and no surface

ATTACHMENT D

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

streams on, or adjacent, to the project limits. All Temporary BMPs utilized are adequate for the drainage areas served.

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. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

ATTACHMENT D

Temporary Stormwater Section



ATTACHMENT F

STRUCTURAL PRACTICES

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment F - Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities:

- *Erection of silt fences along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection, as located on sheet C02.10 Erosion & Sedimentation Control Plan.*
- *Installation of inlet protection at downgradient inlets of construction activities, as located on sheet C02.10.*
- *Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on sheet C02.10.*

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- *Installation of concrete truck washout pit(s), as required and located on sheet C02.10.*

ATTACHMENT F

Temporary Stormwater Section



ATTACHMENT I

BMP MAINTENANCE

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment I - Inspection and Maintenance for BMPs

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) Check sediment basin's embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed by the contractor. Trash and other debris within the basins should be removed after each rainfall to prevent clogging of the outlet structure. Accumulated silt within the basins should be removed and the basin should be re-graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.

ATTACHMENT I

Temporary Stormwater Section



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

_____ **A brief statement describing the qualifications of the inspector is included in this SWP3.**

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

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

Inspector's Name

Inspector's Signature

Date



CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

PROJECT MILESTONE DATES

Date when major site grading activities begin:

<u>Construction Activity</u>	<u>Date</u>
<u>Installation of BMPs</u>	

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

<u>Construction Activity</u>	<u>Date</u>

Dates when stabilization measures are initiated:

<u>Stabilization Activity</u>	<u>Date</u>

Removal of BMPs
Temporary Stormwater Section



ATTACHMENT J

SCHEDULE OF INTERIM & PERMANENT SOIL STABILIZATION PRACTICES

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CANYON RANCH UNIT 3

Temporary Stormwater Section (TCEQ-0602)

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (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 seasonably arid conditions, stabilization measures must be initiated as soon as practicable. Stabilization measures in this instance shall comply with temporary stabilization as defined in TXR150000 or as defined otherwise in the landscape plans where applicable.

ATTACHMENT J

Temporary Stormwater Section

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

I _____ Kelly Leach _____
Print Name

_____ President _____
Title - Owner/President/Other

of _____ Gram Vikas Partners, Inc. _____
Corporation/Partnership/Entity Name

have authorized _____ BGE, Inc. _____
Print Name of Agent/Engineer

of _____ BGE, Inc. _____
Print Name of Firm

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

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Kelly
Applicant's Signature

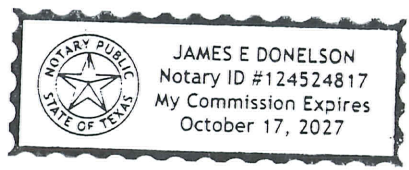
March 4 2024
02/14/2024
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Kelly Leach 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 4 day of March, 2024



James Donelson
NOTARY PUBLIC

James Donelson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10-17-27

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Kelly Leach of Canyon Ranch 400 LP
Land Owner Signatory Name Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

North of FM 306 between Loma Ranch Road and Mystic Canyon, approx 3 miles from US Highway 281 and the FM 306 Intersection

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gram Vikas Partners, Inc.
Applicant Name (Legal Entity or Individual)

to conduct regulated activities allowed by the approved CZP
Description of the proposed regulated activities

at North of FM 306 between Loma Ranch Road and Mystic Canyon, approx 3 miles from US Highway 281 and the FM 306 Intersection
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Canyon Ranch 400 LP
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Kelly

Land Owner Signature

March 4 2024

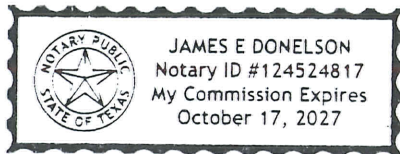
Date

THE STATE OF § TX

County of § BEXAR

BEFORE ME, the undersigned authority, on this day personally appeared Kelly Leach 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 4 day of March, 2024



James Donelson

NOTARY PUBLIC

James Donelson

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10-17-27

Attached: (Mark all that apply)

- Lease Agreement
- Signed Contract
- Deed Recorded Easement
- Other legally binding document

Applicant Acknowledgement

I, Kelly Leach of Gram Vikas Partners, Inc.
Applicant Signatory Name Applicant Name (Legal Entity or Individual)

acknowledge that Canyon Ranch 400 LP
Land Owner Name (Legal Entity or Individual)

has provided Gram Vikas Partners, Inc.
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gram Vikas Partners, Inc.
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director’s approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Kelly Leach
Applicant Signature

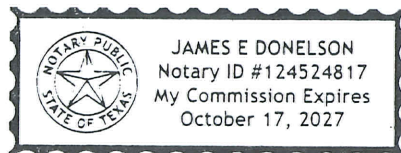
March 4 2024
Date

THE STATE OF § _____

County of § _____

BEFORE ME, the undersigned authority, on this day personally appeared Kelly Leach 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 4 day of March



James E. Donelson
NOTARY PUBLIC
James Donelson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10-17-2027

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Canyon Ranch Unit 3

Regulated Entity Location: North of FM 306 between Loma Ranch Road and Mystic Canyon, approximately 3 miles from the US Highway 281 and FM 306 intersection.

Name of Customer: Gram Vikas Partners, Inc.

Contact Person: Kelly Leach

Phone: (210) 827-7918

Customer Reference Number (if issued): CN 605577949

Regulated Entity Reference Number (if issued): RN 111592846

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

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(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	46.56 Acres	\$ 6,500
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 02/14/2024

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	Project Area in Acres	Fee
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$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

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	Fee
Exception Request	\$500

Extension of Time Requests

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



TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 605577949		RN 111592846

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	4/18/2022	
<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)			
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).			
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
Gram Vikas Partners, Inc.			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0802913090	32066007504	455536030	
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <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 checked="" type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Occupational Licensee <input checked="" type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
15. Mailing Address:	1141 N Loop 1604		
	City	San Antonio	State TX ZIP 78232 ZIP + 4
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		kelly.welovedirt@gmail.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(210) 827-7918		() -	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)		
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information		
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).		
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)		
Canyon Ranch Unit 3		

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>							
	City		State		ZIP		ZIP + 4
24. County	Comal						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 3.68 miles northeast of Highway 281 and FM 306 intersection.						
26. Nearest City	Fischer			State	TX	Nearest ZIP Code	78070
27. Latitude (N) In Decimal:	29.955		28. Longitude (W) In Decimal:	98.35278			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	57	18	98	21	10		
29. Primary SIC Code (4 digits)	1521	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)	236117	32. Secondary NAICS Code (5 or 6 digits)	
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>							
Single family residential housing.							
34. Mailing Address:							
	City		State		ZIP		ZIP + 4
35. E-Mail Address:							
36. Telephone Number		37. Extension or Code			38. Fax Number <i>(if applicable)</i>		
() -					() -		

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"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Stacy Mulholland	41. Title:	PE
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 581-3637		() -	smulholland@bgeinc.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:	Gram Vikas Partners, Inc.	Job Title:	President
Name <i>(In Print)</i> :	Kelly Leach	Phone:	(210) 827- 7918
Signature:		Date:	March 4 2024



TCEQ Use Only

TCEQ Core Data Form

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SECTION I: General Information

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2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 605941475		RN 111592846

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	02/14/2024	
<input checked="" 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)			
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6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
Canyon Ranch 400 LP			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number* (if applicable)
0803641552	32074563134	742791904	
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
15. Mailing Address:	1141 N Loop 1604 E, Suite 105-114		
	City	San Antonio	State TX ZIP 78232 ZIP + 4
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		kelly.welovedirt@gmail.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(210) 827-7918		() -	

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Canyon Ranch Unit 3

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	City		State		ZIP		ZIP + 4
24. County	Comal						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 3.68 miles northeast of Highway 281 and FM 306 intersection.						
26. Nearest City	Fischer			State	TX	Nearest ZIP Code	78070
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Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	57	18	98	21	10		
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1521		236117					
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>							
Single family residential housing.							
34. Mailing Address:							
	City		State		ZIP		ZIP + 4
35. E-Mail Address:							
36. Telephone Number	37. Extension or Code		38. Fax Number <i>(if applicable)</i>				
() -			() -				

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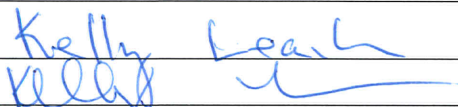
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review 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"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Stacy Mulholland	41. Title:	PE
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 581-3637		() -	smulholland@bgeinc.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:	Canyon Ranch 400 LP	Job Title:	General Partner
Name (In Print):	Kelly Leach	Phone:	(210) 827-7918
Signature:		Date:	Feb 20 2024

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 9, 2022

Kelly Leach
Gram Vikas Partners, Inc.
141 N. Loop 1604, 105-114
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Canyon Ranch Unit 1; Located approximately 3.66-miles northeast of US Highway 281 and FM 306 intersection; Comal County, Texas

TYPE OF PLAN: Request for Modification of an Approved Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer

Regulated Entity No. RN111346102; Additional ID No. 13001556

Dear Kelly Leach:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP Modification for the above-referenced project submitted to the San Antonio Regional Office by BGE, Inc. on behalf of Gram Vikas Partners, Inc. on June 15, 2022. Final review of the CZP was completed after additional material was received on August 11, 2022, and September 1, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The TCEQ approved the original CZP application titled Canyon Ranch Unit 1 by letter dated January 21, 2021 (13001410).

PROJECT DESCRIPTION

The proposed single-family residential project will have an area increased from 26.02-acres approved January 21, 2021, to 32.34-acres in this project. It will include 112 residential lots and modification to the batch detention pond and adding one (1) vegetative filter strip. The impervious cover will be reduced from 14.04-acres to 13.85-acres (43 percent). Project wastewater will be disposed of by conveyance to the approved Canyon Ranch Wastewater Treatment Plant owned by Gram Vikas Partners, Inc.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one existing (13001410) (1) batch detention basin, one existing VFS (13001410), and one newly proposed VFS, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 12,432 pounds of TSS generated from the 13.85- acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

- I. This modification is subject to all Special and Standard Conditions listed in the CZP approval letter dated January 21, 2021.
- II. All permanent pollution abatement measures shall be operational prior to occupancy of the facilities within their respective drainage areas.
- III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

8. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. 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).
10. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
11. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
13. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 5, above.

After Completion of Construction:

14. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
17. A Contributing Zone Plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Drew Evans of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4053.

Sincerely,



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

LIB/de

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

cc: Mr. Aaron Neumann, P.E., BGE, Inc.
Ms. Stacy Mulholland, EIT, BGE, Inc

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

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

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

Signature of New Responsible Party Date

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

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

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

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 26, 2022

Mr. Kelly Leach
Gram Vikas Partners, Inc
1141 N Loop 1604, 105-114
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Canyon Ranch Unit 2; Located approximately 3.66 miles northeast of the US Hwy 281 and FM 306 intersection; Comal County, Texas

TYPE OF PLAN: Request for Modification of an Approved Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer

Regulated Entity No. RN111356259; Additional ID No. 13001557

Dear Mr. Leach:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP Modification for the above-referenced project submitted to the San Antonio Regional Office by BGE, Inc. on behalf of Gram Vikas Partners, Inc. on June 15, 2022. Final review of the CZP Modification was completed after additional material was received on August 3, 2022, and August 18, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The original Canyon Ranch Unit 2 CZP (13001422) was approved by letter, dated January 28, 2022. The residential project had a site area of 14.55 acres and included the construction of 49 single-family residential lots with associated roadways. The impervious cover was approved to be 8.72 acres. One previously approved batch detention basin (13001410), one new batch detention basin, and one new engineered vegetative filter strip (VFS) were approved to treat stormwater generated by the project.

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 14.55 acres. It will include the construction of 46 single-family lots with associated roadways and modifications to the previously approved batch detention basin (13001422) and engineered VFS (13001422). The impervious cover will be 6.03 acres (41.44 percent). Project wastewater will be disposed of by conveyance to the existing Canyon Ranch Wastewater Treatment Plant owned by the Canyon Ranch Municipal Utility District.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one batch detention basin from Unit 1 (13001410), a second batch detention basin and an engineered VFS, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized and constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 5,413 pounds of TSS generated from the 6.03 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

- I. This modification is subject to all Special and Standard Conditions listed in the CZP approval letter dated January 28, 2022.
- II. All permanent pollution abatement measures shall be operational prior to first occupancy of the homes within their respective drainage areas.
- III. All sediment and/or media removed from the water quality basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

8. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. 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).
10. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
11. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
13. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 5, above.

After Completion of Construction:

14. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

Mr. Kelly Leach
Page 4
August 26, 2022

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
17. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Joshua Vacek of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4028.

Sincerely,



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

LIB/jv

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

cc: Ms. Stacy Mulholland, EIT, BGE, Inc.

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

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

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

Signature of New Responsible Party Date

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

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

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

CANYON RANCH UNIT 3

COMAL COUNTY

CIVIL CONSTRUCTION DRAWINGS

WATER, SEWER, STREET AND DRAINAGE IMPROVEMENTS

JANUARY 2023

STREETS - COMAL COUNTY
 WATER - CANYON LAKE WATER SERVICE COMPANY, SJWTX
 DRAINAGE - COMAL COUNTY
 WASTEWATER - CANYON RANCH MUD OF COMAL COUNTY

FEMA PANEL: #48091C0080F, DATED SEPTEMBER 9, 2009
 TRACT SIZE: 43.06 ACRES
 TYPE: SINGLE FAMILY RESIDENTIAL

CONTACT INFORMATION FOR COORDINATION AND EMERGENCY

COMAL COUNTY ENGINEER'S OFFICE: (830) 608-2090
 ELECTRIC UTILITY: PEDERNALES ELECTRIC COOPERATIVE: (512) 262-2161
 WATER UTILITY: CANYON LAKE WATER SERVICE COMPANY, SJWTX: (830) 312-4600
 WASTEWATER UTILITY: CANYON RANCH MUD OF COMAL COUNTY: (512) 328-2008
 TEXAS DEPARTMENT OF TRANSPORTATION: (512) 832-7000
 FIRE DEPARTMENT: COMAL COUNTY ESD #1 & #4: (830) 228-4501

BENCHMARK

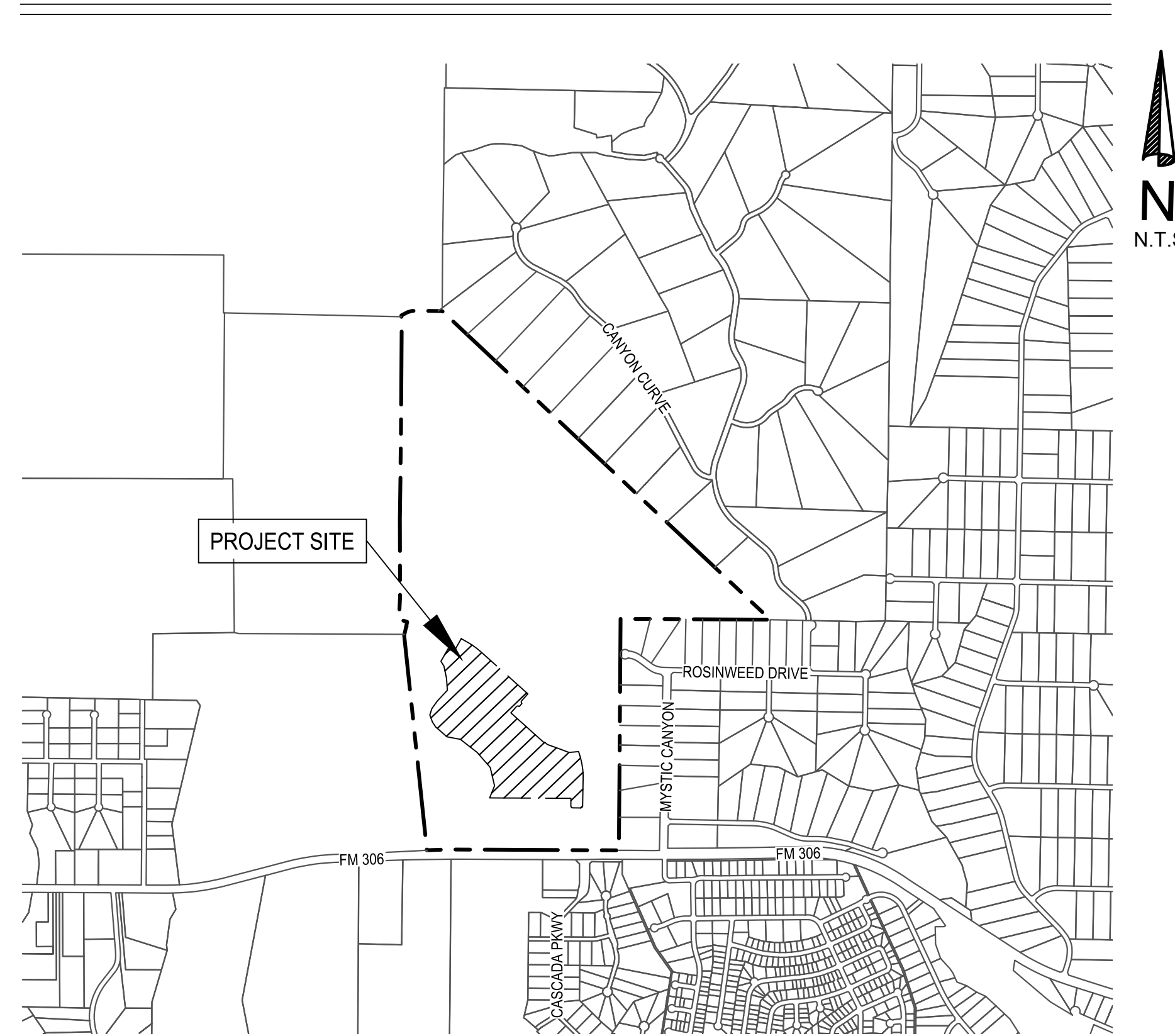
BM #101: MAG NAIL SET IN ASPHALT DRIVEWAY APRON LOCATED ON THE SOUTH SIDE OF FARM TO MARKET 306, ±614' FROM THE SOUTHWEST CORNER OF THE 400.00 ACRE PARENT TRACT. ELEVATION: 1,228.08'

BM #102: MAG NAIL SET 2' SOUTH FROM THE EDGE OF ASPHALT PAVEMENT OF FARM TO MARKET 306, ± 278' FROM THE SOUTHEAST CORNER OF THE 400.00 ACRE PARENT TRACT. ELEVATION: 1,195.17'

ACCEPTED FOR CONSTRUCTION:

COMAL COUNTY	DATE
CANYON LAKE WS SJWTX	DATE
CANYON RANCH MUD	DATE

VICINITY MAP



NAME: CANYON RANCH UNIT 3

OWNER: CANYON RANCH 400
 CONTACT: KELLY LEACH, PRESIDENT
 1141 N. LOOP 1604
 SUITE 105-114
 SAN ANTONIO, TEXAS 78232
 PHONE: (210) 827-7918

ENGINEER: BGE, INC., TBPE-1046
 CONTACT: AARON NEUMANN P.E.
 EMAIL: ANEUMANN@BGEINC.COM
 7330 SAN PEDRO AVENUE SUITE 202
 SAN ANTONIO, TEXAS 78216
 PHONE: (210) 581-3600

WATER: CANYON LAKE WATER SERVICE, SJWTX
 1399 SATTTLER RD
 NEW BRAUNFELS, TEXAS 78132
 PHONE: (830) 312-4600

ELECTRIC: PEDERNALES COOP, INC.
 PO BOX 1
 JOHNSON CITY, TEXAS 78636
 PHONE: (877) 372-0391

DEVELOPER: GRAM VIKAS PARTNERS, INC.
 CONTACT: KELLY LEACH, PRESIDENT
 1141 NORTH LOOP 1604
 SUITE 105 - 114
 SAN ANTONIO, TX 78232
 PHONE: (210) 827-7918

LAND SURVEYOR: BGE INC., TBPE F1046
 CONTACT: DION ALBERTSON R.P.L.S.
 7330 SAN PEDRO AVE SUITE 202
 SAN ANTONIO, TX 78216
 PHONE: (210) 581-3600

WASTEWATER: CANYON RANCH MUD OF COMAL COUNTY
 ATTN: MCGLEAN & HOWARD LLP
 901 SOUTHWOPAR SUITE 225
 AUSTIN, TX 78746
 PHONE: (512) 328-2008

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35	C05.07 LOGORNO COVES PLAN & PROFILE STA 1+00 TO 6+89	93	C09.14 SANITARY SEWER I PLAN & PROFILE STA 1+00 TO 5+00
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49	C06.07 STORM DRAIN D PLAN & PROFILE STA 1+00 TO END	107	C11.20 TRAFFIC CONTROL DETAILS (SHEET 1 OF 3)
50	C06.08 STORM DRAIN E PLAN & PROFILE STA 1+00 TO END	108	C11.21 TRAFFIC CONTROL DETAILS (SHEET 2 OF 3)
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57	C06.15 STORM DRAIN K PLAN & PROFILE STA 1+00 TO END		
58	C06.16 STORM DRAIN L PLAN & PROFILE STA 1+00 TO END		

UNDER SEPARATE COVERS

RETAINING WALL:
 RBM CANYON RANCH UNIT 3
 PROJECT NO.:
 DATE ISSUED:

STRUCTURAL:
 ALPHA CANYON RANCH UNIT 3
 PROJECT NO.:
 ISSUED:

ELECTRICAL:
 M&S CANYON RANCH UNIT 3
 PROJECT NO.: XXXXXX
 ISSUED: 11/01/2022

SUBMITTED BY

Stacy Mulholland
 STACY S. MULHOLLAND, P.E.
 BGE, INC. TBPE NO. 146417
 7330 SAN PEDRO AVENUE
 SUITE 202
 SAN ANTONIO, TEXAS 78216
 (210) 581-3600 (MAIN)



BGE, Inc.
 7330 San Pedro Ave., Suite 202
 San Antonio, TX 78216
 Tel: 210-581-3600 • www.browngay.com
 TBPE Registration No. F-1046

REVISIONS/CORRECTIONS					
SHEET LIST	DESCRIPTION	DATE	REVISE (R) ADD (A) VOID (V) SHEET NO.'S	ACCEPTED BY	APPROVAL DATE



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

GENERAL NOTES

- 1. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF COUNTY APPROVAL FOR CONSTRUCTION INSPECTION THAT APPROVAL IS NO LONGER VALID.
2. THE MOST CURRENT EDITIONS OF COMAL COUNTY STANDARD SPECIFICATIONS AND THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES SHALL BE FOLLOWED FOR ALL CONSTRUCTION EXCEPT AS AMENDED BY THE CITY OF NEW BRUNSWICK, CITY OF SAN ANTONIO, OR CITY OF AUSTIN STANDARD DETAILS.
3. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, COMAL COUNTY MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
4. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL CONTACT COMAL COUNTY TO SET A PRE-CONSTRUCTION MEETING. A 48-HOUR NOTIFICATION IS REQUIRED FOR ALL INSPECTION AND MEETING REQUESTS.
- ALL INSPECTIONS ARE TO BE CALLED IN AT (830) 608-2090
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IF, IN THE OPINION OF THE ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO THE ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. A TXDOT TYPE II B-B BLUE REFLECTIVE RAISED PAVEMENT MARKER SHALL BE INSTALLED IN THE CENTER OF THE ROADWAY ADJACENT TO ALL FIRE HYDRANTS. IN LOCATIONS WHERE FIRE HYDRANTS ARE SITUATED ON CORNERS, BLUE REFLECTIVE RAISED PAVEMENT MARKERS SHALL BE INSTALLED ON BOTH APPROACHES FROM THE HYDRANT. THE RAISED PAVEMENT MARKER SHALL MEET TXDOT MATERIAL, EPOXY, AND ADHESIVE SPECIFICATIONS.

GROUND WATER:

- 1. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, CONTRACTOR, SUBCONTRACTORS, BUILDERS, GEO-TECHNICAL ENGINEER, AND PROJECT ENGINEER TO IMMEDIATELY NOTIFY THE OFFICE OF THE COUNTY ENGINEER AND PROJECT ENGINEER IF THE PRESENCE OF GROUNDWATER WITHIN THE SITE IS EVIDENT. UPON NOTIFICATION THE PROJECT ENGINEERS SHALL RESPOND WITH PLAN REVISIONS FOR THE MITIGATION OF THE GROUNDWATER ISSUE. THE COUNTY ENGINEER SHALL RESPOND WITH TWO (2) BUSINESS DAYS UPON RECEIPT OF THE MITIGATION PLAN. ALL CONSTRUCTION ACTIVITY, IMPACTED BY THE DISCOVERY OF GROUNDWATER, SHALL BE SUSPENDED UNTIL THE COUNTY ENGINEER GRANTS A WRITTEN APPROVAL OF THE GROUNDWATER MITIGATION PLAN.

RECORD DRAWINGS:

- 1. AS PER PLATTING ORDINANCE SECTION 118-38M: WHEN ALL OF THE IMPROVEMENTS ARE FOUND TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND WITH THE COUNTY'S STANDARDS, AND UPON RECEIPT OF ONE SET OF "RECORD DRAWING" PLANS, AND DIGITAL COPY OF ALL PLANS (PDF COPY) THE COUNTY ENGINEER SHALL ACCEPT SUCH IMPROVEMENTS FOR COMAL COUNTY, SUBJECT TO THE GUARANTY OF MATERIAL AND WORKMANSHIP PROVISIONS IN THIS SECTION.

CONSTRUCTION NOTE:

- 1. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT EROSION CONTROL MEASURES AND STORM WATER CONTROL SUFFICIENT TO MITIGATE OFF-SITE IMPACTS ARE IN PLACE AT ALL STAGES OF CONSTRUCTION.

DRAINAGE NOTE:

- 1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE THE IMPACT OF CONSTRUCTION SHALL BE INSTALLED PRIOR TO ADDING IMPERVIOUS COVER.

FINISHED FLOOR ELEVATIONS:

- 1. THE ELEVATIONS OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORM WATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO STORM WATER CONVEYANCE STRUCTURES MUST HAVE A FLOOR SLAB ELEVATION OR BOTTOM FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE A PROPERLY SIZED GROSS SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE.

SOILS TESTING:

- 1. PROCTORS SHALL BE SAMPLED FROM ON-SITE MATERIAL (ON-SITE IS DEFINED AS LIMITS OF CONSTRUCTION FOR THIS PLAN SET) AND A COPY OF THE PROCTOR RESULTS SHALL BE DELIVERED TO COMAL COUNTY STREET INSPECTOR PRIOR TO ANY DENSITY TESTS.

ROADWAY:

- 1. ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FLEXIBLE BASE OR FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED SIX INCHES COMPACTED. EACH LAYER OF MATERIAL, INCLUSIVE OF SUB GRADE, SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, AND TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY COMAL COUNTY STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100 LF FOR EACH UPLIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER WILL PROVIDE COMAL COUNTY STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FLEXIBLE BASE, AND FILL MATERIAL, AND SUB GRADE, HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ITEM 340: ASPHALTIC CONCRETE PAVEMENT SHALL BE TYPE "D" HOT MIX ASPHALT AS DEFINED IN TXDOT'S STANDARD SPECIFICATIONS FOR CURRENT TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET, AND BRIDGES.
3. COMAL COUNTY WILL NOT ACCEPT THE USE OF RECYCLED ASPHALT PAVEMENT (RAP) OR RECYCLED ASPHALT SHINGLES (RAS) IN ASPHALT MIXTURES FOR NEW ROADWAYS. ANY DEBRIS INCLUSIONS WITHIN NEW ASPHALT PAVEMENTS WILL RESULT IN ASPHALT REMOVAL AND REPLACEMENTS FROM CURB TO CURB FOR LIMITS TO BE DETERMINED BY COMAL COUNTY.
4. THE ASPHALTIC CONCRETE SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "D" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE MIX SHALL BE DESIGNED FOR A STABILITY OF AT LEAST 35 AND SHALL BE COMPACTED TO BETWEEN 91 AND 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY TXDOT TEST METHOD T227-F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL FALL WITHIN A TOLERANCE OF +/- 0.5 PERCENT FROM A SPECIFIC MIX DESIGN.

UTILITY TRENCH COMPACTION:

- 1. ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYER NOT TO EXCEED TWELVE INCHES (12") THICK. EACH LAYER OF MATERIALS SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, AND TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER SHALL PROVIDE COMAL COUNTY STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

CURB CUT DUE TO CONSTRUCTION OF NEW RIGHT-OF-WAY CONSTRUCTION:

- 1. SAW CUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
2. SAW CUT EXISTING CURB TO THE INTO EXISTING CONSTRUCTION.

CONSTRUCTION STABILIZED ENTRANCE:

- 1. SAW CUT CURB FOR CONSTRUCTION ENTRANCE.
2. STABILIZED CONSTRUCTION AREA SHALL BE CONSTRUCTED OF 3"x5" ROCK TO BE PLACED A MINIMUM LENGTH OF 25-FT AND MAINTAINED SO THAT CONSTRUCTION DEBRIS DOES NOT FALL WITHIN THE CITY RIGHT-OF-WAY. RIGHT-OF-WAY MUST BE CLEARED FROM MUD, ROCKS, ETC.

SIGNING AND PAVEMENT MARKING PLAN NOTES:

- 1. COMAL COUNTY WILL INSTALL COUNTY ROAD SIGNS AND INVOICE THE OWNER. THE CONTRACTOR IS TO INSTALL ALL TXDOT SIGNS AND PAVEMENT MARKINGS. ALL ROAD SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED ENGINEERING PLANS. THE COUNTY WILL INSPECT ALL SIGNS AT FINAL INSPECTION.
2. THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE COUNTY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

CANYON LAKE WATER SERVICE COMPANY WATERLINE NOTES:

- 1. NO CONSTRUCTION ACTIVITIES SHALL BEGIN UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD BETWEEN THE CONTRACTOR, ENGINEER OF RECORD, AND A REPRESENTATIVE OF CLWSC.
2. IT IS THE INTENT OF THESE PLANS TO SHOW THE LOCATION OF EXISTING UNDERGROUND FACILITIES IN ACCORDANCE WITH EXISTING RECORDS. HOWEVER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY THE EXACT LOCATION OF ALL EXISTING UNDERGROUND FACILITIES PRIOR TO EXCAVATION. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY AND ALL DAMAGES TO EXISTING FACILITIES.
3. BOUNDARY FENCES OR OTHER IMPROVEMENTS REMOVED TO PERMIT CONSTRUCTION SHALL BE REPLACED IN KIND AND IN THE SAME LOCATION AND SAME CONDITION AS GOOD OR BETTER THAN IN WHICH THEY WERE FOUND. NO COMPENSATION SHALL BE GIVEN TO THE CONTRACTOR FOR REMOVAL AND REPLACEMENT OF FENCES.
4. CONTRACTOR SHALL NOTIFY THE CLWSC (830-964-3854) AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
6. CONTRACTOR SHALL NOT PLACE FILL OR WASTE MATERIAL ON ANY PRIVATE PROPERTY WITHOUT PRIOR WRITTEN AGREEMENT WITH THE PROPERTY OWNER. A COPY OF ANY WRITTEN AGREEMENT BETWEEN PROPERTY OWNER AND CONTRACTOR SHALL BE FURNISHED TO CLWSC.
7. NO EXCESS EXCAVATION MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAY WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
8. ALL VEGETATED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITIONS THAN FOUND PRIOR TO THE BEGINNING OF CONSTRUCTION.
9. BEFORE FINAL COMPLETION OF THE PROPOSED WORK, ALL ROADWAY, SLOPES, DITCHES AND BERMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
10. REMOVE AND DISPOSE OF TREES, STUMPS, BRUSH, ROOTS, VEGETATION, LOGS, RUBBISH AND OTHER OBJECTIONABLE MATTER WITHIN THE LIMITS OF AREA AFFECTED BY THE WORK, INCLUDING ALL AREAS TO BE RE-GRADED, PROTECT TREES, SHRUBS, AND OTHER LANDSCAPE FEATURES SPECIFICALLY DESIGNATED FROM DAMAGE DURING CONSTRUCTION OPERATIONS.
11. CONTRACTOR TO CONFIRM ACTUAL HORIZONTAL AND VERTICAL LOCATION OF EXISTING STRUCTURES, PIPING, PAVING, FENCING AND ALL OTHER EXISTING FACILITIES PRIOR TO CONSTRUCTION.
12. CONTRACTOR SHALL COORDINATE FOR ALL NECESSARY UTILITY LOCATES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
13. CONTRACTOR SHALL NOTIFY TEXAS DEPARTMENT OF TRANSPORTATION AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE STATE RIGHT-OF-WAY.
14. CONTRACTOR SHALL NOT OPEN CUT ANY IMPROVED DRIVEWAY IN STATE RIGHT-OF-WAY WITHOUT PRIOR WRITTEN APPROVAL OF PROPERTY OWNER.
15. FINE GRADE APPROVAL TO ACHIEVE FINAL CONTOURS INDICATED OR RESTORE EXISTING GRADES. REMOVE RUBBISH VEGETATION AND ROCKS OVER 1 1/2" IN DIAMETER. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM STRUCTURES. PROVIDE UNIFORM ROUNDINGS AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER WILL STAND.
16. NO UTILITY TRENCHES OR PITS ARE TO BE LEFT OPEN OVERNIGHT. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ADEQUATE SAFETY MEASURES ARE IN PLACE FOR BOTH HUMANS AND LIVESTOCK FOR ANY TRENCH LEFT OPEN OVERNIGHT. BACKFILLING WILL OCCUR DAILY AND AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION OPERATIONS.
17. THE MOST RECENT CLWSC STANDARDS AND SPECIFICATIONS SHALL APPLY TO ALL CONSTRUCTION REGARDLESS OF INFORMATION PROVIDED ON PLANS. CONTRACTORS ARE ENCOURAGED TO VERIFY CURRENT INFORMATION WITH CLWSC STAFF PRIOR TO THE BEGINNING OF CONSTRUCTION.
18. ALL ROAD CROSSINGS UNDER COMAL COUNTY ROADWAYS SHALL REQUIRE A SEPARATE PERMIT FROM THE COMAL COUNTY ENGINEER. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS AND SHALL CONSTRUCT ALL CROSSINGS IN ACCORDANCE WITH COMAL COUNTY STANDARDS.

CONTRACTOR SHALL:

- 1. FOLLOW METHODS AND PROCEDURES OF SHUTDOWN AS DIRECTED BY THE CLWSC STAFF.
2. NOTIFY CONSUMERS OF, AND COORDINATE ALL SHUTDOWNS WITH CLWSC PER CLWSC GUIDELINES.
3. ESTABLISH PIPE GRADES USING TOP OF FINISHED GRADE UNLESS OTHERWISE INDICATED ON PLANS.
4. GRADE MAIN TO AVOID USE OF AIR VALVES.
5. MAINTAIN MINIMUM 10 FEET CLEARANCE BETWEEN MAINS AND SANITARY SEWERS.
6. CONSTRUCT ALL CROSSINGS WITH SANITARY SEWER FACILITIES IN ACCORDANCE WITH THE MOST RECENT VERSION OF APPLICABLE TCEQ STANDARDS.
7. MAINTAIN MINIMUM 10 FEET CLEARANCE BETWEEN HYDRANTS AND DRIVEWAYS.
8. INSTALL SERVICES SUCH THAT CONSUMER'S LINES DO NOT CROSS DRIVEWAYS.
9. SHALL PROVIDE A CLEAN NEAT AS BUILT DRAWING WITHIN 30 DAYS OF JOB COMPLETION IN BOTH PAPER AND ELECTRONIC (PDF) FORMAT.
10. USE DUCTILE IRON FITTING WITH MECHANICAL JOINT AND MEGALUG PER CLWSC STANDARD SPECIFICATIONS ON ALL PIPE REGARDLESS OF PIPE MATERIAL UNLESS OTHERWISE INDICATED ON PLANS.
11. INSTALL ALL APPURTENANCES ON WATER MAIN IN ACCORDANCE WITH APPLICABLE CLWSC STANDARD DETAILS.
12. INSTALL TRACER WIRE ON ALL WATER MAINS LOCATED IN COMMERCIAL SUBDIVISIONS AND RESIDENTIAL SUBDIVISIONS WITH URBAN STREET CROSS SECTIONS.
13. MAINTAIN A COPY OF THE STAMPED SET OF PLANS "APPROVED FOR CONSTRUCTION" ON THE JOB SITE AT ALL TIMES.

TCEQ CZP GENERAL CONSTRUCTION NOTES:

- 1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
- THE NAME OF THE APPROVED PROJECT;
- THE ACTIVITY START DATE; AND
- THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
- THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.
- THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THIS SITE; AND
- THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPs) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES.

- B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER, OR
D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

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GENERAL PAVING NOTES:

- 1. PAVEMENT SUBGRADE PREPARATION AND PAVEMENT DESIGN SHOULD BE IN MINIMUM CONFORMANCE WITH THE SOILS REPORT BY THE INTEC PROJECT/REPORT NUMBER S201370 DATED DECEMBER 10, 2020. IF DISCREPANCIES EXIST BETWEEN THE REPORT AND THE CONSTRUCTION DRAWINGS, THE MORE STRINGENT WILL APPLY, BUT MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE LAB TEST WILL BE A NUCLEAR DENSITY TEST PERFORMED EVERY 150 FEE.

TCEQ 0596 NOTES:

- 1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (S&S) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
2. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
- THE NAME OF THE APPROVED PROJECT;
- THE ACTIVITY START DATE; AND
- THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
3. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CHARTER. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.
5. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE. THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET 21 OF 51. IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.
6. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED WHAT IS RECOMMENDED BY THE PIPE MANUFACTURER. IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED. SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.
7. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES I A, B, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM A 1062, CLASSES A, B OR C.
8. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEAN OUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).
9. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:
(a) FOR COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
1. LOW PRESSURE AIR TEST
(A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TO AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (B)(III) OF THIS PARAGRAPH.
(B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
(I) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.
(II) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSN TO 2.5 PSN GAUGE IS COMPUTER FROM THE FOLLOWING EQUATION:
EQUATION C.3 T = (0.85*PK)/K
WHERE: T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCHES GAUGE IN SECONDS
K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
L = LENGTH OF LINE SAME SIZE BEING TESTED, IN FEET
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE
(C) SINCE K VALUE OR LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3

Table with 7 columns: STREET CLASSIFICATION, ASPHALTIC CONCRETE TYPE B (INCHES), ASPHALTIC CONCRETE TYPE C (INCHES), AGGREGATE BASE (INCHES), GEOGRID, SUBGRADE (INCHES), STRUCTURAL NUMBER. Includes rows for LOCAL STREET (NO BUS TRAFFIC), RESIDENTIAL LOCAL (NO BUS TRAFFIC), and RESIDENTIAL COLLECTOR.

Table with 4 columns: PIPE DIAMETER (IN), MINIMUM TIME (SEC), MAXIMUM LENGTH FOR MINIMUM TIME (FT), TIME FOR LONGER LENGTH (SEC/FT). Includes rows for diameters 6, 8, 10, 12, 15, 18, 21, 24, 27, 30, 33.

- (A) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
(B) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATIONS AS OUTLINED ABOVE OR UNTIL FAILURE.
(C) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH DIAMETER OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
(D) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.
2. INFILTRATION/EXFILTRATION TEST
(A) THE TOTAL EXFILTRATION AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN EN UPSTREAM MANHOLE.
B. AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
C. THE TOTAL EXFILTRATION AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.
D. FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATIONS MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.

- E. IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RE-TEST A PIPE FOLLOWING A REMEDIATION ACTION.
(b) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:
(1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.
(A) MANDREL SIZING
(i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95 % OF THE BASE INSIDE DIAMETER (ID) OF AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTM, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
(ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF THE PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESS FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
(iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
(MANDREL DESIGN
(i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
(ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
(iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
2. FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
3. A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
4. AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
5. GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
6. IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
4. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 20TAC §217.58.
(A) ALL MANHOLES MUST PASS A LEAKAGE TEST.
(B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
(1) HYDROSTATIC TESTING
(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
(2) VACUUM TESTING
(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
(D) AN OWNER SHALL USE A MINIMUM 60 INCH LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST. A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
(G) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

- 17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(VI). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE SPECIFICATION REQUIREMENTS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

GEOTECHNICAL REPORT:

SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS
PROPOSED NEW STREETS
CANYON RANCH SUBDIVISION
COMAL COUNTY, TEXAS
REPORT FOR GRAM VIKAS PARTNERS, INC
DECEMBER 10, 2020
BY INTEC OF SAN ANTONIO, LP
12028 RADIIUM
SAN ANTONIO, TX 78216

Table with 7 columns: STREET CLASSIFICATION, ASPHALTIC CONCRETE TYPE B (INCHES), ASPHALTIC CONCRETE TYPE C (INCHES), AGGREGATE BASE (INCHES), GEOGRID, SUBGRADE (INCHES), STRUCTURAL NUMBER. Includes rows for LOCAL STREET (NO BUS TRAFFIC), RESIDENTIAL LOCAL (NO BUS TRAFFIC), and RESIDENTIAL COLLECTOR. Includes a section for SUMMARY OF RECOMMENDED OPTIONS - RIGID PAVEMENT**.

NOTE: CONTRACTOR MUST REFERENCE THE SIGNED AND SEALED GEOTECH REPORT

SUBGRADE NOTE (**):

- 1. CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME.
2. BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE BORINGS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE LESS THAN 20. SUBGRADE TREATMENT/ STABILIZATION IS NOT NEEDED IF THE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20.
3. HOWEVER, IF THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUES ARE GREATER THAN 20, THEN THE FOLLOWING OPTION MAY BE FOLLOWED:
3.1. THE CLAYS MAY BE REMOVED TO EXPOSE STRATUM II SOILS AT THE PAVEMENT SUBGRADE ELEVATION AND REPLACE WITH ON-SITE MILLED MATERIAL FILL (PLASTICITY INDEX VALUES ARE 20 OR LESS).
3.2. IF THICKER CLAY SECTIONS ARE ENCOUNTERED OR IF THE CLAYEY FILL MATERIAL IS USED TO RAISE THE GRADE, PLEASE CONTACT INTEC TO EVALUATE THE SUBGRADE CONDITIONS AND PROVIDE RECOMMENDATIONS.
4. IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 5.0 AND PLASTICITY INDEX VALUES OF 20 OR LESS. ANY STRATUM I CLAYS (ANY CLAYS WITH PLASTICITY INDEX VALUES GREATER THAN 20) SHOULD BE REMOVED PRIOR TO FILL PLACEMENT. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
GENERAL NOTES (**):
1. INPUT PARAMETERS USED IN PAVEMENT SECTION CALCULATIONS ARE SHOWN IN TABLE NOS. 5A & B. PLEASE CALL US TO PROVIDE PAVEMENT RECOMMENDATIONS, IF NEEDED, FOR DIFFERENT INPUT VALUES.
2. IF REPETITIVE TRUCK OR HEAVY TRUCK TRAFFIC IS ANTICIPATED, PLEASE CONTACT US FOR REVISED PAVEMENT RECOMMENDATIONS.
3. PAVEMENT SECTION RECOMMENDATIONS ARE BASED ON A SUBGRADE CBR VALUE OF 5.0. THE PAVEMENT RECOMMENDATIONS ARE NOT BASED ON THE SHRINK/ SWELL CHARACTERISTICS OF THE UNDERLYING SOILS.
4. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN THE PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE MAY BE REDUCED BY INSTALLING A VERTICAL MOISTURE BARRIER, SUCH AS DEEPER CURBS; CURBS EXTENDING A MINIMUM OF 6 INCHES INTO SUBGRADE.

Table with columns: REV, DATE, DESCRIPTION. Includes a revision table with columns: REV, DATE, DESCRIPTION.

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR



BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-938-3600 www.bge.com
TXE Registration No. F-1046

CANYON RANCH UNIT 3

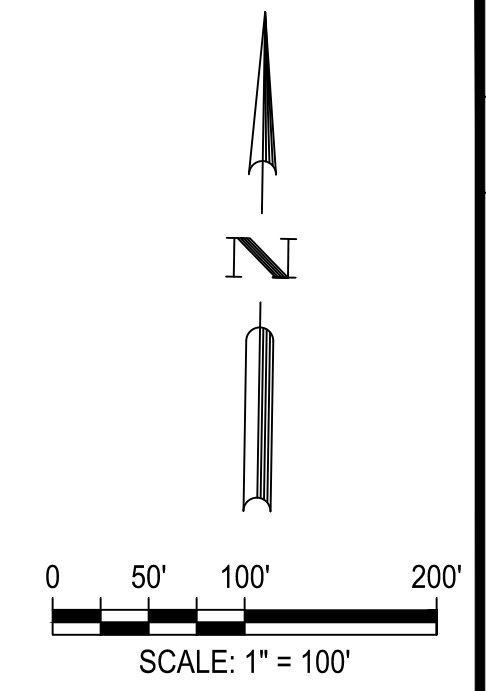


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LAUREN HILL BULLOCK ETAL
CALLED 215.49 AC
DOC #202006040613, O.P.R.C.C.
VOL. 75, PG. 242, D.R.C.C.
VOL. 605, PG. 611, D.R.C.C.

CANYON RANCH 400 LP
CALLED 400.00 AC
DOC #202006035122,
O.P.R.C.C.



LEGEND

	PROPERTY BOUNDARY
	UNIT BOUNDARY
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR

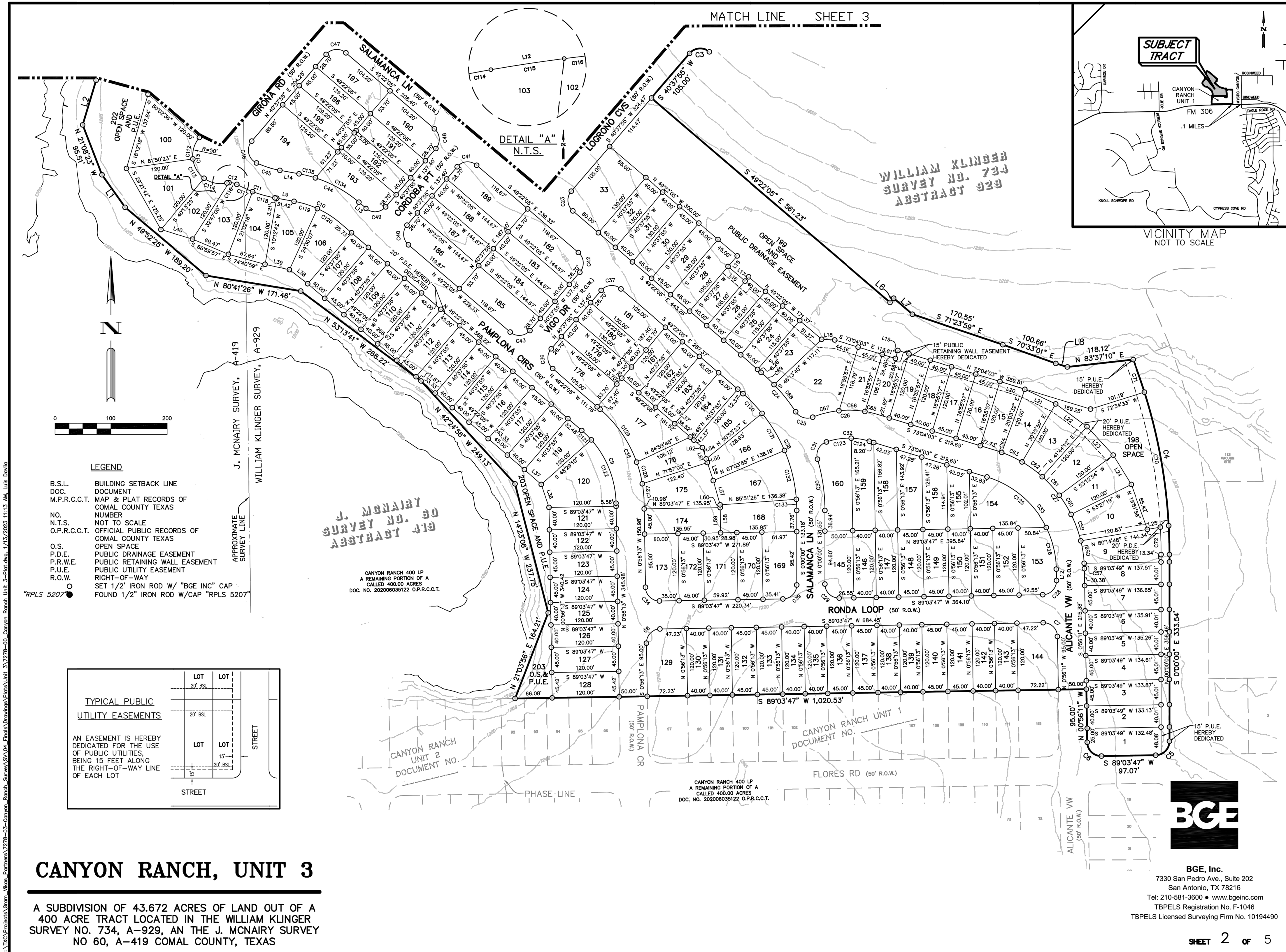
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3	DRAWN BY: SAR		

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TXPE Registration No. P-1046

CANYON RANCH UNIT 3
EXISTING CONDITIONS SURVEY

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024
SHEET
C01.10



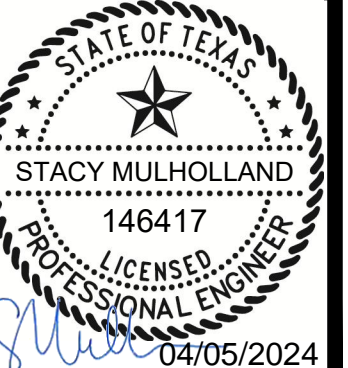
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REVIEWED BY: SSM
DRAWN BY: SAR

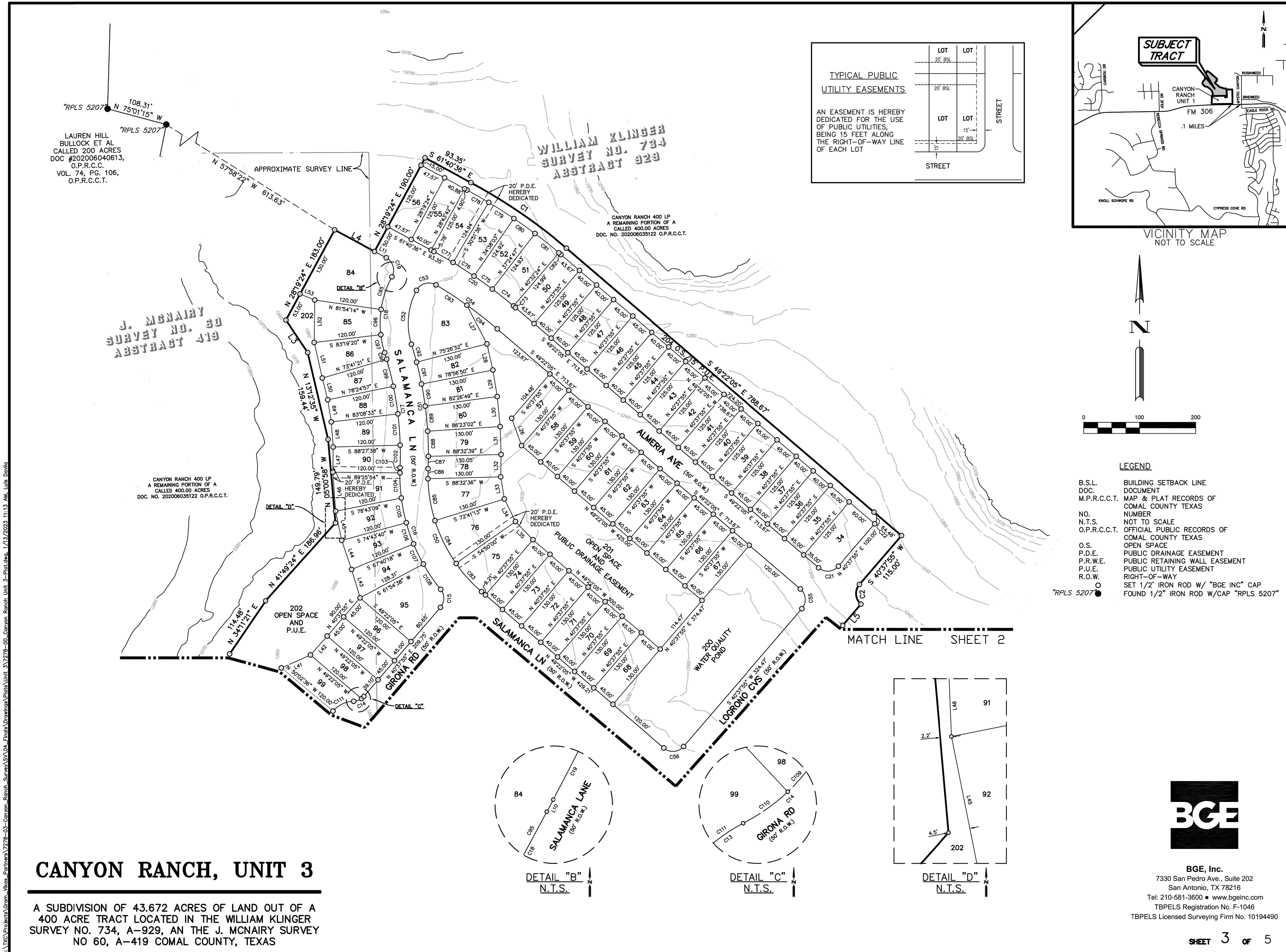


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CANYON RANCH UNIT 3
PLAT (SHEET 2 OF 5)



SHEET C01.21



REV	DESCRIPTION	DATE	APR

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DRAWN BY: SAR



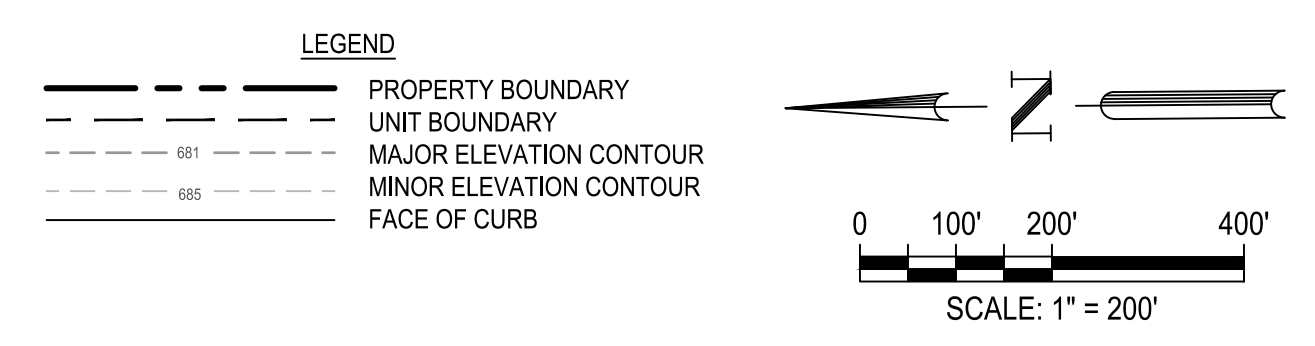
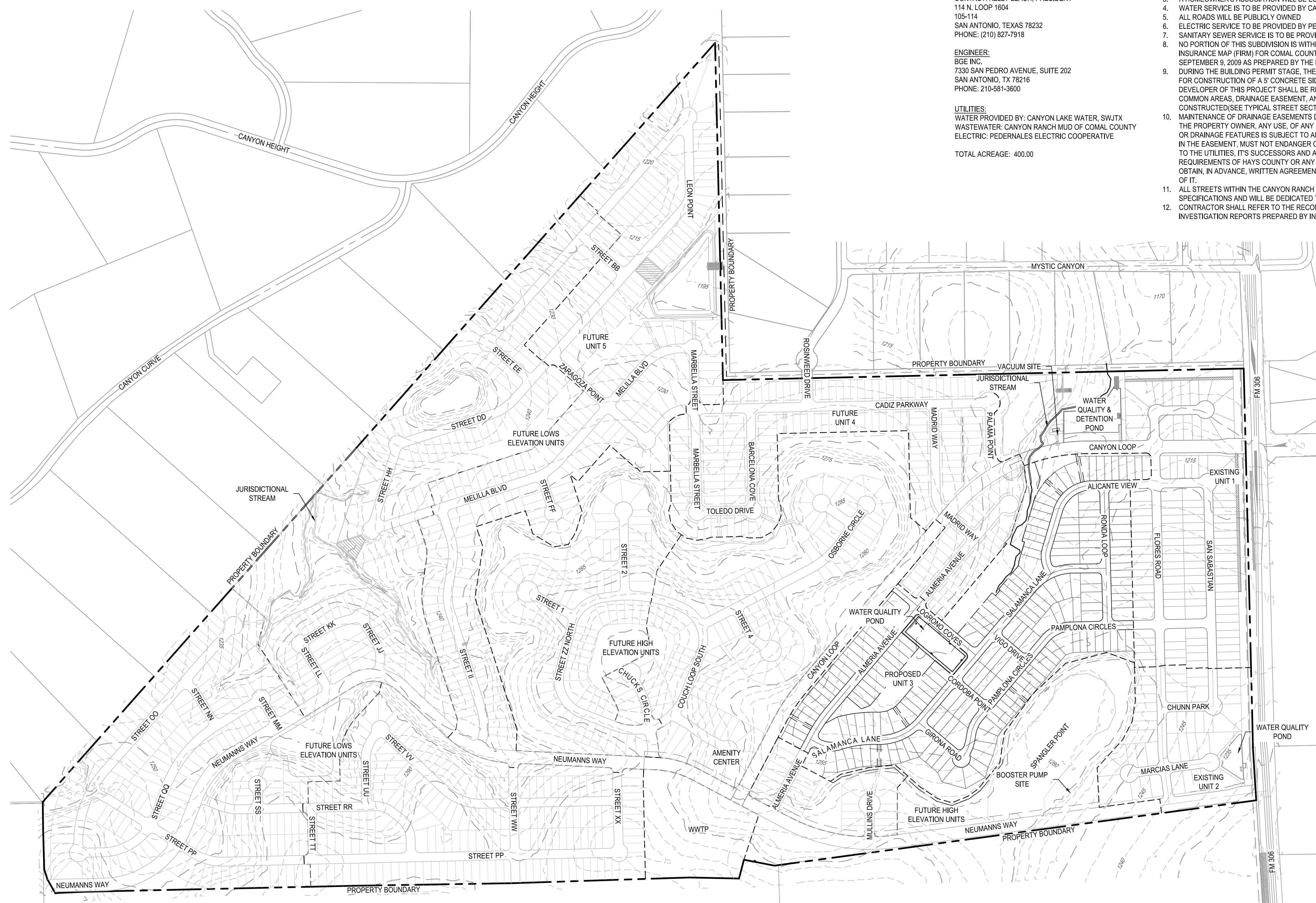
BGE, INC.
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TBPE Registration No. F-1046

CANYON RANCH UNIT 3
PLAT (SHEET 3 OF 5)



04/05/2024
SHEET
C01.22

G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\Units - Unit 3\03_CADD\01_Shts\02.00 OVERALL SITE PLAN - Plotted: 2/19/2024 12:03:47 PM By: Lhuck



DEVELOPER:
 GRAM VIKAS PARTNERS, INC.
 CONTACT: KELLY LEACH, PRESIDENT
 114 N. LOOP 1604
 105-114
 SAN ANTONIO, TEXAS 78232
 PHONE: (210) 827-7918

ENGINEER:
 BGE INC.
 7330 SAN PEDRO AVENUE, SUITE 202
 SAN ANTONIO, TX 78216
 PHONE: 210-581-3600

UTILITIES:
 WATER PROVIDED BY: CANYON LAKE WATER, SWJTX
 WASTEWATER: CANYON RANCH MUD OF COMAL COUNTY
 ELECTRIC: PEDERNALES ELECTRIC COOPERATIVE

TOTAL ACREAGE: 400.00

- GENERAL SITE PLAN NOTES**
1. THIS DEVELOPMENT SHALL COMPLY WITH THE COMAL COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS MANUAL AND THE DEVELOPMENT MANUAL.
 2. THIS SITE PLAN SHALL MEET THE COMAL COUNTY STORM WATER REQUIREMENTS.
 3. A HOMEOWNER'S ASSOCIATION WILL BE ESTABLISHED FOR THIS DEVELOPMENT.
 4. WATER SERVICE IS TO BE PROVIDED BY CANYON LAKE WSC, SJWTX.
 5. ALL ROADS WILL BE PUBLICLY OWNED.
 6. ELECTRIC SERVICE TO BE PROVIDED BY PEDERNALES ELECTRIC COOPERATIVE.
 7. SANITARY SEWER SERVICE IS TO BE PROVIDED BY CANYON RANCH MUD OF COMAL COUNTY.
 8. NO PORTION OF THIS SUBDIVISION IS WITHIN SPECIAL FLOOD HAZARD ZONE AS DELINEATED ON THE FLOOD INSURANCE MAP (FIRM) FOR COMAL COUNTY, TEXAS ON MAP NUMBER 48091C0080F RESPECTIVELY, DATED SEPTEMBER 9, 2009 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
 9. DURING THE BUILDING PERMIT STAGE, THE INDIVIDUAL HOME BUILDER/OWNER SHALL BE RESPONSIBLE FOR CONSTRUCTION OF A 5' CONCRETE SIDEWALK ALONG THE FRONTAGE OF THE INDIVIDUAL LOT. THE DEVELOPER OF THIS PROJECT SHALL BE RESPONSIBLE FOR CONSTRUCTION OF CONCRETE SIDEWALK AT COMMON AREAS, DRAINAGE EASEMENT, AND ALL OTHER AREAS WHERE SIDEWALK IS REQUIRED TO BE CONSTRUCTED (SEE TYPICAL STREET SECTION FOR PLACEMENT OF SIDEWALK)
 10. MAINTENANCE OF DRAINAGE EASEMENTS DESIGNATED WITHIN A LOT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. ANY USE, OF ANY EASEMENT, OR ANY PORTION OF IT, INCLUDING LANDSCAPING OR DRAINAGE FEATURES IS SUBJECT TO AND SHALL NOT CONFLICT WITH THE TERMS AND CONDITIONS OF THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO THE UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF HAYS COUNTY OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
 11. ALL STREETS WITHIN THE CANYON RANCH SUBDIVISION WILL BE BUILT TO THE COMAL COUNTY SPECIFICATIONS AND WILL BE DEDICATED TO THE COUNTY UPON COMPLETION AND ACCEPTANCE.
 12. CONTRACTOR SHALL REFER TO THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL INVESTIGATION REPORTS PREPARED BY INTEC (PROJECT NO. S201370).

NOTE: CONTRACTOR SHALL AVOID OR MINIMIZE IMPACTS TO JURISDICTIONAL STREAMS.

REV	DESCRIPTION	DATE	APR
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REVIEWED BY:	SSM		
DRAWN BY:	SAR		

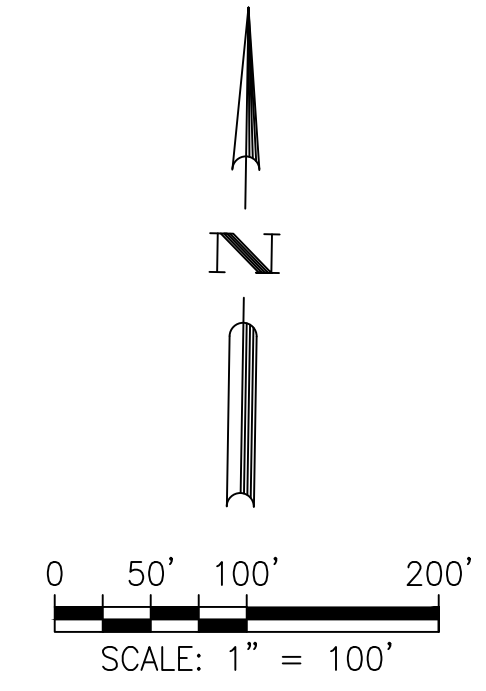
BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 210-581-3600 www.bgeinc.com
 TXPE Registration No. P-1046

CANYON RANCH UNIT 3
 OVERALL SITE PLAN

STATE OF TEXAS
 STACY MULHOLLAND
 146417
 LICENSED PROFESSIONAL ENGINEER

04/05/2024
 SHEET
 C02.00

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LEGEND

	PROPERTY BOUNDARY
	UNIT BOUNDARY
	LIMITS OF CONSTRUCTION
	SILT FENCE
	FLOW ARROW
	CONSTRUCTION ENTRANCE
	CONCRETE WASHOUT AREA
	CONSTRUCTION STAGING AREA
	INLET PROTECTION
	EXISTING 5' CONTOUR
	PROPOSED 1' CONTOUR
	PROPOSED 5' CONTOUR

- TEMPORARY OR PERMANENT VEGETATIVE SOIL STABILIZATION**
- INTERIOR OR FINAL GRADING MUST BE COMPLETED PRIOR TO SEEDING, MINIMIZING ALL STEEP SLOPES.
 - FERTILIZER SHOULD BE APPLIED AT THE RATE OF 40 POUNDS OF NITROGEN AND 40 POUNDS OF PHOSPHORUS PER ACRE. COMPOST CAN BE USED INSTEAD OF FERTILIZER AND APPLIED AT THE SAME TIME AS THE SEED.
 - ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE TEMPORARY CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 21 DAYS.
 - ADD J HOOKS PER CITY OF AUSTIN DETAIL ALONG THE SILT FENCE.
 - A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE PREPARED/AMENDED BY A TX PE, CESC, OR QP/SWPPP (CITY CODE SECTION 86.529(B)(2) OR 86.529(C)(3)), IMPLEMENTED, AND UPDATED TO MATCH SITE CONDITIONS DURING THE PROJECT. THE ASSOCIATED TPDES CONSTRUCTION SITE NOTICE MUST BE POSTED IN PUBLIC VIEW, TXR150000 PART III.D.2.
 - HAVE A CISEC, CESSWI, OR QCIS CONDUCT WEEKLY SWPPP INSPECTIONS AND DOCUMENT PER CITY CODE SECTIONS 86.523 AND 86.529(B)(9) OR 86.529(C)(10). MAINTAIN ALL ESC MEASURES AND ADDRESS ALL IDENTIFIED CORRECTIVE ACTIONS PER CITY CODE SECTION 86.529(C)(11).
 - THE LIMITS OF CONSTRUCTION (LOC) SHALL BE ADJUSTED AS NEEDED DURING THE PROJECT TO COVER ALL AREAS DISTURBED DURING DEMOLITION, GRADING, CONSTRUCTION, STORAGE, STOCKPILING, PARKING, ETC., PER TXR150000 PARTS I AND III.G.4.(C) AND (D). ADDITIONAL EROSION AND SEDIMENT CONTROLS MAY BE REQUIRED.
 - PER TXR150000 PART III.F.1.(M), LOCATIONS OF THE FOLLOWING, AS APPLICABLE, MUST BE MARKED ON THIS ESCP IN THE FIELD. THE TPDES CONSTRUCTION SITE NOTICE POSTING IN PUBLIC VIEW, STAGING, SPOILS STORAGE, CONCRETE WASHOUT, DUMPSTERS, PORTABLE TOILET(S), FUELING POINT(S), AND/OR OTHER POTENTIAL CONTAMINANT SOURCES, THIS ESCP MUST ALSO BE UPDATED AS THESE POTENTIAL CONTAMINANT SOURCES MOVE OR OTHER CHANGES OCCUR ONSITE. PEN AND INK CHANGES ARE EXPECTED AND DON'T REQUIRE RESUBMITTAL; JUST DATE AND INITIAL.
 - IF THERE IS A BREAK OF MORE THAN 14 DAYS DURING THE PROJECT WHERE NO DIRT WORK IS DONE ON A SITE PORTION(S) WITHIN THE LIMITS OF CONSTRUCTION, TEMPORARY (OR PERMANENT) STABILIZATION IS REQUIRED PER TXR150000 PART III.F.2.(B) (CITY CODE SECTION 86.529(A)(1)(G)). SUCH DIRT WORK STOPPAGE INCLUDES TIME PERIODS BETWEEN ROUGH GRADING COMPLETION AND CONSTRUCTION START, DURING CONSTRUCTION, BETWEEN CONSTRUCTION AND FINAL STABILIZATION, ETC. USE TEMPORARY (OR PERMANENT) SEEDING, ROCK, GRAVEL (1" MINIMUM), CONCRETE RIP-RAP, DEGRADABLE STRAW MATTING, SHREDDED HARDWOOD MULCH, DEGRADABLE SOIL RETENTION BLANKETS, OR SIMILAR. NOTE THAT MATTING, MULCH, OR BLANKETS REQUIRE ONGOING MAINTENANCE.
 - ANY EXISTING STORM WATER INLETS WITHIN 200' OF THE LOC MUST HAVE INLET PROTECTION. STORM WATER INLET PROTECTION IS ALSO REQUIRED AS NEW STORM WATER INLETS ARE ADDED TO THE SITE, IF APPLICABLE.
 - FOR ALL DISTURBED SLOPES 3:1 OR FLATTER MUST BE STABILIZED WITH BIODEGRADABLE SOIL RETENTION BLANKETS WITH NO PLASTIC NETTING. DISTURBED SLOPES EXCEEDING 3:1 REQUIRE BLANKETS OR EQUIVALENT UNTIL RE-VEGETATION IS ESTABLISHED OR SOD.

ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE TEMPORARY CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 21 DAYS

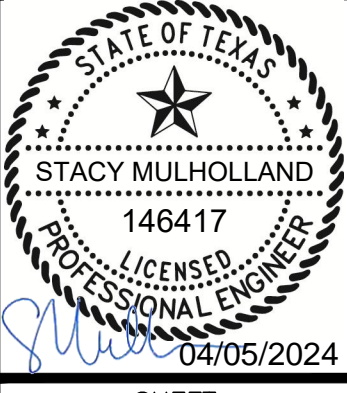
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 DRAWN BY: SAR



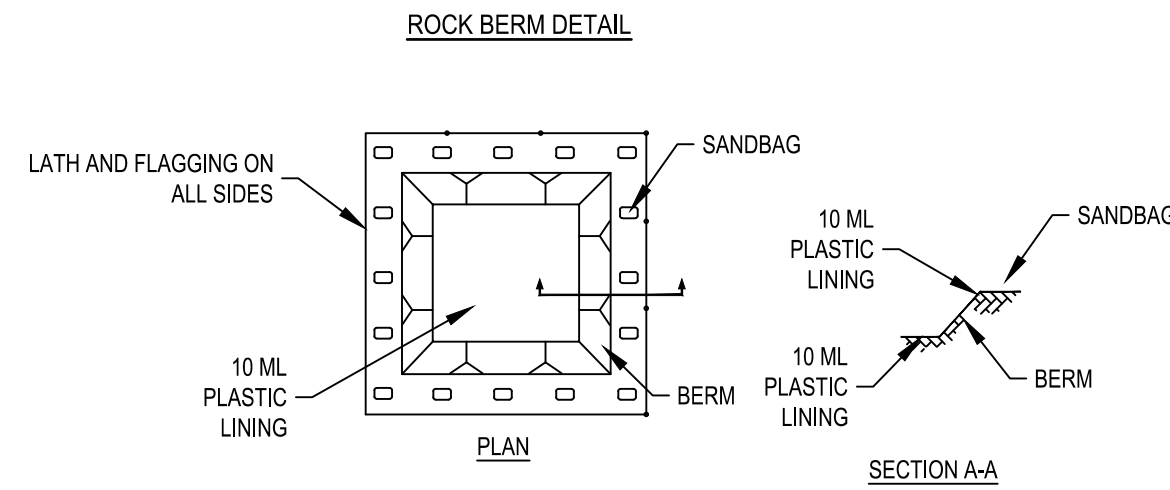
BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-0000 www.bgeinc.com
 TSP# Registration No. P-1049

CANYON RANCH UNIT 3
 EROSION & SEDIMENTATION CONTROL PLAN



04/05/2024
 SHEET
 C02.10

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CONCRETE WASHOUT NOTES:

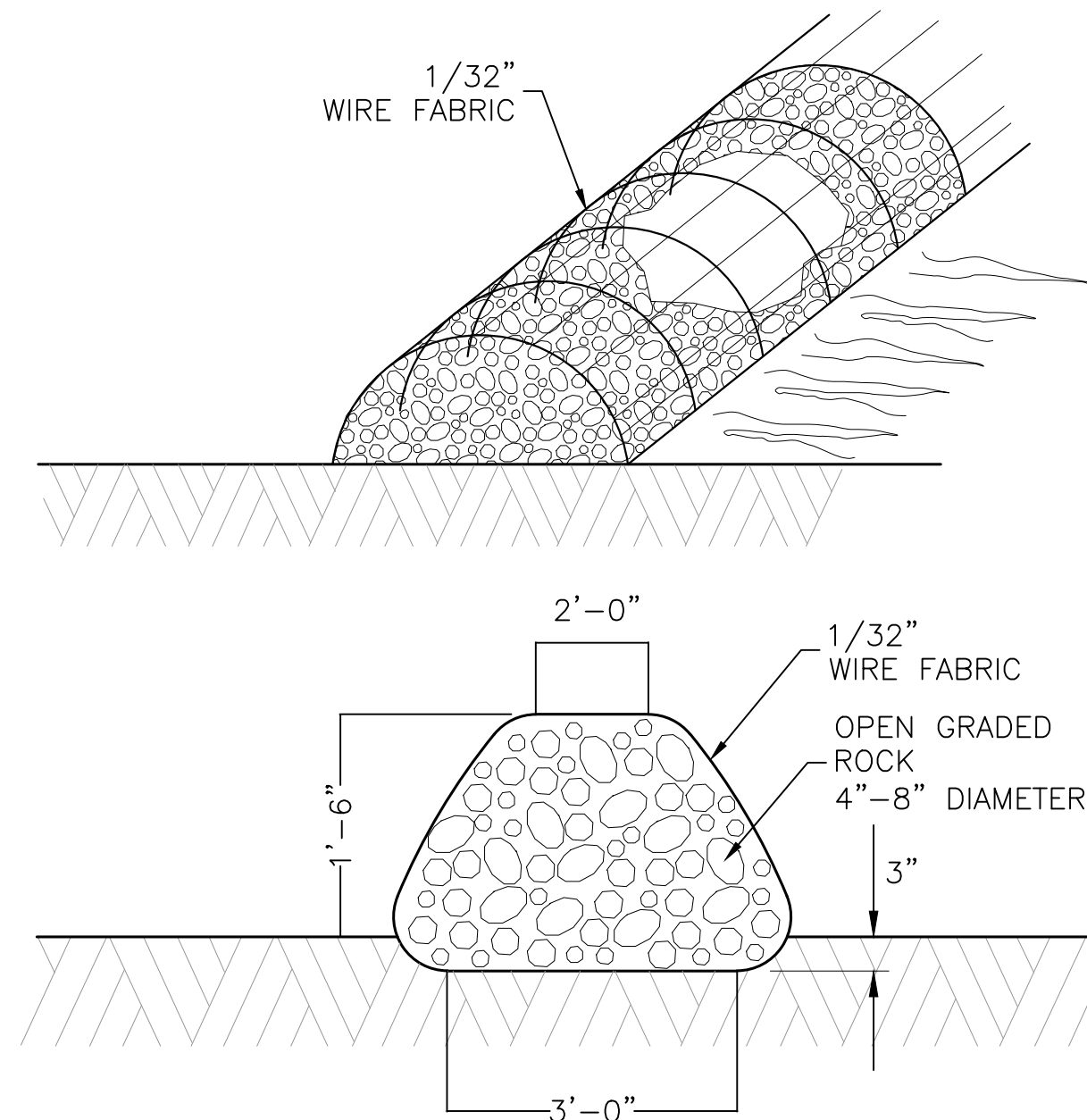
1. THE LINED WASHOUT PIT SHALL BE SUFFICIENTLY LARGE ENOUGH TO HOLD EXPECTED VOLUME OF WASHOUT MATERIAL.
2. WHEN FACILITY IS NO LONGER REQUIRED, HARDENED CONCRETE SHALL PROPERLY REMOVED AND DISPOSED OF.
3. CONTRACTOR TO BACKFIELD PIT UPON REMOVAL OF LINING.

SAND BAG NOTES:

1. THE SAND BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD², MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 TO 30 INCHES, WIDTH SHOULD BE 16 TO 18 INCHES AND THICKNESS SHOULD BE 6 TO 8 INCHES.
3. SANDBAGS SHOULD BE FILLED WITH COARSE GRADE SAND, FREE FROM DELETERIOUS MATERIAL, ALL SAND SHOULD PASS THROUGH A NO. 10 SIEVE. THE FILLED BAG SHOULD HAVE AN APPROXIMATE WEIGHT OF 40 POUNDS.
4. OUTLET PIPE SHOULD BE SCHEDULE 40 OR STRONGER POLYVINYL CHLORIDE (PVC) HAVING A NOMINAL INTERNAL DIAMETER OF 4 INCHES.

1 IN-GROUND CONCRETE WASHOUT PIT
N.T.S.

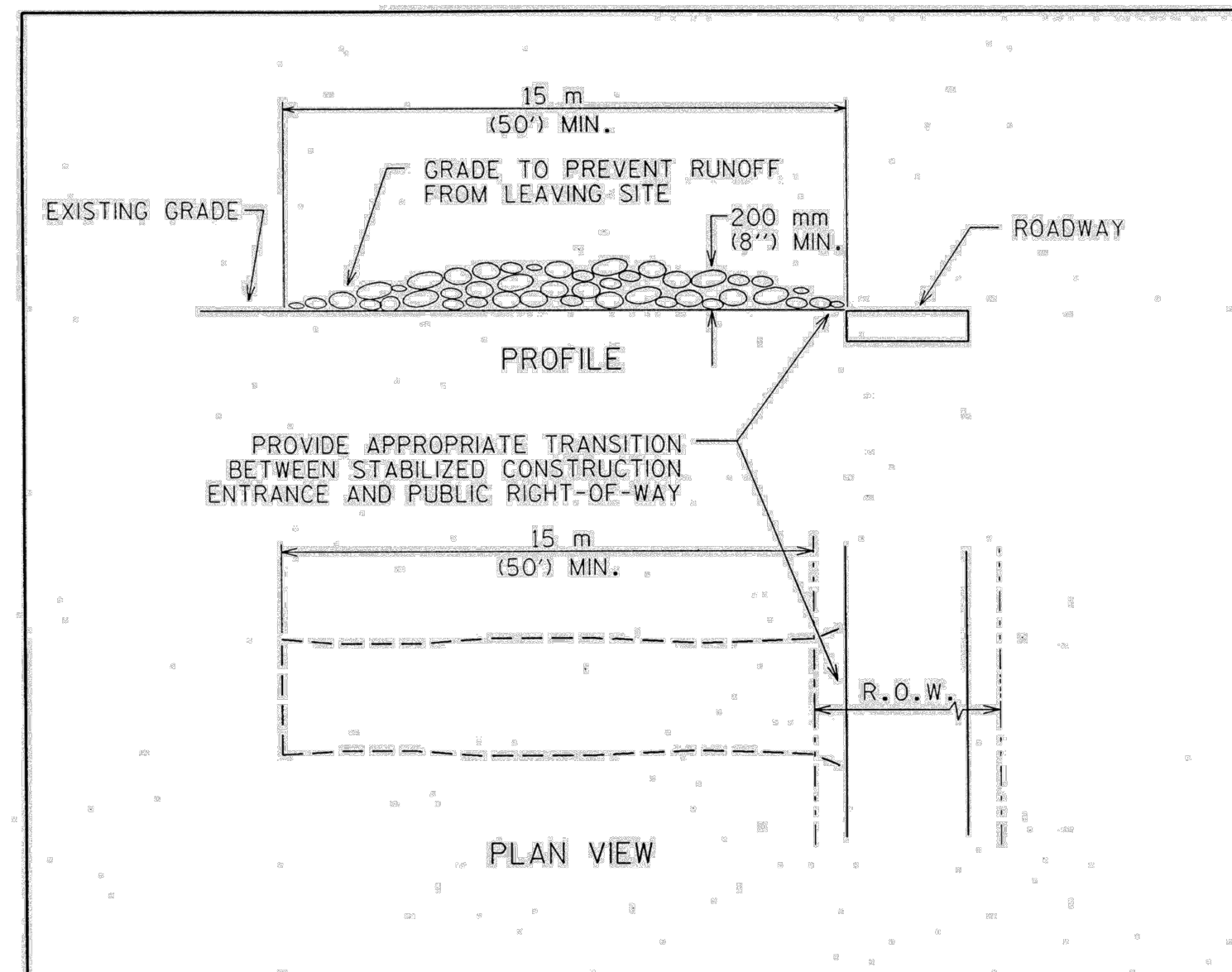
NOTE: SEE GENERAL NOTES SHEETS FOR EROSION CONTROL NOTES



2 ROCK BERM
N.T.S.

GENERAL NOTES:

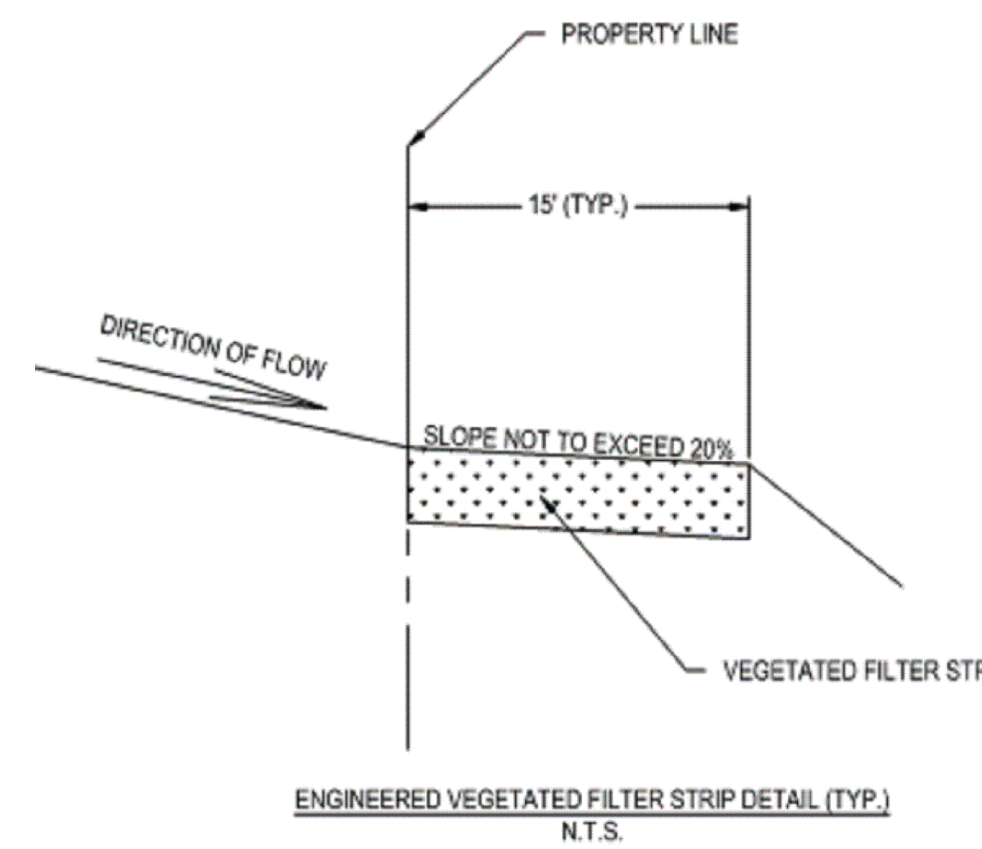
1. USE ONLY OPEN GRADED ROCK 4-8 INCHES DIAMETER FOR STREAM FLOW CONDITION; USE OPEN GRADED ROCK 3-6 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 1/32 INCH.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 12 INCHES, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SITE AND IN A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SERVICE ROCK BERMS, SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.



NOTES:

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

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	STANDARD NO. 641S-1
<i>Jim Davis</i> 5/23/20	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	ADOPTED



V.F.S. NOTES (TCEQ RG348)

1. THE FILTER STRIP SHOULD EXTEND ALONG THE ENTIRE LENGTH OF THE CONTRIBUTING AREA AND THE SLOPE SHOULD NOT EXCEED 20%. THE MINIMUM DIMENSION OF THE FILTER STRIP (IN THE DIRECTION OF FLOW) SHOULD BE NO LESS THAN 15 FEET. THE MAXIMUM WIDTH (IN THE DIRECTION OF FLOW) OF THE CONTRIBUTING IMPERVIOUS AREA SHOULD NOT EXCEED 72 FEET. FOR ROADWAYS WITH A VEGETATED STRIP ALONG BOTH SIDES THE TOTAL WIDTH OF THE ROADWAY SHOULD NOT EXCEED 144 FEET (I.E., 72 FEET DRAINING TO EACH SIDE).
2. THE MINIMUM VEGETATED COVER FOR ENGINEERED STRIPS IS 80%.
3. THE AREA CONTRIBUTING RUNOFF TO A FILTER STRIP SHOULD BE RELATIVELY FLAT SO THAT THE RUNOFF IS DISTRIBUTED EVENLY TO THE VEGETATED AREA WITHOUT THE USE OF A LEVEL SPREADER.
4. THE AREA TO BE USED FOR THE STRIP SHOULD BE FREE OF GULLIES OR RILLS THAT CAN CONCENTRATE OVERLAND FLOW (SCHUELER, 1997).
5. THE TOP EDGE OF THE FILTER STRIP ALONG THE PAVEMENT WILL BE DESIGNED TO AVOID THE SITUATION WHERE RUNOFF WOULD TRAVEL ALONG THE TOP OF THE FILTER STRIP, RATHER THAN THROUGH IT.
6. TOP EDGE OF THE FILTER STRIP SHOULD BE LEVEL. OTHERWISE RUNOFF WILL TEND TO FORM A CHANNEL IN THE LOW SPOT. A LEVEL SPREADER SHOULD NOT BE USED TO DISTRIBUTE RUNOFF TO AN ENGINEERED FILTER STRIP.
7. FILTER STRIPS SHOULD BE LANDSCAPED AFTER OTHER PORTIONS OF THE PROJECT ARE COMPLETED.

COMPLIANCE CHECKLIST:

1. **PERIMETER CONTROLS:** INSTALL ESC'S (EROSION SEDIMENT CONTROLS) ALONG THE BACK OF THE CURB AND ALONG THE LOT LINE OF ADJACENT PROPERTIES, WHICH ARE DOWNHILL AND RECEIVE RUNOFF FROM YOUR LOT. FOLLOWING SIDEWALK INSTALLATION, ESC'S SHOULD BE REMOVED TO THE BACK OF THE SIDEWALK TO PREVENT SEDIMENT FROM REACHING THE SIDEWALK. MAINTAIN ESC'S TO ENSURE PROPER FUNCTION, INCLUDING REPAIR OR REPLACEMENT OF TORN, DEGRADED OR OTHERWISE INEFFECTIVE MATERIALS. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE PROTECTION.
2. **STOCKPILES:** INSTALL SEDIMENT CONTROLS AROUND STOCKPILES TO PREVENT SEDIMENT FROM REACHING THE STREET AND ADJACENT PROPERTIES. LOCATE STOCKPILES AWAY FROM THE STREET, PROPERTY LINES AND DRAINAGE WAYS.
3. **LOT ACCESS:** REQUIRED FOR EACH INDIVIDUAL LOT. MAINTAIN A SURFACE SUITABLE FOR PARKING AND UNLOADING TO PREVENT THE TRACKING OF MUD AND ROCK ONTO THE STREET. A MINIMUM 6-INCH DEPTH OF 3- TO 5-INCH AGGREGATE IS SUGGESTED. ALL VEHICLES THAT ACCESS THE LOT MUST USE THE CONSTRUCTION ENTRANCE. ANY SOILS THAT ARE TRUCKED ONTO THE STREET MUST BE REMOVED BY THE END OF THE DAY.
4. **INTERMEDIATE CONTROL:** LONG OR STEEP DRAINAGE PATHS MAY REQUIRE INTERMEDIATE OR INTERIOR ESC'S TO HELP SLOW THE FLOW OF RUNOFF. FAILURE OF PERIMETER CONTROLS DUE TO THE FORCE OF RUNOFF OFTEN DETERMINE THE NEED FOR INTERMEDIATE CONTROLS.
5. **HOUSEKEEPING:** PROVIDE ADEQUATE SANITARY FACILITIES, TRASH/REFUSE BINS, AND DESIGNATED CONCRETE WASHOUT.

CONTRACTOR/BUILDERS RESPONSIBILITY:

1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL PRACTICES PRIOR TO ANY LAND DISTURBANCE TO PREVENT EXCESSIVE SEDIMENT FROM LEAVING THE SITE.
2. PERIODIC INSPECTION AND MAINTENANCE ARE VITAL TO THE PERFORMANCE OF EROSION AND SEDIMENT CONTROLS. IT IS RECOMMENDED THAT ALL TEMPORARY EROSION CONTROLS BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL.
3. **MAINTENANCE:** ESC (EROSION SEDIMENT CONTROLS) SHOULD BE ROUTINELY INSPECTED AND MAINTAINED UNTIL SITE IS PERMANENTLY VEGETATED. SOMETIMES ROUTINE INSPECTIONS MAY SHOW A NEED FOR ADJUSTMENTS OR ADDITIONAL ESC'S.
4. SUBMIT A NOTICE OF TERMINATION (NOT) TO THE TCEQ AND LOCAL MS4 WHEN CONSTRUCTION IS COMPLETE.
5. **REVEGETATE THE SITE:** PREVENT EROSION ON INDIVIDUAL LOTS WITH GROUND COVER. EXISTING TREES AND VEGETATION SHOULD BE PROTECTED TO HELP MAINTAIN A STABLE GROUND SURFACE AND PREVENT LOSS OF VALUABLE TOPSOIL. EROSION CONTROL BLANKETS, MATTING AND MULCHES CAN HELP STABILIZE THE AREA UNTIL PERMANENT VEGETATION IS ESTABLISHED. THE SITE NEEDS TO HAVE AT LEAST 70 PERCENT COVER OF PERMANENT VEGETATION BEFORE ESC'S CAN BE REMOVED.

NOTES:

ENGINEERING FILTER STRIPS

1. THE FILTER STRIP SHOULD EXTEND ALONG THE ENTIRE LENGTH OF THE CONTRIBUTING AREA AND THE SLOPE SHOULD NOT EXCEED 20%. THE MINIMUM DIMENSION OF THE FILTER STRIP (IN THE DIRECTION OF FLOW) SHOULD BE NO LESS THAN 15 FEET. THE MAXIMUM WIDTH (IN THE DIRECTION OF FLOW) OF THE CONTRIBUTING IMPERVIOUS AREA SHOULD NOT EXCEED 72 FEET. FOR ROADWAYS WITH A VEGETATED STRIP ALONG BOTH SIDES OF THE TOTAL WIDTH OF THE ROADWAY SHOULD NOT EXCEED 144 FEET.

2. THE MINIMUM VEGETATED COVER FOR ENGINEERED STRIPS IS 80%.

3. THE AREA CONTRIBUTING RUNOFF TO A FILTER STRIP SHOULD BE RELATIVELY FLAT SO THAT THE RUNOFF IS DISTRIBUTED EVENLY TO THE VEGETATED AREA WITHOUT THE USE OF A LEVEL SPREADER.

4. THE AREA TO BE USED FOR THE STRIP SHOULD BE FREE OF GULLIES OR RILLS THAT CAN CONCENTRATE OVERLAND FLOW.

5. THE TOP EDGE OF THE FILTER STRIP ALONG THE PAVEMENT WILL BE DESIGNED TO AVOID THE SITUATION WHERE RUNOFF WOULD TRAVEL ALONG THE TOP OF THE FILTER STRIP, RATHER THAN THROUGH IT.

6. TOP EDGE OF THE FILTER STRIP SHOULD BE LEVEL. OTHERWISE RUNOFF WILL TEND TO FORM A CHANNEL IN THE LOW SPOT. A LEVEL SPREADER SHOULD NOT BE USED TO DISTRIBUTE RUNOFF TO AND ENGINEERED FILTER STRIP.

7. FILTER STRIPS SHOULD BE LANDSCAPED AFTER OTHER PORTIONS OF THE PROJECT ARE COMPLETED.

INTERIM FILTER STRIPS

1. THE FILTER STRIP AREA MUST BE 50% OF THE SIZE OF THE CONTRIBUTING IMPERVIOUS COVER.

2. TOP EDGE OF THE FILTER STRIP SHOULD BE LEVEL. OTHERWISE RUNOFF WILL TEND TO FORM A CHANNEL IN THE LOW SPOT. IF A LEVEL SPREADER IS USED (IS IS ONLY ALLOWED FOR INTERIM USE) TO DISTRIBUTE RUNOFF TO THE FILTER STRIP, IT MUST BE LINED OR BE CONSTRUCTED OF IMPERMEABLE MATERIALS (CONCRETE).

3. THE AREA TO BE USED FOR THE STRIP SHOULD BE FREE OF GULLIES OR RILLS THAT CAN CONCENTRATE OVERLAND FLOW.

4. FILTER STRIPS SHOULD BE LANDSCAPED AFTER OTHER PORTIONS OF THE PROJECT ARE COMPLETED AND VEGETATION COVERAGE SHOULD BE AT LEAST 80%.

DATE	APR
DESCRIPTION	
REV	

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR



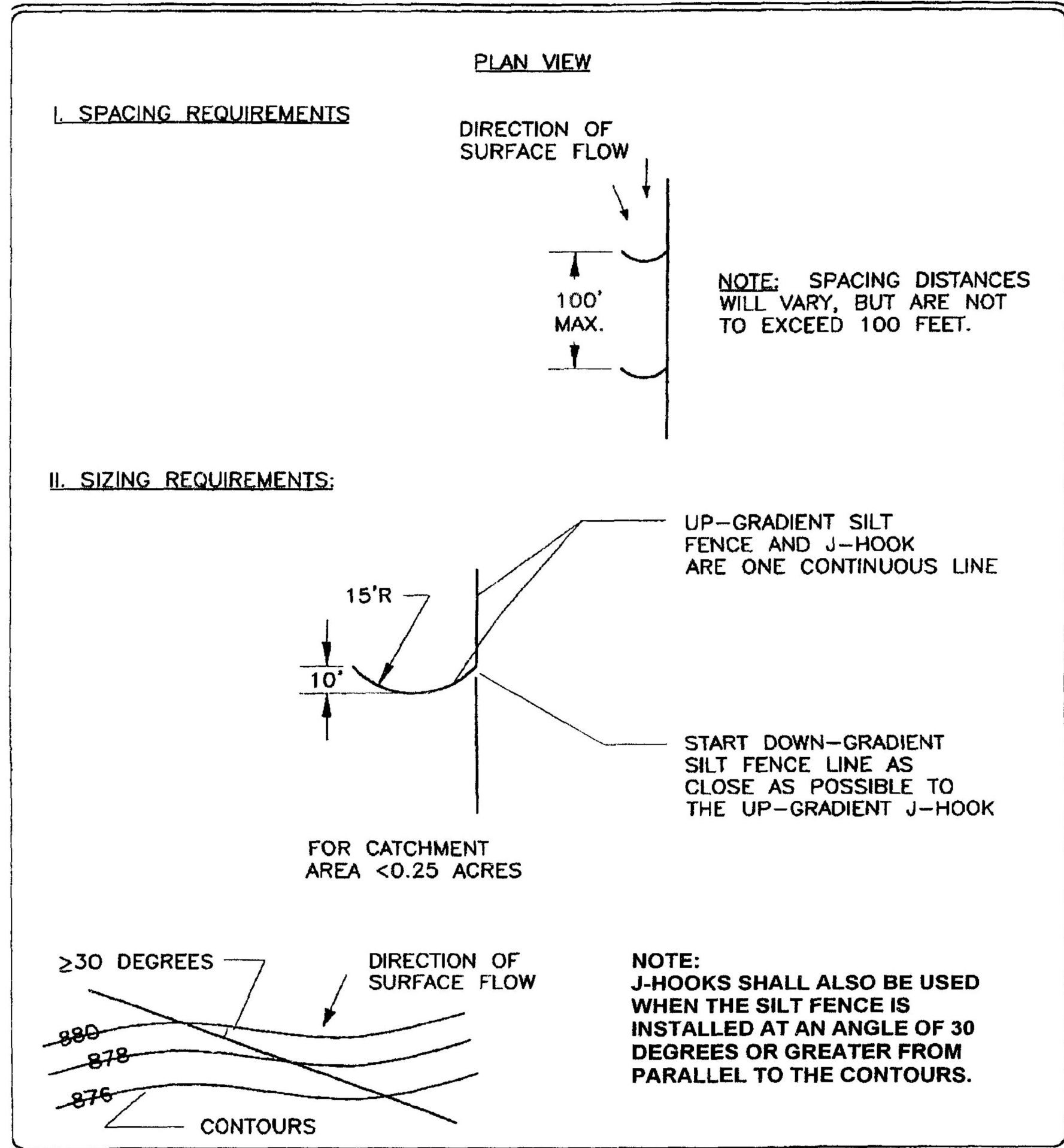
BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-3600 www.bgeny.com
TDE Registration No. F-1046

CANYON RANCH UNIT 3
EROSION CONTROL DETAILS
(SHEET 1 OF 2)

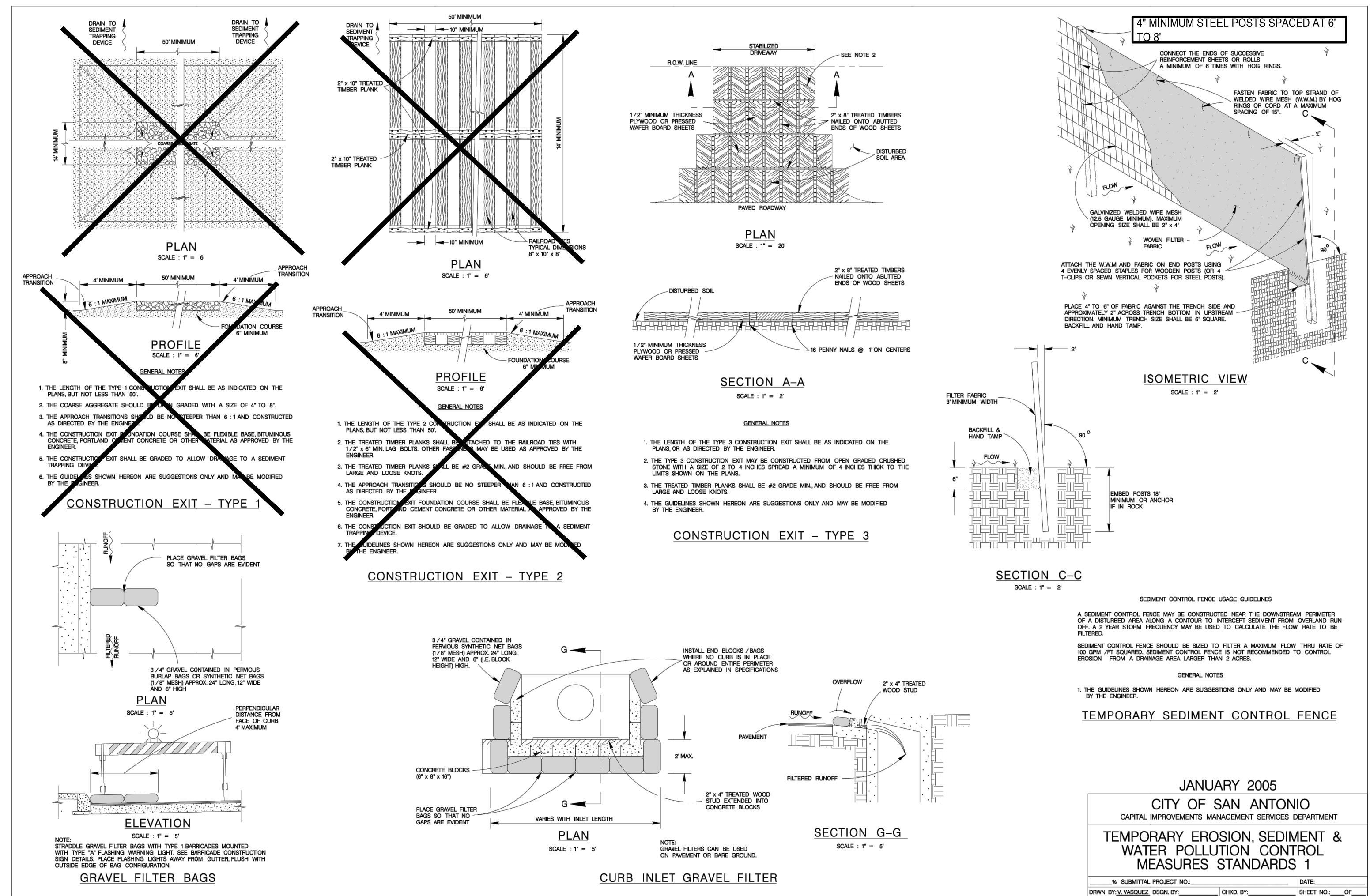
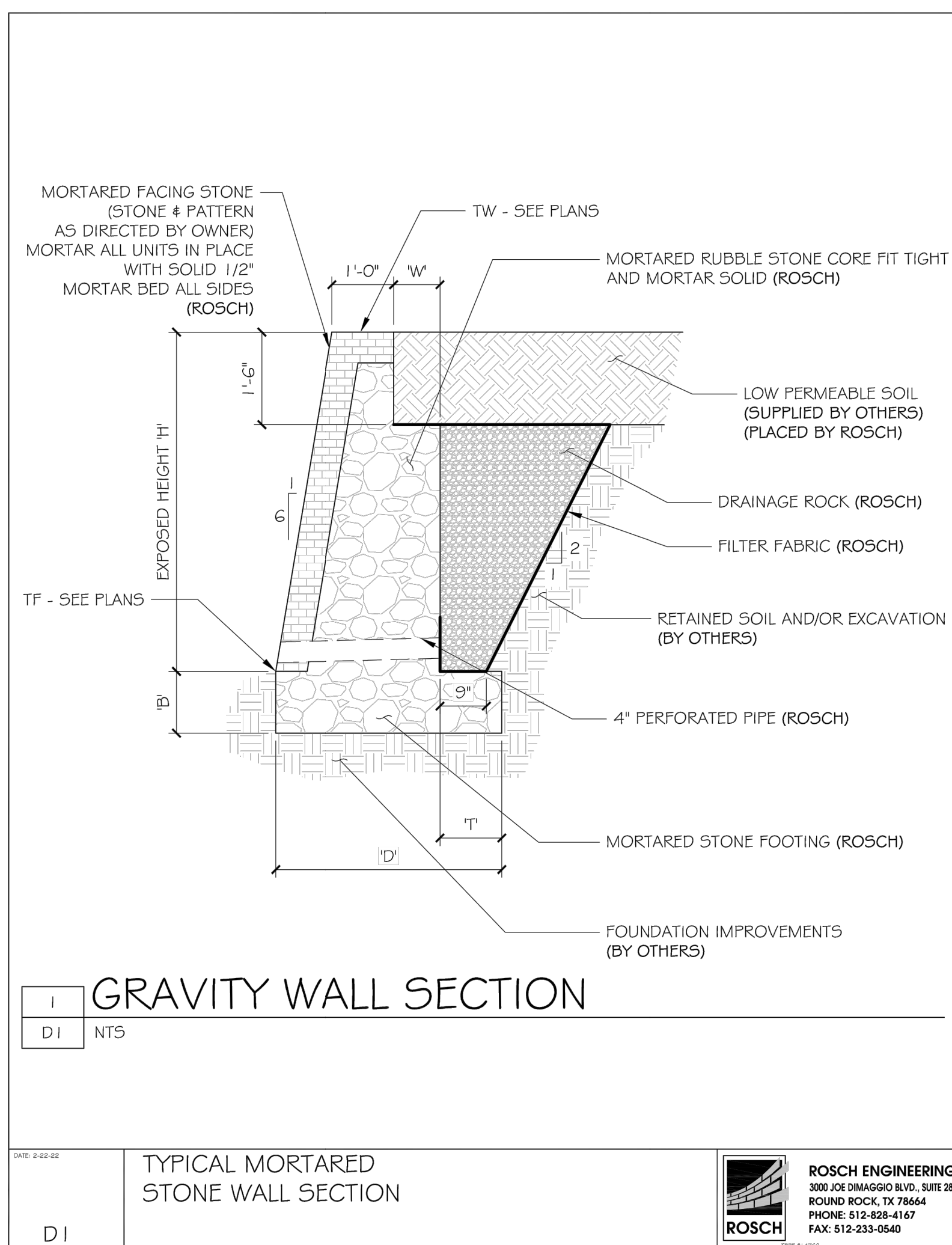


04/05/2024
SHEET
C02.20

G:\TXC\Projects\San Antonio Projects\2728-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C02.20 EROSION CONTROL DETAILS.dwg Layout: EROSION CONTROL DETAILS (SHEET 2 OF 2) Plotted: 2/20/2023 2:22:43 PM By: Stodigquez



3 J-HOOK DETAIL
N.T.S.



NO.	DESCRIPTION	DATE	REV

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR

BGE

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7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-381-3600 www.bgeinc.com
TXE Registration No. P-1046

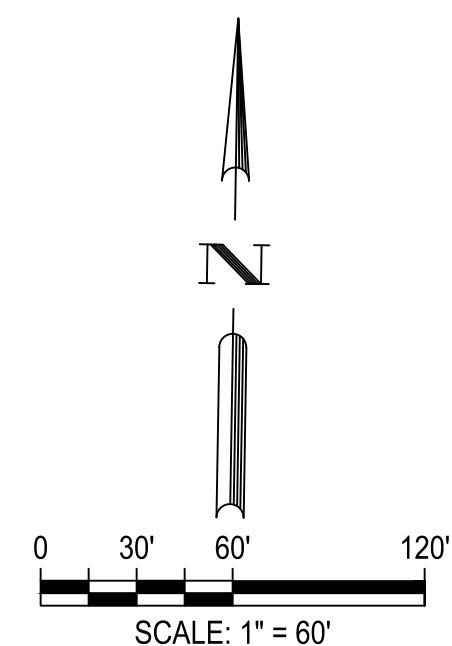
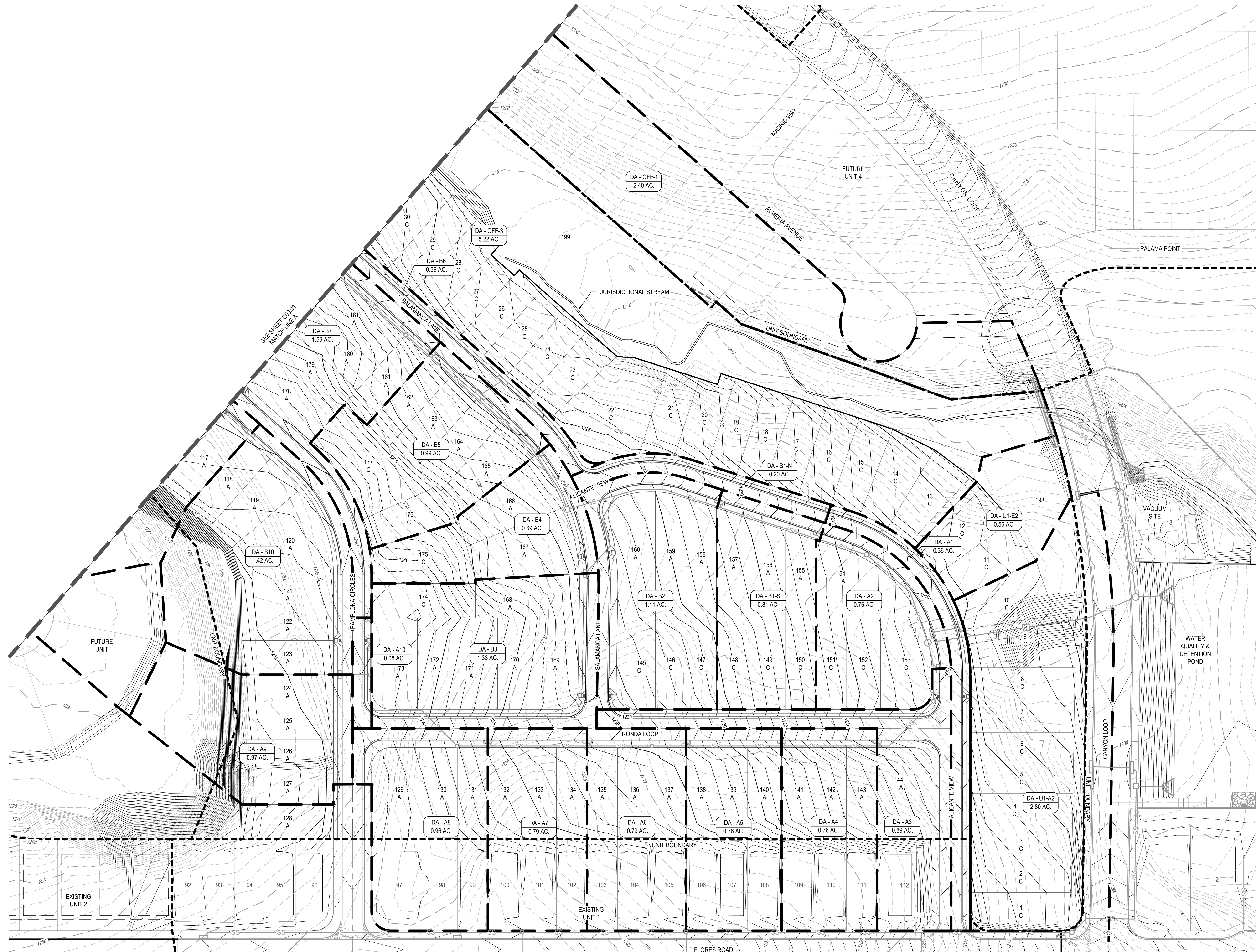
CANYON RANCH UNIT 3

EROSION CONTROL DETAILS
(SHEET 2 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER

04/05/2024
SHEET
C02.21

G:\TX\Projects\San Antonio Projects\2278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C03.00 ONSITE WATERSHED PLAN.dwg Layout: ONSITE WATERSHED PLAN (SHEET 1 OF 3) Plotted: 2/20/2023 2:24:14 PM By: jclifon



- LEGEND**
- ← DIRECTION OF FLOW
 - UNIT BOUNDARY
 - DA - 37
0.79 AC. DRAINAGE AREA LABEL
 - DRAINAGE AREA BOUNDARY
 - 3 LOT NUMBER
 - PROPOSED 10' CURB INLET
 - JUNCTION BOX
 - 661 EXISTING 1' CONTOUR
 - 665 EXISTING 5' CONTOUR
 - 681 PROPOSED 1' CONTOUR
 - 685 PROPOSED 5' CONTOUR

NOTE:
 1. PROPOSED DRAINAGE PATTERNS ARE TO FOLLOW THE FINISHED LOT/PAD GRADING BASED ON THE LOT TYPE DESIGNATION AND DETAIL SHOWN ON SHEET C03.11.
 2. REFERENCE GRADING DETAIL ON SHEET C03.11

DATE	REV	DESCRIPTION

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR



BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 210-360-3600 www.bgeinc.com
 EPC Registration No. P-1046

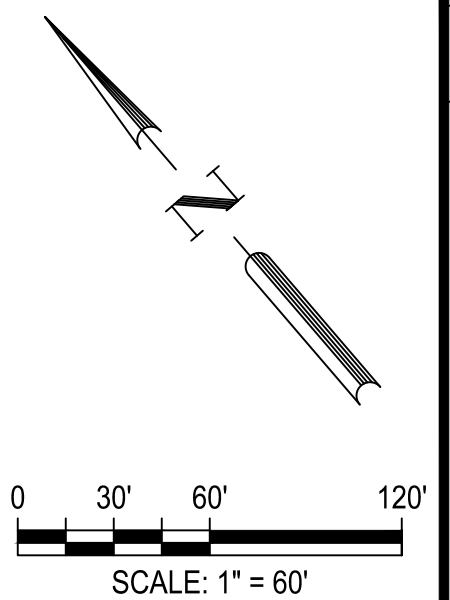
CANYON RANCH UNIT 3
 ONSITE WATERSHED PLAN (SHEET 1 OF 3)



04/05/2024
 SHEET
 C03.00

G:\TXC\Projects\San Antonio Projects\1278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C03.00 ONSITE WATERSHED PLAN.dwg Layout: ONSITE WATERSHED PLAN (SHEET 2 OF 3) Plotter: 2/20/2023 2:24:20 PM By: jclifton

SEE SHEET C03.02
MATCH LINE B



LEGEND

- DIRECTION OF FLOW
- UNIT BOUNDARY
- DRAINAGE AREA LABEL
- DRAINAGE AREA BOUNDARY
- LOT NUMBER
- PROPOSED 10' CURB INLET
- JUNCTION BOX
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR

NOTE:
1. PROPOSED DRAINAGE PATTERNS ARE TO FOLLOW THE FINISHED LOTPAD GRADING BASED ON THE LOT TYPE DESIGNATION AND DETAIL SHOWN ON SHEET C03.11.
2. REFERENCE GRADING DETAIL ON SHEET C03.11

REV	DESCRIPTION	DATE	APR
DESIGNED BY: SAR			
REVIEWED BY: SSM			
DRAWN BY: SAR			

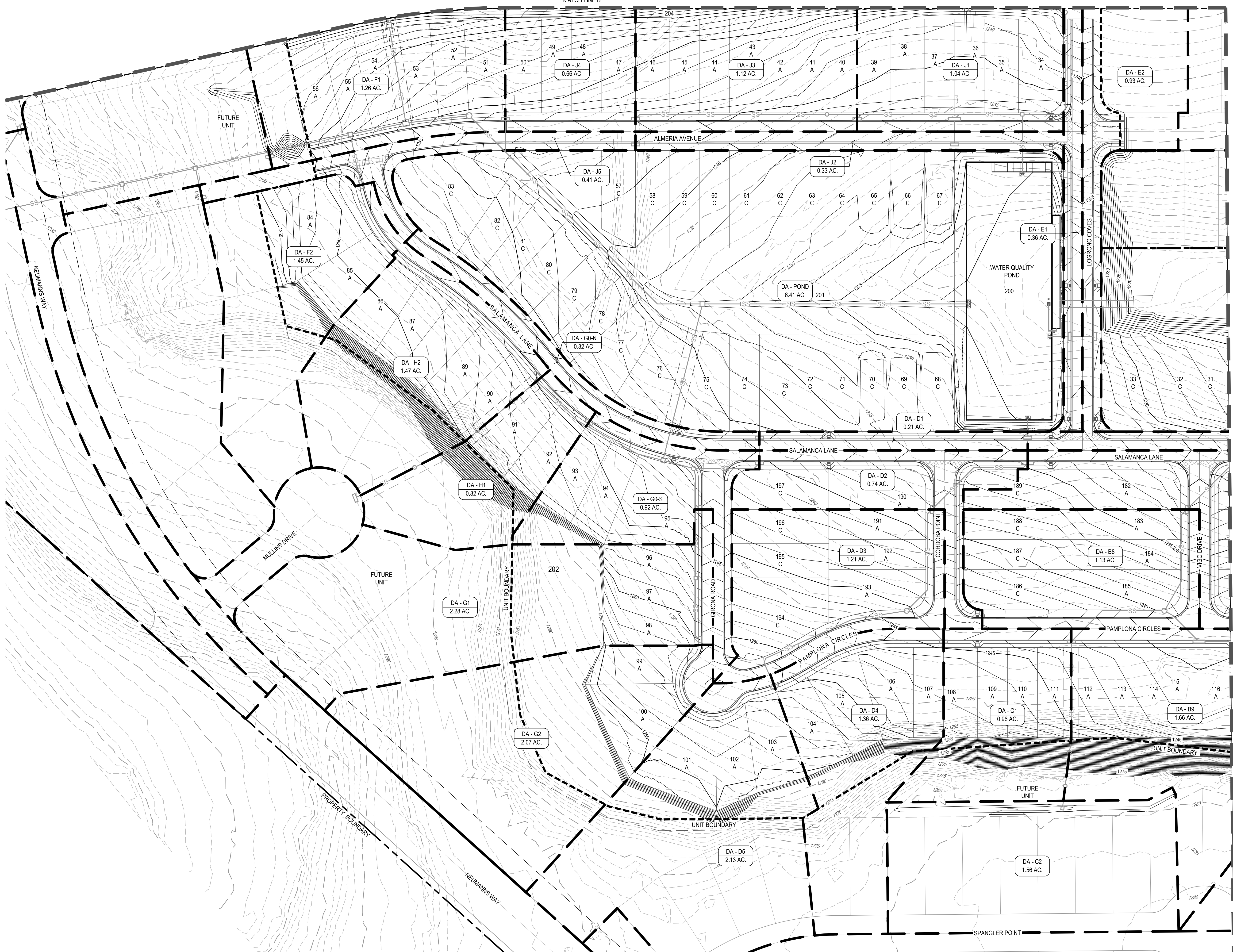


BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 210-381-3300 www.bgeinc.com
TXPE Registration No. P-1049

CANYON RANCH UNIT 3
ONSITE WATERSHED PLAN (SHEET 2 OF 3)



04/05/2024
SHEET
C03.01



G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C03.00 ONSITE WATERSHED PLAN.dwg Layout: ONSITE WATERSHED PLAN (SHEET 3 OF 3) Plotter: 2/20/2023 2:24:25 PM By: jclifton

LEGEND

- DIRECTION OF FLOW
- UNIT BOUNDARY
- DRAINAGE AREA LABEL
- DRAINAGE AREA BOUNDARY
- LOT NUMBER
- PROPOSED 10' CURB INLET
- JUNCTION BOX
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR

0 30' 60' 120'
SCALE: 1" = 60'

NOTE:
 1. PROPOSED DRAINAGE PATTERNS ARE TO FOLLOW THE FINISHED LOT/PAD GRADING BASED ON THE LOT TYPE DESIGNATION AND DETAIL SHOWN ON SHEET C03.11.
 2. REFERENCE GRADING DETAIL ON SHEET C03.11



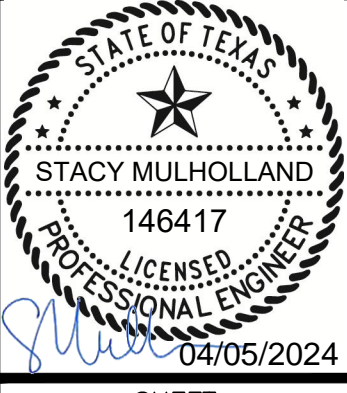
DATE	REV	DESCRIPTION
APR		

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR



BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
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 P.E. Registration No. P-1046

CANYON RANCH UNIT 3
 ONSITE WATERSHED PLAN (SHEET 3 OF 3)



04/05/2024
 SHEET
 C03.02

G:\TXC\Projects\San Antonio Projects\7278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C03.00 ONSITE WATERSHED CALCULATIONS (SHEET 1 OF 3) - Plothead: 2/20/2023 2:24:26 PM By: Jclifton

Runoff Coefficients	25 Yr	100 Yr
Asphalt	0.86	0.95
Conc. / Roof	0.88	0.97
Grass (0-2%) good	0.39	0.46

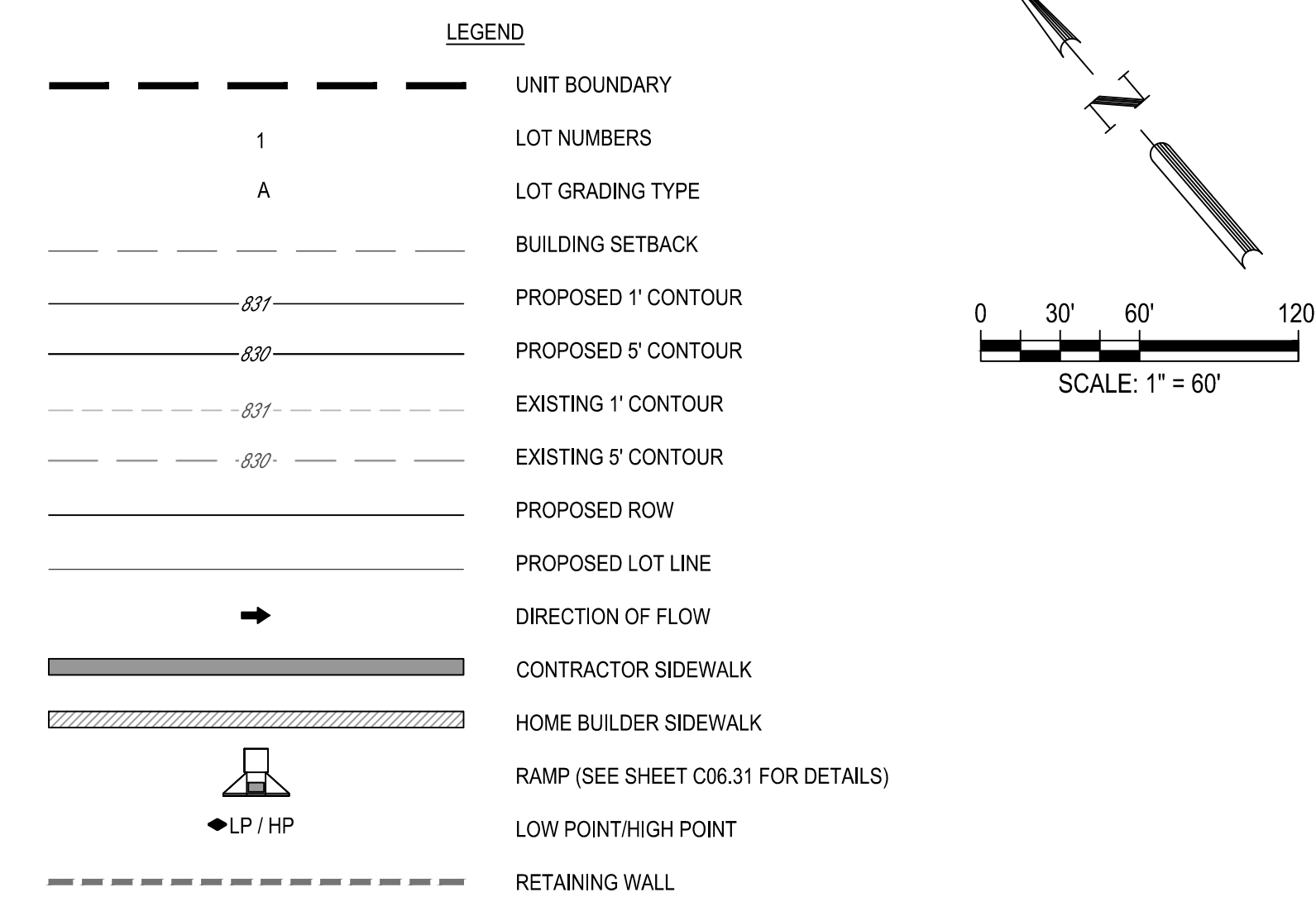
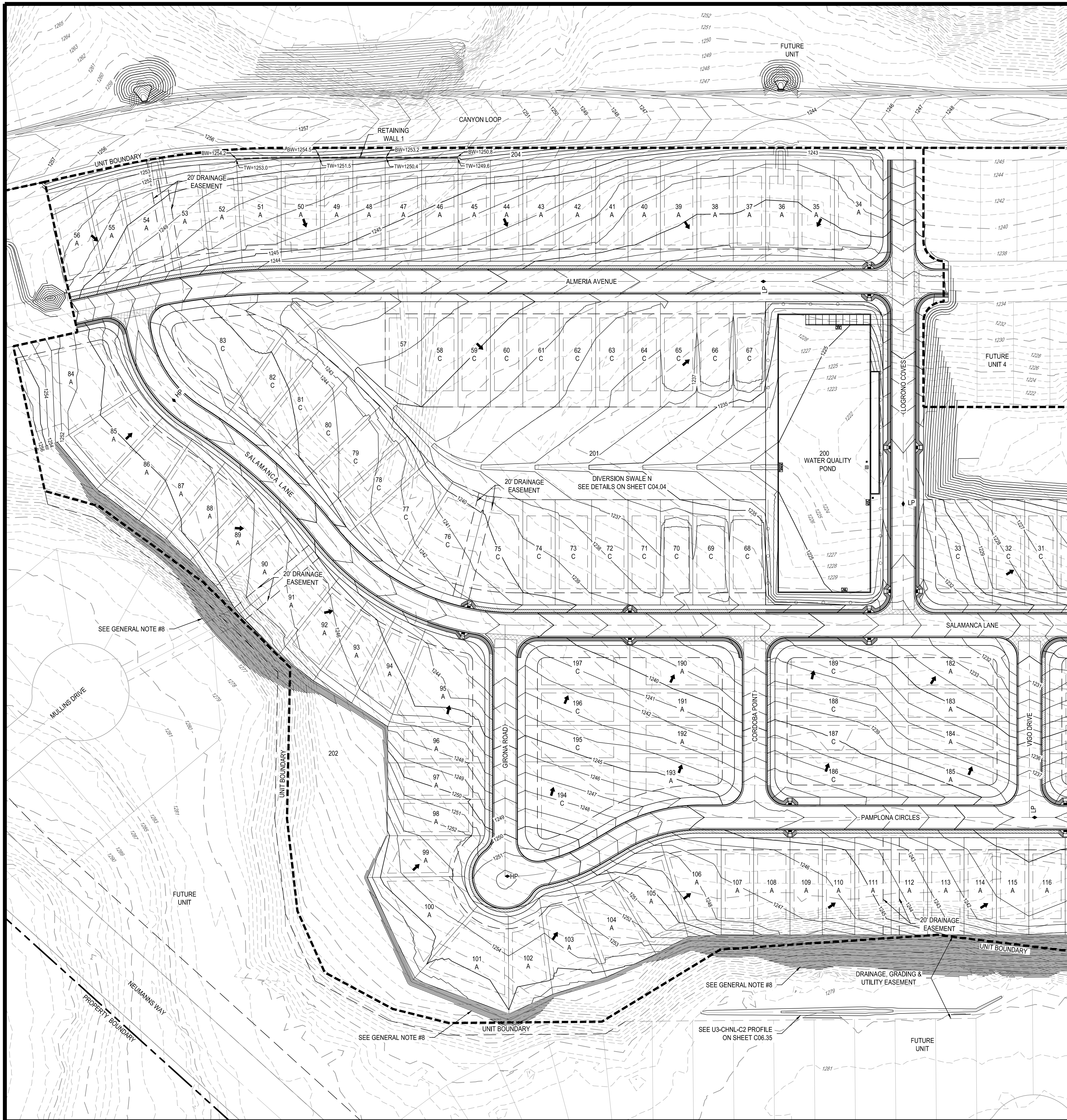
Drainage Area	Total Area (Ac)	STREET	STREET	STREET	% of Street	Street Length (ft)	Sidewalk Length (ft)	Area Street (sf)	Area Street (Ac)	IMPERVIOUS				GRASS			Composite 25 Yr "C"	Composite 100 Yr "C"	
										Area Street	Area Imper.	Area Imper.	Area Imper.	Area Grass (sf)	Area Grass (Ac)	Area Grass (%)			
A1	0.36	15,682	31	4	50%	614	614	11,973	0.27	76.4%	0	0	0.00	0.0%	3,709	0.09	23.6%	0.75	0.83
A2	0.77	33,541	31	4	50%	304	0	4,712	0.11	14.0%	4	14,400	0.33	42.9%	14,429	0.33	43.0%	0.67	0.75
A3	0.89	38,768	31	4	50%	856	459	15,104	0.35	39.0%	2	7,200	0.17	18.6%	16,464	0.38	42.5%	0.66	0.75
A4	0.76	33,106	31	4	50%	125	0	1,938	0.04	5.9%	6	21,600	0.50	65.2%	9,568	0.22	28.9%	0.74	0.82
A5	0.76	33,106	31	4	50%	125	0	1,938	0.04	5.9%	6	21,600	0.50	65.2%	9,568	0.22	28.9%	0.74	0.82
A6	0.79	34,412	31	4	50%	130	0	2,015	0.05	5.9%	6	21,600	0.50	62.8%	10,797	0.25	31.4%	0.73	0.81
A7	0.79	34,412	31	4	50%	130	0	2,015	0.05	5.9%	6	21,600	0.50	62.8%	10,797	0.25	31.4%	0.73	0.81
A8	0.96	41,818	31	4	50%	152	0	2,356	0.05	5.6%	6	21,600	0.50	51.7%	17,862	0.41	42.7%	0.67	0.75
A9	0.97	42,253	31	4	50%	144	144	2,808	0.06	6.6%	4	14,400	0.33	34.1%	25,045	0.57	59.3%	0.59	0.67
A10	0.08	3,485	31	4	50%	145	120	2,728	0.06	78.3%	0	0	0.00	0.0%	757	0.02	21.7%	0.76	0.84
B1-N	0.20	8,712	31	4	50%	337	35	5,364	0.12	61.6%	0	0	0.00	0.0%	3,349	0.08	38.4%	0.68	0.76
B1-S	0.80	34,848	31	4	50%	141	0	2,186	0.05	6.3%	6	21,600	0.50	62.0%	11,063	0.25	31.7%	0.72	0.81
B2	1.11	48,352	31	4	50%	460	0	7,130	0.16	14.7%	6	21,600	0.50	44.7%	19,622	0.45	40.6%	0.68	0.76
B3	1.33	57,935	31	4	50%	473	473	9,224	0.21	15.9%	7	25,200	0.58	43.5%	23,511	0.54	40.6%	0.68	0.76
B4	0.69	30,056	31	4	50%	183	183	3,569	0.08	11.9%	3	10,800	0.25	35.9%	15,888	0.36	52.2%	0.62	0.70
B5	0.99	43,124	31	4	50%	198	198	3,861	0.09	9.0%	6	21,600	0.50	50.1%	17,663	0.41	41.0%	0.68	0.76
B6	0.39	16,988	31	4	50%	670	670	13,065	0.30	76.9%	0	0	0.00	0.0%	3,923	0.09	23.1%	0.75	0.84
B7	1.59	69,260	31	4	50%	1,051	332	17,619	0.40	25.4%	6	21,600	0.50	31.2%	30,042	0.69	43.4%	0.66	0.74
B8	1.13	49,223	31	4	50%	423	0	6,557	0.15	13.3%	6	21,600	0.50	43.9%	21,066	0.48	42.8%	0.67	0.75
B9	1.66	72,310	31	4	50%	260	260	5,070	0.12	7.0%	7	25,200	0.58	34.9%	42,040	0.97	58.1%	0.59	0.67
B10	1.42	61,855	31	4	50%	372	372	7,254	0.17	11.7%	6	21,600	0.50	34.9%	33,001	0.76	53.4%	0.62	0.70
C1	0.96	41,818	31	4	50%	170	170	3,315	0.08	7.9%	4	14,400	0.33	34.4%	24,103	0.55	57.6%	0.60	0.67
C2	1.56	67,954	31	4	50%	387	0	5,999	0.14	8.8%	7	25,200	0.58	37.1%	36,755	0.84	54.1%	0.61	0.69
D1	0.21	9,148	31	4	50%	357	357	6,962	0.16	76.1%	0	0	0.00	0.0%	2,186	0.05	23.9%	0.75	0.83
D2	0.74	32,234	31	4	50%	623	569	11,933	0.27	37.0%	2	7,200	0.17	22.3%	13,102	0.30	40.6%	0.67	0.76
D3	1.21	52,708	31	4	50%	456	0	7,068	0.16	13.4%	6	21,600	0.50	41.0%	24,040	0.55	45.6%	0.65	0.73
D4	1.36	59,242	31	4	50%	245	245	4,778	0.11	8.1%	6	21,600	0.50	36.5%	32,864	0.75	55.5%	0.61	0.69
D5	2.13	92,783	31	4	50%	78	85	1,549	0.04	1.7%	7	25,200	0.58	27.2%	66,034	1.52	71.2%	0.53	0.61
E1	0.36	15,682	31	4	50%	594	389	10,763	0.25	68.6%	0	0	0.00	0.0%	4,919	0.11	31.4%	0.71	0.80
E2	0.93	40,511	31	4	50%	811	543	14,743	0.34	36.4%	2	7,200	0.17	17.8%	18,568	0.43	45.8%	0.65	0.73
F1	1.26	54,886	31	4	50%	125	125	2,438	0.06	4.4%	7	25,200	0.58	45.9%	27,248	0.63	49.6%	0.64	0.72
F2	1.45	63,162	31	4	50%	96	96	1,872	0.04	3.0%	4	14,400	0.33	22.8%	46,890	1.08	74.2%	0.52	0.59
GO-N	0.32	13,939	31	4	50%	564	0	8,742	0.20	62.7%	0	0	0.00	0.0%	5,197	0.12	37.3%	0.68	0.77
GO-S	0.92	40,075	31	4	50%	571	200	9,651	0.22	24.1%	3	10,800	0.25	26.9%	19,625	0.45	49.0%	0.64	0.72
G1	2.28	99,317	31	4	50%	208	208	4,056	0.09	4.1%	7	25,200	0.58	25.4%	70,061	1.61	70.5%	0.53	0.61
G2	2.07	90,169	31	4	50%	60	60	1,170	0.03	1.3%	2	7,200	0.17	8.0%	81,799	1.88	90.7%	0.44	0.51
H1	0.82	35,719	31	4	50%	83	83	1,619	0.04	4.5%	3	10,800	0.25	30.2%	23,301	0.53	65.2%	0.56	0.64
H2	1.47	64,033	31	4	50%	253	253	4,934	0.11	7.7%	5	18,000	0.41	28.1%	41,100	0.94	64.2%	0.56	0.64
I1	0.61	26,572	51	4	50%	803	803	23,689	0.54	89.1%	0	0	0.00	0.0%	2,883	0.07	10.9%	0.81	0.90
I2-N	8.76	381,586	31	4	50%	1,600	1,600	31,200	0.72	8.2%	27	97,200	2.23	25.5%	253,186	5.81	66.4%	0.55	0.63
I2-S	0.62	27,007	51	4	50%	788	788	23,246	0.53	86.1%	0	0	0.00	0.0%	3,761	0.09	13.9%	0.79	0.88
J1	1.04	45,302	31	4	50%	275	275	5,363	0.12	11.8%	6	21,600	0.50	47.7%	18,340	0.42	40.5%	0.68	0.76
J2	0.33	14,375	31	4	50%	570	0	8,835	0.20	61.5%	0	0	0.00	0.0%	5,540	0.13	38.5%	0.68	0.76
J3	1.12	48,787	31	4	50%	295	295	5,763	0.13	11.8%	7	25,200	0.58	51.7%	17,835	0.41	36.6%	0.70	0.78
J4	0.66	28,750	31	4	50%	173	173	3,374	0.08	11.7%	4	14,400	0.33	50.1%	10,976	0.25	38.2%	0.69	0.77
J5	0.41	17,860	31	5	50%	692	227	11,861	0.27	66.4%	0	0	0.00	0.0%	5,999	0.14	33.6%	0.70	0.79
K1	0.58	25,265	51	5	50%	902	902	27,511	0.63	108.9%	0	0	0.00	0.0%	-2,246	-0.05	-8.9%	0.90	0.99
K2	0.73	31,799	51	5	50%	902	902	27,511	0.63	86.5%	0	0	0.00	0.0%	4,288	0.10	13.5%	0.80	0.88
K3	8.02	349,351	31	4	50%	1,171	1,171	22,835	0.52	6.5%	16	57,600	1.32	16.5%	268,917	6.17	77.0%	0.50	0.58

n Values
Concrete = 0.015
Short grass prairie = 0.15
Dense grasses = 0.24

Inlet Flow Calculations

Basin	From	To	Area (Ac)	Sheet Flow (Max 100 feet)				Grass Shallow Conc. Flow				Street Shallow Conc. Flow				25-year			100-year			Inlet	Area	C 25	C 100			
				L (ft)	n	S (%)	Tc (min)	L (ft)	n	S (%)	Tc (min)	L (ft)	n	S (%)	Tc (min)	Tc (min)	C	I (in/hr)	Q (cfs)	C	I (in/hr)					Q (cfs)		
A1	INLET	0.36	15,682	13	0.015	0.9%	0.37							382	0.015	1.61%	2.47	5.00	0.75	11.35	3.06	0.83	14.64	4.40	A1	15,682	0.75	0.83
A2	INLET	0.77	33,541	58	0.240	3.66%	6.42	123	0.240	3.55%	0.67	23	0.015	0.43%	0.29	7.38	0.67	10.30	5.29	0.75	13.24	7.62	A2	33,541	0.67	0.75		
A3	INLET	0.89	38,768	65	0.240	7.97%	5.15	218	0.240	2.70%	1.37	165	0.015	1.44%	1.13	7.65	0.66	10.30	6.09	0.75	13.24	8.79	A3	38,768	0.66	0.75		
A4	INLET	0.76	33,106	41	0.240	6.63%	3.83	238	0.240	4.11%	1.21	81	0.015	5.20%	0.29	5.34	0.74	11.35	6.36	0.82	14.64	9.14	A4	33,106	0.74	0.82		
A5	INLET	0.76	33,106	39	0.240	3.56%	4.72	233	0.240	3.34%	1.32	86	0.015	6.00%	0.29	6.33	0.74	10.78	6.04	0.82	13.88	8.67	A5	33,106	0.74	0.82		
A6	INLET	0.79	34,412	39	0.240	3.72%	4.64	236	0.240	2.98%	1.41	90	0.015	2.39%	0.48	6.53	0.73	10.78	6.17	0.81	13.88	8.87	A6	34,412	0.73	0.81		
A7	INLET	0.79	34,412	44	0.240	2.43%	6.06	235	0.240	2.67%	1.48	85	0.015	3.28%	0.38	7.93	0.73	10.30	5.90	0.81	13.24	8.46	A7	34,412	0.73	0.81		
A8	INLET	0.96	41,818	45	0.240	0.53%	11.32	242	0.240	0.70%	2.98	82	0.015	5.50%	0.29	14.59	0.67	7.82	5.03	0.75	10.03	7.23	A8	41,818	0.67	0.75		
A9	INLET	0.97	42,253	48	0.240	1.00%	9.27	228	0.240	15.22%	0.60	43	0.015	0.56%	0.47	10.35	0.59	9.12	5.20	0.67	11.70	7.56	A9	42,253	0.59	0.67		
A10	INLET	0.08	3,485	23	0.015	2.26%	0.40					113	0.015	0.93%	0.96	5.00	0.76	11.35	0.69	0.84	14.64	0.99	A10	3,485	0.76	0.84		
B1-N	INLET	0.20	8,712	14	0.015	1.14%	0.36					303	0.015	2.35%	1.62	5.00	0.68	11.35	1.54	0.76	14.64	2.23	B1-N	8,712	0.68	0.76		
B1-S	INLET	0.80	34,848	42	0.240	6.19%	4.02																					

G:\TXC\Projects\San Antonio Projects\2278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C03.10 OVERALL GRADING PLAN.dwg Layout: OVERALL GRADING PLAN (SHEET 1 OF 2) Plotted: 5/24/2023 11:46:38 AM By: Srodriaguz

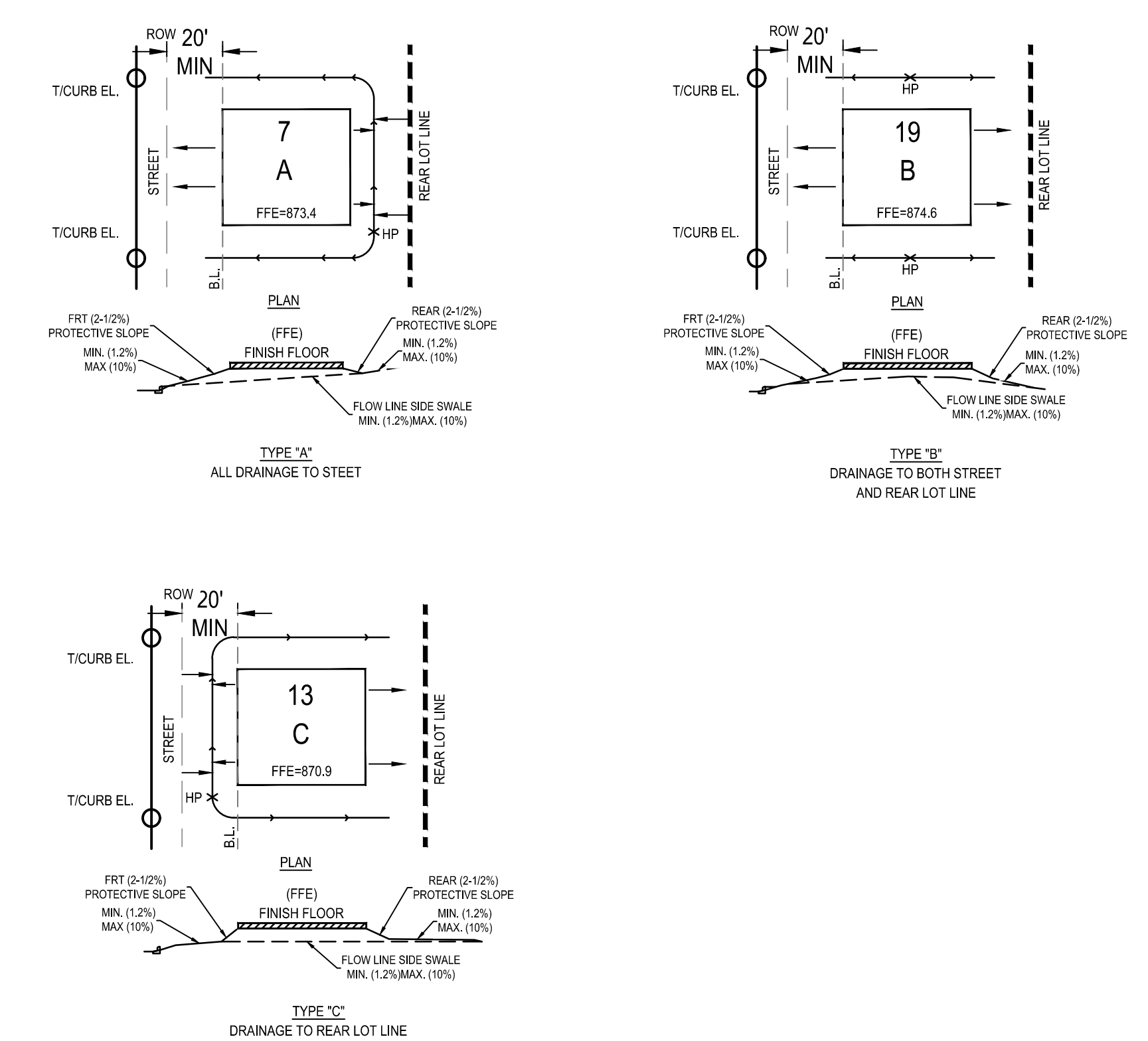


- GENERAL NOTES:**
- HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
 - AS SOON AS PRACTICAL, HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.
 - CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
 - POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OF STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.
 - GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.
 - CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.
 - EARTHEN GRADING SLOPES SHALL BE NO GREATER THAN 3:1. SLOPES GREATER THAN 3:1 ARE ASSUMED TO BE MILLED ROCK. IF SITE CONDITIONS VARY FROM THIS, NOTIFY ENGINEER IMMEDIATELY.

- LOT FILL NOTES:**
- ALL LOTS WITH FILL SHALL BE COMPACTED IN ACCORDANCE WITH THE 79G PROCEDURE THAT MEETS THE REQUIREMENTS OF THE FHA DATA SHEET. DOCUMENTATION AND THE EVIDENCE OF COMPACTED SHALL BE FURNISHED TO THE ENGINEER & OWNER.

FINISHED FLOOR ELEVATIONS

THE ELEVATION OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND OR FINISHED FLOOR ELEVATION WHICH EVER IS HIGHER, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORM WATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO THE STORM WATER CONVEYANCE STRUCTURES MUST HAVE FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE STRUCTURE.



DATE	APR
DESCRIPTION	
REV	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

BGE INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
Tel: 210-358-3360 www.bgeinc.com
EPA Registration No. P-1040

CANYON RANCH UNIT 3

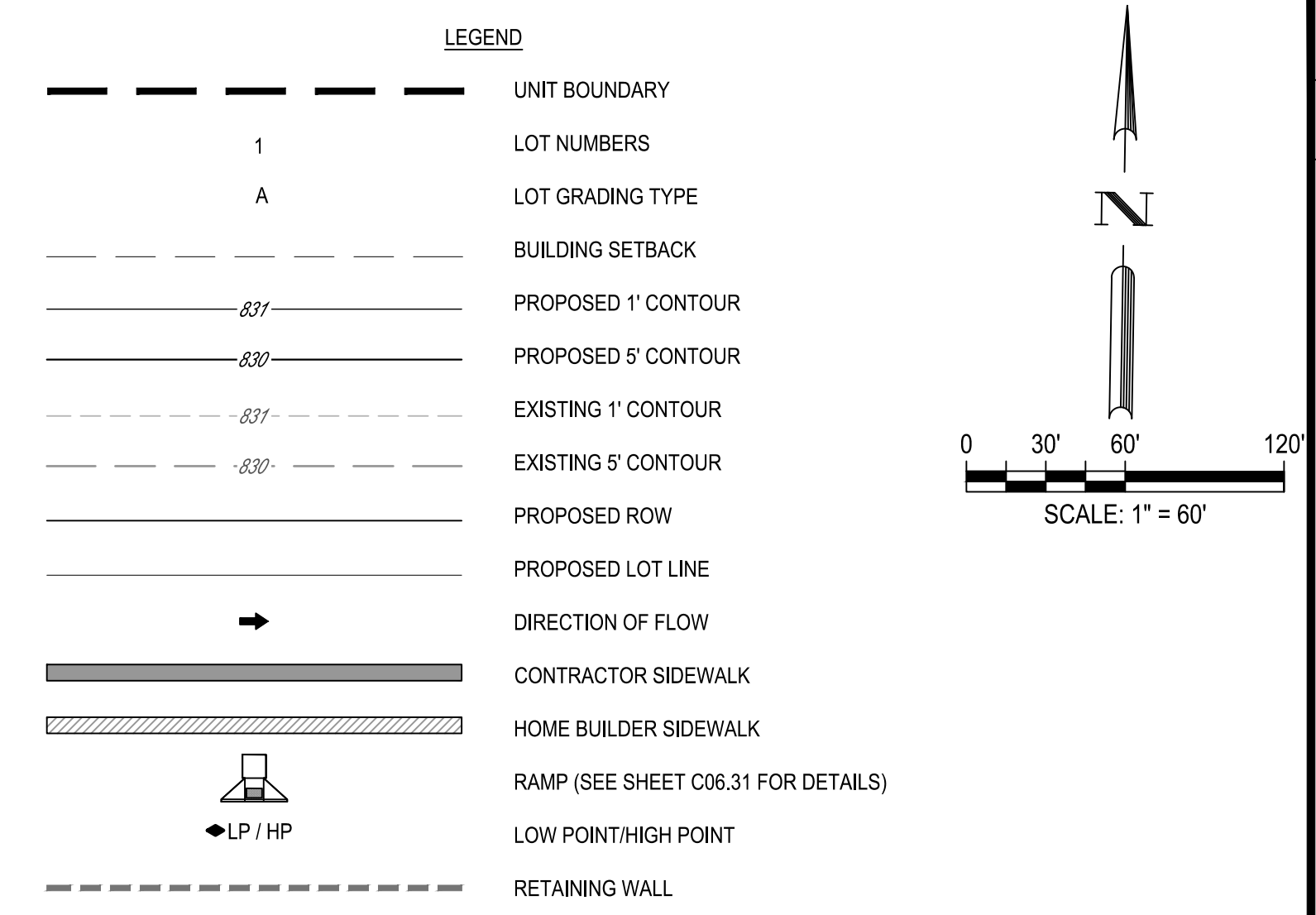
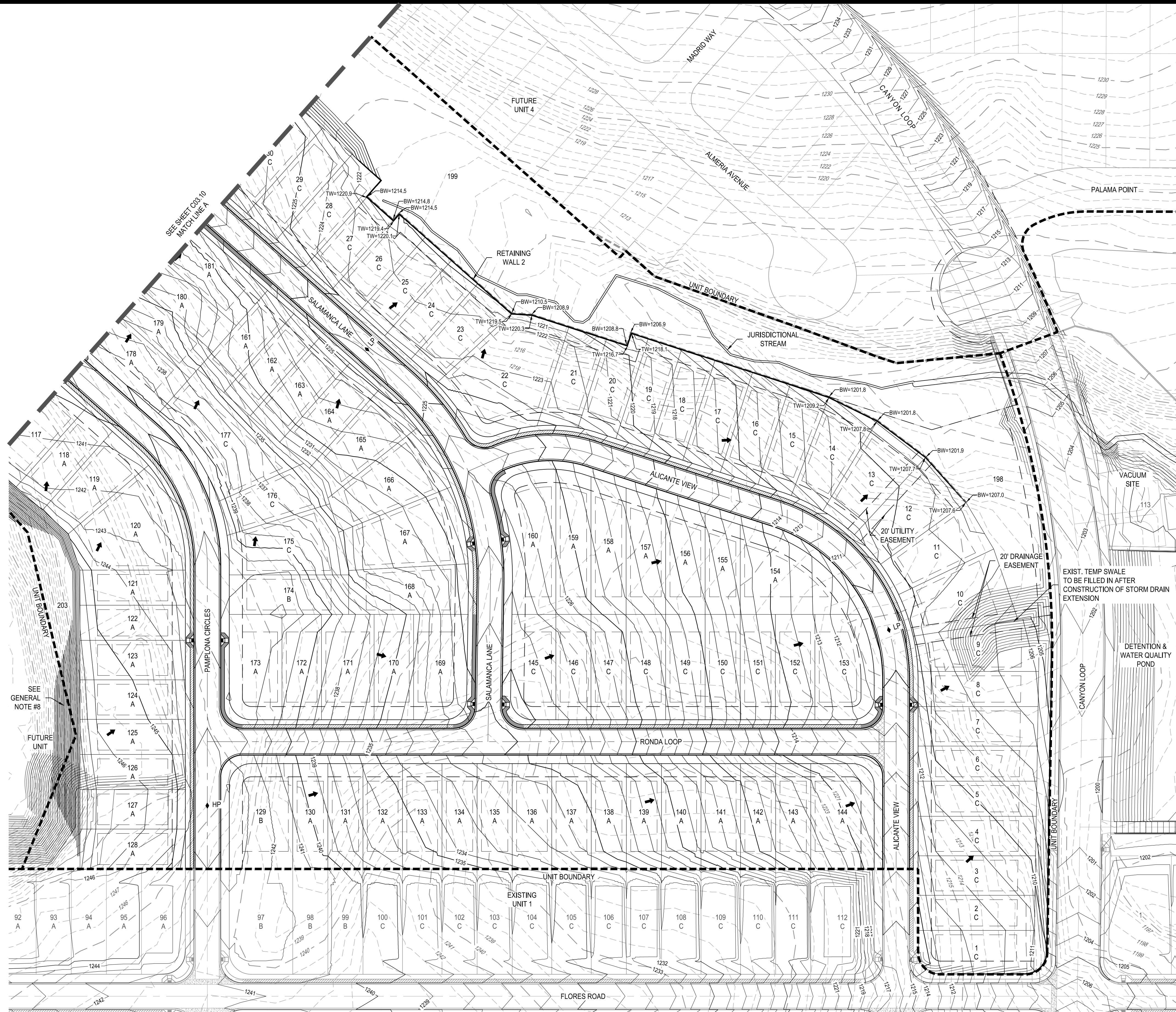
OVERALL GRADING PLAN (SHEET 1 OF 2)

04/05/2024

SHEET

C03.10

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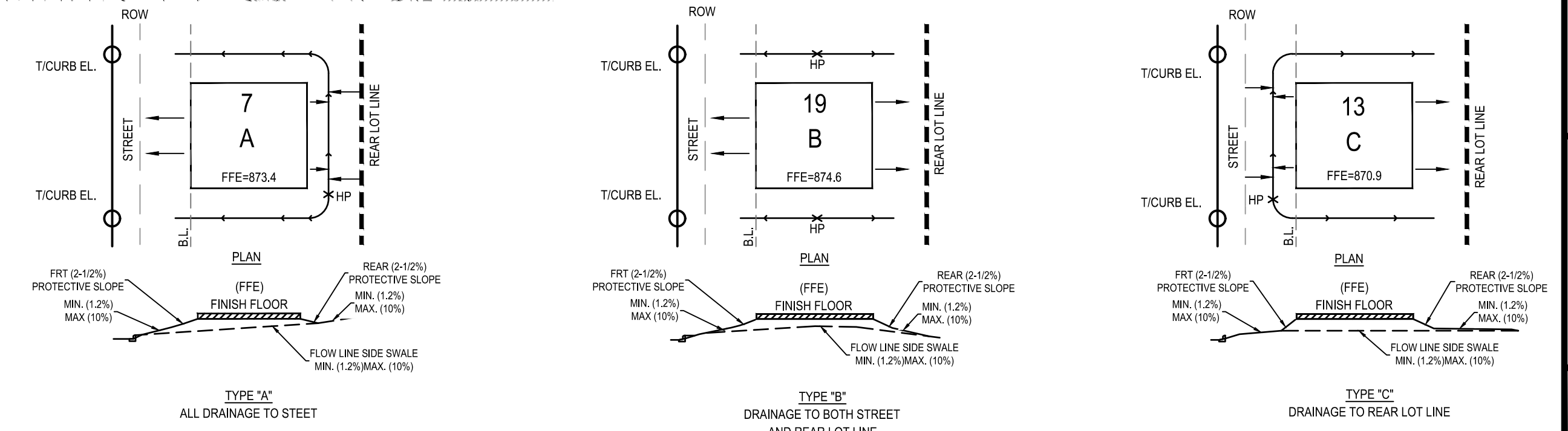


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DATE	APR
DESCRIPTION	
REV	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

BGE

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 210-358-3600 www.bgeinc.com
TXE Registration No. P-1040

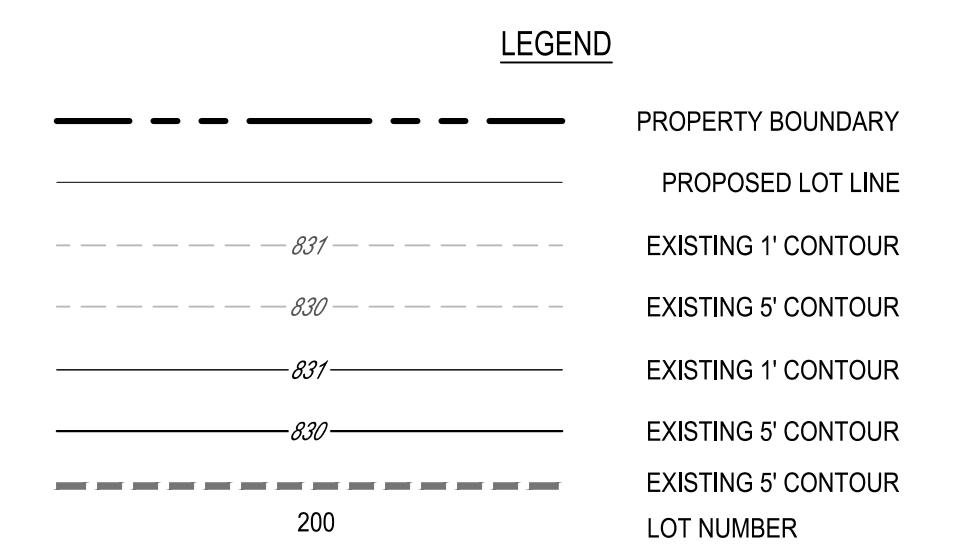
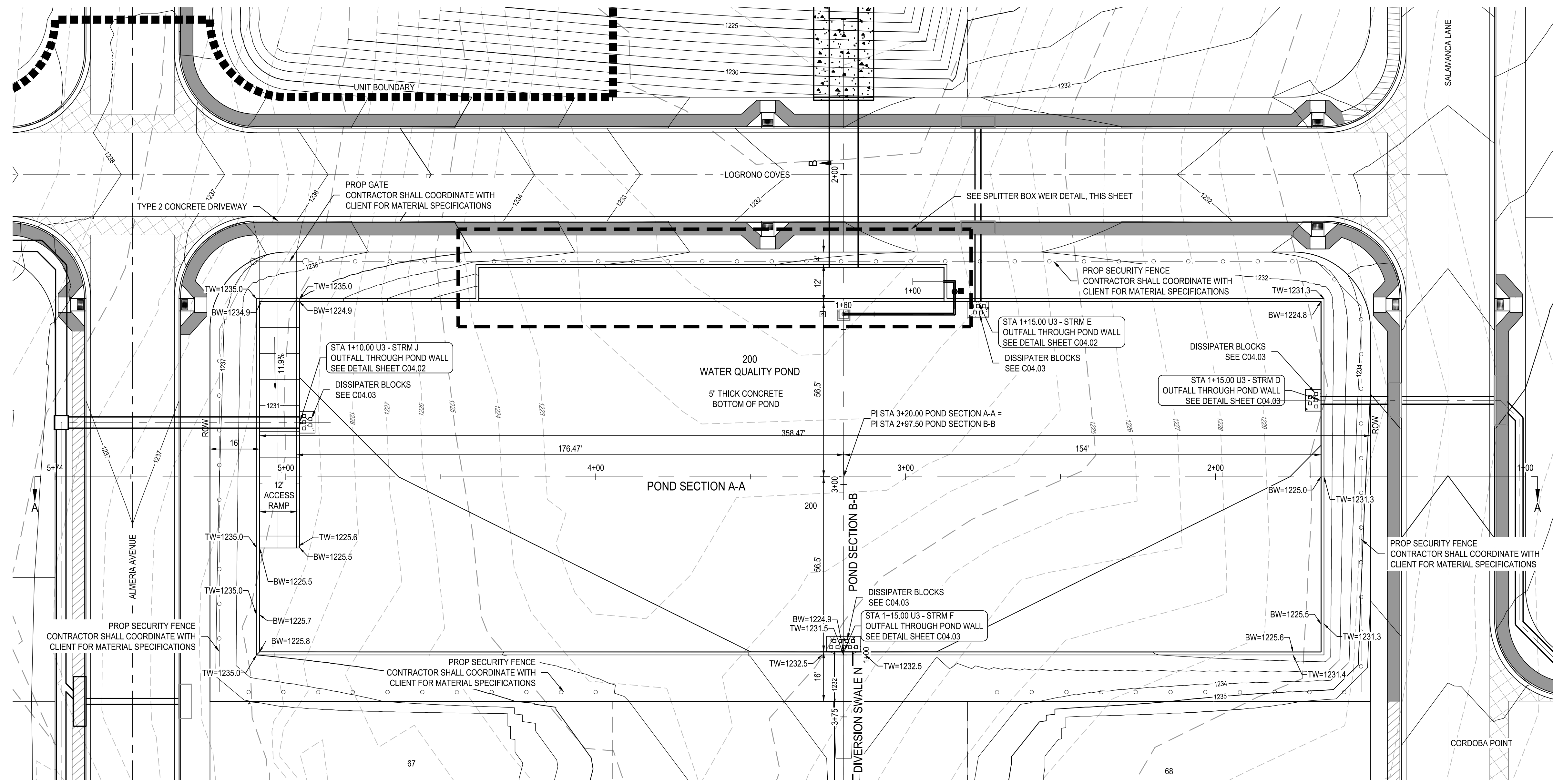
CANYON RANCH UNIT 3

OVERALL GRADING PLAN (SHEET 2 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024

SHEET
C03.11

G:\TXC\Projects\San Antonio Projects\7278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C04.00 DETENTION POND PLAN.dwg Layout: C04.00 WATER QUALITY POND PLAN By: Lhuck

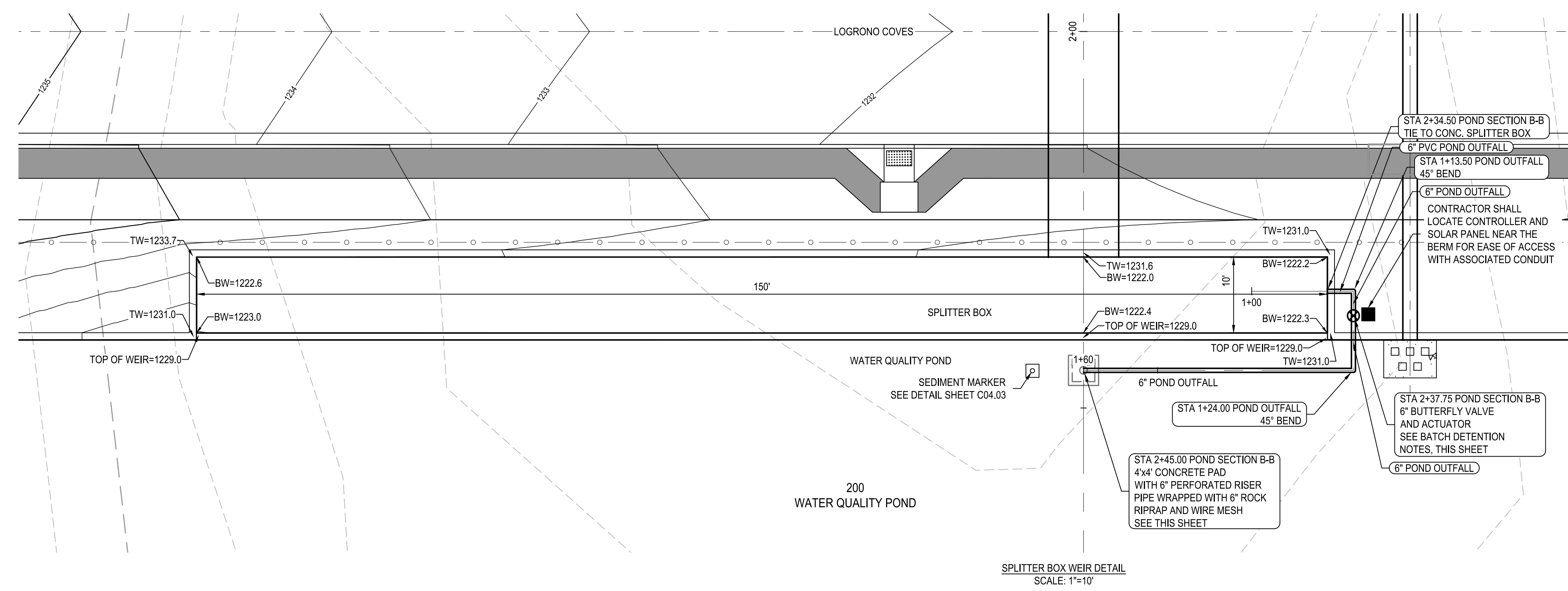


NOTE: UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DETENTION FACILITY, FILTRATION FACILITIES AND/OR WATER QUALITY FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.

- NOTES:
- POND SHALL MAINTAINED BY CANYON RANCH MUD OF COMAL COUNTY.
 - POND IS TO HAVE 5" CONCRETE BOTTOM. SEE C04.03 FOR JOINTING DETAIL.
 - THE REQUIRED WATER QUALITY VOLUME IS 153,886 CF AND THE PROVIDED WATER QUALITY VOLUME IS 155,958 CF.

BATCH DETENTION NOTES:

- OVERVIEW: THE BASIN IS TYPICALLY FILLED QUICKLY BY STORMWATER CONVEYED THROUGH A STORM DRAIN, MAKING THE INFLOW TIME RELATIVELY SHORT. THE RESIDENCE TIME OF THE STORMWATER IS 12 HOURS AND IS CONTROLLED BY THE CONTROL VALVE (NORMALLY SHUT OFF) AND ACTUATOR INSTALLED ON THE OUTLET STRUCTURE. THE CONTROL VALVE OPENS ONCE THE DESIRED RESIDENCE TIME IS ACHIEVED AFTER A STORM EVENT. THE TREATED WATER IS RELEASED SLOWLY OVER A TIME OF 24 TO 48 HOURS.
- VALVE/ACTUATOR: THE VALVE/ACTUATOR ASSEMBLY CONSISTS OF A BUTTERFLY VALVE WITH A SMALL 12VDC ACTUATOR. THE VALVE IS A QUARTER TURN VALVE. THE ACTUATOR OPERATES THE VALVE BETWEEN THE FULL OPEN AND FULL CLOSED POSITIONS. A MECHANICAL HAND CLANK ALLOWS A PHYSICAL OVERRIDE OF THE VALVE SYSTEM.
- THE VALVE IS A KEYSTONE 6-INCH (100MM) BUTTERFLY VALVE MATED WITH A EPI-6 12VDC ACTUATOR. THE EPI-6 ACTUATOR REQUIRES AN OPEN OR CLOSE SIGNAL OF 10 SECONDS. THE ACTUATOR HAS LIMIT SWITCHES THAT DETECT END OF TRAVEL AND SHUT OFF THE INCOMING OPEN OR CLOSE SIGNAL TO THE ACTUATOR ONCE THE VALVE REACHES THE FULL OPEN OR CLOSED POSITION. OVER TORQUE SENSORS WILL SHUT DOWN THE ACTUATOR IN THE EVENT OF AN OVER TORQUE SITUATION.
- CONTROLLER SYSTEM SPECIFICATIONS:
 - POWER - THE CONTROLLER SHALL BE POWERED BY A SHIELD-CONTAINED RENEWABLE POWER SOURCE (SUCH AS SOLAR POWER) IF ELECTRICAL POWER IS NOT AVAILABLE. A SINGLE SUPPLY VOLTAGE FOR ALL COMPONENTS IS DESIRABLE.
 - PROGRAMMABILITY - THE CONTROLLED SHALL BE PROGRAMMABLE. IT SHALL BE POSSIBLE TO UPDATE PROGRAMS IN THE FIELD. THE DETENTION TIME AND DRAW-DOWN TIME SHALL BE ADJUSTABLE IN HOURS FROM 0 HOURS TO 72 HOURS.
 - EVENT SENSING - THE CONTROLLER SHALL BE ABLE TO SENSE THE BEGINNING OF A STORM (WATER FILLING THE BASIN), AND THE END OF A STORM (WATER HAS DRAINED FROM THE BASIN).
 - ENVIRONMENT - THE CONTROLLER SHALL OPERATE IN TEMPERATURES FROM 0 DEGREES CELSIUS TO 55 DEGREES CELSIUS, IN HUMIDITY FROM 10% TO 90% (NON-CONDENSING). THE CONTROLLER SHALL OPERATE DURING PERIODS OF RAINFALL.
 - SAFETY/SECURITY - THE SYSTEM COMPONENTS SHALL BE LOCKED IN ENCLOSURE TO PREVENT ACCIDENTAL CONTACT THAT COULD COMPROMISED THE FUNCTION OF THE APPARATUS OR CAUSE INJURY.
 - MAINTENANCE - THE CONTROLLER SHALL REQUIRE MINIMAL PERIODIC MAINTENANCE TO CONTROLLER PROGRAM SHALL BE FIELD UPGRADEABLE. THE ABILITY TO MANUALLY OPERATE THE VALVE SHALL BE PROVIDED.
 - RELIABILITY - 40,000 HOURS (4.6 YEARS) OR GREATER.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND DESIGN OF SENSOR, AUTOMATIC VALVE, CONTROLLER, ETC. TO ENGINEER FOR REVIEW AND APPROVAL.



Stage (ft msl)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Surface Area (sf)	Volume (cf)	Cumulative Volume (cf)
1224.90	0.00	0.00	0	0	0
1225.00	0.10	0.10	27,888	930	930
1226.00	1.00	1.10	37,742	32,691	33,621
1227.00	1.00	2.10	37,863	37,802	71,423
1228.00	1.00	3.10	37,984	37,923	109,347
1229.00	1.00	4.10	38,104	38,044	147,391
1230.00	1.00	5.10	39,871	38,984	186,375
1231.00	1.00	6.10	39,991	39,931	226,306

CANYON RANCH UNIT 3
WATER QUALITY POND PLAN

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR

DATE: APR

DESCRIPTION: REV

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-361-3300 www.bgeinc.com
EPA Registration No. P-1040

STATE OF TEXAS
STACY MÜLLHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024
SHEET
C04.00

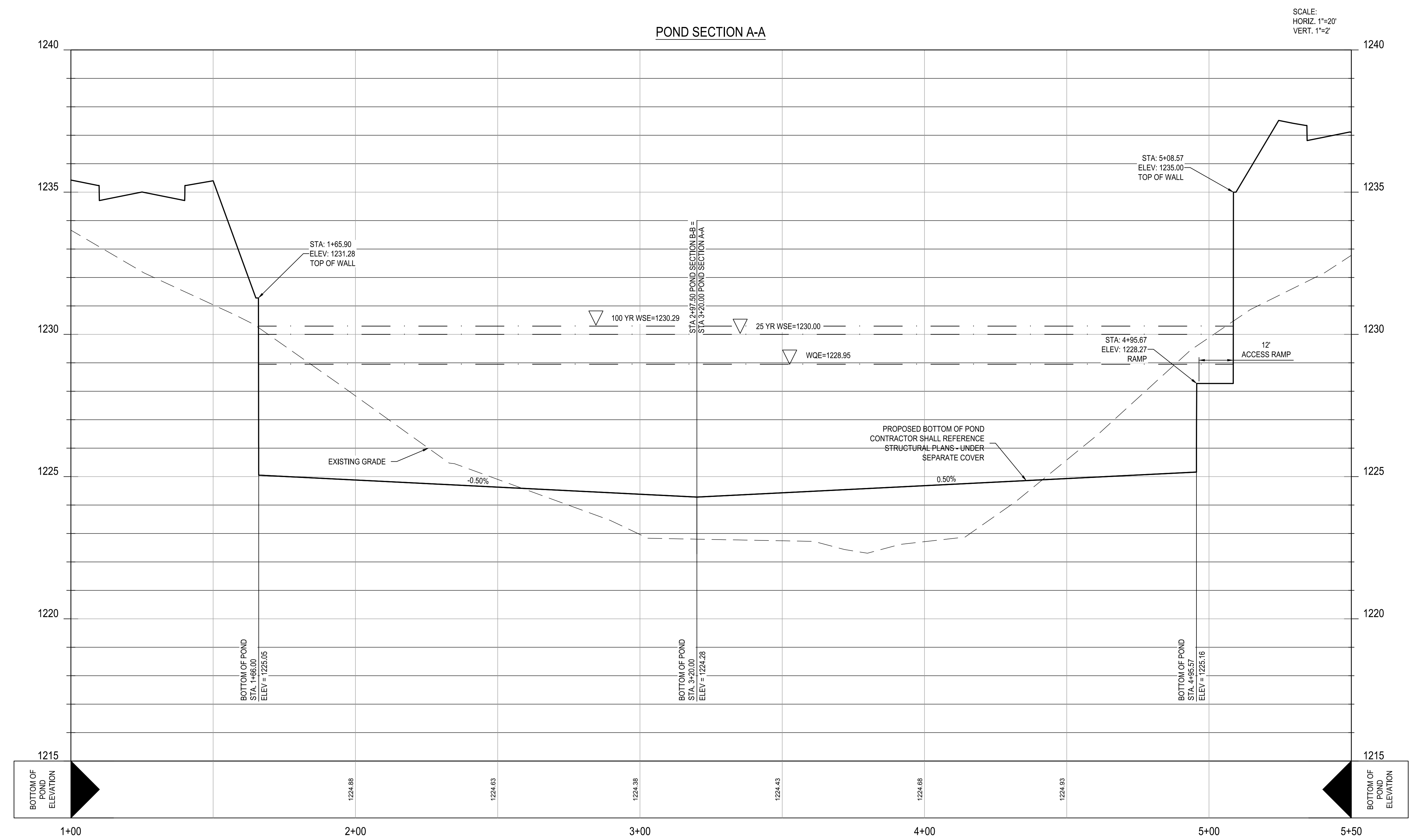
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NOTE: UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DETENTION FACILITY, FILTRATION FACILITIES AND/OR WATER QUALITY FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.

LEGEND

	PROPERTY BOUNDARY
	PROPOSED LOT LINE
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR
	EXISTING 5' CONTOUR



DATE	REV	DESCRIPTION

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR



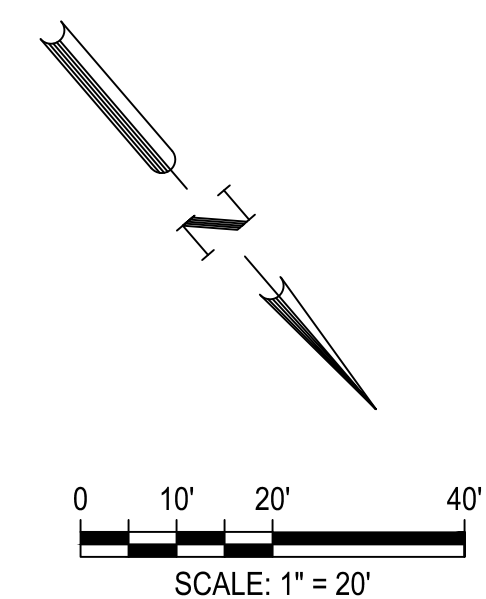
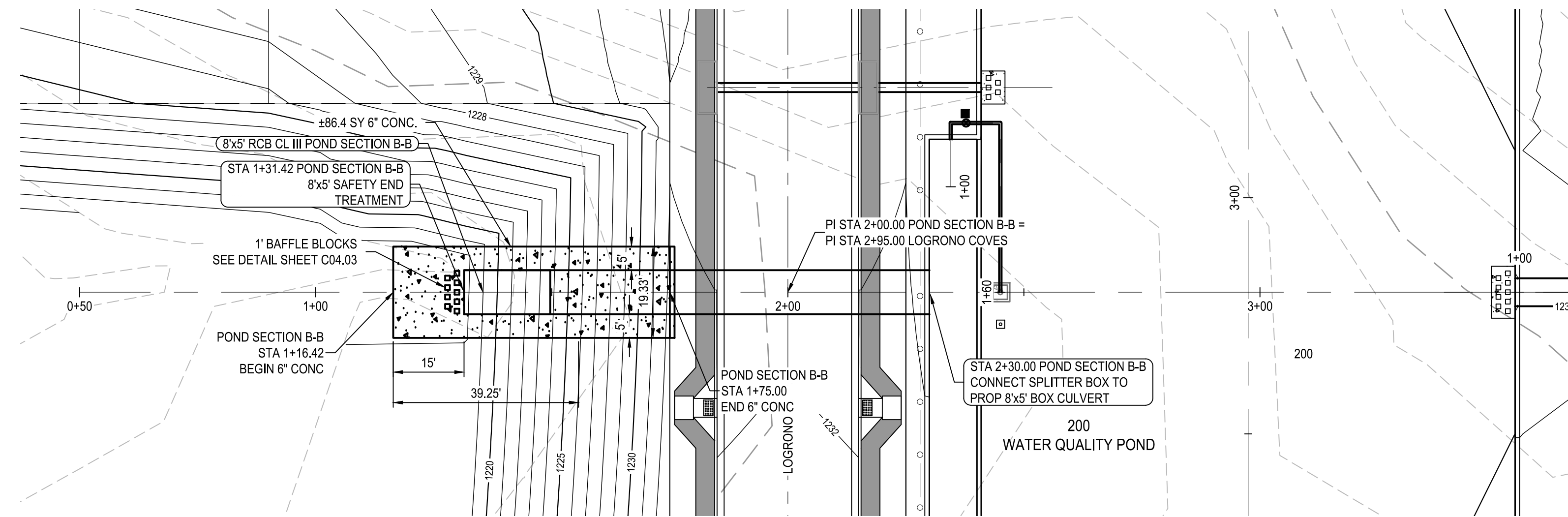
BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-3300 www.bgeinc.com
 TSP# Registration No. 7-1040

CANYON RANCH UNIT 3
 WATER QUALITY POND SECTIONS
 (SHEET 1 OF 2)



04/05/2024
 SHEET
 C04.01

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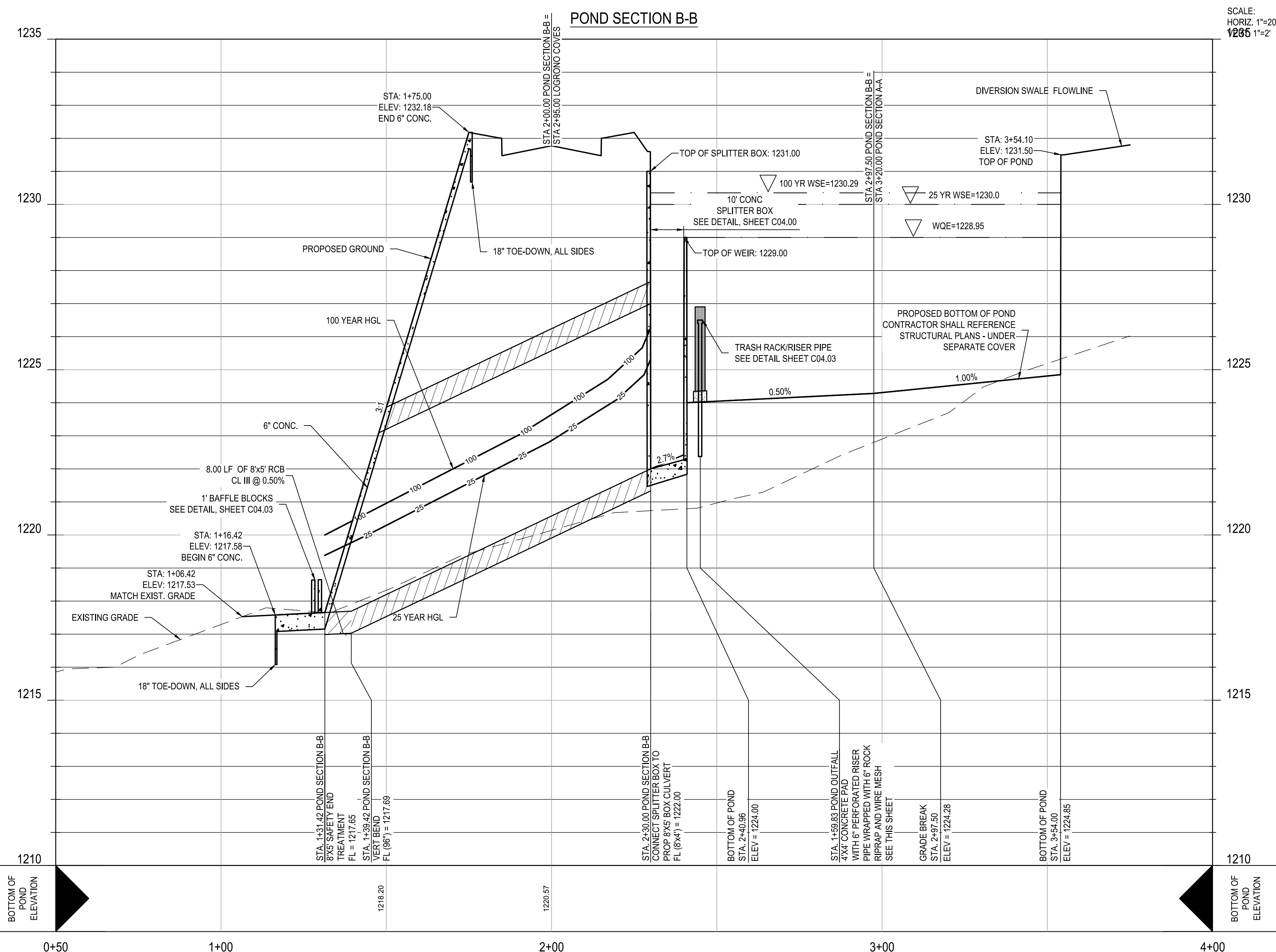
PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
POND OUTFALL	274.34	24.56	1.73

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
POND OUTFALL	399.70	27.73	2.34

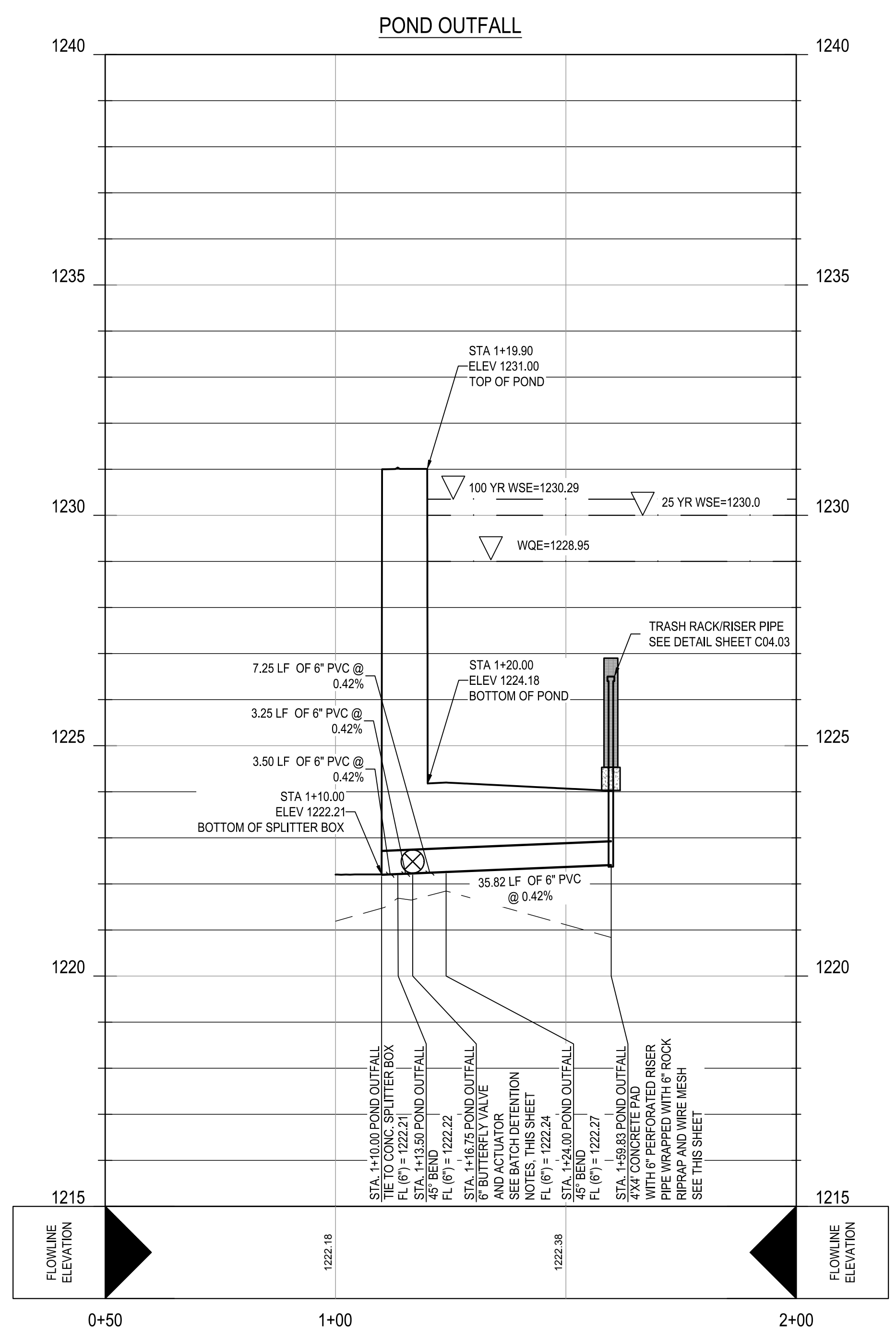
LEGEND

	PROPERTY BOUNDARY
	PROPOSED LOT LINE
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR

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SCALE:
HORIZ. 1"=20'
VERT. 1"=2'



DATE	DESCRIPTION
APR	
REV	
DESIGNED BY: SAR	
REVIEWED BY: SSM	
DRAWN BY: SAR	



CANYON RANCH UNIT 3
WATER QUALITY POND SECTIONS
(SHEET 2 OF 2)



Texas Commission on Environmental Quality UNIT 3 POND - US CONDITIONS

TSS Removal Calculations 04-20-2009 Project Name: Canyon Ranch Date Prepared: 2/1/2024

Additional Information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

Page 3-29 Equation 3.3: $L_{d,TOTAL PROJECT} = 27.2(A_{i1} \times P)$

where: $L_{d,TOTAL PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
 A_{i1} = Net increase in impervious area for the project
 P = Average annual precipitation, inches

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

County	Comal
Total project area included in plan	46.56 acres
Predevelopment impervious area within the limits of the plan	0.00 acres
Total post-development impervious area within the limits of the plan	23.26 acres
Total post-development impervious cover fraction	0.50
P	33 inches
$L_{d,TOTAL PROJECT}$	20878 lbs.

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

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

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

Drainage Basin/Outfall Area No. = unit 3 pond*

Total drainage basin/outfall area	20.22 acres
Predevelopment impervious area within drainage basin/outfall area	0.00 acres
Post-development impervious area within drainage basin/outfall area	9.52 acres
Post-development impervious fraction within drainage basin/outfall area	0.47
$L_{d,THIS BASIN}$	8645 lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP = Batch Detention
Removal efficiency = 91 percent

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

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

where: A_i = Total On-Site drainage area in the BMP catchment area
 A_p = Impervious area proposed in the BMP catchment area
 A_p = PerVIOUS area remaining in the BMP catchment area
 L_d = TSS Load removed from this catchment area by the proposed BMP

A_i	20.22 acres
A_p	9.52 acres
A_p	10.70 acres
L_d	10065 lbs.

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

Desired $L_{d,THIS BASIN}$ = 10015 lbs.
 $F = 1.00$

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-38

Rainfall Depth	4.00 inches
Post Development Runoff Coefficient	0.34
On-site Water Quality Volume	100388 cubic feet

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

Off-site area draining to BMP	0.00 acres
Off-site impervious cover draining to BMP	0.00 acres
Impervious fraction of off-site area	0
Off-site Runoff Coefficient	0.00
Off-site Water Quality Volume	0 cubic feet
Storage for Sediment	20078
Total Capture Volume (required water quality volume) x 1.20	120466 cubic feet

Texas Commission on Environmental Quality UNIT 1 POND - US CONDITIONS

TSS Removal Calculations 04-20-2009 Project Name: Canyon Ranch Date Prepared: 2/1/2024

Additional Information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

Page 3-29 Equation 3.3: $L_{d,TOTAL PROJECT} = 27.2(A_{i1} \times P)$

where: $L_{d,TOTAL PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
 A_{i1} = Net increase in impervious area for the project
 P = Average annual precipitation, inches

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

County	Comal
Total project area included in plan	46.56 acres
Predevelopment impervious area within the limits of the plan	0.00 acres
Total post-development impervious area within the limits of the plan	23.26 acres
Total post-development impervious cover fraction	0.50
P	33 inches
$L_{d,TOTAL PROJECT}$	20878 lbs.

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

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

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

Drainage Basin/Outfall Area No. = unit 1 pond*

Total drainage basin/outfall area	18.26 acres
Predevelopment impervious area within drainage basin/outfall area	0.00 acres
Post-development impervious area within drainage basin/outfall area	10.79 acres
Post-development impervious fraction within drainage basin/outfall area	0.59
$L_{d,THIS BASIN}$	9885 lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP = Batch Detention
Removal efficiency = 91 percent

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

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

where: A_i = Total On-Site drainage area in the BMP catchment area
 A_p = Impervious area proposed in the BMP catchment area
 A_p = PerVIOUS area remaining in the BMP catchment area
 L_d = TSS Load removed from this catchment area by the proposed BMP

A_i	18.26 acres
A_p	10.79 acres
A_p	7.47 acres
L_d	11332 lbs.

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

Desired $L_{d,THIS BASIN}$ = 10013 lbs.
 $F = 0.95$

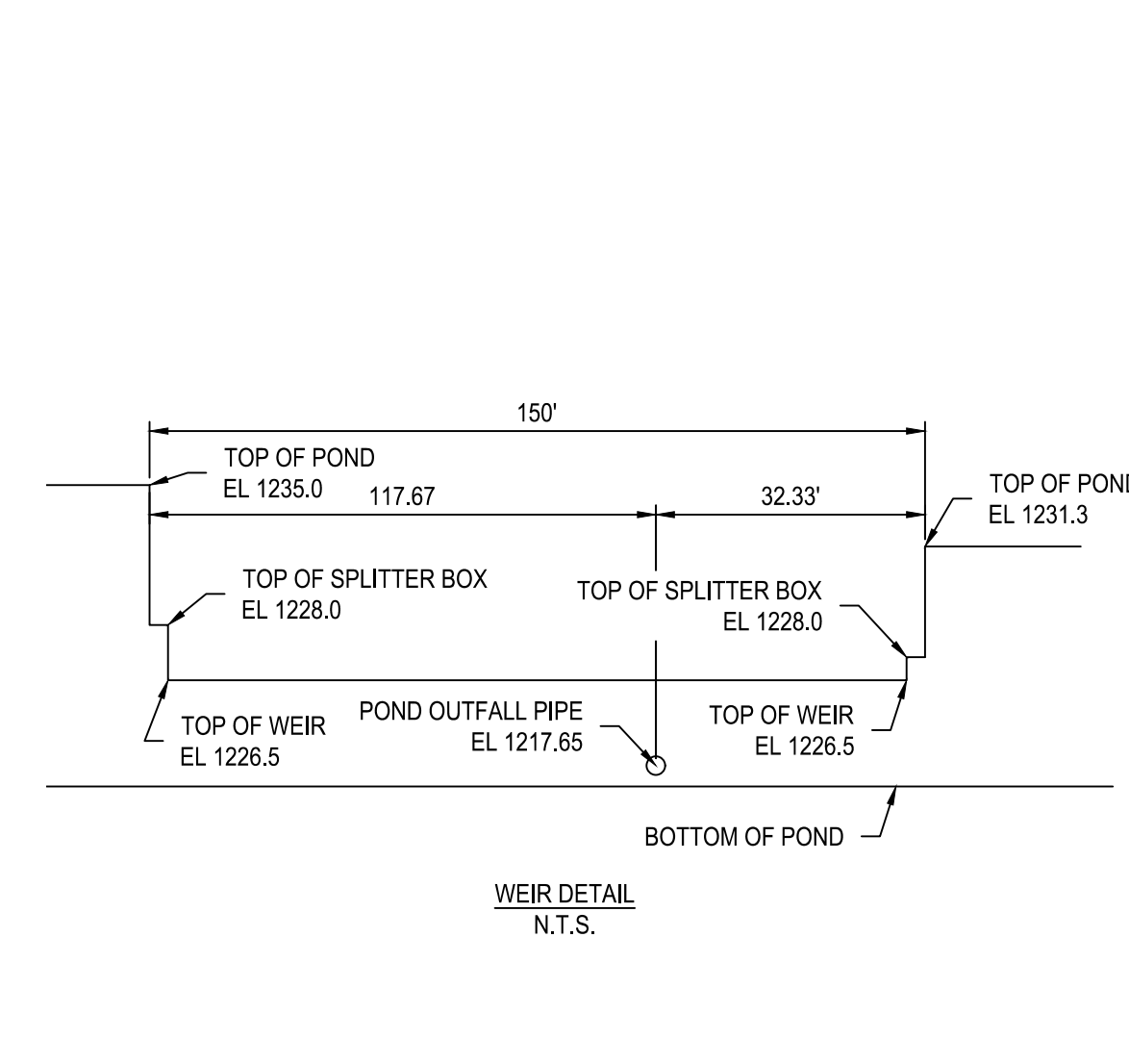
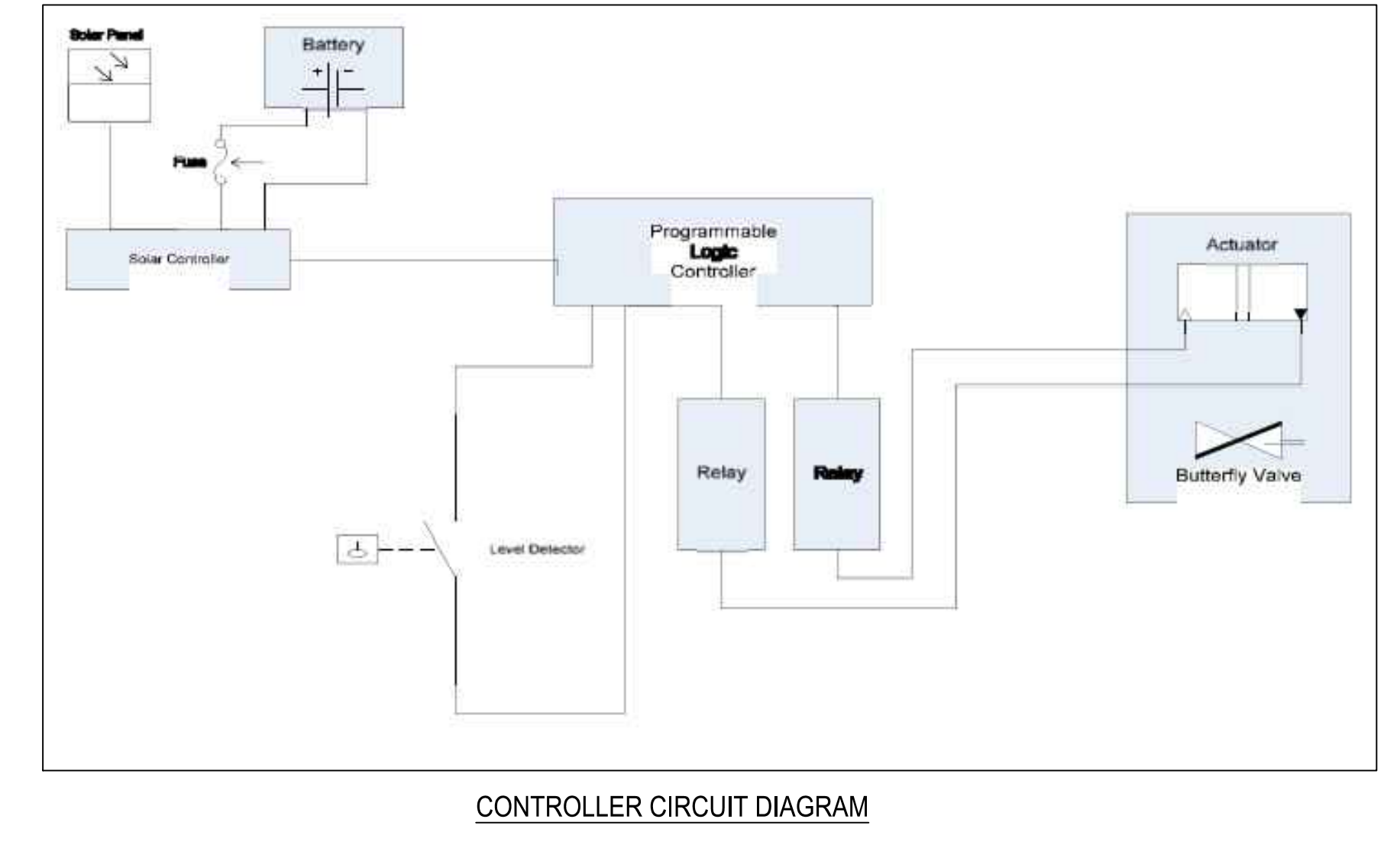
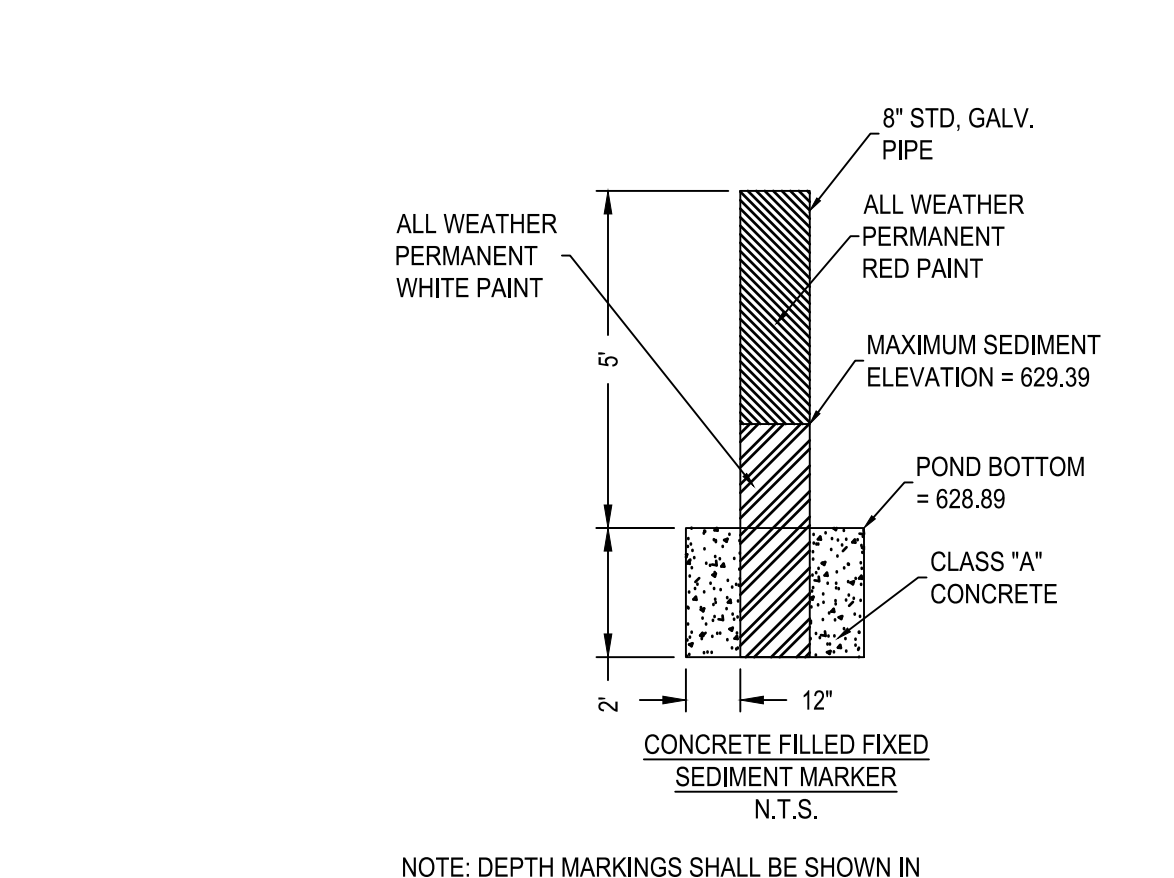
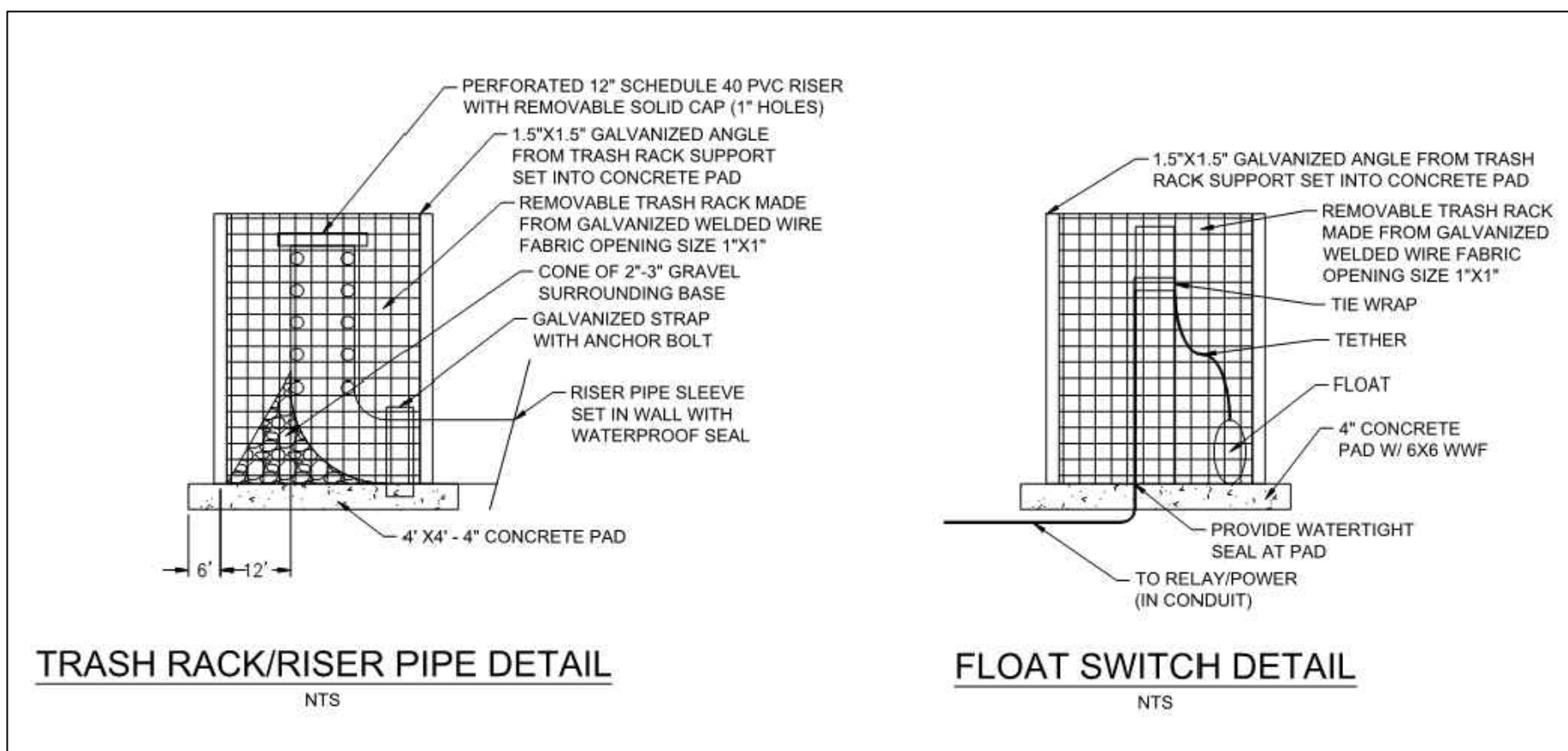
6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-38

Rainfall Depth	2.60 inches
Post Development Runoff Coefficient	0.41
On-site Water Quality Volume	71319 cubic feet

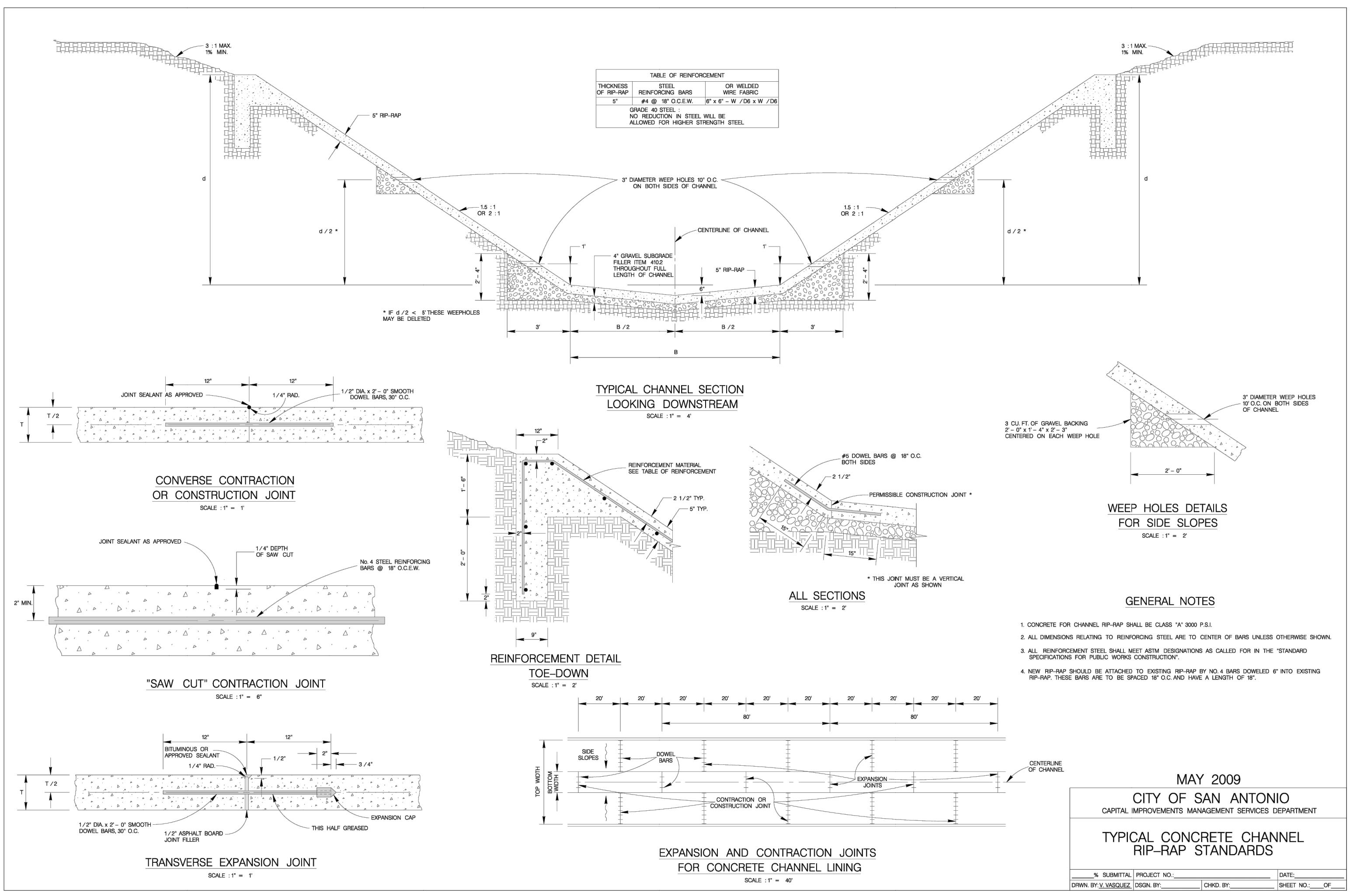
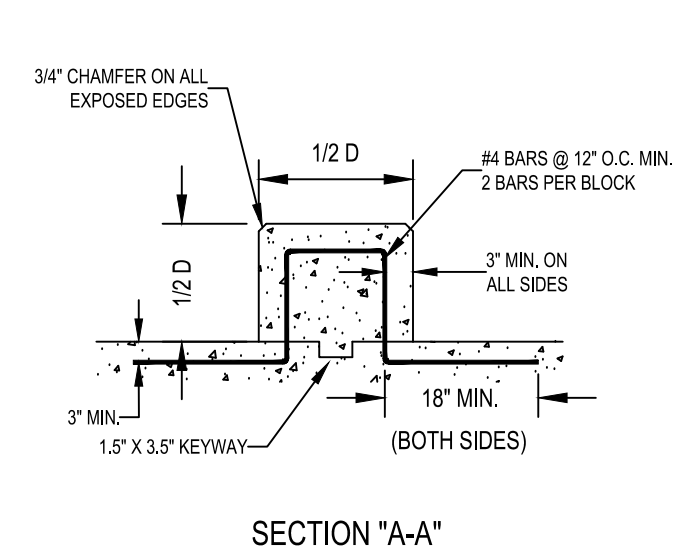
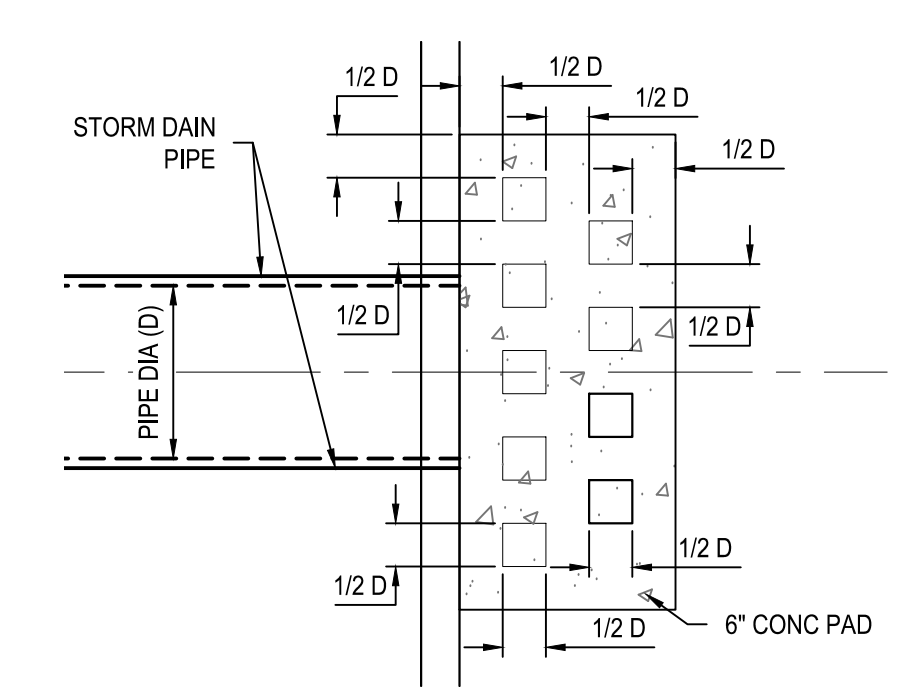
Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP	0.00 acres
Off-site impervious cover draining to BMP	0.00 acres
Impervious fraction of off-site area	0
Off-site Runoff Coefficient	0.00
Off-site Water Quality Volume	0 cubic feet
Storage for Sediment	14264
Total Capture Volume (required water quality volume) x 1.20	85563 cubic feet

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



G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C04.00 DETENTION POND PLAN.dwg Layout: WATER QUALITY POND DETAILS (SHEET 1 OF 2) Plotted: 2/19/2024 11:51:01 AM By: Lhuck



DATE	APR
DESCRIPTION	
REV	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

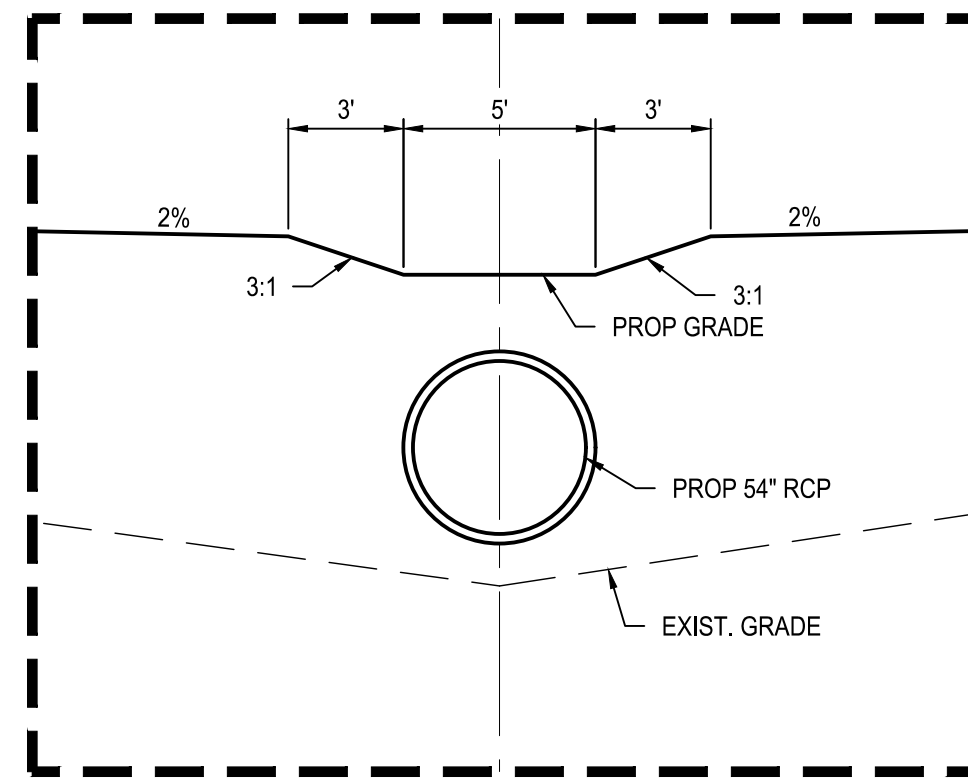
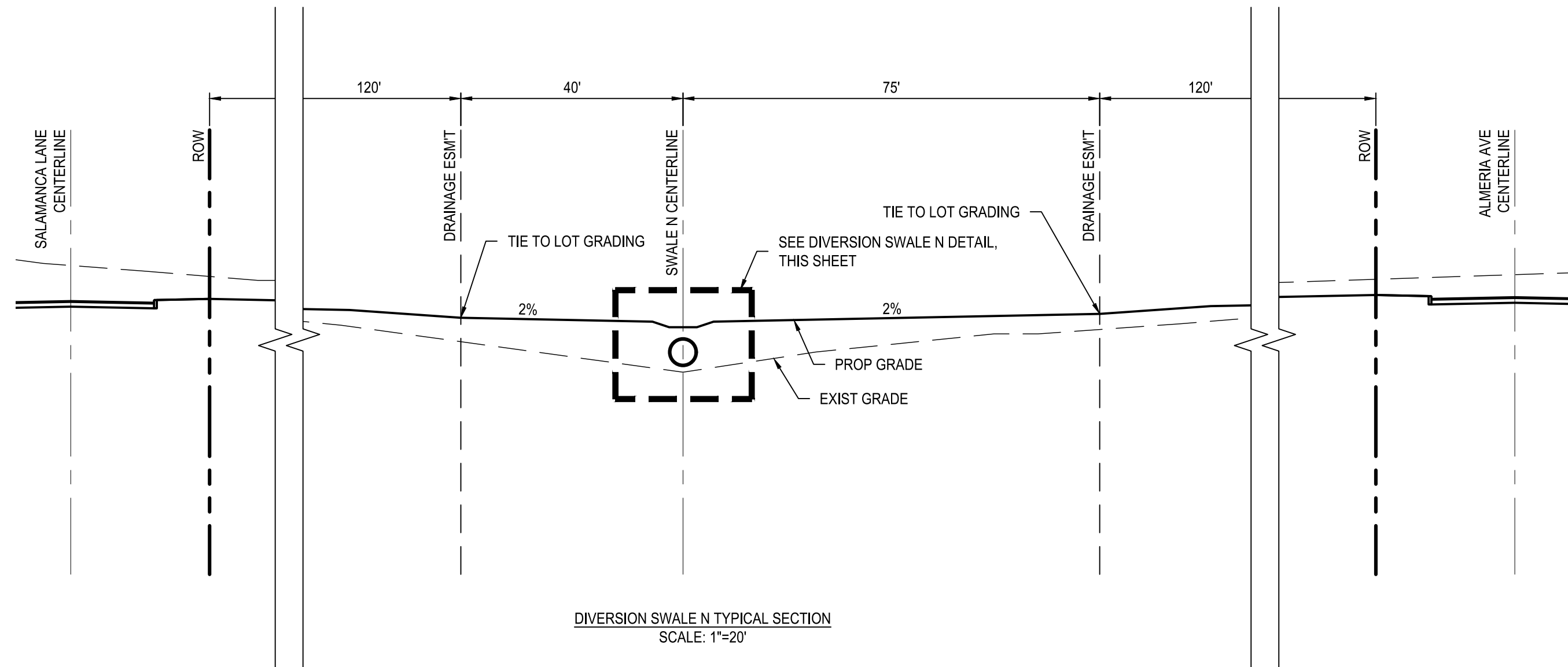
BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-0300 www.bgeenergy.com
TXE Registration No. P-1040

CANYON RANCH UNIT 3
WATER QUALITY POND DETAILS
(SHEET 1 OF 2)

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TYPICAL CONCRETE CHANNEL
RIP-RAP STANDARDS

PROJECT NO. _____ DATE: _____
DRAWN BY: Lhuck, CHECK BY: _____ SHEET NO. _____

04/05/2024
SHEET
C04.03



SWALE N CAPACITY VERIFICATION

$Q_p = 32.00$ cfs	$Q_s = 48.00$ cfs
$n = 0.030$	$n = 0.030$
$S = 1.50\%$	$S = 1.50\%$
$D_n = 0.91$ ft	$D_n = 1.13$ ft
$V_n = 4.55$ fps	$V_n = 5.06$ fps
$D = 1.50$ ft	$D = 1.50$ ft
$B_w = 5$ ft	$B_w = 5$ ft

WING DIMENSION CALCULATIONS:
 $H_w = H + T + C - 0.250$
 $L_w = (H_w - 0.333) (SL)$

For cast-in-place culverts:
 $A_{tw} = (N) (S) + (N + 1) (U)$
 For precast culverts:
 $A_{tw} = (N) (2U + S) + (N - 1) (0.500)$

Total Wingwall Area (SF)
 $= (0.5) (H_w + 0.333) (L_w) (N - 1)$
 Total Concrete Volume (CY)
 $= (Wingwall Area) (0.583) + (L_w) (0.583) + (A_{tw}) (1.167) (1.167 - 0.583) + (27)$

PIPE RUNNER DIMENSION CALCULATIONS:
 Pipe Runner Length (feet)
 $(L_w) (K_1) + (1.917)$
 Total Reinforcing (lb)
 $= (1.55) (L_w) (A_{tw}) + (4.43) (A_{tw}) + (K_2) (H_w) (N + 1) (L_w)$

MATERIAL NOTES:
 Provide Class "C" concrete (f'c = 3600 psi)
 Provide pipe runners, cross pipes, and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.
 Provide ASTM A307 bolts.
 Galvanize all steel components, except the concrete reinforcing, unless required elsewhere in the plans, after fabrication.
 Repair galvanizing damage during transport or construction in accordance with Item 445, "Galvanizing."

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
 Cross pipes are designed for a traveling load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures," Texas Transportation Institute, March 1981.
 The quantities for concrete, reinforcing steel, and cross pipes resulting from the formulas given herein are for Contractor's information only.
 See the Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
 Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the safety end treatments.

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE. REINFORCING DIMENSIONS ARE OUT-TO-OUT OF BARS.

TEXAS DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION STANDARD
SAFETY END TREATMENT FOR BOX CULVERTS (MAXIMUM HW = 7'-0") TYPE 1 - PARALLEL DRAINAGE
SETB-PD

DATE	DESCRIPTION	BY	CHK	APP
02/20/2023	REVISED	SSM		

REQUIRED PIPE SIZES

Culvert Span	Cross Pipe Size	Sleeve Pipe Size	Standard Pipe Size	Standard Pipe O.D.	Standard Pipe I.D.
30" to 42"	3" STD	2 1/2" STD	2 1/2" STD	2.875"	2.469"
48" to 72"	4" STD	3" STD	3" STD	3.500"	3.068"
78" to 120"	5" STD	4" STD	3 1/2" STD	4.000"	3.548"
	6" STD	5" STD	4" STD	4.500"	4.026"
		6" STD	5" STD	5.563"	5.047"
			6" STD	6.625"	6.065"

SECTION B-B
 PART PLAN SECTION B-B
 OPTIONAL ANCHOR BAR DETAILS

SLEEVE PIPE DETAILS

CROSS PIPE INSTALLATION DETAILS

SECTION THROUGH INSTALLATION OF TYPICAL FULL CROSS PIPE
 (Anchor details and dimensions are similar to those shown below in Section Through Installation of 3 1/2" First Cross Pipe detail.)

SECTION THROUGH INSTALLATION OF 3 1/2" FIRST CROSS PIPE

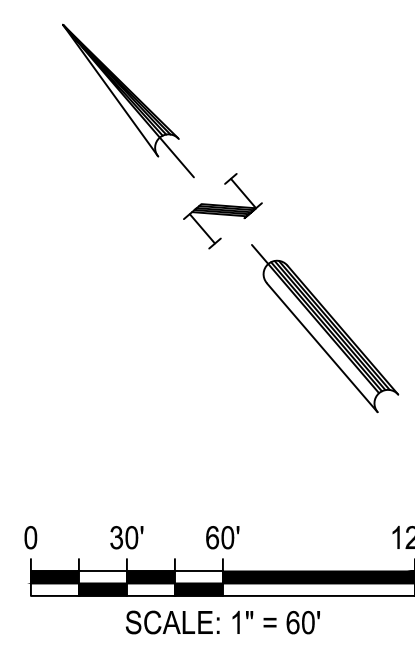
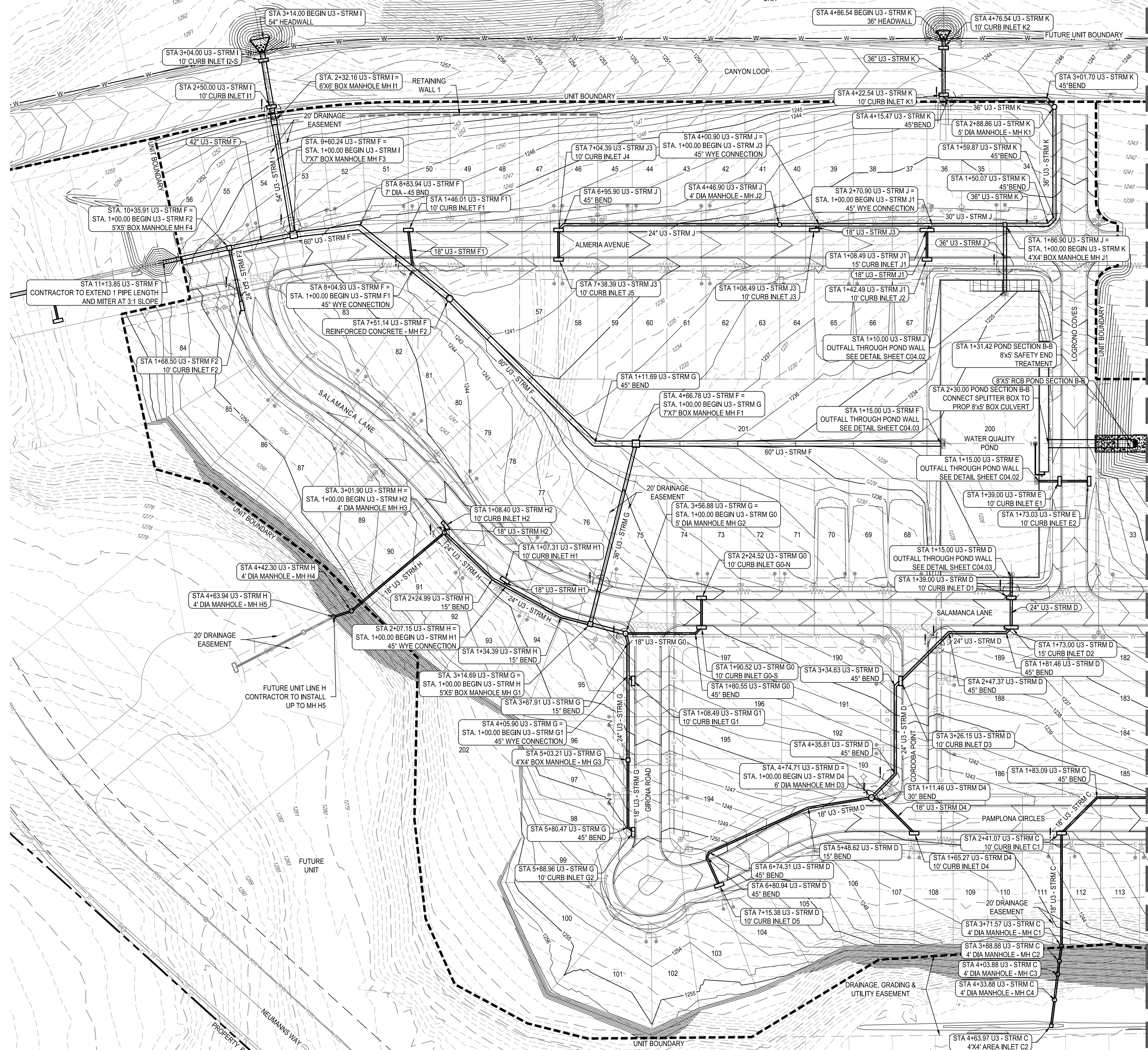
OUTSIDE CULVERT BARREL WITH OPTIONAL ANCHOR BARS & RIPRAP

OUTSIDE CULVERT BARREL WITH BOLTED ANCHOR

INSIDE CULVERT BARREL

TEXAS DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION STANDARD
SAFETY END TREATMENT FOR BOX CULVERTS (MAXIMUM HW = 7'-0") TYPE 1 - PARALLEL DRAINAGE
SETB-PD

DATE	DESCRIPTION	BY	CHK	APP
02/20/2023	REVISED	SSM		



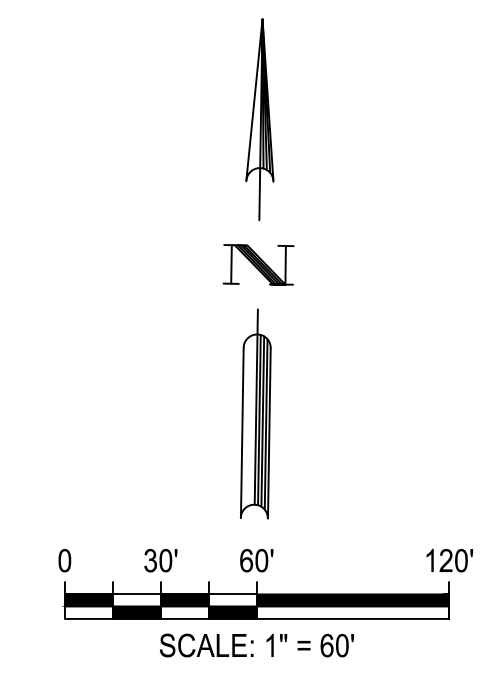
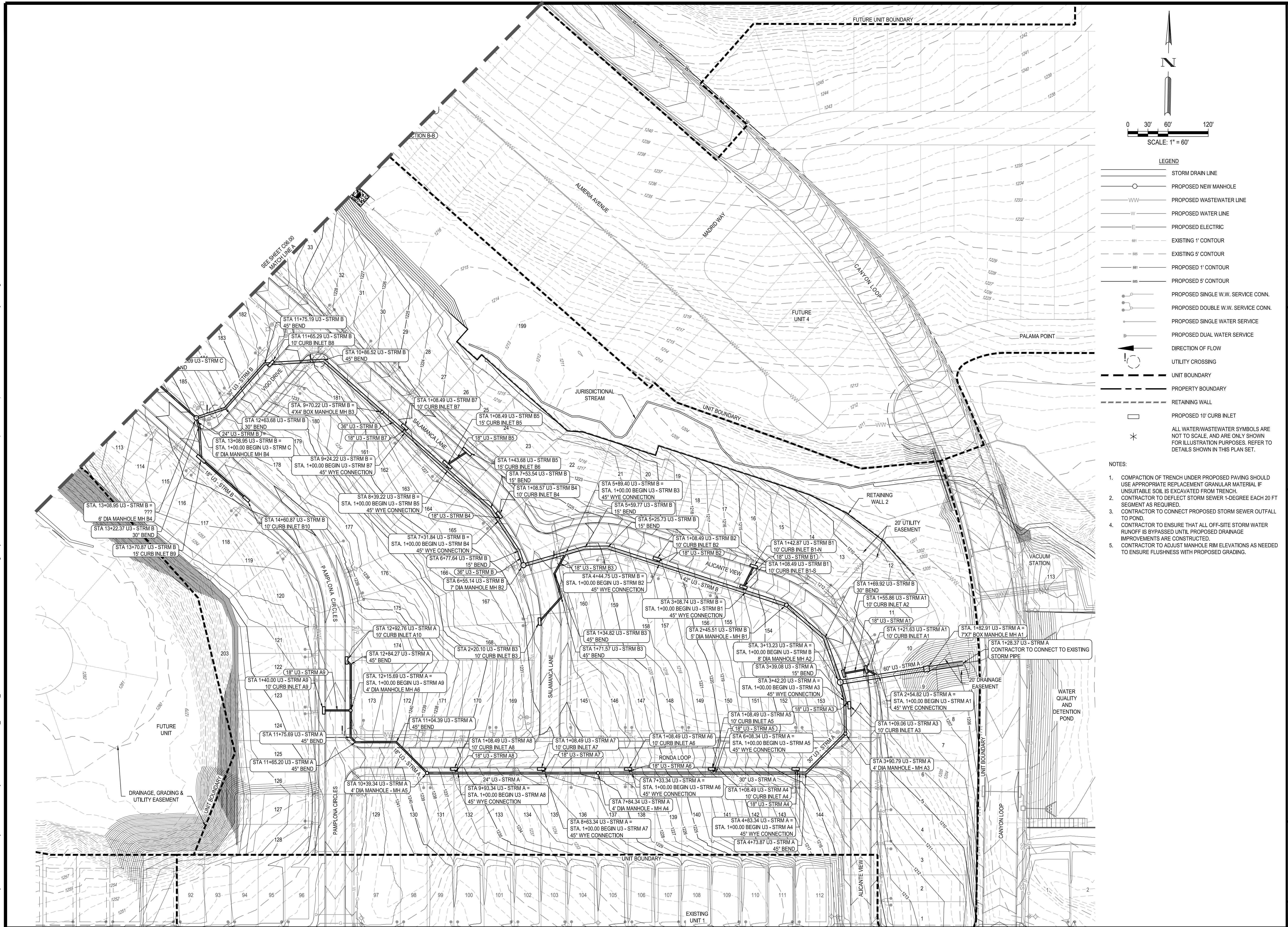
LEGEND

	STORM DRAIN LINE
	PROPOSED NEW MANHOLE
	PROPOSED WASTEWATER LINE
	PROPOSED WATER LINE
	PROPOSED ELECTRIC
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR
	PROPOSED 1' CONTOUR
	PROPOSED 5' CONTOUR
	PROPOSED SINGLE W.W. SERVICE CONN.
	PROPOSED DOUBLE W.W. SERVICE CONN.
	PROPOSED SINGLE WATER SERVICE
	PROPOSED DUAL WATER SERVICE
	DIRECTION OF FLOW
	UTILITY CROSSING
	UNIT BOUNDARY
	PROPERTY BOUNDARY
	RETAINING WALL
	PROPOSED 10' CURB INLET
	ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
 3. CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
 4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

<p>CANYON RANCH UNIT 3 STORM DRAIN COLLECTION PLAN (SHEET 1 OF 2)</p>	<p>BGE BGE, INC. 7330 San Pedro, Suite 202 San Antonio, TX 78216 TEL: 214-351-3600 www.bgeinc.com TXPE Registration No. P-1040</p>
<p>DESIGNED BY: SAR REVIEWED BY: SSM DRAWN BY: SAR</p>	<p>DATE: APR</p>
<p>STATE OF TEXAS STACY MULHOLLAND 146417 LICENSED PROFESSIONAL ENGINEER</p>	<p>04/05/2024 SHEET C06.00</p>

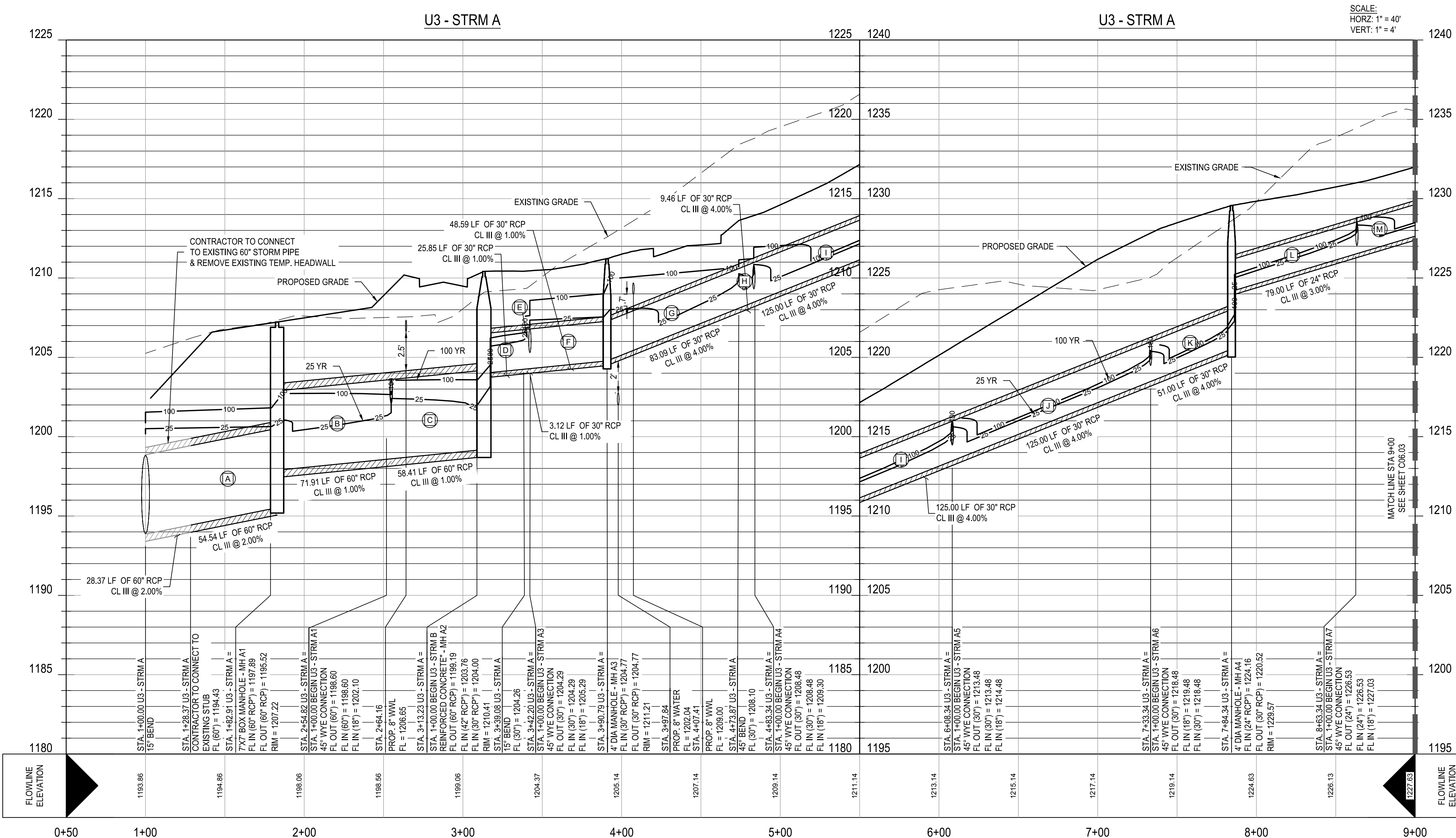
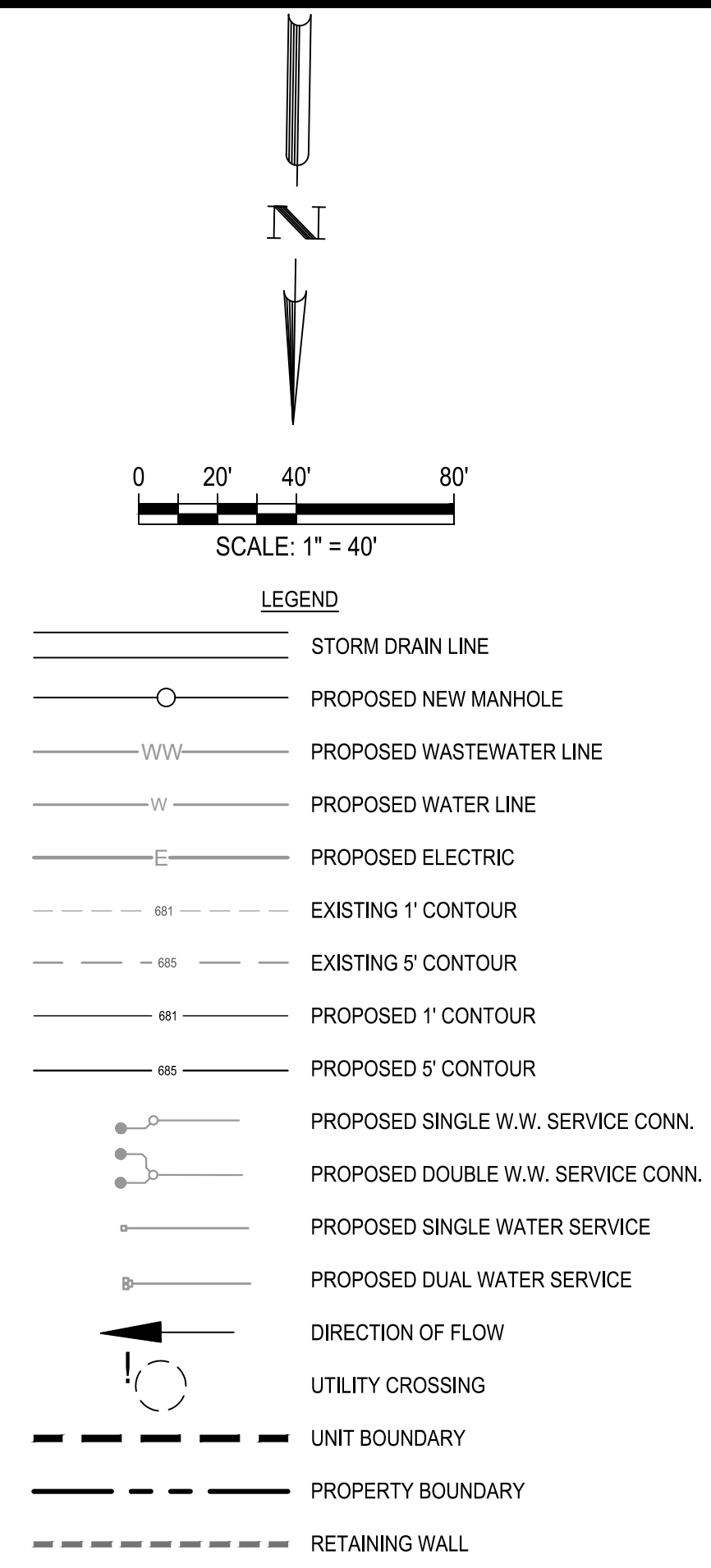
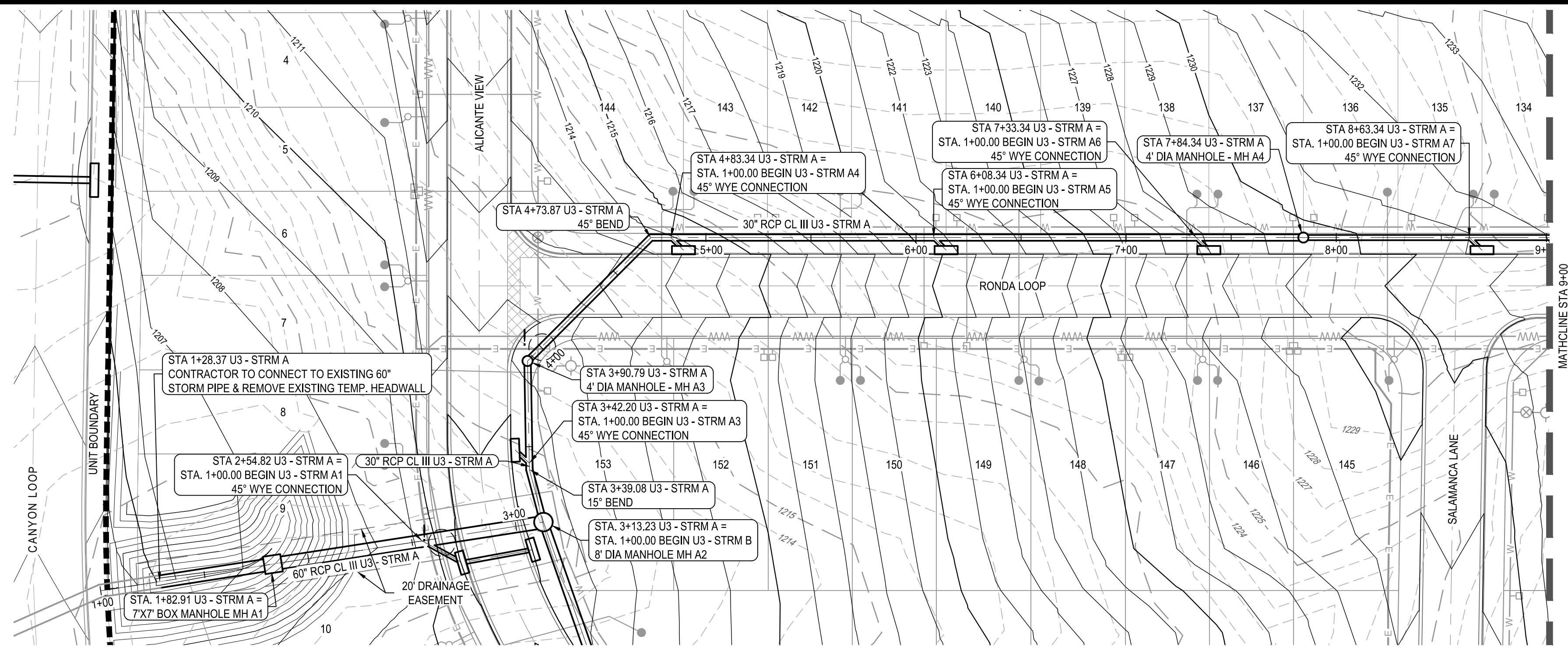
G:\TXC\Projects\San Antonio Projects\1278-00 - Canyon Ranch\Units - Unit 3\03_CADD\01_Shts\C06.00 STORM DRAIN COLLECTION PLAN (SHEET 2 OF 2).dwg Layout: STORM DRAIN COLLECTION PLAN (SHEET 2 OF 2) Plotted: 2/20/2023 3:11:09 PM By: S.Rodriguez



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - PROPOSED WASTEWATER LINE
 - PROPOSED WATER LINE
 - PROPOSED ELECTRIC
 - EXISTING 1' CONTOUR
 - EXISTING 5' CONTOUR
 - PROPOSED 1' CONTOUR
 - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - DIRECTION OF FLOW
 - UTILITY CROSSING
 - UNIT BOUNDARY
 - PROPERTY BOUNDARY
 - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
 3. CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
 4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

<p>CANYON RANCH UNIT 3</p> <p>STORM DRAIN COLLECTION PLAN</p> <p>(SHEET 2 OF 2)</p>	<p>DESIGNED BY: SAR</p> <p>REVIEWED BY: SSM</p> <p>DRAWN BY: SAR</p>
	<p>BGE, INC.</p> <p>7330 San Pedro, Suite 202 San Antonio, TX 78216 TEL: 214-358-3600 www.bgeenergy.com EPA Registration No. P-1049</p>
	<p>DATE: APR</p> <p>REV</p> <p>DESCRIPTION</p>



SCALE:
HORZ: 1" = 40'
VERT: 1" = 4'

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
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5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

TRENCH EXCAVATION SAFETY PROTECTION

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

PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM A-A	103.81	5.29	6.64
STRM A-B	104.02	12.52	3.18
STRM A-C	98.30	12.33	3.81
STRM A-D	31.05	9.18	1.70
STRM A-E	31.05	6.33	2.60
STRM A-F	26.73	5.45	3.05
STRM A-G	26.78	14.95	3.23
STRM A-H	26.79	14.95	2.17
STRM A-I	22.61	14.27	2.37
STRM A-J	18.42	13.48	2.15
STRM A-K	14.09	12.50	1.91
STRM A-L	14.16	11.46	0.85
STRM A-M	9.84	10.38	1.81

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM A-A	149.32	7.60	7.68
STRM A-B	149.59	13.72	4.83
STRM A-C	141.40	13.54	4.95
STRM A-D	44.50	9.07	2.22
STRM A-E	44.51	9.07	3.33
STRM A-F	38.18	7.78	4.30
STRM A-G	38.32	7.81	5.17
STRM A-H	38.33	7.81	3.04
STRM A-I	32.39	15.73	3.46
STRM A-J	26.45	14.90	2.67
STRM A-K	20.28	13.85	2.36
STRM A-L	20.27	12.59	1.07
STRM A-M	14.20	11.47	2.27

CANYON RANCH UNIT 3
STORM DRAIN A PLAN & PROFILE
STA 1+00 TO 9+00

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR

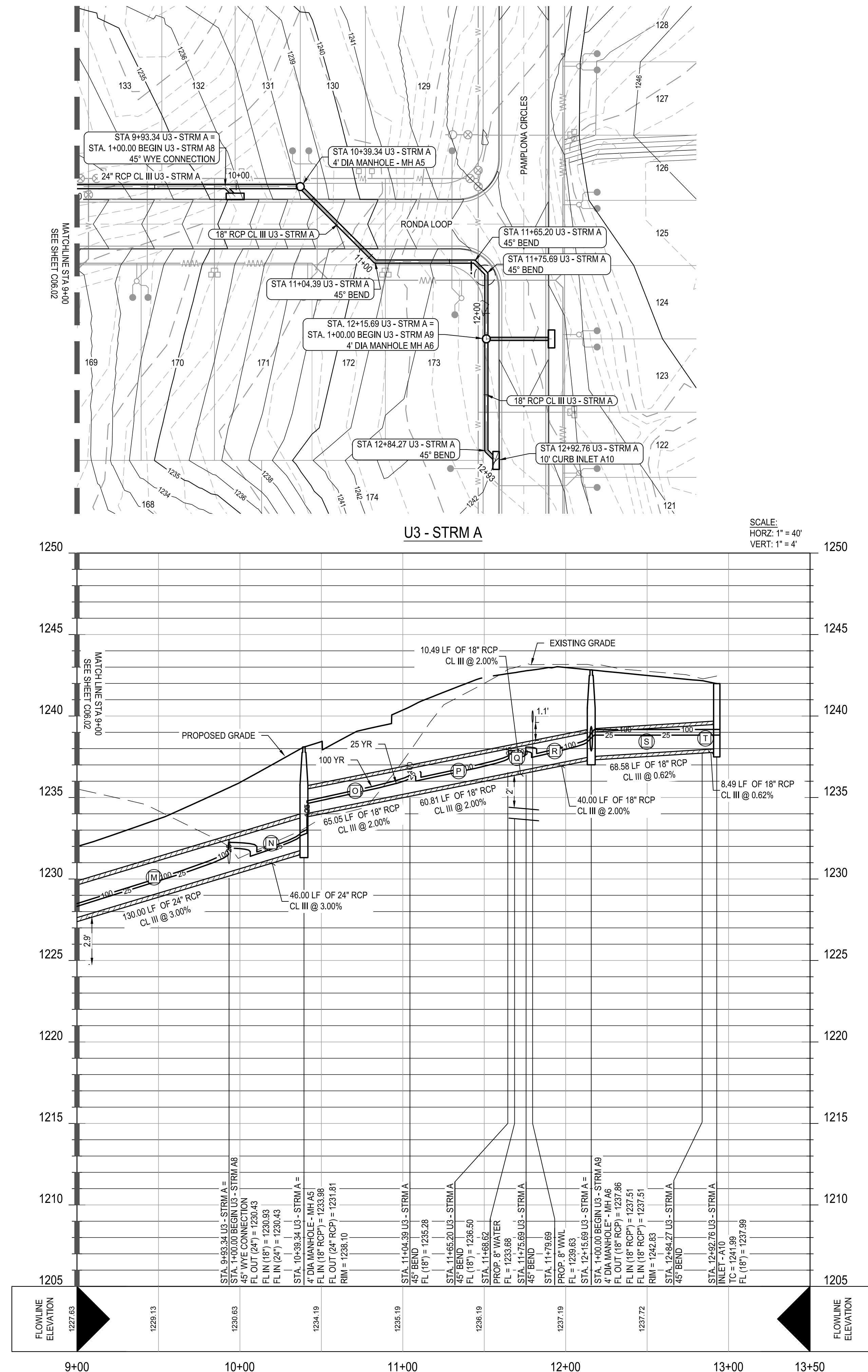
BGE
7330 San Pedro, Suite 202
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EPA Registration No. P-1049

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024

SHEET
C06.02

DATE: APR

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N

0 20' 40' 80'

SCALE: 1" = 40'

LEGEND

- STORM DRAIN LINE
- PROPOSED NEW MANHOLE
- W—W— PROPOSED WASTEWATER LINE
- W— PROPOSED WATER LINE
- E— PROPOSED ELECTRIC
- - - 681 EXISTING 1' CONTOUR
- - - 685 EXISTING 5' CONTOUR
- - - 681 PROPOSED 1' CONTOUR
- - - 685 PROPOSED 5' CONTOUR
- PROPOSED SINGLE W.W. SERVICE CONN.
- PROPOSED DOUBLE W.W. SERVICE CONN.
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NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
3. CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM A-M	9.84	10.38	1.81
STRM A-N	5.65	8.87	1.46
STRM A-O	5.68	7.85	0.65
STRM A-P	5.71	7.86	1.11
STRM A-Q	5.71	7.86	1.12
STRM A-R	5.73	7.86	1.12
STRM A-S	0.69	2.63	1.32
STRM A-T	0.70	2.64	0.98

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM A-M	14.20	11.47	2.27
STRM A-N	8.23	9.87	1.81
STRM A-O	8.27	8.63	0.81
STRM A-P	8.30	8.64	1.38
STRM A-Q	8.31	8.64	1.39
STRM A-R	8.33	8.65	1.39
STRM A-S	0.99	2.92	1.66
STRM A-T	0.99	2.92	1.32

TRENCH EXCAVATION SAFETY PROTECTION

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

DESCRIPTION	REV	DATE	APR
DESIGNED BY: SAR			
REVIEWED BY: SSM			
DRAWN BY: SAR			

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-3300 www.bgeenergy.com
 T&E Registration No. P-1049

CANYON RANCH UNIT 3

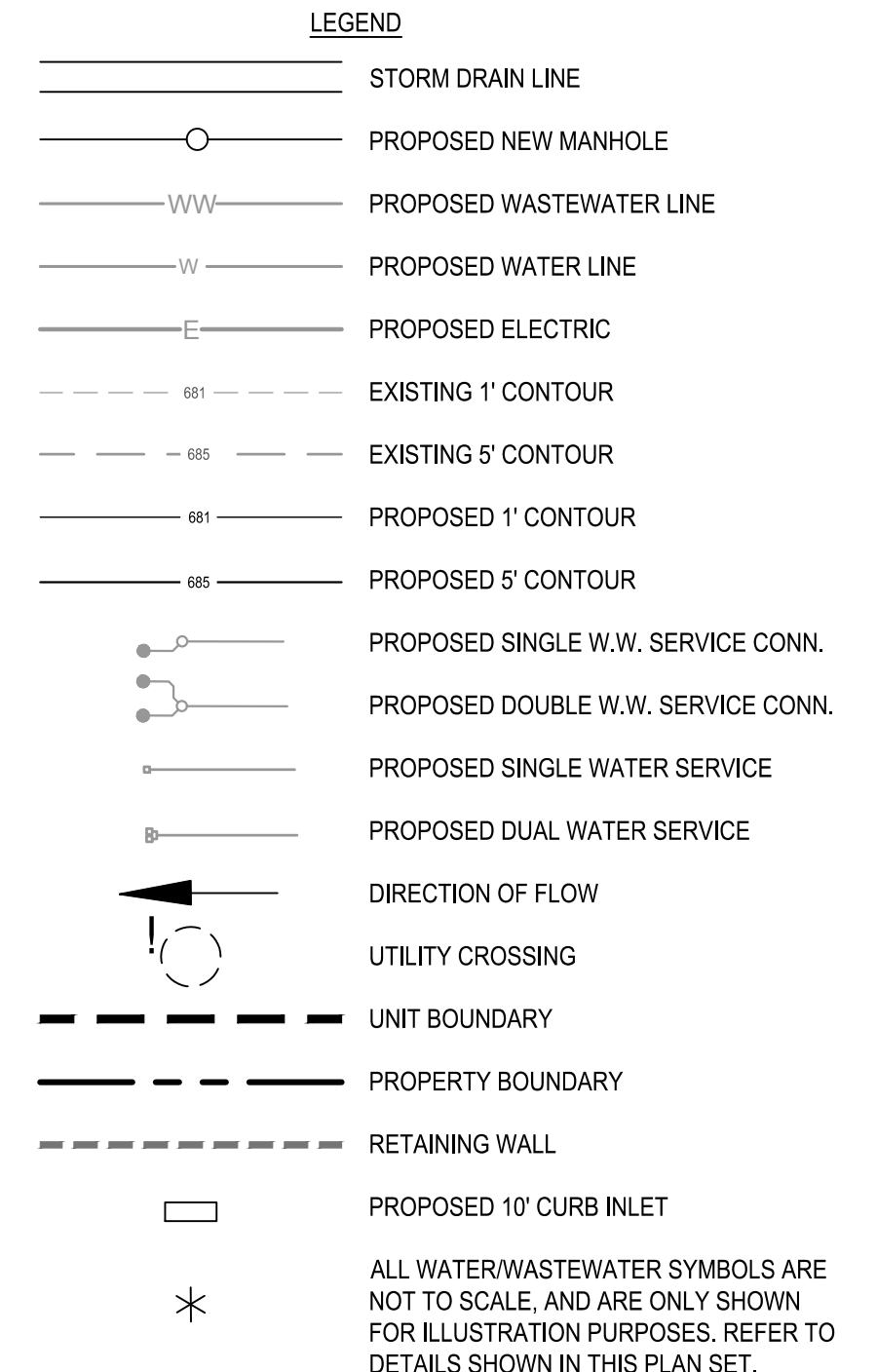
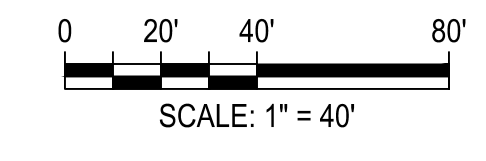
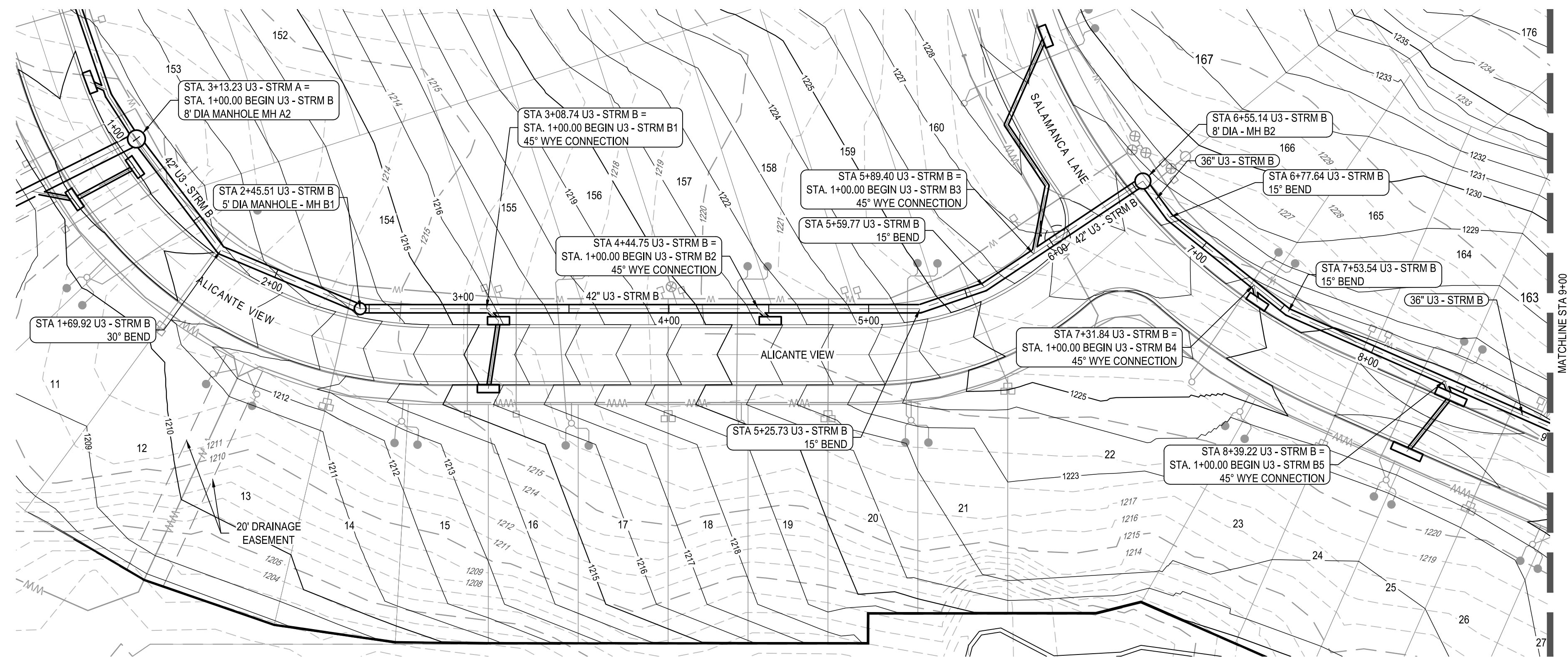
STORM DRAIN A PLAN & PROFILE

STA 9+00 TO END

04/05/2024

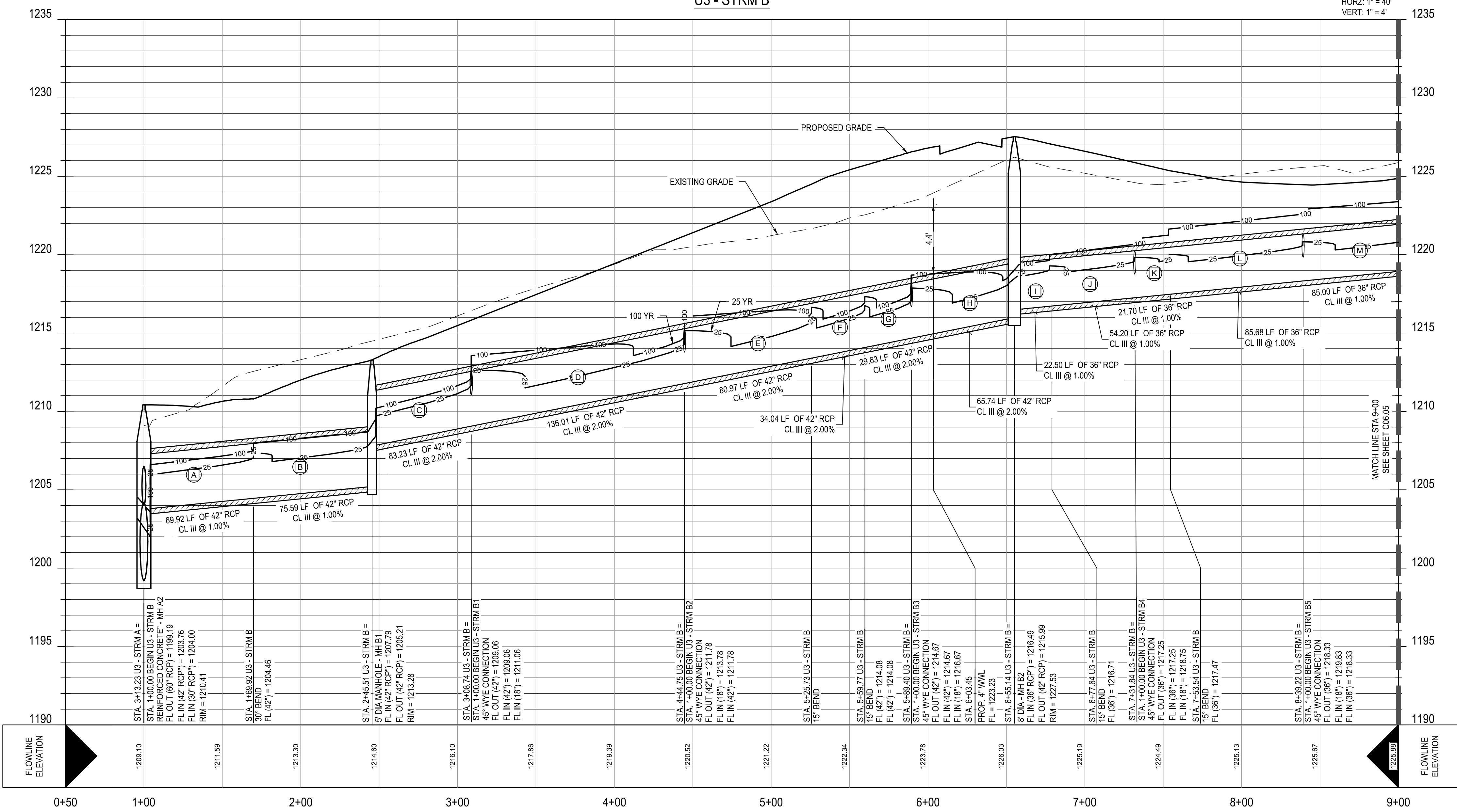
SHEET

C06.03



U3 - STRM B

SCALE:
HORZ: 1" = 40'
VERT: 1" = 4'



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM B-A	68.35	11.25	2.20
STRM B-B	68.67	11.25	2.90
STRM B-C	68.88	14.67	1.92
STRM B-D	63.84	14.39	3.54
STRM B-E	58.25	14.05	3.38
STRM B-F	58.35	14.06	2.66
STRM B-G	58.44	14.07	2.66
STRM B-H	51.58	13.60	3.20
STRM B-I	51.65	10.42	2.12
STRM B-J	51.84	10.43	2.58
STRM B-K	48.56	10.29	2.58
STRM B-L	48.83	10.31	2.55
STRM B-M	41.45	9.94	2.50

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM B-A	98.50	11.92	2.84
STRM B-B	99.01	10.29	3.53
STRM B-C	99.29	15.99	2.41
STRM B-D	91.98	15.72	4.50
STRM B-E	83.94	15.39	4.27
STRM B-F	84.07	15.40	3.24
STRM B-G	84.18	15.41	3.25
STRM B-H	74.34	14.95	4.03
STRM B-I	74.45	10.53	2.88
STRM B-J	74.72	10.57	3.27
STRM B-K	69.97	9.90	3.76
STRM B-L	70.39	9.96	4.16
STRM B-M	59.87	8.47	4.57

TRENCH EXCAVATION SAFETY PROTECTION

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

CANYON RANCH UNIT 3

STORM DRAIN B PLAN & PROFILE

STA 1+00 TO 9+00

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR

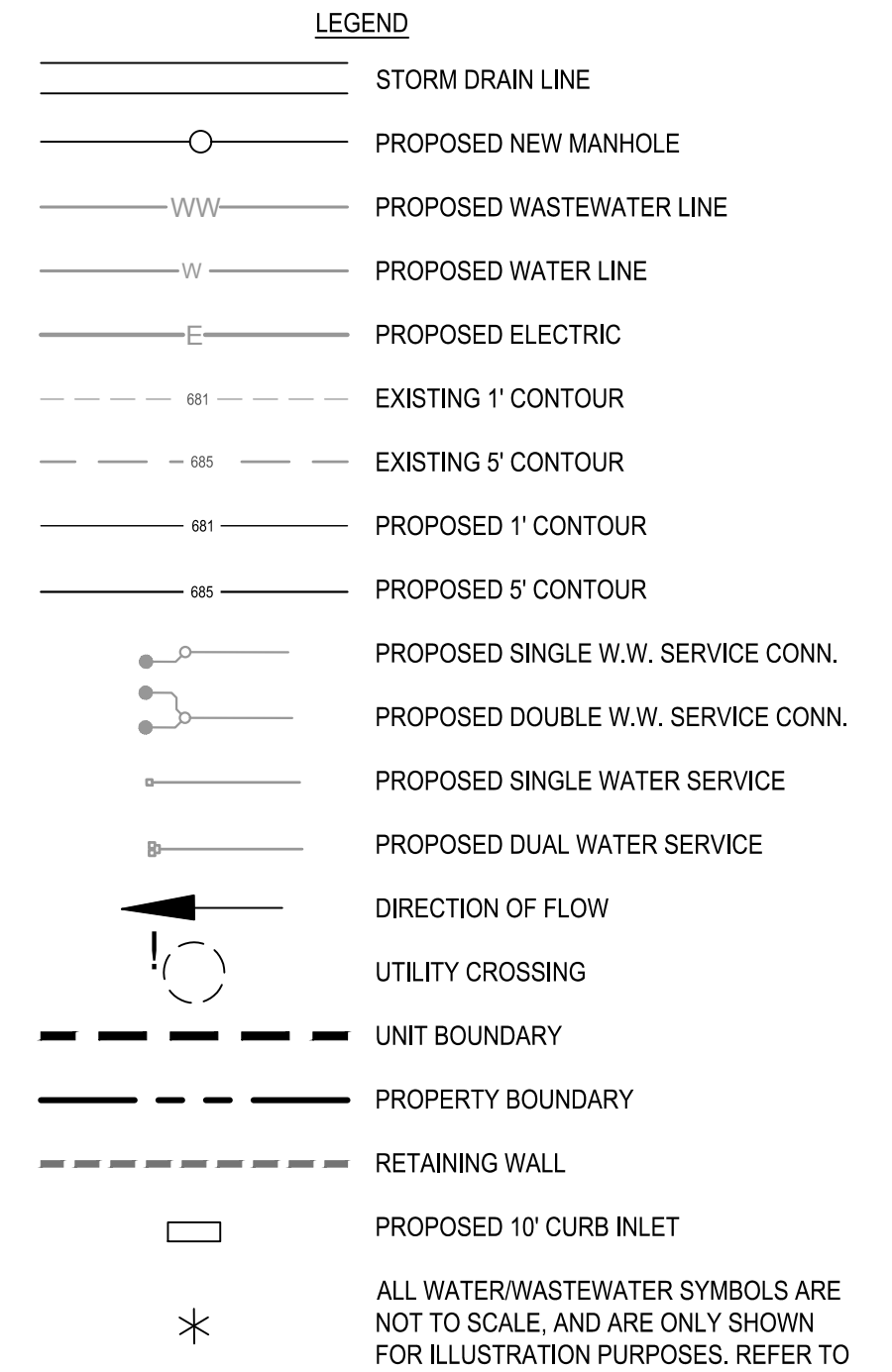
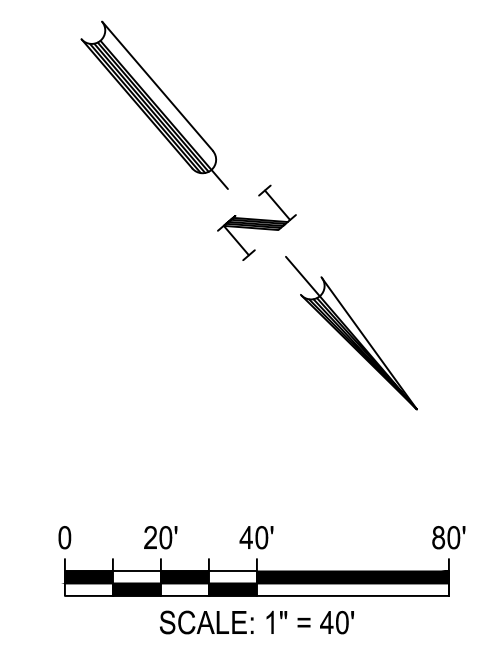
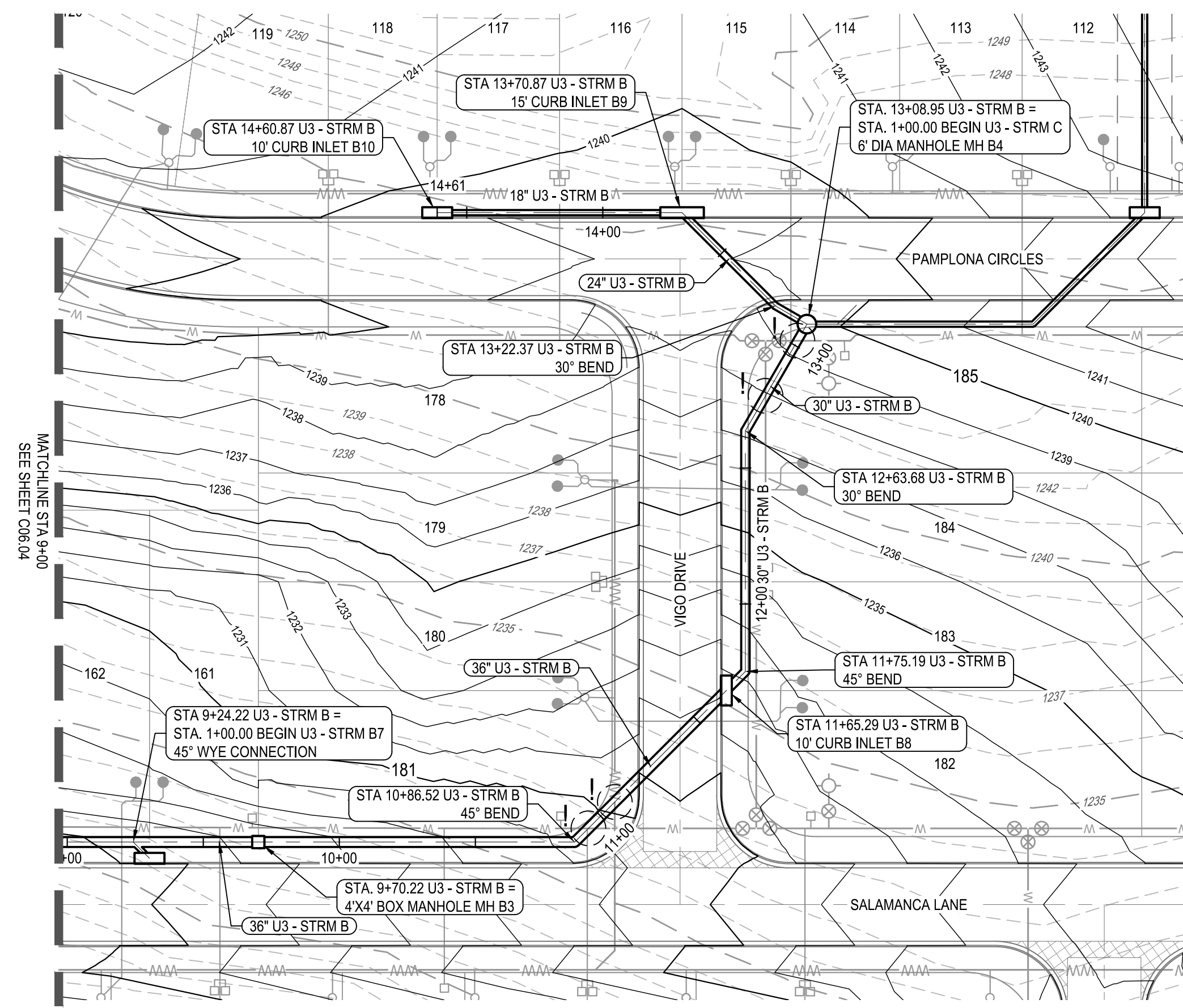
DATE: APR

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-358-3300 www.bgeenergy.com
TXE Registration No. P-1040

04/05/2024

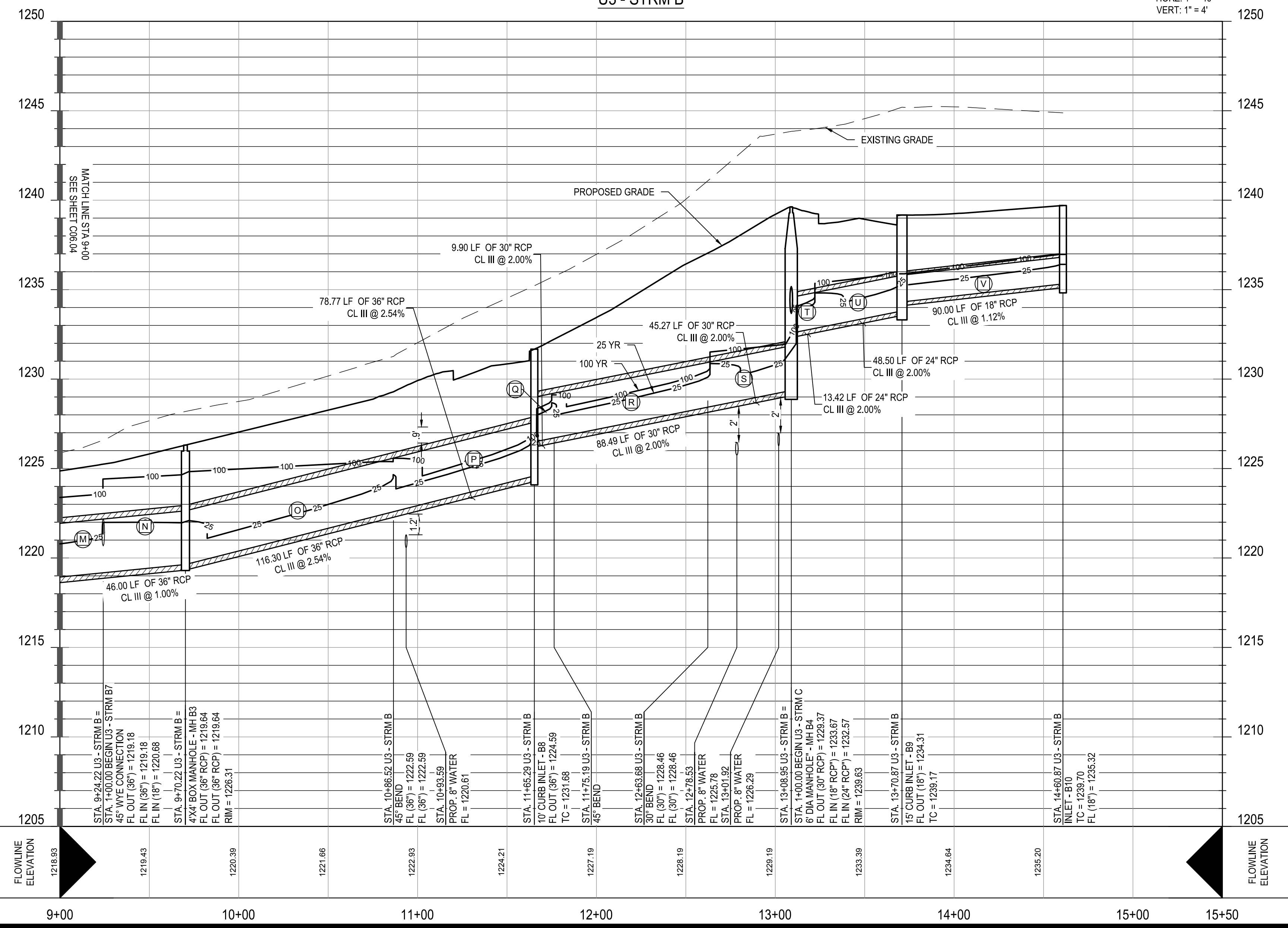
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C06.04

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U3 - STRM B

SCALE:
HORZ: 1" = 40'
VERT: 1" = 4'



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM B-M	41.45	9.94	2.50
STRM B-N	33.02	9.41	2.82
STRM B-O	33.21	13.29	2.45
STRM B-P	33.34	13.30	2.07
STRM B-Q	27.27	11.63	1.50
STRM B-R	27.41	11.65	1.99
STRM B-S	27.48	11.65	2.41
STRM B-T	16.31	10.23	1.19
STRM B-U	16.36	10.24	1.97
STRM B-V	7.95	6.84	0.94

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM B-M	59.87	8.47	4.57
STRM B-N	47.81	6.76	5.24
STRM B-O	48.07	14.66	5.19
STRM B-P	48.24	14.67	2.99
STRM B-Q	39.51	12.71	1.85
STRM B-R	39.70	12.72	2.43
STRM B-S	39.84	8.12	3.05
STRM B-T	23.67	11.14	1.48
STRM B-U	23.76	7.56	2.51
STRM B-V	11.52	6.52	1.58

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3

STORM DRAIN B PLAN & PROFILE

STA 9+00 TO END

DATE: APR

REV: _____

DESCRIPTION: _____

DESIGNED BY: SAR

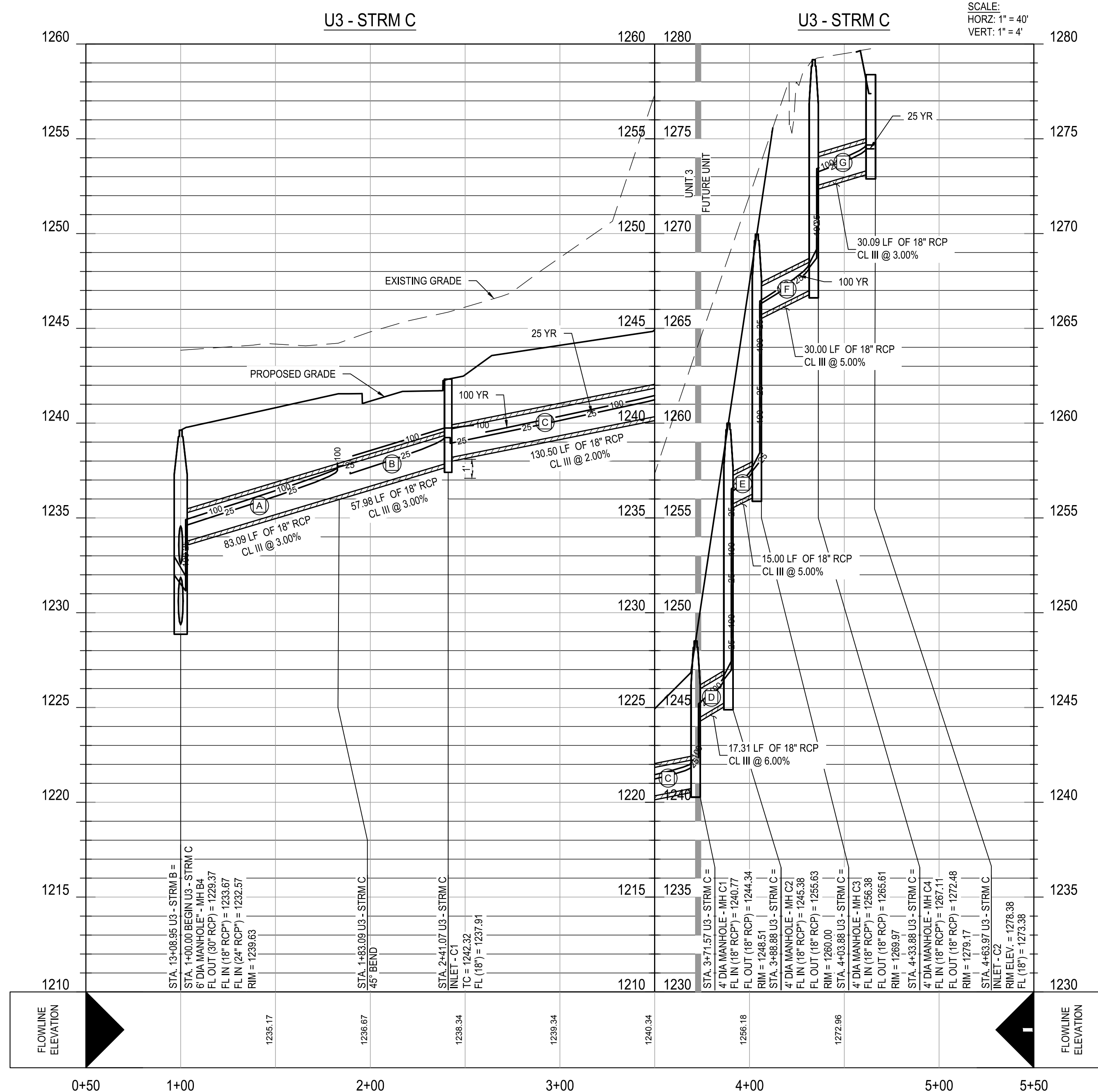
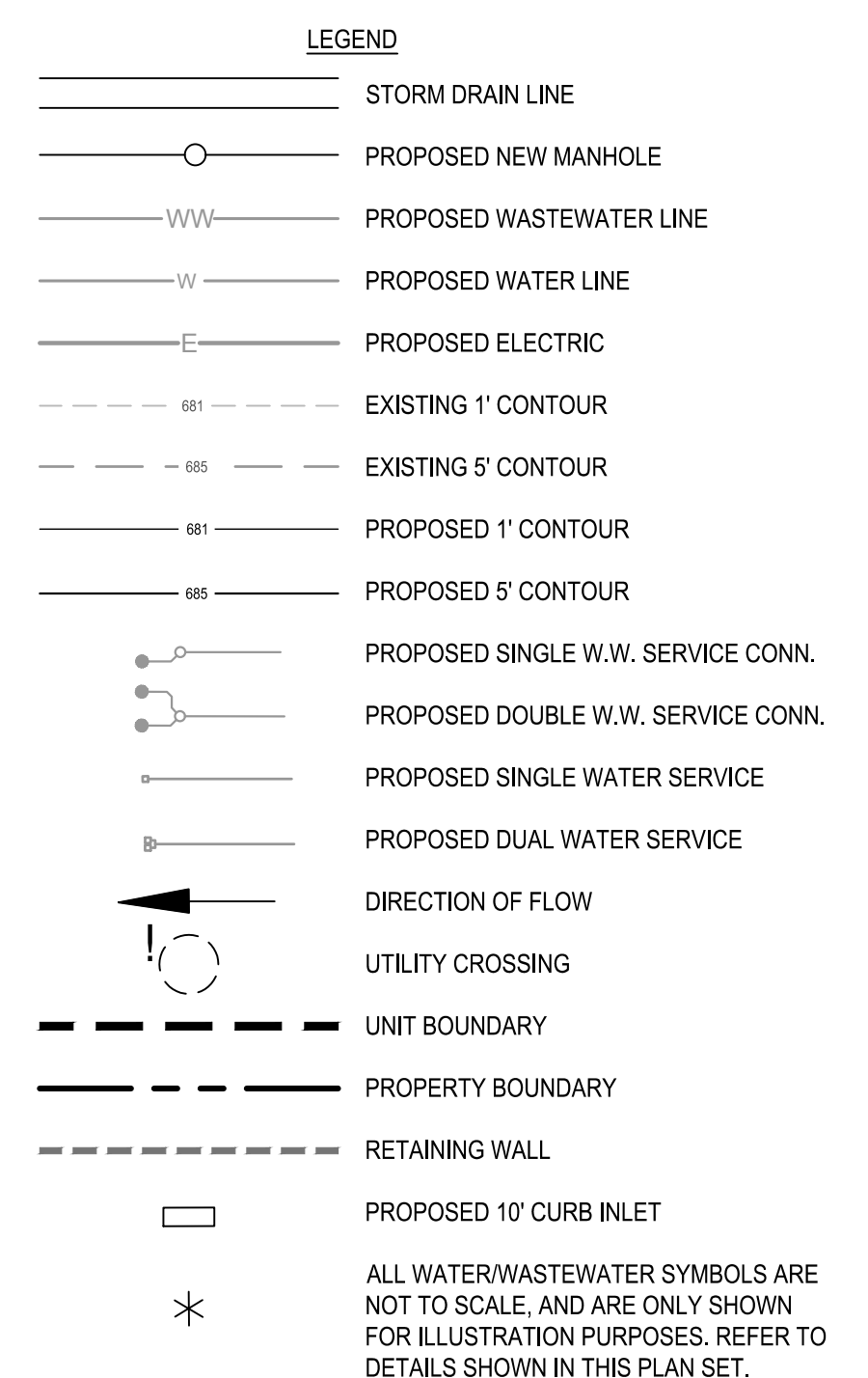
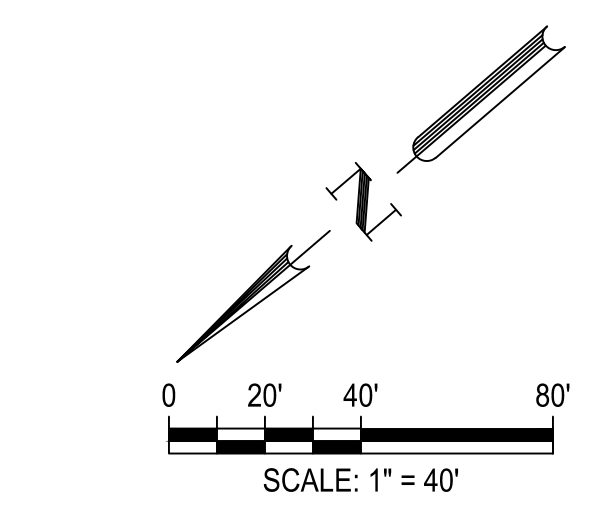
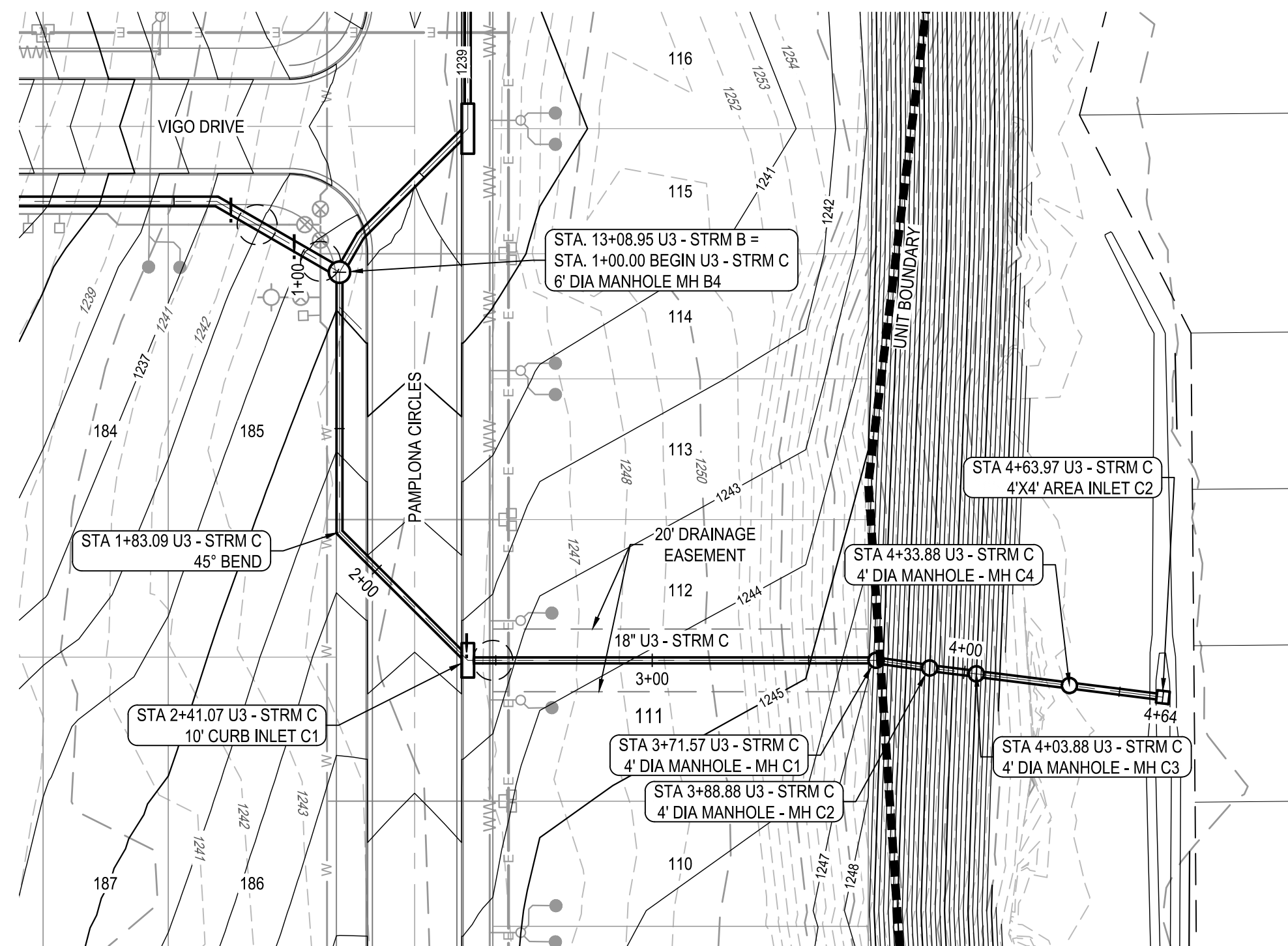
REVIEWED BY: SSM

DRAWN BY: SAR

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-3600 www.bgeenergy.com
TXE Registration No. F-1040

04/05/2024
SHEET
C06.05

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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM C-A	12.45	11.09	0.93
STRM C-B	12.50	11.09	1.55
STRM C-C	7.86	8.53	0.78
STRM C-D	7.87	12.80	0.68
STRM C-E	7.88	11.97	0.72
STRM C-F	7.89	11.98	0.66
STRM C-G	7.90	9.94	0.75

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM C-A	17.99	11.74	1.24
STRM C-B	18.06	10.22	1.86
STRM C-C	11.41	9.27	1.58
STRM C-D	11.42	14.13	0.86
STRM C-E	11.43	13.21	0.91
STRM C-F	11.44	13.21	0.83
STRM C-G	11.47	10.88	0.95

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3

STORM DRAIN C PLAN & PROFILE

STA 1+00 TO END

DATE: APR

DESCRIPTION

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR

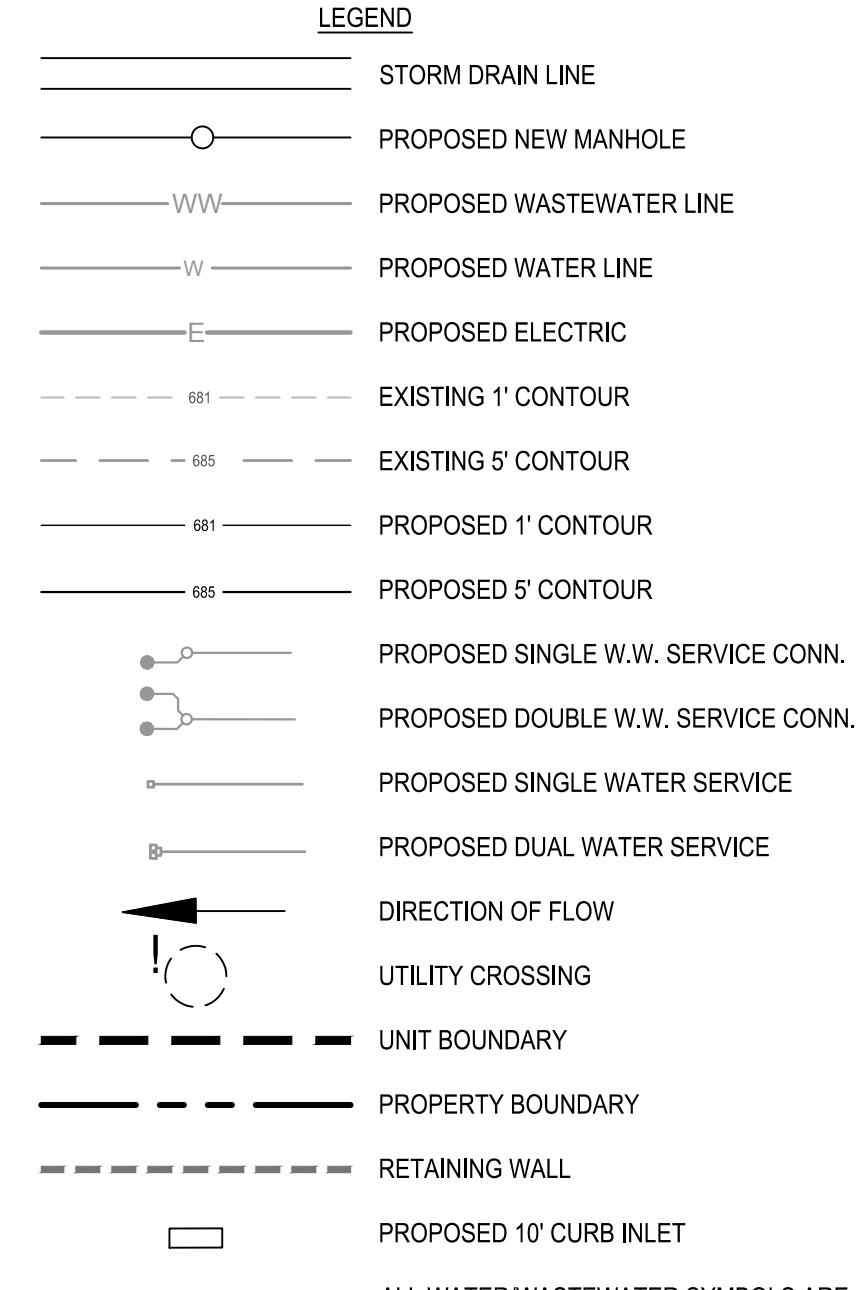
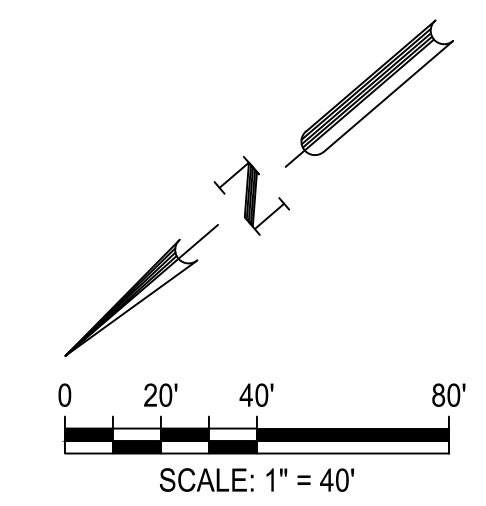
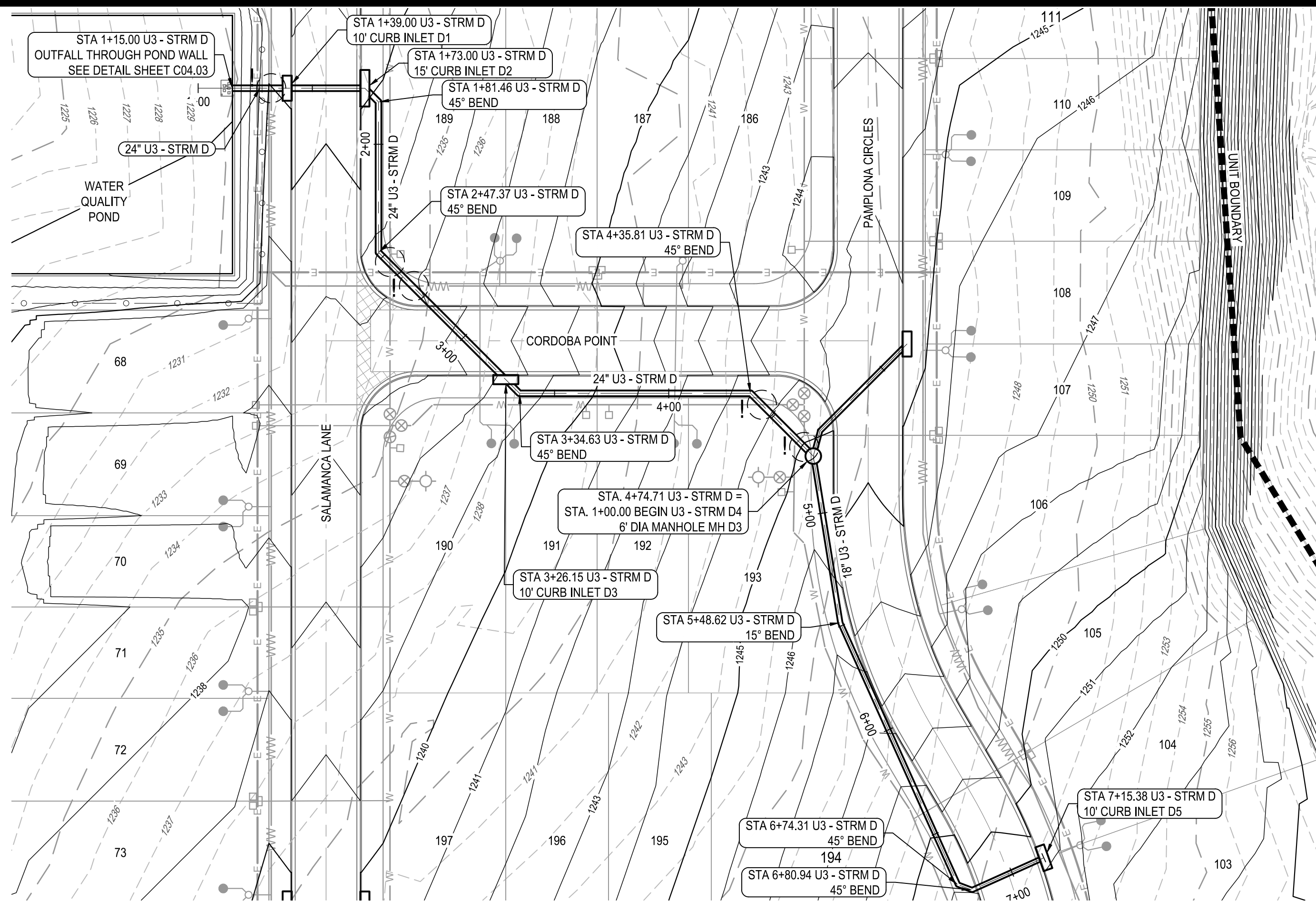
BGE

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
Tel: 214-368-3300 www.bgeinc.com
EPA Registration No. P-1049

STATE OF TEXAS
STACY MULHOLLAND
146417
PROFESSIONAL ENGINEER
04/05/2024

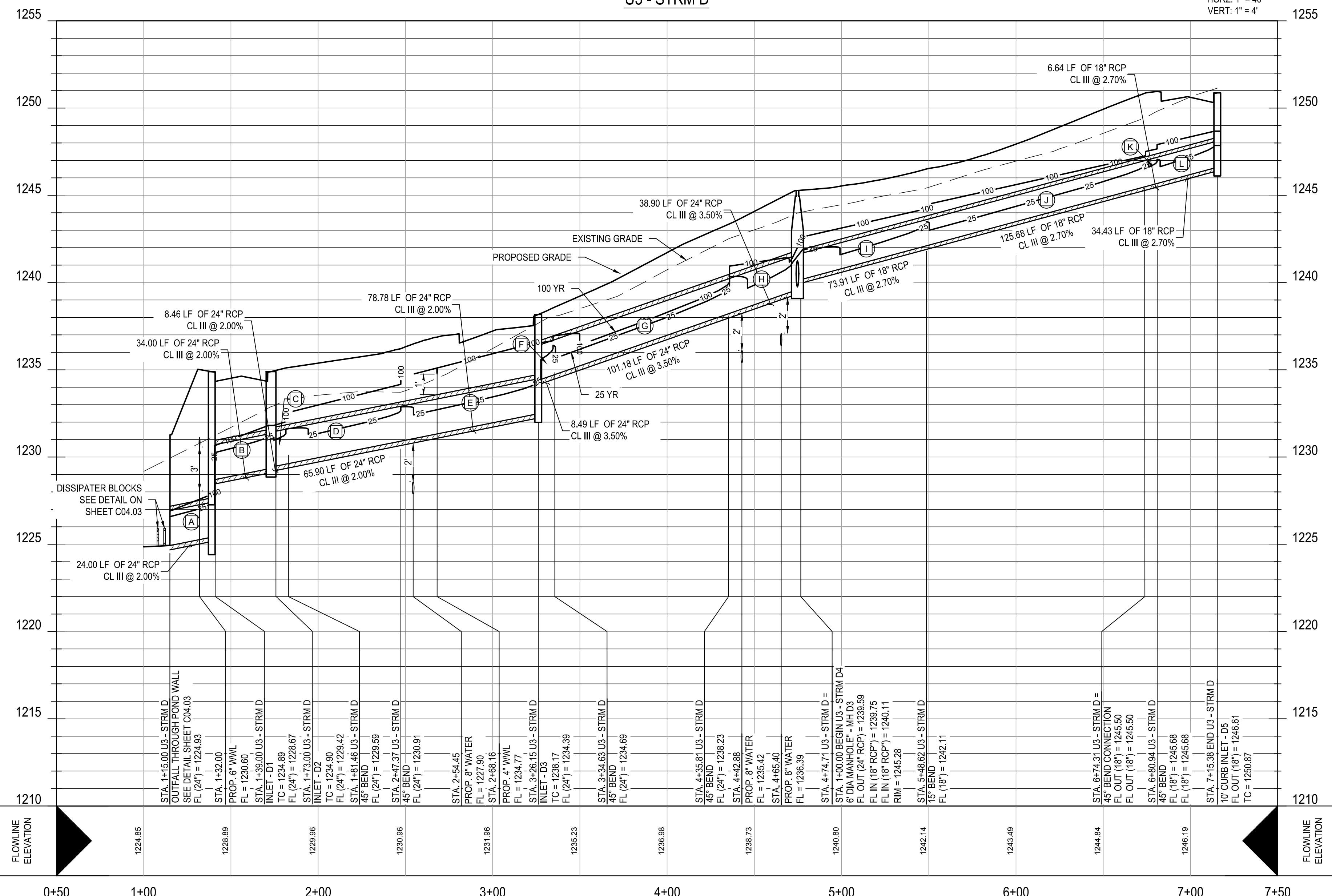
SHEET C06.06

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U3 - STRM D

SCALE: HORZ: 1" = 40' VERT: 1" = 4'



- NOTES:
- COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 - CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
 - CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
 - CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 - CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM D-A	30.01	11.58	1.66
STRM D-B	28.66	11.53	1.58
STRM D-C	24.43	11.24	1.77
STRM D-D	24.52	11.22	2.02
STRM D-E	24.62	11.23	1.97
STRM D-F	17.98	12.92	1.21
STRM D-G	18.09	12.94	1.72
STRM D-H	18.14	12.95	2.10
STRM D-I	10.51	10.24	1.78
STRM D-J	10.62	10.27	1.39
STRM D-K	10.62	10.26	1.39
STRM D-L	10.65	10.28	1.39

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM D-A	43.69	13.91	1.97
STRM D-B	41.77	13.29	1.96
STRM D-C	35.64	11.34	2.39
STRM D-D	35.76	11.38	2.93
STRM D-E	35.91	11.43	3.67
STRM D-F	26.32	14.20	2.17
STRM D-G	26.44	14.21	2.25
STRM D-H	26.51	14.22	2.72
STRM D-I	15.50	8.77	2.51
STRM D-J	15.68	8.87	2.37
STRM D-K	15.69	8.88	2.02
STRM D-L	15.74	8.91	2.23

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3

STORM DRAIN D PLAN & PROFILE

STA 1+00 TO END

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR

BGE, INC.

7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-360-0000 www.bgeinc.com
TXE Registration No. P-1040

STATE OF TEXAS

STACY MULHOLLAND

146417

PROFESSIONAL ENGINEER

04/05/2024

SHEET

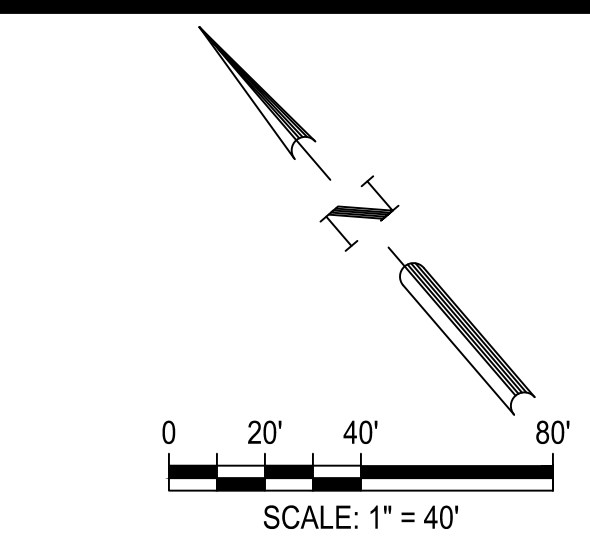
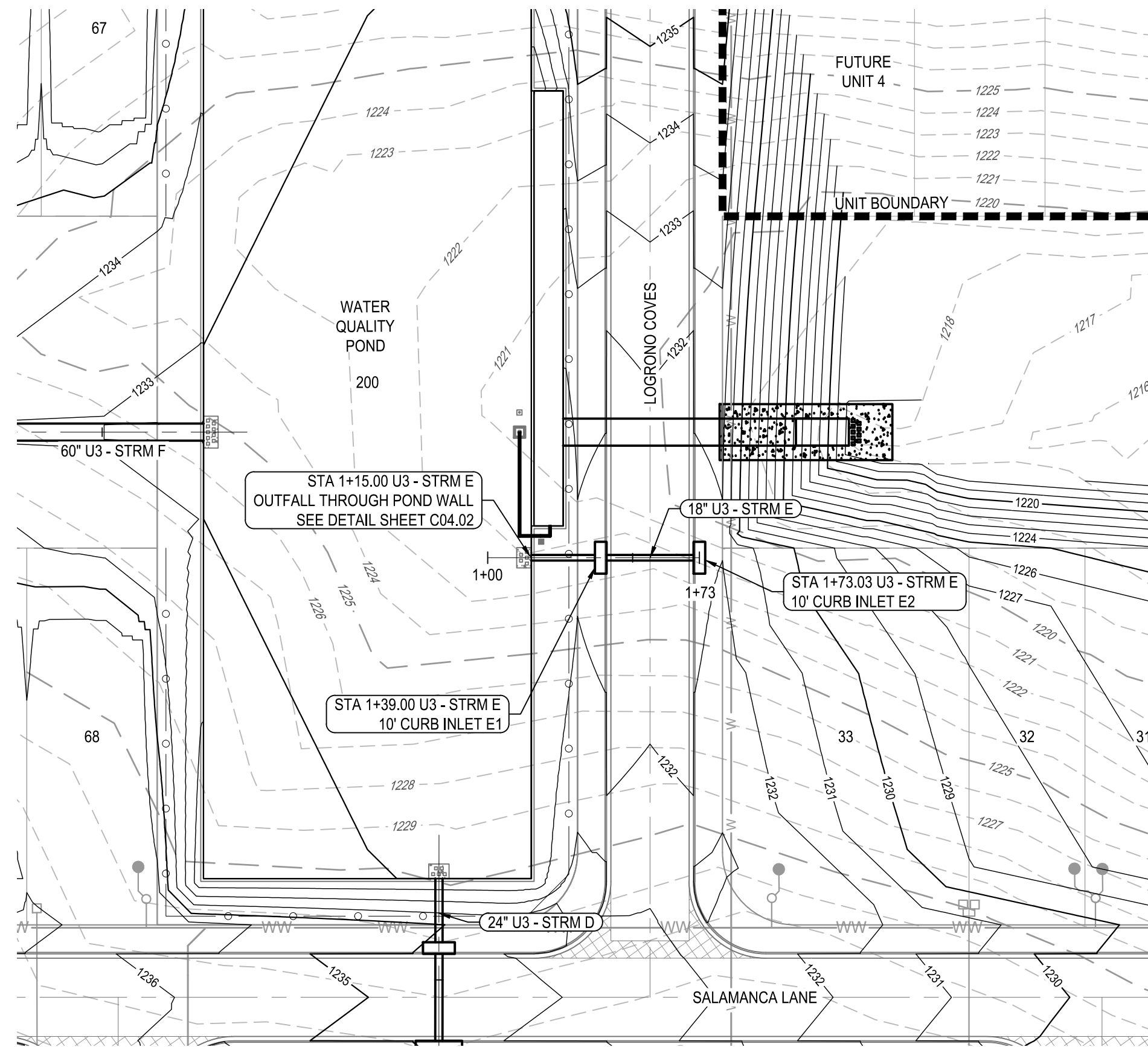
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DATE

DESCRIPTION

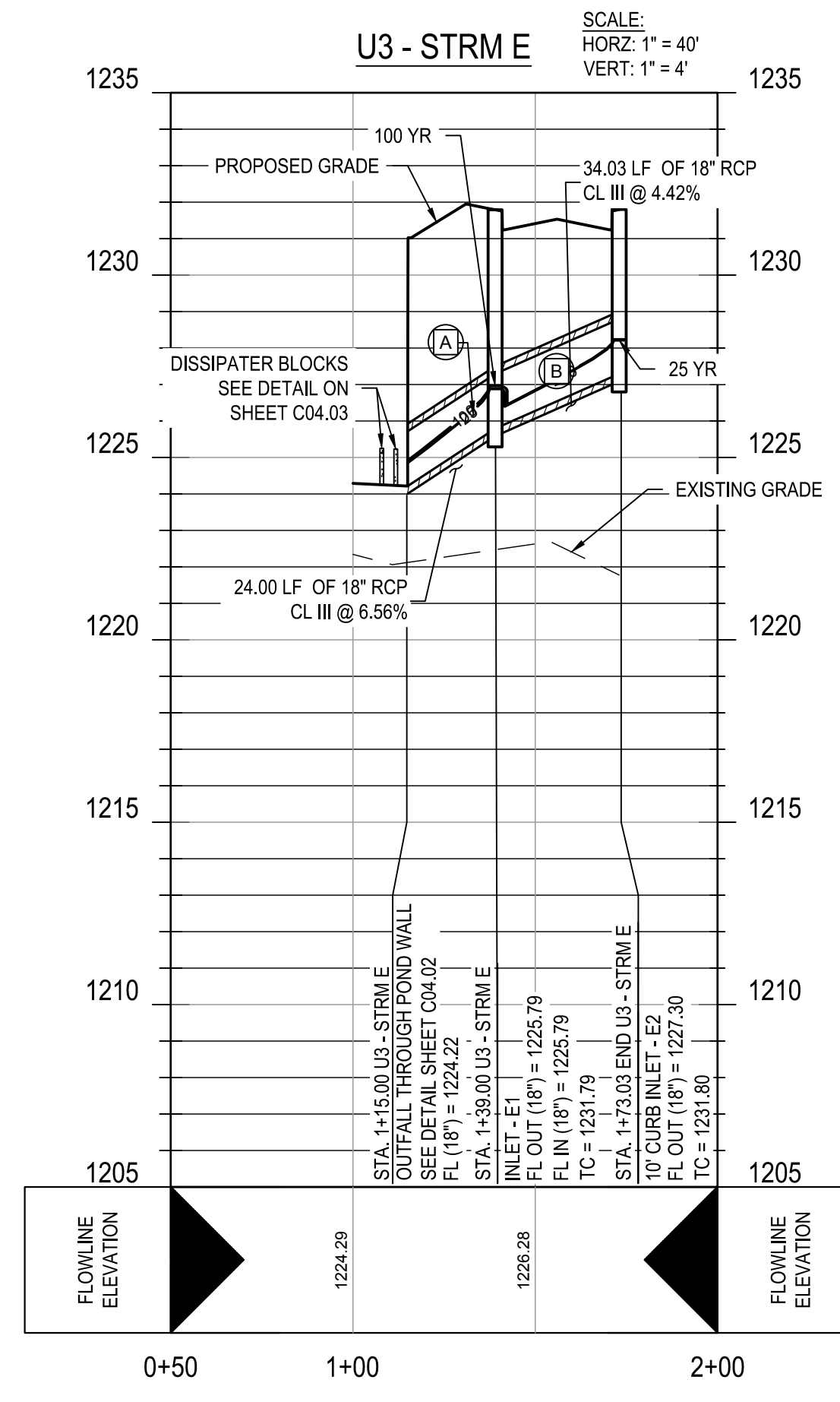
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- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W W — PROPOSED WASTEWATER LINE
 - W — PROPOSED WATER LINE
 - E — PROPOSED ELECTRIC
 - - - 681 - - - EXISTING 1' CONTOUR
 - - - 685 - - - EXISTING 5' CONTOUR
 - - - 681 - - - PROPOSED 1' CONTOUR
 - - - 685 - - - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - DIRECTION OF FLOW
 - UTILITY CROSSING
 - - - UNIT BOUNDARY
 - - - PROPERTY BOUNDARY
 - - - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - * ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
 3. CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
 4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM E-A	7.94	13.26	0.64
STRM E-B	5.67	10.47	1.09

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM E-A	9.16	13.78	0.70
STRM E-B	5.89	10.58	1.17

TRENCH EXCAVATION SAFETY PROTECTION

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	DATE
	REV
	DESCRIPTION
	APR

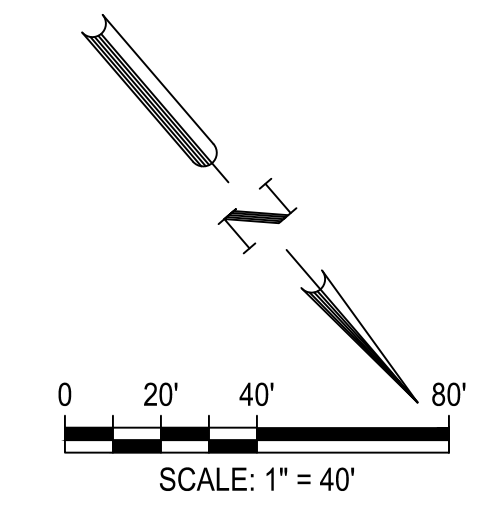
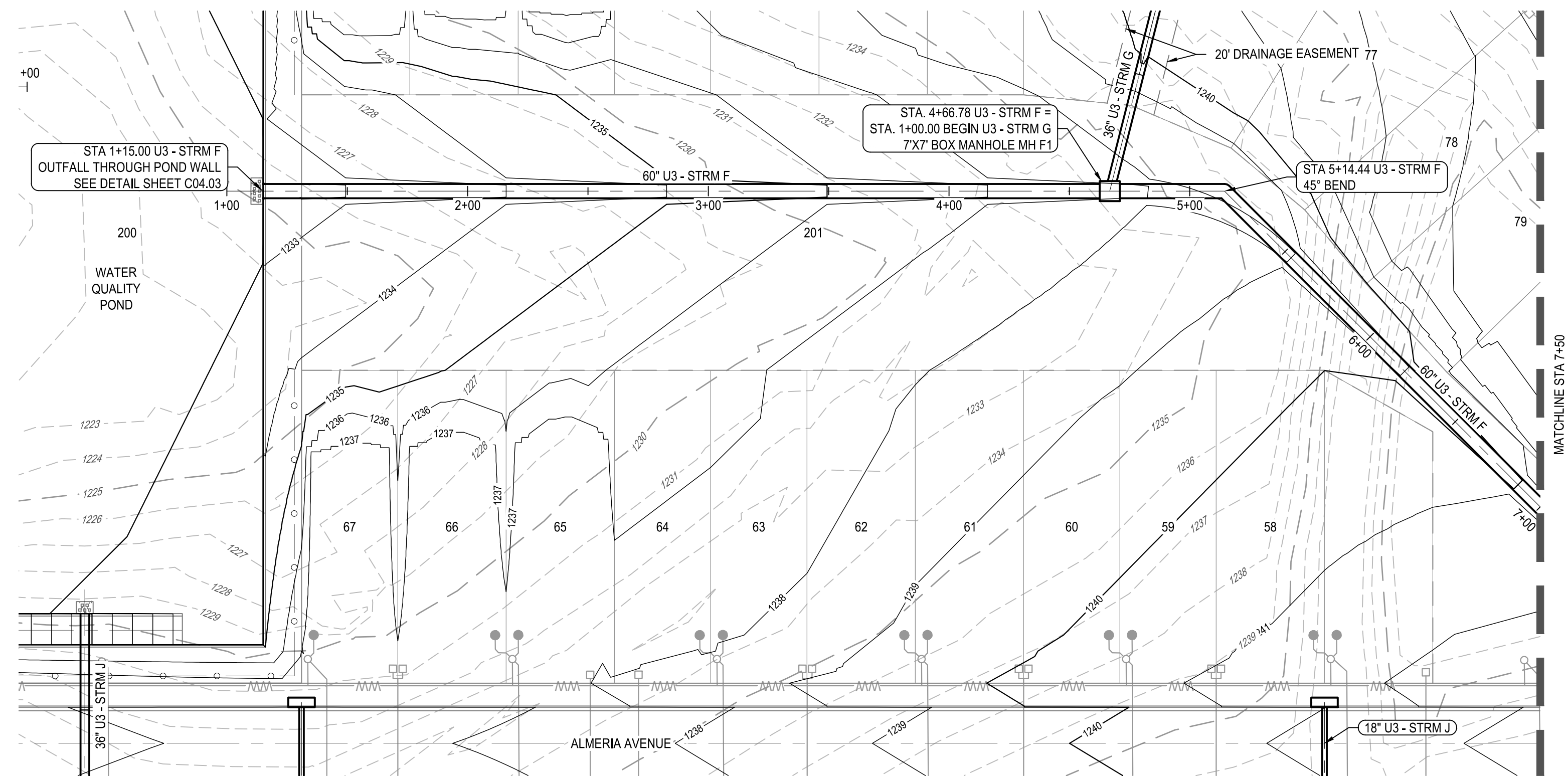
DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-3600 www.bgeenergy.com
 TSP# Registration No. P-1049

CANYON RANCH UNIT 3
 STORM DRAIN E PLAN & PROFILE
 STA 1+00 TO END

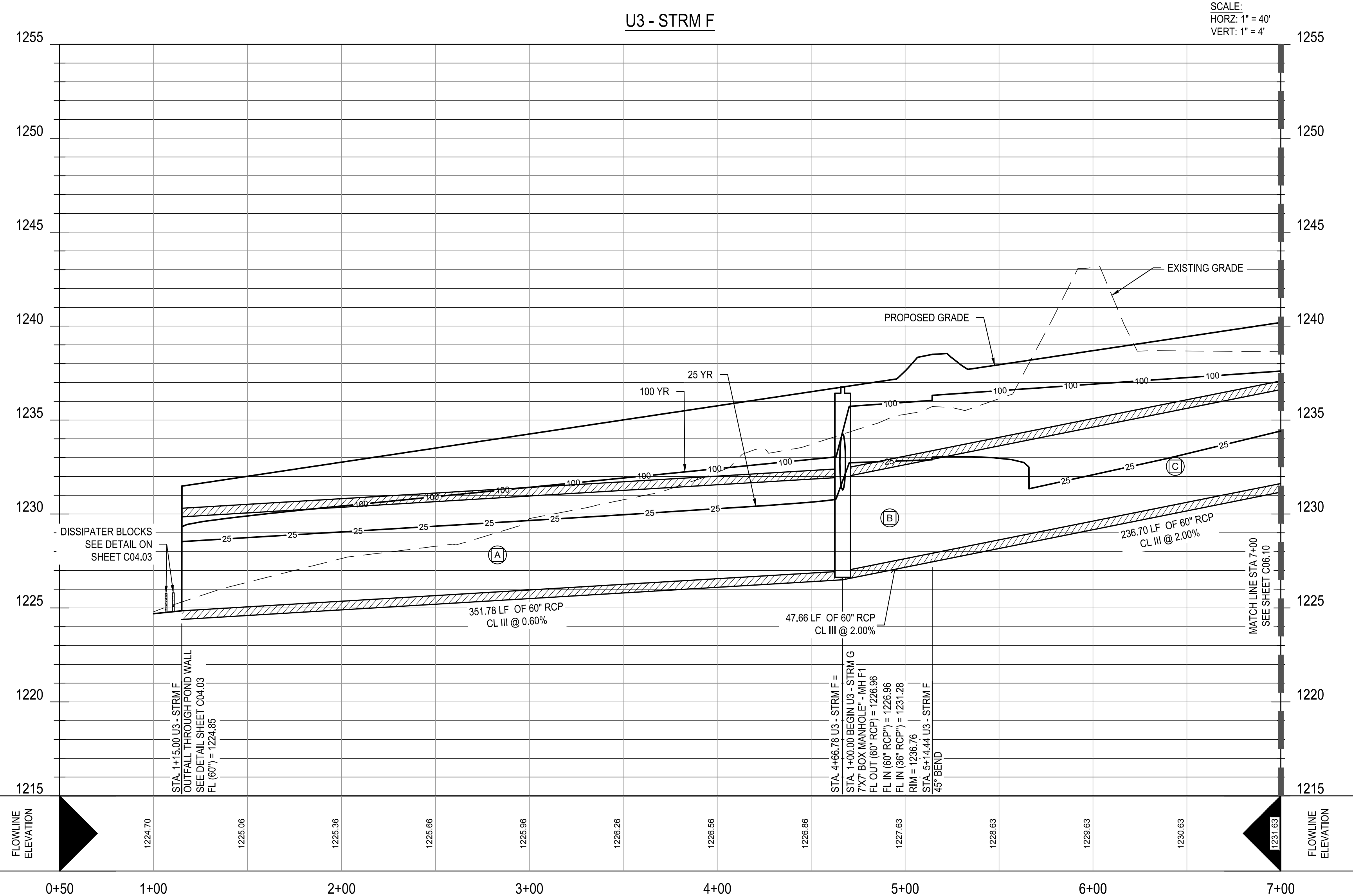
04/05/2024
 SHEET
 C06.08

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- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W — PROPOSED WASTEWATER LINE
 - W — PROPOSED WATER LINE
 - E — PROPOSED ELECTRIC
 - - - 681 - - - EXISTING 1' CONTOUR
 - - - 685 - - - EXISTING 5' CONTOUR
 - - - 681 - - - PROPOSED 1' CONTOUR
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 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - DIRECTION OF FLOW
 - UTILITY CROSSING
 - - - UNIT BOUNDARY
 - - - PROPERTY BOUNDARY
 - - - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - * ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
 3. CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
 4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM F-A	180.19	11.62	3.68
STRM F-B	151.31	17.84	5.77
STRM F-C	152.70	17.88	5.11

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM F-A	258.23	13.15	4.47
STRM F-B	212.32	10.81	8.77
STRM F-C	215.55	10.98	8.41

TRENCH EXCAVATION SAFETY PROTECTION

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

CANYON RANCH UNIT 3

STORM DRAIN F PLAN & PROFILE
STA 1+00 TO 7+00


DESIGNED BY: SAR

REVIEWED BY: SSM

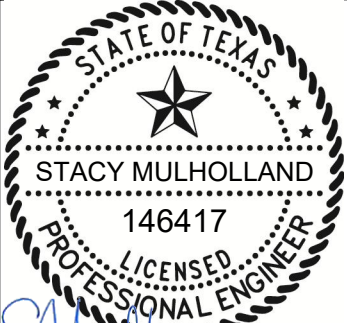
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DATE: APR

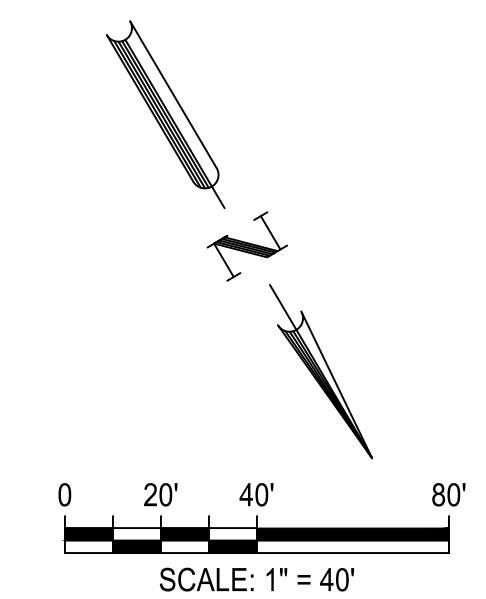
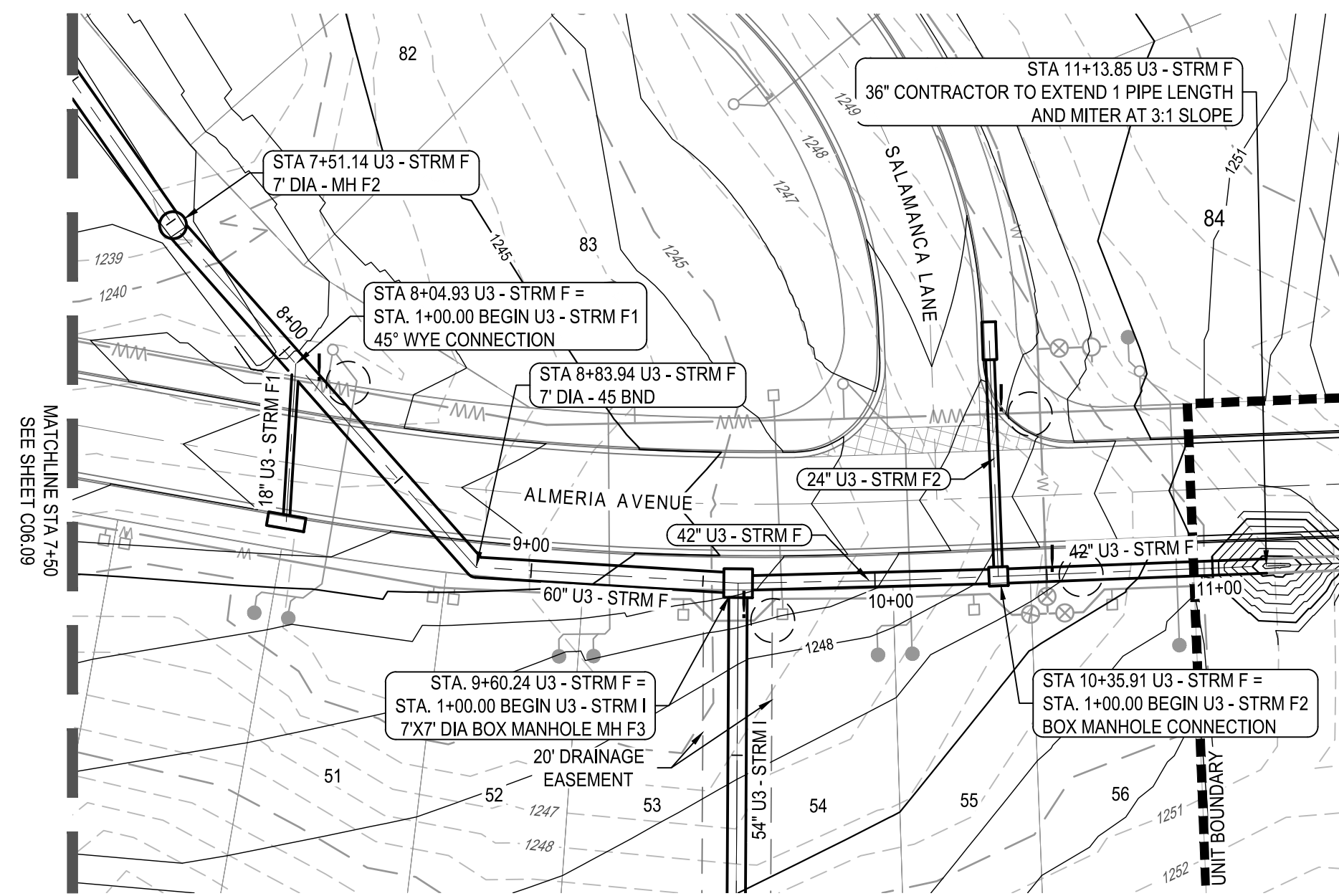
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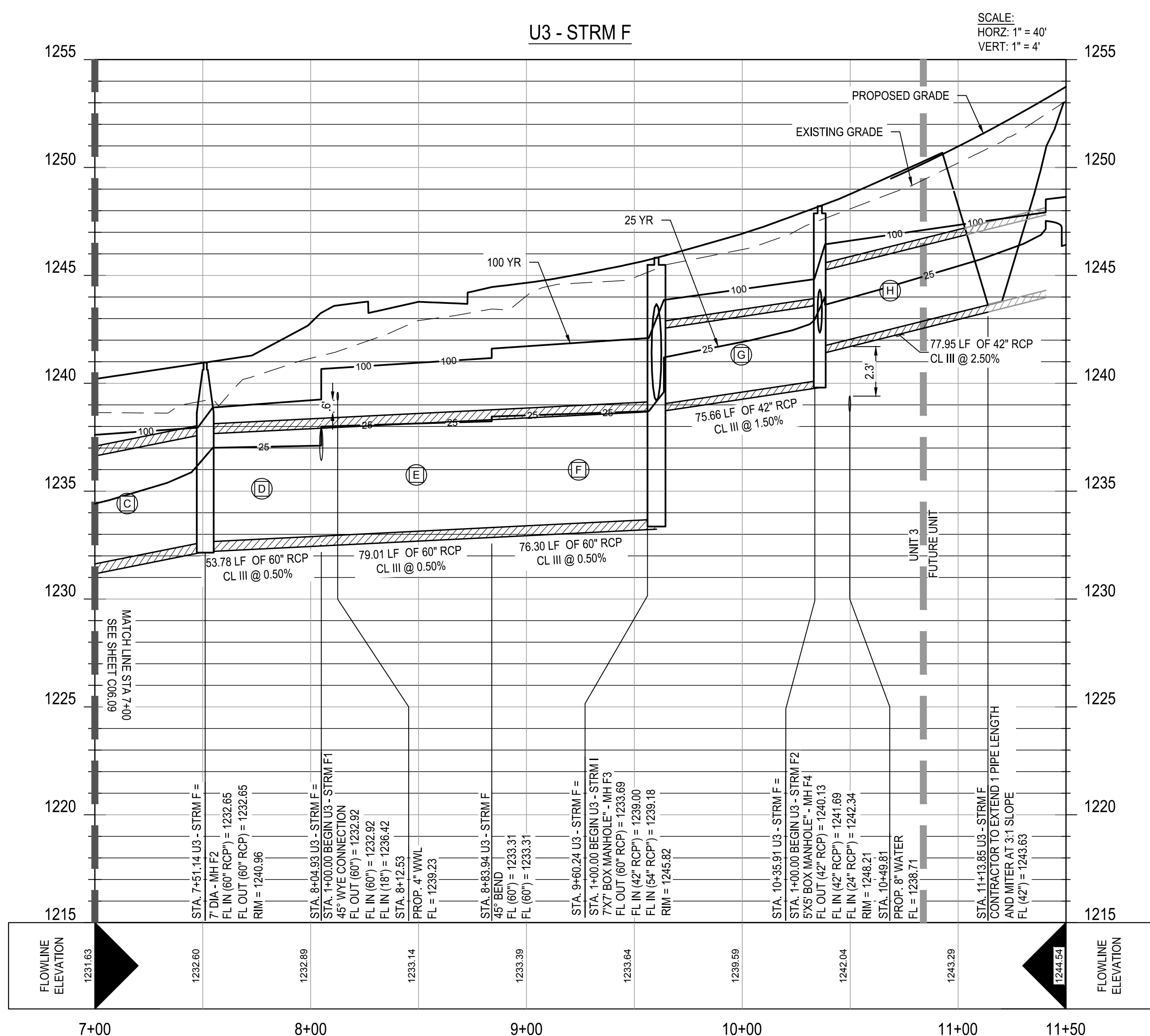
BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-3360 www.bgeny.com
TXE Registration No. P-1040



04/05/2024
SHEET
C06.09



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - PROPOSED WASTEWATER LINE
 - PROPOSED WATER LINE
 - PROPOSED ELECTRIC
 - EXISTING 1' CONTOUR
 - EXISTING 5' CONTOUR
 - PROPOSED 1' CONTOUR
 - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - DIRECTION OF FLOW
 - UTILITY CROSSING
 - UNIT BOUNDARY
 - PROPERTY BOUNDARY
 - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.



SCALE:
HORIZ: 1" = 40'
VERT: 1" = 4'

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
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 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM F-C	152.70	17.88	5.11
STRM F-D	153.23	10.49	4.36
STRM F-E	147.64	10.42	5.08
STRM F-F	148.65	7.57	5.15
STRM F-G	79.39	13.61	2.20
STRM F-H	82.85	16.71	1.95

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM F-C	215.55	10.98	8.41
STRM F-D	216.28	11.01	6.23
STRM F-E	208.26	10.61	7.75
STRM F-F	209.29	10.66	8.29
STRM F-G	113.32	11.78	4.87
STRM F-H	119.70	12.44	4.75

TRENCH EXCAVATION SAFETY PROTECTION

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REV	DATE	DESCRIPTION

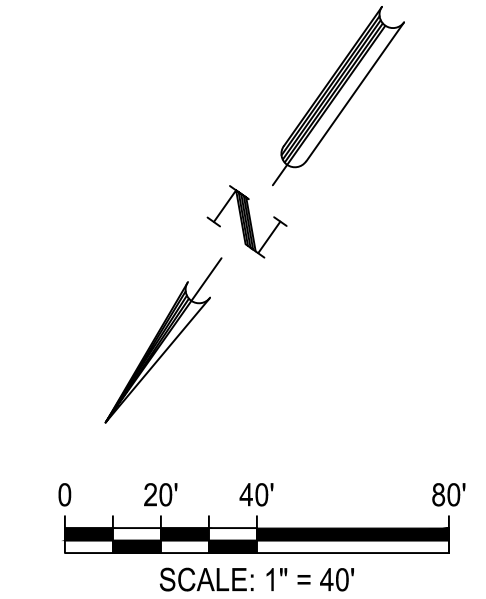
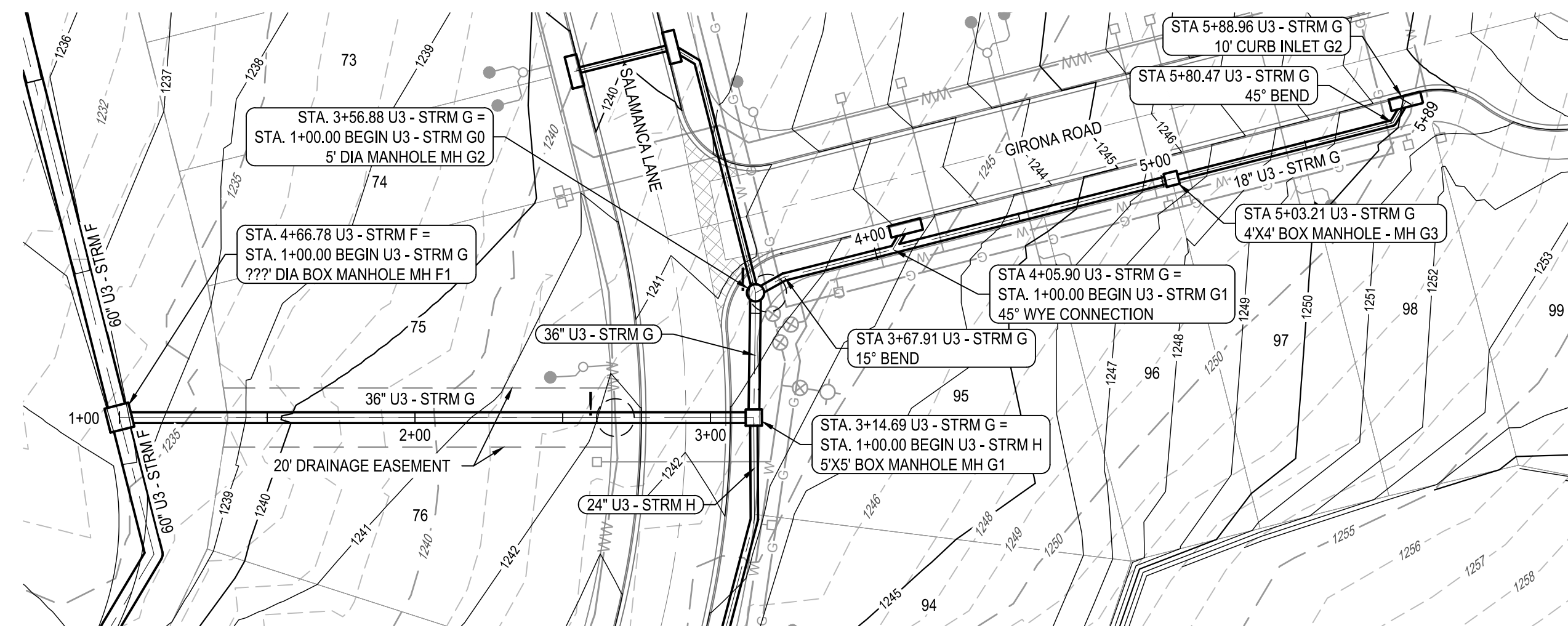
DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR



BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
Tel: 210-361-3600 www.bgeenergy.com
EPA Registration No. F-1049

CANYON RANCH UNIT 3
STORM DRAIN F PLAN & PROFILE
STA 7+00 TO END

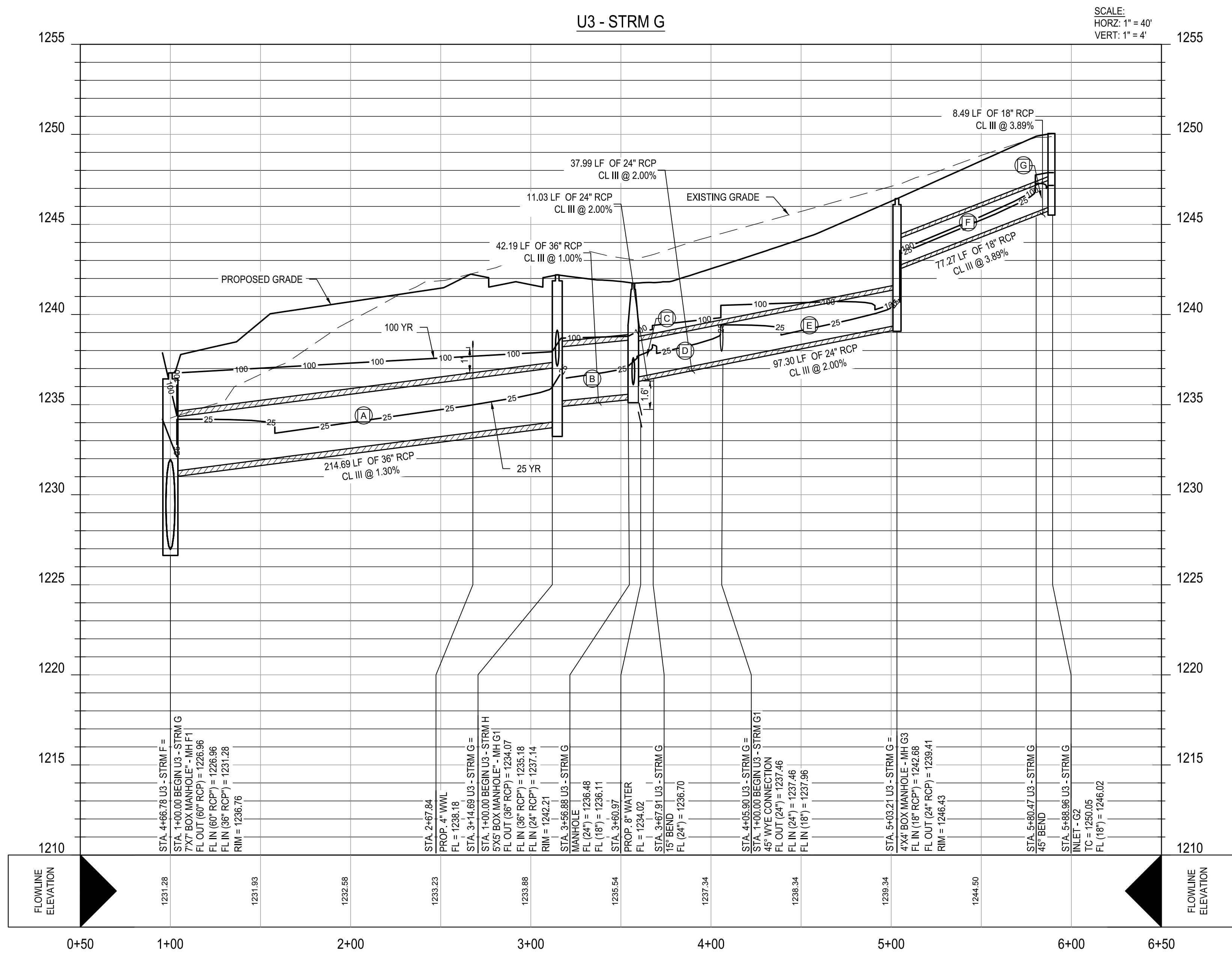
STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024
SHEET
C06.10



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W—W— PROPOSED WASTEWATER LINE
 - W— PROPOSED WATER LINE
 - E— PROPOSED ELECTRIC
 - - - - - EXISTING 1' CONTOUR
 - - - - - EXISTING 5' CONTOUR
 - - - - - PROPOSED 1' CONTOUR
 - - - - - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
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NO.	DESCRIPTION	DATE	APR
DESIGNED BY:	SAR		
REVIEWED BY:	SSM		
DRAWN BY:	SAR		

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 210-360-3600 www.bgeenergy.com
 TPE Registration No. P-1040



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM G-A	33.68	10.43	2.91
STRM G-B	22.39	8.50	1.58
STRM G-C	16.23	10.21	1.20
STRM G-D	16.27	10.23	1.62
STRM G-E	8.72	8.67	1.97
STRM G-F	8.76	11.24	0.69
STRM G-G	8.77	11.24	1.57

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM G-A	49.28	6.97	5.49
STRM G-B	32.88	4.65	3.51
STRM G-C	24.00	7.64	2.57
STRM G-D	24.08	7.67	2.70
STRM G-E	12.98	9.65	3.05
STRM G-F	13.05	12.40	0.89
STRM G-G	13.06	7.39	2.06

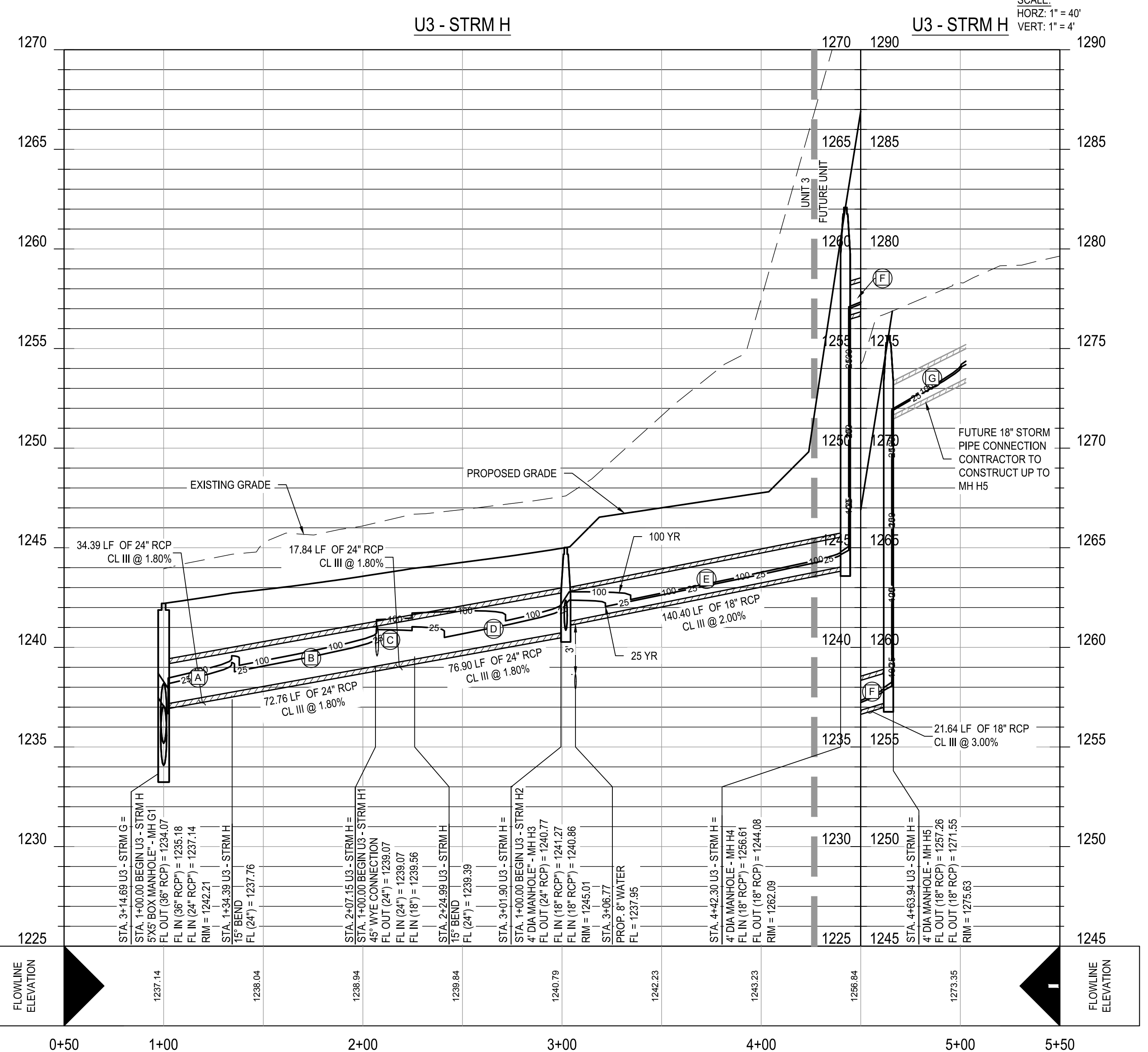
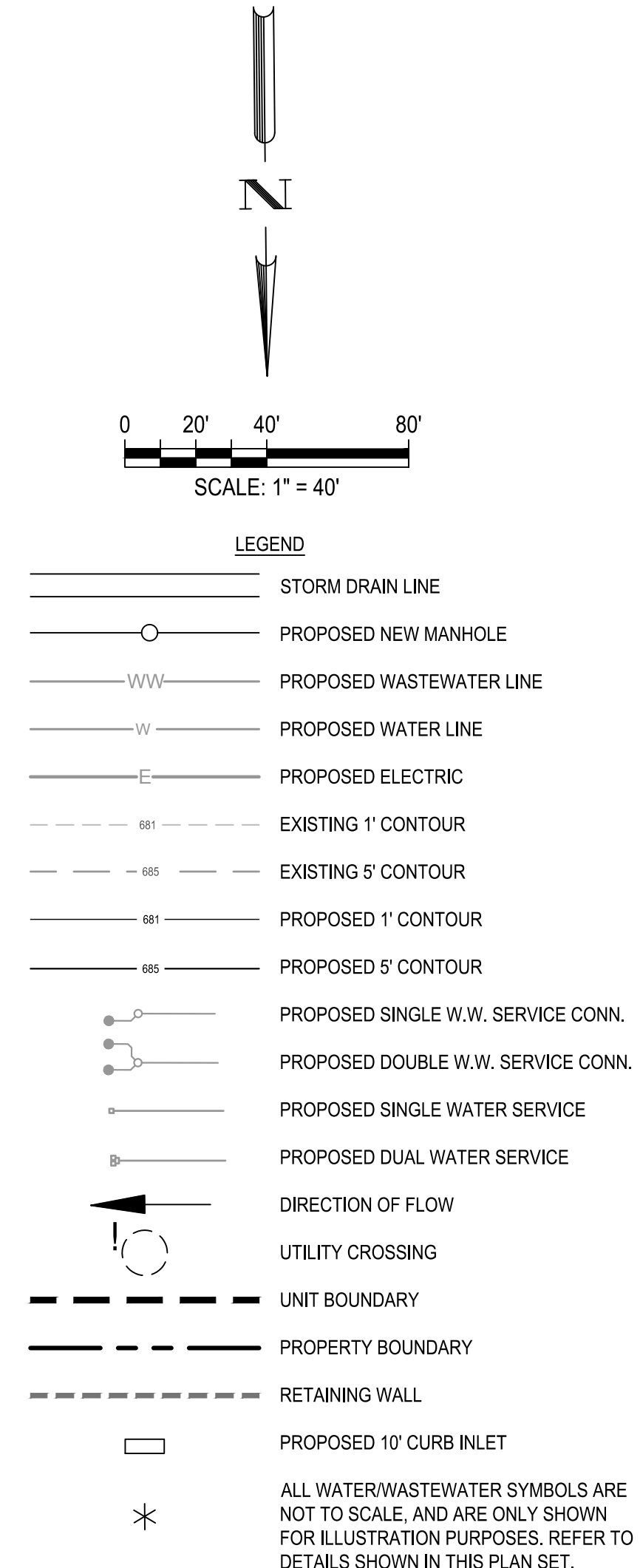
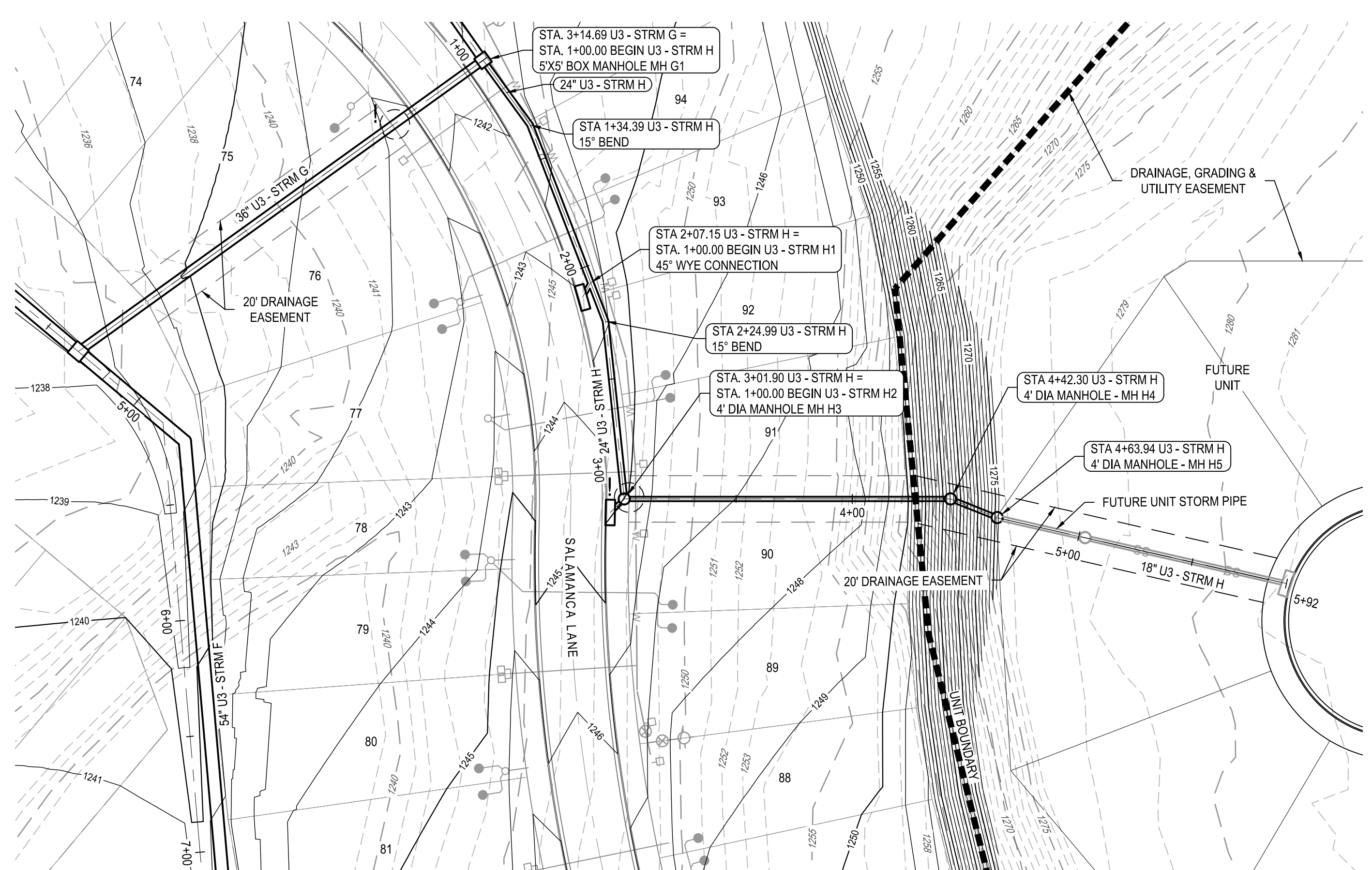
TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3
 STORM DRAIN G PLAN & PROFILE
 STA 1+00 TO END

04/05/2024
 SHEET
 C06.11

G:\TXC\Projects\San Antonio Projects\2728-00 - Canyon Ranch\05 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C06.12 STORM DRAIN H PLAN & PROFILE.dwg Layout: STORM DRAIN H PLAN & PROFILE STA 1+00 TO END Plotted: 2/20/2023 3:24:06 PM By: Jefflon



- NOTES:
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM H-A	14.30	9.51	1.04
STRM H-B	14.39	9.53	1.49
STRM H-C	9.97	8.66	1.83
STRM H-D	10.04	8.67	1.65
STRM H-E	2.35	6.14	1.10
STRM H-F	2.36	7.10	0.38
STRM H-G	2.37	8.52	0.32

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM H-A	21.03	10.43	1.32
STRM H-B	21.14	10.44	1.82
STRM H-C	14.69	4.68	2.33
STRM H-D	14.78	9.59	2.34
STRM H-E	3.52	6.89	1.52
STRM H-F	3.52	7.96	0.48
STRM H-G	3.53	9.57	0.40

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3

STORM DRAIN H PLAN & PROFILE
STA 1+00 TO END

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-361-3600 www.bgeenergy.com
EPA Registration No. P-1040

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER

04/05/2024

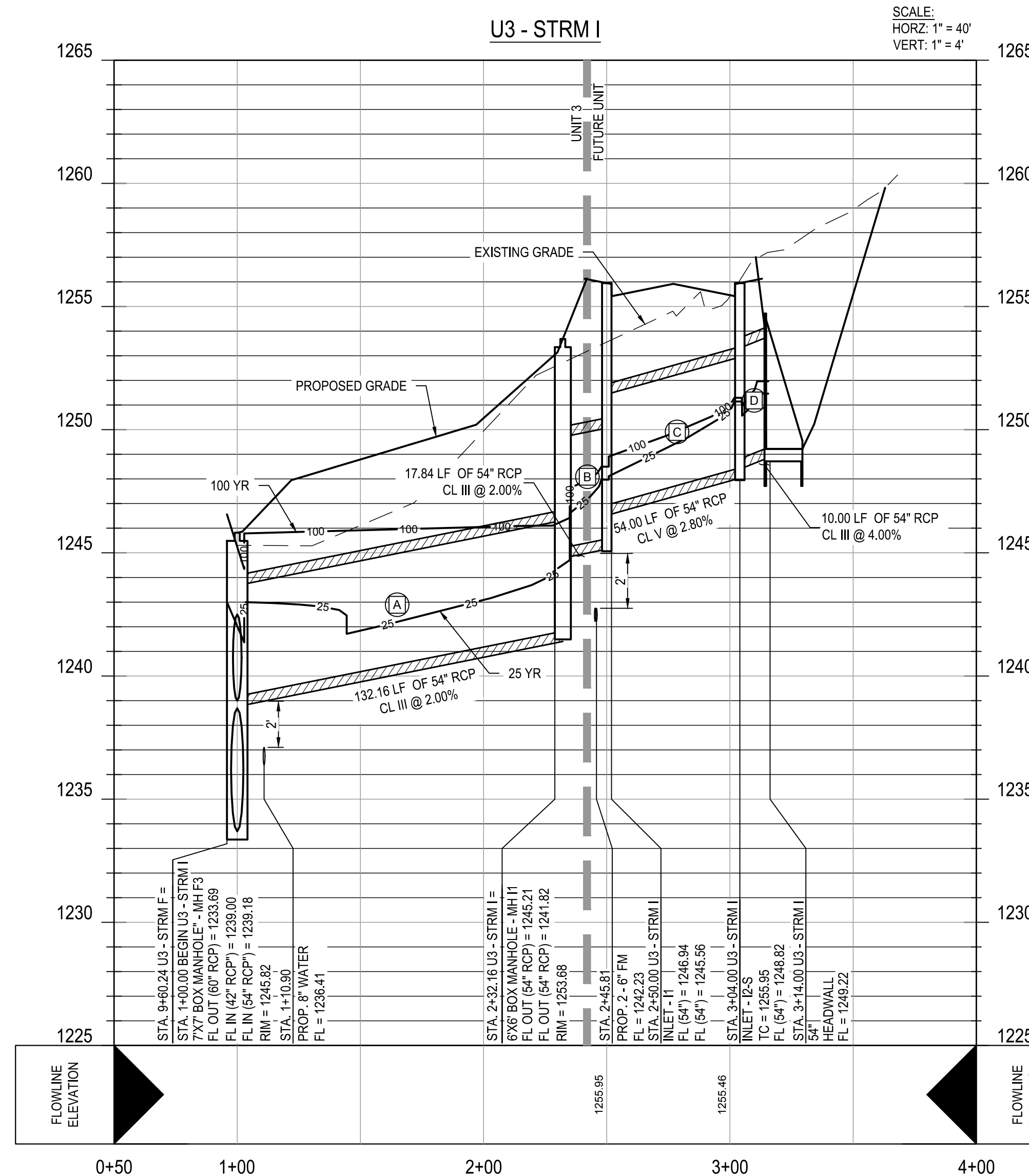
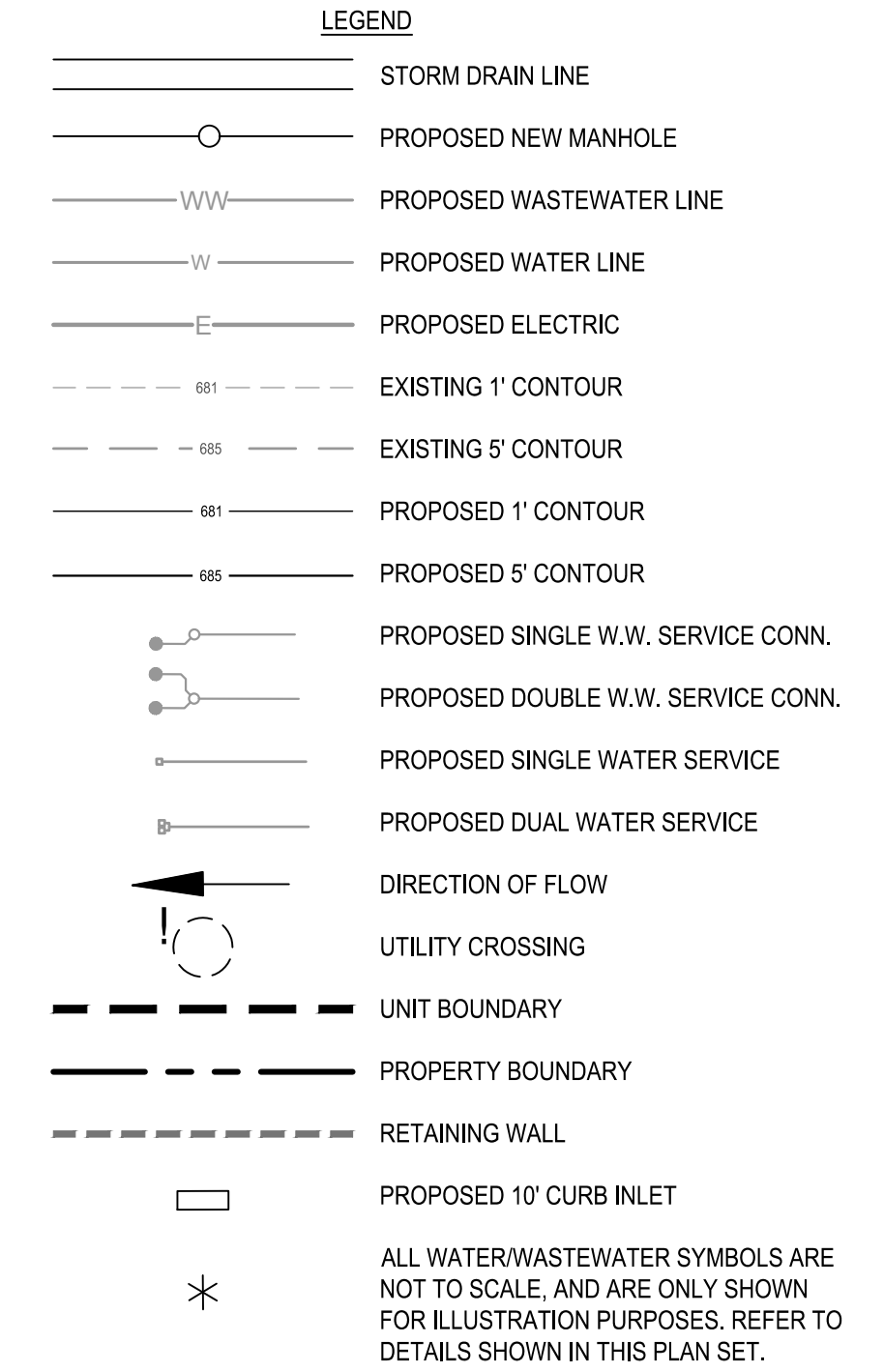
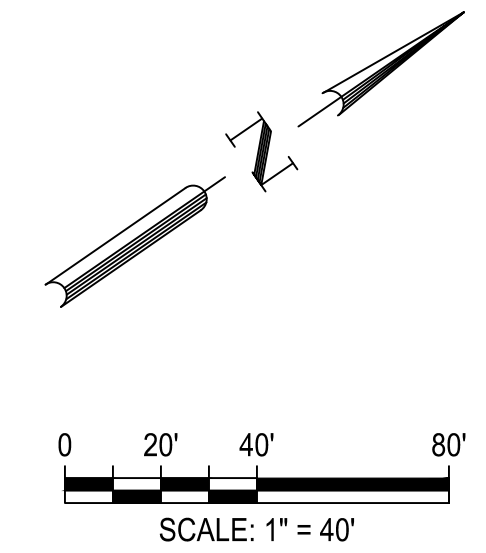
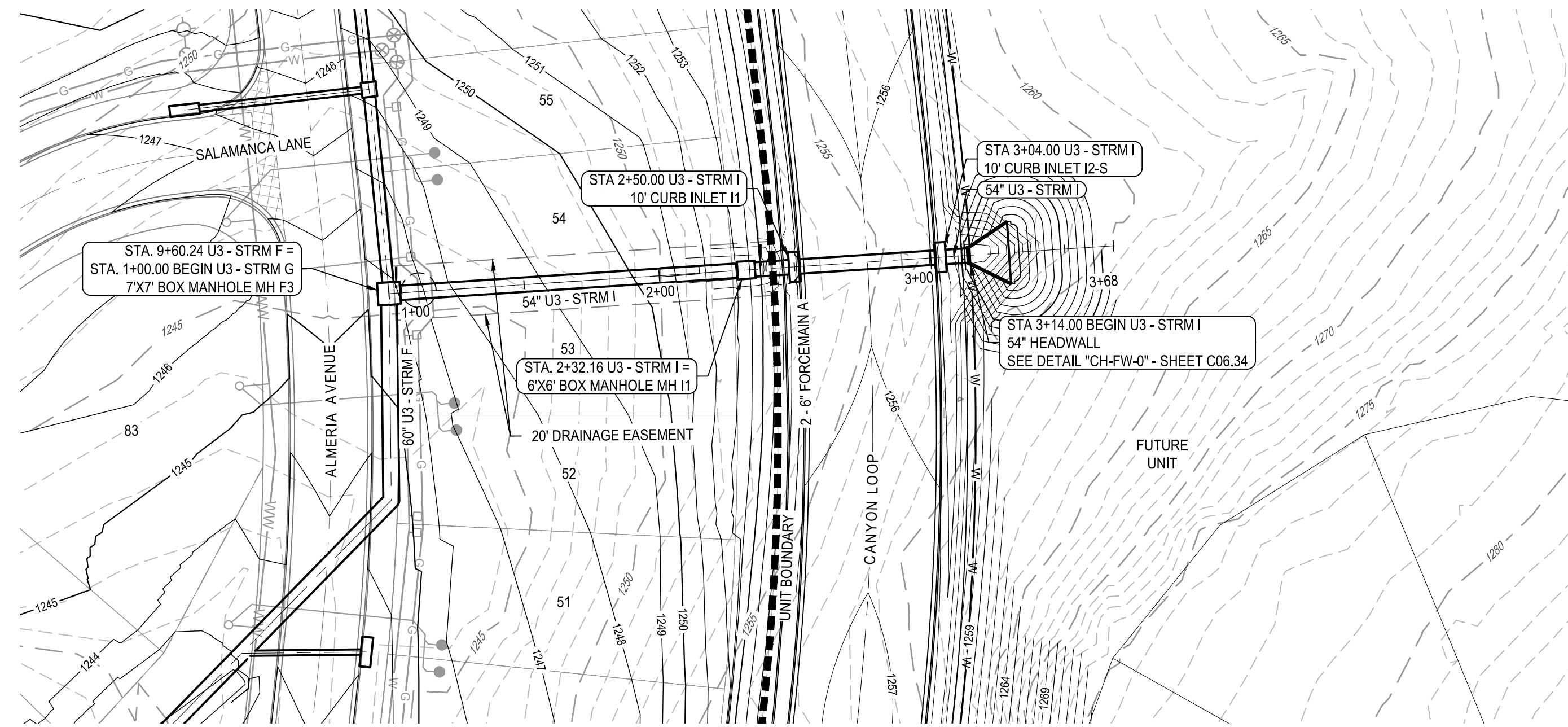
DATE: APR

REV

DESCRIPTION

SHEET C06.12

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SCALE:
HORIZ: 1" = 40'
VERT: 1" = 4'

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM I-A	68.12	14.45	3.82
STRM I-B	68.17	14.46	1.94
STRM I-C	64.07	16.03	1.57
STRM I-D	59.87	17.86	1.74

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM I-A	99.69	16.04	6.61
STRM I-B	99.76	16.05	2.42
STRM I-C	93.89	17.84	1.97
STRM I-D	87.90	19.92	2.18

TRENCH EXCAVATION SAFETY PROTECTION

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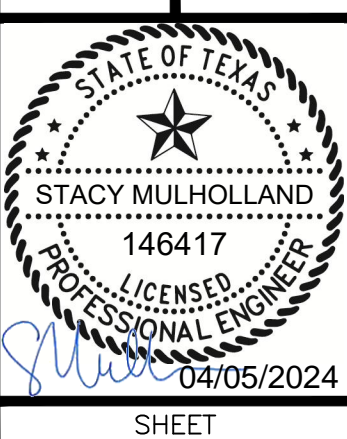
REV	DATE	DESCRIPTION

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR



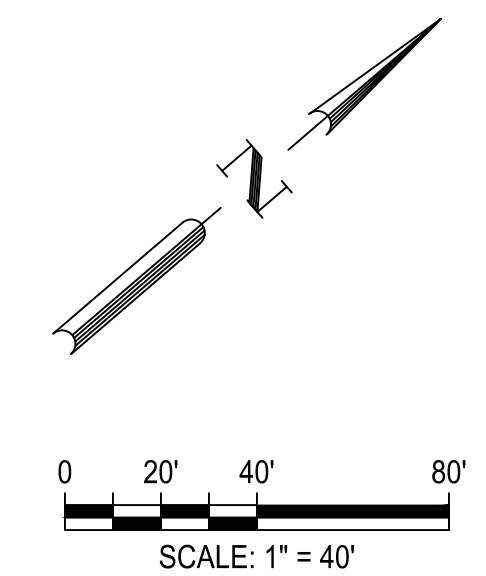
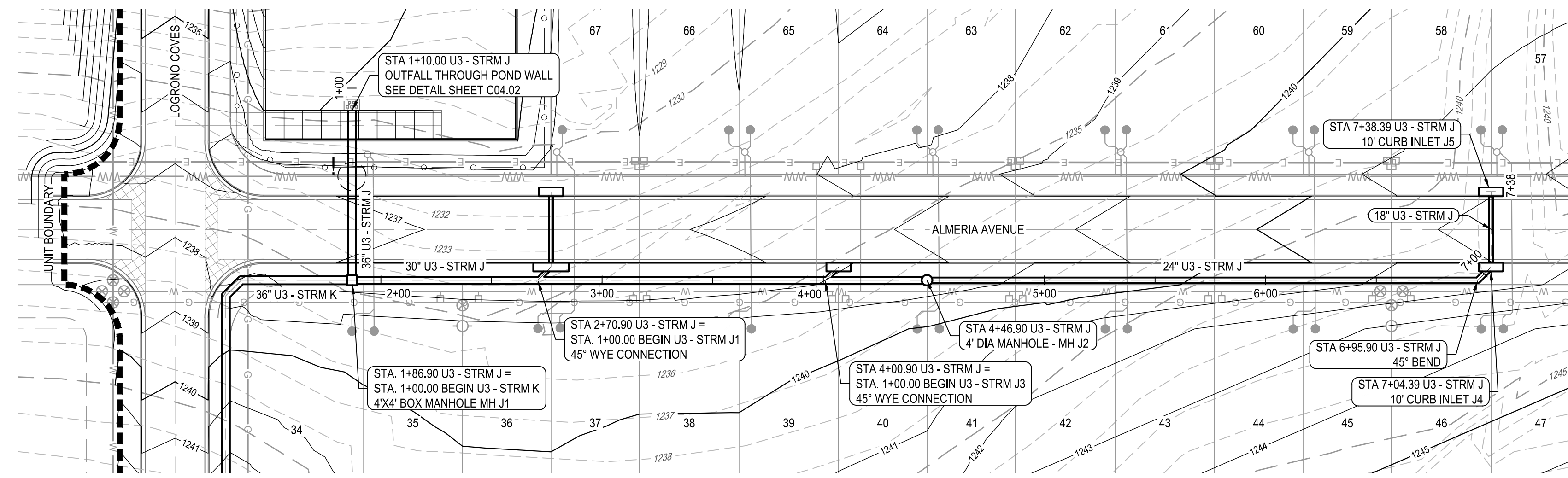
BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
Tel: 214-368-3600 www.bgeinc.com
EPA Registration No. P-1049

CANYON RANCH UNIT 3
STORM DRAIN I PLAN & PROFILE
STA 1+00 TO END



SHEET
C06.13

G:\TXC\Projects\San Antonio Projects\2728-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C06.14 STORM DRAIN J PLAN & PROFILE STA 1+00 TO END Layout: STORM DRAIN J PLAN & PROFILE STA 1+00 TO END Plotted: 2/20/2023 3:27:35 PM By: jcliffon



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W—W— PROPOSED WASTEWATER LINE
 - W— PROPOSED WATER LINE
 - E— PROPOSED ELECTRIC
 - 681 --- EXISTING 1' CONTOUR
 - 685 --- EXISTING 5' CONTOUR
 - 681 --- PROPOSED 1' CONTOUR
 - 685 --- PROPOSED 5' CONTOUR
 - ○ ○ ○ PROPOSED POND FENCE
 - ○ ○ ○ PROPOSED SINGLE W.W. SERVICE CONN.
 - ○ ○ ○ PROPOSED DOUBLE W.W. SERVICE CONN.
 - ○ ○ ○ PROPOSED SINGLE WATER SERVICE
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 - * ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR



BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-369-3300 www.bgeenergy.com
 TXEPE Registration No. P-1049

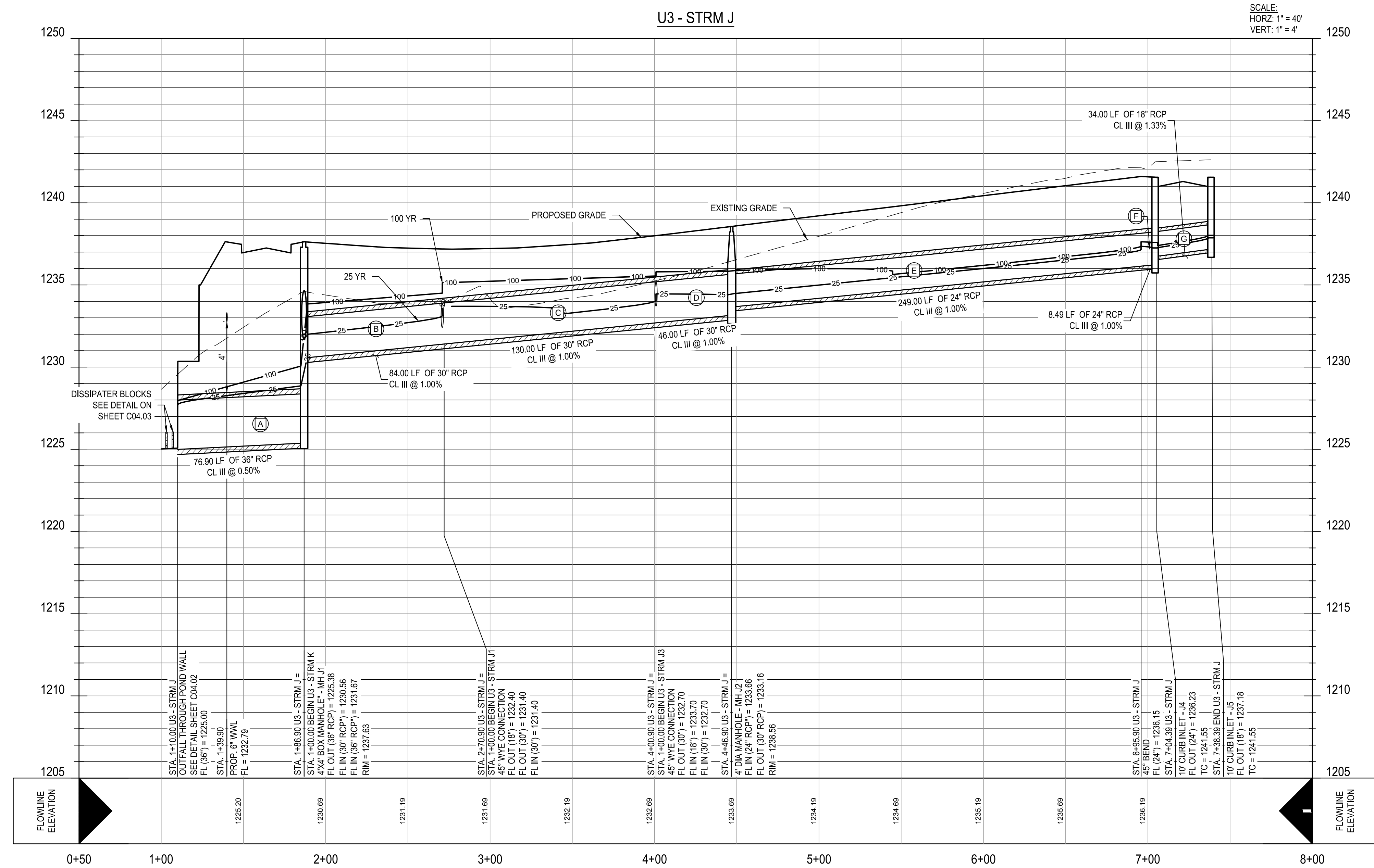
- NOTES:**
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM J-A	75.53	10.69	2.73
STRM J-B	25.58	8.81	1.45
STRM J-C	16.08	7.85	2.31
STRM J-D	7.86	6.45	1.76
STRM J-E	8.07	6.60	0.83
STRM J-F	8.08	6.60	1.21
STRM J-G	3.28	5.82	0.54

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM J-A	110.21	15.59	2.93
STRM J-B	36.25	7.38	3.29
STRM J-C	22.97	4.68	3.74
STRM J-D	11.37	2.32	3.11
STRM J-E	11.65	7.26	2.22
STRM J-F	11.66	7.26	1.48
STRM J-G	4.78	6.44	0.86

TRENCH EXCAVATION SAFETY PROTECTION

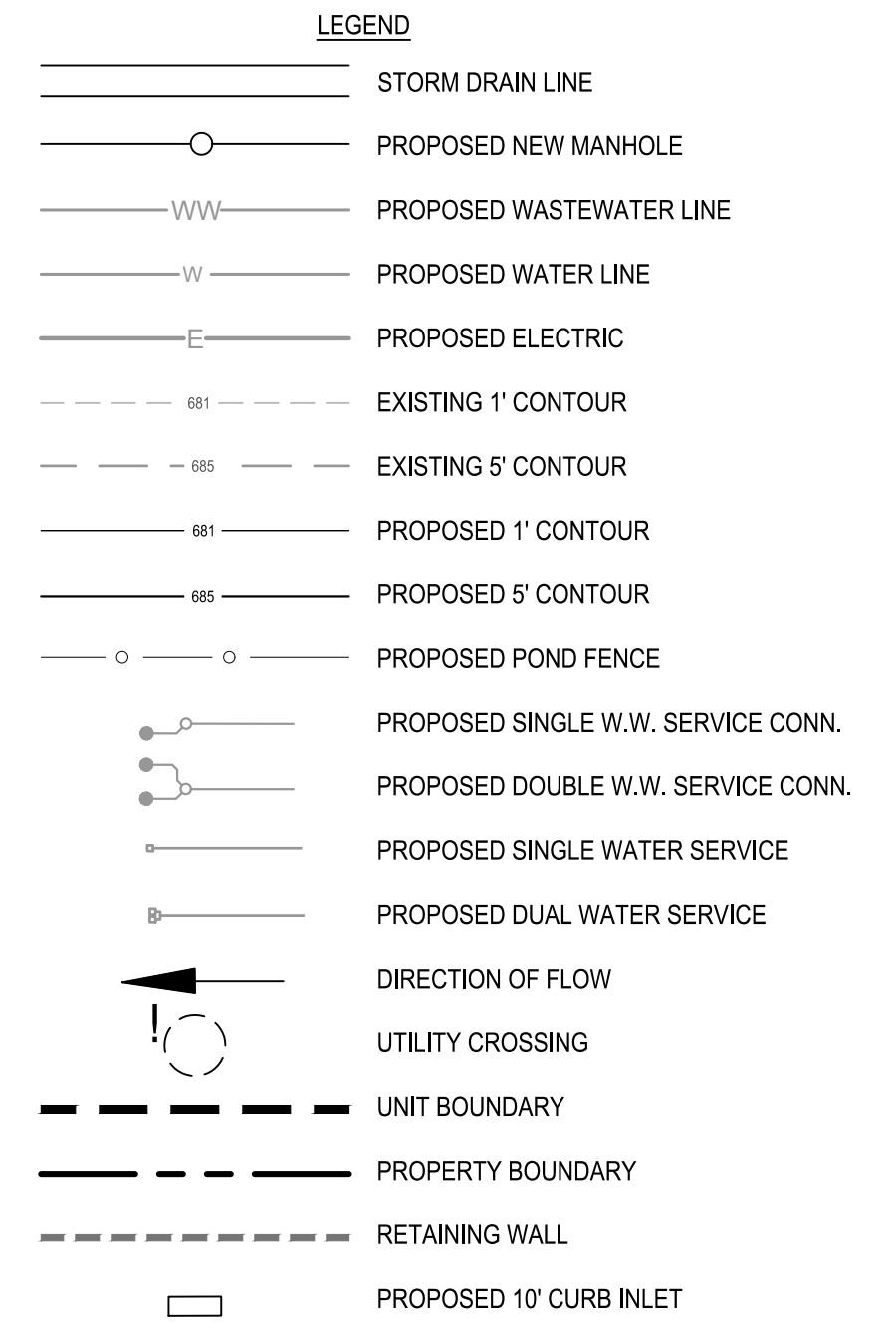
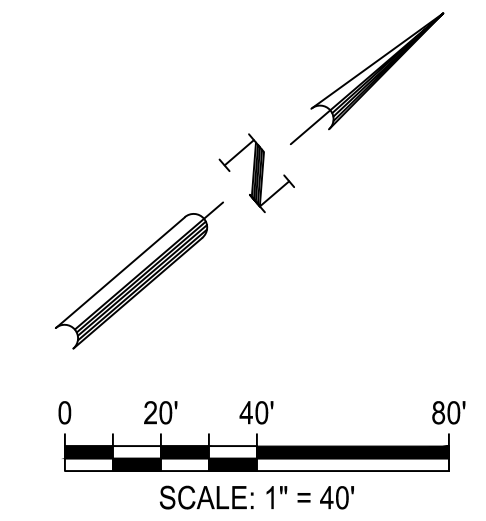
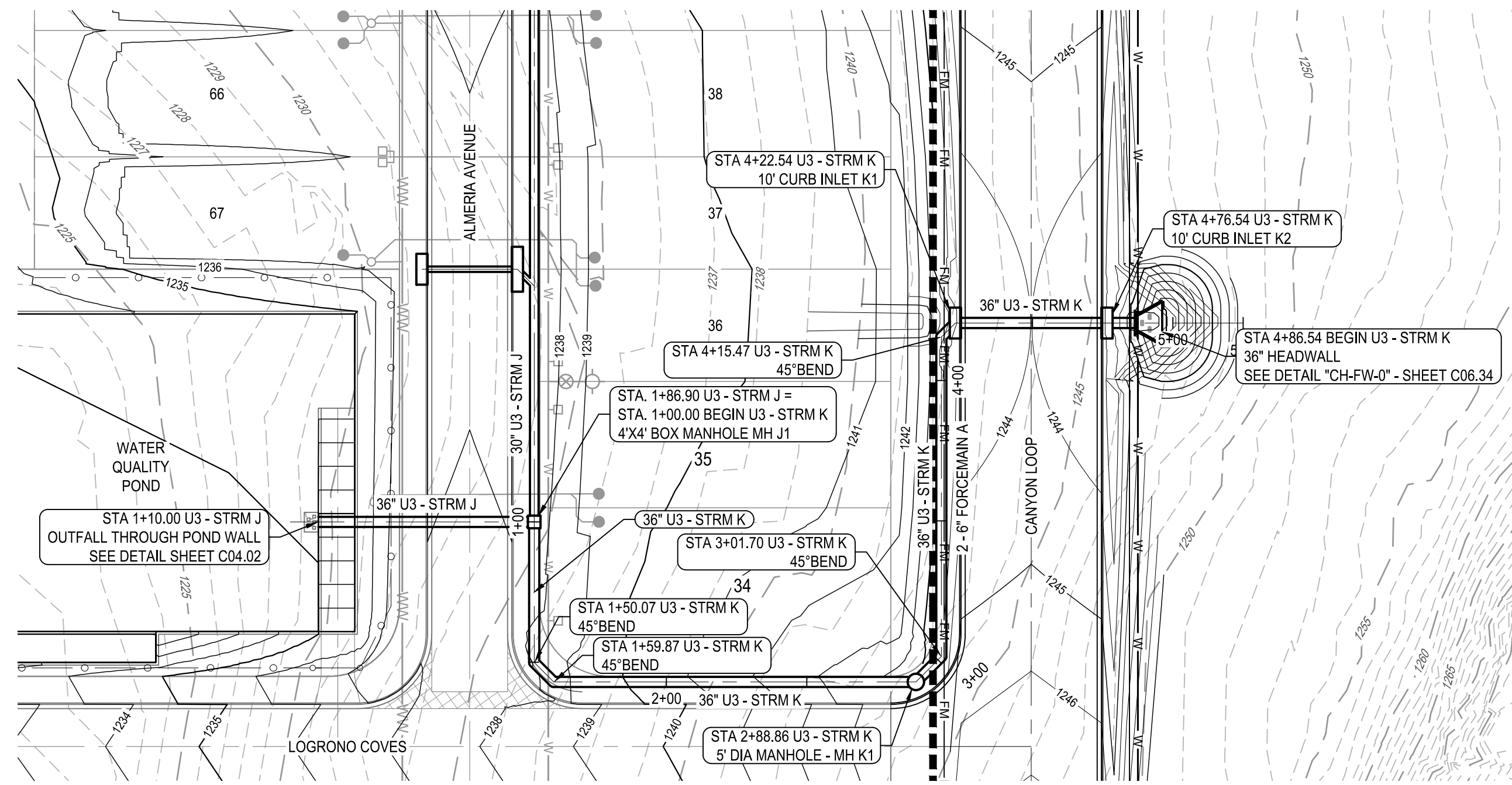
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CANYON RANCH UNIT 3
 STORM DRAIN J PLAN & PROFILE
 STA 1+00 TO END



04/05/2024
 SHEET
 C06.14

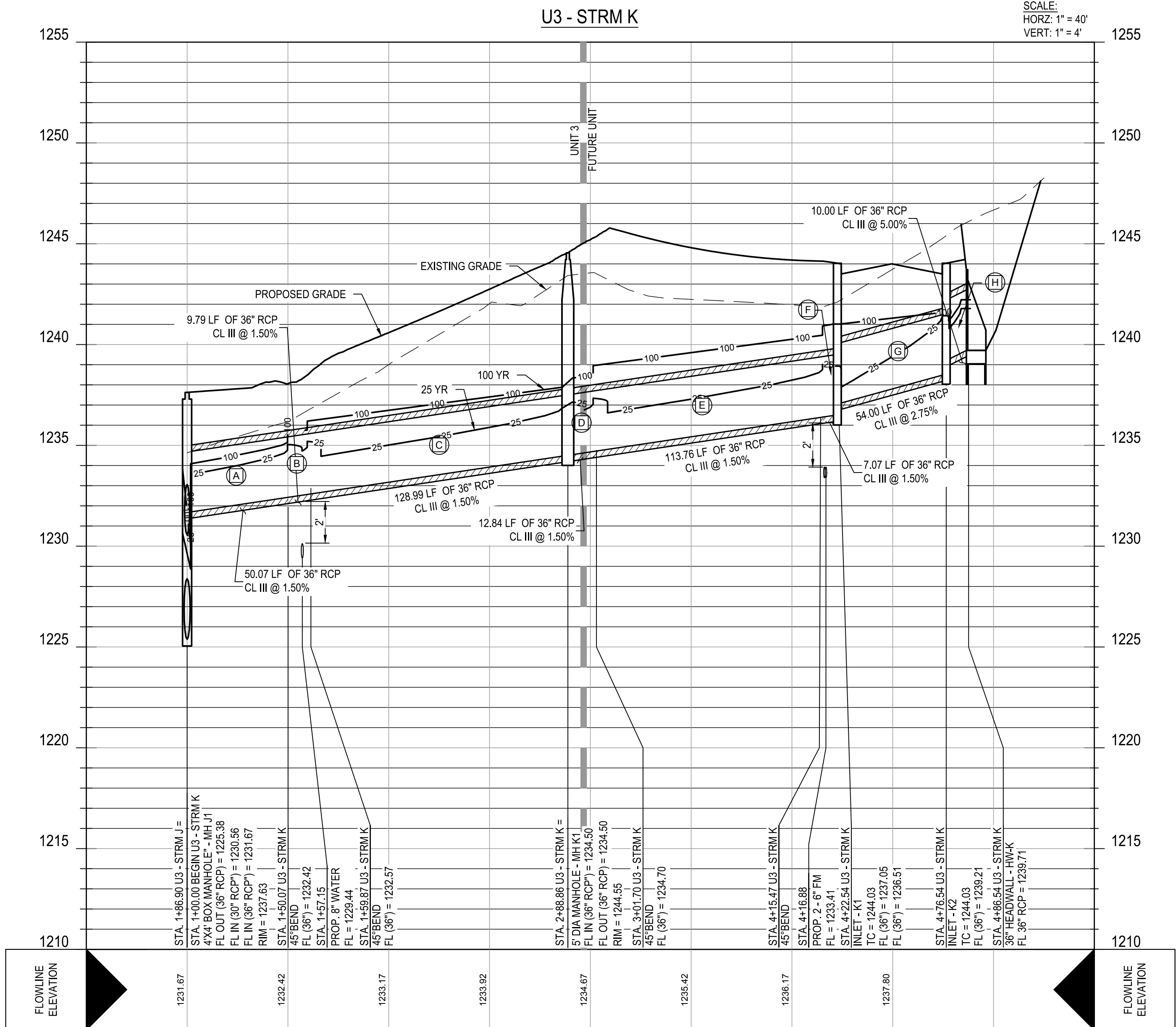


REV	DATE	DESCRIPTION
DESIGNED BY:	SAR	
REVIEWED BY:	SSM	
DRAWN BY:	SAR	



BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-360-3600 www.bgeenergy.com
 TXE Registration No. P-1040

- NOTES:**
1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
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 4. CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM K-A	51.35	12.21	1.88
STRM K-B	51.38	12.21	2.63
STRM K-C	51.79	12.23	2.63
STRM K-D	51.83	12.24	2.64
STRM K-E	52.19	12.25	2.64
STRM K-F	52.21	12.25	2.65
STRM K-G	46.45	14.96	1.54
STRM K-H	40.56	17.95	1.56

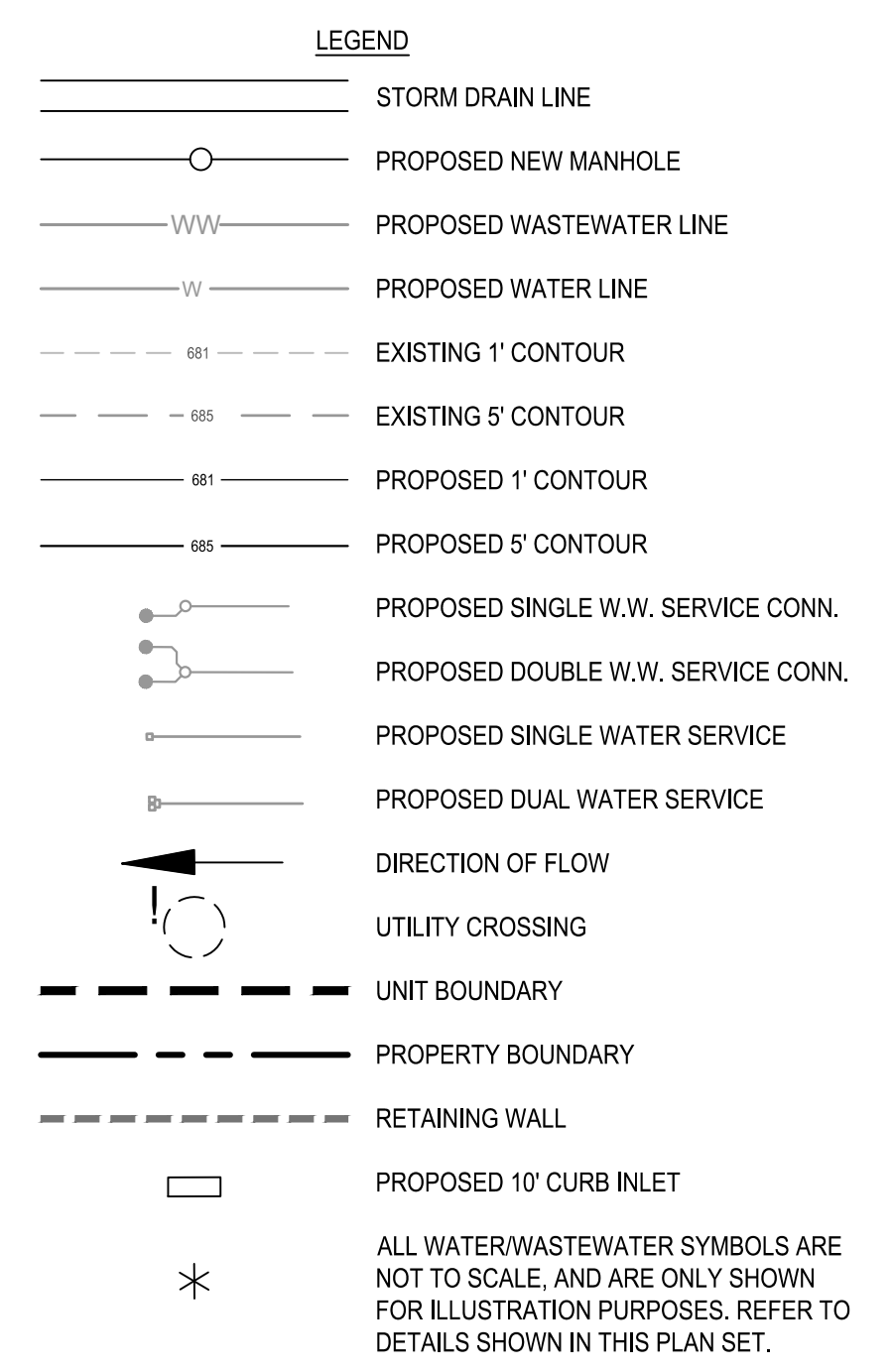
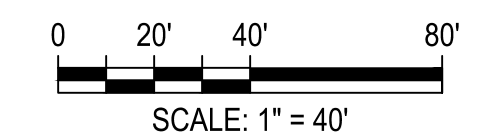
PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM K-A	75.39	13.11	2.41
STRM K-B	75.45	10.67	3.21
STRM K-C	76.15	10.77	3.63
STRM K-D	76.22	10.78	3.83
STRM K-E	76.83	10.87	4.25
STRM K-F	76.87	10.87	4.52
STRM K-G	68.84	9.74	3.96
STRM K-H	60.51	20.00	1.97

TRENCH EXCAVATION SAFETY PROTECTION

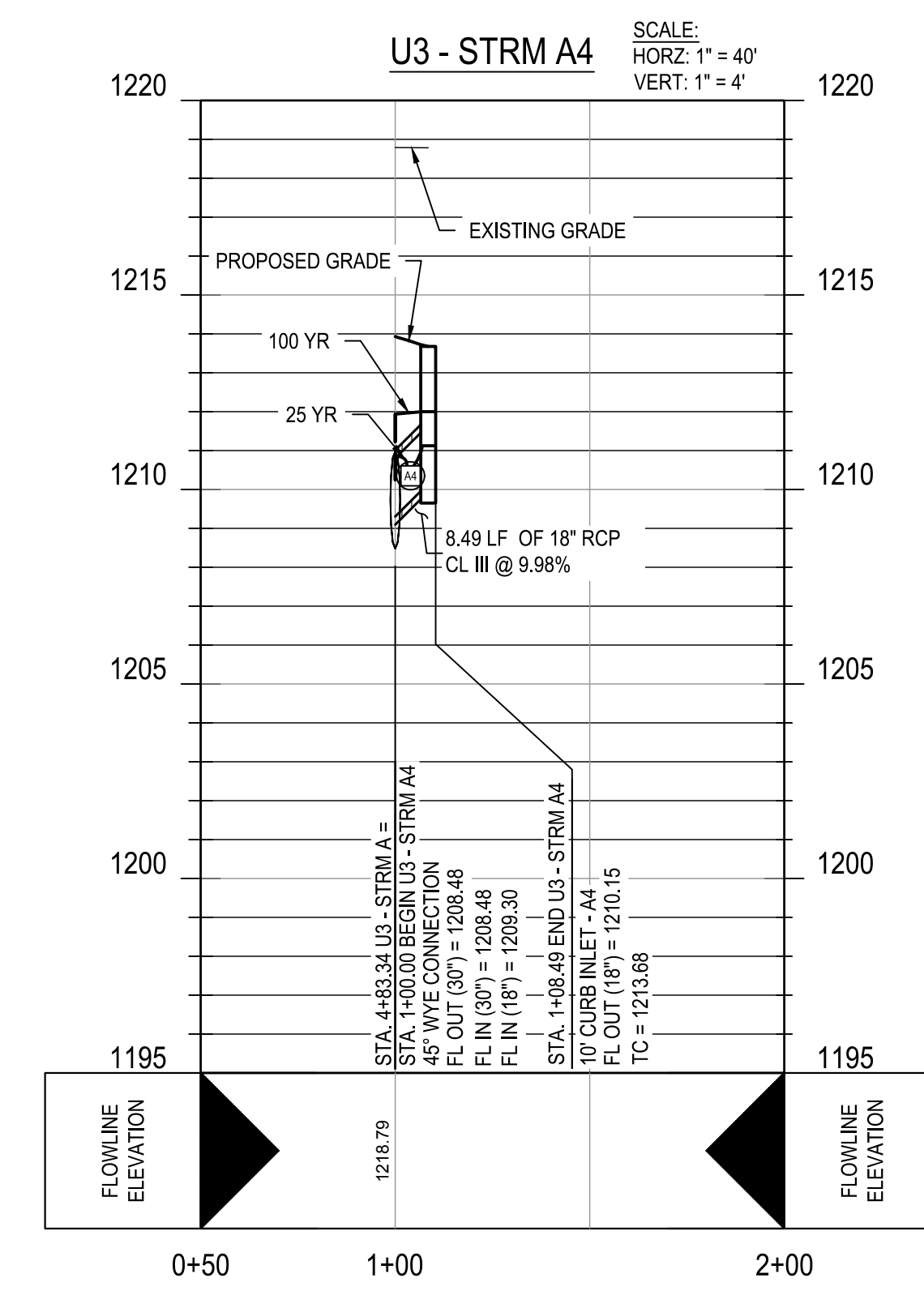
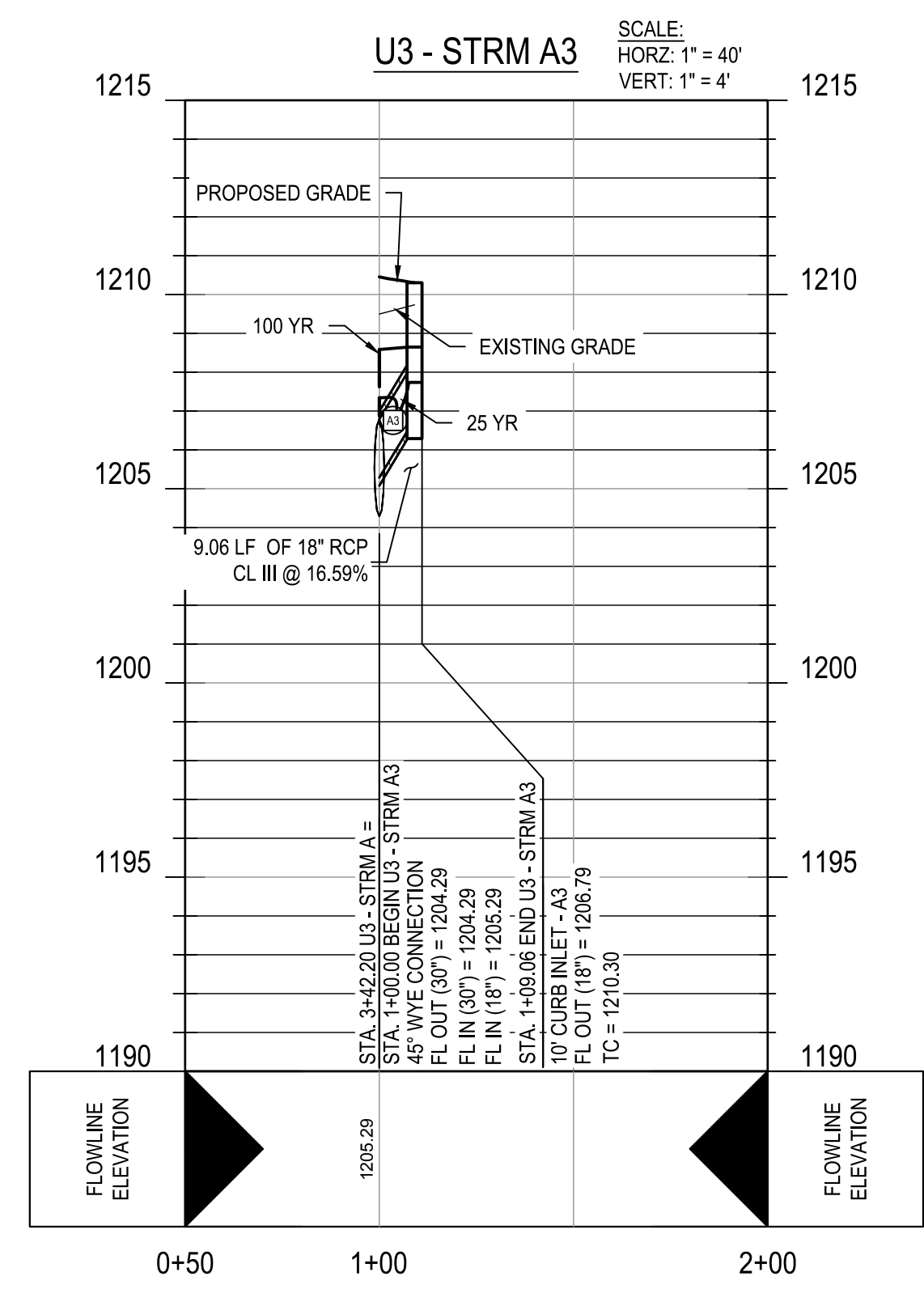
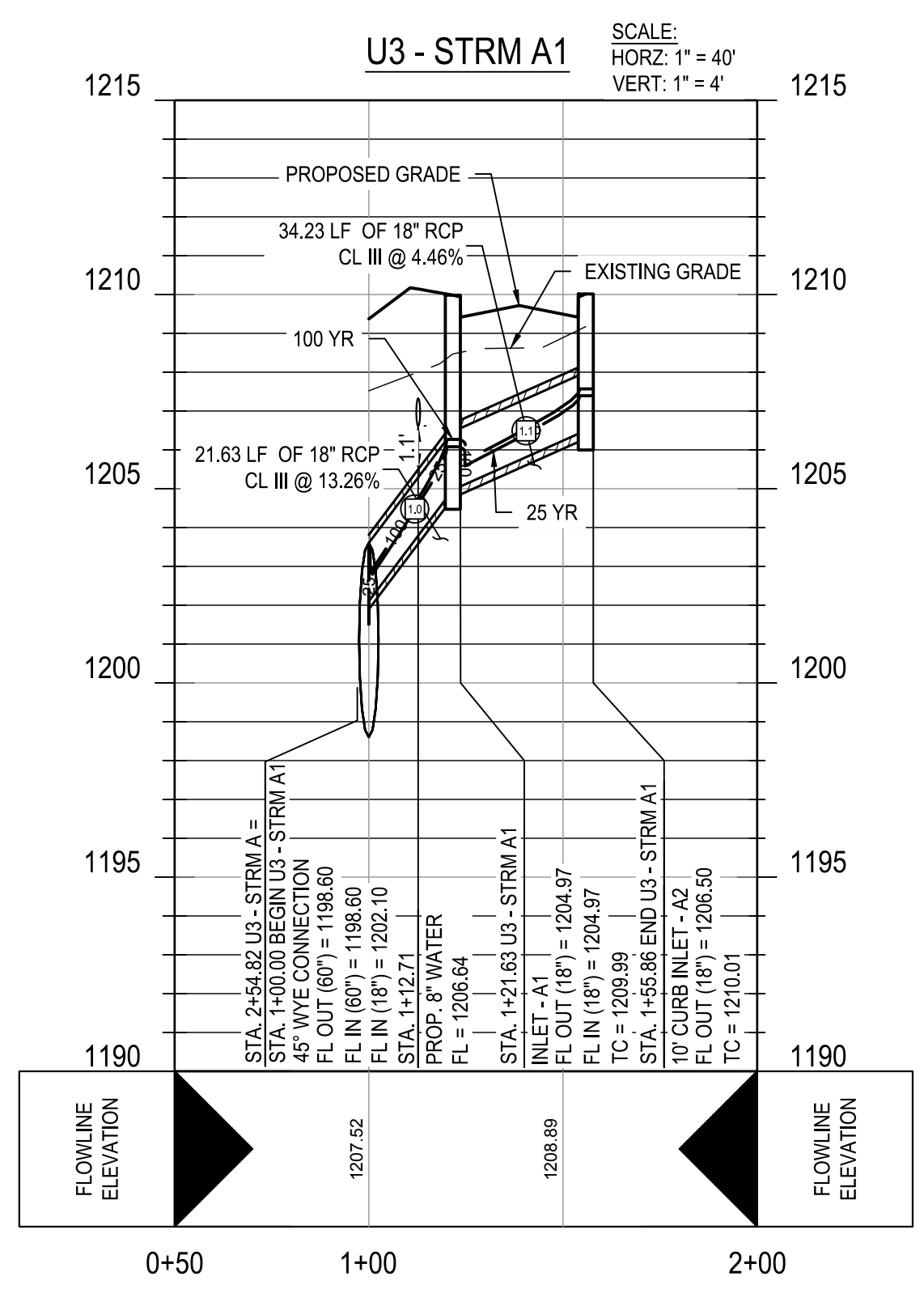
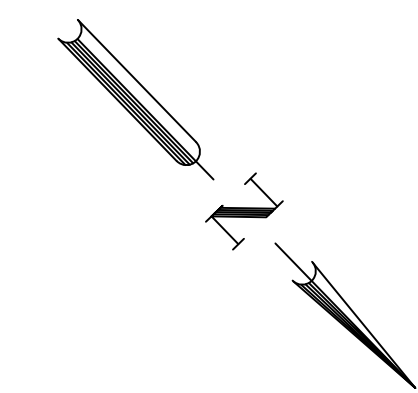
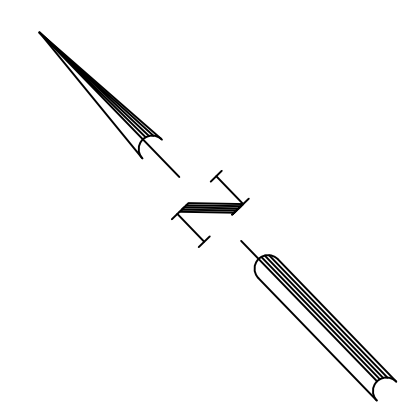
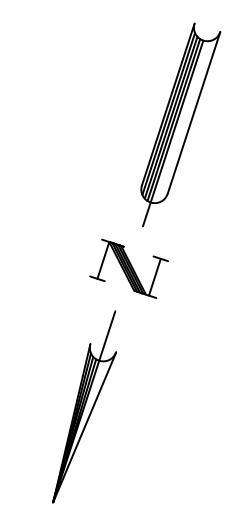
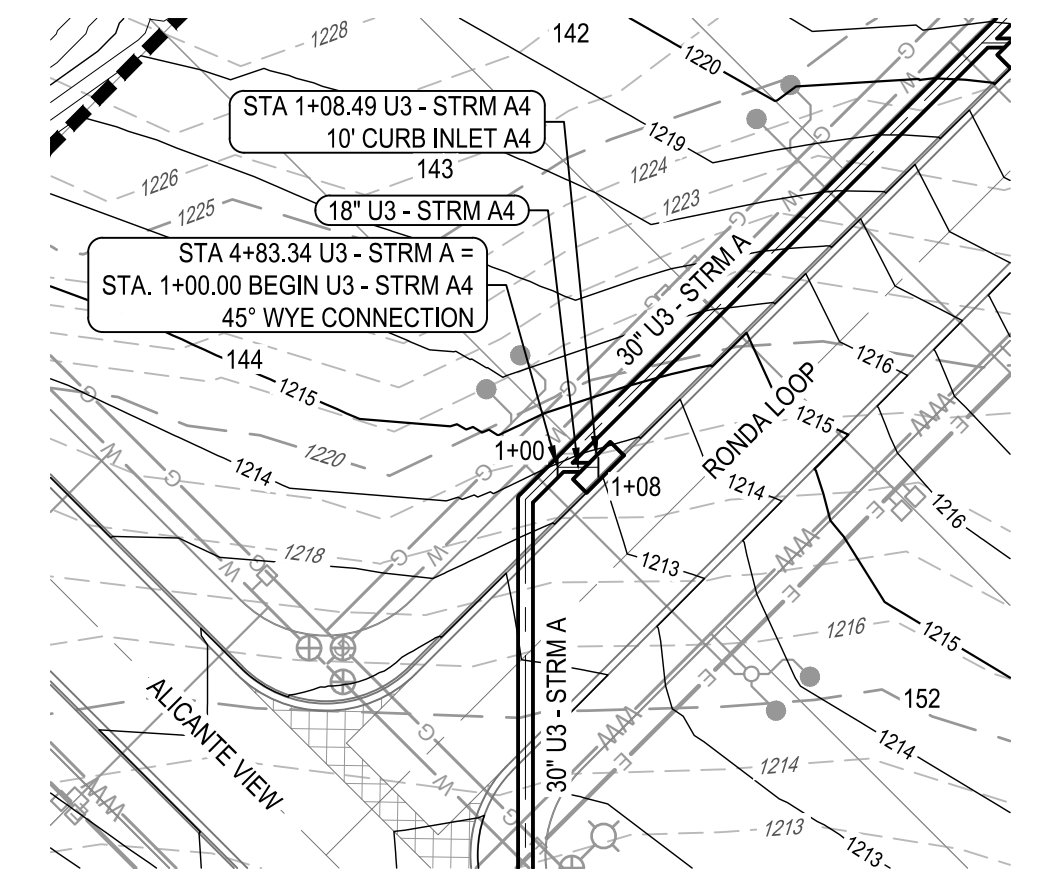
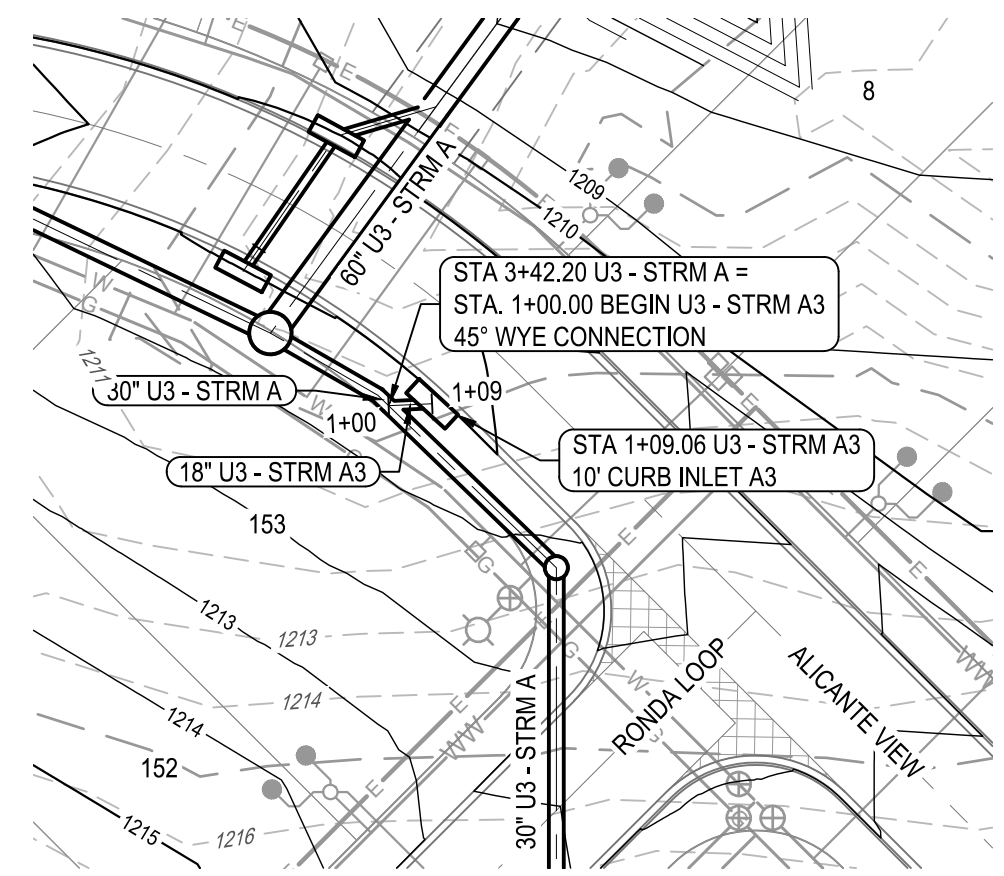
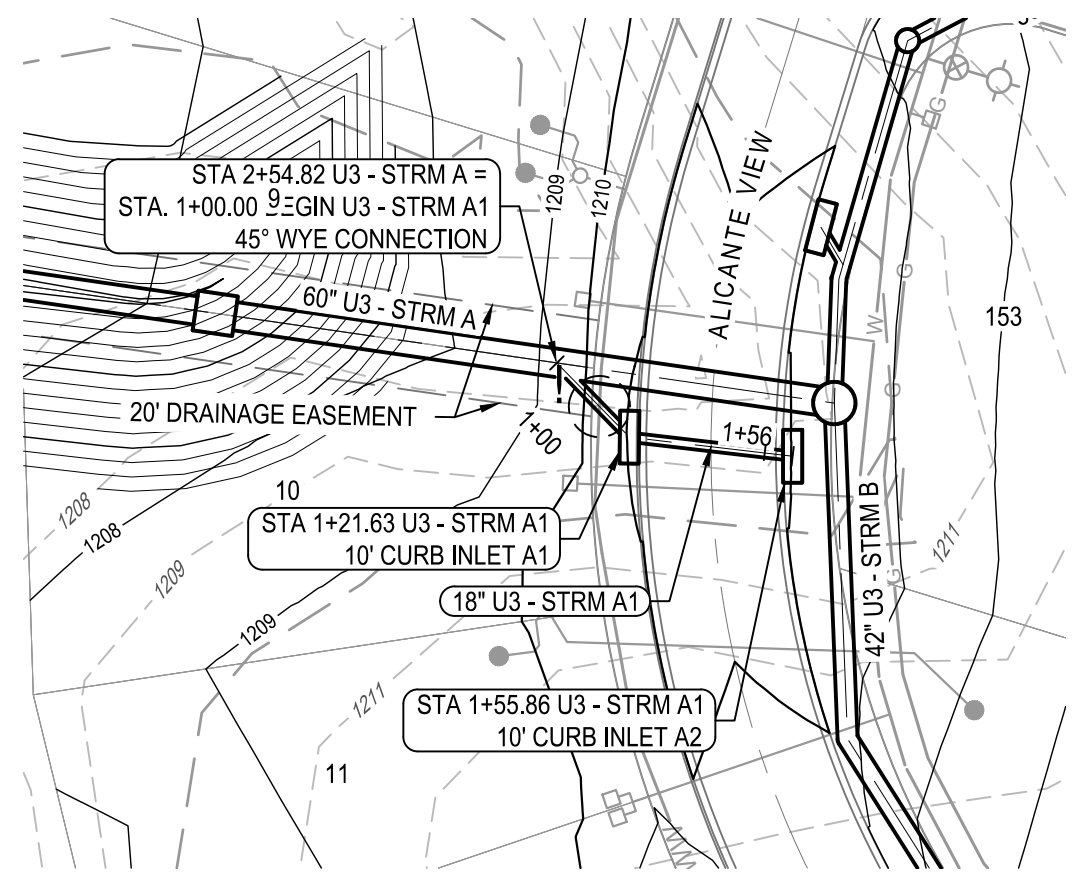
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CANYON RANCH UNIT 3
 STORM DRAIN K PLAN & PROFILE
 STA 1+00 TO END





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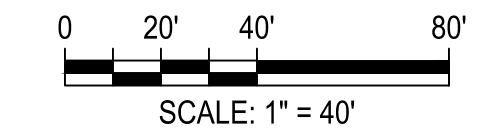
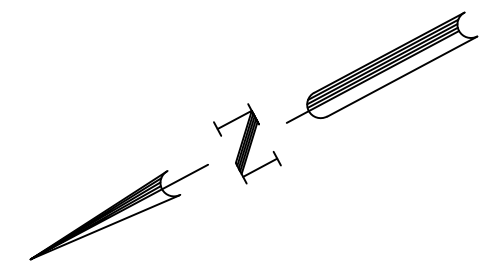
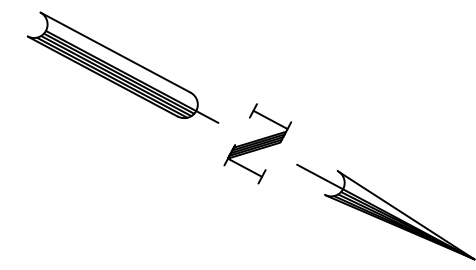
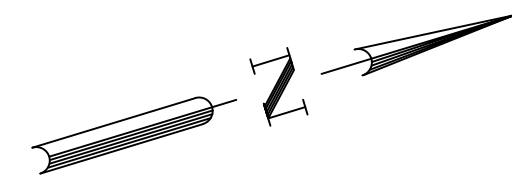
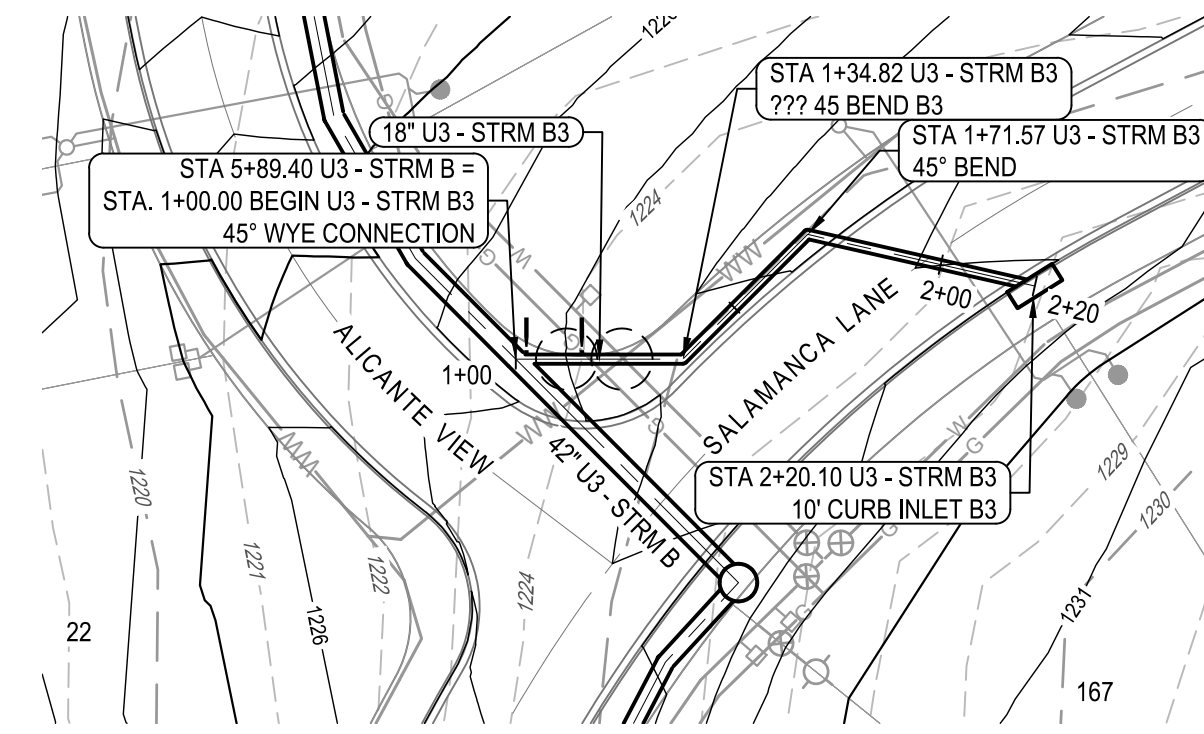
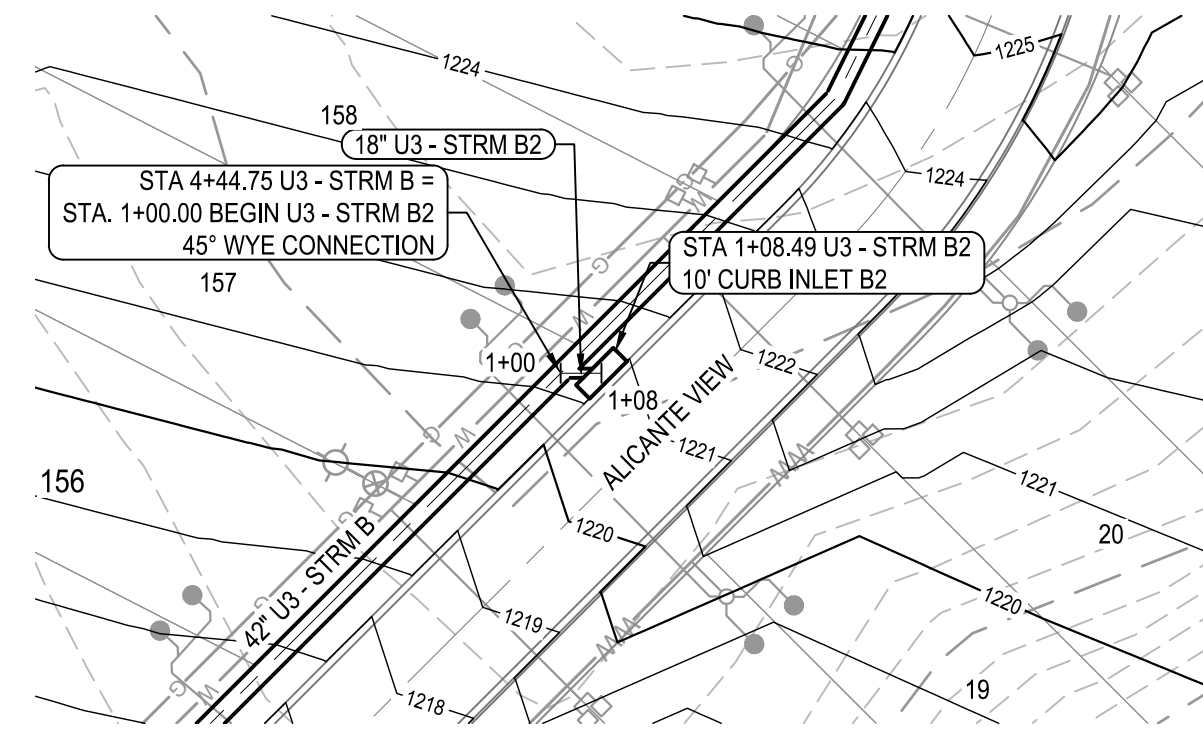
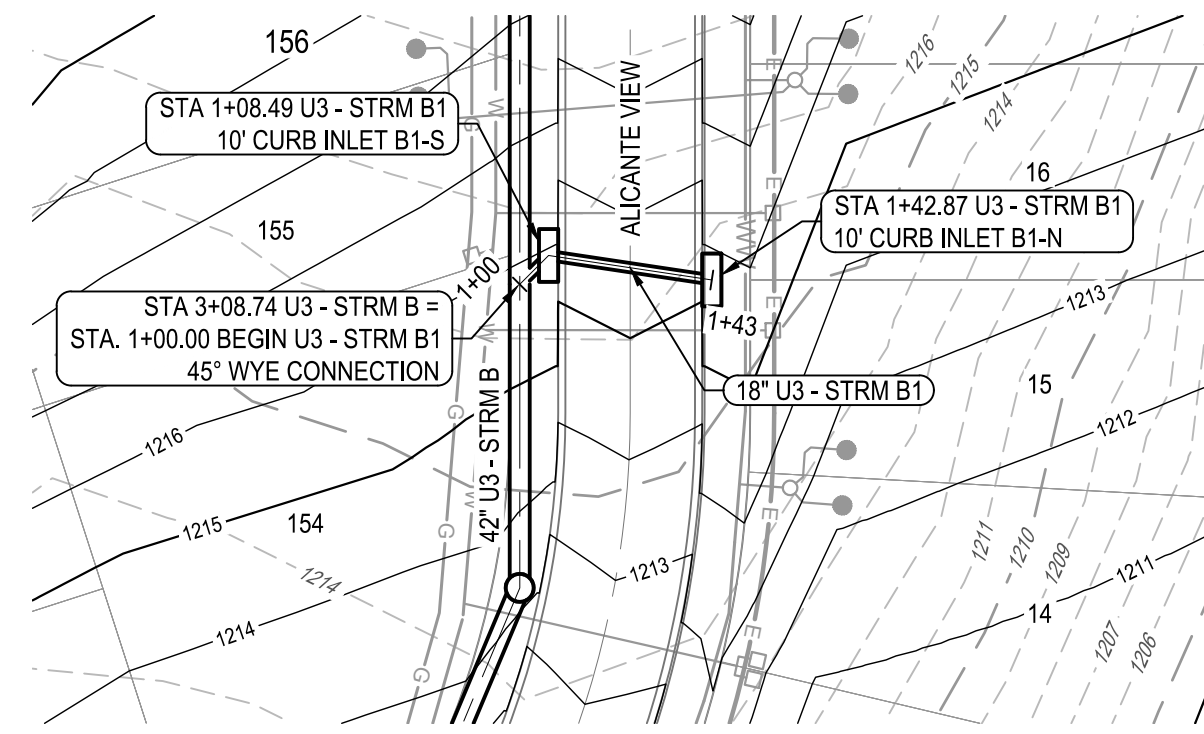
PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM A1.0	8.13	17.19	0.55
STRM A1.1	5.35	10.33	1.11
STRM A3	6.02	17.09	2.05
STRM A4	6.35	14.48	1.55

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM A1.0	11.67	19.01	1.45
STRM A1.1	7.71	11.42	1.30
STRM A3	8.80	4.98	3.30
STRM A4	9.07	5.13	2.63

TRENCH EXCAVATION SAFETY PROTECTION

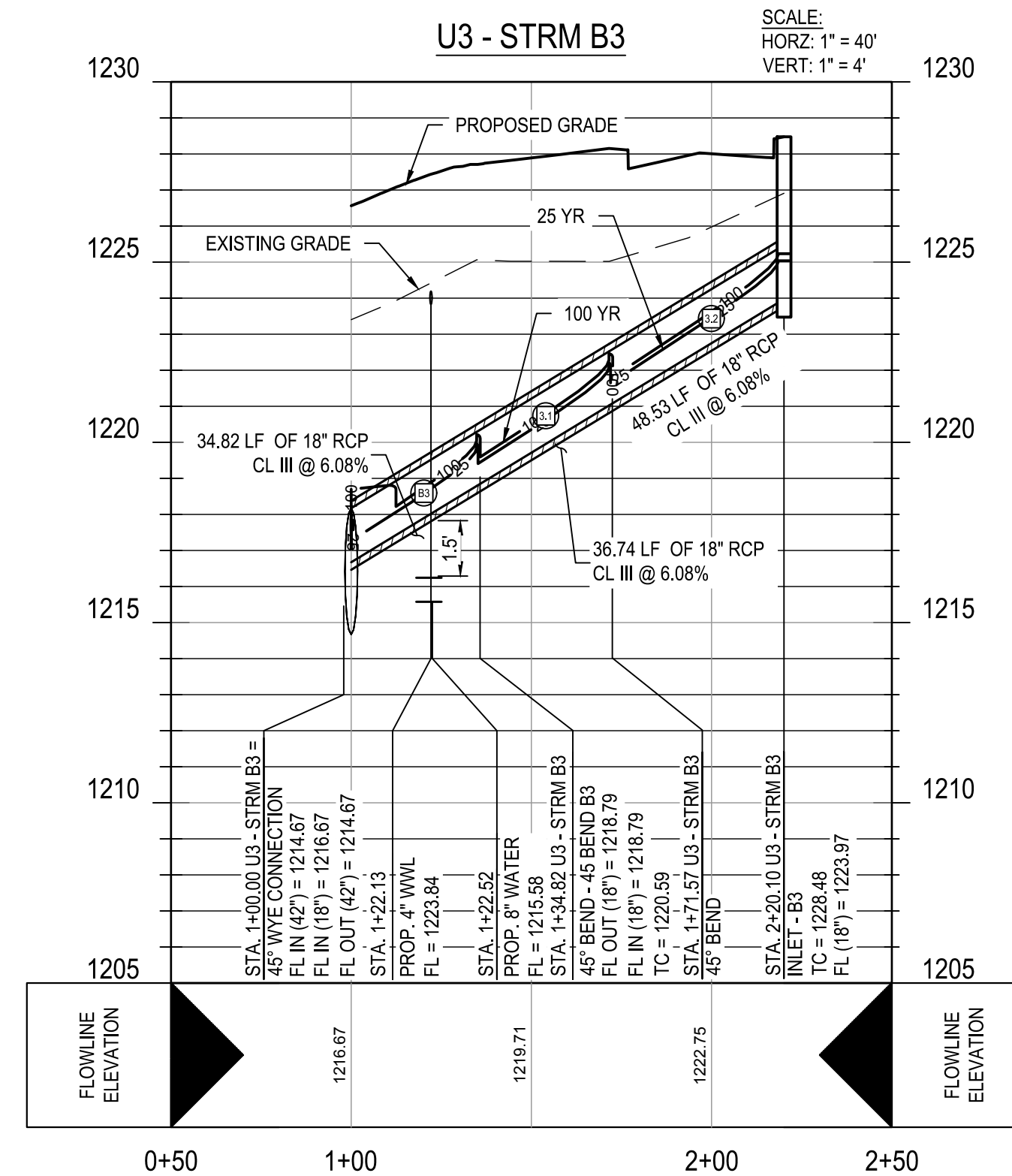
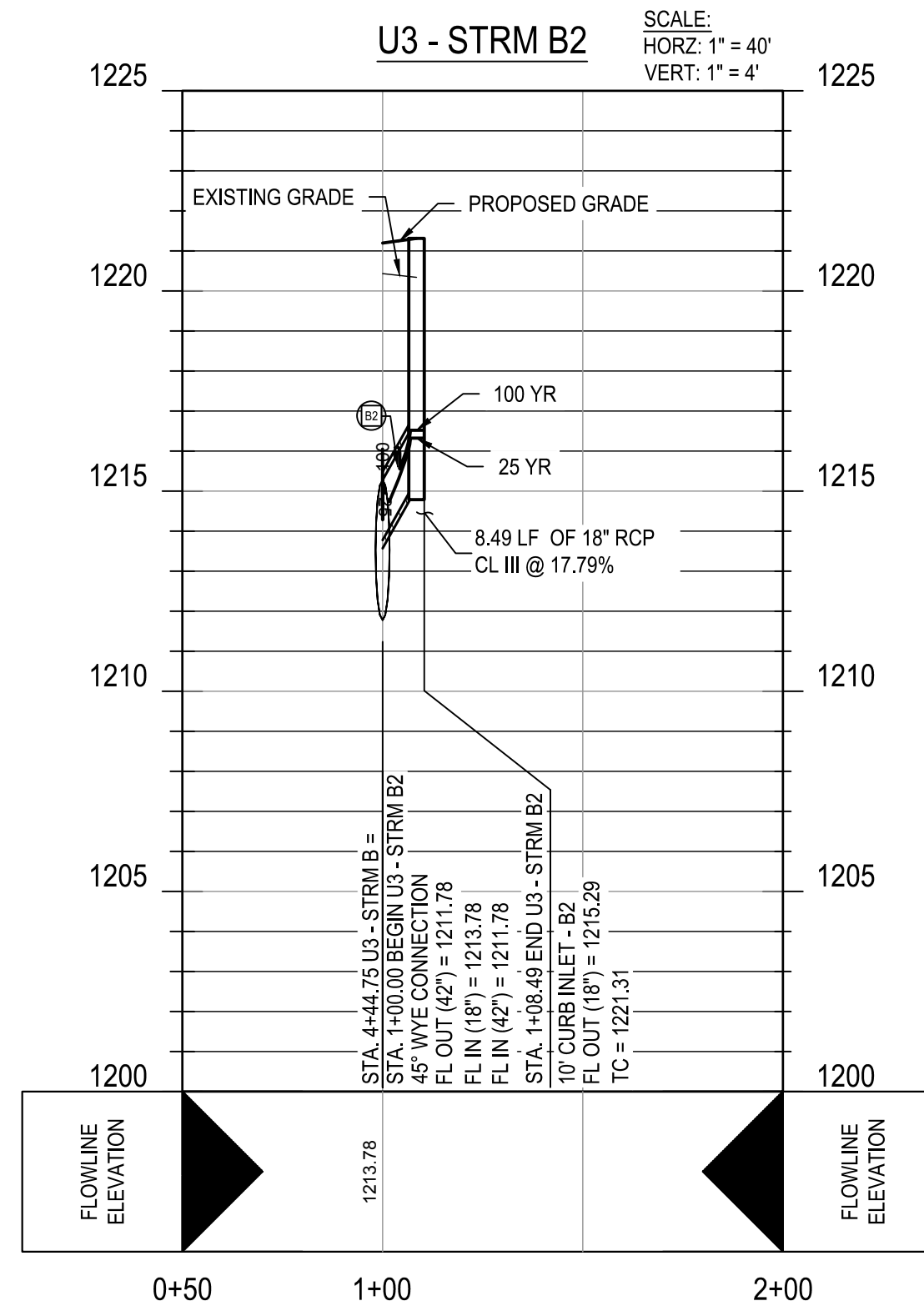
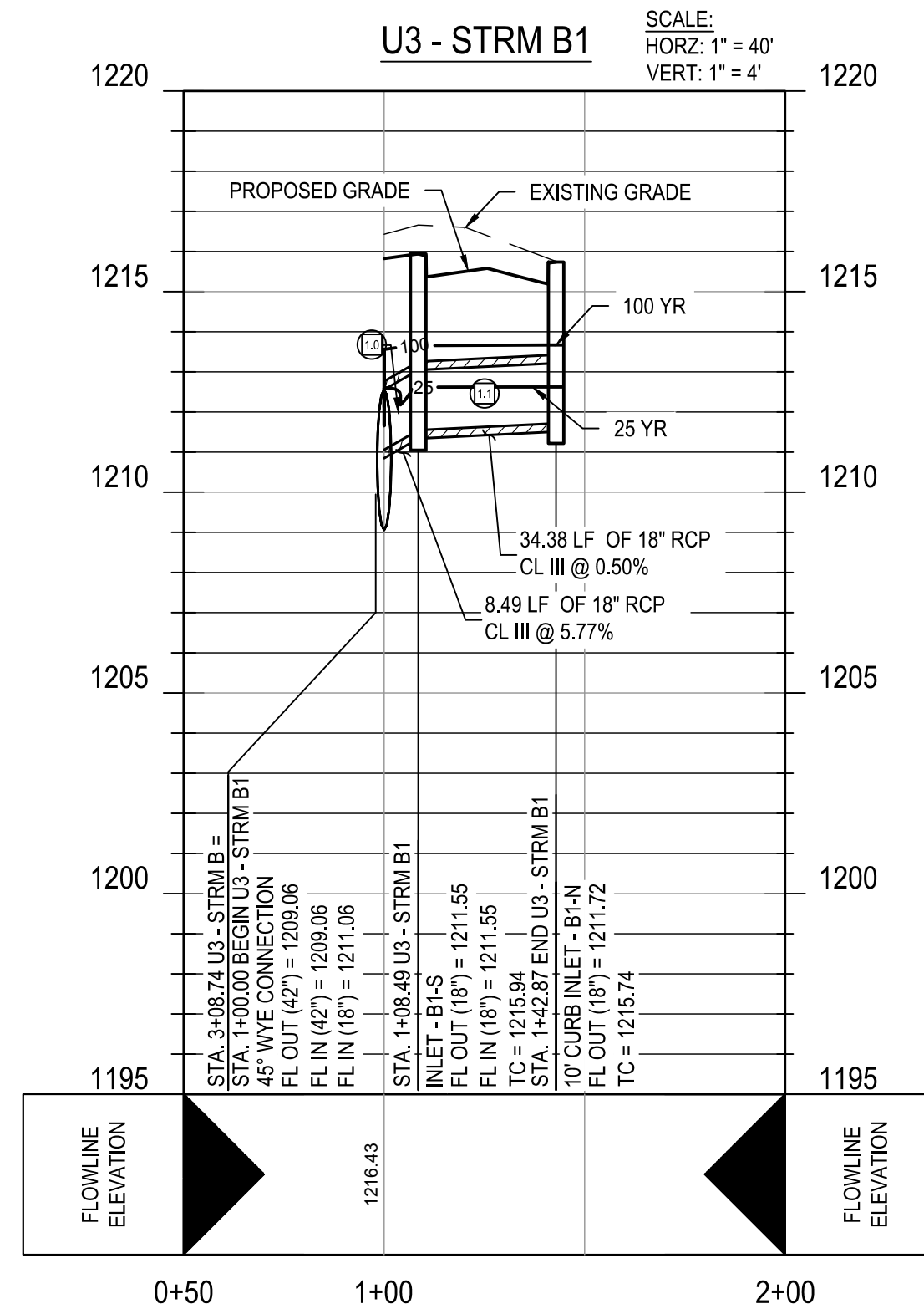
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<p>BGE, INC. 7330 San Pedro, Suite 202 San Antonio, TX 78216 Tel: 214-368-3600 www.bgeinc.com TX P.E. Registration No. P-1040</p>	<p>CANYON RANCH UNIT 3 STORM DRAIN A LATERAL PLAN & PROFILE (SHEET 1 OF 3)</p>
<p>DESIGNED BY: SAR REVIEWED BY: SSM DRAWN BY: SAR</p>	<p>DATE: APR</p>
<p>STATE OF TEXAS STACY MULHOLLAND 146417 LICENSED PROFESSIONAL ENGINEER</p>	<p>04/05/2024 SHEET C06.16</p>



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W W PROPOSED WASTEWATER LINE
 - W PROPOSED WATER LINE
 - E PROPOSED ELECTRIC
 - - - 681 EXISTING 1' CONTOUR
 - - - 685 EXISTING 5' CONTOUR
 - - - 681 PROPOSED 1' CONTOUR
 - - - 685 PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - ➔ DIRECTION OF FLOW
 - UTILITY CROSSING
 - - - UNIT BOUNDARY
 - - - PROPERTY BOUNDARY
 - - - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - * ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM B1.0	7.70	12.55	1.54
STRM B1.1	1.56	3.33	1.08
STRM B2	7.18	18.44	1.38
STRM B3.0	7.51	12.67	1.20
STRM B3.1	7.53	12.70	1.18
STRM B3.2	7.55	12.70	1.19

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM B1.0	11.15	6.31	2.50
STRM B1.1	2.24	1.27	2.11
STRM B2	10.30	20.43	2.27
STRM B3.0	10.77	13.96	2.03
STRM B3.1	10.79	13.99	1.43
STRM B3.2	10.82	13.99	1.44

TRENCH EXCAVATION SAFETY PROTECTION

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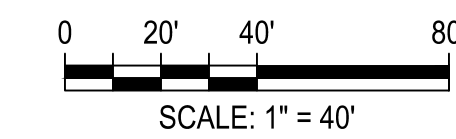
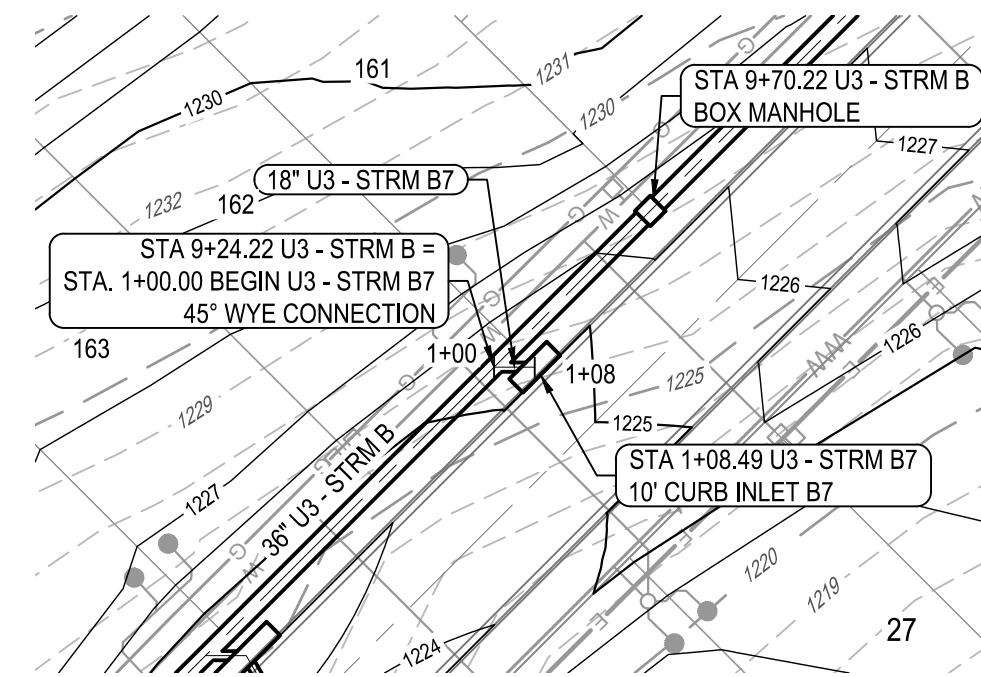
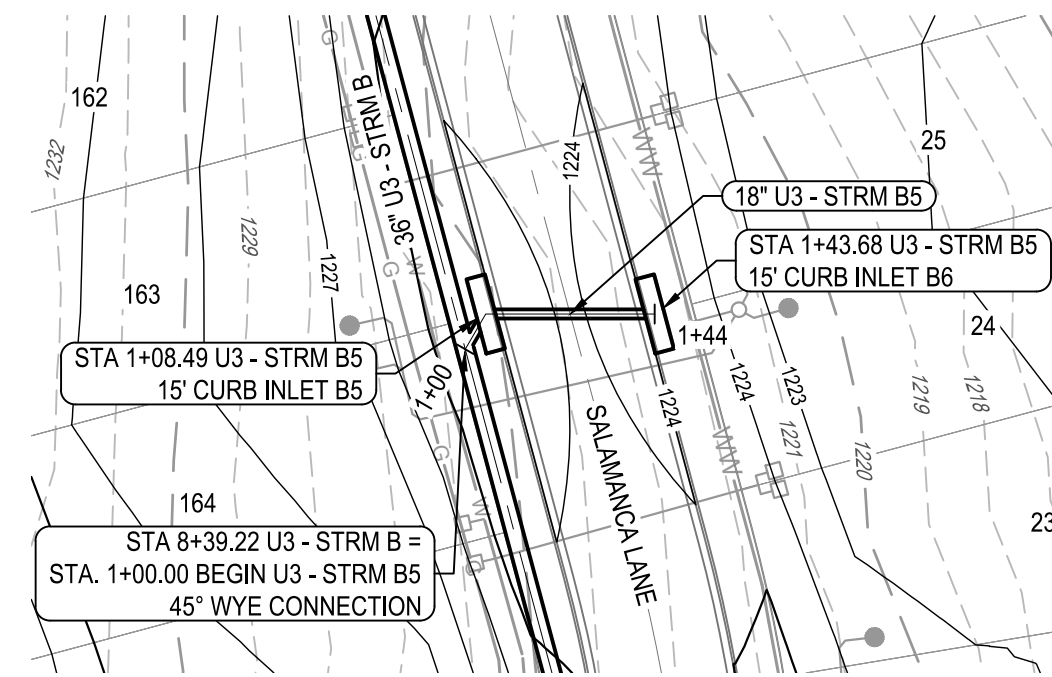
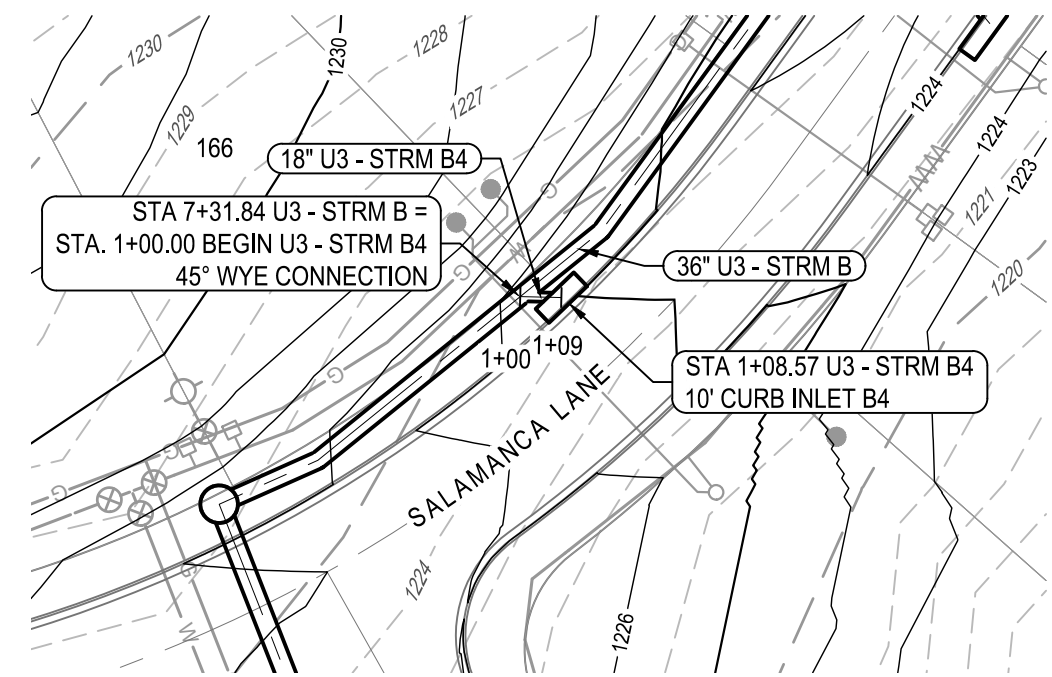
REV	DESCRIPTION	DATE	APR

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REVIEWED BY: SSM
DRAWN BY: SAR

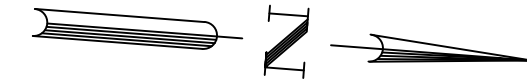
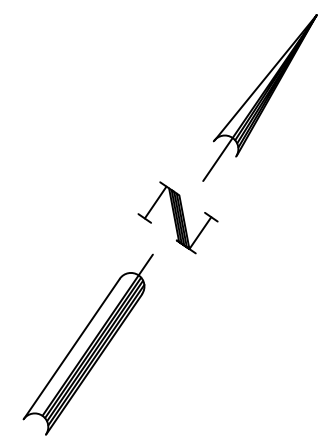
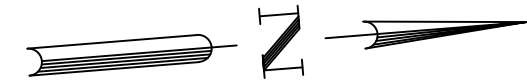
BGE
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-3600 www.bgeenergy.com
TXE Registration No. P-1046

CANYON RANCH UNIT 3
STORM DRAIN B LATERAL PLAN &
PROFILE (SHEET 1 OF 2)

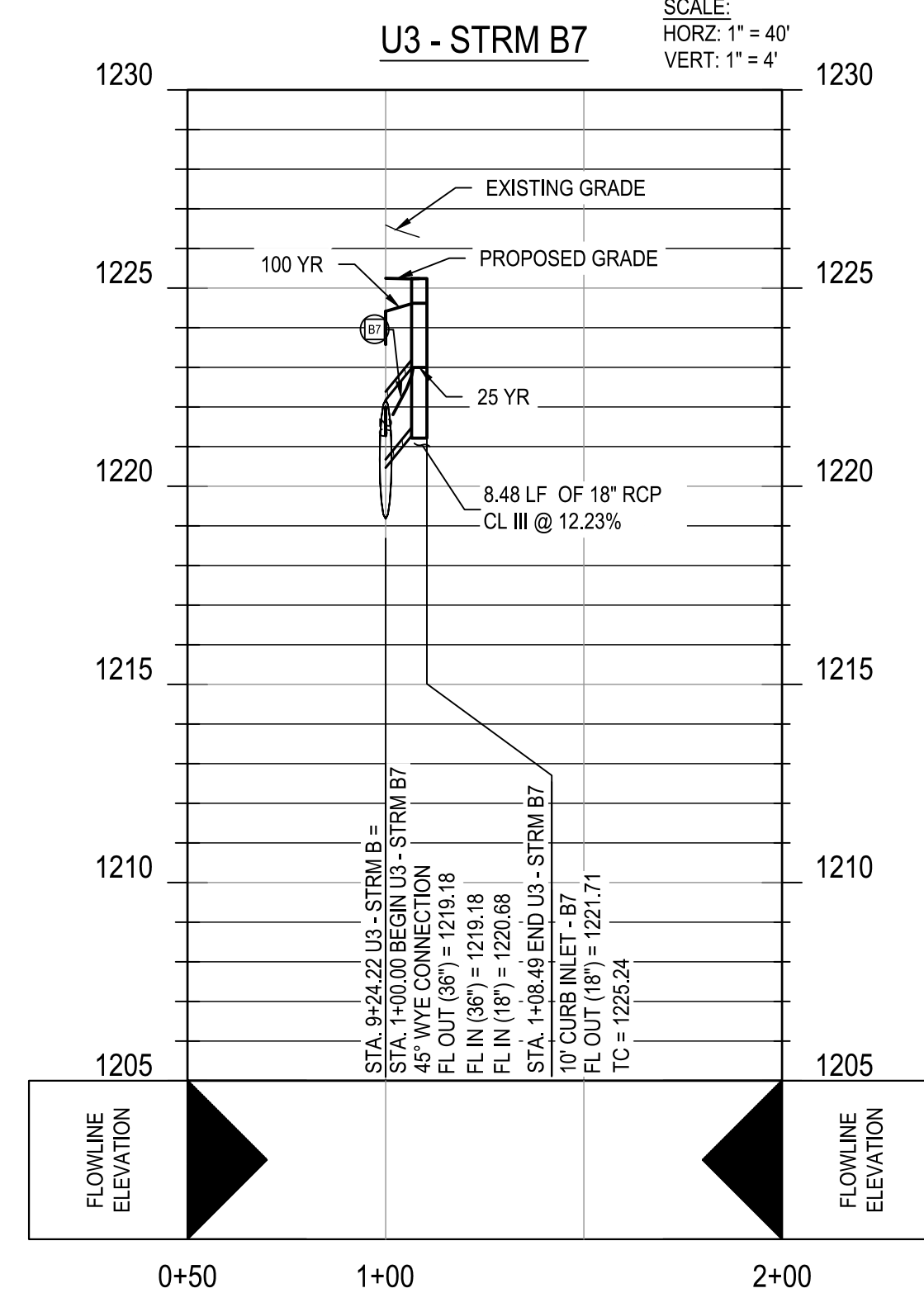
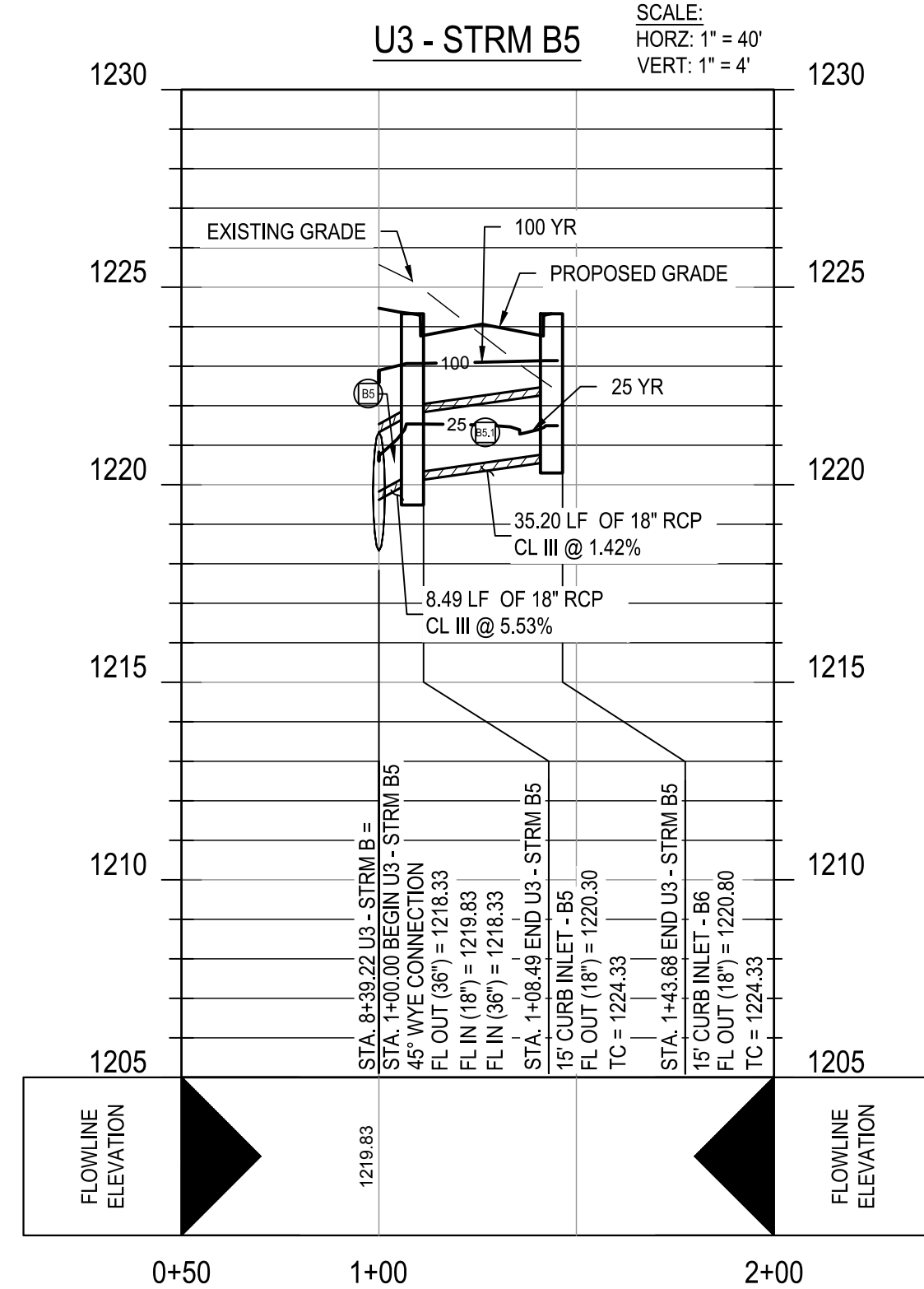
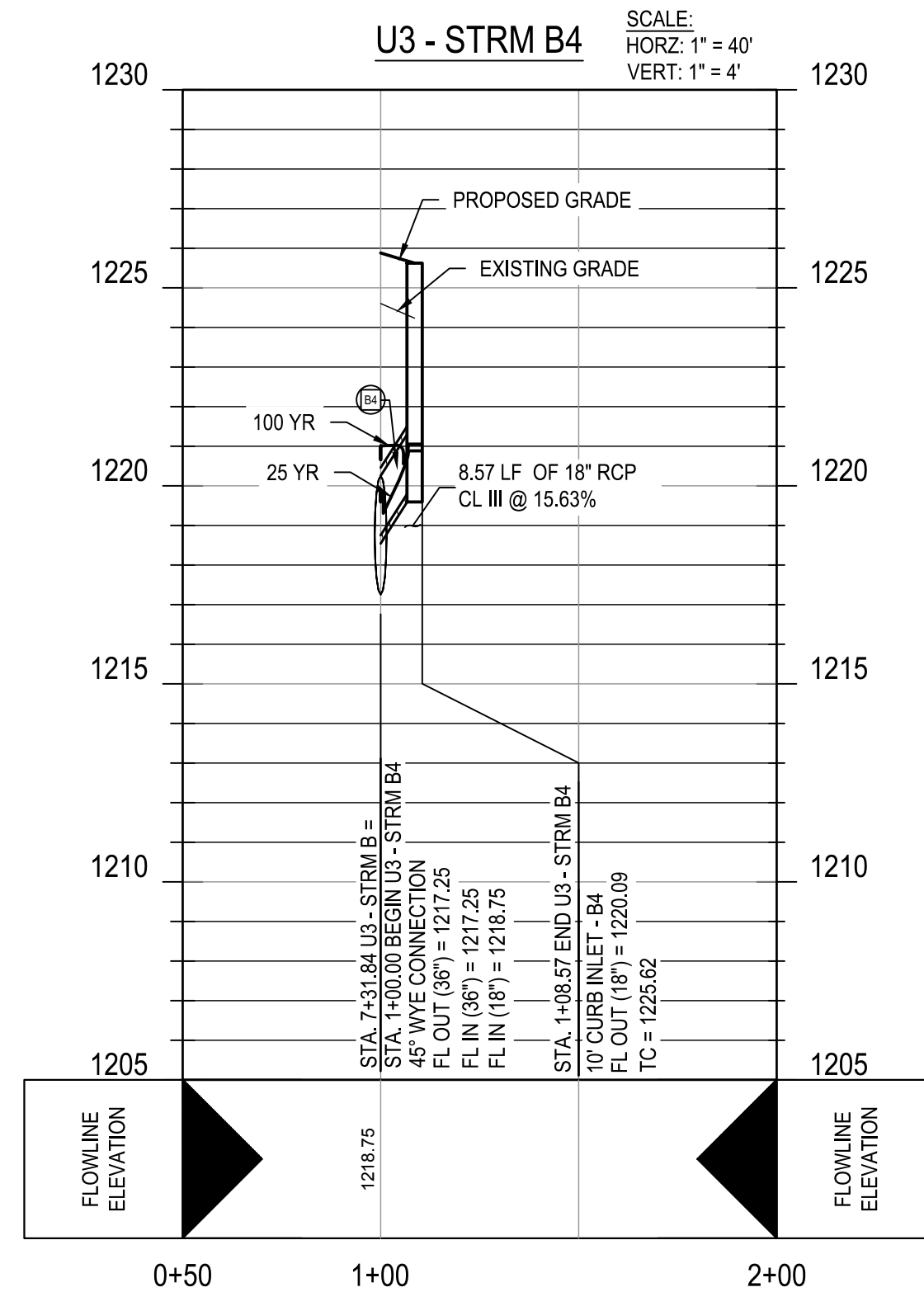
04/05/2024
SHEET
C06.19



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - PROPOSED WASTEWATER LINE
 - PROPOSED WATER LINE
 - PROPOSED ELECTRIC
 - EXISTING 1' CONTOUR
 - EXISTING 5' CONTOUR
 - PROPOSED 1' CONTOUR
 - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM B4	4.28	15.16	1.08
STRM B5.0	10.39	13.37	0.90
STRM B5.1	3.35	6.00	1.24
STRM B7	11.24	18.28	1.32

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM B4	6.21	16.88	2.26
STRM B5.0	14.96	8.47	3.07
STRM B5.1	4.83	2.74	2.77
STRM B7	16.22	9.18	3.74

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REV	DESCRIPTION	DATE	APR

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR

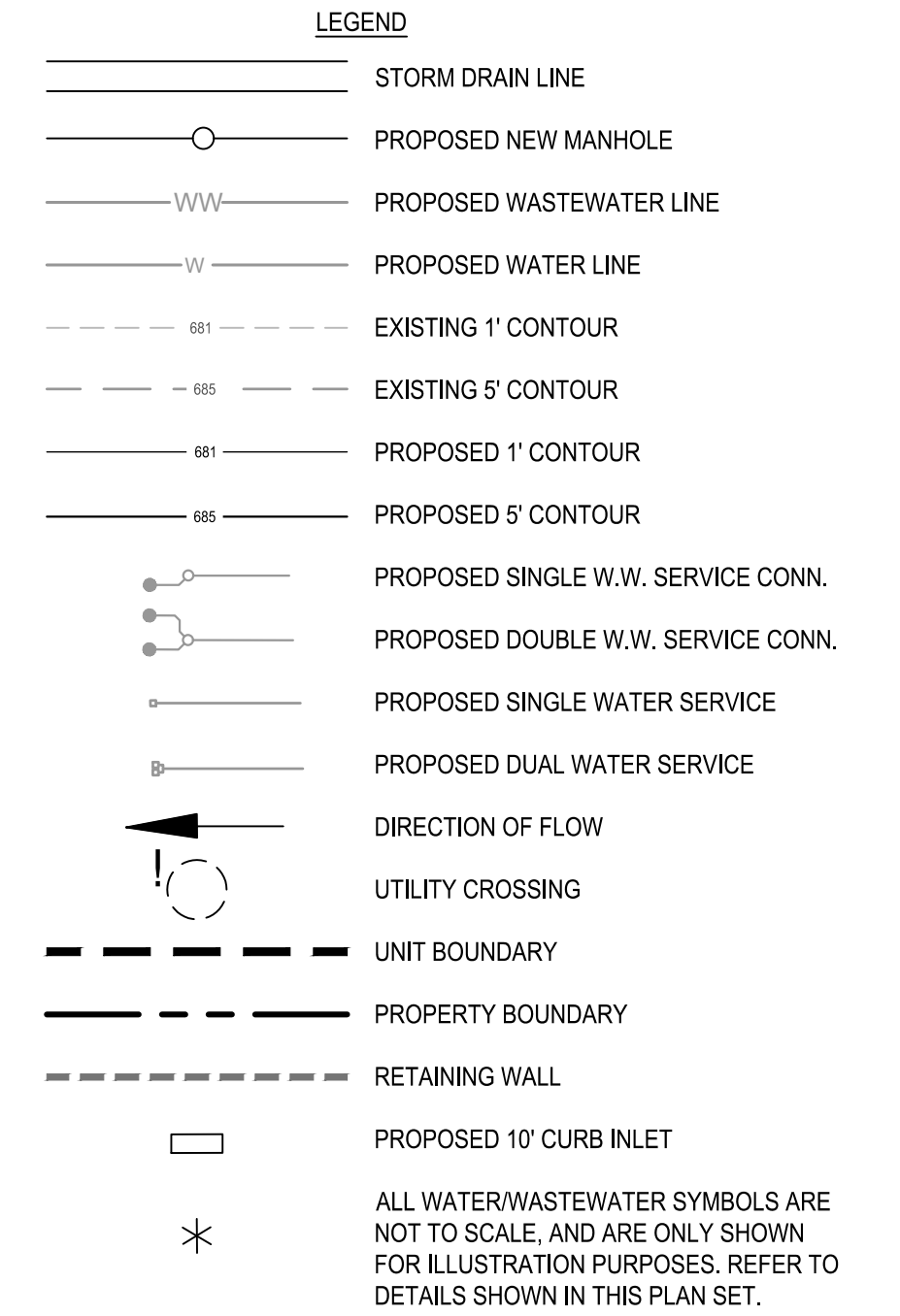
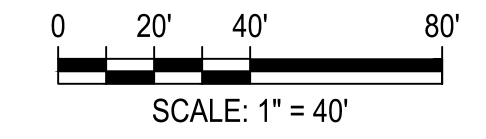
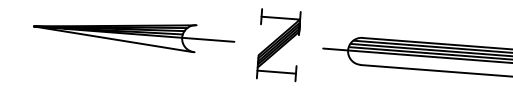
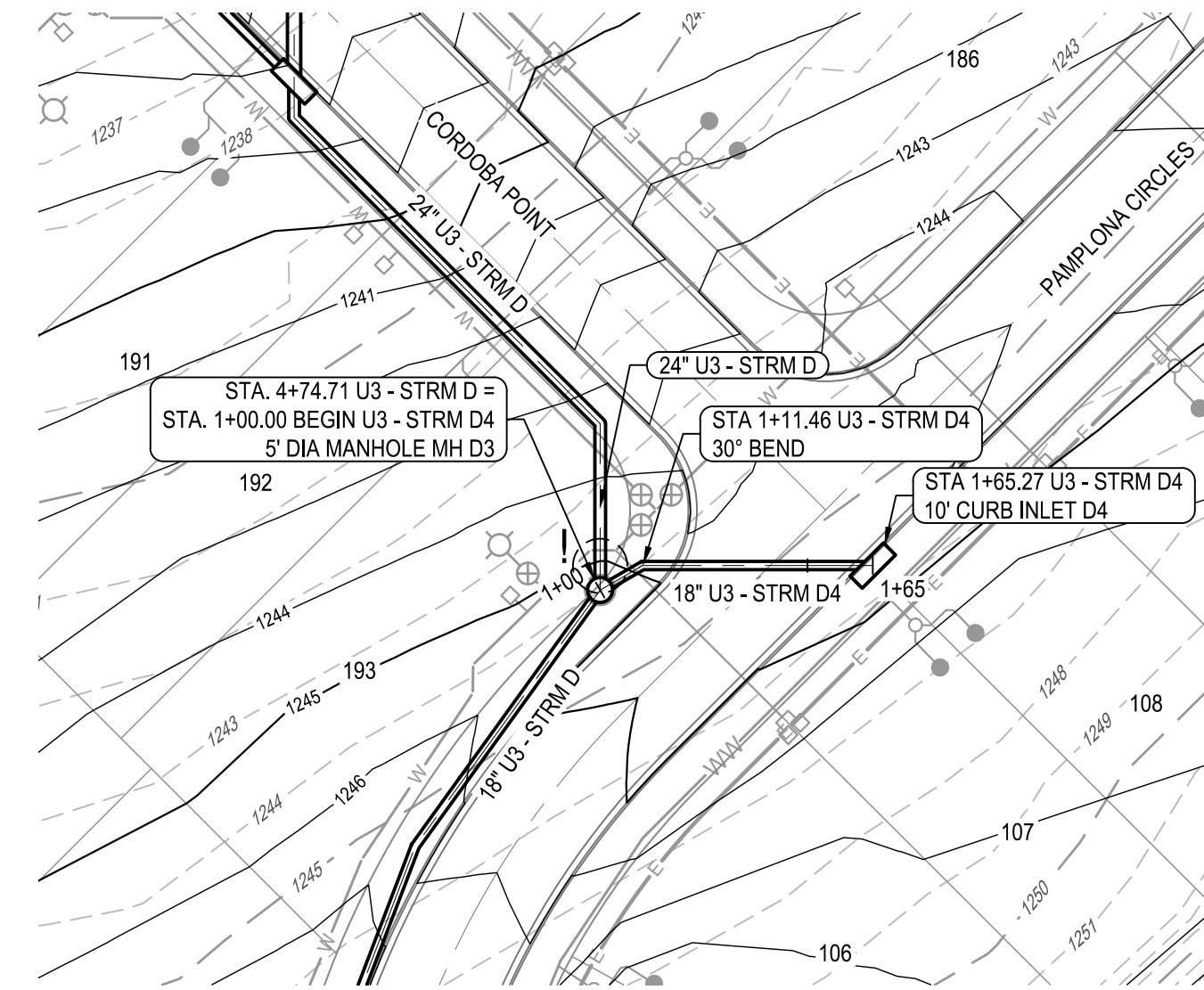


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 TEL: 214-360-3600 www.bgeenergy.com
 TXE Registration No. P-1040

CANYON RANCH UNIT 3
 STORM DRAIN B LATERAL PLAN &
 PROFILE (SHEET 2 OF 2)



G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\105 - Unit 3\03_CADD\01_Shts\06.22 STORM DRAIN D LATERAL PLAN & PROFILE.dwg Layout: STORM DRAIN D LATERAL PLAN & PROFILE Plotter: 2/20/2023 3:36:51 PM By: jcliffon

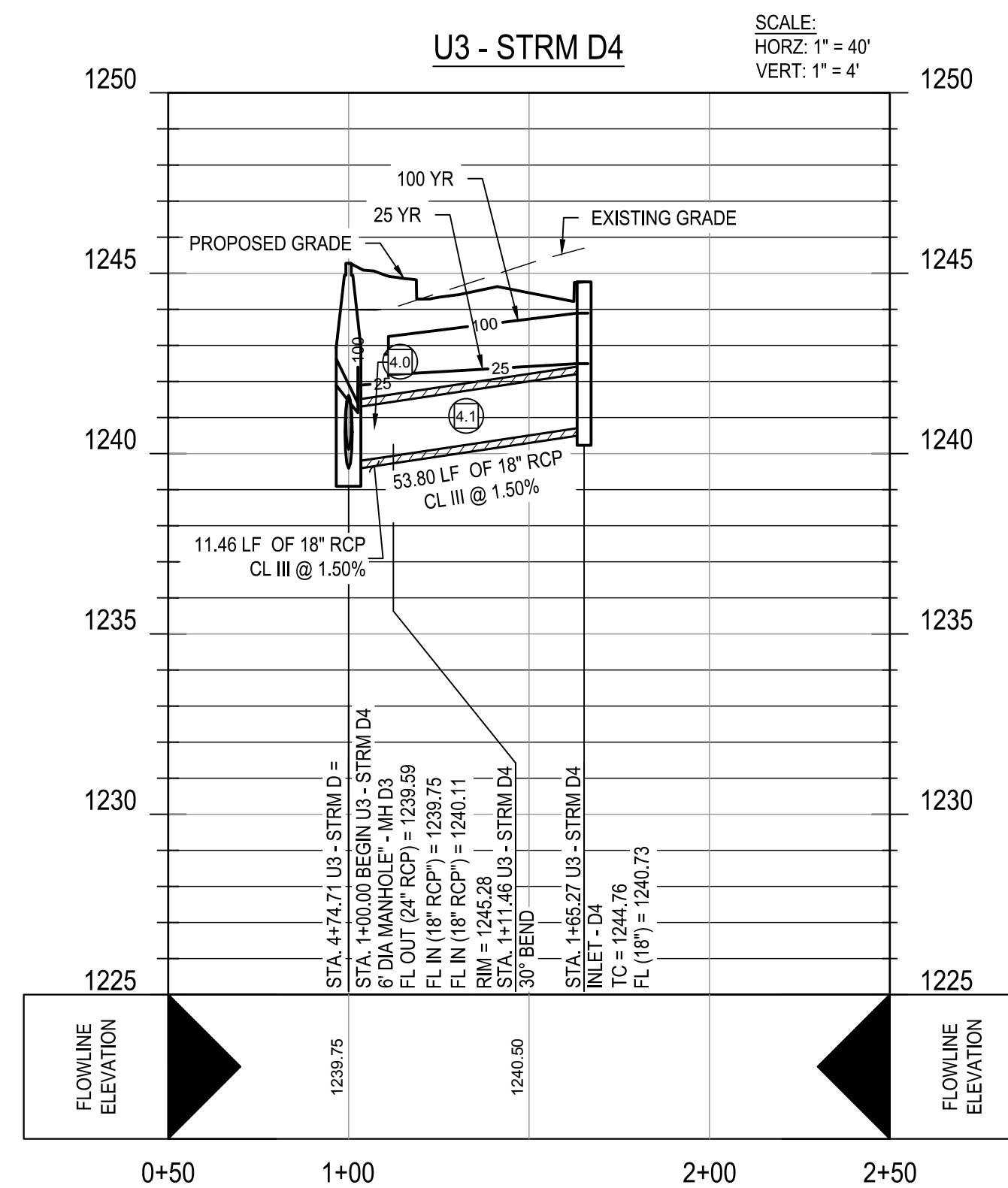


NOTES:

- COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
- CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
- CONTRACTOR TO CONNECT PROPOSED STORM SEWER OUTFALL TO POND.
- CONTRACTOR TO ENSURE THAT ALL OFF-SITE STORM WATER RUNOFF IS BYPASSED UNTIL PROPOSED DRAINAGE IMPROVEMENTS ARE CONSTRUCTED.
- CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.

PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM D4.0	7.84	4.44	2.14
STRM D4.1	7.91	4.48	2.26

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM D4.0	11.42	6.46	2.87
STRM D4.1	11.50	6.51	3.32



TRENCH EXCAVATION SAFETY PROTECTION

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DATE	REV	DESCRIPTION

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 REVIEWED BY: SSM
 DRAWN BY: SAR

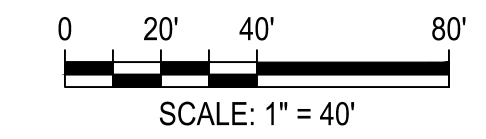
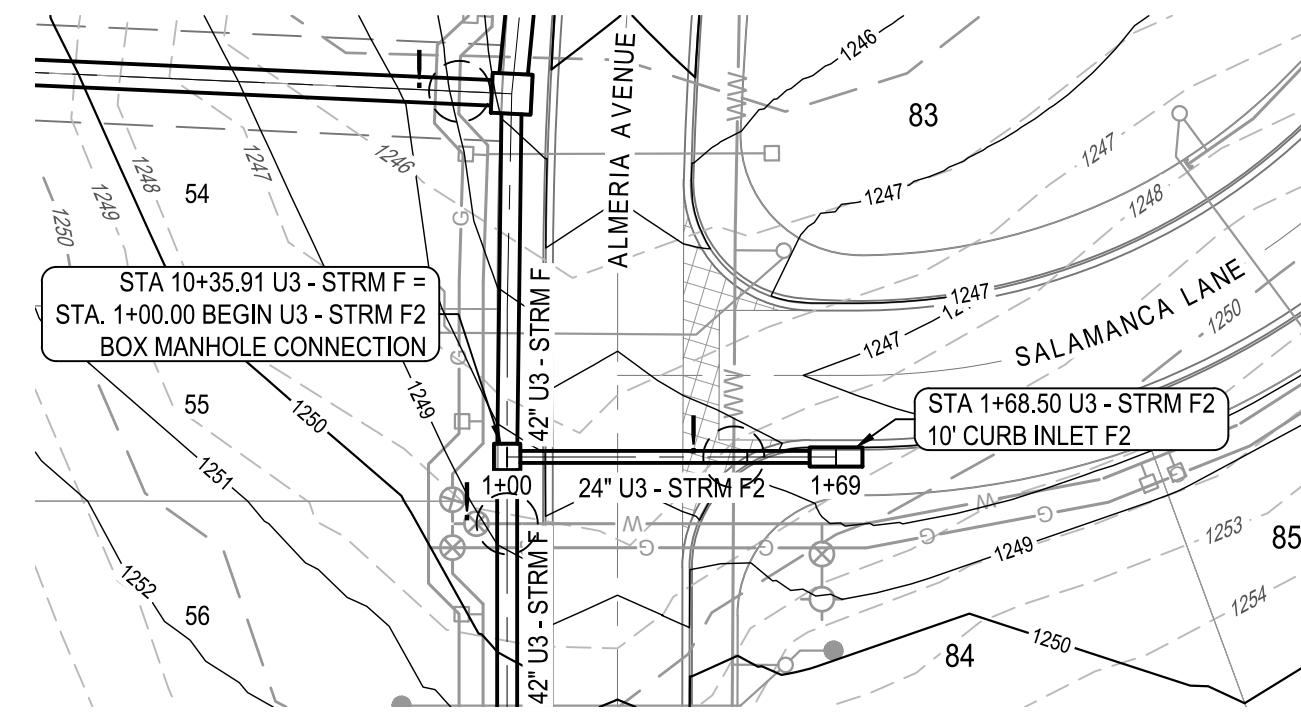
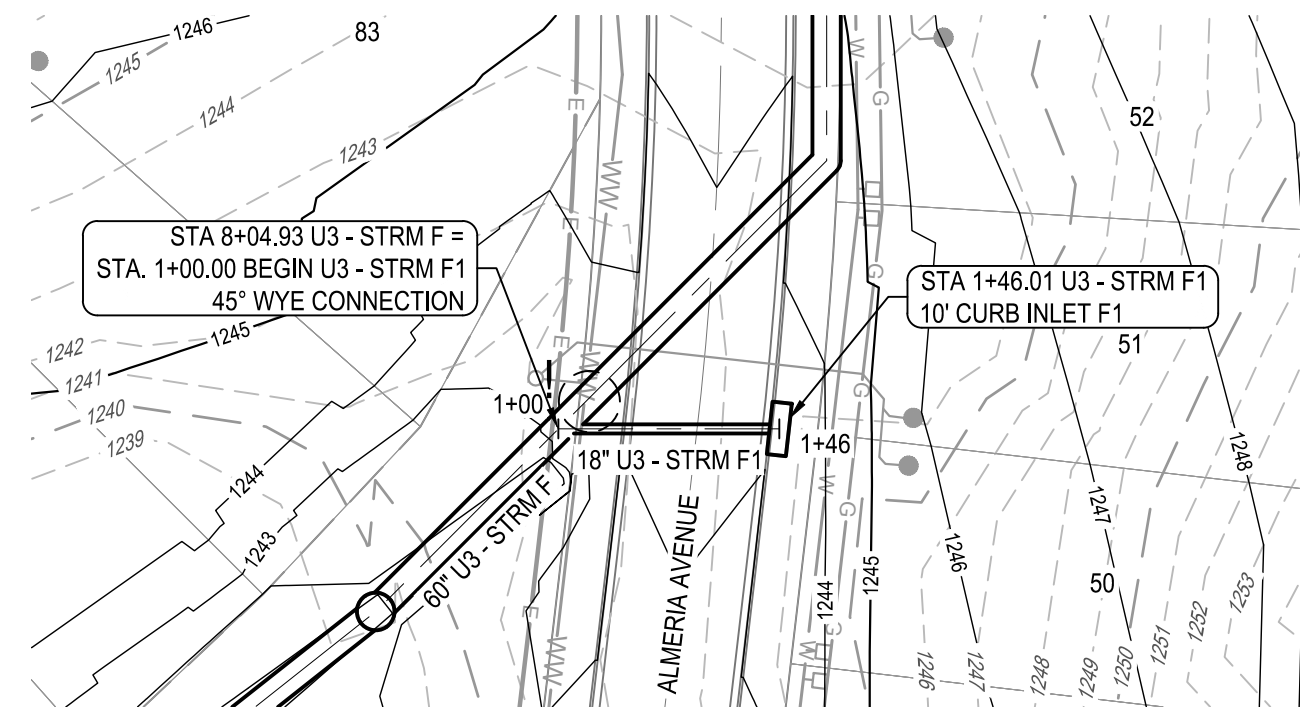


BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-3300 www.bgeny.com
 TPE Registration No. F-1049

CANYON RANCH UNIT 3
 STORM DRAIN D LATERAL PLAN & PROFILE

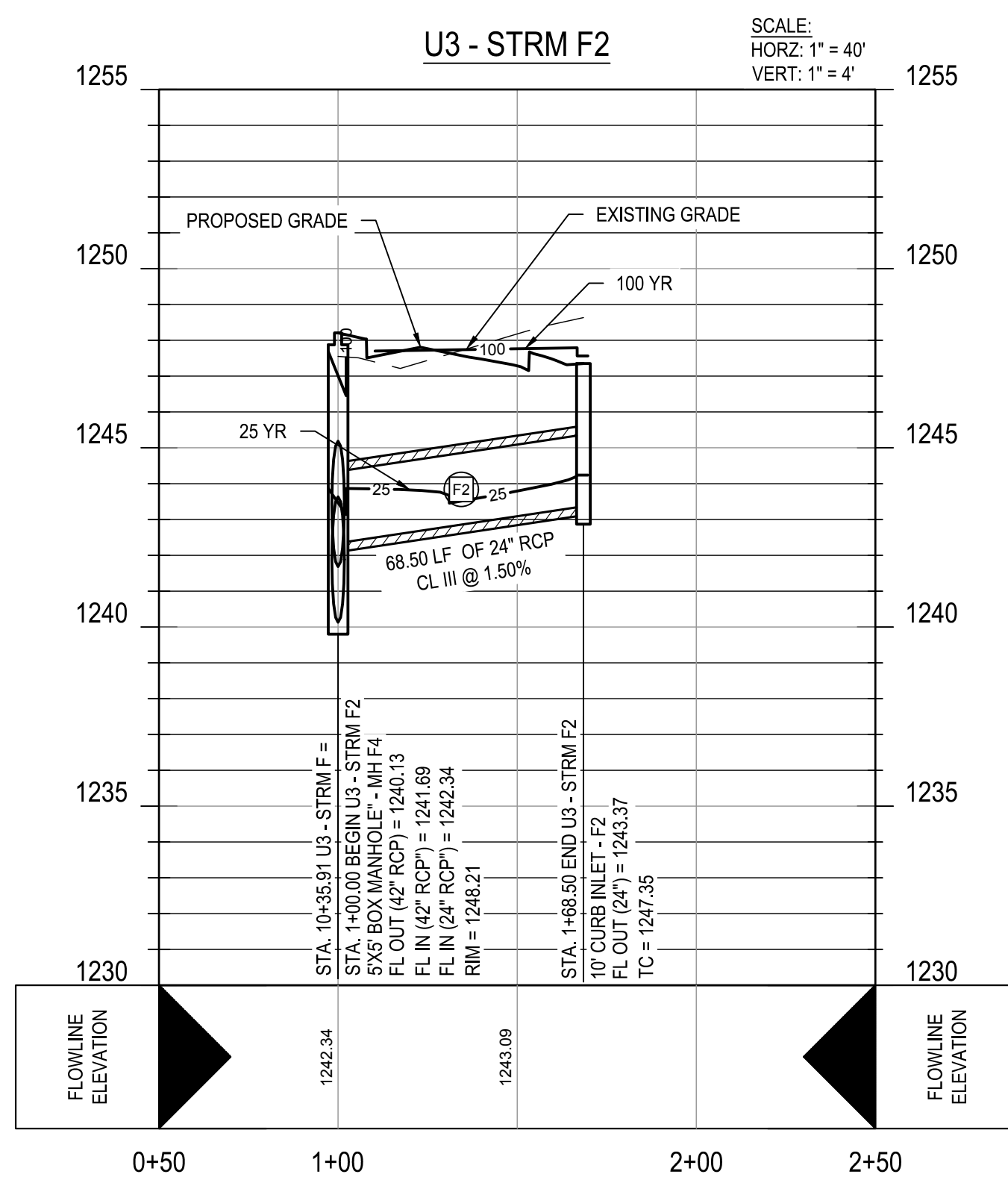
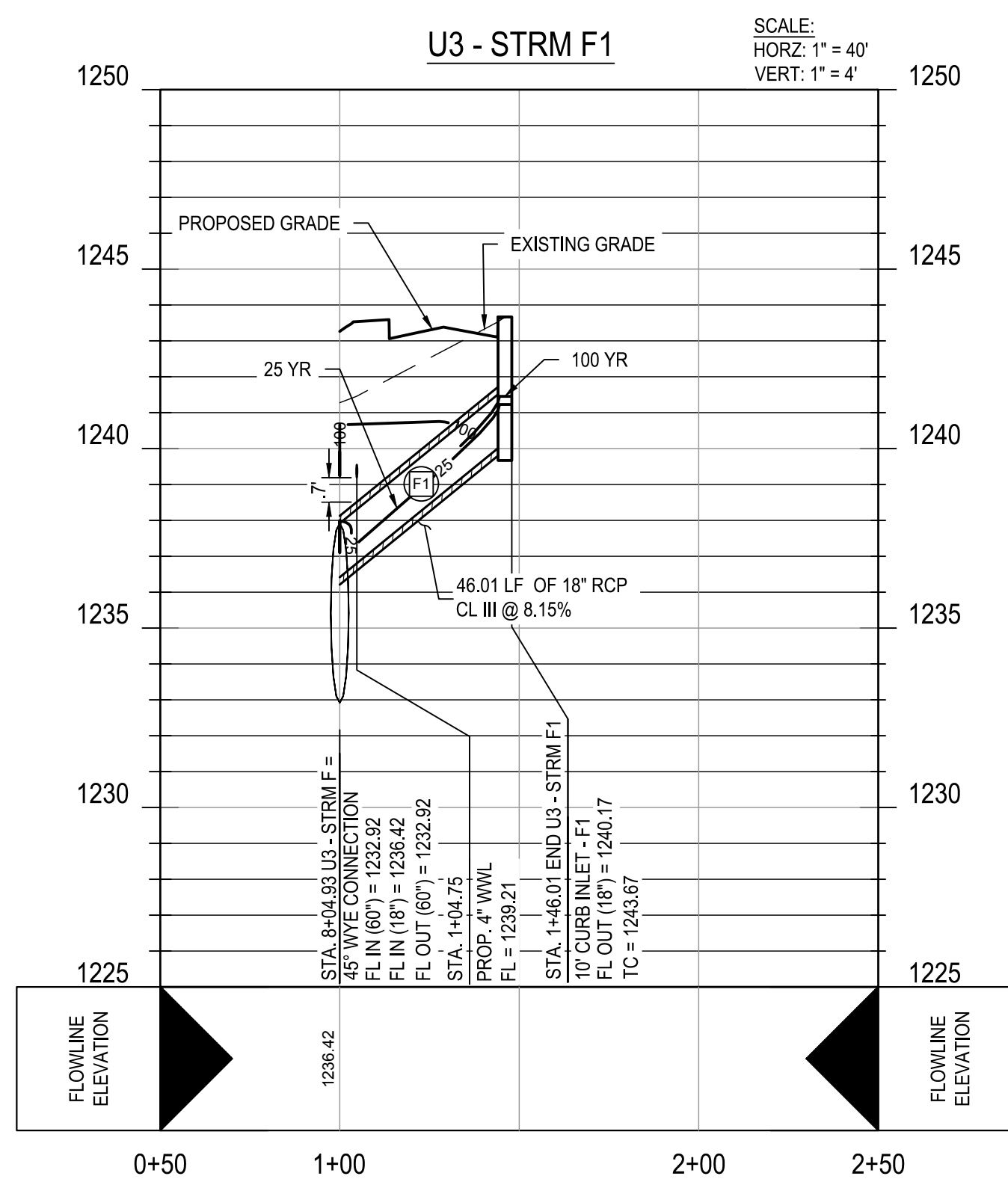


04/05/2024
 SHEET
 C06.21



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - WW — PROPOSED WASTEWATER LINE
 - W — PROPOSED WATER LINE
 - E — PROPOSED ELECTRIC
 - - - 681 - - - EXISTING 1' CONTOUR
 - - - 685 - - - EXISTING 5' CONTOUR
 - - - 681 - - - PROPOSED 1' CONTOUR
 - - - 685 - - - PROPOSED 5' CONTOUR
 - PROPOSED SINGLE W.W. SERVICE CONN.
 - PROPOSED DOUBLE W.W. SERVICE CONN.
 - PROPOSED SINGLE WATER SERVICE
 - PROPOSED DUAL WATER SERVICE
 - DIRECTION OF FLOW
 - UTILITY CROSSING
 - - - UNIT BOUNDARY
 - - - PROPERTY BOUNDARY
 - - - RETAINING WALL
 - PROPOSED 10' CURB INLET
 - * ALL WATER/WASTEWATER SYMBOLS ARE NOT TO SCALE, AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES. REFER TO DETAILS SHOWN IN THIS PLAN SET.

- NOTES:**
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 2. CONTRACTOR TO DEFLECT STORM SEWER 1-DEGREE EACH 20 FT SEGMENT AS REQUIRED.
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 5. CONTRACTOR TO ADJUST MANHOLE RIM ELEVATIONS AS NEEDED TO ENSURE FLUSHNESS WITH PROPOSED GRADING.



PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM F1	8.85	14.40	1.58
STRM F2	6.07	7.06	1.54

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM F1	12.82	16.02	4.25
STRM F2	8.84	2.81	5.41

TRENCH EXCAVATION SAFETY PROTECTION

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	DATE
	REV
	DESCRIPTION

DESIGNED BY: SAR
 REVIEWED BY: SSM
 DRAWN BY: SAR

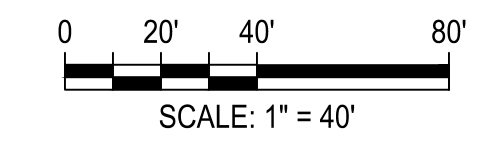
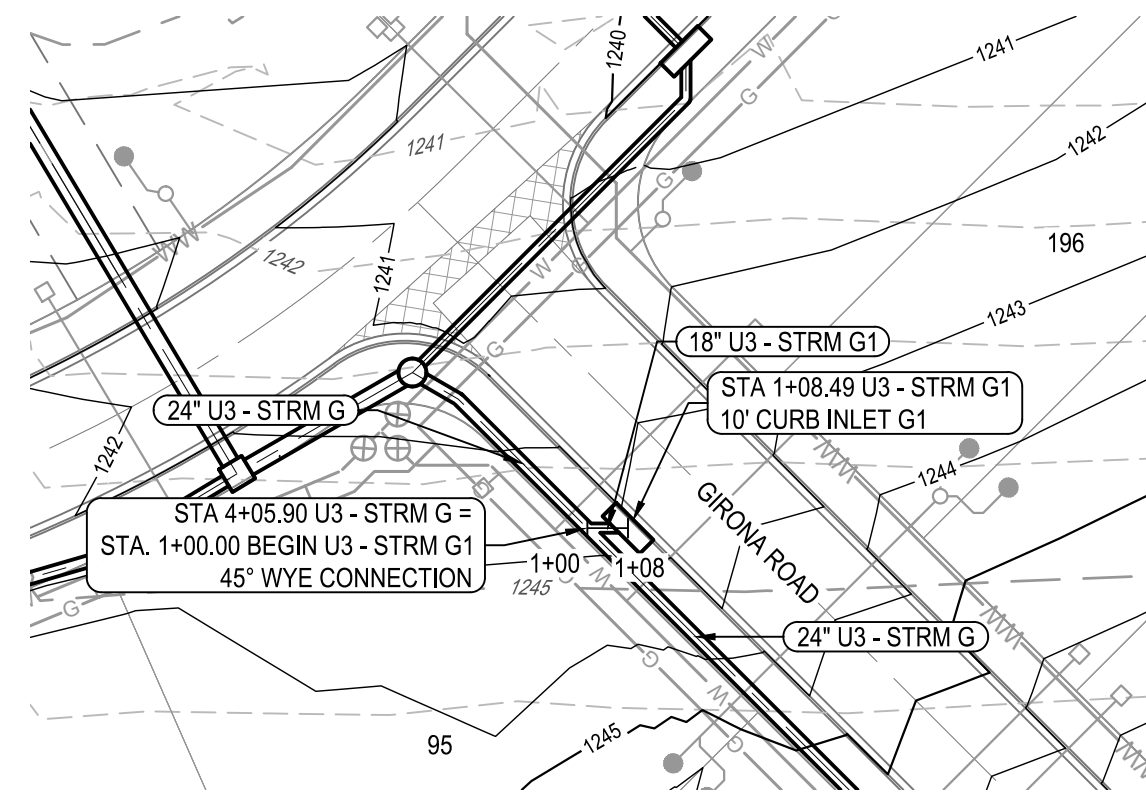
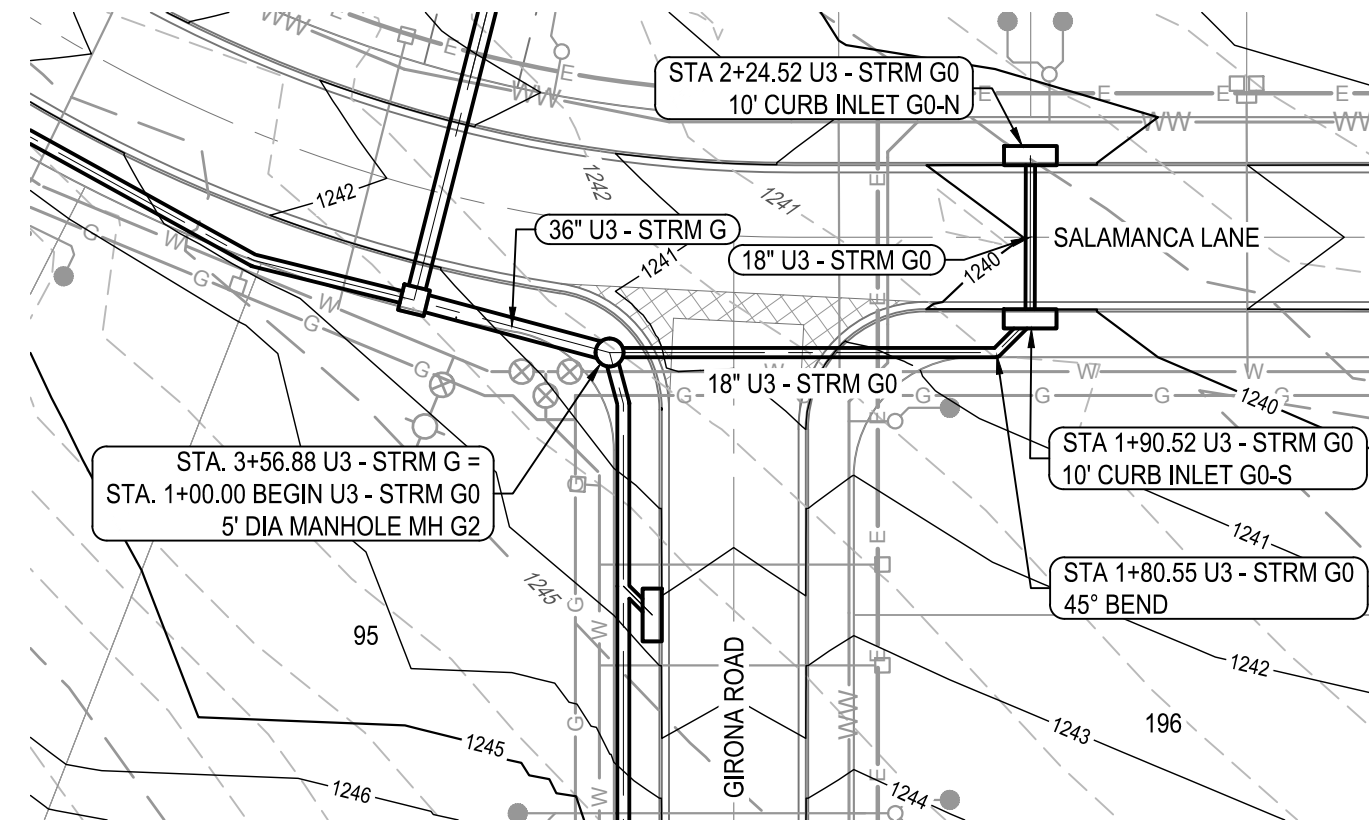
BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-368-3360 www.bgeny.com
 TPE Registration No. P-1049

CANYON RANCH UNIT 3

STORM DRAIN F LATERAL
 PLAN & PROFILE

04/05/2024
 SHEET
 C06.22

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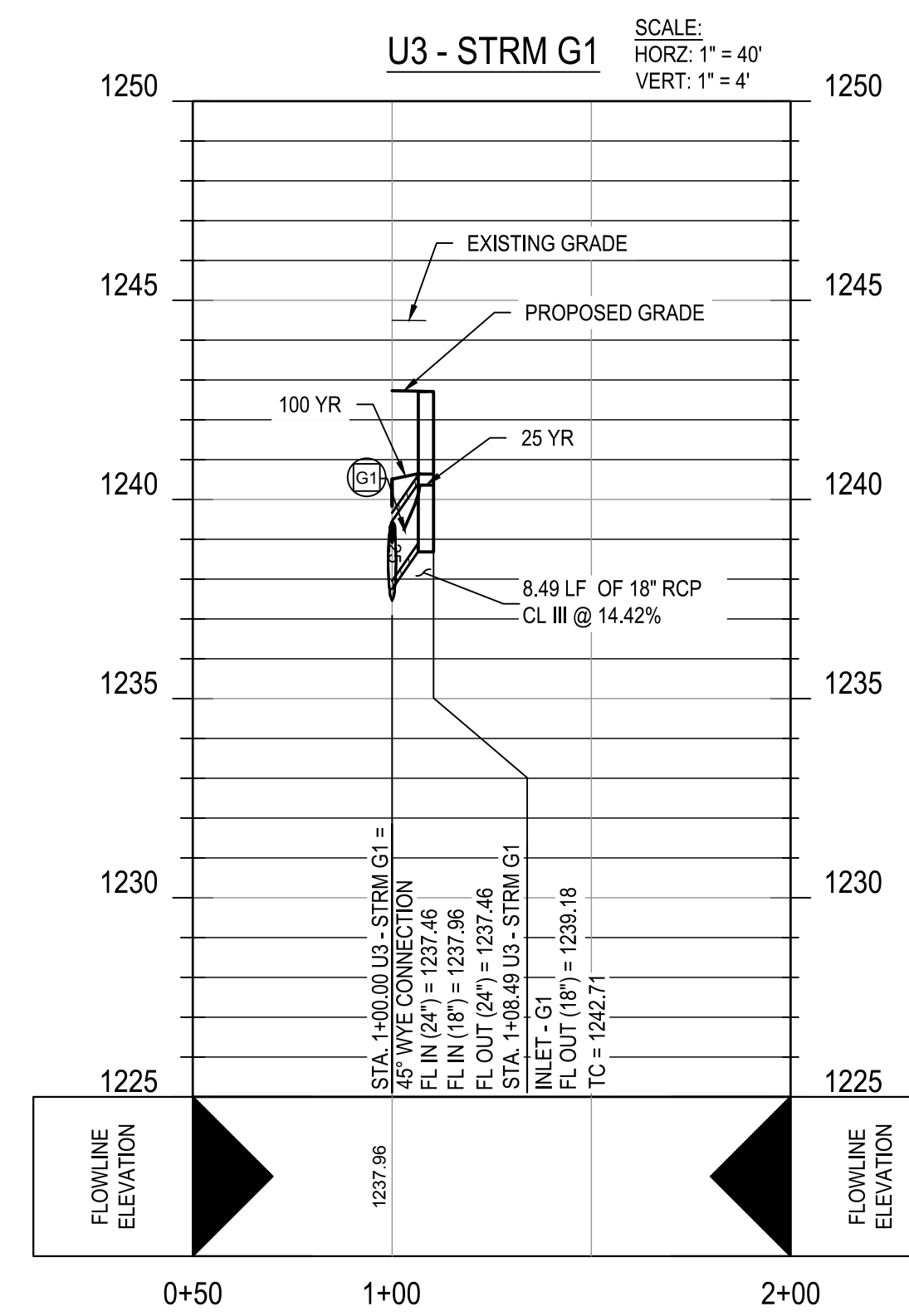
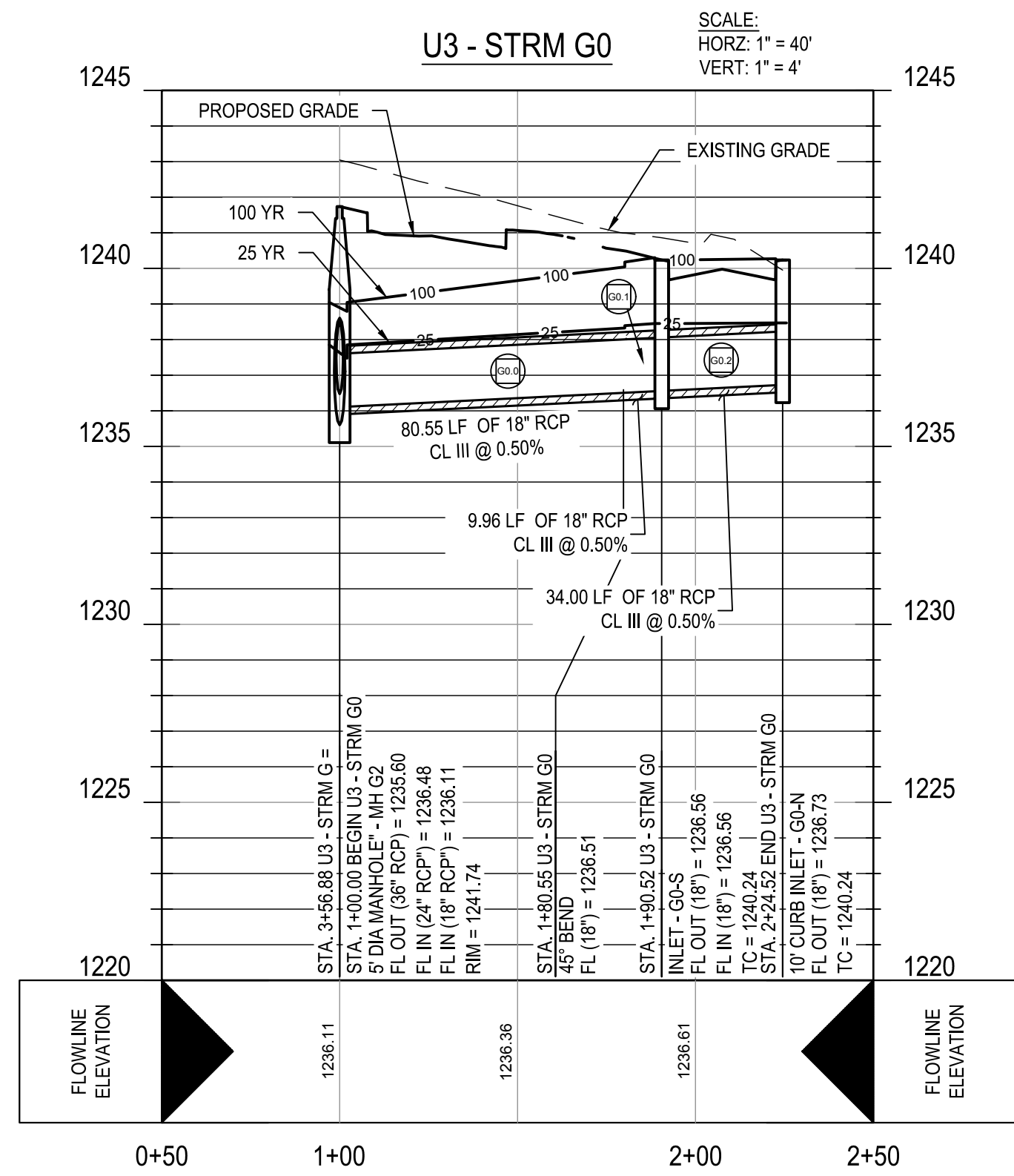
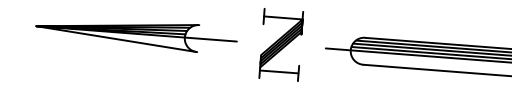
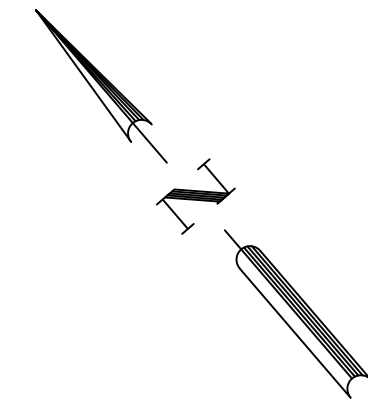


LEGEND

- STORM DRAIN LINE
- PROPOSED NEW MANHOLE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED ELECTRIC
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED SINGLE W.W. SERVICE CONN.
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- PROPOSED SINGLE WATER SERVICE
- PROPOSED DUAL WATER SERVICE
- DIRECTION OF FLOW
- UTILITY CROSSING
- UNIT BOUNDARY
- PROPERTY BOUNDARY
- RETAINING WALL
- PROPOSED 10' CURB INLET

NOTES:

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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM G0.0	8.06	4.56	1.47
STRM G0.1	8.08	4.57	1.59
STRM G0.2	2.49	3.79	1.60
STRM G1.0	9.28	18.38	1.47

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM G0.0	11.69	6.62	2.94
STRM G0.1	11.70	6.62	3.67
STRM G0.2	3.64	2.06	3.67
STRM G1.0	13.69	20.47	2.55

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3
STORM DRAIN G LATERAL
PLAN & PROFILE



04/05/2024
SHEET
C06.23

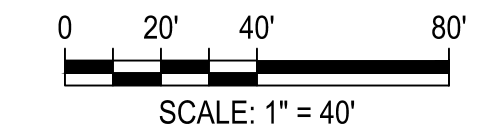
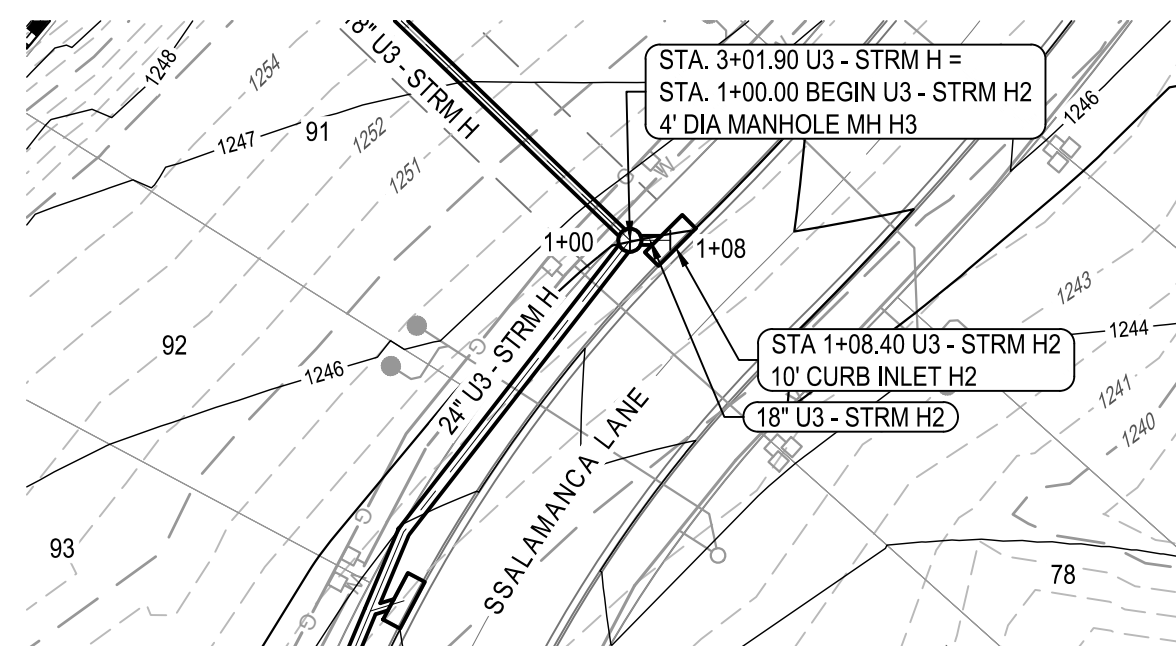
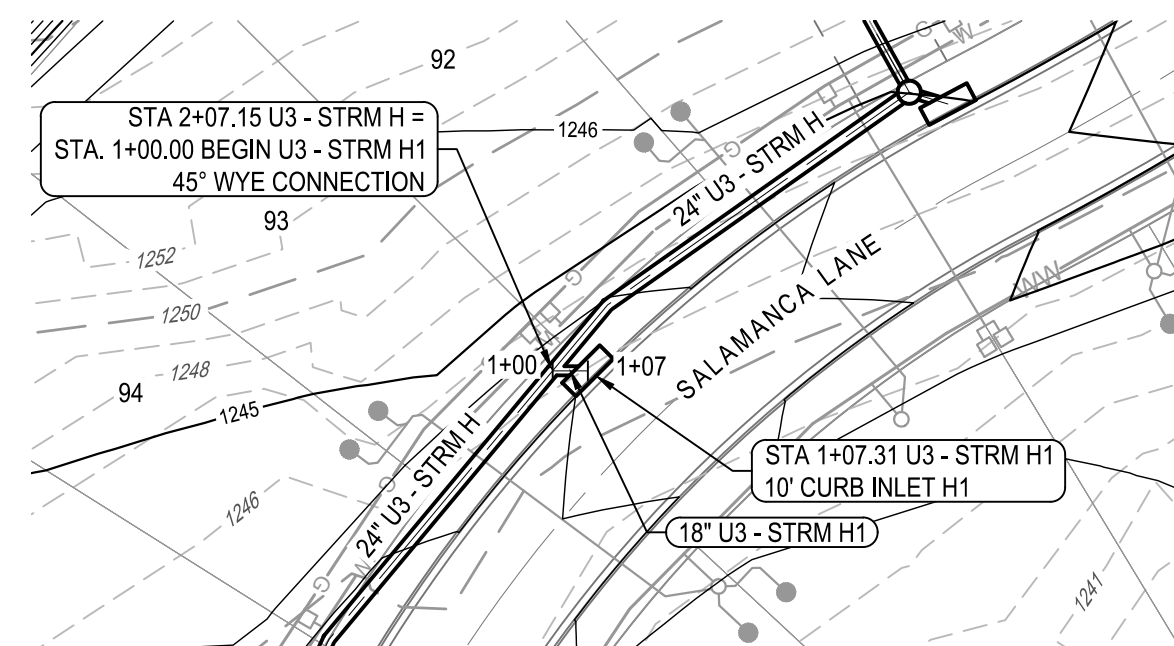
REV	DATE	DESCRIPTION

DESIGNED BY: SAR
REVIEWED BY: SSM
DRAWN BY: SAR



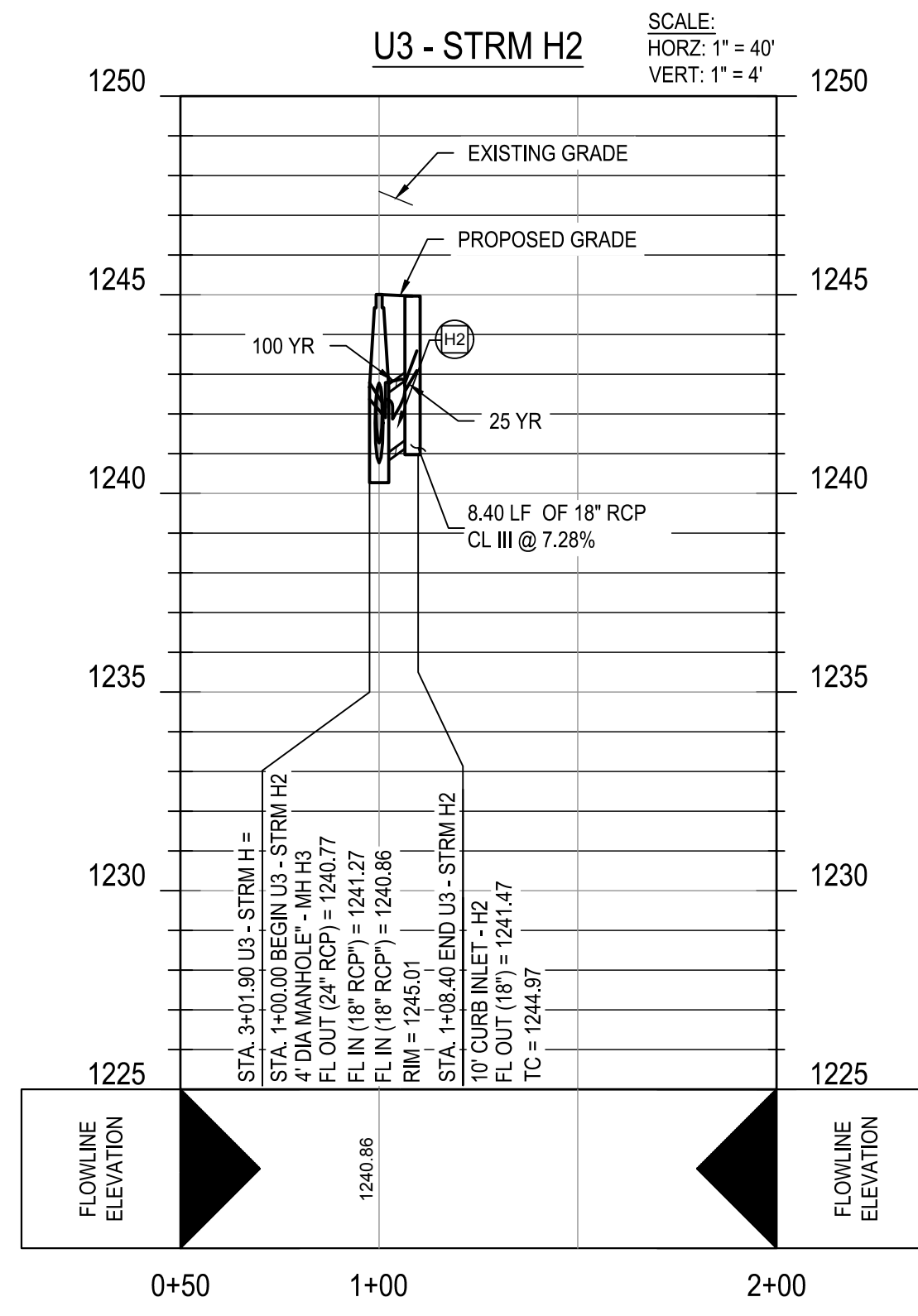
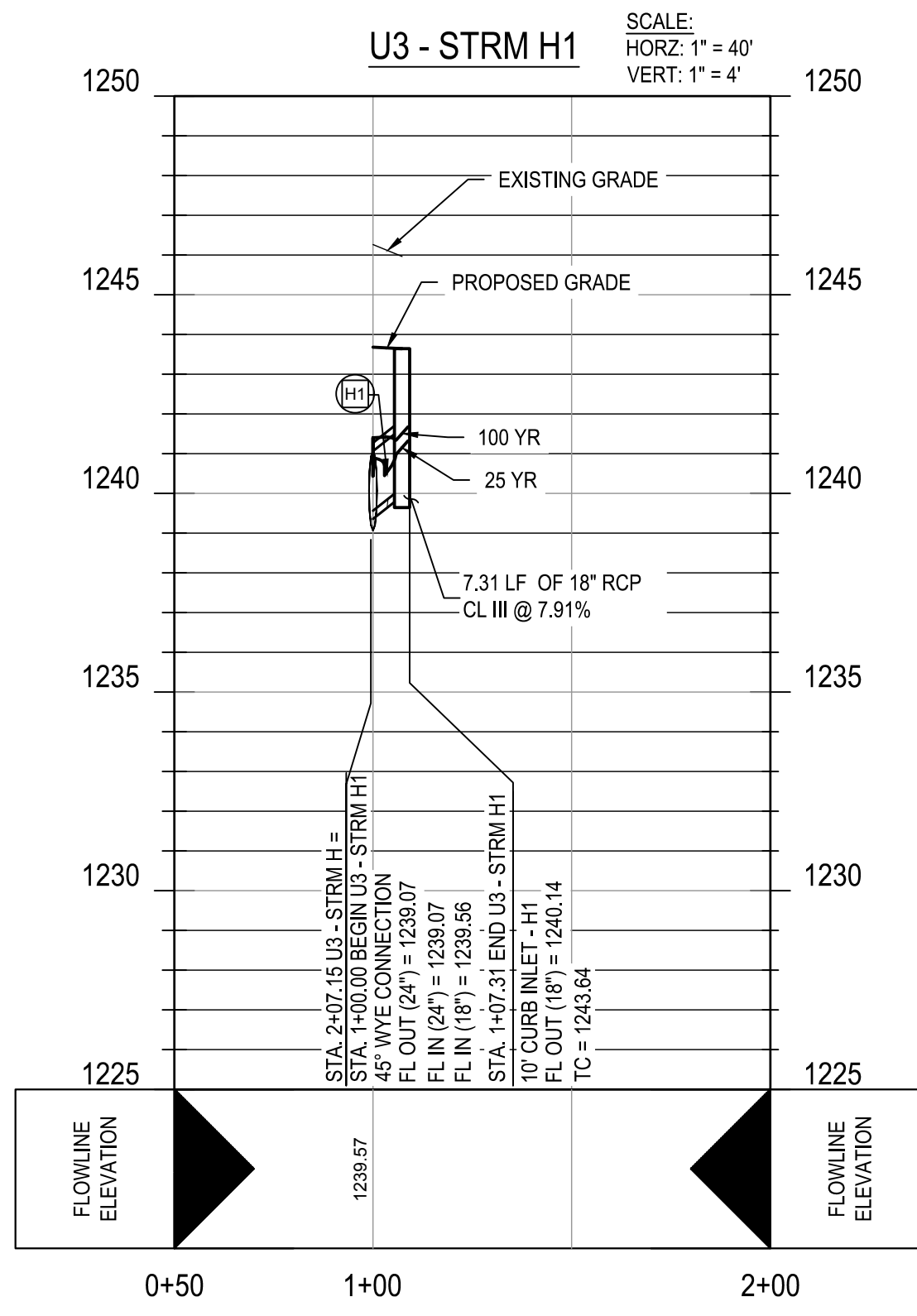
BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-368-3600 www.bgeenergy.com
TX P.E. Registration No. P-1049

G:\TXC\Projects\San Antonio Projects\12726-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C06.25 STORM DRAIN H LATERAL PLAN & PROFILE.dwg Layout: STORM DRAIN H LATERAL PLAN & PROFILE Plotter: 2/20/2023 3:40:35 PM By: jcliffon



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W W — PROPOSED WASTEWATER LINE
 - W — PROPOSED WATER LINE
 - E — PROPOSED ELECTRIC
 - - - 681 - - - EXISTING 1' CONTOUR
 - - - 685 - - - EXISTING 5' CONTOUR
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM H1	4.74	12.26	1.33
STRM H2	8.02	13.80	1.51

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM H1	6.96	13.68	1.83
STRM H2	11.77	15.29	1.93

TRENCH EXCAVATION SAFETY PROTECTION

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REV	DATE	DESCRIPTION
DESIGNED BY:	SAR	
REVIEWED BY:	SSM	
DRAWN BY:	SAR	

CANYON RANCH UNIT 3

STORM DRAIN H LATERAL PLAN & PROFILE

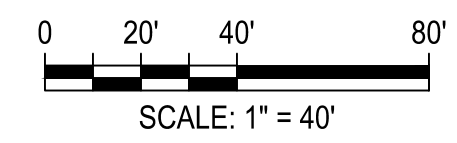
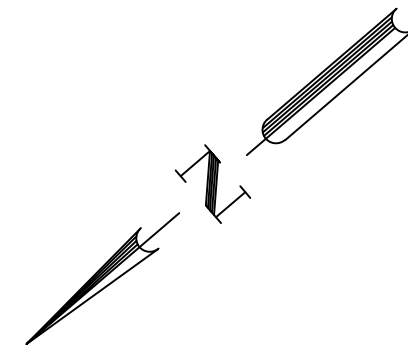
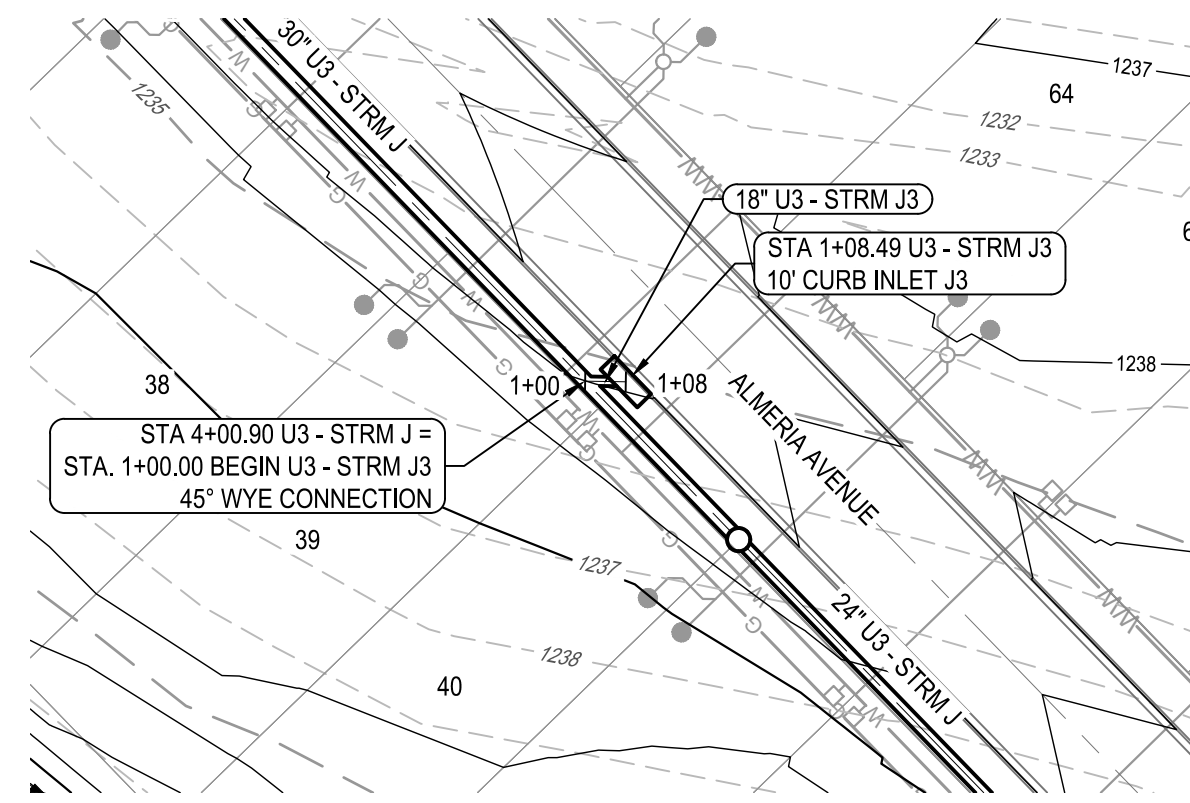
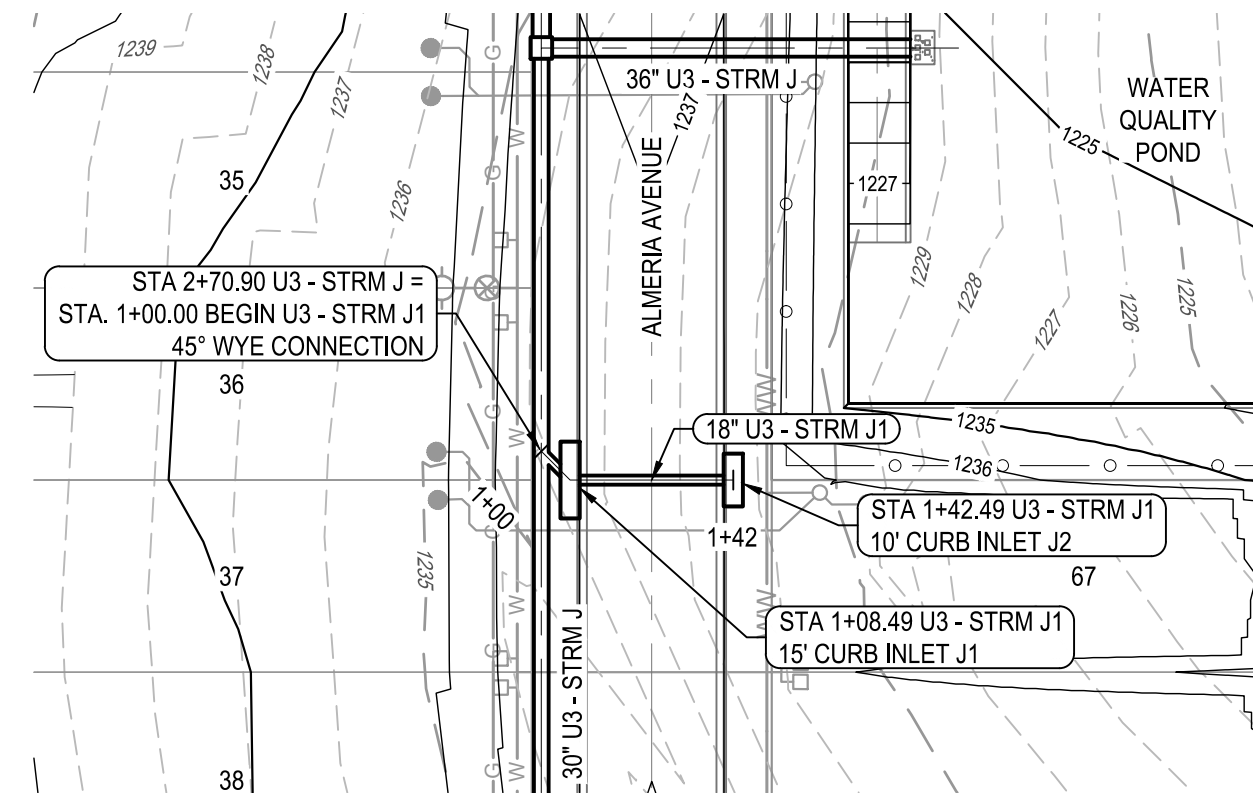
STACY MULHOLLAND
146417
PROFESSIONAL ENGINEER

04/05/2024

SHEET
C06.24

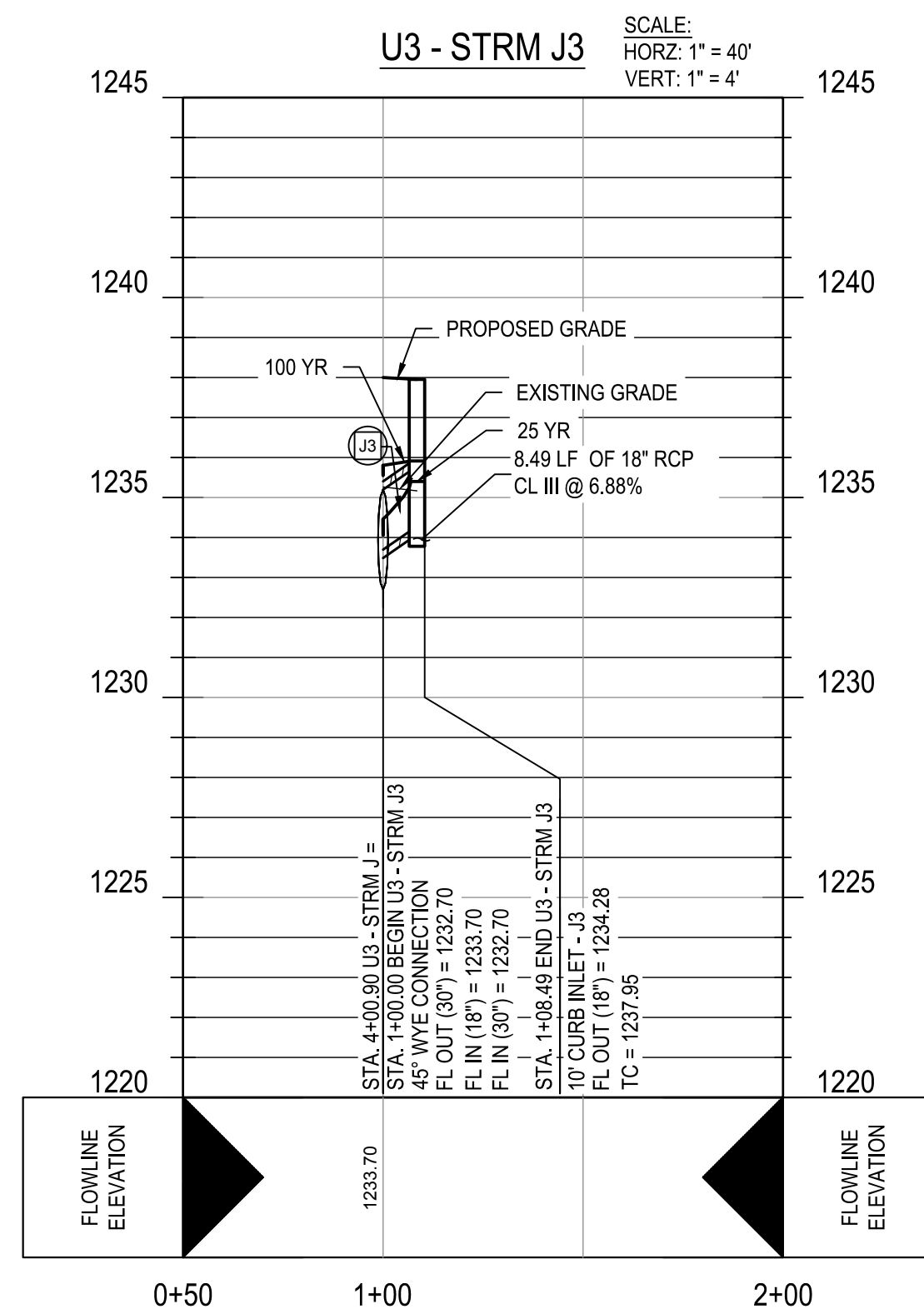
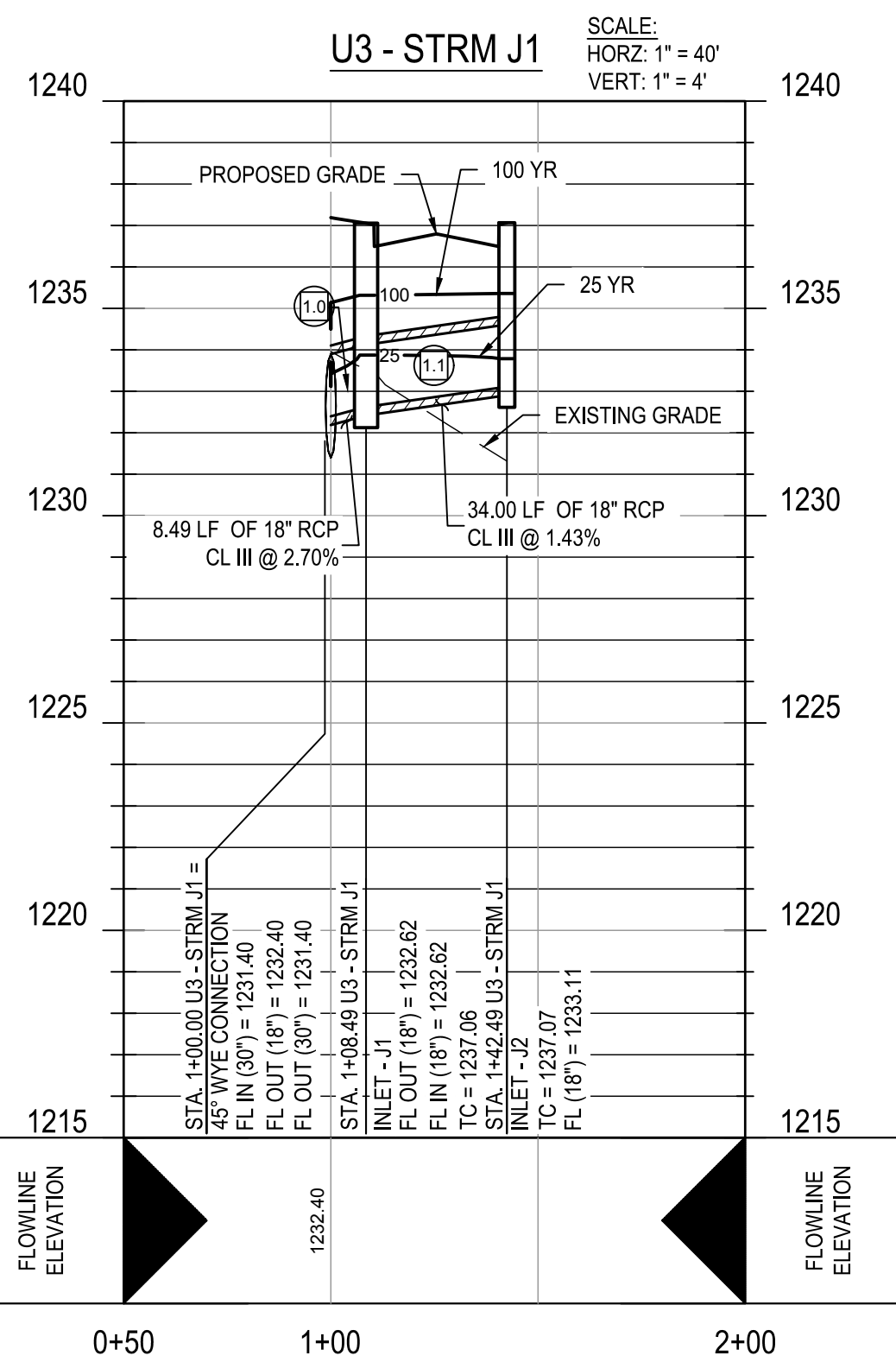


BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 214-338-3300 www.bgeenergy.com
TXPE Registration No. P-1040



- LEGEND**
- STORM DRAIN LINE
 - PROPOSED NEW MANHOLE
 - W—W— PROPOSED WASTEWATER LINE
 - W— PROPOSED WATER LINE
 - E— PROPOSED ELECTRIC
 - - - 681 EXISTING 1' CONTOUR
 - - - 685 EXISTING 5' CONTOUR
 - - - 681 PROPOSED 1' CONTOUR
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PIPE IDENTIFICATION	FLOW 25 (CFS)	VELOCITY 25 (FPS)	DEPTH 25 (FT)
STRM J1.0	10.57	10.26	1.31
STRM J1.1	2.57	5.59	1.25
STRM J3	8.36	13.67	0.76

PIPE IDENTIFICATION	FLOW 100 (CFS)	VELOCITY 100 (FPS)	DEPTH 100 (FT)
STRM J1.0	15.20	8.60	2.74
STRM J1.1	3.70	2.09	2.69
STRM J3	12.00	6.79	2.11

TRENCH EXCAVATION SAFETY PROTECTION

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CANYON RANCH UNIT 3

STORM DRAIN J LATERAL PLAN & PROFILE

DESIGNED BY: SAR

REVIEWED BY: SSM

DRAWN BY: SAR

DATE

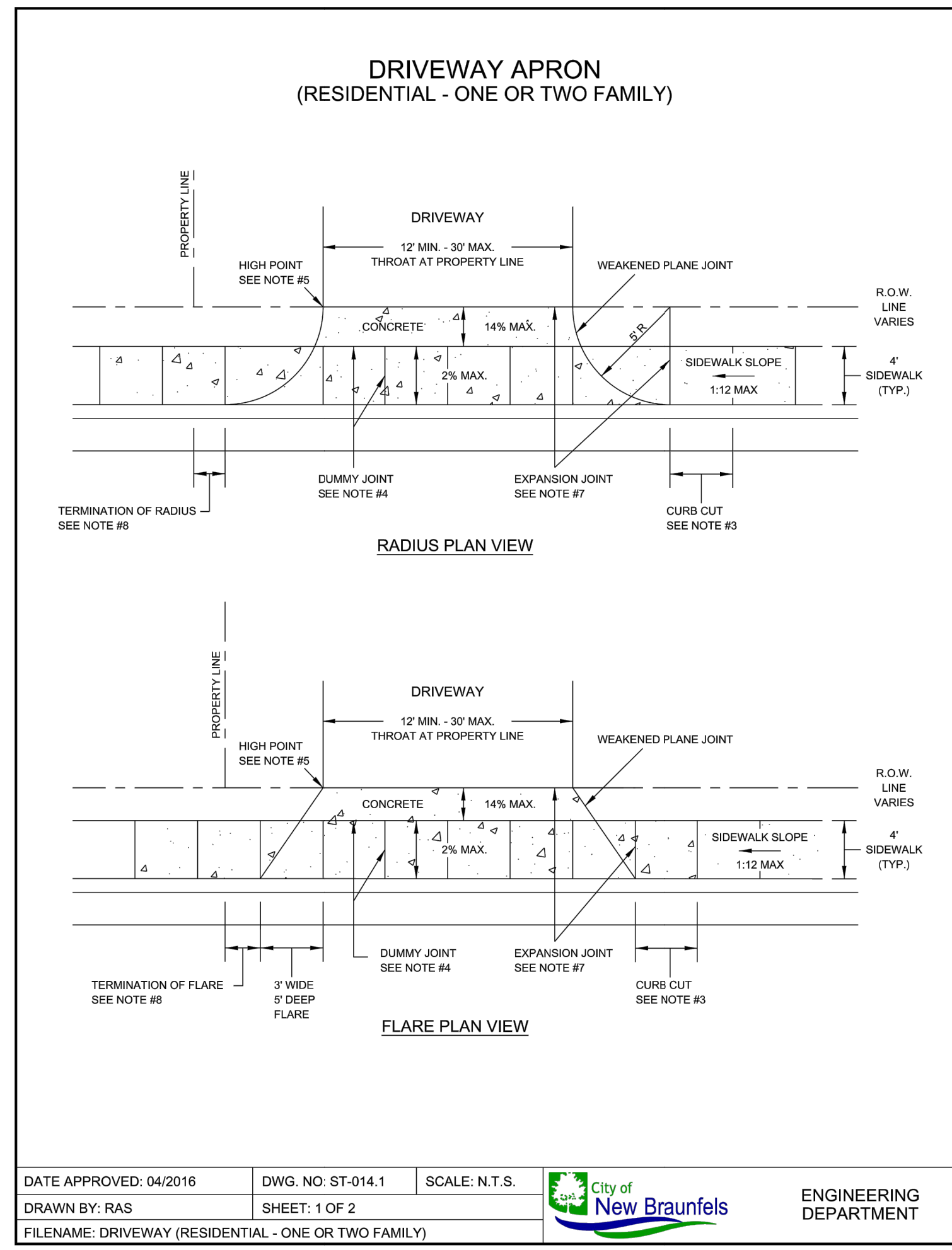
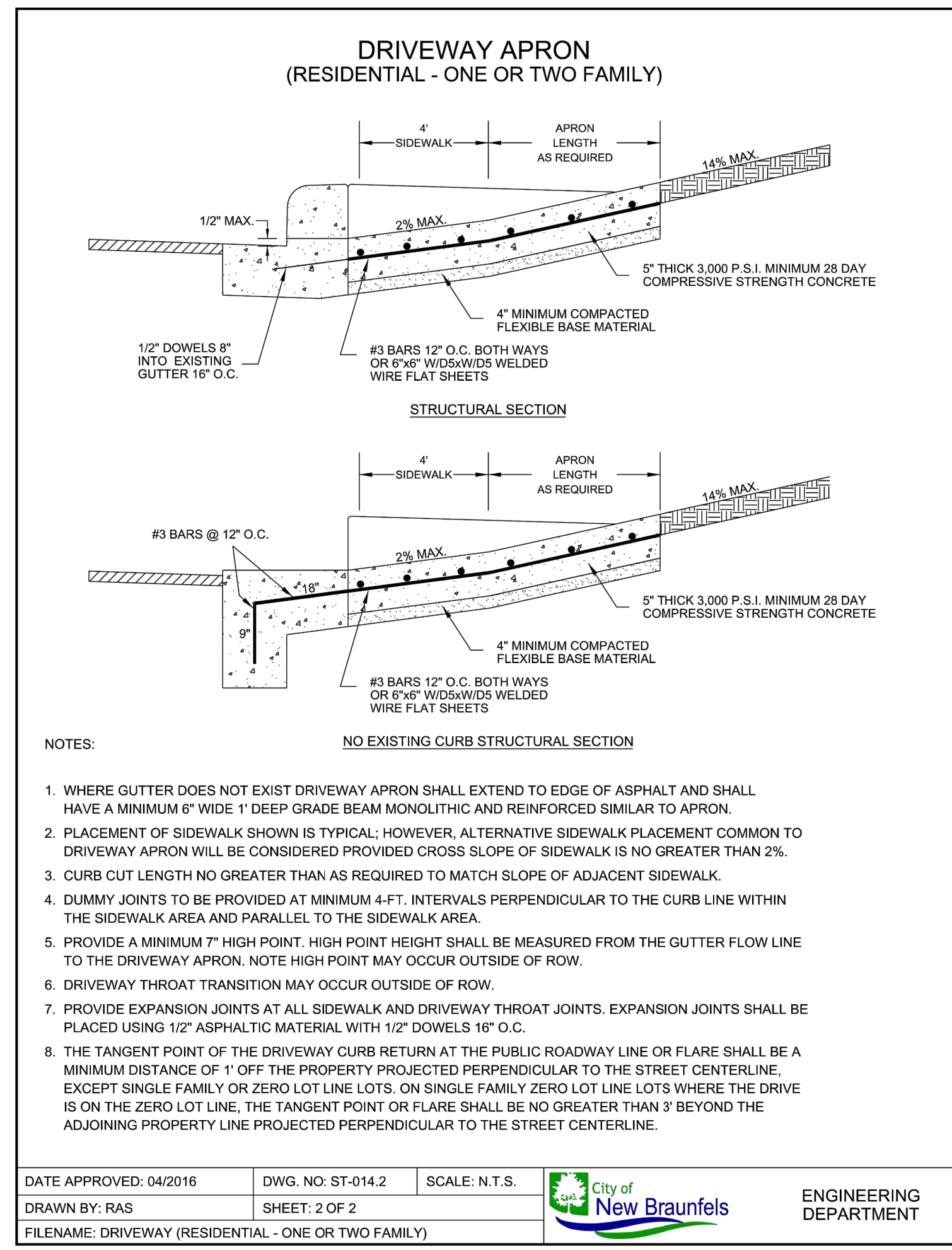
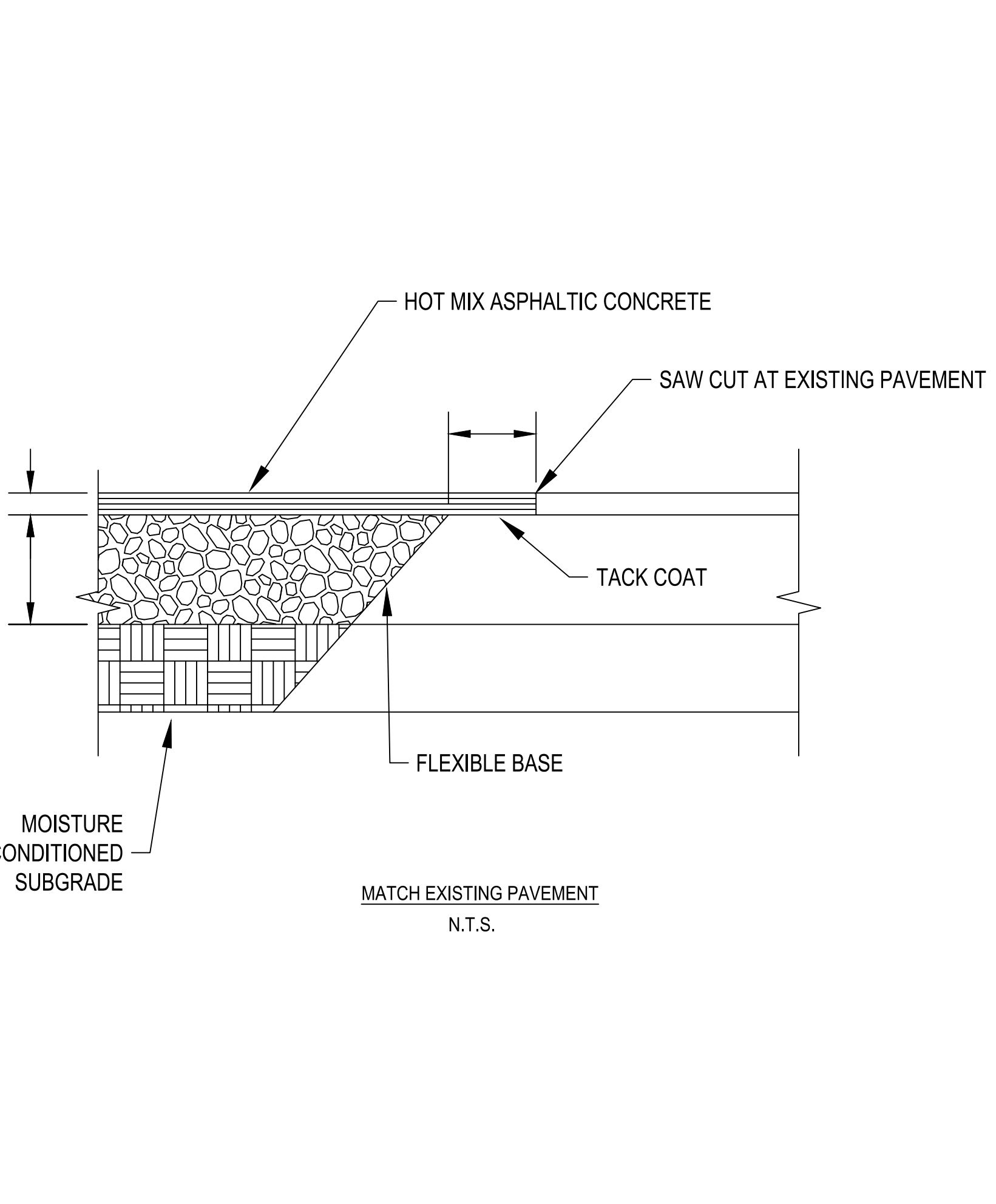
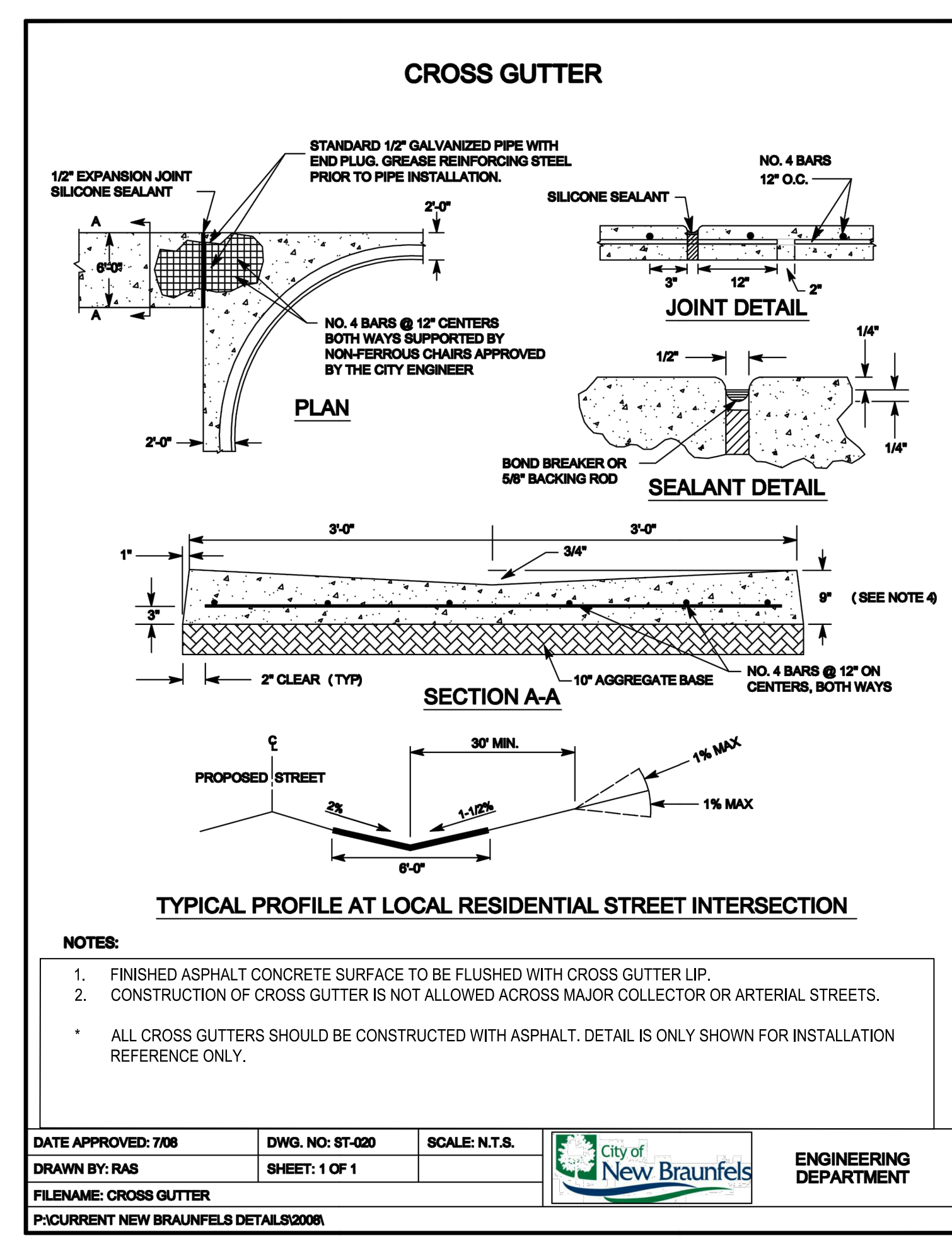
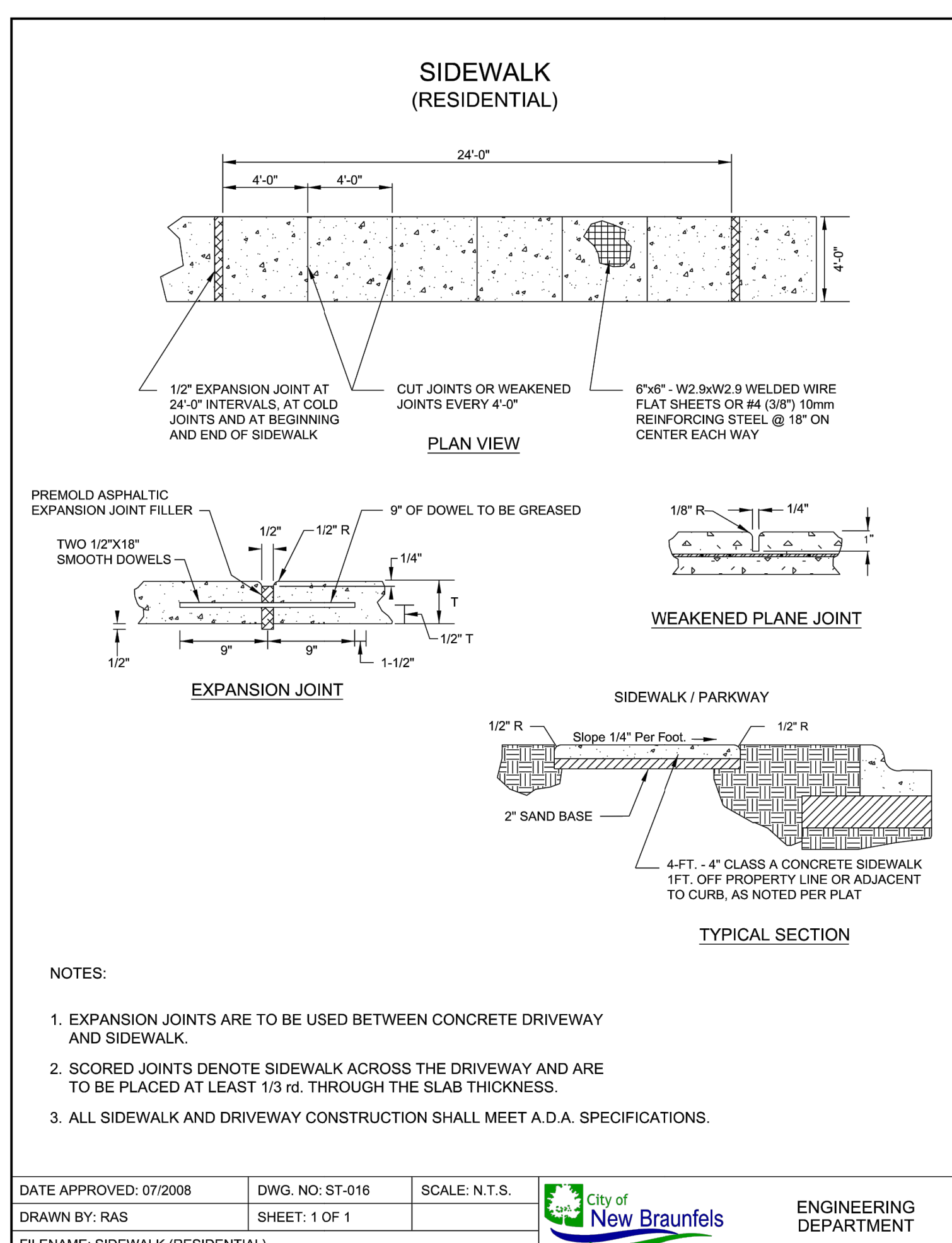
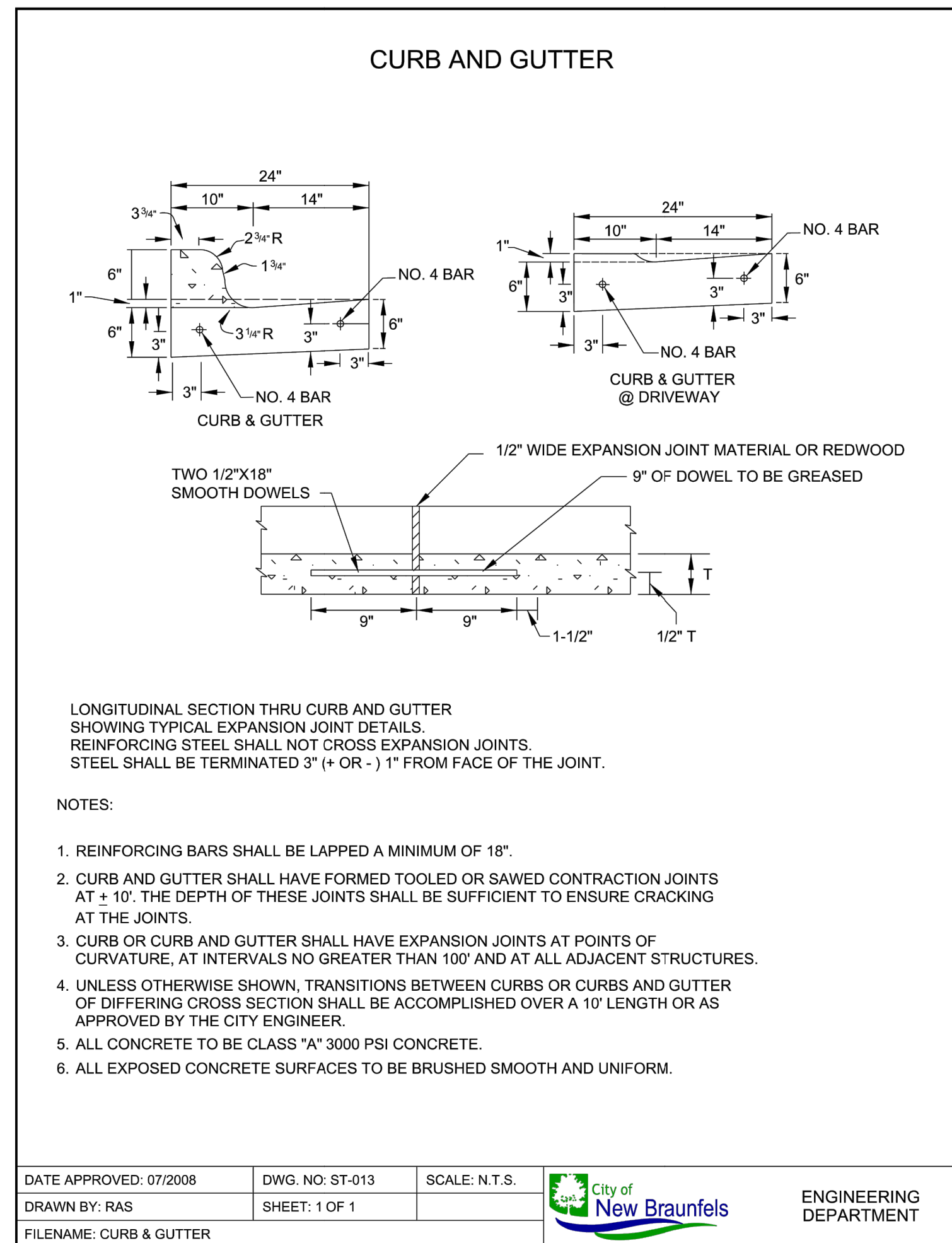
REV

DESCRIPTION

BGE, INC.
7330 San Pedro, Suite 202
San Antonio, TX 78216
TEL: 210-381-3300 www.bgeenergy.com
TXPE Registration No. P-1049

04/05/2024
SHEET
C06.25

G:\TXC\Projects\San Antonio Projects\1728-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C06.30 STREET & DRAINAGE DETAILS.dwg Layout: STREET & DRAINAGE DETAILS (SHEET 1 OF 6) Plotted: 2/20/2023 3:42:33 PM By: Jclifton

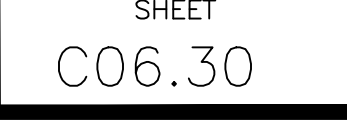


DATE	APR
DESCRIPTION	
DESIGNED BY: SAR	
REVIEWED BY: SSM	
DRAWN BY: SAR	

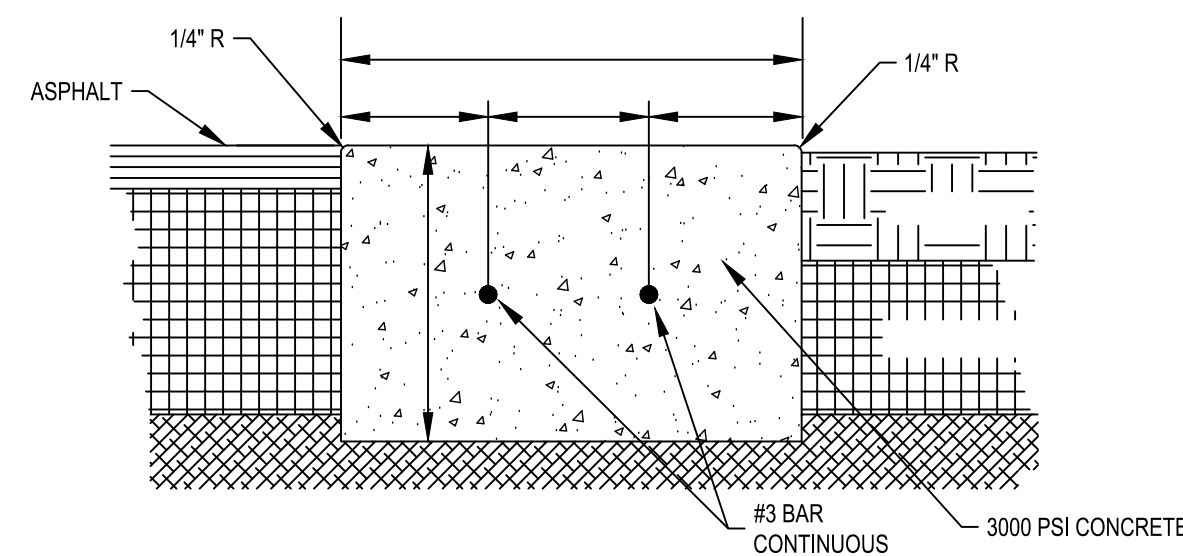
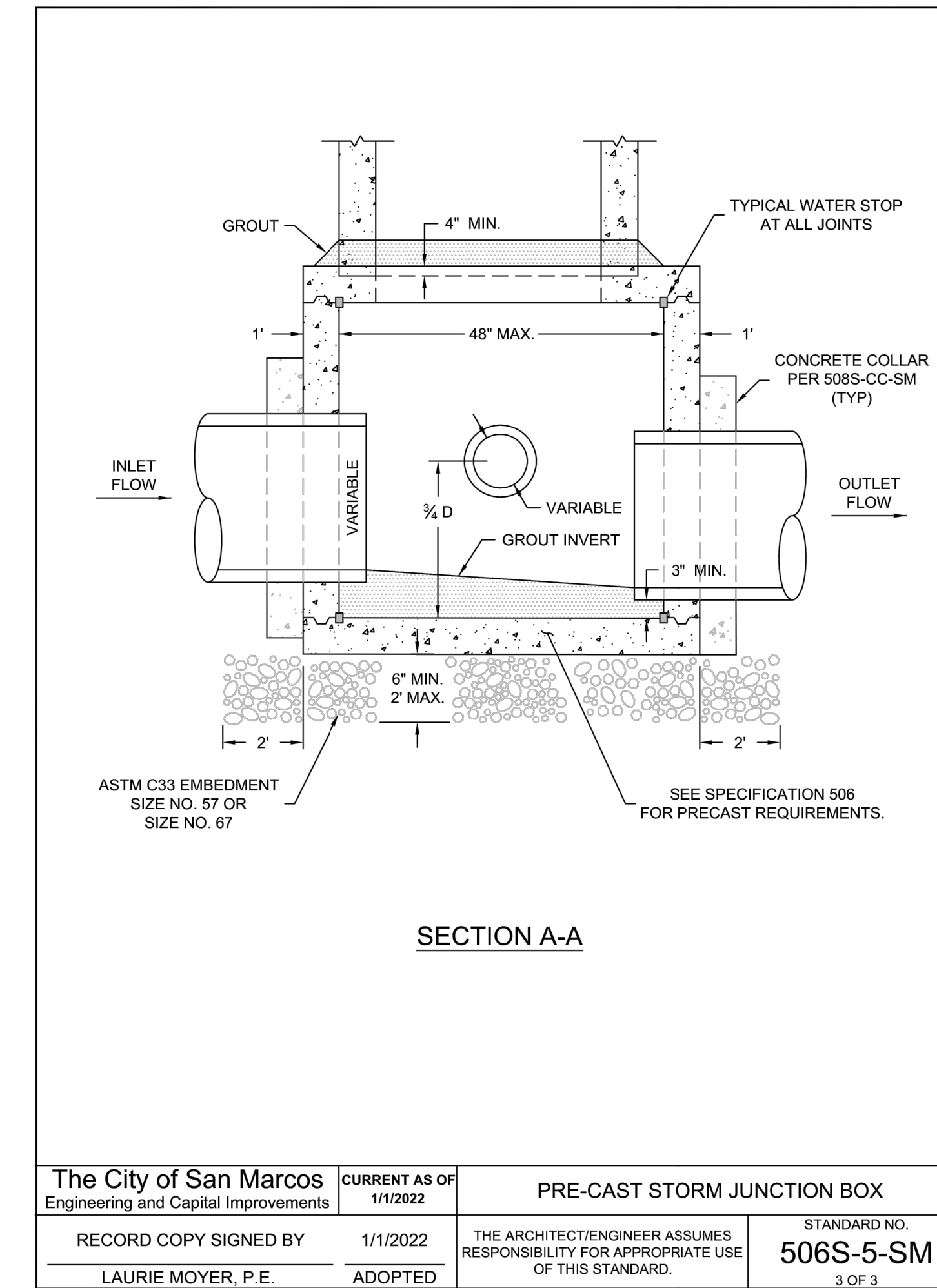
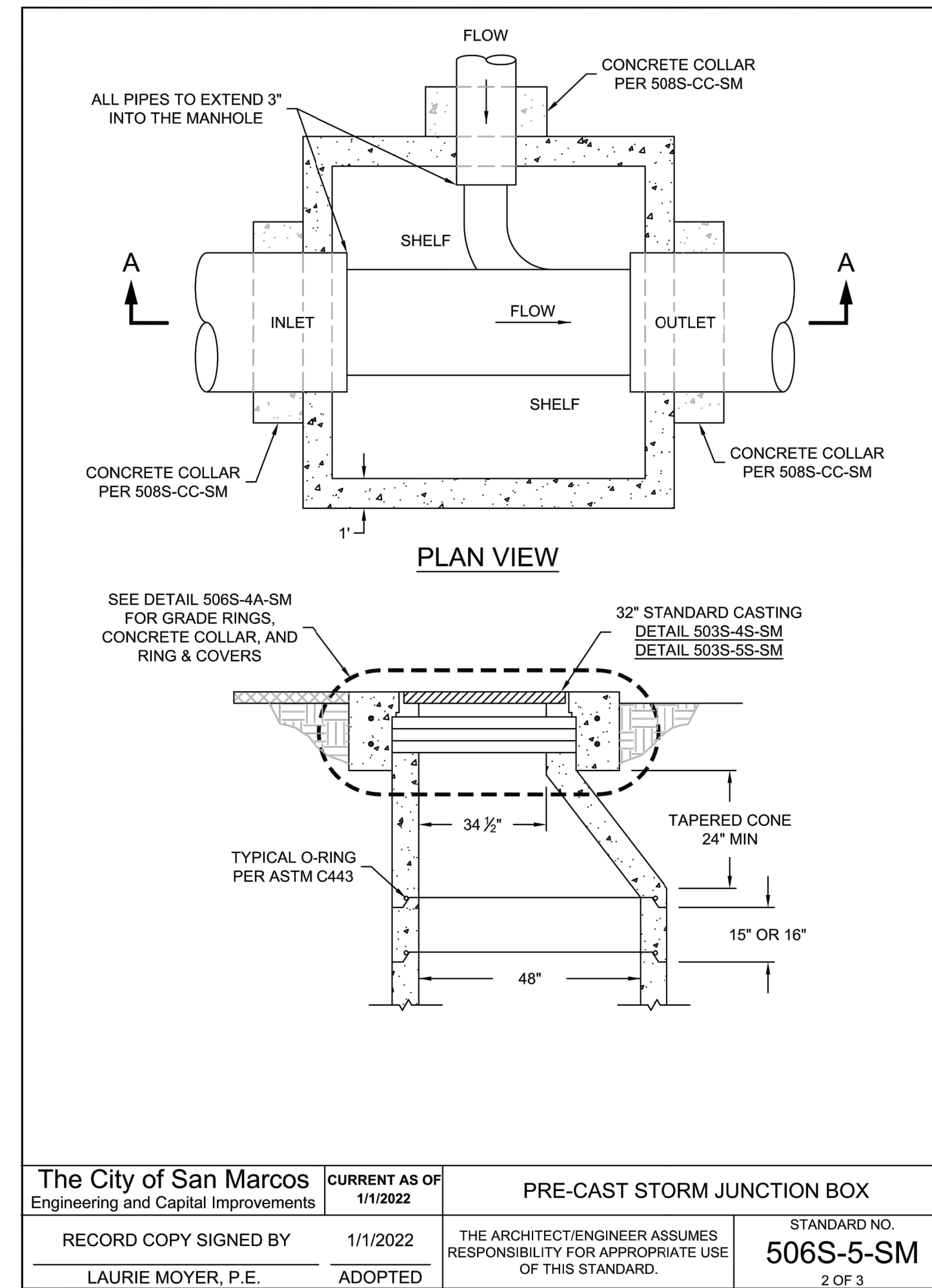
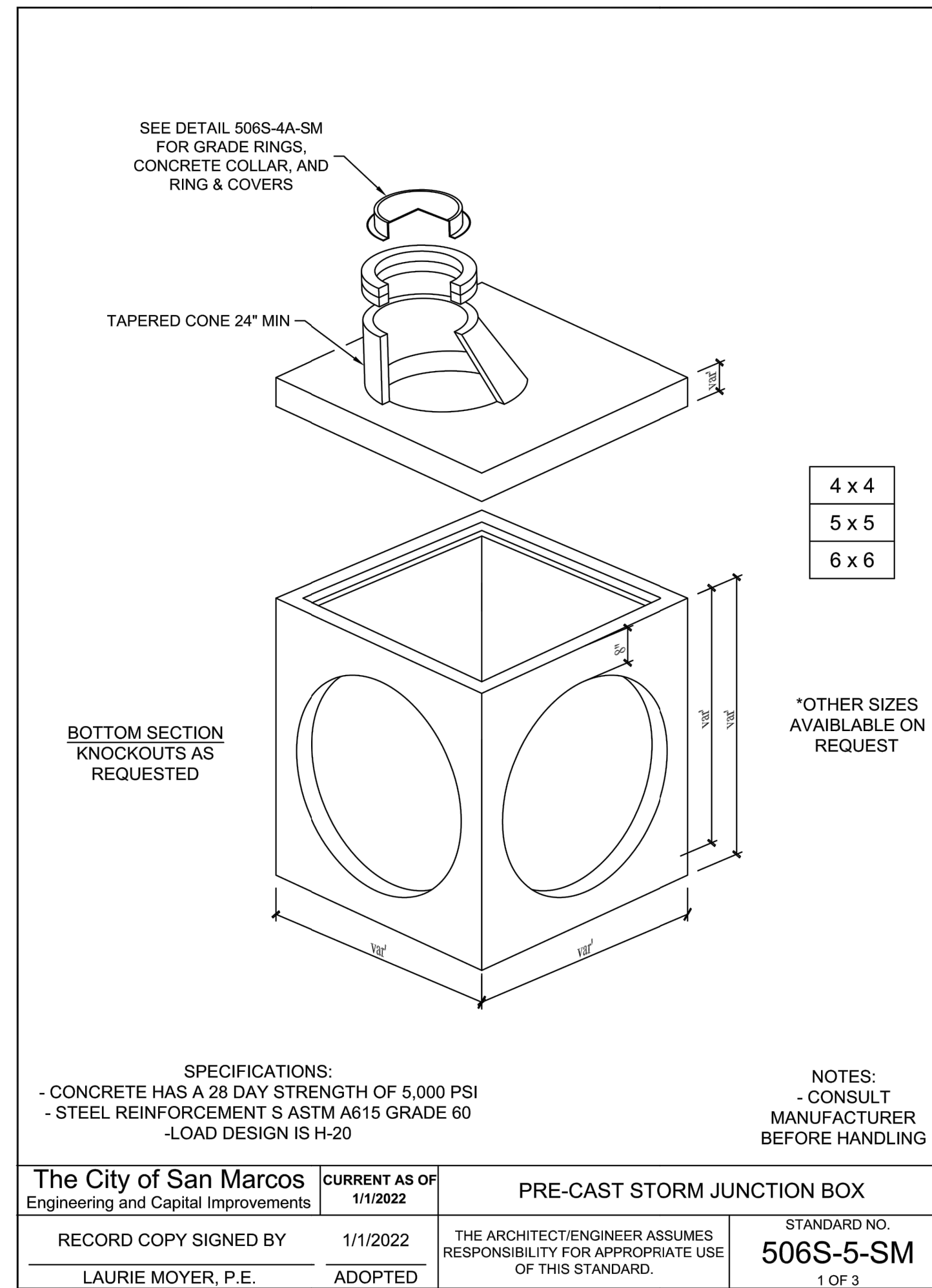


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CANYON RANCH UNIT 3
STREET & DRAINAGE DETAILS
(SHEET 1 OF 6)

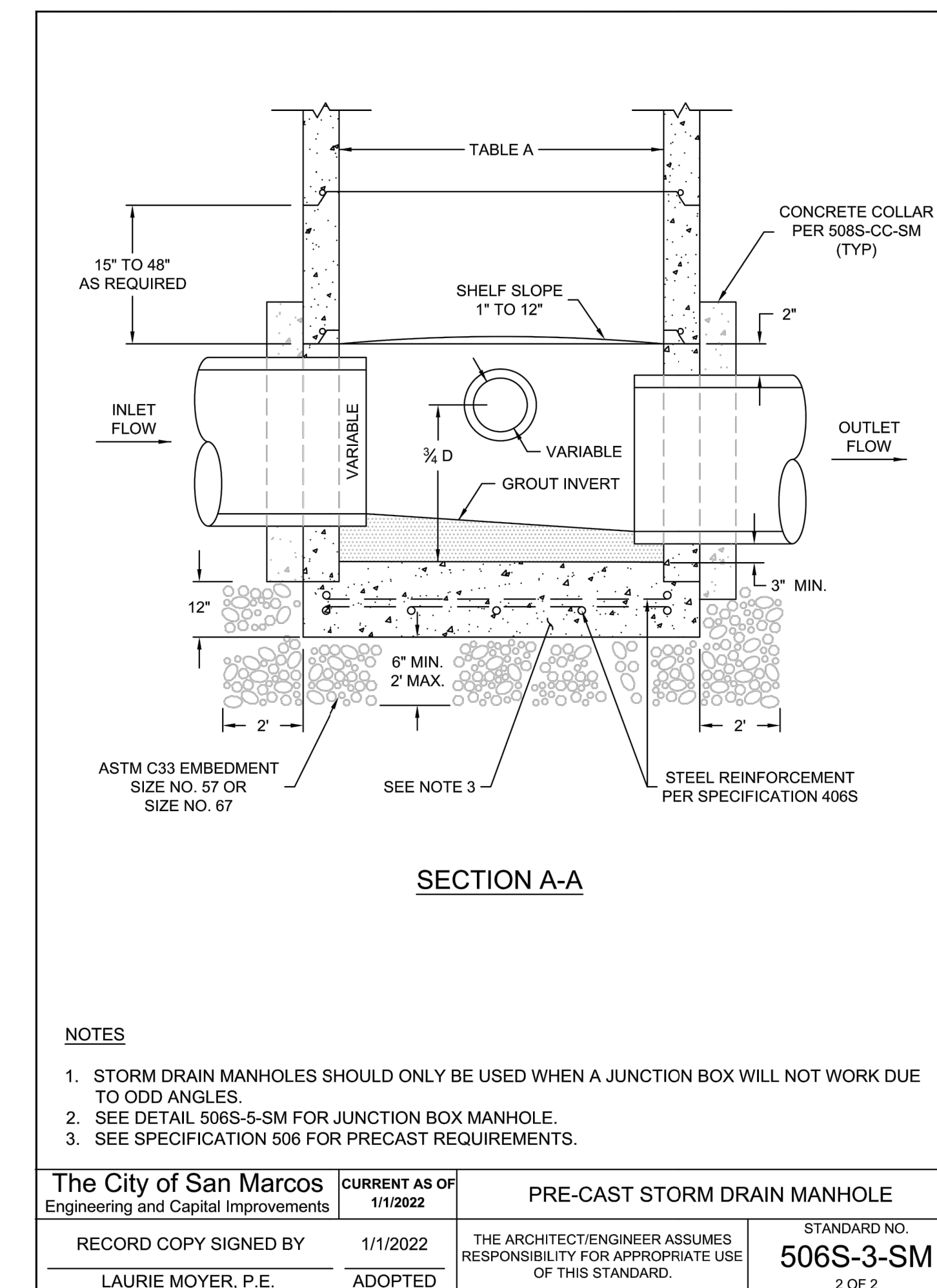
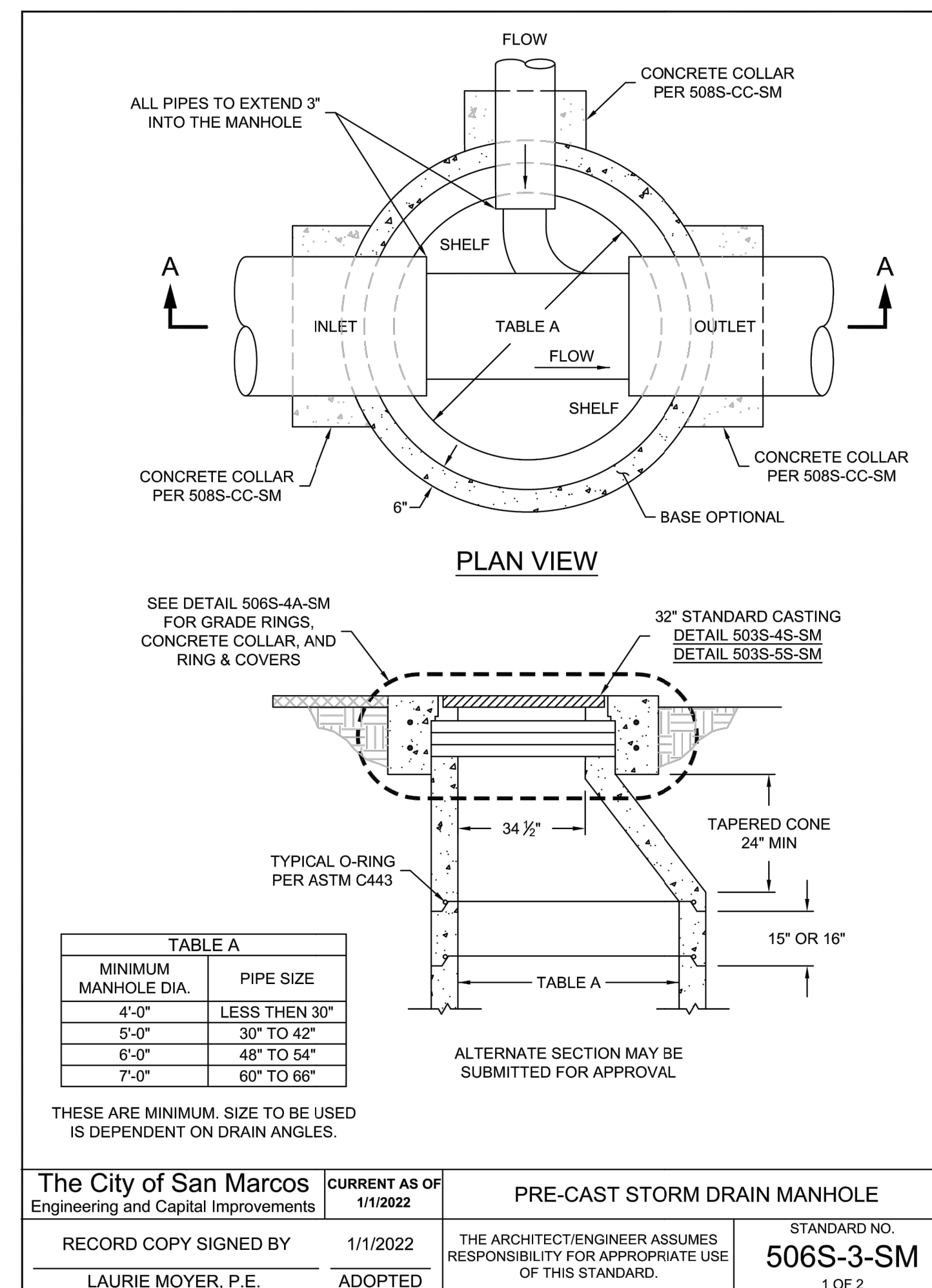


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- NOTES:
1. REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS CONFORMING TO ASTM A 615/A 615M OR ASTM A 706/A 706M.
 2. WIRE TIES SHALL BE 16 GAUGE OR HEAVIER BLACK ANNEALED STEEL WIRE.

12" FLUSH CURB
N.T.S.



REV	DATE	DESCRIPTION

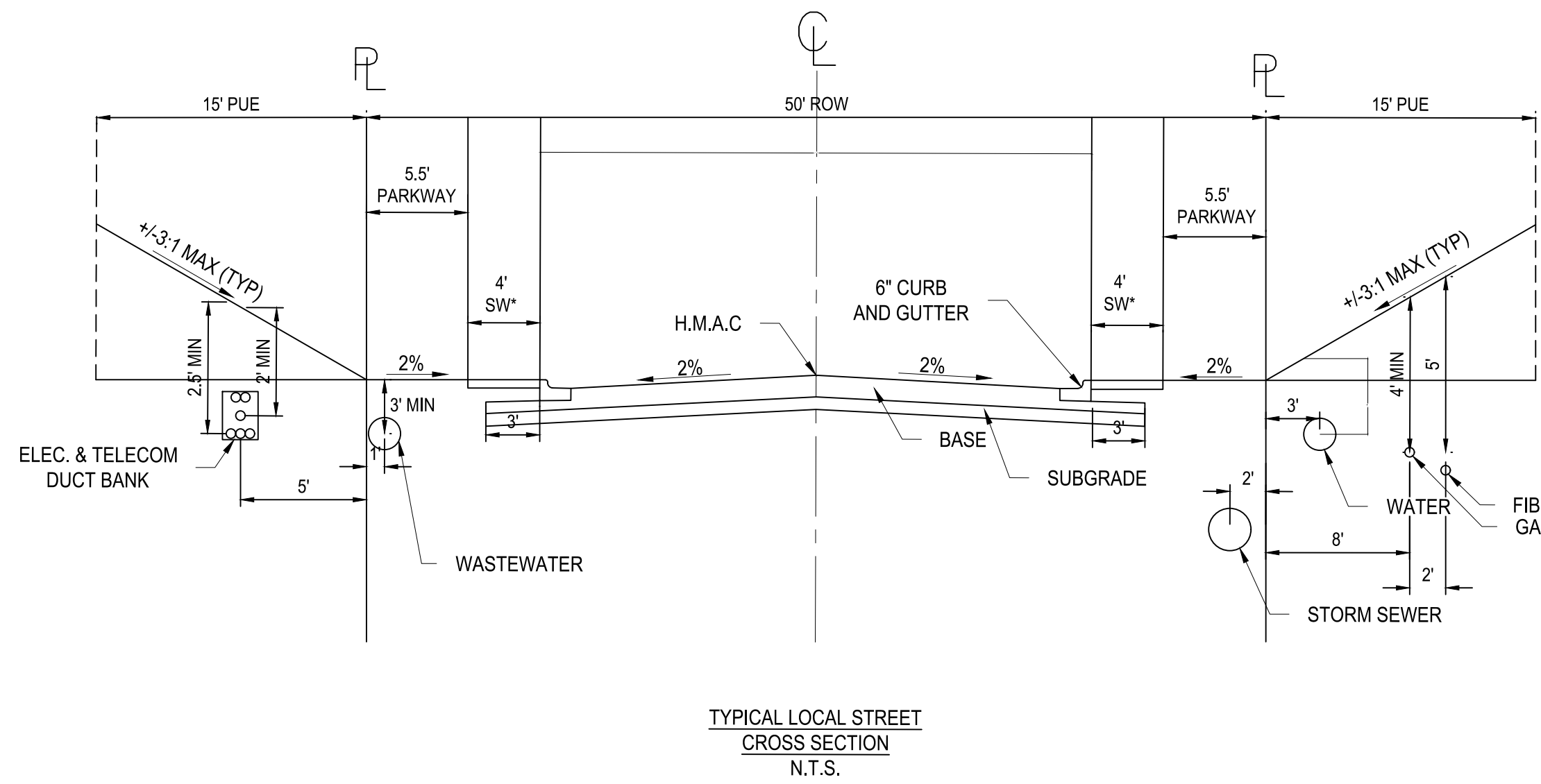
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CANYON RANCH UNIT 3
STREET & DRAINAGE DETAILS
(SHEET 2 OF 6)

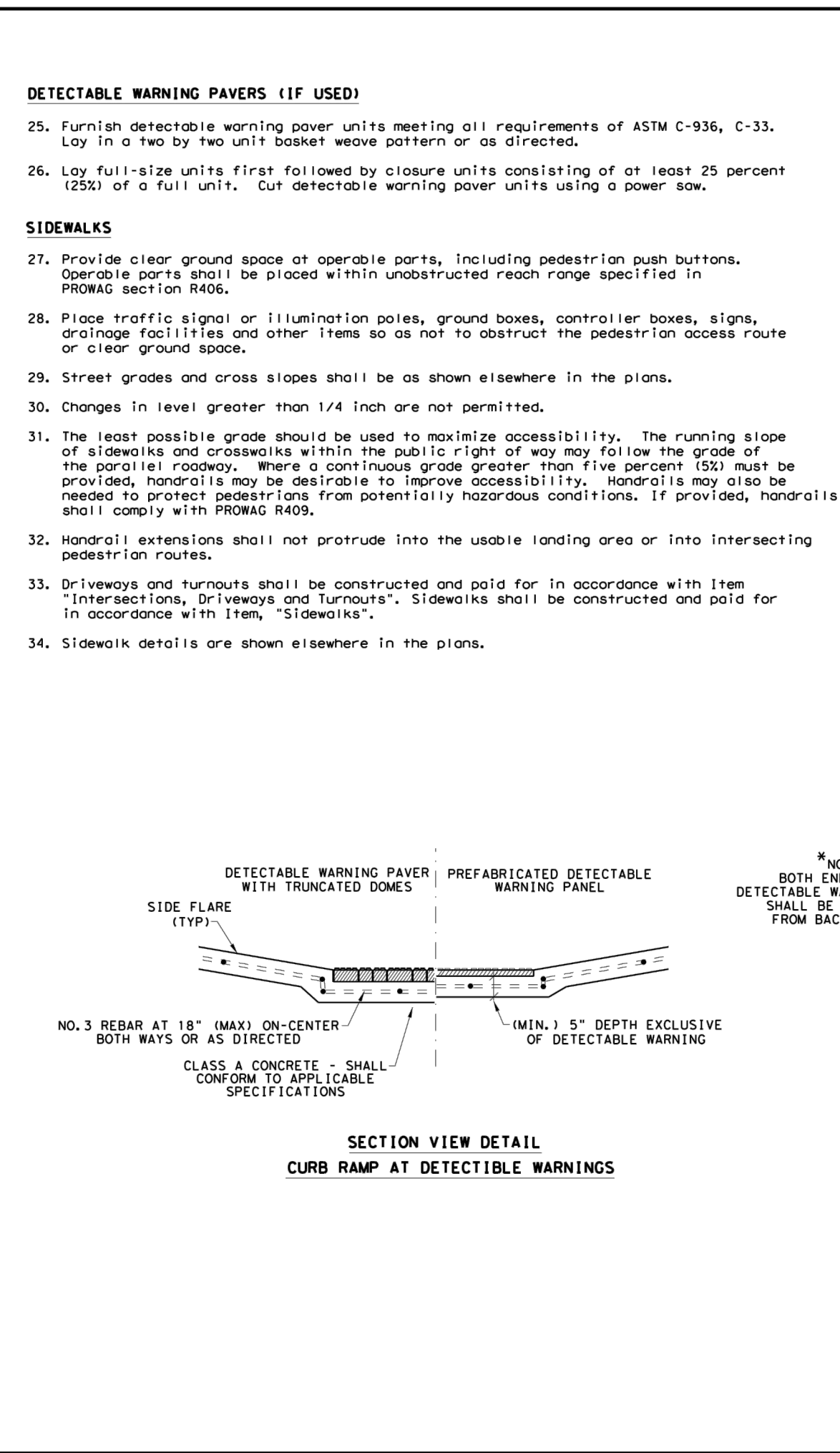




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DATE: 02/20/2023

- ### GENERAL NOTES
- #### CURB RAMP
1. Install a curb ramp or blended transition at each pedestrian street crossing.
 2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
 3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
 4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
 5. Turning Spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
 6. Clear space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
 7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
 8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
 9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
 10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
 11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with the material crosswalks unless otherwise directed.
 12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
 13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
 14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
 15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
 16. Provide a smooth transition where the curb ramps connect to the street.
 17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
 18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.
- #### DETECTABLE WARNING MATERIAL
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
 20. Detectable warning materials must meet TxDOT Departmental Materials Specification DM5 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
 21. Detectable warning surfaces must be firm, stable and slip resistant.
 22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
 23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
 24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



SHEET 2 OF 4

Design Division Standard

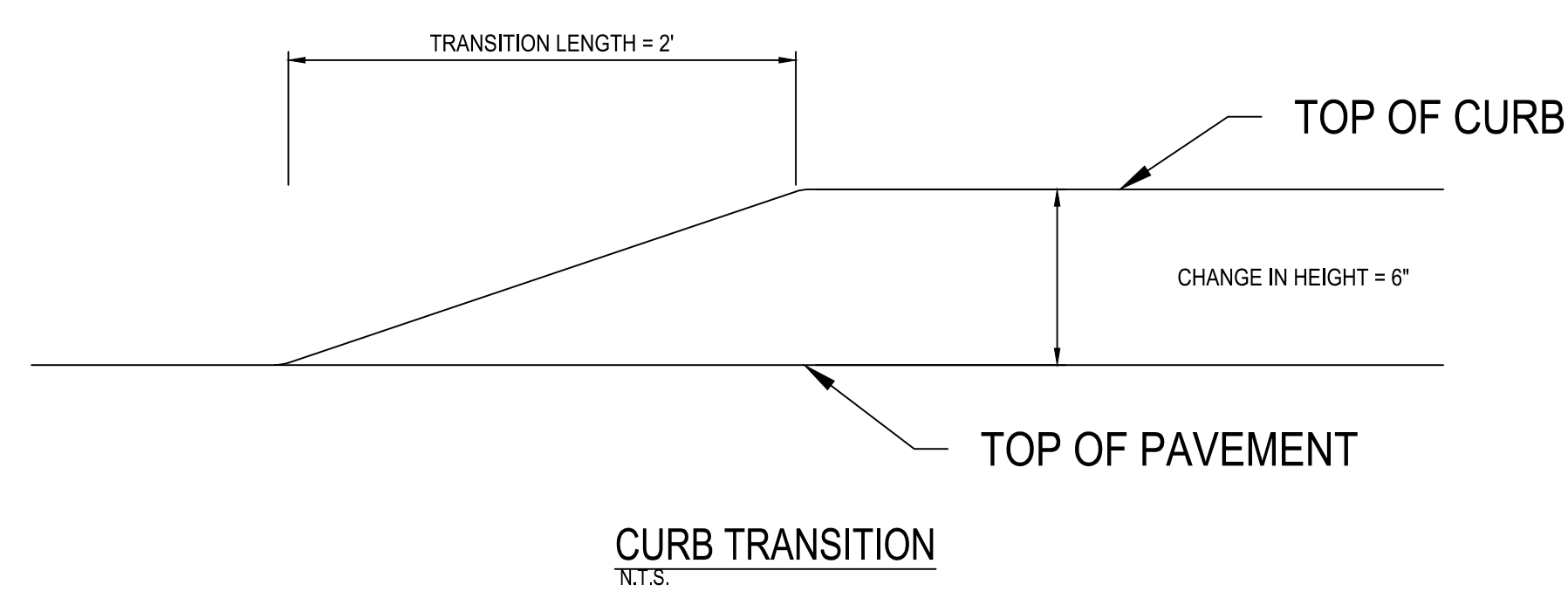
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILED 08/18/2022	BY T&E	DATE 08/18/2022	JOB NO. 2728-00	SHEET NO. 06
DESIGNED BY: SAR	CHECKED BY: SSM	DATE: 02/20/2023	PROJECT: 2728-00	SHEET NO. 06

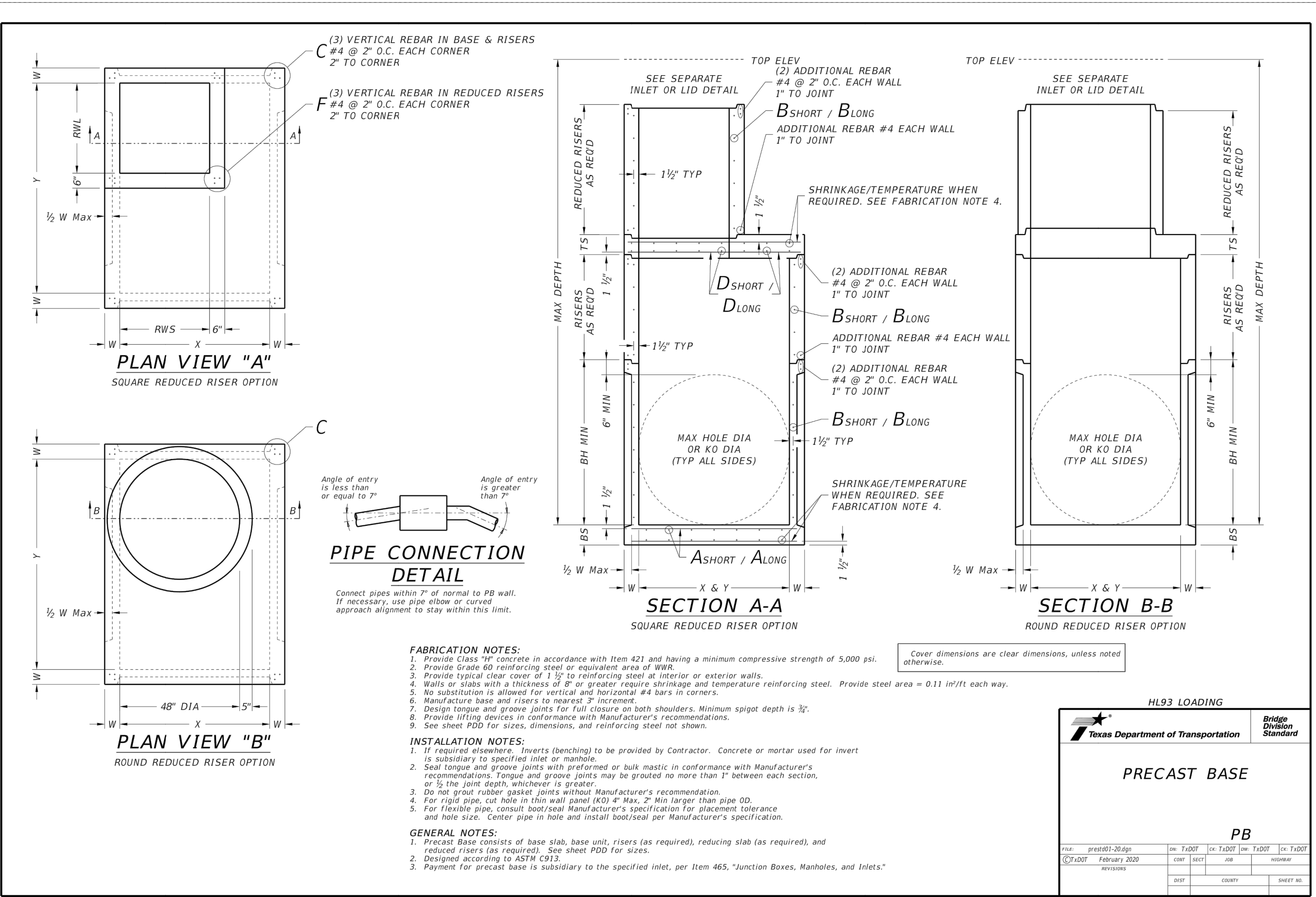
DATE	APR
DESCRIPTION	
REV	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

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DATE: 02/20/2023



CANYON RANCH UNIT 3

STREET & DRAINAGE DETAILS (SHEET 3 OF 6)

HLB3 LOADING

Bridge Division Standard

PRECAST BASE

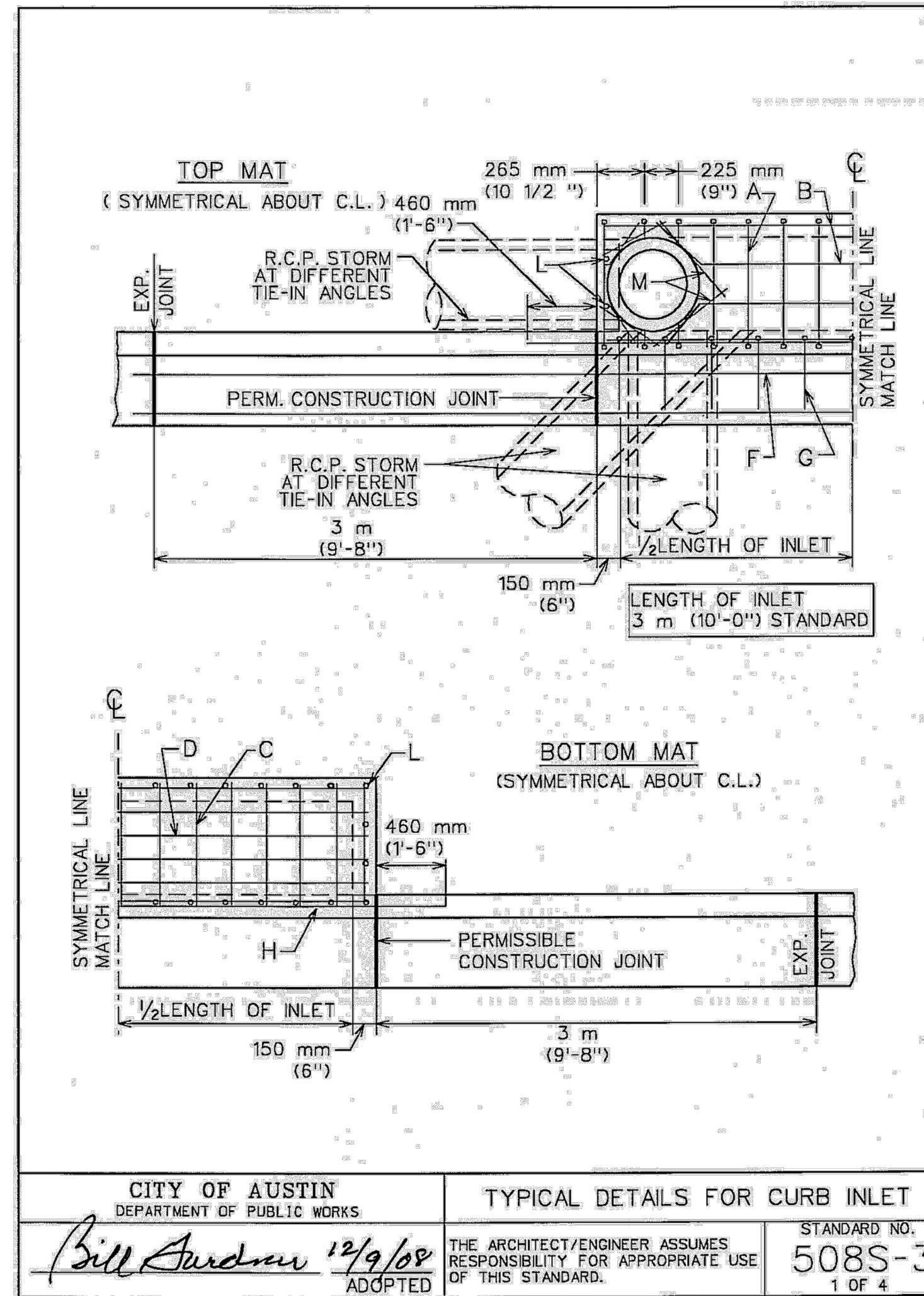
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FILED 02/20/2023	BY T&E	DATE 02/20/2023	JOB NO. 2728-00	SHEET NO. 06
DESIGNED BY: SAR	CHECKED BY: SSM	DATE: 02/20/2023	PROJECT: 2728-00	SHEET NO. 06

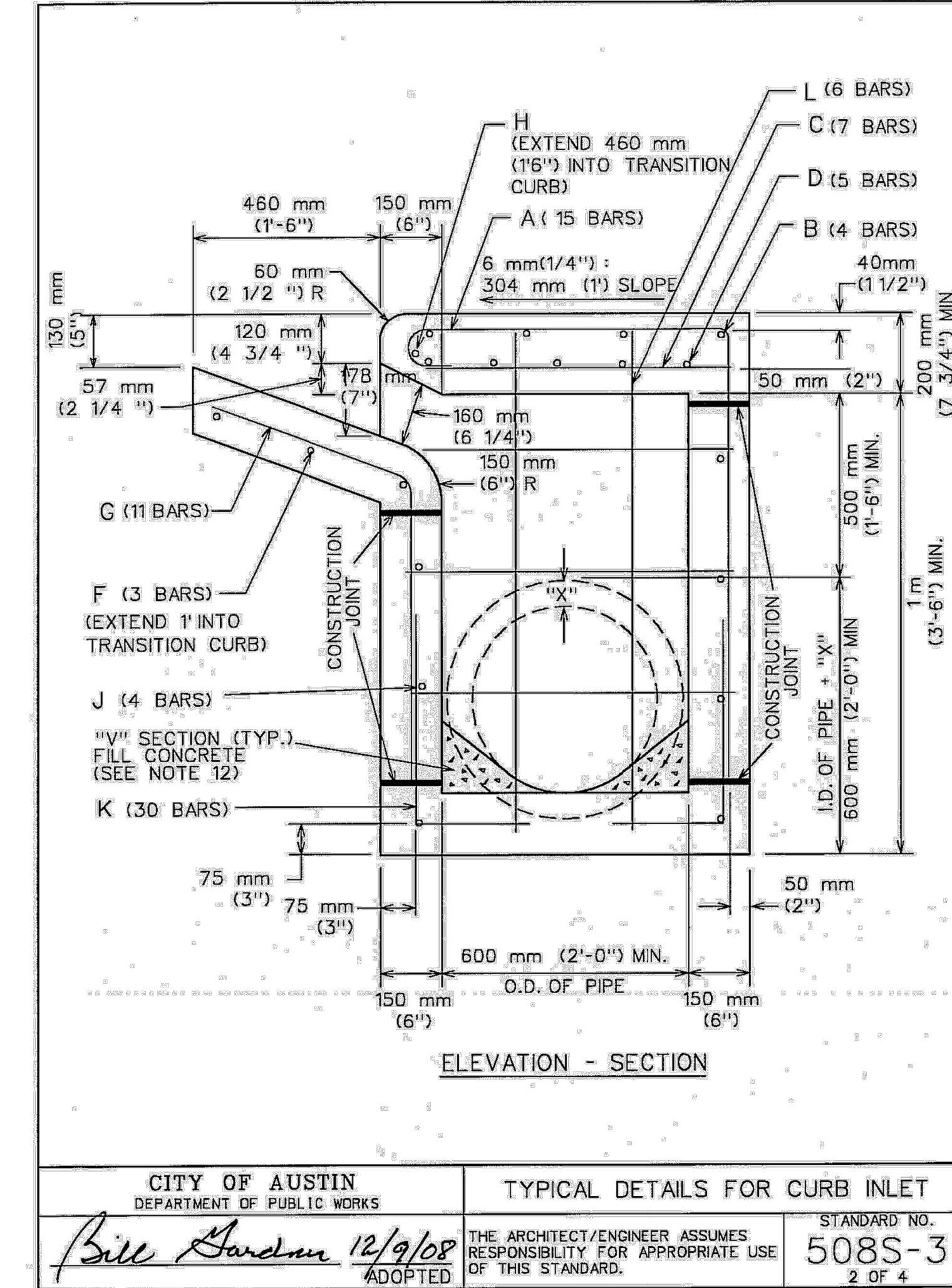
STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
04/05/2024

SHEET C06.32

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Bill Gardner 12/9/08 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3
1 OF 4



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STANDARD NO. 508S-3
2 OF 4

TABLE OF QUANTITIES FOR 18" OUTLET PIPE REINFORCING STEEL QUANTITIES

BARS	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	230mm (9")*	15	2 m (7'-0")	73
B	4	250 mm (10")	4	3.25 m (10'-8")	29
C	4	460 mm (18")	7	760 mm (2'-6")	12
D	6	150 mm (6")	5	3.25 m (10'-8")	80
E	4	300 mm (12")	6	760 mm (2'-6")	10
F	4	250 mm (10")	3	4 m (13'-0")	35
G	4	300 mm (12")	11	1.25 m (4'-3")	31
H	6	-	1	4.25 m (14'-0")	20
J	4	300 mm (12")	7	3.25 m (10'-8")	50
K	4	230 mm (9")*	30	800 mm (2'-7 1/2")	52
L	4	300 mm (12")	6	1.3 m (4'-4")	17
M	4	-	4	500 mm (1'-8") AVG	4
TOTAL STEEL, LB.					413
TOTAL CONCRETE, C.Y.					4.06

* EXCEPT AS SHOWN ON PLAN

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
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STANDARD NO. 508S-3
3 OF 4

- NOTES:
- ALL CONCRETE SHALL BE CLASS "A"
 - ALL REINFORCING STEEL SHALL BE GRADE 60
 - DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
 - VERTICAL STEEL MAY BE SPICED (380 mm or 15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS.
 - IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
 - QUANTITIES SHOWN HEREON ARE FOR THE CONTRACTOR'S INFORMATION ONLY. PAYMENT WILL BE MADE FOR EACH INLET OF THE TYPE SPECIFIED, COMPLETE IN PLACE INCLUDING MANHOLE FRAME AND COVER.
 - CHAMFER ALL EXPOSED EDGES 20 mm (3/4")
 - MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
 - THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS, INCLUDING PRECAST UNITS, PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION.
 - ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAT EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES.
 - PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB.
 - INVERT OF INLET SHALL BE SLOPED 1:20 WITH FILL CONCRETE, SHAPED AS "V" SECTION
 - NO SPlicing OF REINFORCING STEEL SHALL BE PERMITTED UNLESS OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.
- REFERENCES:
- FOR EXPANSION JOINT DOWEL AND DOWEL LOCATION DETAILS
SEE STD. 430S-3, "CURB EXPANSION JOINT DOWEL DETAIL".
- FOR 18" MANHOLE FRAME AND COVER DETAILS
SEE STD. 503S-1, "18" COVER AND FRAME".

CITY OF AUSTIN
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STANDARD NO. 508S-3
4 OF 4

DATE	APR
DESCRIPTION	
REV	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

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CANYON RANCH UNIT 3
STREET & DRAINAGE DETAILS
(SHEET 4 OF 6)

04/05/2024
SHEET
C06.33

TABLE OF DIMENSIONS & REINFORCING STEEL (Wings for One Structure End)				TABLE OF WINGWALL REINFORCING (2-Wings)		
Maximum Wingwall Height (Hw)	Dimensions				Reinforcing Steel (CY/Ft)	Spa
	W	X	Y	Z		
2'-6"	2'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
3'-0"	2'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
3'-6"	2'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
4'-0"	2'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
4'-6"	3'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
5'-0"	3'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
5'-6"	3'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
6'-0"	3'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
7'-0"	3'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
8'-0"	4'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
9'-0"	4'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
10'-0"	5'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
11'-0"	5'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
12'-0"	6'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
13'-0"	6'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
14'-0"	7'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
15'-0"	7'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"
16'-0"	8'-0"	1'-0"	0'-0"	9'-0"	7#4	1'-0"

Bar	Size	No.	Spa
DL	#5	1	1'-0"
DS	#5	1	1'-0"
E	#4	1	1'-0"
F	#4	1	1'-0"
G	#6	4	-
M	#4	4	-
P	#4	1	1'-0"
RS	#5	3	-
RL	#5	3	-
V	#4	1	1'-0"

Bar	Size	No.	Spa
L	#4	1	1'-0"
Q	#4	1	-
Rein	(Lb/Ft)	2.45	-
Conc	(CY/Ft)	0.333	-

WING DIMENSION CALCULATIONS:
 Formulas: (All values are in Feet)
 $H_w = H + 1 + C = 0.250$
 $A = (H_w - 0.333) \cdot (SL)$
 $B = (A) \cdot (\tan(\theta + 15^\circ))$
 $L_w = (A) \cdot (\cos(\theta + 15^\circ))$
 For Precast culverts:
 $L_{tw} = (N) \cdot (S) + (N+1) \cdot (U) \cdot \phi \cdot (\cos(\theta))$
 For Cast-in-place culverts:
 $L_{tw} = (N) \cdot (S) + (N+1) \cdot (U) \cdot \phi \cdot (\cos(\theta))$
 Total Wingwall Area (Two Wings = S.F.) = $(L_w + A) \cdot (0.5) \cdot (H_w + 0.333) \cdot (L_w + A)$

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	1	1'-0"
Q	#4	1	-
Rein	(Lb/Ft)	2.45	-
Conc	(CY/Ft)	0.333	-

WINGWALL TOEWALL
 (Showing reinforcing, Culvert and Toewall reinforcing not shown for clarity.)

INSIDE ELEVATION
 (Showing reinforcing, Culvert and Toewall reinforcing not shown for clarity.)

PLAN
 (Showing dimensions and 30° Skew.)

SECTION A-A
 (Showing reinforcing, Culvert and Toewall reinforcing not shown for clarity.)

SECTION B-B
 (Showing reinforcing, Culvert and Toewall reinforcing not shown for clarity.)

GENERAL NOTES:
 1. Extend Bars P 3'-0" minimum into bottom slab of Box Culvert.
 2. Adjust to fit as necessary to maintain 1 1/4" clear cover and 4" minimum between bars.
 3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings multiply the tabulated values by 0.5 x (L+L').
 4. Recommended values of Slope are: 2:1, 3:1, 4:1, & 6:1.
 5. When shown elsewhere on the plans, a 5" deep concrete riprap shall be constructed. Payment for riprap shall be as required by Item 432, "Riprap", unless otherwise shown on the plans or directed by the Engineer. The riprap shall have a 6" wide by 1'-6" deep reinforced concrete toewall along all edges adjacent to natural ground; the toewall shall be reinforced by extending typical riprap reinforcing into the toewall; construction joints or grooved joints, oriented in the direction of flow, shall extend across the full distance of the riprap, at intervals of approximately 50'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
 6. At Contractor's option, Culvert Toewall may be ended flush with Wingwall Toewall. Adjust reinforcing from that shown as necessary.
 7. Applicable values of Skew are: 15°, 30°, and 45°.
 8. Typical wingwall angle for all skew.
 9. 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standards. For structures with TE bridge rail, refer to TE-CM standards. For structures with traffic rail, other than TE, refer to RAC standards.
 10. For vehicle safety, curb heights and wall heights shall be reduced, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

GENERAL NOTES:
 1. Designed according to AASHTO LRFD Specifications. All reinforcing steel shall be Grade 60.
 2. Synthetic Fibers (Fibers) for Concrete Material Producer (L) or (M) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
 3. All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.
 4. All reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.
 5. When structure is founded on solid rock, depth of toewalls for culverts on wings shall be reduced or eliminated as directed by the Engineer.
 6. The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL				TABLE OF REINFORCING STEEL		TABLE OF CONSTANT DIMENSIONS	
Slope (D)	Values for One Pipe				Reinforcing Steel (CY)	Spa	No.
	W	X	Y	L			
12'	4'-7 1/2"	2'-6"	2'-10"	3'-3 1/2"	88	0.6	1'-9"
15'	5'-5 1/2"	2'-9 1/2"	3'-4"	3'-10 1/2"	103	0.7	2'-2"
18'	6'-4 1/2"	3'-1"	3'-10"	4'-5"	124	0.9	2'-8"
21'	7'-2 1/2"	3'-4 1/2"	4'-4"	5'-0"	143	1.1	3'-1"
24'	8'-2 1/2"	3'-9 1/2"	4'-10"	5'-7"	164	1.3	3'-7"
27'	9'-1"	4'-1"	5'-4"	6'-2"	179	1.5	3'-11"
30'	9'-11 1/2"	4'-4 1/2"	5'-10"	6'-8 1/2"	203	1.7	4'-6"
33'	10'-10"	4'-8"	6'-4"	7'-3 1/2"	224	2.0	4'-8"
36'	11'-8 1/2"	4'-11 1/2"	6'-10"	7'-10 1/2"	249	2.2	5'-1"
42'	13'-5 1/2"	5'-6 1/2"	7'-10"	9'-0 1/2"	298	2.8	5'-10"
48'	15'-9"	6'-1 1/2"	9'-4"	10'-9 1/2"	360	3.8	6'-7"
54'	17'-5 1/2"	6'-8 1/2"	10'-4"	11'-11 1/2"	427	4.5	7'-6"
60'	19'-2 1/2"	7'-3 1/2"	11'-4"	13'-1"	481	5.3	8'-3"
66'	20'-11 1/2"	7'-10 1/2"	12'-4"	14'-3"	544	6.2	8'-9"
72'	22'-8 1/2"	8'-5 1/2"	13'-4"	15'-4 1/2"	601	7.1	9'-4"

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

Bar	Size	Spa	No.
Bars B and B1-x	Y + 4"	-	-
Bars B1-x	9" Min	-	-

ELEVATION
 (Showing dimensions)

PLAN
 (Showing dimensions and 30° Skew)

SECTION A-A
 (Showing reinforcing, Culvert and Toewall reinforcing not shown for clarity.)

GENERAL NOTES:
 1. Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
 2. For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. Changes will be made in quantities and no additional compensation will be allowed for this work.
 3. Provide a 1'-0" footing as shown where required to maintain a minimum cover for pipes.
 4. Dimensions shown are usual and maximum.
 5. Quantities shown are for one structure end only (one headwall).
 6. Min Length = $6' + 3' \cdot \frac{12 \times H - 7}{12 \times L}$
 Max Length = $12 \times H - 3' \cdot \frac{12 \times H - 7}{12 \times L}$ - 1'
 7. Lengths of wings based on SL1 slope along this line.

MATERIAL NOTES:
 1. Provide Class 50 reinforcing steel.
 2. Provide Class C concrete (f'c = 3600 psi).

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

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE REINFORCING DIMENSIONS ARE OUT-TO-OUT OF BARS.

DATE	DESCRIPTION
APR	
REV	
DESIGNED BY: SAR	
REVIEWED BY: SSM	
DRAWN BY: SAR	

BGE

TEXAS DEPARTMENT OF TRANSPORTATION
 Bridge Division Standard
CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS
 CH-FW-0

FILE: chfw0w-20.dwg
 DATE: February 2020
 CDR: JMB
 CHK: JMB
 DES: JMB
 SHEET NO.:

STATE OF TEXAS
 STACY MULHOLLAND
 146417
 LICENSED PROFESSIONAL ENGINEER
 04/05/2024

SHEET C06.34

TABLE OF DIMENSIONS AND REINFORCING STEEL					
(Wings for one structure end)					
Dimensions	Variable Reinforcing		Estimated Quantities per ft of wing (2-wings)	Estimated Quantities per ft of wing (1-to-wall)	
	Bars J1	Bars J2			
2'-0"	#4	#4	48.64	0.465	6.85
2'-9"	#4	#4	49.31	0.424	6.85
3'-0"	#4	#4	49.98	0.444	6.85
3'-9"	#4	#4	53.32	0.462	6.85
4'-0"	#4	#4	53.98	0.480	6.85
4'-9"	#4	#4	55.71	0.522	6.85
5'-0"	#4	#4	59.77	0.568	6.85
5'-9"	#4	#4	63.45	0.632	6.96
6'-0"	#4	#4	67.46	0.668	6.96
6'-9"	#4	#4	80.67	0.730	7.07
7'-0"	#4	#4	85.05	0.768	7.07
7'-9"	#4	#4	92.15	0.864	8.07
8'-0"	#4	#4	96.54	0.902	8.07
8'-9"	#4	#4	139.04	0.962	8.13
9'-0"	#4	#4	144.47	1.000	8.13
9'-9"	#4	#4	156.93	1.126	8.41
10'-0"	#4	#4	156.27	1.234	8.57
10'-9"	#4	#4	230.13	1.438	9.52
11'-0"	#4	#4	283.41	1.592	9.74
11'-9"	#4	#4	348.72	1.804	10.02
12'-0"	#4	#4	432.94	2.046	10.30
12'-9"	#4	#4	489.52	2.302	11.24
13'-0"	#4	#4	505.72	2.448	11.47

TABLE OF WINGWALL REINFORCING
(2-wings)

Bar	Size	No.	Spa
D1	#6	1	1'-0"
D2	#6	1	1'-0"
E1	#4	1	1'-0"
F	#4	1	1'-0"
G	#6	1	1'-0"
H1	#4	1	1'-0"
P	#4	1	1'-0"
V	#4	1	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	1	1'-0"
M2	#4	2	1'-0"
E2	#4	1	1'-0"

WING DIMENSION FORMULAS:
(All values are in feet.)

$H_w = H + T + C$
 $L_w = (H_w)(SL) + \cosine(\theta)$ for Type PW-1
 $L_w = (H_w - 1)(SL) + \cosine(\theta)$ for Type PW-2 and $H_w < 4$
 $L_w = (H_w - 0.5)(SL) + \cosine(\theta)$ for Type PW-2 and $H_w < 4$

For cast-in-place culverts:
 $L_w = (N)(2U + S) + (N - 1)(0.5U) + \cosine(\theta)$
 Total Wingwall Area (two wings) = $2L_w$

For precast culverts:
 $L_w = (N)(2U + S) + (N - 1)(0.5U) + \cosine(\theta)$
 Total Wingwall Area (two wings) = $2L_w$

For extended curb details (ECD) standard sheet:
 $SL1 =$ Channel slope ratio (horizontal: 1 vertical, usual value is 2:1)
 $\theta =$ Culvert skew

See applicable box culvert standard sheet for S, K, T, and U values.

DESIGNER NOTES:

- Skew = 0°
- At discharge end, chanfer may be 1/2" minimum.
- For 15° skew - 1" For 30° skew - 2" For 45° skew - 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by L_w . Quantities shown do not include weight of Bars D.
- Provide weepholes for $H_w = 5'-0"$ and greater. Fill around weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars H1 1'-6" minimum with Bars H2.
- Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
- Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with 7631 or T6315 bridge rail, refer to the Mounting Details for T631 & T6315 Bridge Rails (BR) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T6315.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs flush with finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade.
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical, 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
- 3'-0" for $H_w < 4$.
- 6" for $H_w < 4$.

MATERIAL NOTES:

- Provide Class C concrete ($f'c = 3600$ psi).
- Provide Grade 60 reinforcing steel.
- Provide galvanized reinforcing steel if required elsewhere in the plans.

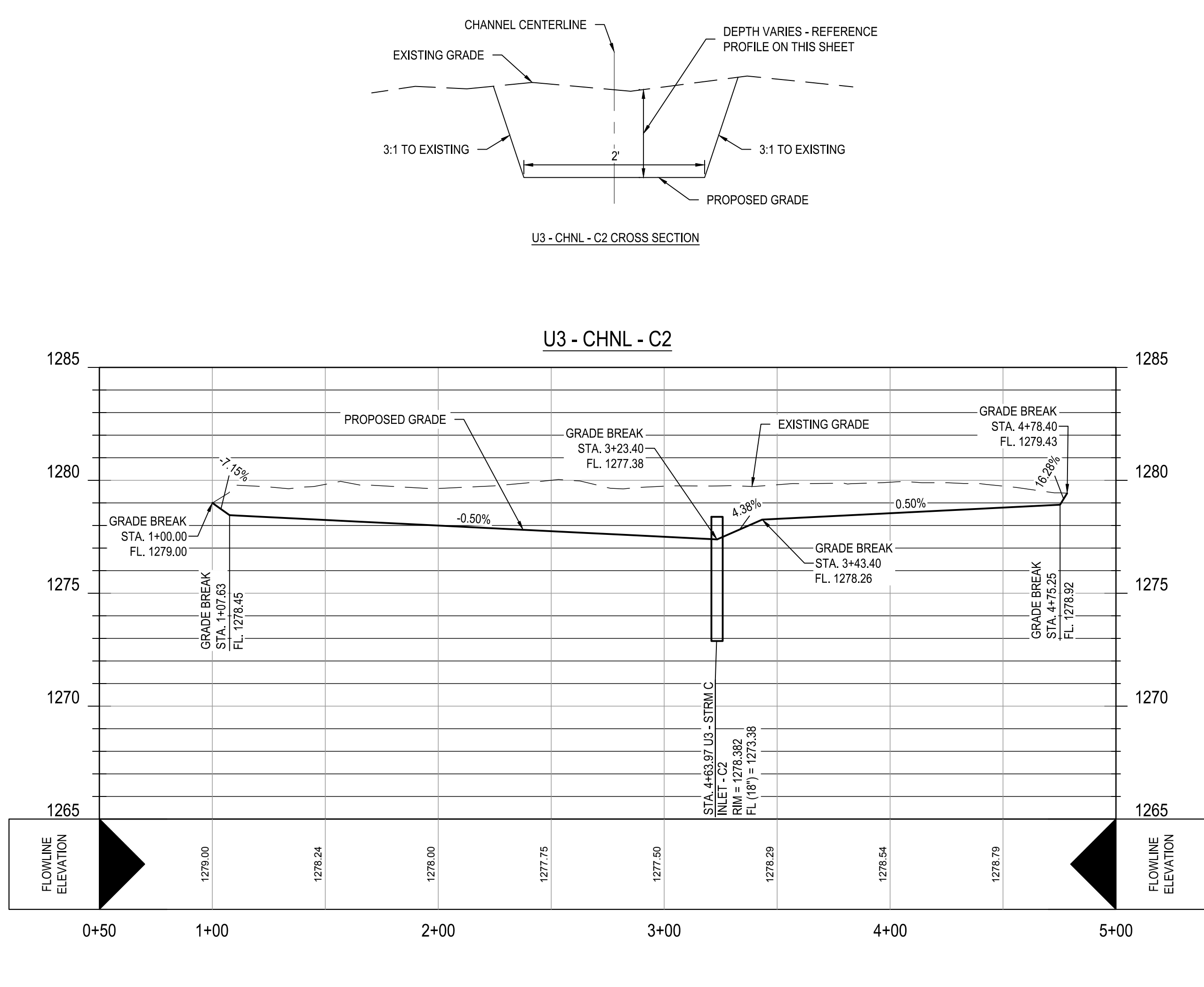
GENERAL NOTES:

- Designed in accordance with AASHTO LRFD Bridge Design Specifications.
- Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
- See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information. Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE. REINFORCING DIMENSIONS ARE OUT-TO-OUT OF BARS.

DATE	APR
DESCRIPTION	
REV	
DESIGNED BY: SAR	
REVIEWED BY: SSM	
DRAWN BY: SAR	

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-981-3360 www.bgeenergy.com
 T&E Registration No. P-1046



ELEVATION VIEW

#4 (1) Each Side
 Detail "A"

ELEVATION VIEW

#4 (1) Each Side
 Detail "A"

ELEVATION VIEW

#4 (1) Each Side
 Detail "A"

ELEVATION VIEW

#4 (1) Each Side
 Detail "A"

PLAN VIEW
NO OPENINGS
STYLE 'SL'

PLAN VIEW
32" DIA CAST-IN RING & COVER
STYLE 'RC'

PLAN VIEW
32" DIA CAST-IN RING & GRATE
STYLE 'RG'

PLAN VIEW
CAST-IN FRAME & GRATE
STYLE 'FG'

① Matches inside face of wall of precast base or riser below inlet.

FABRICATION NOTES:

- Provide Class "M" concrete in accordance with Item 421 and having a minimum compressive strength of 5000 psi.
- Provide Grade 60 reinforcing steel or equivalent area of WWR.
- Provide clear cover of 3/4" to reinforcing from bottom of slab for structural reinforcement. Place short span reinforcing closest to surface.
- No substitution is allowed for diagonal #4 bars around openings.
- Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
- Provide lifting devices in conformance with Manufacturer's recommendations.

INSTALLATION NOTES:

- PAZD is for use in ditches and medians outside of the horizontal clearance (clear zone). Precast Area Zone Drain is not intended for direct traffic and may not be placed in roadway.
- Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2" joint depth, whichever is greater.
- Do not grout rubber gasket joints without Manufacturer's recommendation.

GENERAL NOTES:

- Designed according to ASTM C913.
- Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

DETAIL "A"
(Reinforcing not shown for clarity)
 When an apron is to be cast around PAZD, use detail above to create an apron ledge on all 4 sides.

Construct cast-in-place reinforced concrete apron when shown elsewhere in plans. Use Class "M" concrete. Apron is subsidiary to PAZD. Apron is 1'-0" Min width around precast zone drain.

Style	Size (X x Y)	A x A*	B x B	Short Span Rein Steel Area	Long Span Rein Steel Area
SL	3x3	n/a	n/a	0.37 in ² /ft	0.37 in ² /ft
RC, RG	3x3	32" Dia	1.5x1.5	0.37 in ² /ft	0.37 in ² /ft
FG	3x3	3x3	1.5x1.5	0.37 in ² /ft	0.37 in ² /ft
SL	4x4	n/a	n/a	0.34 in ² /ft	0.34 in ² /ft
RC, RG	4x4	32" Dia	2x2	0.34 in ² /ft	0.34 in ² /ft
FG	4x4	3x3	2x2	0.34 in ² /ft	0.34 in ² /ft
SL	5x5	n/a	n/a	0.43 in ² /ft	0.43 in ² /ft
RC, RG	5x5	32" Dia	2.5x2.5	0.43 in ² /ft	0.43 in ² /ft
FG	5x5	3x3	2.5x2.5	0.43 in ² /ft	0.43 in ² /ft
FG	5x5	4x4	2.5x2.5	0.43 in ² /ft	0.43 in ² /ft

* Nominal frame/grate or ring/cover size.

TEXAS DEPARTMENT OF TRANSPORTATION Bridge Division Standard

PRECAST AREA ZONE DRAIN

PAZD

File	Drawn	Checked	Reviewed	Scale	Sheet	Total
precast08-20.dwg	2/20/20	2/20/20	2/20/20	1/8" = 1'-0"	10	10

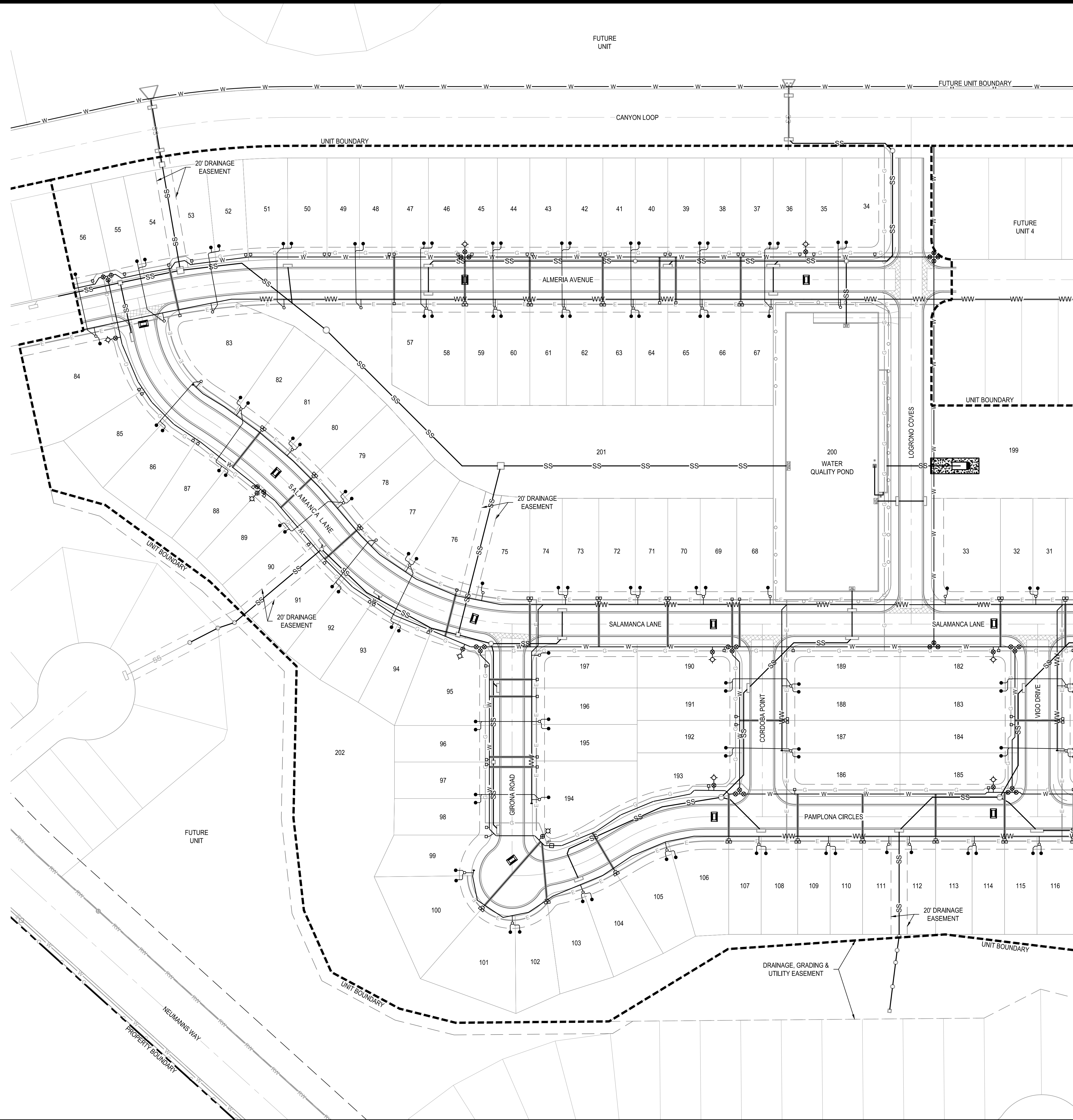
CANYON RANCH UNIT 3

STREET & DRAINAGE DETAILS (SHEET 6 OF 6)

STACY MULHOLLAND
 146417
 LICENSED PROFESSIONAL ENGINEER
 04/05/2024

SHEET C06.35

G:\TXC\Projects\San Antonio Projects\17278-00 - Canyon Ranch\05 - Unit 3\03_CADD\01_Shts\C07.00 ONSITE UTILITY PLAN.dwg Layout: ONSITE UTILITY PLAN (SHEET 1 OF 2) Plotted: 2/20/2023 3:47:05 PM By: Stodriguez



FINISHED FLOOR ELEVATIONS
 THE ELEVATION OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND OR FINISHED FLOOR ELEVATION WHICH EVER IS HIGHER, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORM WATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO THE STORM WATER CONVEYANCE STRUCTURES MUST HAVE FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE STRUCTURE.

TRENCH EXCAVATION SAFETY PROTECTION
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ABANDONED MAINS	QL D
NATURAL GAS MAINS	QL D
OVERHEAD ELECTRIC LINES	QL C
UNDERGROUND CATV LINES	QL D
UNDERGROUND TELECOMMUNICATION LINES	QL D
ALL UNDERGROUND UTILITY SERVICE LINES	QL D

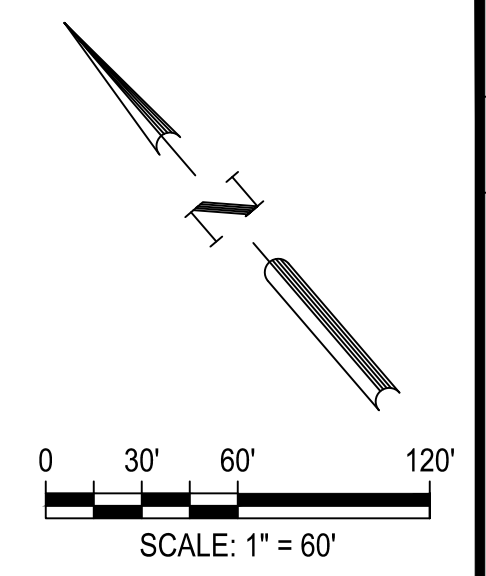
LEGEND

	PROPOSED LOT LINE
	PROPOSED RIGHT OF WAY
	PUBLIC UTILITY EASEMENT (P.U.E.)
	UNIT BOUNDARY
	PROPERTY BOUNDARY
	PROPOSED WATER MAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORM DRAIN
	PROPOSED GAS LINE
	PROPOSED ELECTRIC BANK
	SINGLE WATER SERVICE
	DUAL WATER SERVICE
	SINGLE SEWER SERVICE
	DUAL SEWER SERVICE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER SERVICE SLEEVE
	EXISTING WATER SLEEVE
	RAISED REFLECTIVE HYDRANT MARKER

- UTILITY GENERAL NOTES**
- 2" WATERLINES SHALL BE ASTM D2241, SDR 21 UNLESS OTHERWISE APPROVED. ALL WATERLINES LARGER THAN 8" SHALL BE AWWA C900 OR 18.
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- CONTRACTOR TO TIE INTO EXISTING WATER MAIN AFTER ALL NEW MAINS HAVE BEEN DISINFECTED AND PASSED ALL TESTS AND HAVE BEEN APPROVED BY ALOQA TEXAS, INC. FOR CHLORINATION INJECTION:
 1 - 1" CORPORATION STOP C.C. X I.P.
 1 - 1" COMP X 1" CPL CURB STOP
 1 - 1" 1/4" THD SOLID CAP FOR MACHINE CHLORINATION
 1 - 1" COPPER TUBING, CUT AS REQD
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 - ALL DISTURBED AREAS WITHIN THE EASEMENTS SHALL BE HYDRO-MULCHED IN ACCORDANCE WITH TXDOT SPECIFICATIONS.
 - FOR WATER METER SERVICED DETAIL, SEE SHEET C10.00
 - SEE SHEET C10.00 THROUGH C10.06 FOR UTILITY DETAILS
 - IF THE MAXIMUM STATIC PRESSURE EXCEEDS 80 PSI, A PRV WILL BE REQUIRED ON THE PROPERTY OWNER'S SIDE OF THE WATER METER

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DATE	APR
DESCRIPTION	
DESIGNED BY:	SAR
REVIEWED BY:	SSM
DRAWN BY:	SAR

BGE

BGE, INC.
 7330 San Pedro, Suite 202
 San Antonio, TX 78216
 TEL: 214-360-9999 www.bgeenergy.com
 TXE Registration No. P-1046

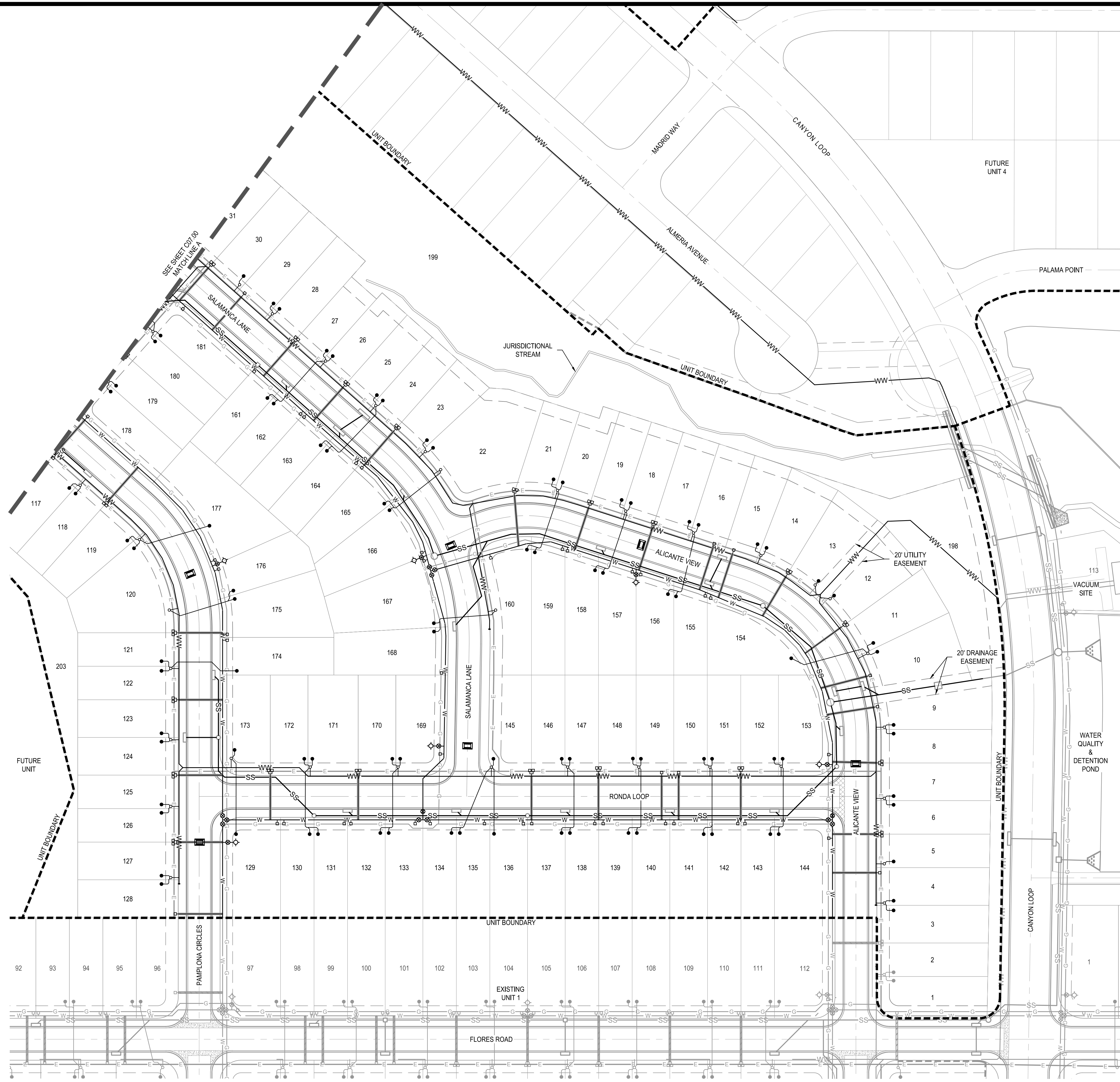
CANYON RANCH UNIT 3

ONSITE UTILITY PLAN (SHEET 1 OF 2)

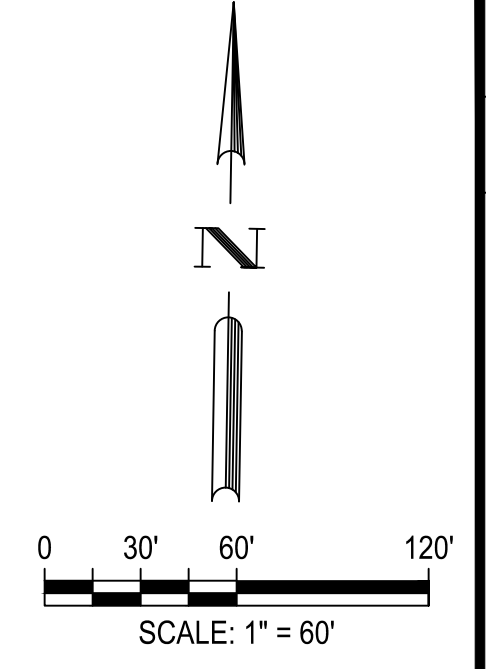
STATE OF TEXAS
 STACY MÜLLHOLLAND
 146417
 LICENSED PROFESSIONAL ENGINEER
 04/05/2024

SHEET
 C07.00

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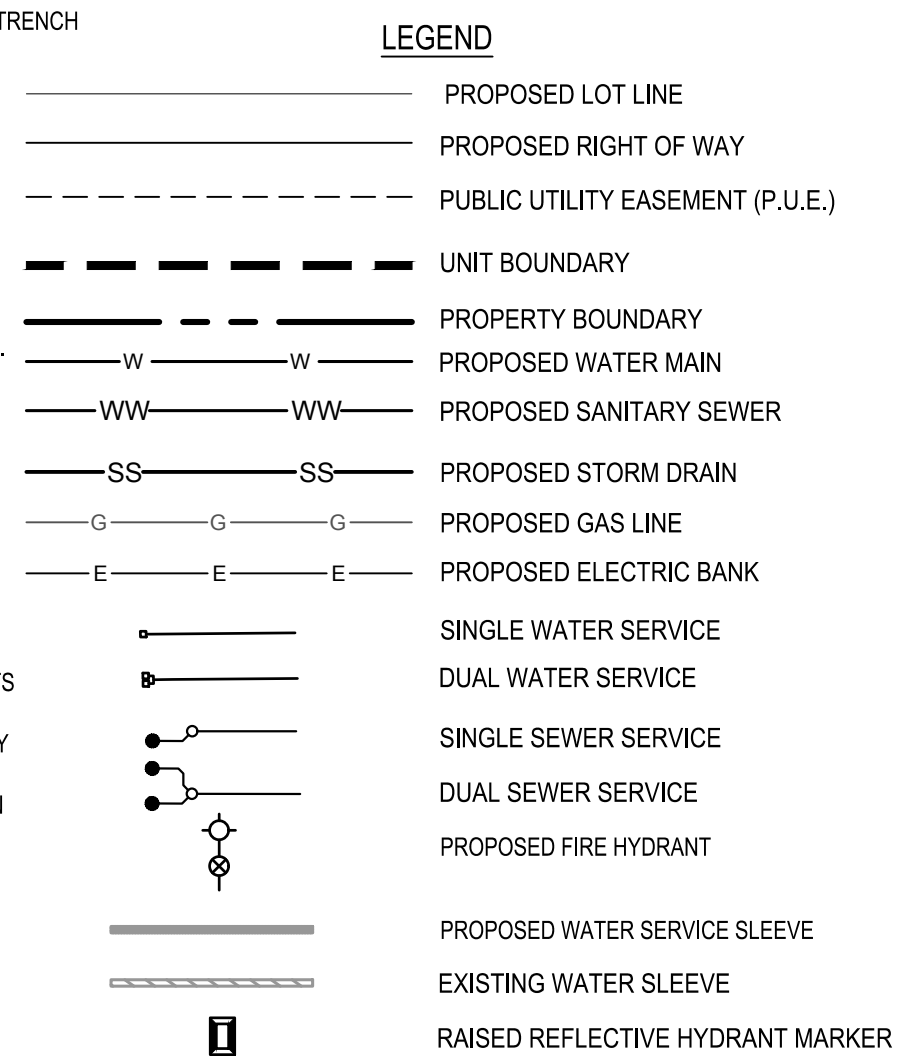
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UNDERGROUND CATV LINES	QL D
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<p style="font-size: 8px;">BGE, INC. 7330 San Pedro, Suite 202 San Antonio, TX 78216 TEL: 210-369-0000 www.bgeenergy.com TXE Registration No. P-1040</p>	<p style="font-size: 12px; font-weight: bold;">CANYON RANCH UNIT 3</p> <p style="font-size: 12px; font-weight: bold;">ONSITE UTILITY PLAN (SHEET 2 OF 2)</p>									
<p style="font-size: 8px;">STACY MULHOLLAND 146417 LICENSED PROFESSIONAL ENGINEER 04/05/2024</p>	<p style="font-size: 10px;">DESIGNED BY: SAR</p> <p style="font-size: 10px;">REVIEWED BY: SSM</p> <p style="font-size: 10px;">DRAWN BY: SAR</p>									
<p style="font-size: 10px;">SHEET</p> <p style="font-size: 14px; font-weight: bold;">C07.01</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">REV</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	REV	DATE	DESCRIPTION						
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