LIVELY TRACT PHASE 2

Modified Contributing Zone Plan Application

April 2025

PAPE-DAWSON ENGINEERS

LIVELY TRACT PHASE 2

Modified Contributing Zone Plan Application

Pape-Dawson Consulting Engineers, LLC.
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Bldg. 3, Suite 200
Austin, Texas 78759
(512) 454-8711
Email: tkrause@pape-dawson.com

April 2025

PAPE-DAWSON ENGINEERS

April 8, 2025

Ms. Leah Whallon
Texas Commission on Environmental Quality - Region 11
12100 Park 35 Circle, Bldg. A
Austin, Texas 78753

Re: Lively Tract, Phase 2
Modified Contributing Zone Plan

Dear Ms. Whallon:

Please find attached one (1) original, one (1) copy and one (1) digital copy of the Lively Tract, Phase 2 Modified Contributing Zone Plan (CZP). This Modified Contributing Zone Plan has been prepared in accordance with the Texas Administrative Code (30 TAC 213), and current policies for development over the Edwards Aquifer Recharge Zone.

This Contributing Zone Plan applies to an approximate 120.60-acre site as identified by the project limits. Please review the plan information for the items it is intended to address. If acceptable, please provide a written approval of the plan in order that construction may begin at the earliest opportunity.

Appropriate review fee ($8,000) and application fee are included. If you have any questions or require additional information, please do not hesitate to contact me at your earliest convenience.

Sincerely,
Pape-Dawson Consulting Engineers, LLC.

Dustin Goss, P.E., LEED® AP
Vice President

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER

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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: Lively Tract, Phase 2					**2. Regulated Entity No.: RN110606126**			
3. Customer Name: Hwy 29 Ventures 2015 LP					**4. Customer No.: 605112077**			
5. Project Type: **(Please circle/check one)**	New	Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential	Non-residential				**8. Site (acres):**		120.60
9. Application Fee:	$8,000	**10. Permanent BMP(s):**					2 Batch Detention, Vegetative Filter Strips	
11. SCS (Linear Ft.):	N/A	**12. AST/UST (No. Tanks):**					N/A	
13. County:	Williamson	**14. Watershed:**					South Fork San Gabriel River	

Application Distribution

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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

DUSTIN GOSS

Print Name of Customer/Authorized Agent

4/8/2025

Signature of Customer/Authorized Agent Date

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

CONTRIBUTING ZONE PLAN MODIFICATION

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: Dustin Goss, P.E., LEED AP®

Date: 4/8/25

Signature of Customer/Agent:

DM Goss

Project Information

1. Current Regulated Entity Name: Lively Tract, Phase 2
   Original Regulated Entity Name: Lively Tract, Phase 2
   Assigned Regulated Entity Number(s) (RN): RN110606126
   Edwards Aquifer Protection Program ID Number(s): 11002658
   ☒ The applicant has not changed and the Customer Number (CN) is: 605112077
   ☐ 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.

CZP Modification Summary	***Approved Project***	***Approved Modification #1***
Acres	80.43 Ac	109.88 Ac
Type of Development	Residential Single Family	Residential Single Family
Number of Residential Lots	58	136
Impervious Cover (acres)	7.44 Ac	20.47 Ac
Impervious Cover (%)	9.26%	18.63%
Permanent BMPs	1 batch detention basin; VFS	2 batch detention basins; VFS
Other		

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	0	0
Other	0	0

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

CZP Modification Summary	Approved Modification #2	Proposed Modification #3
Acres	116.70 Ac	120.60 Ac
Type of Development	Residential Single Family	Residential Single Family
Number of Residential Lots	334	429
Impervious Cover (acres)	48.77 Ac	63.15 Ac
Impervious Cover (%)	41.79%	52.36%
Permanent BMPs	2 batch detention basins; VFS	2 batch detention basins; VFS
Other		

AST Modification Summary	Approved Project	Proposed Modification
Number of ASTs	0	0
Other	0	0

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

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

6. ☒ **Attachment C: Current Site Plan of the Approved Projec**t. 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

Deed Recordation Affidavit
Contributing Zone Plan

THE STATE OF TEXAS §

County of Travis §

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

(1) That my name is **David Nairne** and that I own the real property described below.

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

(3) That the CONTRIBUTING ZONE PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on **March 13, 2019**.

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

(4) The said real property is located in **Williamson** County, Texas, and the legal description of the property is as follows: SEE ATTACHED EXHIBIT "B"

DAVID NAIRNE
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this 27th day of March, 2019.

NOTARY PUBLIC

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared **David Nairne** 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 27 day of March, 2019..

NOTARY PUBLIC

MARY HELEN TELLO
My Notary ID # 126626500
Expires August 14, 2020

Mary Helen Tello
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08/14/2020

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 14, 2024

Mr. Tom Rielly
HWY 29 Ventures 2015, LP
4910 Campus Drive
Newport Beach, CA 92660

Re: Modification of an approved Contributing Zone Plan (CZPMOD)
Lively Tract Phase 2; Located SW of Cross Creek Rd. and SH29; Leander, Williamson County, Texas
Edwards Aquifer Protection Program ID: 11003979, Regulated Entity No. RN110606126

Dear Mr. Rielly:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the application for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by Pape-Dawson Engineers, Inc. on behalf of the applicant, HWY 29 Ventures 2015 on April 23, 2024.

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

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this contributing zone plan or modification to a plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

BACKGROUND

The Lively Tract Phase 2 Contributing Zone Plan (CZP) was approved by letter dated March 13, 2019 (EAPP ID No. 11001396). The CZP consisted of 80.4 acres of a single-family residential development. A CZPMOD was approved by letter dated October 29, 2021 (EAP ID No. 11002658). The CZPMOD increased the approved acreage of the development to 109.88 acres

PROJECT DESCRIPTION

The proposed residential project will have a total area of approximately 116.70 acres, an increase of 6.9 acres. The modification will include the construction of single-family residences, drives, utilities, streets, sidewalks, and associated appurtenances. The impervious cover will be increased to 48.77 acres (41.79 percent) for the Lively Tract Phase 2 development. Project wastewater will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two previously approved engineered vegetative filter strips (VFS D and VFS E approved under EAPP ID No. 11001396) and two previously approved batch detention basins (Pond H approved under EAPP ID No. 11001396; and, Pond J approved under EAPP ID No. 11002658), designed using the TCEQ technical guidance, *RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices,* will be used to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 42,449 pounds of TSS generated from the 48.77 acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

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

SPECIAL CONDITIONS

I. This modification is subject to all the special and standard conditions listed in the approval letters dated March 13, 2019 (EAPP ID No. 11001396) and October 29, 2021 (EAP ID No. 11002658).

STANDARD CONDITIONS

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

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

Prior to Commencement of Construction:

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

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

of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.

5. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

<u>During Construction:</u>

6. The application must indicate the placement of permanent aboveground storage tanks facilities for static hydrocarbons and hazardous substances with cumulative storage capacity of 500 gallons or more. Subsequent permanent storage tanks on this project site require a modification to be submitted and approved prior to installation.

7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

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

9. 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.

10. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

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

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

12. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.

The holder of the approved contributing zone plan is responsible for compliance with Chapter §213 subchapter B and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 subchapter B and is subject to administrative rule or orders and penalties as provided under §213.25 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved contributing zone plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. James "Bo" Slone, P.G. of the Edwards Aquifer Protection Program at (512) 239-6994 or the regional office at 512-339-6994.

Sincerely,

Lori Wilson

Lori Wilson, Director
Austin Region
Texas Commission on Environmental Quality

LW/jcs

cc: Mr. Dustin Goss, P.E., Pape-Dawson Engineers, Inc.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 29, 2021

Mr. Tom Reilly
Hwy 29 Ventures 2015, LP
4910 Campus Dr.
New Port Beach, CA 92660

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Lively Tract Phase 2; Located S.W. of Cross Creek Rd. and SH 29; Leander, Texas

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

Edwards Aquifer Protection Program ID No. 11002658; Regulated Entity No. RN110606126

Dear Mr. Reilly:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP–MOD for the above-referenced project submitted to the Austin Regional Office by Pape-Dawson Engineers, Inc. on behalf of Hwy 29 Ventures 2015, LP on September 1, 2021. Final review of the CZP-MOD was completed after additional material was received on October 15, 2021. 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 Lively Tract Phase 2 Contributing Zone Plan (CZP) was approved by letter dated March 13, 2019 (EAPP ID No. 11001396). The CZP consisted of approximately 80.4. acres, which included single-family residences, drives, utilities, and associated appurtenances.

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 109.88 acres. It will include clearing and grading, excavation, installation of utilities and drainage improvements, streets, sidewalks and 136 single-family homes with associated driveways. The impervious cover will be 20.47 acres (18.63 percent). Project wastewater will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, an existing batch detention basin (Pond H, EAPP ID 11001396), a proposed batch detention basin (Pond J), an existing engineered vegetative filter strip (VFS D, EAPP ID 11001396), and a proposed engineered vegetative filter strip (VFS E) designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 17,817 pounds of TSS generated from the 20.47 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 March 13, 2019.

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. 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-MOD 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 Austin 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.

<u>During Construction:</u>

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.

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

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 Austin 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 Austin 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 Austin 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 Colin Gearing of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/cmg

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

Cc: Mr. Dustin Goss, P.E., LEED® AP, Pape-Dawson Engineers, Inc.

EXHIBIT "A"

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 13, 2019

Mr. David Nairne
Hwy 29 Ventures 2015, LP
4910 Campus Dr.
Newport Beach, CA 95660

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Lively Tract Phase 2, located SW of Cross Creek Rd and SH 29, Leander (ETJ), Texas

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

Edwards Aquifer Protection Program ID No. 11001396; Regulated Entity No. RN110606126

Dear Mr. Nairne:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP Application for the above-referenced project submitted to the Austin Regional Office by Pape-Dawson Engineers, Inc. on behalf of Hwy 29 Ventures 2015, LP on December 14, 2018. Final review of the CZP was completed after additional material was received on February 15, 2019, March 8, 2019, and March 12, 2019. 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 proposed residential project will have an area of approximately 80.43 acres. It will include the construction of single-family residences, drives, utilities, and associated appurtenances.

The impervious cover will be 7.44 acres (9.26 percent). Project wastewater will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a batch detention basin ("Pond H") and engineered vegetative filter strips ("VFS D"), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 6,476 pounds of TSS generated from the 7.44 acres of impervious cover. Pond H is designed to treat 5,866 pounds of TSS. The provided water quality volume is 161,181 ft^3 at an elevation of 815.0 ft. VFS D is designed to treat 766 pounds of TSS. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

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

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

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 CZP 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 Austin 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.

<u>During Construction:</u>

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.

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

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 Austin 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 Austin 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 CZP. If the new owner intends to commence any new regulated activity on the site, a new CZP 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 CZP 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 CZP must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
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 Ms. Michelle Zvonkovic of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

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

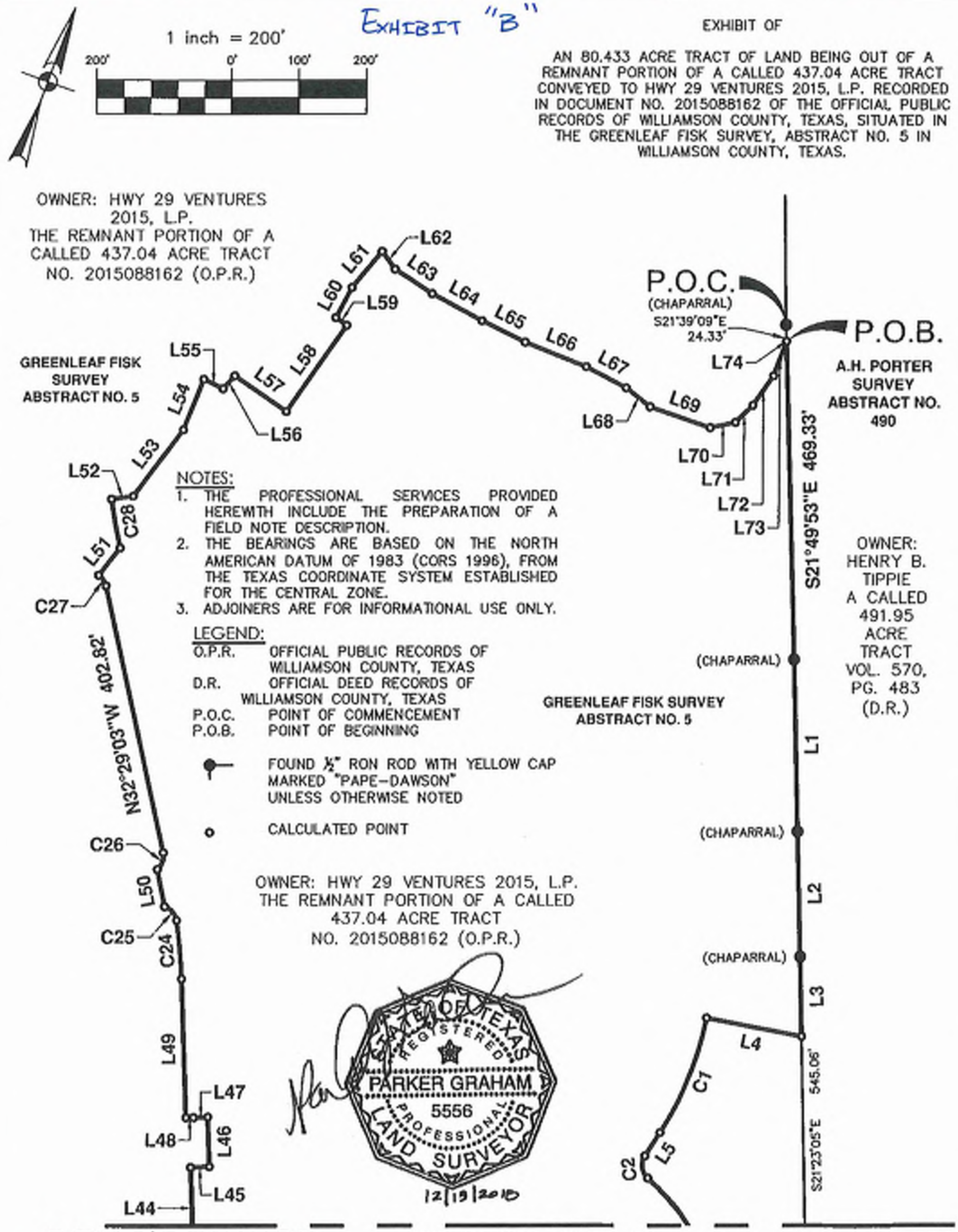
RCS/maz

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

EXHIBIT "B"

EXHIBIT OF

AN 80.433 ACRE TRACT OF LAND BEING OUT OF A REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5 IN WILLIAMSON COUNTY, TEXAS.



NOTES:

1. THE PROFESSIONAL SERVICES PROVIDED HEREWITH INCLUDE THE PREPARATION OF A FIELD NOTE DESCRIPTION.
2. THE BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (CORS 1996), FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE CENTRAL ZONE.
3. ADJOINERS ARE FOR INFORMATIONAL USE ONLY.

LEGEND:

O.P.R.	OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS
D.R.	OFFICIAL DEED RECORDS OF WILLIAMSON COUNTY, TEXAS
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
	FOUND ½" IRON ROD WITH YELLOW CAP MARKED "PAPE-DAWSON" UNLESS OTHERWISE NOTED
	CALCULATED POINT

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

DECEMBER 12, 2018

SHEET 1 OF 4

JOB No.: 50816-21

Date: Dec 13, 2018, 2:52pm User ID: blawson
File: H:\survey\CIVIL\50816-21\Exhibits\EX-5081621_C2P_R2.dwg

MATCHLINE SHEET 1 OF 4

EXHIBIT OF

AN 80.433 ACRE TRACT OF LAND BEING OUT OF A REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5 IN WILLIAMSON COUNTY, TEXAS.

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1 inch = 200'

LEGEND:

O.P.R.	OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS
D.R.	OFFICIAL DEED RECORDS OF WILLIAMSON COUNTY, TEXAS
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
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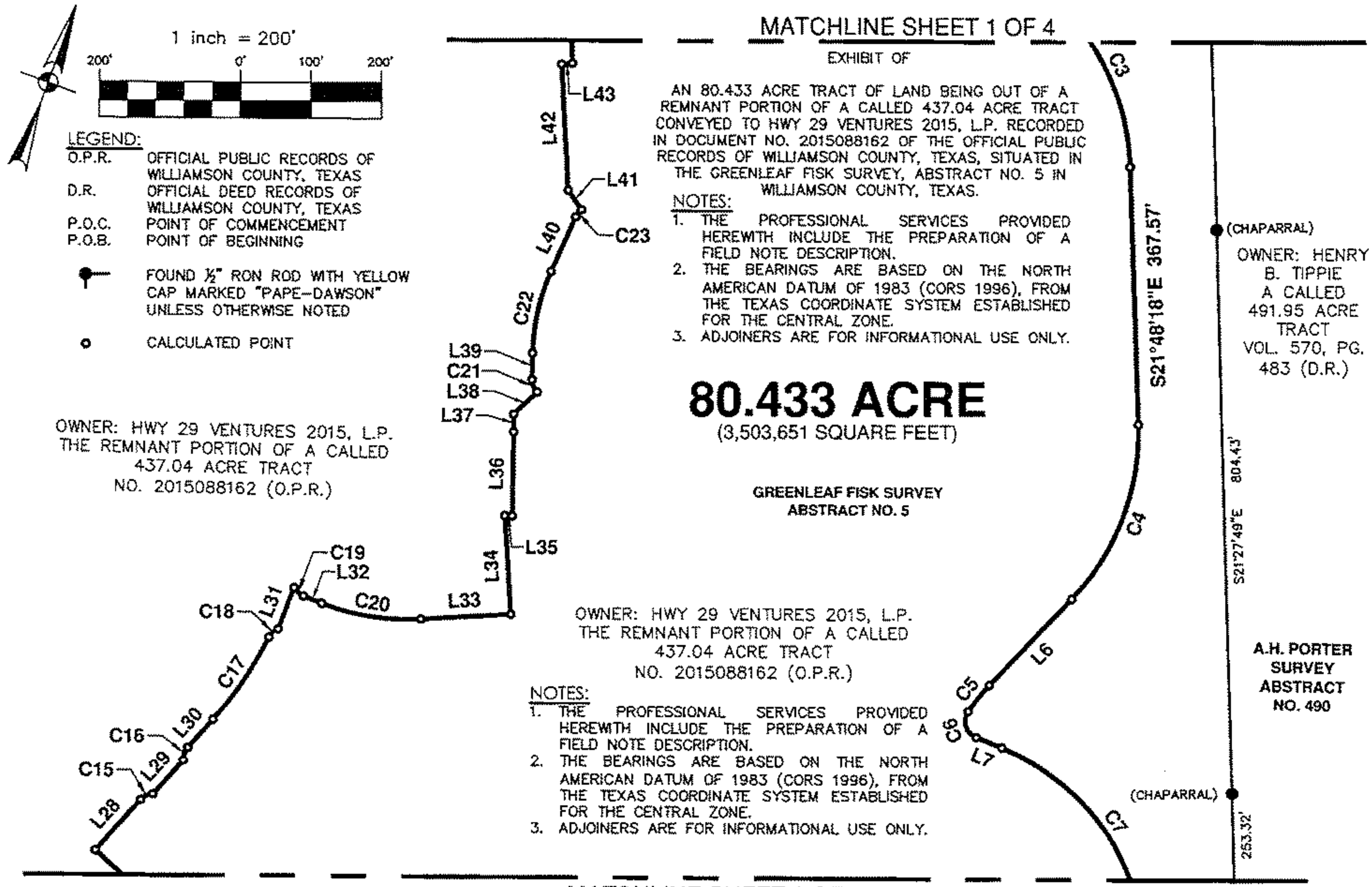

80.433 ACRE
(3,503,651 SQUARE FEET)

NOTES:
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MATCHLINE SHEET 3 OF 4

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

DECEMBER 12, 2018

SHEET 2 OF 4

JOB No.: 50816-21

Date: Dec 13, 2018, 2:52pm User ID: blawson
File: H:\survey\CIVIL\50816-21\Exhibits\EX-5081621_C2P_R2.dwg

EXHIBIT OF

AN 80.433 ACRE TRACT OF LAND BEING OUT OF A REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5 IN WILLIAMSON COUNTY, TEXAS.

1 inch = 200'

200' 0' 100' 200'

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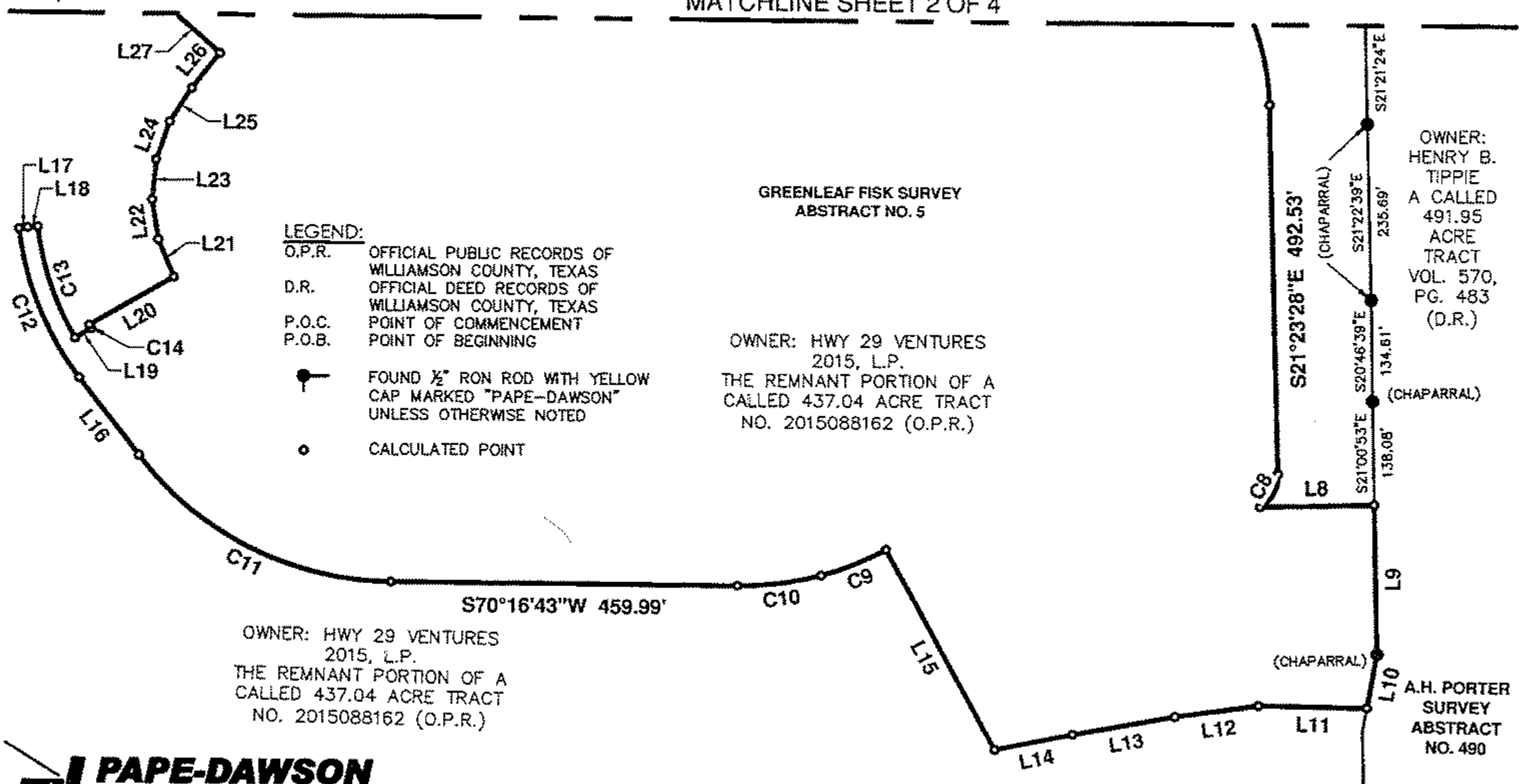

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DECEMBER 12, 2018

SHEET 3 OF 4

JOB No.: 50816-21

Date: Dec 13, 2018, 2:52pm User ID: blawson
File: H:\survey\CIVIL\50816-21\Exhibits\EX-5081621_C2P_R2.dwg

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CURVE TABLE

CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	475.00'	22°09'50"	S01°54'46"W	182.60'	183.75'
C2	25.00'	82°07'35"	S28°04'06"E	32.84'	35.83'
C3	340.00'	47°19'36"	S45°28'06"E	272.93'	280.84'
C4	345.00'	45°28'17"	S00°55'51"W	266.67'	273.80'
C5	275.00'	10°04'02"	S18°37'58"W	48.26'	48.32'
C6	25.00'	101°27'54"	S37°11'56"E	38.71'	44.27'
C7	325.00'	66°32'24"	S54°39'40"E	356.58'	377.44'
C8	43.76'	69°10'12"	S08°23'59"W	49.68'	52.83'
C9	403.98'	13°10'31"	S47°59'30"W	92.69'	92.90'
C10	419.86'	15°25'23"	S62°22'49"W	112.68'	113.02'
C11	425.00'	52°07'54"	N83°39'20"W	373.49'	386.69'
C12	400.00'	30°53'46"	N42°08'30"W	213.09'	215.70'
C13	375.00'	23°54'37"	S38°44'13"E	155.36'	156.49'
C14	350.00'	0°54'11"	N50°14'29"W	5.52'	5.52'
C15	25.00'	45°00'00"	N44°21'38"E	19.13'	19.63'
C16	25.00'	45°00'00"	N00°38'22"W	19.13'	19.63'
C17	525.00'	15°29'47"	N14°06'45"E	141.56'	141.99'
C18	25.00'	42°23'31"	N27°33'37"E	18.08'	18.50'
C19	25.00'	42°23'31"	S67°39'20"E	18.08'	18.50'
C20	335.00'	24°28'17"	N78°54'45"E	142.00'	143.08'
C21	25.00'	45°00'00"	N41°23'56"W	19.13'	19.63'
C22	300.00'	23°02'32"	N07°22'40"W	119.84'	120.65'
C23	25.00'	31°11'01"	N19°44'07"E	13.44'	13.61'
C24	768.00'	6°27'31"	N25°23'46"W	86.53'	86.57'
C25	25.00'	65°16'35"	N61°15'49"W	26.97'	28.48'
C26	25.00'	62°56'59"	N01°00'33"W	26.11'	27.47'
C27	25.00'	45°00'01"	N54°59'03"W	19.13'	19.64'
C28	1002.70'	4°10'44"	N30°12'45"W	73.12'	73.13'

LINE TABLE

LINE	BEARING	LENGTH
L1	S21°36'00"E	253.35'
L2	S21°35'17"E	184.35'
L3	S21°23'05"E	117.63'
L4	S80°49'51"W	143.46'
L5	S12°59'41"W	41.41'
L6	S23°39'59"W	169.98'
L7	S87°55'52"E	39.11'
L8	N68°36'32"E	151.69'
L9	S21°00'53"E	200.03'
L10	S09°27'57"E	73.28'
L11	S70°51'14"W	144.14'
L12	S62°15'36"W	112.43'
L13	S59°50'40"W	138.09'
L14	S58°20'23"W	105.09'
L15	N48°29'56"W	303.36'
L16	N57°35'23"W	129.77'
L17	N63°18'23"E	11.47'
L18	S65°44'37"W	13.54'
L19	N39°19'15"E	25.00'
L20	N40°12'36"E	130.00'
L21	N42°45'23"W	53.88'
L22	N28°41'22"W	53.88'
L23	N14°37'21"W	53.88'
L24	N00°33'20"W	53.88'
L25	N13°26'11"E	53.31'
L26	N18°02'33"E	60.13'
L27	N68°08'22"W	126.07'
L28	N21°51'38"E	96.80'
L29	N21°51'38"E	64.64'
L30	N21°51'38"E	53.80'
L31	N01°08'54"E	63.07'
L32	S88°51'06"E	27.51'
L33	N66°40'37"E	127.77'
L34	N23°19'23"W	140.29'
L35	N71°06'04"E	10.51'
L36	N18°53'56"W	120.00'
L37	N19°47'44"W	25.00'

LINE TABLE

LINE	BEARING	LENGTH
L38	N26°06'04"E	45.71'
L39	N18°53'56"W	37.41'
L40	N04°08'36"E	85.23'
L41	N54°40'23"W	33.44'
L42	N22°55'10"W	177.98'
L43	N64°36'42"E	15.46'
L44	N22°10'00"W	120.00'
L45	N67°50'00"E	27.60'
L46	N22°10'00"W	73.48'
L47	S67°52'31"W	21.00'
L48	S68°17'01"W	11.04'
L49	N22°09'21"W	205.10'
L50	N31°21'41"W	55.79'
L51	N18°05'48"E	50.90'
L52	N61°52'45"E	32.00'
L53	N17°08'05"E	122.55'
L54	N01°53'16"E	80.00'
L55	S84°27'52"E	31.81'
L56	N21°37'01"E	25.54'
L57	S75°26'30"E	93.16'
L58	N15°09'32"E	155.00'
L59	N74°50'28"W	20.00'
L60	N08°18'41"E	50.42'
L61	N19°33'44"E	69.08'
L62	S55°56'56"E	32.65'
L63	S76°26'18"E	65.24'
L64	S81°43'15"E	84.39'
L65	S83°56'33"E	71.54'
L66	S88°19'26"E	97.45'
L67	S82°12'05"E	67.13'
L68	S72°20'21"E	45.47'
L69	N88°55'16"E	94.32'
L70	N58°06'50"E	38.18'
L71	N25°20'36"E	35.94'
L72	N15°06'53"E	52.85'
L73	N00°08'30"W	54.08'
L74	N11°27'13"W	0.42'

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

DECEMBER 12, 2018

SHEET 4 OF 4

JOB No.: 50816-21

FIELD NOTES

FOR

AN 80.433 ACRE TRACT OF LAND BEING OUT OF A REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5 IN WILLIAMSON COUNTY, TEXAS. SAID 80.433 ACRE TRACT BEING MORE FULLY DESCRIBED AS FOLLOWS, WITH BEARINGS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NA 2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE CENTRAL ZONE:

COMMENCING at a ½" iron rod with cap marked "Chaparral" found for on a point in the west boundary line of a called 491.95-acre tract of land, conveyed to Henry B. Tippie, recorded in Vol. 570, Pg. 483 of the Deed Records of Williamson County, Texas, same being the east boundary line of said 437.04-acre tract hereof;

THENCE S 21°39'09" E, with the west boundary line of said 491.95-acre tract, same being the east boundary line of said 437.04-acre tract, a distance of **24.33 feet** to a calculated point, for the northeast corner and **POINT OF BEGINNING** hereof;

THENCE with the east boundary line of said 437.04-acre tract, same being the west boundary line of said 491.95-acre tract, the following four (4) courses and distances:

1. **S 21°49'53" E**, a distance of **469.33 feet** to a ½" iron rod with cap marked "Chaparral" found, for an angle point hereof,

2. **S 21°36'00" E**, a distance of **253.35 feet** to a ½" iron rod with cap marked "Chaparral" found, for an angle point hereof,

3. **S 21°35'17" E**, a distance of **184.35 feet** to a ½" iron rod with cap marked "Chaparral" found, for an angle point hereof, and

4. **S 21°23'05" E**, a distance of **117.63 feet** to a calculated point for the easternmost southeast corner hereof;

THENCE departing the west line of said 491.95-acre tract, through the interior of said 437.04-acre tract, the following fifteen (15) courses and distances:

1. **S 80°49'51" W**, a distance of **143.46 feet** to a calculated point of non-tangent curvature hereof,

2. along the arc of a curve to the right, having a **radius** of **475.00 feet**, a **central angle** of **22°09'50"**, a **chord bearing** and **distance** of **S 01°54'46" W, 182.60 feet**, an **arc length** of **183.75 feet** to a calculated point of non-tangency hereof,

3. **S 12°59'41" W**, a distance of **41.41 feet** to a calculated point of tangent curvature hereof,

4. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **82°07'35"**, a **chord bearing** and **distance** of **S 28°04'06" E, 32.84 feet**, an **arc length** of **35.83 feet** to a calculated point of reverse curvature hereof,

5. along the arc of a curve to the right, having a **radius** of **340.00 feet**, a **central angle** of **47°19'36"**, a **chord bearing** and **distance** of **S 45°28'06" E, 272.93 feet**, an **arc length** of **280.84 feet** to a calculated point of tangency hereof,

6. **S 21°48'18" E**, a distance of **367.57 feet** to a calculated point of tangent curvature hereof,

7. along the arc of a curve to the right, having a **radius** of **345.00 feet**, a **central angle** of **45°28'17"**, a **chord bearing** and **distance** of **S 00°55'51" W, 266.67 feet**, an **arc length** of **273.80 feet** to a calculated point of tangency hereof,

8. **S 23°39'59" W**, a distance of **169.98 feet** to a calculated point of tangent curvature hereof,

9. along the arc of a curve to the left, having a **radius** of **275.00 feet**, a **central angle** of **10°04'02"**, a **chord bearing** and **distance** of **S 18°37'58" W, 48.26 feet**, an **arc length** of **48.32 feet** to a calculated point of compound curvature hereof,

10. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **101°27'54"**, a **chord bearing** and **distance** of **S 37°11'56" E, 38.71 feet**, an **arc length** of **44.27 feet** to a calculated point of tangency hereof,

11. **S 87°55'52" E**, a distance of **39.11 feet** to a calculated point of tangent curvature hereof,

12. along the arc of a curve to the right, having a **radius** of **325.00 feet**, a **central angle** of **66°32'24"**, a **chord bearing** and **distance** of **S 54°39'40" E, 356.58** feet, an **arc length** of **377.44 feet** to a calculated point of tangency hereof,

13. **S 21°23'28" E**, a distance of **492.53 feet** to a calculated point of non-tangent curvature hereof,

14. along the arc of a curve to the right, having a **radius** of **43.76 feet**, a **central angle** of **69°10'12"**, a **chord bearing** and **distance** of **S 08°23'59" W, 49.68 feet**, an **arc length** of **52.83 feet** to a calculated point of non-tangency hereof, and

15. **N 68°36'32" E**, a distance of **151.69 feet** to a calculated point in the west line of said 491.95-acre tract, same being the east line of said 437.04-acre tract for a southeast corner hereof;

THENCE S 21°00'53" E, with the east boundary line of said 437.04-acre tract, same being the west boundary line of said 491.95-acre tract, a distance of **200.03 feet** to an iron rod with cap marked "Chaparral" found for an angle point hereof;

THENCE S 09°27'57" E, with the east boundary line of said 437.04-acre tract, same being the west boundary line of said 491.95-acre tract, a distance of **73.28 feet** to a calculated point for the southeast corner hereof;

THENCE departing the west line of said 491.95-acre tract, through the interior of said 437.04-acre tract, the following eighty-six (86) courses and distances:

1. **S 70°51'14" W**, a distance of **144.14 feet** to a calculated angle point hereof,

2. **S 62°15'36" W**, a distance of **112.43 feet** to a calculated angle point hereof,

3. **S 59°50'40" W**, a distance of **138.09 feet** to a calculated angle point hereof,

4. **S 58°20'23" W**, a distance of **105.09 feet** to a calculated angle point hereof,

5. **N 48°29'56" W**, a distance of **303.36 feet** to a calculated point of non-tangent curvature,

6. along the arc of a curve to the right, having a **radius** of **403.98 feet**, a **central angle** of **13°10'31"**, a **chord bearing** and **distance** of **S 47°59'30" W, 92.69 feet**, an **arc length** of **92.90 feet** to a calculated point of compound curvature hereof,

7. along the arc of a curve to the right, having a **radius** of **419.86 feet**, a **central angle** of **15°25'23"**, a **chord bearing** and **distance** of **S 62°22'49" W, 112.68 feet**, an **arc length** of **113.02 feet** to a calculated point of non-tangency hereof,

8. **S 70°16'43" W**, a distance of **459.99 feet** to a calculated point of tangency hereof,

9. along the arc of a curve to the right, having a **radius** of **425.00 feet**, a **central angle** of **52°07'54"**, a **chord bearing** and **distance** of **N 83°39'20" W, 373.49 feet**, an **arc length** of **386.69 feet** to a calculated point of tangency hereof,

10. **N 57°35'23" W**, a distance of **129.77 feet** to a calculated point of tangent curvature hereof,

11. along the arc of a curve to the right, having a **radius** of **400.00 feet**, a **central angle** of **30°53'46"**, a **chord bearing** and **distance** of **N 42°08'30" W, 213.09 feet**, an **arc length** of **215.70 feet** to a calculated point of tangency hereof,

12. **N 63°18'23" E**, a distance of **11.47 feet** to a calculated point for the westernmost southwest corner hereof,

13. **N 65°44'37" E**, a distance of **13.54 feet** to a calculated point of non-tangent curvature hereof,

14. along the arc of a curve to the left, having a **radius** of **375.00 feet**, a **central angle** of **23°54'37"**, a **chord bearing** and **distance** of **S 38°44'13" E, 155.36 feet**, an **arc length** of **156.49 feet** to a calculated point of non-tangency hereof,

15. **N 39°19'15" E**, a distance of **25.00 feet** to a calculated point of non-tangent curvature hereof,

16. along the arc of a curve to the right, having a **radius** of **350.00 feet**, a **central angle** of **00°54'11"**, a **chord bearing** and **distance** of **N 50°14'29" W, 5.52 feet**, an **arc length** of **5.52 feet** to a calculated point of non-tangency hereof,

17. **N 40°12'36" E**, a distance of **130.00 feet** to a calculated angle point hereof,

18. **N 42°45'23" W**, a distance of **53.88 feet** to a calculated angle point hereof,

19. **N 28°41'22" W**, a distance of **53.88 feet** to a calculated angle point hereof,

20. **N 14°37'21" W**, a distance of **53.88 feet** to a calculated angle point hereof,

21. **N 00°33'20" W**, a distance of **53.88 feet** to a calculated angle point hereof,

22. **N 13°26'11" E**, a distance of **53.31 feet** to a calculated angle point hereof,

23. **N 18°02'33" E**, a distance of **60.13 feet** to a calculated angle point hereof,

24. **N 68°08'22" W**, a distance of **126.07 feet** to a calculated angle point hereof,

25. **N 21°51'38" E**, a distance of **96.80 feet** to a calculated point of tangency,

26. along arc of a curve to the right, having a **radius** of **25.00 feet**, a **central angle** of **45°00'00"**, a **chord bearing** and **distance** of **N 44°21'38" E, 19.13 feet**, an **arc length** of **19.63 feet** to a calculated point of tangency hereof,

27. **N 21°51'38" E**, a distance of **64.64 feet** to a calculated point of non-tangent curvature,

28. along the arc of a curve to the right, having a **radius** of **25.00 feet**, a **central angle** of **45°00'00"**, a **chord bearing** and **distance** of **N 00°38'22" W, 19.13 feet**, an **arc length** of **19.63 feet** to a calculated point of non-tangent curvature,

29. **N 21°51'38" E**, a distance of **53.80 feet** to a calculated point of tangent curvature,

30. along the arc of a curve to the left, having a **radius** of **525.00 feet**, a **central angle** of **15°29'47"**, a **chord bearing** and **distance** of **N 14°06'45" E, 141.56 feet**, an **arc length** of **141.99 feet** to a calculated point of reverse curvature,

31. along the arc of a curve to the right, having a **radius** of **25.00 feet**, a **central angle** of **42°23'31"**, a **chord bearing** and **distance** of **N 27°33'37" E, 18.08 feet**, an **arc length** of **18.50 feet** to a calculated point of tangency hereof,

32. **N 01°08'54" E**, a distance of **63.07 feet** to a calculated point of non-tangent curvature hereof,

33. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **42°23'31"**, a **chord bearing** and **distance** of **S 67°39'20" E, 18.08 feet**, an **arc length** of **18.50 feet** to a calculated point of non-tangency,

34. **S 88°51'06" E**, a distance of **27.51 feet** to a calculated point of tangent curvature,

35. along the arc of a curve to the left, having a **radius** of **335.00 feet**, a **central angle** of **24°28'17"**, a **chord bearing** and **distance** of **N 78°54'45" E, 142.00 feet**, an **arc length** of **143.08 feet** to a calculated point of tangency hereof,

36. **N 66°40'37" E**, a distance of **127.77 feet** to a calculated angle point hereof,

37. **N 23°19'23" W**, a distance of **140.29 feet** to a calculated angle point hereof,

38. **N 71°06'04" E**, a distance of **10.51 feet** to a calculated angle point hereof,

39. **N 18°53'56" W**, a distance of **120.00 feet** to a calculated angle point hereof,

40. **N 19°47'44" W**, a distance of **25.00 feet** to a calculated angle point hereof,

41. **N 26°06'04" E**, a distance of **45.71 feet** to a calculated point of non-tangent curvature hereof,

42. along the arc of a curve to the right, having a **radius** of **25.00 feet**, a **central angle** of **45°00'00"**, a **chord bearing** and **distance** of **N 41°23'56" W, 19.13 feet**, an **arc length** of **19.63 feet** to a calculated point of non-tangency hereof,

43. **N 18°53'56" W**, a distance of **37.41 feet** to a calculated point of tangent curvature hereof,

44. along the arc of a curve to the right, said curve having **radius** of **300.00 feet**, a **central angle** of **23°02'32"**, a **chord bearing** and **distance** of **N 07°22'40" W, 119.84 feet**, an **arc length** of **120.65 feet** to a calculated point of tangency,

45. **N 04°08'36" E**, a distance of **85.23 feet** to a calculated point of tangent curvature,

46. along the arc of a curve to the right, having a **radius** of **25.00 feet**, a **central angle** of **31°11'01"**, a **chord bearing** and **distance** of **N 19°44'07" E, 13.44 feet**, an **arc length** of **13.61 feet** to a calculated point of tangency,

47. **N 54°40'23" W**, a distance of **33.44 feet** to a calculated angle point hereof,

48. **N 22°55'10" W**, a distance of **177.98 feet** to a calculated angle point hereof,

49. **N 64°36'42" E**, a distance of **15.46 feet** to a calculated angle point hereof,

50. **N 22°10'00" W**, a distance of **120.00 feet** to a calculated angle point hereof,

51. **N 67°50'00" E**, a distance of **27.60 feet** to a calculated angle point hereof,

52. **N 22°10'00" W**, a distance of **73.48 feet** to a calculated angle point hereof,

53. **S 67°52'31" W**, a distance of **21.00 feet** to a calculated angle point hereof,

54. **S 68°17'01" W**, a distance of **11.04 feet** to a calculated angle point hereof,

55. **N 22°09'21" W**, a distance of **205.10 feet** to a calculated point of non-tangent curvature hereof,

56. along the arc of a curve to the left, having a **radius** of **768.00 feet**, a **central angle** of **06°27'31"**, a **chord bearing** and **distance** of **N 25°23'46" W, 86.53 feet**, an **arc length** of **86.57 feet** to a calculated point of compound curvature hereof,

57. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **65°16'35"**, a **chord bearing** and **distance** of **N 61°15'49" W, 26.97 feet**, an **arc length** of **28.48 feet** to a calculated point of non-tangency hereof,

58. **N 31°21'41" W**, a distance of **55.79 feet** to a calculated point of non-tangent curvature hereof,

59. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **62°56'59"**, a **chord bearing** and **distance** of **N 01°00'33" W, 26.11 feet**, an **arc length** of **27.47 feet** to a calculated point of non-tangency hereof,

60. **N 32°29'03" W**, a distance of **402.82 feet** to a calculated point of tangent curvature hereof,

61. along the arc of a curve to the left, having a **radius** of **25.00 feet**, a **central angle** of **45°00'01"**, a **chord bearing** and **distance** of **N 54°59'03" W, 19.13 feet**, an **arc length** of **19.64 feet** to a calculated point of tangency hereof,

62. **N 18°05'48" E**, a distance of **50.90 feet** to a calculated point of non-tangent curvature hereof,

63. along the arc of a curve to the right, having a **radius** of **1002.70 feet**, a **central angle** of **04°10'44"**, a **chord bearing** and **distance** of **N 30°12'45" W, 73.12 feet**, an **arc length** of **73.13 feet** to a calculated point of non-tangency hereof,

64. **N 61°52'45" E**, a distance of **32.00 feet** to a calculated angle point hereof,

65. **N 17°08'05" E**, a distance of **122.55 feet** to a calculated angle point hereof,

66. **N 01°53'16" E**, a distance of **80.00 feet** to a calculated angle point hereof,

67. **S 84°27'52" E**, a distance of **31.81 feet** to a calculated angle point hereof,

68. **N 21°37'01" E**, a distance of **25.54 feet** to a calculated angle point hereof,

69. **S 75°26'30" E**, a distance of **93.16 feet** to a calculated angle point hereof,

70. **N 15°09'32" E**, a distance of **155.00 feet** to a calculated angle point hereof,

71. **N 74°50'28" W**, a distance of **20.00 feet** to a calculated angle point hereof,

72. **N 08°18'41" E**, a distance of **50.42 feet** to a calculated angle point hereof,

73. **N 19°33'44" E**, a distance of **69.08 feet** to a calculated point for the northwest corner hereof,

74. **S 55°56'56" E**, a distance of **32.65 feet** to a calculated angle point hereof,

75. **S 76°26'18" E**, a distance of **65.24 feet** to a calculated angle point hereof,

76. **S 81°43'15" E**, a distance of **84.39 feet** to a calculated angle point hereof,

77. **S 83°56'33" E**, a distance of **71.54 feet** to a calculated angle point hereof,

78. **S 88°19'26" E**, a distance of **97.45 feet** to a calculated angle point hereof,

79. **S 82°12'05" E**, a distance of **67.13 feet** to a calculated angle point hereof,

80. **S 72°20'21" E**, a distance of **45.47 feet** to a calculated angle point hereof,

81. **N 88°55'16" E**, a distance of **94.32 feet** to a calculated angle point hereof,

82. **N 58°06'50" E**, a distance of **38.18 feet** to a calculated angle point hereof,

83. **N 25°20'36" E**, a distance of **35.94 feet** to a calculated angle point hereof,

84. **N 15°06'53" E**, a distance of **52.85 feet** to a calculated angle point hereof,

85. **N 00°08'30" W**, a distance of **54.08 feet** to a calculated angle point hereof, and

86. **N 11°27'13" W**, a distance of **0.42 feet** to the POINT OF BEGINNING and containing 80.433 acres in Williamson County, Texas. Said tract being described in accordance with a survey made on the ground and exhibit prepared under Job No. 50816-21 by Pape-Dawson Engineers, Inc.

PREPARED BY:	Pape-Dawson Engineers, Inc.
DATE:	December 11, 2018
JOB No.:	50816-21
DOC.ID.:	H:\survey\CIVIL\50816-21\Exhibits\Word\FN-5081621_80.433Ac_CZP_R1.docx

TBPE Firm Registration #470
TBPLS Firm Registration #100288-01

Parker J. Graham

STATE OF TEXAS
REGISTERED
PARKER GRAHAM
5556
PROFESSIONAL
LAND SURVEYOR

12/13/2018

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 29, 2021

Mr. Tom Reilly
Hwy 29 Ventures 2015, LP
4910 Campus Dr.
New Port Beach, CA 92660

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Lively Tract Phase 2; Located S.W. of Cross Creek Rd. and SH 29; Leander, Texas

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

Edwards Aquifer Protection Program ID No. 11002658; Regulated Entity No. RN110606126

Dear Mr. Reilly:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP–MOD for the above-referenced project submitted to the Austin Regional Office by Pape-Dawson Engineers, Inc. on behalf of Hwy 29 Ventures 2015, LP on September 1, 2021. Final review of the CZP-MOD was completed after additional material was received on October 15, 2021. 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 Lively Tract Phase 2 Contributing Zone Plan (CZP) was approved by letter dated March 13, 2019 (EAPP ID No. 11001396). The CZP consisted of approximately 80.4. acres, which included single-family residences, drives, utilities, and associated appurtenances.

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 109.88 acres. It will include clearing and grading, excavation, installation of utilities and drainage improvements, streets, sidewalks and 136 single-family homes with associated driveways. The impervious cover will be 20.47 acres (18.63 percent). Project wastewater will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, an existing batch detention basin (Pond H, EAPP ID 11001396), a proposed batch detention basin (Pond J), an existing engineered vegetative filter strip (VFS D, EAPP ID 11001396), and a proposed engineered vegetative filter strip (VFS E) designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 17,817 pounds of TSS generated from the 20.47 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 March 13, 2019.

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

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

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.

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

Prior to Commencement of Construction:

4. 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-MOD 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 Austin 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.

<u>During Construction:</u>

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.

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

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 Austin 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 Austin 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 Austin 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 Colin Gearing of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/cmg

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

Cc: Mr. Dustin Goss, P.E., LEED® AP, Pape-Dawson Engineers, Inc.

ATTACHMENT B

Project Modification Narrative

The Lively Tract, Phase 2 Modified Contributing Zone Plan is located southeast of the intersection of Ronald Reagan Blvd. and SH Hwy 29, within the City of Leander ETJ in Williamson County, Texas and is being proposed for modification because of Lively Tract Phase 6 development using PBMPs constructed with the original Lively Tract Phase 2. The initial phases of the development (Lively Tract Phases 1, 2, 3, 4, & 5) have been permitted and are in various stages of construction. The entire Phase 1 boundary is located within the Recharge Zone (WPAP); thus, no Contributing Zone Plan exists for the phase. Phase 2 was divided into two sections: one located entirely over the Edwards Aquifer Recharge Zone (WPAP), and one located entirely over the Contributing Zone. The section over the Contributing Zone has an approved CZP, which was modified with Phase 4 and approved. The Phase 3 boundary is located partly over the Edwards Aquifer Recharge Zone and partly over the Contributing Zone, but was submitted as one section and treated as if over the Recharge Zone and covered by a WPAP per TCEQ policy; thus, no CZP exists for Phase 3. The Lively Tract Phase 4 boundary is located entirely within the Contributing Zone and is separated by a north-south flowing drainage way conveying treated upstream runoff to the South Fork San Gabriel River. The portion of Phase 4 to the east of the drainage way has an approved CZP, which was the modification of the aforementioned Phase 2 CZP. The portion of Phase 4 to the west of the drainage way with its own separate PBMP's was submitted as a Contributing Zone Plan and approved. The Lively Tract Phase 5 boundary is also within the Contributing Zone and has an approved modification to the aforementioned Phase 2 CZP. This is the final Phase 2 CZP modification to be done with the development's final phase, Lively Tract Phase 6.

This modification to the Lively Tract Phase 2 CZP is being pursued because of the development of Lively Tract Phase 6 and because a portion of Phase 6 development is to be treated by PMBP's built and permitted with the Phase 2 CZP. The Lively Tract Phase 6 boundary is located entirely within the Contributing Zone and is included as part of the Lively Tract Phase 2 Modified CZP. This Modified CZP will ultimately result in 120.60 acres of development over the Contributing Zone that will be served by the proposed PBMP's. No more modifications are anticipated because Phase 6 is the final phase of development.

New construction activities proposed with the Lively Tract, Phase 2 Modified CZP improvements include clearing, grading, excavation, installation of utilities and drainage improvements, streets, sidewalks, and homes with associated driveways. The increase in area/impervious area/lots from the original CZP is a result of the development of Phase 6 and its PBMP's, which was undeveloped at the time of original Phase 2 CZP approval. Of the total Phase 2 Modified CZP project limits of 120.60 acres, 28.09 acres were developed as part of the original permitted Lively Tract Phase 2 CZP, 26.94 acres were developed after Phase 4 construction with modification #1 to the Phase 2 CZP, 42.76 acres were developed after Phase 5 construction with modification #2 to the Phase 2 CZP, and 22.83 acres are proposed to be developed with Phase 6 construction and permitted through this modification to the Phase 2 CZP. After Phase 6 development, the total improvements within the Lively Tract Phase 2 Modified CZP include approximately 63.15 acres (52.36%) of impervious cover.

The project limits of the Lively Tract, Phase 2 Modified Contributing Zone Plan (CZP) are approximately 120.60 acres. 81.10 acres are treated by an existing Permanent Best Management Practices (PBMPs) batch detention basin H from the original Lively Tract Phase 2 CZP, while 15.93 acres are to be treated by another existing PBMP batch detention basin J constructed with Lively Tract Phase 4 and permitted in CZP Modification #1.

One (1) existing batch detention pond already constructed with the original Phase 2 CZP will serve as one Permanent Best Management Practice (PBMPs). One (1) existing batch detention basin and engineered vegetated filter strips (VFS) that were constructed with Phase 4's modification #1 of the Phase 2 CZP will also serve this site as a PBMP. 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 Total Suspended Solids (TSS) from the site. Please see the Treatment Summary Exhibit included as an attachment to this application for more information.

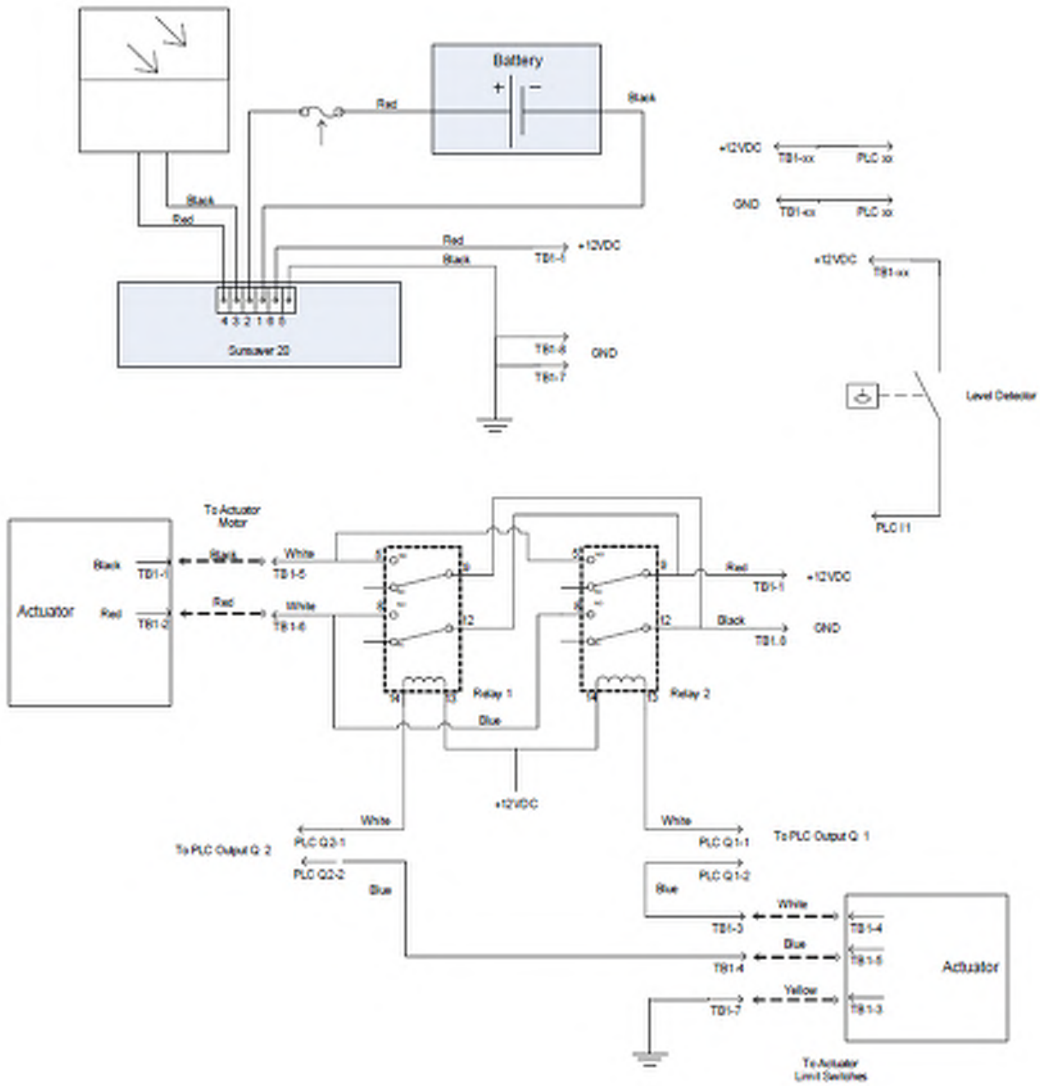
At full build-out, this project will generate approximately 102,960 gallons per day of average wastewater flow. Sewage flow will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant. Potable water will be provided by the City of Leander.

Batch Detention Basin

The batch detention basins (Batch Detention Basin H & Batch Detention Basin J) are earthen ponds with side-slopes at 3:1 with the exception of maintenance access paths which are at 4:1 slopes. Batch Detention Basin H is designed to treat 43.35 acres of impervious cover and remove 44,271 lb. of TSS at Ultimate Buildout. Batch Detention Basin J is designed to treat 8.71 acres of impervious cover and remove 8,889 lb. of TSS at Ultimate Buildout. The following is a summary of the batch detention pond controller components:

Batch Detention Pond Controller Information		
Component	**Description**	**Voltage**
Power System	Solar Charged 12 VDC Battery (Model MK Powered 8GU1) (Or approved equal)	
Logic Controller	IDEC FL1C-H12RCE (Or approved equal)	12
Parts Enclosure	Southwest Photovoltaic Model BBG-1 (15.75" wide x 9.75" deep x 11.75" tall) (Or approved equal)	
Nature of Event Sensing	Anchor Scientific Float Switch (Or approved equal)	
Valve Type	Keystone 6" Butterfly Valve with over torque sensors and mechanical hand crank for physical override if necessary. Able to withstand 100 psi minimum. (Or approved equal)	
Actuator	EPI-6 12 VDC. Able to withstand 100 psi minimum. (Or approved equal)	12
Power Consumption (actuator, controller, relay, PLC)	242.58 W, 46.5 W-hours	

The following is a circuit diagram of the controllers:



The logic controllers will provide a test sequence. The systems will be solar powered and will be equipped with a backup battery. The systems will be equipped with an on/off/reset switch. The butterfly valves will be equipped with a manual hand crank for physical override if necessary in the event of a spill or for maintenance purposes. The systems will be equipped with a clearly visible external indicator to indicate if a cycle is in progress without having to open the parts enclosure.

The logic controller cycle overviews are as follows:

Case 1: A single rain event fills the batch detention basin. The basin holds the diverted storm water for the detention time (12 hours) and the releases the water. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 2: A single rain event occurs, but does not completely fill the batch detention basin. The basin holds the water for the detention period (12 hours), and then releases it. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 3: A single rain event fills the batch detention basin under the trip point of the level sensor. The level sensor does not trip. The captured water is held until it infiltrates / evaporates or is joined by storm water from a subsequent storm.

Case 4: Begins the same as Case 1. During the drawdown period, one or more additional rain events occur causing additional water to enter the batch detention basin. The valve remains open and the additional water volume is drained. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 5: Begins the same as Case 2. During the drawdown period, one or more additional rain events can occur causing additional water to enter the basin. The valve remains open and the additional water volume is drained. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Safety Precautions:

The system will be equipped with an alarm system that is clearly visible to indicate a system malfunction. A sign shall be posted with phone numbers of the owner and appropriate TCEQ regional office.

Vegetated Filter Strips

The remaining areas of the Modified Phase 2 CZP that are not treated in proposed Batch Detention Basin J and existing Batch Detention Basin H will be treated by 15' wide engineered vegetated filter strips (VFS). The VFS areas are identified on the Treatment Summary Exhibit. The VFS will treat 11.09 acres of impervious cover and provide 10,574 lb. of TSS removal.

ATTACHMENT C

Impervious Cover & Water Quality Treatment Summary (Post Phase 2, 4, & 5 Development)						
LIVELY TRACT, PHASE 2 MODIFIED CZP						
B.M.P.	Area (AC)		I.C. (AC)		TSS Removal (lb.)	
Batch Detention Pond H	80.06		33.34		34,326	
Batch Detention Pond J	16.63		7.13		7,333	
Residential VFS D	9.89		5.05		4,824	
Residential VFS E	6.59		3.25		3,108	
Open Space Area	3.53		0		0	
						Required
Total CZP	116.70		48.77		49,591	49,591

SCALE: 1"= 200'

0' 200' 400' 600'

LEGEND

CZP POND J TREATMENT AREA

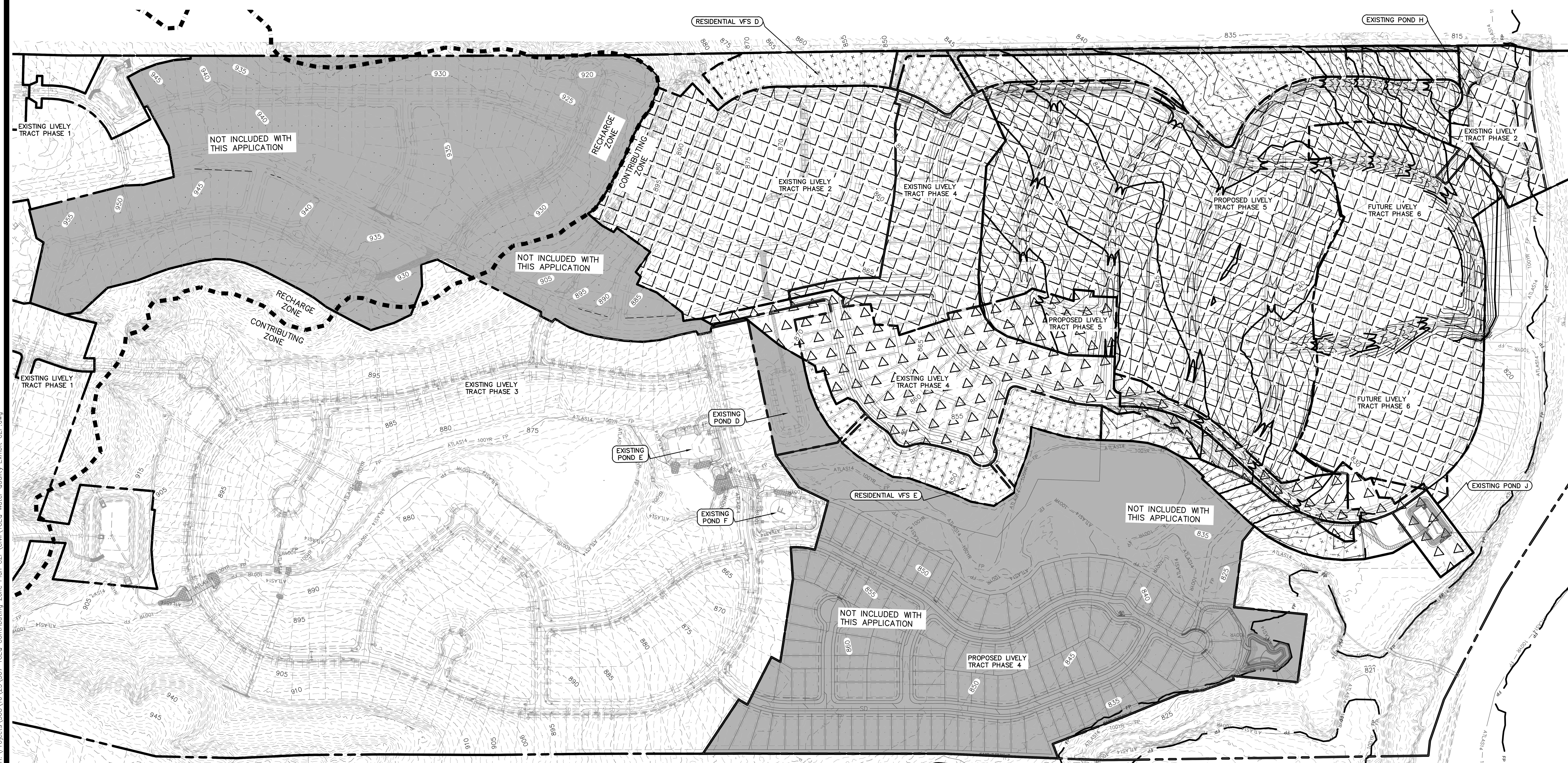
CZP POND H TREATMENT AREA

FILTER STRIP TREATMENT AREA

PHASE 2, 4 & 5 BOUNDARIES

DRAINAGE AREA BOUNDARY

CZP BOUNDARY



STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
03/28/2024

NO. | REVISION | DATE

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS
TCEQ CZP WQ EXHIBIT

CITY JOB No.
JOB NO. 50816-21
DATE MARCH 2024
DESIGNER
CHECKED TCK DRAWN DY
SHEET 4 OF 70

CONTRIBUTING ZONE PLAN APPLICATION

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: Dustin Goss, P.E., LEED® AP

Date: 4/8/25

Signature of Customer/Agent:

Regulated Entity Name: Lively Tract, Phase 2

Project Information

1. County: Williamson
2. Stream Basin: South Fork San Gabriel River
3. Groundwater Conservation District (if applicable): N/A
4. Customer (Applicant):

   Contact Person: Tom Rielly
   Entity: Hwy 29 Ventures 2015 LP
   Mailing Address: 4910 Campus Drive
   City, State: Newport Beach, CA Zip: 92660
   Telephone: 949-922-2512 Fax: _____
   Email Address: tomr@shamrockcommunities.com

5. Agent/Representative (If any):

   Contact Person: Dustin Goss, P.E., LEED® AP
   Entity: Pape-Dawson Engineers, Inc.
   Mailing Address: 10801 N Mopac Expy. Bldg. 3, Suite 200
   City, State: Austin, TX Zip: 78759
   Telephone: 512-454-8711 Fax: _____
   Email Address: dgoss@pape-dawson.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 City of Leander.
   ☐ 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.

   From TCEQ's Regional Office, proceed north on IH-35 for approximately 16.6 miles. Exit 261 toward Texas 29 / Burnet and keep right at the fork, following signs for Taylor. Turn left onto West University Avenue / Texas 29 W and Proceed approximately 6.5 miles. Turn left onto Lively Ranch Road and the site will be in front in approximately 0.5 mile.

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: 429
☐ Residential: # of Living Unit Equivalents: ______
☐ Commercial
☐ Industrial
☐ Other: ______

13. Total project area (size of site): 120.60 Acres

Total disturbed area: 120.60 Acres

14. Estimated projected population: 1716

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

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	***Sq. Ft.***	***Sq. Ft./Acre***	***Acres***
Structures/Rooftops	2,026,533.19	÷ 43,560 =	46.52
Parking	0	÷ 43,560 =	0
Other paved surfaces	724,138.79	÷ 43,560 =	16.62
Total Impervious Cover	2,750,671.98	÷ 43,560 =	63.15

Total Impervious Cover 63.15 **÷ Total Acreage** 120.60 **X 100 =** 52.38**% Impervious Cover**

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

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

For Road Projects Only

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

☒ N/A

18. Type of project:

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

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

    ☐ Concrete
    ☐ Asphaltic concrete pavement
    ☐ Other: _____

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

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

21. Pavement Area:

    Length of pavement area: _____ feet.
    Width of pavement area: _____ feet.
    L x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
    Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

☒ N/A

26. Wastewater will be disposed of by:

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

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

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

☒ Sewage Collection System (Sewer Lines):
The sewage collection system will convey the wastewater to the San Gabriel (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

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

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

Total x 1.5 = _____ Gallons

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

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

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

Table 3 - Secondary Containment

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

Total: _____ Gallons

30. Piping:

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

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

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

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

☐ Dispenser clearly labeled

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

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

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

Site Plan Requirements

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

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

    Site Plan Scale: 1" = 200'.

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 No. 48491C0460F for Williamson County, Effective Date December 20, 2019.

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

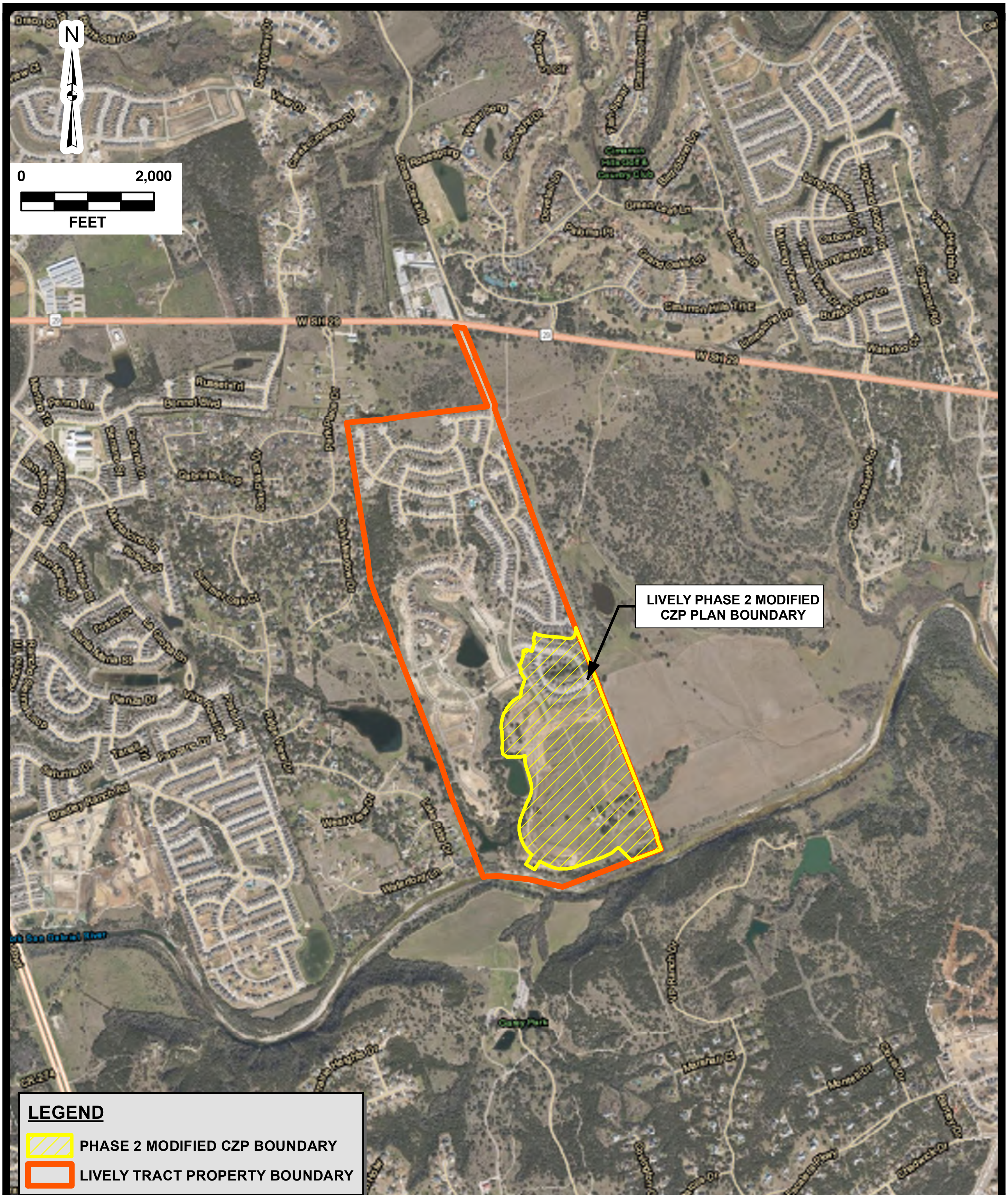
61. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.

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



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Date: Apr 02, 2025 6:13:58 PM User: croe
File: H:\Projects\508\26\307 TCEQ Contributing Zone Plan CZP\GIS\Project Location Lively Tract Phase 2 Modified Aerial.mxd

JOB NO.	50816-26
DATE	Apr 2025
DESIGNER	CR
CHECKED	TK
DRAWN	CR
SHEET	Attachment A

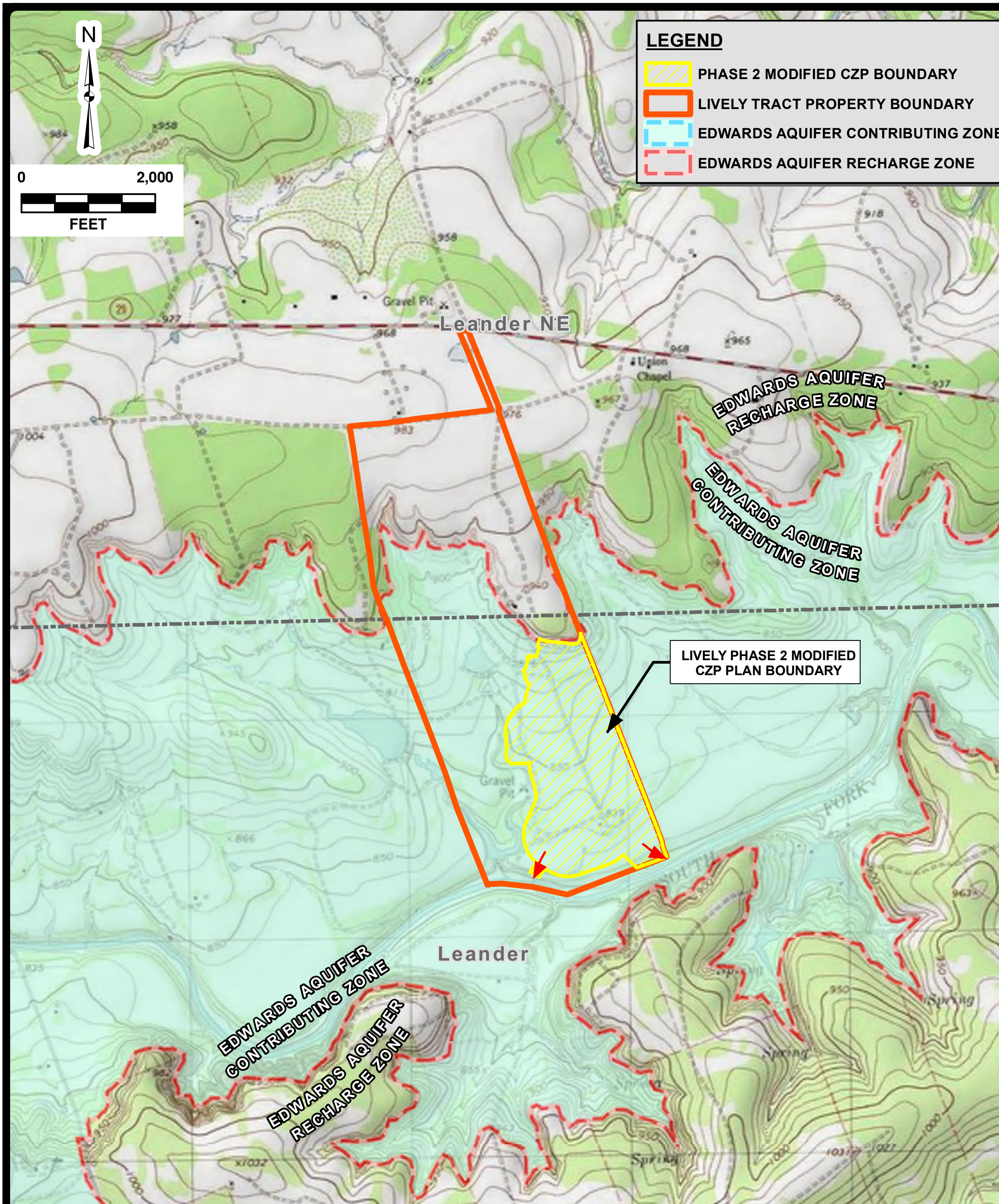
LIVELY TRACT

PHASE 2 MODIFIED PROJECT LOCATION MAP

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY. BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

ATTACHMENT B



Data Sources: TCEQ Edwards Aquifer; USGS data ©2013 National Geographic Society, i-cubed.

JOB NO.	50816-26
DATE	Apr 2025
DESIGNER	CR
CHECKED	TK
DRAWN	CR
SHEET	Attachment B

LIVELY TRACT

PHASE 2 MODIFIED

PROJECT LOCATION MAP
USGS 7.5' QUAD - LEANDER & LEANDER NE

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY. BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

Date: Apr 02, 2025 6:21:31 PM User: croe
File: H:\Projects\508\16\26\307 TCEQ Contributing Zone Plan CZP\GIS\Project Location Lively Tract Phase 2 Modified USGS.mxd

ATTACHMENT C

Project Narrative

Lively Tract, Phase 2 is located southeast of the intersection of Ronald Reagan Blvd. and SH Hwy 29, within the City of Leander ETJ in Williamson County, Texas. The initial phases of the development (Lively Tract Phase 1 Sections 1-10, Phase 2, Phase 4, Phase 5) have been permitted and are in various stages of construction. The entire Phase 1 boundary is located within the Recharge Zone; thus no Contributing Zone Plan currently exists for the property. Phase 2 has been constructed and is located partly over the Edwards Aquifer Recharge Zone and partly over the Contributing Zone. Therefore, the total Phase 2 boundary has been divided into a Recharge Zone boundary and a Contributing Zone boundary with separate applications being submitted for the construction activities over the Recharge Zone (WPAP) and the Contributing Zone (CZP). While Phase 2 has been built as part of the originally approved CZP with 27.10 acres of development over the Contributing Zone, the PBMP's built with Phase 2 will serve portions of future phases of the development, ultimately resulting in an 120.60-acre contributing area. A modification to this Contributing Zone Plan will be submitted at the time of development of any future phase contributing to the Phase 2 PBMP's. The first modification was approved and included a portion of Lively Tract, Phase 4. The second modification was also approved and encompassed Lively Tract, Phase 5. The third and final modification is proposed with this with this CZP to include Lively Tract, Phase 6 which along with previous phases, includes development that contributes to Phase 2 constructed PBMP's. 22.83 acres of disturbed acreage will result from Phase 6 construction as part of this modified Phase 2 CZP.

Construction activities proposed with the Lively Tract improvements include clearing, grading, excavation, installation of utilities and drainage improvements, streets, sidewalks, 429 homes with associated driveways, and two (2) water quality basins. Of the 120.60-acre CZP project limits, the proposed improvements include approximately 63.15 acres (52.36%) of impervious cover in the ultimate post-development condition contributed by single-family lots and street right-of-way.

Two (2) existing batch detention basins and engineered vegetated filter strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this site. 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 Total Suspended Solids (TSS) from the site. Please see the Treatment Summary Exhibit included as an attachment to this application for more information.

At full build-out, this project will generate approximately 102,960 gallons per day of average wastewater flow. Sewage flow will be disposed of by conveyance to the existing San Gabriel Wastewater Treatment Plant. Potable water will be provided by the City of Leander.

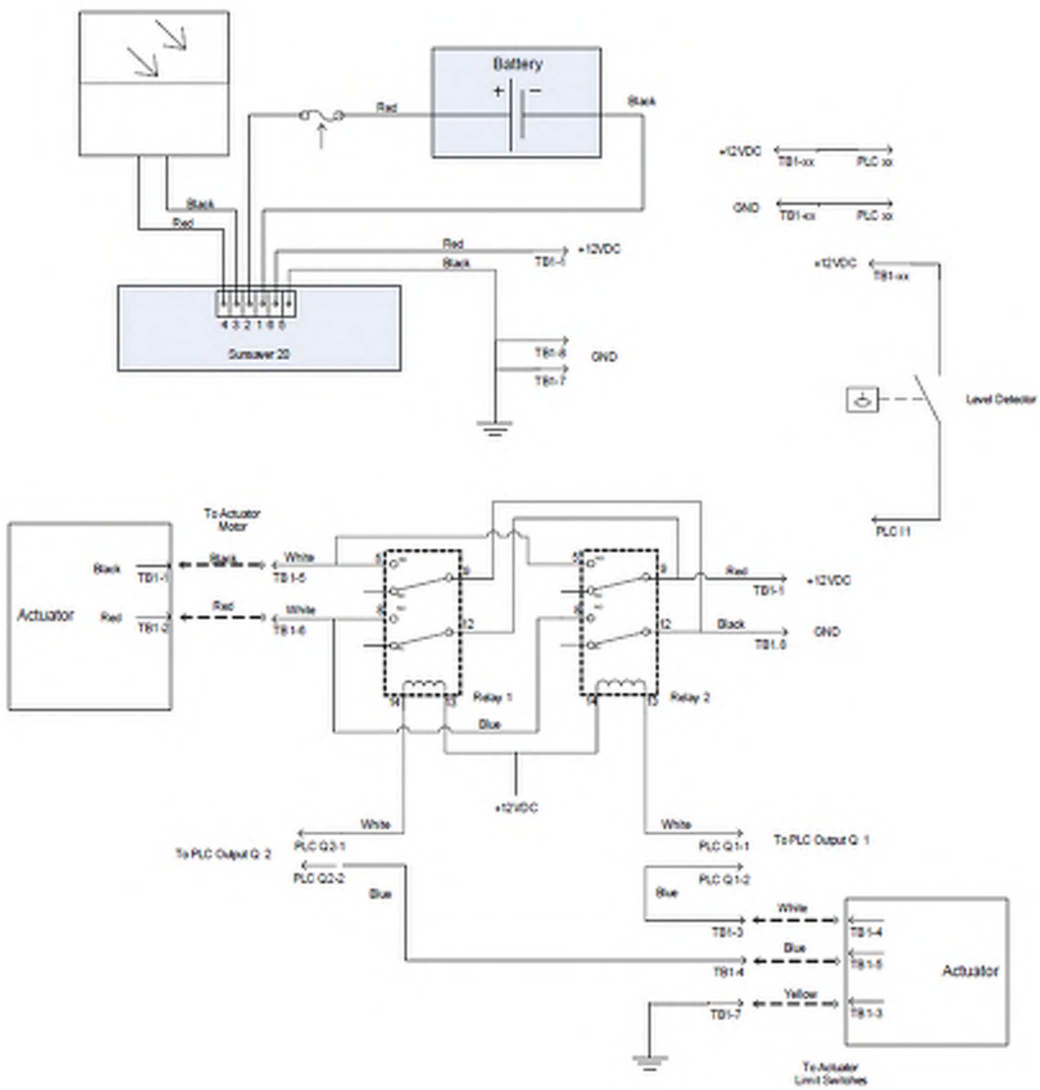
Batch Detention Basin

The batch detention basins (Batch Detention Basins H & J) are earthen ponds with side-slopes at 3:1 with the exception of maintenance access paths which are at 4:1 slopes. Batch Detention Basin H is designed to treat 43.35 acres of impervious cover and remove 44,271 lb. of TSS at Ultimate Buildout. Batch Detention Basin J is designed to treat 8.71 acres of impervious cover and remove 8,889 lb. of TSS at Ultimate Buildout. Treatment is provided by a batch detention pond controller that will regulate the release of the captured runoff.

The following is a summary of the batch detention pond controller components:

Batch Detention Pond Controller Information		
Component	**Description**	**Voltage**
Power System	Solar Charged 12 VDC Battery (Model MK Powered 8GU1) (Or approved equal)	
Logic Controller	IDEC FL1C-H12RCE (Or approved equal)	12
Parts Enclosure	Southwest Photovoltaic Model BBG-1 (15.75" wide x 9.75" deep x 11.75" tall) (Or approved equal)	
Nature of Event Sensing	Anchor Scientific Float Switch (Or approved equal)	
Valve Type	Keystone 4" (Pond 1) and 6" (Pond 2) Butterfly Valve with over torque sensors and mechanical hand crank for physical override if necessary. Able to withstand 100 psi minimum. (Or approved equal)	
Actuator	EPI-6 12 VDC. Able to withstand 100 psi minimum. (Or approved equal)	12
Power Consumption (actuator, controller, relay, PLC)	242.58 W, 46.5 W-hours	

The following is a circuit diagram of the controllers:



The logic controllers will provide a test sequence. The systems will be solar powered and will be equipped with a backup battery. The systems will be equipped with an on/off/reset switch. The butterfly valves will be equipped with a manual hand crank for physical override if necessary in the event of a spill or for maintenance purposes. The systems will be equipped with a clearly visible external indicator to indicate if a cycle is in progress without having to open the parts enclosure.

The logic controller cycle overviews are as follows:

Case 1: A single rain event fills the batch detention basin. The basin holds the diverted storm water for the detention time (12 hours) and the releases the water. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 2: A single rain event occurs, but does not completely fill the batch detention basin. The basin holds the water for the detention period (12 hours), and then releases it. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 3: A single rain event fills the batch detention basin under the trip point of the level sensor. The level sensor does not trip. The captured water is held until it infiltrates / evaporates or is joined by storm water from a subsequent storm.

Case 4: Begins the same as Case 1. During the drawdown period, one or more additional rain events occur causing additional water to enter the batch detention basin. The valve remains open and the additional water volume is drained. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Case 5: Begins the same as Case 2. During the drawdown period, one or more additional rain events can occur causing additional water to enter the basin. The valve remains open and the additional water volume is drained. Once the batch detention basin is empty, a delay of 2 hours is started to allow the basin to completely drain, and then a close signal is sent to the actuator to close the valve.

Safety Precautions:

The system will be equipped with an alarm system that is clearly visible to indicate a system malfunction. A sign shall be posted with phone numbers of the owner and appropriate TCEQ regional office.

Vegetated Filter Strips

The remaining areas of the CZP that are not treated in proposed Batch Detention Basin J and Batch Detention Basin H will be treated by 15' wide engineered vegetated filter strips (VFS). The VFS areas are identified on the Treatment Summary Exhibit. The VFS will treat 11.09 acres of impervious cover and provide 10,574 lb. of TSS removal.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009
Ultimate Buildout

Project Name: Lively Tract, Phase 2 Modified CZP
Date Prepared: 3/26/2025

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

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

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	120.60	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	63.15	acres
Total post-development impervious cover fraction * =	0.52	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	**54,966**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = H Ultimate Condition

Total drainage basin/outfall area =	81.10	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	43.35	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.53**	
$L_{M\ THIS\ BASIN}$ =	**37,732**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Batch Detention Pond		
Removal efficiency =	**91**	percent	MANUALLY ADJUSTED

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

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

where:

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

A_C =	81.10	acres
A_I =	43.35	acres
A_P =	**37.75**	acres
L_R =	**44,271**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	37,732	lbs.
F =	**0.85**	

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

Rainfall Depth =	**1.32**	inches
Post Development Runoff Coefficient =	**0.38**	
On-site Water Quality Volume =	**146613**	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 =	**29323**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**175936**	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009
Ultimate Buildout

Project Name: Lively Tract, Phase 2 Modified CZP
Date Prepared: 3/26/2025

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

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	120.60	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	63.15	acres
Total post-development impervious cover fraction * =	0.52	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	54,966	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = J **Ultimate Condition**

Total drainage basin/outfall area =	15.93	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	8.71	acres
Post-development impervious fraction within drainage basin/outfall area =	0.55	
$L_{M\ THIS\ BASIN}$ =	7,581	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Batch Detention Pond		
Removal efficiency =	91	percent	MANUALLY ADJUSTED

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

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

where:

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

A_C =	15.93	acres
A_I =	8.71	acres
A_P =	7.22	acres
L_R =	8,889	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	7,581	lbs.
F =	0.85	

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

Rainfall Depth =	1.32	inches
Post Development Runoff Coefficient =	0.38	
On-site Water Quality Volume =	29367	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 =	5873	
Total Capture Volume (required water quality volume(s) x 1.20) =	35240	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Lively Tract, Phase 2 Modified CZP**
Date Prepared: **3/26/2025**

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

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

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

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

County =	**Williamson**	
Total project area included in plan * =	**120.60**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan * =	**63.15**	acres
Total post-development impervious cover fraction * =	**0.52**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**54,966**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **5**

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

Drainage Basin/Outfall Area No. =	**VFS D**	**Ultimate Condition**
Total drainage basin/outfall area =	**9.87**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**5.29**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.54**	
$L_{M\ THIS\ BASIN}$ =	**4,604**	lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

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

A_C =	**9.87**	acres
A_I =	**5.29**	acres
A_P =	**4.58**	acres
L_R =	**5,046**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**4,680**	lbs.	***includes overtreatment of 0.087 ac IC for lots that do not have fiter strips due to slopes higher than 20%**
F =	**0.93**		

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

Rainfall Depth =	**2.20**	inches
Post Development Runoff Coefficient =	**0.38**	
On-site Water Quality Volume =	**29807**	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 =	**5961**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**35768**	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Lively Tract, Phase 2 Modified CZP
Date Prepared: 3/26/2025

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

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	120.60	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	63.15	acres
Total post-development impervious cover fraction * =	0.52	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	**54,966**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = VFS E Ultimate Condition

Total drainage basin/outfall area =	6.68	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	3.68	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.55**	
$L_{M\ THIS\ BASIN}$ =	**3,203**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetative Filter Strips
Removal efficiency = **85** percent MANUALLY ADJUSTED

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

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

where:

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

A_C =	6.68	acres
A_I =	3.68	acres
A_P =	**3.00**	acres
L_R =	**3,507**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 3,203 lbs.

F = **0.91**

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

Rainfall Depth =	**1.80**	inches
Post Development Runoff Coefficient =	**0.39**	
On-site Water Quality Volume =	**16905**	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 =	**3381**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**20285**	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Lively Tract, Phase 2 Modified CZP**
Date Prepared: **3/26/2025**

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

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

where:

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

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

County =	**Williamson**	
Total project area included in plan * =	**120.60**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan * =	**63.15**	acres
Total post-development impervious cover fraction * =	**0.52**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**54,966**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **5**

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

Drainage Basin/Outfall Area No. =	**VFS F**	**Ultimate Condition**
Total drainage basin/outfall area =	**3.86**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.12**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.55**	
$L_{M\ THIS\ BASIN}$ =	**1,845**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**Vegetative Filter Strips**		
Removal efficiency =	**85**	percent	MANUALLY ADJUSTED

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

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

where:

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

A_C =	**3.86**	acres
A_I =	**2.12**	acres
A_P =	**1.74**	acres
L_R =	**2,021**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**1,845**	lbs.
F =	**0.91**	

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

Rainfall Depth =	**1.80**	inches
Post Development Runoff Coefficient =	**0.39**	
On-site Water Quality Volume =	**9742**	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 =	**1948**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**11690**	cubic feet

PROPERTY METES & BOUNDS

FIELD NOTES
FOR

A 120.620 ACRE TRACT OF LAND SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, AND THE BARTHOLOMEW MANLOVE SURVEY, ABSTRACT NO. 420 IN WILLIAMSON COUNTY, TEXAS, BEING OUT OF THE REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162, AND BEING OUT OF LIVELY TRACT PHASE 2, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2020134123 AND BEING OUT OF LIVELY TRACT PHASE 4, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2023099454, ALL OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. SAID 120.620 ACRE TRACT BEING MORE FULLY DESCRIBED AS FOLLOWS, WITH BEARINGS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NA 2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE CENTRAL ZONE:

BEGINNING at a ½" iron rod with yellow cap marked "Pape-Dawson" found on a point in the southwest corner of a called 491.95 acre tract, conveyed to Henry B. Tippie , recorded in Volume 570, Page 483 of the Deed Records of Williamson County, Texas, said point being the north boundary line of a called 5.00 acre tract, conveyed to SFSG, recorded in Document No. 2017001815 of the Official Public Records of Williamson County, Texas, same being the southeast corner of said Lively Tract, Phase 4 for the southeast corner and **POINT OF BEGINNING** hereof;

THENCE S 69°12'32" W, departing the west boundary line of said 491.95 acre tract, with the north boundary line of said 5.00 acre tract, same being the south boundary line of said Lively Tract, Phase 4, a distance of **278.63 feet** to a calculated point on the southeast corner of said Remnant Portion of said 437.04 acre tract, same being a southwest corner of said Lively Tract, Phase 4 for an angle point hereof;

THENCE N 45°57'26" W, departing the north boundary line of said 5.00 acre tract, with the west boundary line of said Lively Tract, Phase 4, same being the east boundary line of said Remnant Portion, a distance of **278.63 feet** to a calculated point hereof,

THENCE, departing the west boundary line of said Lively Tract, Phase 4, though the interior of said Remnant Portion, the following fourteen (14) courses and distances:

1. **S 50°33'25" W**, a distance of **78.70 feet** to a calculated angle point hereof,
2. **S 55°16'14" W**, a distance of **62.77 feet** to a calculated angle point hereof,
3. **S 61°22'08" W**, a distance of **62.77 feet** to a calculated angle point hereof,
4. **S 67°26'24" W**, a distance of **62.27 feet** to a calculated angle point hereof,
5. **S 70°17'29" W**, a distance of **400.00 feet** to a calculated angle point hereof,
6. **S 70°16'43" W**, a distance of **52.13 feet** to a calculated angle point hereof,
7. **S 74°31'06" W**, a distance of **63.48 feet** to a calculated angle point hereof,

8. **S 80°57'34" W**, a distance of **63.48 feet** to a calculated angle point hereof,

9. **S 87°24'02" W**, a distance of **63.48 feet** to a calculated angle point hereof,

10. **N 86°09'30" W**, a distance of **63.48 feet** to a calculated angle point hereof,

11. **N 79°43'02" W**, a distance of **63.48 feet** to a calculated angle point hereof,

12. **N 73°16'34" W**, a distance of **63.48 feet** to a calculated angle point hereof,

13. **N 66°50'06" W**, a distance of **63.48 feet** to a calculated angle point hereof, and

14. **N 59°10'41" W**, a distance of **112.58 feet** to a calculated angle point on a southeast boundary line of said Lively Tract, Phase 4, same being a northwest boundary line of said Remnant Portion hereof,

THENCE S 32°24'37" W, with the southeast boundary line of said Lively Tract, Phase 4, same being a northwest boundary line of said Remnant Portion, a distance of **155.78 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found on a southwest corner of said Lively Tract, Phase 4, same being an interior corner of said Remnant Portion for the southwest corner hereof,

THENCE, with the west boundary line of said Lively Tract, Phase 4, same being the east boundary line of said Remnant Portion, the following nine (9) courses and distances:

1. **N 57°35'23" W**, a distance of **155.00 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

2. **N 32°24'37" E**, a distance of **171.62 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

3. **N 51°36'14" W**, a distance of **89.36 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

4. **N 32°58'12" W**, a distance of **111.62 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

5. **N 23°41'17" W**, a distance of **76.24 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

6. **N 15°35'33" W**, a distance of **76.24 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

7. **N 07°29'49" W**, a distance of **76.24 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

8. **N 00°35'55" E**, a distance of **76.24 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof, and

9. **N 08°41'39" E**, a distance of **76.24 feet** to a ½" iron rod with yellow cap marked "Pape-Dawson" found hereof,

THENCE N 16°51'35" E, continuing with the west boundary line of said Lively Tract Phase 4, same being the east boundary line of said Remnant Portion, in part, through the interior of said Lively Tract, Phase 4, a distance of **78.29 feet** to a calculated point hereof;

THENCE, continuing through the interior of said Lively Tract, Phase 4, the following thirty seven (37) courses and distances:

1. **N 21°51'38" E**, a distance of **250.00 feet** to a calculated angle point hereof,

2. **S 68°08'22" E**, a distance of **10.00 feet** to a calculated angle point hereof,

3. **N 21°51'38" E**, a distance of **60.00 feet** to a calculated angle point hereof,

4. **N 17°36'40" E**, a distance of **56.12 feet** to a calculated angle point hereof,

5. **N 08°18'18" E**, a distance of **55.95 feet** to a calculated angle point hereof,

6. **N 01°43'06" E**, a distance of **23.31 feet** to a calculated angle point hereof,

7. **N 04°52'06" W**, a distance of **55.95 feet** to a calculated angle point hereof,

8. **N 14°10'12" W**, a distance of **55.95 feet** to a calculated angle point hereof,

9. **N 18°53'55" W**, a distance of **59.97 feet** to a calculated angle point hereof,

10. **N 18°53'56" W**, a distance of **60.00 feet** to a calculated angle point hereof,

11. **N 17°42'47" W**, a distance of **66.82 feet** to a calculated angle point hereof,

12. **N 12°02'54" W**, a distance of **71.45 feet** to a calculated angle point hereof,

13. **N 05°59'26" W**, a distance of **69.13 feet** to a calculated angle point hereof,

14. **N 03°56'14" W**, a distance of **60.00 feet** to a calculated angle point hereof,

15. **S 73°13'52" W**, a distance of **61.54 feet** to a calculated angle point hereof,

16. **S 85°51'39" W**, a distance of **60.00 feet** to a calculated angle point hereof,

17. **N 89°44'52" W**, a distance of **114.82 feet** to a calculated angle point hereof,
18. **S 73°29'12" W**, a distance of **21.51 feet** to a calculated angle point hereof,
19. **N 54°00'12" W**, a distance of **91.03 feet** to a calculated angle point hereof,
20. **N 10°26'39" W**, a distance of **87.91 feet** to a calculated angle point hereof,
21. **N 03°16'40" E**, a distance of **66.45 feet** to a calculated angle point hereof,
22. **N 01°08'18" W**, a distance of **180.21 feet** to a calculated angle point hereof,
23. **N 15°24'04" W**, a distance of **64.24 feet** to a calculated angle point hereof,
24. **N 07°42'00" E**, a distance of **75.11 feet** to a calculated angle point hereof,
25. **N 11°14'57" E**, a distance of **77.12 feet** to a calculated angle point hereof,
26. **N 19°37'23" E**, a distance of **77.25 feet** to a calculated angle point hereof,
27. **N 39°56'54" E**, a distance of **16.69 feet** to a calculated angle point hereof,
28. **N 27°32'01" E**, a distance of **64.66 feet** to a calculated angle point hereof,
29. **N 37°22'05" E**, a distance of **79.71 feet** to a calculated angle point hereof,
30. **N 47°12'08" E**, a distance of **79.71 feet** to a calculated angle point hereof,
31. **N 55°50'07" E**, a distance of **70.28 feet** to a calculated angle point hereof,
32. **N 57°30'57" E**, a distance of **45.86 feet** to a calculated angle point hereof,
33. **N 09°12'52" E**, a distance of **101.37 feet** to a calculated angle point hereof,
34. **N 16°38'35" E**, a distance of **36.19 feet** to a calculated angle point hereof,
35. **N 18°54'15" E**, a distance of **43.66 feet** to a calculated angle point hereof,
36. **N 17°33'41" E**, a distance of **67.52 feet** to a calculated angle point hereof, and
37. **N 15°38'35" E**, a distance of **19.86 feet** to a calculated point on the west boundary line of said Livey Tract, Phase 2, same being the east boundary line of said Lively Tract, Phase 4 for an angle point hereof,

THENCE, with the west boundary line of said Livey Tract, Phase 2, same being the east boundary line of said Lively Tract, Phase 4, the following two (2) courses and distances:

1. **N 33°14'57" W**, a distance of **109.77 feet** to a calculated point of tangent curvature hereof, and

2. along a curve to the left, having a **radius** of **25.00 feet**, a central angle of **26°33'54"**, a **chord bearing** and **distance** of **N 46°31'54" W, 11.49 feet**, an **arc length** of **11.59 feet** to a calculated point of tangency hereof,

THENCE, departing the east boundary line of said Livey Tract, Phase 4, though the interior of said Lively Tract, Phase 2, the following twenty five (25) courses and distances:

1. **N 08°29'38" E**, a distance of **52.03 feet** to a calculated point of non-tangent curvature hereof,

2. along the arc of a curve to the left having a **radius** of **831.85 feet**, a **central angle** of **04°39'42"**, a **chord bearing** and **distance** of **N 28°05'47" W, 67.66 feet**, an **arc length** of **67.68 feet** to a calculated point of non-tangency hereof,

3. **N 61°52'45" E**, a distance of **32.00 feet** to a calculated angle point hereof,

4. **N 17°08'05" E**, a distance of **122.55 feet** to a calculated angle point hereof,

5. **N 01°53'16" E**, a distance of **80.00 feet** to a calculated angle point hereof,

6. **S 84°27'52" E**, a distance of **31.81 feet** to a calculated angle point hereof,

7. **N 21°37'01" E**, a distance of **25.54 feet** to a calculated angle point hereof,

8. **S 75°26'30" E**, a distance of **93.16 feet** to a calculated angle point hereof,

9. **N 15°09'32" E**, a distance of **155.00 feet** to a calculated angle point hereof,

10. **N 74°50'28" W**, a distance of **20.00 feet** to a calculated angle point hereof,

11. **N 08°18'41" E**, a distance of **50.42 feet** to a calculated angle point hereof,

12. **N 19°33'44" E**, a distance of **69.08 feet** to a calculated angle point hereof,

13. **S 55°56'56" E**, a distance of **32.65 feet** to a calculated angle point hereof,

14. **S 76°26'18" E**, a distance of **65.24 feet** to a calculated angle point hereof,

15. **S 81°43'15" E**, a distance of **84.39 feet** to a calculated angle point hereof,

16. **S 83°56'33" E**, a distance of **71.54 feet** to a calculated angle point hereof,

17. **S 88°19'26" E**, a distance of **97.45 feet** to a calculated angle point hereof,

18. **S 82°12'05" E**, a distance of **67.13 feet** to a calculated angle point hereof,

19. **S 72°20'21" E**, a distance of **45.47 feet** to a calculated angle point hereof,

20. **N 88°55'16" E**, a distance of **94.32 feet** to a calculated angle point hereof,

21. **N 58°06'50" E**, a distance of **38.18 feet** to a calculated angle point hereof,

22. **N 25°20'36" E**, a distance of **35.94 feet** to a calculated angle point hereof,

23. **N 15°06'53" E**, a distance of **52.85 feet** to a calculated angle point hereof,

24. **N 00°08'30" W**, a distance of **54.08 feet** to a calculated angle point hereof, and

25. **N 11°27'13" W**, a distance of **0.42 feet** to a calculated point on the west boundary line of said 491.95 acre tract, same being the east boundary line of said Lively Tract, Phase 2 for the northeast corner hereof,

THENCE, with the west boundary line of said 491.95 acre tract, same being the east boundary line of said Lively Tract, Phase 2, the following

1. **S 21°49'53" E**, a distance of **469.33 feet** to a calculated angle point hereof,

2. **S 21°36'00" E**, a distance of **253.35 feet** to a calculated angle point hereof,

3. **S 21°35'17" E**, a distance of **184.35 feet** to a calculated angle point hereof,

4. **S 21°23'05" E**, a distance of **117.63 feet** to a calculated angle point hereof,

5. **S 21°23'05" E**, a distance of **545.06 feet** to a calculated angle point hereof,

6. **S 21°27'49" E**, a distance of **804.43 feet** to a calculated angle point hereof,

7. **S 21°22'30"** E, a distance of **229.85 feet** to a calculated angle point hereof,

8. **S 21°21'35" E**, a distance of **259.16 feet** to a calculated angle point hereof,

9. **S 20°46'39" E**, a distance of **134.61 feet** to a calculated angle point hereof,

10. **S 21°02'38" E**, a distance of **137.67 feet** to a calculated angle point hereof,

11. **S 20°59'40" E**, a distance of **200.44 feet** to a calculated angle point hereof,

12. **S 09°27'57" E**, a distance of **103.90 feet** to a calculated angle point hereof, and

13. **S 21°00'01" E**, a distance of **141.14 feet** to the **POINT OF BEGINNING** and containing 120.620 acres in Williamson County, Texas. Said tract being described in accordance with a survey made on the ground and a map prepared under Job No. 50816-25 by Pape Dawson Consulting Engineers, LLC.

PREPARED BY: Pape-Dawson Consulting Engineers, LLC.
DATE: April 9, 2025
JOB No.: 50816-26
DOC.ID.: H:\Survey\CIVIL\50816-26\Exhibits\Word\FN-50816-26_CZP_120.620Ac.docx
TBPE Firm Registration #470
TBPLS Firm Registration #100288-01

STATE OF TEXAS
REGISTERED
PARKER GRAHAM
5556
PROFESSIONAL
LAND SURVEYOR

05/08/2025

CZP EXHIBIT OF

A 120.620 ACRE TRACT OF LAND SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, AND THE BARTHOLOMEW MANLOVE SURVEY, ABSTRACT NO. 420 IN WILLIAMSON COUNTY, TEXAS, BEING OUT OF THE REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162, AND BEING OUT OF LIVELY TRACT PHASE 2, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2020134123 AND BEING OUT OF LIVELY TRACT PHASE 4, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2023099454, ALL OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

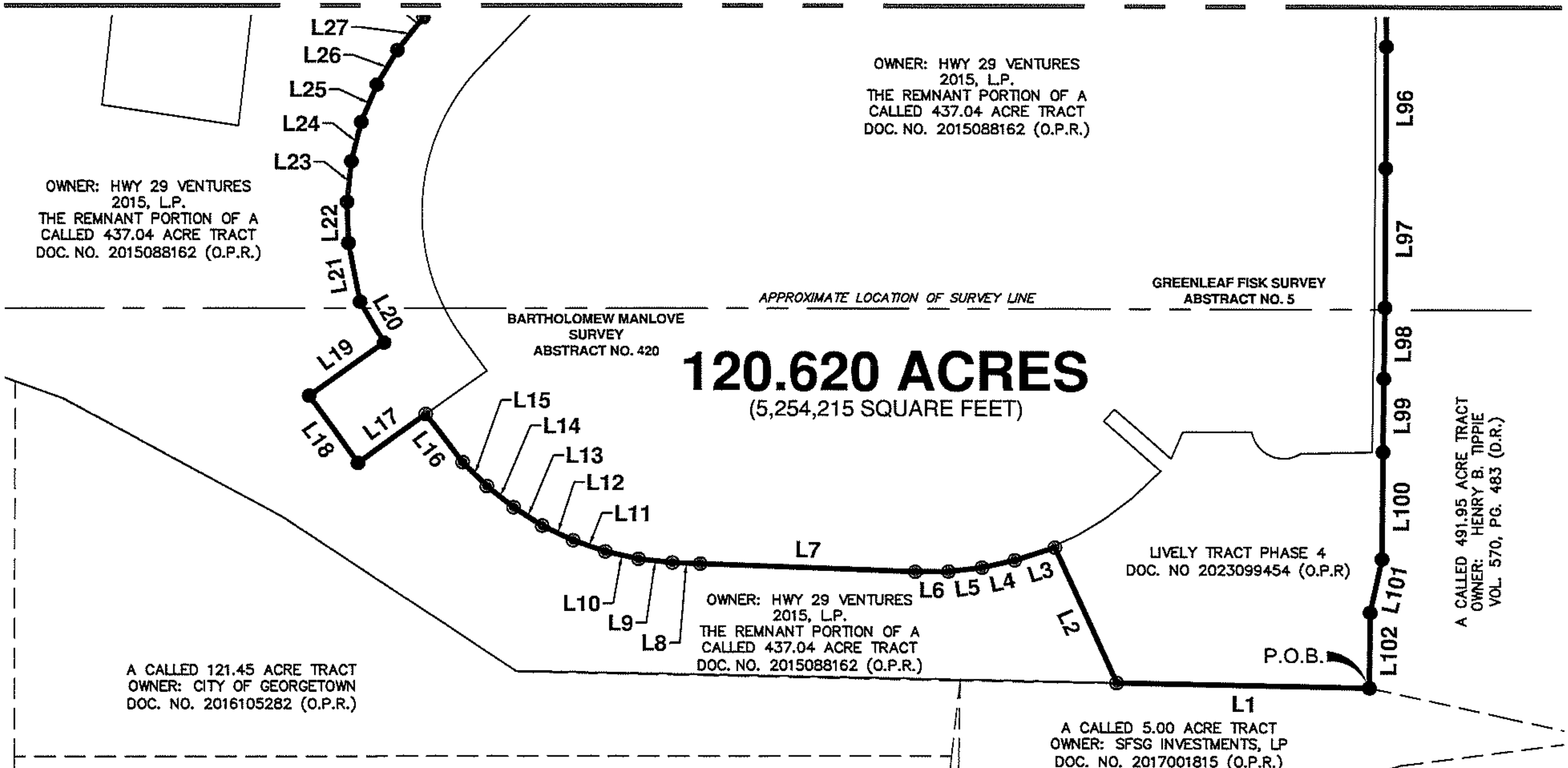
LEGEND:

O.P.R.	OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS
P.R.	PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS
P.O.B.	POINT OF BEGINNING
	FOUND ½" RON ROD WITH YELLOW CAP MARKED "PAPE-DAWSON" UNLESS OTHERWISE NOTED
	CALCULATED POINT

300' 0' 150' 300'

SCALE: 1"= 300'

MATCHLINE SHEET 2 OF 4



PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

APRIL 09, 2025

SHEET 1 OF 4

JOB No.:50816-25

Date: Apr 09, 2025, 12:17pm User ID: DRodriguez

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CZP EXHIBIT OF

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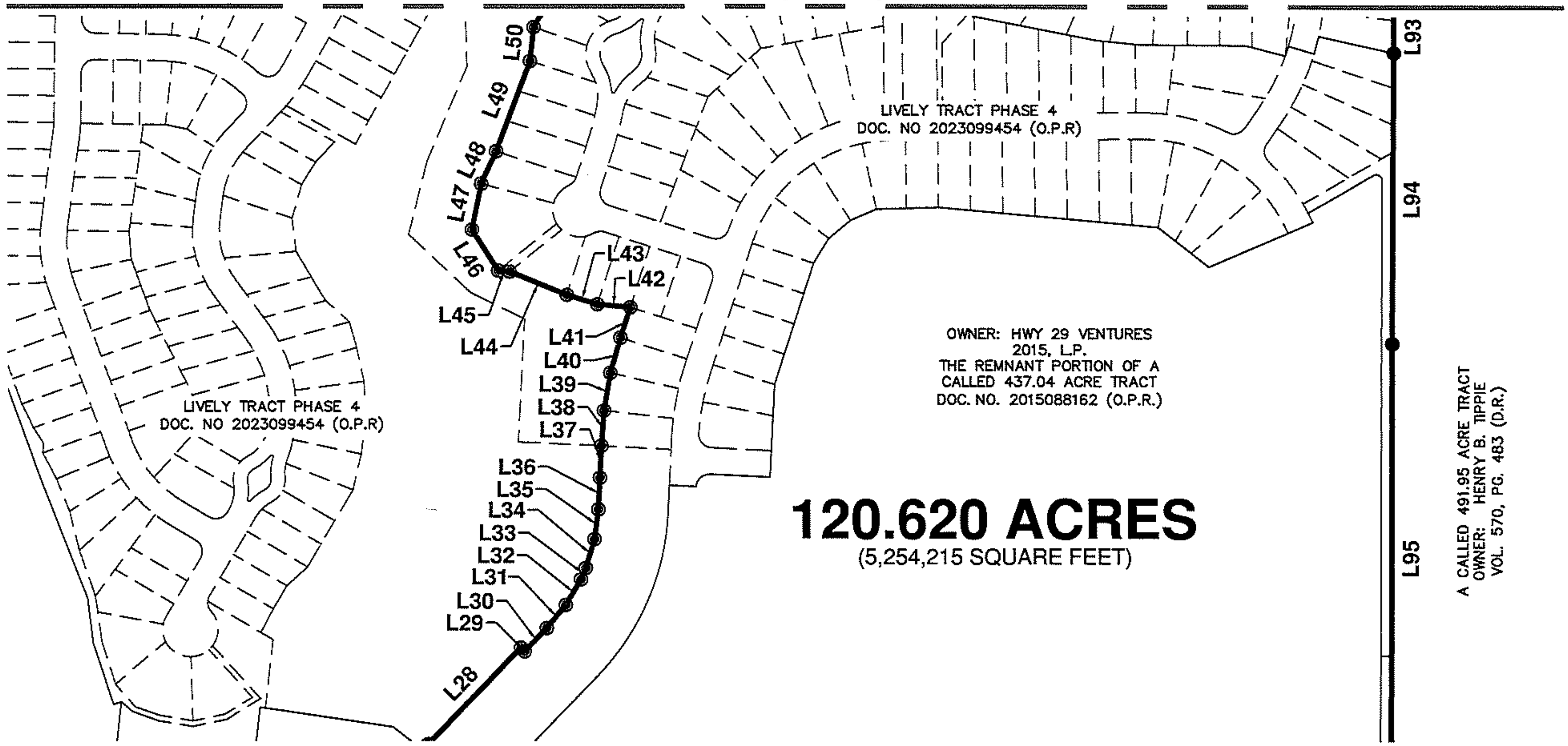
LEGEND:

O.P.R. OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS
P.R. PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS
P.O.B. POINT OF BEGINNING
FOUND ½" RON ROD WITH YELLOW CAP MARKED "PAPE-DAWSON" UNLESS OTHERWISE NOTED
CALCULATED POINT

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

MATCHLINE SHEET 3 OF 4



MATCHLINE SHEET 1 OF 4

PAPE-DAWSON ENGINEERS

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APRIL 09, 2025

SHEET 2 OF 4
JOB No.:50816-25

Date: Apr 09, 2025, 12:17pm User ID: DRodriguez
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LEGEND:

O.P.R. OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

P.R. PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS

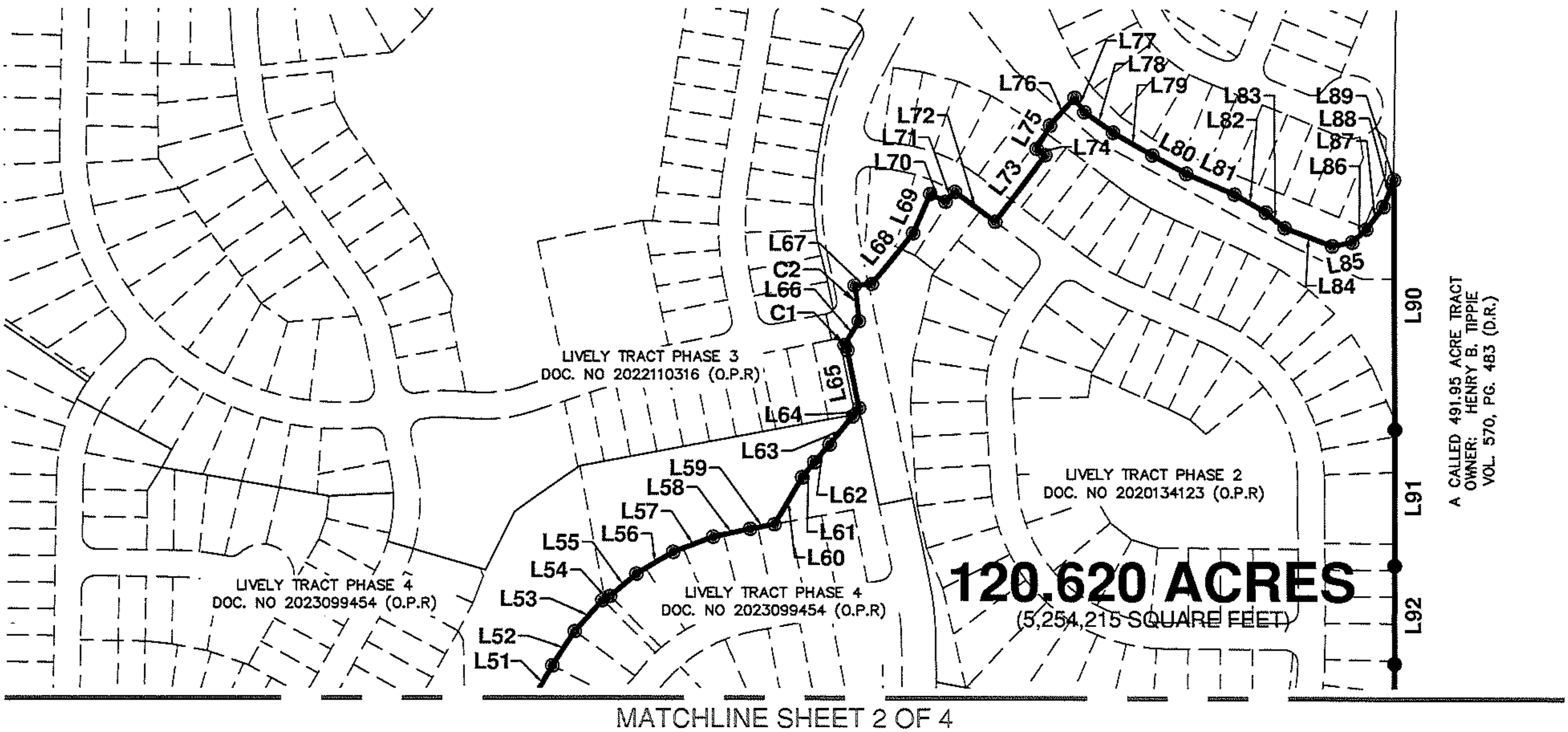
P.O.B. POINT OF BEGINNING

FOUND ½" RON ROD WITH YELLOW CAP MARKED "PAPE-DAWSON" UNLESS OTHERWISE NOTED

CALCULATED POINT

300' 0' 150' 300'

SCALE: 1"= 300'



PAPE-DAWSON ENGINEERS

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10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

APRIL 09, 2025

SHEET 3 OF 4

JOB No.:50816-25

Date: Apr 09, 2025, 12:17pm User ID: DRodriguez

File: \\pape-dawson.com\aus-pd\Survey\CIVIL\50816-25\Exhibits\EX50816-25_120.6Ac.dwg

LINE TABLE		
LINE	BEARING	LENGTH
L1	S69°12'32"W	471.11'
L2	N45°57'26"W	278.63'
L3	S50°33'25"W	78.70'
L4	S55°16'14"W	62.77'
L5	S61°22'08"W	62.77'
L6	S67°26'24"W	62.27'
L7	S70°17'29"W	400.00'
L8	S70°16'43"W	52.13'
L9	S74°31'06"W	63.48'
L10	S80°57'34"W	63.48'
L11	S87°24'02"W	63.48'
L12	N86°09'30"W	63.48'
L13	N79°43'02"W	63.48'
L14	N73°16'34"W	63.48'
L15	N66°50'06"W	63.48'
L16	N59°10'41"W	112.58'
L17	S32°24'37"W	155.78'
L18	N57°35'23"W	155.00'
L19	N32°24'37"E	171.62'
L20	N51°36'14"W	89.36'
L21	N32°58'12"W	111.62'
L22	N23°41'17"W	76.24'
L23	N15°35'33"W	76.24'
L24	N07°29'49"W	76.24'
L25	N00°35'55"E	76.24'
L26	N08°41'39"E	76.24'

LINE TABLE		
LINE	BEARING	LENGTH
L27	N16°51'35"E	78.29'
L28	N21°51'38"E	250.00'
L29	S68°08'22"E	10.00'
L30	N21°51'38"E	60.00'
L31	N17°36'40"E	56.12'
L32	N08°18'18"E	55.95'
L33	N01°43'06"E	23.31'
L34	N04°52'06"W	55.95'
L35	N14°10'12"W	55.95'
L36	N18°53'55"W	59.97'
L37	N18°53'56"W	60.00'
L38	N17°42'47"W	66.82'
L39	N12°02'54"W	71.45'
L40	N05°59'26"W	69.13'
L41	N03°56'14"W	60.00'
L42	S73°13'52"W	61.54'
L43	S85°51'39"W	60.00'
L44	N89°44'52"W	114.82'
L45	S73°29'12"W	21.51'
L46	N54°00'12"W	91.03'
L47	N10°26'39"W	87.91'
L48	N03°16'40"E	66.45'
L49	N01°08'18"W	180.21'
L50	N15°24'04"W	64.24'
L51	N07°42'00"E	75.11'
L52	N11°14'57"E	77.12'

LINE TABLE		
LINE	BEARING	LENGTH
L53	N19°37'23"E	77.25'
L54	N39°56'54"E	16.69'
L55	N27°32'01"E	64.66'
L56	N37°22'05"E	79.71'
L57	N47°12'08"E	79.71'
L58	N55°50'07"E	70.28'
L59	N57°30'57"E	45.86'
L60	N09°12'52"E	101.37'
L61	N16°38'35"E	36.19'
L62	N18°54'15"E	43.66'
L63	N17°33'41"E	67.52'
L64	N15°38'35"E	19.86'
L65	N33°14'57"W	109.77'
L66	N08°29'38"E	52.03'
L67	N61°52'45"E	32.00'
L68	N17°08'05"E	122.55'
L69	N01°53'16"E	80.00'
L70	S84°27'52"E	31.81'
L71	N21°37'01"E	25.54'
L72	S75°26'30"E	93.16'
L73	N15°09'32"E	155.00'
L74	N74°50'28"W	20.00'
L75	N08°18'41"E	50.42'
L76	N19°33'44"E	69.08'
L77	S55°56'56"E	32.65'
L78	S76°26'18"E	65.24'

LINE TABLE		
LINE	BEARING	LENGTH
L79	S81°43'15"E	84.39'
L80	S83°56'33"E	71.54'
L81	S88°19'26"E	97.45'
L82	S82°12'05"E	67.13'
L83	S72°20'21"E	45.47'
L84	N88°55'16"E	94.32'
L85	N58°06'50"E	38.18'
L86	N25°20'36"E	35.94'
L87	N15°06'53"E	52.85'
L88	N00°08'30"W	54.08'
L89	N11°27'13"W	0.42'
L90	S21°49'53"E	469.33'
L91	S21°36'00"E	253.35'
L92	S21°35'17"E	184.35'
L93	S21°23'05"E	117.63'
L94	S21°23'05"E	545.06'
L95	S21°27'49"E	804.43'
L96	S21°22'30"E	229.85'
L97	S21°21'35"E	259.16'
L98	S20°46'39"E	134.61'
L99	S21°02'38"E	137.67'
L100	S20°59'40"E	200.44'
L101	S09°27'57"E	103.90'
L102	S21°00'01"E	141.14'

CZP EXHIBIT OF

A 120.620 ACRE TRACT OF LAND SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, AND THE BARTHOLOMEW MANLOVE SURVEY, ABSTRACT NO. 420 IN WILLIAMSON COUNTY, TEXAS, BEING OUT OF THE REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162, AND BEING OUT OF LIVELY TRACT PHASE 2, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2020134123 AND BEING OUT OF LIVELY TRACT PHASE 4, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2023099454, ALL OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

NOTES:

1. THE PROFESSIONAL SERVICES PROVIDED HEREWITH INCLUDE THE PREPARATION OF A FIELD NOTE DESCRIPTION.
2. THE BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NA 2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE CENTRAL ZONE
3. ADJOINERS ARE FOR INFORMATIONAL USE ONLY.

STATE OF TEXAS
REGISTERED
PARKER GRAHAM
5556
PROFESSIONAL
LAND SURVEYOR

05/08/2025

Parker J. Graham

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	25.00'	26°33'54"	N46°31'54"W	11.49'	11.59'
C2	831.85'	4°39'42"	N28°05'47"W	67.66'	67.68'

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

APRIL 09, 2025

JOB No.:50816-25

ATTACHMENT D

ATTACHMENT D – FACTORS AFFECTING SURFACE WATER QUALITY

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

- Soil erosion due to the clearing of the site for roads, residential homes, and drainage structures.
- 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.
- Construction debris.
- Concrete truck washout.
- Potential overflow/spills from portable toilets

Potential sources of pollution that may reasonably be expected to affect the quality of stormwater 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 E

ATTACHMENT E– VOLUME AND CHARACTER OF STORMWATER

Stormwater runoff will increase as a result of this development. All stormwater runoff generated on-site will be routed through one of the on-site water quality ponds. Peak flows going into Basin H after the development of Phases 2, 4, 5, and 6 in the ultimate condition will be 482.40 cfs for the 100 yr scenario and 337.79 cfs for the 25 year scenario. The curve number for the Pond H basin changes from approximately 80.00 pre-development to 81.43 after ultimate development. Peak flows going into Basin J after development of Phases 2, 4, 5, and 6 in the ultimate condition will be 193.01 cfs and 136.06 for the 100 yr and 25 yr scenarios. The curve number for the Pond J basin changes from approximately 61.00 pre-development to 82.97 after ultimate development. Values are based on the Rational Method using runoff coefficients per the City of Austin Drainage Criteria Manual. Stormwater runoff from the development can be characterized as overland, shallow-concentrated, and channelized flow from the proposed single-family subdivision.

ATTACHMENT J

ATTACHMENT J – BMP'S FOR UPGRADIENT STORMWATER

There is minimal amount of upgradient stormwater passing through the site, as the site is bordered to the north by Lively Tract Phase 1 which diverts upstream flows by means of curb inlets running along either side of the roadway. Upgradient stormwater that does pass through the site will be collected by the proposed curb inlets and conveyed via the proposed storm drain system into the proposed permanent BMP's. The permanent BMP's have been designed to accommodate these upgradient flows. For more information on upgradient stormwater, see the Proposed Drainage Area Map located within the plan set provided with this application.

Construction of two (2) batch detention ponds and installation of three (3) fifteen-foot (15') wide Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMP's) for this development. All PBMP's have been designed in accordance with the Texas Commistion on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site.

ATTACHMENT K

ATTACHMENT K – BMP'S FOR ON-SITE STORMWATER

Construction of two (2) batch detention ponds and installation of three (3) fifteen-foot (15') wide Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this development. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site. Detailed design and construction drawings for the PBMP's can be found in the plan set provided with the application.

ATTACHMENT L

ATTACHMENT L – BMP'S FOR SURFACE STREAMS

Construction of two (2) batch detention ponds and installation of three (3) fifteen-foot (15') wide Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this development. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site. Runoff from impervious cover areas will be treated by the proposed water quality basins and VFS prior to discharge downstream and eventually into the South Fork San Gabriel River.

ATTACHMENT M

ATTACHMENT M – CONSTRUCTION PLANS

See attached drawing set for relevant construction plans and design drawings for Lively Phase 2, 4, 5, & 6.

ATTACHMENT N

ATTACHMENT N - MAINTENANCE PROCEDURES FOR PERMANENT BMPs

Note: Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 3.5.

A written record will be kept of inspection results and maintenance performed.

3.5.8 Vegetative Filter Strips

Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it received in the first few months after it is planted. Once established, all vegetated BMPs require some basic maintenance to insure the health of the plants including:

- *Pest Management.* An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

- *Seasonal Mowing and Lawn Care.* If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

- *Inspection.* Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

- *Debris and Litter Removal.* Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

- *Sediment Removal.* Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

- *Grass Reseeding and Mulching.* A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grad is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to need specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

3.5.20 Batch Detention Basin

Batch detention basins may have somewhat higher maintenance requirements than an extended detention basin since they are active stormwater controls. The maintenance activities are identical to those of extended detention basins with the addition of maintenance and inspections of the automatic controller and the valve at the outlet.

- *Inspections*. Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.

- *Mowing*. 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.

- *Litter and Debris Removal*. Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter 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.

- *Erosion control*. The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.

- *Nuisance Control*. Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

- *Structural Repairs and Replacement*. 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 Removal*. A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. 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.

- *Logic Controller*. 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.

Signature

Date 3/27/24

Tom Rielly, President
Hwy 29 Ventures 2015 LP

ATTACHMENT P

ATTACHMENT P – MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Where erosive velocities exist at drain discharge points, energy dissipators will be constructed to reduce the potential for erosion. These include mortared rock riprap and concrete headwalls with velocity dissipating devices.

TEMPORARY STORMWATER

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: Dustin Goss, P.E., LEED ® AP

Date: 4/8/25

Signature of Customer/Agent:

DhGoss

Regulated Entity Name: Lively Tract, Phase 2

Project Information

Potential Sources of Contamination

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

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

   ☒ The following fuels and/or hazardous substances will be stored on the site: Diesel Fuel, Gasoline, Etc.

   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: South Fork San Gabriel River

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    ☐ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

ATTACHMENT A

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.
- 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:
  - the National Response Center at (800) 424-8802
  - the TCEQ Regional Office (512) 339-2929 (if during business hours: 8 AM to 5 PM) or
  - the State Emergency Response Center (800) 832-8224 (if after hours)

- 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 B

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 forecasted 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.

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.

Preventive Measure

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

Potential Source

- Construction debris.

Preventive 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.

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 C

Attachment C – Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will be divided into two stages. The first is the common infrastructure improvements including public right-of-way, streets, and utilities. This will disturb approximately 23.02 acres. The second is construction that will include home building and landscaping improvements. This will disturb approximately 97.58 acres.

SEQUENCE OF MAJOR ACTIVITIES

COMMON INFRASTRUCTURE IMPROVEMENTS

1. Install temporary erosion and sedimentation control per construction plans.
2. Hold pre-construction meeting.
3. Clear & Grub the extents of the proposed right-of-way and water quality pond locations.
4. Excavate water quality ponds and begin utility trenching.
5. Install water/wastewater lines per the Construction Plans (including offsite wastewater construction).
6. Install proposed storm drain system (including connections to water quality ponds).
7. Install remaining water quality pond elements.
8. Rough grade streets and right-of-ways.
9. Finish pavement, curbs, and sidewalks.
10. Restore staging area to natural grade.
11. Obtain Engineer's Concurrence Letter.
12. Complete permanent erosion and sedimentation control measures and restoration of site vegetation.
13. Temporary erosion and sedimentation controls to remain in place as needed for the construction of next phase.

RESIDENTIAL SUBDIVISION IMPROVEMENTS

1. Install erosion controls per construction plans.
2. Begin mass grading of single family lots within limits of construction.
3. Install building foundations and connect underground utilities.
4. Begin home construction.
5. Final paving and sidewalk construction.
6. Complete final grading and restore construction spoils and staging area to natural grade.
7. Obtain Engineer's concurrence letter.
8. Complete permanent erosion control and restoration of site vegetation.
9. Remove temporary erosion and sedimentation controls and complete any necessary final revegetation. Temporary erosion and sedimentation controls to remain in place as needed for the construction of next phase.

ATTACHMENT D

ATTACHMENT D - TEMPORARY BMP AND MEASURES

Please see the Erosion Control sheets included in the Construction Plans Section for TBMP layout and the responses below for more details.

Upgradient stormwater will cross the site from along the northern edges of the project limits. However, this upgradient land has been developed and has completed infrastructure with its own TBMPs subject to their own SWPPP requirements, no additional TBMPs are necessary. All TMBPs utilized are adequate for the drainage areas served.

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 downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, (4) installation of construction staging area(s), and (5) construction of temporary sediment basins.

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 the aquifer, surface streams and/or sensitive features that may exist downstream of the site.

As the site is located entirely over the Edwards Aquifer Contributing Zone, a Geologic Assessment was not conducted and is not required by 30 TAC 213 regulations. Therefore, no naturally-occurring sensitive features are known to exist on the site. 30 TAC 213.5(f)(2) only applies to projects located on the Edwards Aquifer Recharge Zone. A combination of TBMPs including silt fence and rock berm are proposed to capture sediment from onsite stormwater runoff and preserve the quality of Block House Creek.

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 the aquifer, surface streams and/or sensitive features that may exist downstream of the site.

ATTACHMENT F

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 for secondary protection, as located on the Erosion and Sedimentation Control Plan Sheet.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on the Erosion and Sedimentation Control Plan Sheet.

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

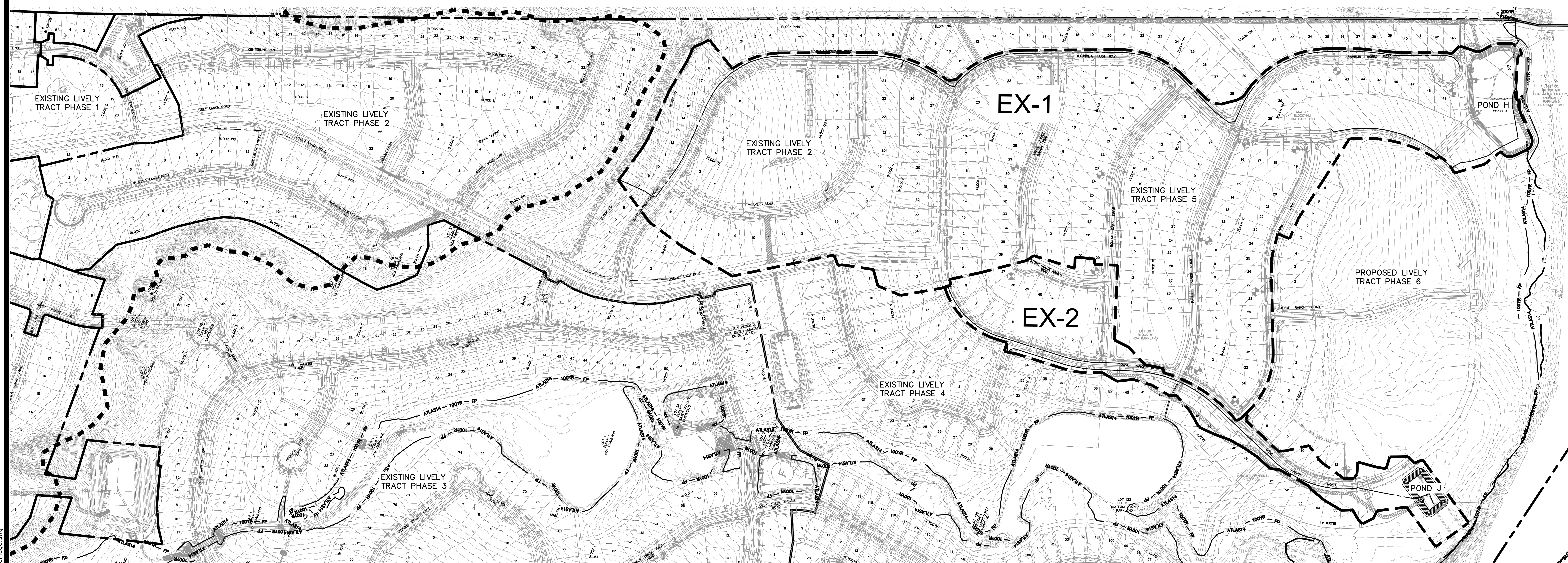
- Installation of concrete truck washout pit(s), as required and located on the Erosion Control Plan Sheet.
- Installation of inlet protection, as located on the Erosion Control Plan Sheet.

ATTACHMENT G

ATTACHMENT G – DRAINAGE AREA MAP

A copy of an exhibit delineating the existing common 57.89 and 8.94 acre drainage areas draining to the temporary sedimentation ponds have been added to this section. A Proposed Drainage Area map broken out by PBMP with acreage and impervious cover is included in the Construction Plans. All TBMPs utilized are adequate for the drainage areas served.

SCALE: 1"= 200'



DRAINAGE AREA	INLET NUMBER	AREA (acres)	COMPOSITE C C_{25}	C_{100}	$A \cdot C_{25}$	$A \cdot C_{100}$	SHEET FLOW Length (ft)	Manning's (n)	Slope ft/ft	Tc (min)	SHALLOW CONCENTRATED FLOW Length (ft)	Paved/ Unpaved	Slope ft/ft	Tc (min)	CHANNELIZED FLOW Length (ft)	Manning's (n)	Slope ft/ft	Velocity ft/s	Tc (min)	Cumulative Tc (min)	INTENSITY I 25yr (in/hr)	I 100yr (in/hr)	DISCHARGE Q 25 (cfs)	Q 100 (cfs)
EXISTING CONDITION DRAINAGE AREAS																								
EX-1	EX-1	57.89	0.54	0.61	31.054	35.459	100	0.24	0.118	6.34	49.16	U	0.125	0.14	3635.74	0.015	0.023	5.8	10.387	16.87	7.29	9.67	226.3	343.0
EX-2	EX-2	8.94	0.58	0.65	5.147	5.843	100	0.24	0.005	22.45	224.9	U	0.047	1.07	1522.73	0.128	0.018	0.6	41.797	65.32	3.34	4.51	17.2	26.3

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT 1 FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING CITY OF AUSTIN DATA.

LEGEND

- STORM DRAIN LINE
- SD MANHOLE
- SD INLET
- DRAINAGE FLOW ARROW
- DRAINAGE AREA BOUNDARY
- FUTURE DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA
- 01 DRAINAGE AREA
- #01 INLET # Q=25/100 YEAR
- HEADWALL
- PROPOSED CONTOUR LINE
- EXISTING CONTOUR LINE
- 100 YEAR FEMA FLOODPLAIN
- 100 YEAR FULLY DEVELOPED FLOODPLAIN

NO.	REVISION	DATE

PAPE-DAWSON ENGINEERS

AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

CZP TEMPORARY STORMWATER POND EXHIBIT

CITY JOB No.
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER
CHECKED TK DRAWN DY
SHEET 1 OF 1

Date: Mar 28, 2025, 11:59am User ID: dyoder
File: H:\Projects\508\16\26\107 Contributing Zone Plan\Report\250326_Lively Tract Phase 2 - Ex Drainage.dwg

ATTACHMENT H

ATTACHMENT H – TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

The proposed batch detention basin may be used as a temporary sediment basin during site construction. Qualified personnel shall inspect the temporary sediment basin every fourteen (14) calendar days and within twenty-four (24) hours after a rainfall event greater than 0.5 inches. Depth of silt deposit and erosion in basin shall also be checked within twenty-four (24) hours after every rainfall event greater than 0.5 inches and every seven (7) days until lot construction is complete in the basin's drainage area.

The equipment for batch detention will be installed concurrently with the first construction phase of each watershed. If a basin has been converted to a Permanent BMP, but a portion of the watershed is not stabilized, then the basin shall continue to be inspected in accordance with the inspection requirements of a temporary sediment trap until final stabilization of the entire watershed. Prior to final acceptance by the owner, the contractor will remove trash, debris and accumulated silt from the basin and re-establish it to proper operating condition. All permanent pollution abatement measures shall be operational prior to occupancy of any facility within the drainage area of the respective permanent pollution abatement measure. After inspection of the finished batch detention basin, a licensed professional engineer will certify the basin in accordance with the TCEQ requirements.

Capture Volume Calculation:

Volume required = 3,600 cubic feet (CF) storage per 1 acre drained.

Temporary Sediment Basin "H"

3,600 CF x 57.89 ac (Construction Area) = 208,404 CF

Volume provided = 221,562 cf (At 816.00)

Temporary Sediment Basin "J"

3,600 CF x 8.94 ac (Construction Area) = 32,184 CF

Volume provided = 58,222 CF (At 827.00)

Riser Pipe Perforation Calculation:

$$A_o = \frac{A_s \times \sqrt{2h}}{C_d \times 980{,}000}$$

Temporary Sediment Basin "H"

A_s = 35,818 ft^2; C_d = 0.6; h = 4.5 ft

A_o = 0.193 ft^2 = 27.75 in^2

Temporary Sediment Basin "J"

A_s = 12,750.39 ft^2; C_d = 0.6; h = 6.9 ft

A_o = 0.081 ft^2 = 11.60 in^2

Please note, these temporary sediment basins are being utilized in combination with other TBMP measures for the site and all are adequate for the drainage areas served.

ATTACHMENT I

ATTACHMENT I – INSPECTION AND MAINTENANCE OF TEMPORARY BMP'S

INSPECTIONS & MAINTENANCE

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 will 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) sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable. Temporary sediment basins and permanent basins will be inspected until final stabilization of 70% within the basin watershed is achieved.

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

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

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date
Installation of BMPs	

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

Construction Activity	Date

Dates when stabilization measures are initiated:

Stabilization Activity	Date
Removal of BMPs	

ATTACHMENT J

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.

NOTICE OF INTENT

TCEQ Office Use Only
Permit No:
CN:
RN:

Notice of Intent (NOI) for an Authorization for Stormwater Discharges Associated with Construction Activity under TPDES General Permit TXR150000

IMPORTANT INFORMATION

Please read and use the General Information and Instructions prior to filling out each question in the NOI form.

Use the NOI Checklist to ensure all required information is completed correctly. **Incomplete applications delay approval or result in automatic denial.**

Once processed your permit authorization can be viewed by entering the following link into your internet browser: http://www2.tceq.texas.gov/wq_dpa/index.cfm or you can contact TCEQ Stormwater Processing Center at 512-239-3700.

ePERMITS

Effective September 1, 2018, this paper form must be submitted to TCEQ with a completed electronic reporting waiver form (TCEQ-20754).

To submit an NOI electronically, enter the following web address into your internet browser and follow the instructions: https://www3.tceq.texas.gov/steers/index.cfm

APPLICATION FEE AND PAYMENT

The application fee for submitting a paper NOI is $325. The application fee for electronic submittal of a NOI through the TCEQ ePermits system (STEERS) is $225.

Payment of the application fee can be submitted by mail or through the TCEQ ePay system. The payment and the NOI must be mailed to separate addresses. To access the TCEQ ePay system enter the following web address into your internet browser: http://www.tceq.texas.gov/epay.

Provide your payment information for verification of payment:

- If payment was mailed to TCEQ, provide the following:
  - Check/Money Order Number: Click here to enter text.
  - Name printed on Check: Click here to enter text.
- If payment was made via ePay, provide the following:
  - Voucher Number: Click here to enter text.
  - A copy of the payment voucher is attached to this paper NOI form.

RENEWAL (This portion of the NOI is not applicable after June 3, 2018)

Is this NOI for a renewal of an existing authorization? ☐ Yes ☒ No

If Yes, provide the authorization number here: TXR15 Click here to enter text.

NOTE: If an authorization number is not provided, a new number will be assigned.

SECTION 1. OPERATOR (APPLICANT)

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? CN 605112077

(Refer to Section 1.a) of the Instructions)

b) What is the Legal Name of the entity (applicant) applying for this permit? (The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

Hwy 29 Ventures 2015 LP

c) What is the contact information for the Operator (Responsible Authority)?

Prefix (Mr. Ms. Miss): Mr.

First and Last Name: Tom Rielly Suffix: N/A

Title: President Credentials: N/A

Phone Number: 949-922-2512 Fax Number: Click here to enter text.

E-mail: tomr@shamrockcommunities.com

Mailing Address: 4910 Campus Drive

City, State, and Zip Code: Newport Beach, CA, 92660

Mailing Information if outside USA:

Territory: Click here to enter text.

Country Code: Click here to enter text. Postal Code: Click here to enter text.

d) Indicate the type of customer:

☐ Individual
☒ Limited Partnership
☐ General Partnership
☐ Trust
☐ Sole Proprietorship (D.B.A.)
☐ Corporation
☐ Estate
☐ Federal Government
☐ County Government
☐ State Government
☐ City Government
☐ Other Government
☐ Other: Click here to enter text.

e) Is the applicant an independent operator? ☒ Yes ☐ No

(If a governmental entity, a subsidiary, or part of a larger corporation, check No.)

f) Number of Employees. Select the range applicable to your company.

☒ 0-20 ☐ 251-500

☐ 21-100 ☐ 501 or higher

☐ 101-250

g) Customer Business Tax and Filing Numbers: (**Required** for Corporations and Limited Partnerships. **Not Required** for Individuals, Government, or Sole Proprietors.)

State Franchise Tax ID Number: Click here to enter text.

Federal Tax ID: 475180278

Texas Secretary of State Charter (filing) Number: Click here to enter text.

DUNS Number (if known): Click here to enter text.

SECTION 2. APPLICATION CONTACT

Is the application contact the same as the applicant identified above?

☐ Yes, go to Section 3

☒ No, complete this section

Prefix (Mr. Ms. Miss): Mr.

First and Last Name: Dustin Goss, P.E., LEED® AP Suffix: N/A

Title: Vice President Credential: Click here to enter text.

Organization Name: Pape-Dawson Engineers, Inc.

Phone Number: 512-454-8711 Fax Number: Click here to enter text.

E-mail: dgoss@pape-dawson.com

Mailing Address: 10801 N Mopac Expy. Bldg. 3, Suite 200

Internal Routing (Mail Code, Etc.): Click here to enter text.

City, State, and Zip Code: Austin, TX, 78759

Mailing information if outside USA:

Territory: Click here to enter text.

Country Code: Click here to enter text. Postal Code: Click here to enter text.

SECTION 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) If this is an existing permitted site, what is the Regulated Entity Number (RN) issued to this site? RN 110606126

(Refer to Section 3.a) of the Instructions)

b) Name of project or site (the name known by the community where it's located): Lively Tract Phase 2

c) In your own words, briefly describe the type of construction occurring at the regulated site (residential, industrial, commercial, or other): Residential – Single Family

d) County or Counties (if located in more than one): Williamson

e) Latitude: 30.636983 Longitude: 97.800311

f) Site Address/Location

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete *Section A*.

If the site does not have a physical address, provide a location description in *Section B*. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section A:

Street Number and Name: Click here to enter text.

City, State, and Zip Code: Click here to enter text.

Section B:

Location Description: West of intersection of TX Hwy 29 and Cross Creek Road.

City (or city nearest to) where the site is located: Leander

Zip Code where the site is located: 78628

SECTION 4. GENERAL CHARACTERISTICS

a) Is the project or site located on Indian Country Lands?

☐ Yes, do not submit this form. You must obtain authorization through EPA Region 6.

☒ No

b) Is your construction activity associated with a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources?

☐ Yes. Note: The construction stormwater runoff may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization through EPA Region 6.

☒ No

c) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site? **1521**

d) What is the Secondary SIC Code(s), if applicable? 1794

e) What is the total number of acres to be disturbed? 120.60

f) Is the project part of a larger common plan of development or sale?

☒ Yes

☐ No. The total number of acres disturbed, provided in e) above, must be 5 or more. If the total number of acres disturbed is less than 5, do not submit this form. See the requirements in the general permit for small construction sites.

g) What is the estimated start date of the project? December 2021

h) What is the estimated end date of the project? December 2026

i) Will concrete truck washout be performed at the site? ☒ Yes ☐ No

j) What is the name of the first water body(ies) to receive the stormwater runoff or potential runoff from the site? South Fork San Gabriel River

k) What is the segment number(s) of the classified water body(ies) that the discharge will eventually reach? 1250

l) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?

☐ Yes ☒ No

If Yes, provide the name of the MS4 operator: Click here to enter text.

Note: The general permit requires you to send a copy of this NOI form to the MS4 operator.

m) Is the discharge or potential discharge from the site within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?

☒ Yes, complete the certification below.

☐ No, go to Section 5

I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented. ☒ Yes

SECTION 5. NOI CERTIFICATION

a) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000). ☒ Yes

b) I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas. ☒ Yes

c) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed. ☒ Yes

d) I certify that a Stormwater Pollution Prevention Plan has been developed, will be implemented prior to construction and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the Construction General Permit (TXR150000). ☒ Yes

Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3, provided all obligations are confirmed by at least one operator.

SECTION 6. APPLICANT CERTIFICATION SIGNATURE

Operator Signatory Name: Tom Rielly

Operator Signatory Title: President

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 that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): ______________________ Date: 3/27/24

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

REQUEST FOR ELECTRONIC REPORTING WAIVER

If you have questions about completing this form please contact the Applications Review and Processing Team at 512-239-4671.

Section 1. Applicant Information

a) What is the contact information for the applicant?
Prefix (Mr. Ms. or Miss): Mr.

First and Last Name: Tom Rielly Suffix: N/A

Title: Owner Credentials: N/A

Phone Number: 949-922-2512 Fax Number: Click here to enter text.

Email: tomr@shamrockcommunities.com

Mailing Address: 4910 Campus Drive

City, State, and Zip Code: Newport Beach, CA, 92660

b) Does the applicant have a water quality individual permit or general authorization issued by TCEQ?

☐ Yes. Complete Sections 3, 4, and 5

☒ No. Complete Sections 2, 4, and 5

Section 2. New Customers

a) What is the Legal Name of the applicant applying for this waiver? (The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)
Hwy 29 Ventures 2015 LP

b) What type of permit or authorization are you applying for? Edwards Aquifer Contributing Zone Plan [Notice of Intent].

c) Is the permit application identified in question c) submitted together with this form?

☒ Yes. Skip to Section 4

☐ No. Answer question e) below

d) What date did you submit the permit application to TCEQ? Click here to enter text.

Section 3. Existing Customers

a) What is the TCEQ Water Quality Permit or Authorization Number related to this request for an electronic waiver? **A separate request for electronic reporting waiver form is required for each permit or authorization.** Edwards Aquifer Protection Program ID Number 11001396

b) What is the current permittee name on the permit or authorization: Hwy 29 Ventures 2015 LP

c) What is the Customer Number (CN) for the current permittee? CN 605112077

d) What is the Regulated Entity Number (RN): RN 110606126

Section 4. Reason for the Waiver

Select the reason for requesting a waiver from electronic reporting:

- ☐ I don't have a computer.
- ☐ I don't have internet access.
- ☐ I have limited internet speed.
- ☒ I need additional training on electronic reporting.
- ☐ I have a religious objection to electronic reporting.

Section 5. Certification and Signature

Applicant's Name: Mr. Tom Rielly Applicant's Title: President

I understand that this waiver will expire on the same date as my permit or authorization, unless the reason for the waiver is additional training is needed or religious objection.	☒ Yes
I understand that this waiver is not transferrable. If the permit is transferred, this waiver will be terminated and the new permittee must request and obtain a new waiver.	☒ Yes
I understand that an approved electronic reporting waiver allows me to submit required information on paper rather than electronically. It does not change the type of information that is required to be submitted to TCEQ.	☒ Yes
I understand that having an approved waiver does not prevent me from using electronic reporting if the reason for requesting the waiver changes.	☒ Yes

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 that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): ____________________ Date: 3/27/24

OWNER AUTHORIZATION

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Tom Reilly of Hwy 29 Ventures 2015 LP

am the owner of the property located at:

A 120.620 ACRE TRACT OF LAND SITUATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, AND THE BARTHOLOMEW MANLOVE SURVEY, ABSTRACT NO. 420 IN WILLIAMSON COUNTY, TEXAS, BEING OUT OF THE REMNANT PORTION OF A CALLED 437.04 ACRE TRACT CONVEYED TO HWY 29 VENTURES 2015, L.P. RECORDED IN DOCUMENT NO. 2015088162, AND BEING OUT OF LIVELY TRACT PHASE 2, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2020134123 AND BEING OUT OF LIVELY TRACT PHASE 4, A SUBDIVISION ACCORDING TO THE PLAT RECORDED IN DOCUMENT NO 2023099454, ALL OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 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 Dustin Goss, P.E., LEED® AP
To conduct Preparing and submitting the plan to TCEQ for review and approval of the development.
At 1602 Magnolia Farm Way, Georgetown, TX 78628

Landowner Acknowledgement

I understand that Hwy 29 Ventures 2015 LP

Is ultimately responsible for the 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 and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Landowner Signature

Date

THE STATE § OF TEXAS

County § of Travis

BEFORE ME, the undersigned authority, on this day personally appeared

Tom Rielly

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 13th day of May 2025

NOTARY PUBLIC

MY COMMISSION EXPIRES: 08/14/2028

NOTARY PUBLIC STATE OF TEXAS
MARY HELEN TELLO
My Notary ID # 126626500
Expires August 14, 2028

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

AGENT AUTHORIZATION

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

I ***Tom Rielly***,
Print Name

President,
Title - Owner/President/Other

of ***Hwy 29 Ventures 2015 LP***,
Corporation/Partnership/Entity Name

have authorized ***Dustin Goss, P.E., LEED® AP***
Print Name of Agent/Engineer

of ***Pape-Dawson Consulting Engineers, LLC***
Print Name of Firm

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

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

Date 8/11/21

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Thomas Rielly 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 11th day of August, 2021.

NOTARY PUBLIC

MARY HELEN TELLO
My Notary ID # 126626500
Expires August 14, 2024

Mary Helen Tello

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08/14/2024

APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Lively Tract, Phase 2
Regulated Entity Location: TX Hwy 29 and Cross Creek Road within the City of Leander ETJ.
Name of Customer: Hwy 29 Ventures 2015 LP
Contact Person: Tom Rielly Phone: (949) 922-2512
Customer Reference Number (if issued):CN 605112077
Regulated Entity Reference Number (if issued):RN 110606126

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	120.6 Acres	$ 8,000
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: 03/27/24

Application Fee Schedule

Texas Commission on Environmental Quality

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

CORE DATA FORM

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 605112077		**RN 110606126**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

Hwy 29 Ventures 2015 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)*
		475180278	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited

Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:	4910 Campus Drive						
	City	Newport Beach	**State**	CA	**ZIP**	92660	**ZIP + 4**

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(949) 922-2512		( ) -

SECTION III: Regulated Entity Information

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

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

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

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

Lively Tract, Phase 2 CZP

23. Street Address of the Regulated Entity: ***(No PO Boxes)***							
	City		State		ZIP		ZIP + 4
24. County							

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

25. Description to Physical Location:	West of Intersection of TX Hwy 29 and Cross Creek Road.

26. Nearest City	State	Nearest ZIP Code
Leander	TX	78628

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

27. Latitude (N) In Decimal:	30.636983		**28. Longitude (W) In Decimal:**	97.800311	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	38	13.14	97	48	1.12

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
1521	1794	236115	238990

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

Single Family Residential Subdivision

34. Mailing Address:							
	City		State		ZIP		ZIP + 4

35. E-Mail Address:	

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

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

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

SECTION IV: Preparer Information

40. Name:	Pape-Dawson Consulting Engineers, LLC	**41. Title:**	
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 44-8711		( ) -	tkrause@pape-dawson.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:	Pape-Dawson Consulting Engineers, LLC	**Job Title:**	Vice President
Name *(In Print):*	Dustin Goss, P.E., LEED® AP	**Phone:**	(512) 454- 8711
Signature:	DWGoss	**Date:**	4/8/25

CONSTRUCTION PLANS

STATE OF TEXAS
COUNTY OF WILLIAMSON

I, DUSTIN J. GOSS, P.E. #91805, DO HEREBY CERTIFY THAT THE ENGINEERING WORK BEING SUBMITTED HEREIN COMPLIES WITH ALL THE PROVISION OF THE TEXAS ENGINEERING PRACTICE ACT, INCLUDING 131.152 (e). I HEREBY ACKNOWLEDGE THAT ANY MISREPRESENTATION REGARDING THIS CERTIFICATION CONSTITUTES A VIOLATION OF THE ACT, AND MAY RESULT IN CRIMINAL, CIVIL AND/OR ADMINISTRATIVE PENALTIES AGAINST ME, AS AUTHORIZED BY THE ACT.

SUBMITTED BY:

04/11/2025

PAPE-DAWSON ENGINEERS
DUSTIN J. GOSS, P.E. #91805
VICE PRESIDENT

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER

WEST WILLIAMSON COUNTY MUNICIPAL UTILITY DISTRICT No. 2

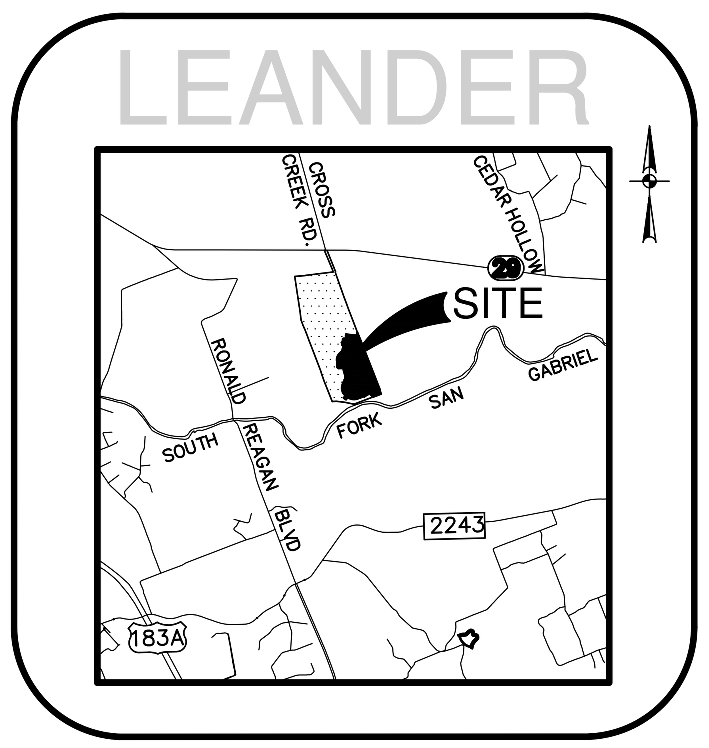
LIVELY TRACT, PHASE 2

CITY OF LEANDER, TX

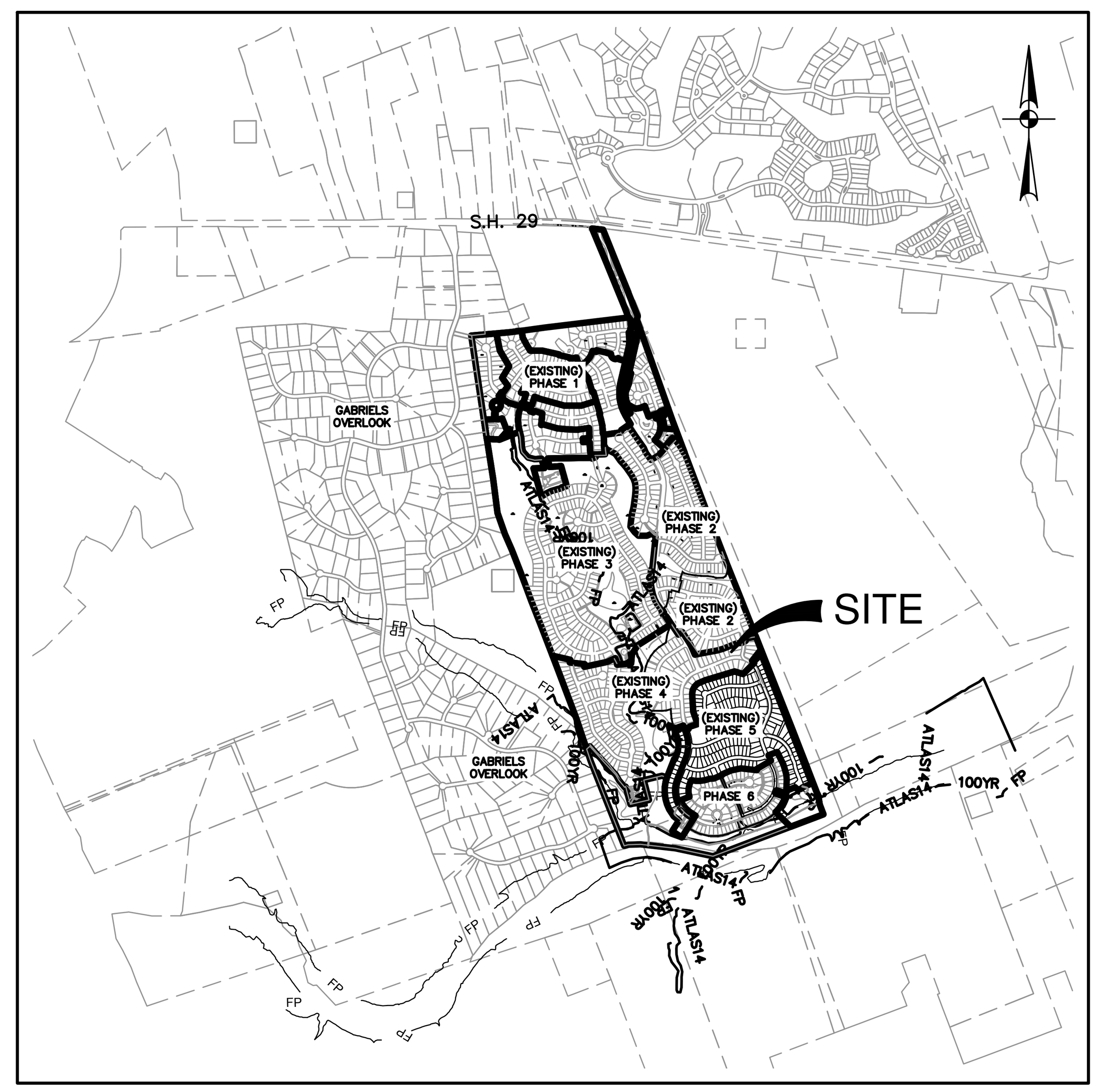
PUBLIC IMPROVEMENTS
MODIFIED CZP
CONSTRUCTION PLANS

ALL PROPOSED HOMES ON THE LOTS IN THIS SUBDIVISION WILL BE REQUIRED TO HAVE A HOME FIRE SPRINKLER SYSTEM, UNLESS AN EMERGENCY SECONDARY ACCESS ROUTE HAS BEEN PROVIDED, AS APPROVED BY CITY ORDINANCES.

THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND/ OR SPECIFICATIONS WHETHER OR NOT THE PLANS AND/ OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT-TO-SCALE

HWY 29 VENTURES 2015 L.P.
4910 CAMPUS DRIVE
NEWPORT BEACH, CA 92660

APRIL 2025

NOTE:

STREET IMPROVEMENTS TO BE DEDICATED TO WILLIAMSON COUNTY.
WATER & WASTEWATER IMPROVEMENTS TO BE DEDICATED TO CITY OF LEANDER.
DRAINAGE IMPROVEMENTS TO BE DEDICATED TO WEST WILLIAMSON COUNTY MUNICIPAL UTILITY DISTRICT NO. 2.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

TOTAL ACREAGE: 120.6 ACRES
DISTURBED ACREAGE: 120.6 ACRES

REVISION #	DESCRIPTION	APPROVAL DATE

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

ENGINEER:
PAPE-DAWSON ENGINEERS
10801 N. MoPac Expy., Bldg 3, Suite 200
AUSTIN, TEXAS 78759
(512) 454-8711
F (512) 459-8867

OWNER:
HWY 29 VENTURES 2015 L.P.
4910 CAMPUS DRIVE
NEWPORT BEACH, CA
(949) 955-3700

SURVEYOR:
PAPE-DAWSON ENGINEERS
10801 N. MoPac Expy., Bldg 3, Suite 200
AUSTIN, TEXAS 78759
(512) 454-8711
F (512) 459-8867

Sheet List Table

Sheet List Table

LIVELY TRACT PHASE 2 MODIFIED CZP
PD JOB NO. 50816-21
PLAT NO. -

Date: Apr 10, 2025, 11:35am User ID: dyosief
File: H:\Projects\508\16\26\307 Contributing Zone Plan\Civil\TS50816-26.dwg

CITY OF LEANDER GENERAL NOTES (03/27/2023)

CITY CONTACTS:

ENGINEERING MAIN LINE:	512–528–2721
PLANNING DEPARTMENT:	512–528–2750
PUBLIC WORKS MAIN LINE:	512–259–2640
STORMWATER INSPECTIONS:	512–285–0055
UTILITIES MAIN LINE:	512–259–1142
UTILITIES ON–CALL:	512–690–4760

PEC CONTACTS:

PUBLIC SAFETY LINE:	1–888–343–7702
CUSTOMER OUTAGE LINE:	1–800–396–9037

1. CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS ONSITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUANCE OF WORK STOPPAGE.
2. CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.
   a. REFRESH ALL LOCATES BEFORE 14 DAYS – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.
   b. REPORT PIPELINE DAMAGE IMMEDIATELY – IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512–259–2640.
3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:
   a. BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.
   b. ANY TESTING. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION.
   c. PROOF ROLLING SUB–GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN–PLACE DENSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE.
   d. CONNECTING TO THE EXISTING WATER LINES.
   e. THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S ROW MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
4. ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
5. EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY OF LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.
6. BURNING IS PROHIBITED.
7. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OR WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.
8. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK FOR APPROVAL TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
9. NO BLASTING IS ALLOWED.
10. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLIGHT ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS AND NUMBERS SHALL BE USED TO MARK REVISIONS. ALL CLOUDS AND TRIANGLE MARKERS FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.
11. THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEANDER ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION.THESE "RECORD DRAWINGS' SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE.
12. THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRED AS A RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT OR PUBLIC RIGHT–OF–WAY, REGARDLESS OF THESE PLANS.
13. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER OF RECORD AND CITY.
14. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE–ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.
15. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752–3832.
16. ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTED TO FINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCTION INSPECTOR INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH CLASS A CONCRETE.
17. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.
18. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
20. THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACENT TO AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NOT REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WATER. ONLY SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE SITE AREA CLEAN AND MAINTAINED AT ALL TIMES, TO THE SATISFACTION OF THE CITY. THE SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED) UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.
22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CITY OF LEANDER CONSTRUCTION SEQUENCE NOTES

1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259–2640 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472–2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROL AND TREE PROTECTION MEASURES AS SHOWN WITHIN THESE PLANS.
3. THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE–CONSTRUCTION CONFERENCE.
4. WITH THE APPROVAL OF ALL AFFECTED PARTIES, THE CONTRACTOR MAY BEGIN CLEARING AND GRUBBING.
5. ROUGH–CUT ALL REQUIRED OR NECESSARY PONDS. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A LOW–LEVEL OUTLET AND AN EMERGENCY OVERFLOW MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL (SECTION 8.3) AND/OR THE ENVIRONMENTAL CRITERIA MANUAL (SECTION 1.4.2.K) AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL FINAL RESTORATION IS ACHIEVED.
6. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING.
7. ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME, EXCEPT AS REQUIRED FOR UTILITY CONSTRUCTION. GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE AND REQUIRED BASE THICKNESS.
8. DELIVER WATER & WASTEWATER CUT SHEETS TO CITY OF LEANDER.
9. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
10. DELIVER STORM SEWER CUT SHEETS TO CITY OF LEANDER.
11. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS. INSTALL INLET PROTECTION AS PER PLANS.
12. DELIVER FINAL GRADE CUT SHEETS TO CITY OF LEANDER.
13. REGRADE STREETS TO SUBGRADE.
14. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
15. INSTALL CURB AND GUTTER.
16. LAY FINAL BASE COURSE ON ALL STREETS.
17. LAY ASPHALT.
18. COMPLETE ALL ROUGH GRADING AND UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.
19. COMPLETE FINAL GRADING AND INSTALL SIDEWALK IN R.O.W. ALONG AREAS DESIGNATED. RESTORE CONSTRUCTION SPOILS & STAGING AREA TO NATURAL GRADE.
20. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.
21. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL, INCLUDING CONSTRUCTION SPOILS AREA.
22. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED.
23. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.

CITY OF LEANDER EROSION CONTROL NOTES

1. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES AND SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
2. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
3. ANY ON–SITE SPOILS DISPOSAL SHALL BE REMOVED PRIOR TO ACCEPTANCE UNLESS SPECIFICALLY SHOWN ON THE PLANS. THE DEPTH OF SPOIL SHALL NOT EXCEED 10 FEET IN ANY AREA.
4. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SINGLE FAMILY LOTS MAY BE INSTALLED WITH HOME CONSTRUCTION. THE TOPSOIL AND COMPOST BLEND SHALL CONSIST OF 75% TOPSOIL AND 25% COMPOST.
5. SEEDING FOR REESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC 164––WC001 SEEDING FOR EROSION CONTROL). RESEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
6. STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONSTRUCTION PROJECTS MAY REQUIRE SPECIAL CONSIDERATION. ROADWAYS SHALL REMAIN CLEAR OF SILT AND MUD.
7. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
8. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

CITY OF LEANDER WATER AND WASTEWATER NOTES (7/22/24)

WATER AND WASTEWATER GENERAL NOTES

1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:

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

3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS.
4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT–MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.
5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0–2
#4	40–85
#10	95–100

6. DENSITY TESTING FOR TRENCH BACKFILL SHALL BE DONE IN MAXIMUM 12" LIFTS.

WATER

1. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTORS' REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LEANDER NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY.
2. CITY PERSONNEL WILL OPERATE OR AUTHORIZE THE CONTRACTOR TO OPERATE ALL WATER VALVES THAT WILL PASS THROUGH THE CITY'S POTABLE WATER. THE CONTRACTOR MAY BE FINED $500 OR MORE, INCLUDING ADDITIONAL THEFT OF WATER FINES, IF A WATER VALVE IS OPERATED IN AN UNAUTHORIZED MANNER, REGARDLESS OF WHO OPERATED THE VALVE.
3. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF–PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM AFTER COORDINATING WITH CITY CONSTRUCTION INSPECTORS AND INFORMING AFFECTED PROPERTIES.
4. PRESSURE TAPS OR HOT TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF LEANDER INSPECTOR MUST BE PRESENT WHEN THE CONTRACTOR MAKES A TAP, AND/OR ASSOCIATED TESTS. A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED. "SIZE ON SIZE" TAPS SHALL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL–CIRCLE GASKETED TAPPING SLEEVE. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. THRUST BLOCKS SHALL BE INSPECTED PRIOR TO BACKFILL.
5. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.
6. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.
7. ALL DEAD END WATER MAINS SHALL HAVE "FIRE HYDRANT ASSEMBLY" OR "BLOW–OFF VALVE AND THRUST BLOCK" OR "BLOW–OFF VALVE AND THRUST RESTRAINTS". THRUST RESTRAINTS SHALL BE INSTALLED ON THE MINIMUM LAST THREE PIPE LENGTHS (STANDARD 20' LAYING LENGTH). ADDITIONAL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURERS RECOMMENDATION AND/OR ENGINEER'S DESIGN.
8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900–DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR–(9)). COPPER PIPES AND FITTINGS ARE NOT ALLOWED IN THE PUBLIC RIGHT OF WAY. ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF–PW).
9. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).
10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8–MIL POLYETHYLENE.
11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
12. ALL WATER METER BOXES SHALL BE:
    a. SINGLE, 1" METER AND BELOW DFW37F–12–1CA, OR EQUAL
    b. DUAL, 1" METERS AND BELOW DFW39F–12–1CA, OR EQUAL
    c. 1.5" SINGLE METER DFW65C–14–1CA, OR EQUAL
    d. 2" SINGLE METER DFW1730F–12–1CA, OR EQUAL
13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER NOTES:

1. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.
2. MANDREL TESTING SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
3. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW–511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5.
4. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.
5. FORCE MAIN PIPES NEED TO HAVE SWEEPING WYES FOR JOINTS.

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
02/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 6
CITY OF LEANDER, TEXAS
CONSTRUCTION NOTES (1 OF 3)

CITY NO. –––––––
JOB NO. 50816–26
DATE JANUARY 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL

–––––––

CITY OF LEANDER STREET AND DRAINAGE NOTES

1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISLATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS (TAS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT–OF–WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
5. STREET RIGHT–OF–WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED.
6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O–RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING.
8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I THERMOPLASTIC.
9. MANHOLE FRAMES, COVERS, VALVES, CLEAN–OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.
12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY MLA GEOTECHNICAL. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:

Street Classification	Subgrade Material	Hot Mix Asphaltic Concrete, in	Crushed Limestone Base, in	Lime Stabilization, in
Local Streets	PI ≥ 35	2.0	14	8
	PI 20 to 35	2.0	12	8
	PI < 20	2.0	12	-

FOR FURTHER INFORMATION REFER TO LIVELY PHASE 5 & 6, LEANDER, TEXAS GEOTECHNICAL INVESTIGATION, PAVEMENT THICKNESS RECOMMENDATIONS PREPARED BY MLA GEOTECHNICAL DATED DECEMBER 2023.

13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL.
16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.
18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRIVEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE.
22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN–OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT–OF–WAY.
26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.
27. CONTRACTOR TO AVOID INSTALLATION OF IRRIGATION, PLANTINGS, SILT FENCE, ETC. IN THE BASE OVERBUILD BEYOND BACK OF CURB.

TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S "TRENCH SAFETY SYSTEMS" OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

GRADING NOTES

1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

BENCHMARK NOTES

Pt.	Grid Northing	Grid Easting	Elevation	Full Description
5	10203233.6'	3094593.4'	975.8'	SET ½" IRON ROD WITH RED CAP "PAPE–DAWSON"
BENCHMARK 110			879.48'	SET CHISELED SQUARE ON GAS VALVE ON THE SOUTH SIDE OF DUKE ROAD

CITY OF LEANDER DRY UTILITIES NOTES (2024)

PROJECT NOTES:

1. CONTACTOR SHALL MAINTAIN MINIMUM 24" CLEARANCE FROM ALL EXISTING UTILITIES.
2. FOR PUBLIC WATER & WASTEWATER LINE EMERGENCIES, CONTACT THE CITY OF LEANDER PUBLIC WORKS EMERGENCY 24–HOUR ON–CALL LINE AT 512–690–4760.
3. THE CONTRACTOR SHALL CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM AT 1–800–344–8377 FOR EXISTING UTILITY LOCATIONS 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES THAT ARE TO BE EXTENDED, TIED TO, CROSSED, OR ALTERED; OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS.
4. CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT FOR EXISTING WATER, WASTEWATER, STREET LIGHT ELECTRICAL WIRING, AND TRAFFIC SIGNAL WIRING LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.

   a. LOCATE REQUESTS <u>MUST INCLUDE A COPY OF YOUR 811 TICKET.</u>

   b. REFRESH ALL LOCATES <u>BEFORE</u> 14 DAYS –LOCATE REFRESH REQUESTS <u>MUST INCLUDE A COPY OF YOUR 811 TICKET</u>. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.

   c. REPORT ALL DAMAGE TO CITY INFRASTRUCTURE IMMEDIATELY –IF YOU WITNESS OR EXPERIENCE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT BY PHONE. IF DAMAGE IS WITNESSED OR EXPERIENCED AFTER HOURS, CALL THE CITY OF LEANDER UTILITIES ON–CALL LINE AT THE NUMBER LISTED ABOVE.
5. A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT & CITY OF LEANDER REPRESENTATIVES PRIOR TO INSTALLATION OF EROSION/SEDIMENTATION CONTROLS & TREE PROTECTION MEASURES AS WELL AS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CITY OF LEANDER PLANNING DEPARTMENT AT 512–528–2750 AT LEAST THREE (3) DAYS PRIOR TO MEETING DATE.
6. 6. CITY OF LEANDER NOISE ORDINANCE PROHIBITS CONSTRUCTION ACTIVITY BETWEEN THE HOURS OF 9 PM AND 7 AM. REQUESTS FOR EXCEPTIONS TO THE ORDINANCE MUST BE MADE TO LEANDER CITY COUNCIL.
7. CONTRACTOR SHALL BORE UNDER ALL DRIVEWAYS, STREET CROSSINGS AND OTHER PAVED AREAS. OPEN CUT CROSSING SHALL NOT BE ALLOWED.
8. CONTRACTOR SHALL REPLACE ALL DAMAGED PAVEMENT, CURB & GUTTER, SIDEWALK, CURB INLETS AND ALL OTHER INFRASTRUCTURE DAMAGED BY CONSTRUCTION PER CITY OF LEANDER STANDARDS & SPECIFICATIONS.
9. THE CURRENT COMPANIES THAT HOLD CONTRACTS WITH THE CITY FOR WASTE HAULING ARE AL CLAWSON DISPOSAL, INC., ARROW ROLL OFF'S AND RECYCLING, BIN DUMPED, HOOK N HAUL, CENTRAL WASTE & RECYCLING, CENTRAL TEXAS REFUSE, LOSSEN BROTHERS CONSTRUCTION, RECON SERVICES, LIBERTY DUMPSTER REMOVAL, TEXAS DISPOSAL SYSTEM.
10. ALL UNDERGROUND UTILITY LINES SHALL CROSS UNDERNEATH WATERLINES.
11. THE MINIMUM DEPTH OF COVER FOR UTILITY LINES INSTALLED UNDER CITY OF LEANDER ROADWAYS SHALL BE 36" BENEATH FINISHED GRADE.

EROSION CONTROL & RESTORATION:

1. THE CITY OF LEANDER ENVIRONMENT INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
2. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL. THE 6" MINIMUM SOIL DEPTH SHALL CONSISTS OF 75% SOIL BLENDED WITH 25% COMPOST.
3. ALL DISTURBED AREAS SHALL BE RE–VEGETATED USING ONLY APPROVED GRASSES FROM THE GROW GREEN GUIDE.

MUD DISTRICT NOTES:

1. THE DISTRICT ENGINEER, JONES–HEROY & ASSOCIATES, INC. (KEN HEROY, Ph: 512/989–2200) SHALL BE CONTACTED 48 HOURS PRIOR TO:

   i) PRE–CONSTRUCTION MEETINGS;
   ii) BEGINNING EACH PHASE OF CONSTRUCTION;
   iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
   iv) FINAL WALK–THROUGH OF FACILITIES.

Texas Commission on Environmental Quality
Contributing Zone Plan
General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

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

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any ground disturbance or construction activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
2. All contractors conducting regulated activities associated with this project should be provided with complete copies of the approved Contributing Zone Plan (CZP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractor(s) should keep copies of the approved plan and approval letter on-site.
3. No hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
4. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
5. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
6. Sediment must be removed from the sediment traps or sedimentation basins when it occupies 50% of the basin's design capacity.
7. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
8. All excavated material that will be stored on-site must have proper E&S controls.
9. If portions of the site will have a cease in construction activity lasting longer than 14 days, soil

stabilization in those areas shall be initiated as soon as possible prior to the 14^{th} day of inactivity. If activity will resume prior to the 21^{st} day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14^{th} day, stabilization measures shall be initiated as soon as possible.

10. The following records should be maintained and made available to the TCEQ upon request:
    - the dates when major grading activities occur;
    - the dates when construction activities temporarily or permanently cease on a portion of the site; and
    - the dates when stabilization measures are initiated.
11. The holder of any approved CZP must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

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

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

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

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

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

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

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
02/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 6
CITY OF LEANDER, TEXAS
CONSTRUCTION NOTES (2 OF 3)

CITY NO. -------
JOB NO. 50816–26
DATE JANUARY 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL

B4 - Construction – General

B4.1 A preconstruction meeting shall be scheduled prior to the start of construction. The Design Engineer, Owner, Contractor, Subcontractors, and County Engineer shall attend this meeting. All roads are to be constructed in accordance with the construction documents as approved by the County Engineer and in accordance with the specifications found in the current version of the "Texas Department of Transportation Manual Standard Specifications for Construction of Highways, Streets, and Bridges" unless otherwise stated on the construction documents approved by the County Engineer.

B4.2 All materials shall be sampled and tested by an Independent Testing Laboratory in accordance with the construction documents approved by the County Engineer. The Owner shall pay for all testing services and shall furnish the County Engineer with certified copies of these test results. The County Engineer must approve the test results prior to constructing the next course of the roadway structure. Any material which does not meet the minimum required test specifications shall be removed and recompacted or replaced unless alternative remedial action is approved in writing from the County Engineer.

B4.3 Except for electrical lines, all underground nonferrous utilities within a right-of-way or easement must be accompanied by ferrous metal lines to aid in tracing the location of said utilities through the use of a metal detector.

B4.4 All proposed pavements (flexible and rigid) are to be specified in the Geotech report. The Geotech report is to be signed and sealed by a Registered Professional Engineer. Pavement designs shall follow the below County requirements based upon soil conditions from samples taken along the proposed roadways. Test borings shall be placed at a maximum spacing of 500 feet or other sampling frequency approved by the County Engineer based on recommendations provided by the geotechnical engineer. Borings shall be to a depth of ten ft or, if solid rock is encountered, one ft

below non-fractured rock or 3 ft below fractured rock. The pavement design must meet at least the minimum of one of the approved County designs and provided in the geotechnical report for review and approval prior to the review and approval of the construction plans. In addition to the basis of the pavement design, the soils report shall contain the results of sampled and tested subgrade for plasticity index.

B4.5 Flexible Pavement Designs based on Roadway Classification

Minimum Local Roadway (Urban/Rural) Flexible Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
HMA Surface (1)	2"	2"	2"	TxDOT Item 340 D- GR HMA PG 70-22 SAC B
Prime Coat or One Course Underseal	YES	YES	YES	AEP or TxDOT Item 316
Flexible Base (2)(5)	12"	12"	14"	TxDOT Item 247 FLBS TY A GR 5
Lime treated Subgrade (3)	NO	8"	8"	TxDOT Item 260
Notes:	(1) For Urban See Appendix B7 – B10 for HMA material requirements. Rural is also allowed B7.11 (2) See Appendix B6 for additional Flexible Base specifications. (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer. (5) Should solid rock be encountered prior to the depth necessary for 12" of base material underneath 2" HMA, a substitute pavement design may be allowed. Substitute pavement design shall have a base thickness no less than 8" and existing material shall be excavated to the exposed solid rock layer. No significant amount of existing material shall be left remaining between the base layer and the rock layer.			

Minimum Collector Roadway (Urban/Rural) Flexible Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
HMA Surface (1)	2"	2"	2"	TxDOT Item 340 D- GR HMA PG 70-22 SAC B
Prime Coat or One Course Underseal	YES	YES	YES	AEP or TxDOT Item 316
Flexible Base (2)(5)	14"	14"	16"	TxDOT Item 247 FLBS TY A GR 5
Lime treated Subgrade (3)	NO	8"	8"	TxDOT Item 260
Notes:	(1) . (1) For Urban See Appendix B7 – B10 for HMA material requirements. Rural is also allowed B7.11			

	(2) See Appendix B6 for additional Flexible Base specifications. (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer. (5) Should solid rock be encountered prior to the depth necessary for 14" of base material underneath 2" HMA, a substitute pavement design may be allowed. Substitute pavement design shall have a base thickness no less than 10" and existing material shall be excavated to the exposed solid rock layer. No significant amount of existing material shall be left remaining between the base layer and the rock layer.

Minimum Arterial Roadway (Urban/Rural) Flexible Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
HMA Surface (1)	2"	2"	2"	TxDOT Item 340 D- GR HMA PG 70-22 SAC B
Prime Coat or One Course Underseal	YES	YES	YES	AEP or TxDOT Item 316
Flexible Base (2)	20"	20"	22"	TxDOT Item 247 FLBS TY A GR 5
Lime treated Subgrade (3)	NO	8"	10"	TxDOT Item 260
Notes:	(1) See Appendix B7 for material requirements for HMA. (2) See Appendix B6 for additional Flexible Base specifications. (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer.			

B4.6 Rigid Pavement Designs based on Roadway Classification

Local Roadway (Urban/ Rural) Rigid Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
CRCP (1)	6"	6"	8"	TxDOT Item 421 – Class P Concrete CRCP – 13, Continuously Reinforced Concrete Pavement, One-layer steel bar placement
HMA Bond Breaker	1"	1"	1"	TxDOT Item D- GR HMA TY D or TY F PG 64-22
Flexible Base (2)	6"	8"	8"	TxDOT Item 247 FLBS TY A GR 4

Lime treated Subgrade (3)			8"	TxDOT Item 260
Notes:	(1) See Appendix B7 for material requirements for CRCP (2) See Appendix B6 for additional Cement Treated Base specifications (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer			

Collector Roadway (Urban/ Rural) Rigid Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
CRCP (1)	6"	6"	8"	TxDOT Item 421 – Class P Concrete CRCP – 13, Continuously Reinforced Concrete Pavement, One-layer steel bar placement
HMA Bond Breaker	1"	1"	1"	TxDOT Item D- GR HMA TY D or TY F PG 64-22
Flexible Base (2)	8"	10"	10"	TxDOT Item 247 FLBS TY A GR 4 (2)
Lime treated Subgrade (3)			8"	TxDOT Item 260 (3)
Notes:	(1) See Appendix B7 for material requirements for CRCP (2) See Appendix B6 for additional Cement Treated Base specifications (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer			

Arterial Roadway (Urban/ Rural) Rigid Pavement design				
Plasticity Index	PI <20	PI 20-35	PI 35-55 (4)	Material Requirements
Soil Classification	Clayey Sand	Lean Clay	Fat Clay	
CRCP (1)	11"	11"	11"	TxDOT Item 421 – Class P Concrete CRCP – 13, Continuously Reinforced Concrete Pavement, One-layer steel bar placement
HMA Bond Breaker	1"	1"	1"	TxDOT Item D- GR HMA TY D or TY F PG 64-22
Flexible Base (2)	12"	12"	12"	TxDOT Item 247 FLBS TY A GR 4
Lime treated Subgrade (3)		6"	10"	TxDOT Item 260

Notes:	(1) See Appendix B7 for material requirements for CRCP (2) See Appendix B6 for additional Cement Treated Base specifications (3) Pelletized lime is not allowed. Use hydrated lime or lime slurry. Confirm sulfates are not present in soil. (4) For PI >55 additional pavement structure is necessary and shall be reviewed and approved by the County Engineer

B5 - Subgrade

B5.1 The preparation of the subgrade shall follow good engineering practices as directed by the County Engineer in conjunction with recommendations outlined in the geotechnical report. When the Plasticity Index (PI) is greater than 20, a sufficient amount of lime shall be added as described in Item 260 of the current edition of the TxDOT Standard Specifications for Construction until the PI is less than 20. If the addition of lime as described in Item 260 is not feasible, an alternate stabilizing design shall be proposed and submitted to the County Engineer for approval. The subgrade shall be prepared and compacted to achieve a dry density per TxDOT Item 132. In addition, proof rolling may be required by the County Engineer.

B5.2 If Lime is necessary, then a sufficient amount of lime shall be added, as described in Item 260 of the current edition of the TxDOT Standard Specifications for Construction to properly stabilize subgrade. The use of Hydrated lime or lime slurry is approved; however, the use of Pelletized lime is not approved.

B5.3 Prior to lime stabilization, a sulfate test of in situ soils shall be performed by developer to confirm the appropriate means and methods of stabilization. Provide sulfate test to County Engineer prior to stabilization.

B5.4 Any variation to the County's stabilization requirements must be approved by the County Engineer.

B5.5 The subgrade shall be prepared and compacted to achieve a dry density per TxDOT Item 132. In addition, proof rolling may be required by the County Engineer.

B5.6 The subgrade shall be inspected and approved by an Independent Testing Laboratory and a certified copy of all inspection reports furnished to the County Engineer. The County Engineer must approve the report prior to application of the base material. All density test reports shall include a copy of the work sheet showing the percentage of the maximum dry (Proctor) density. The number and location of all subgrade tests shall be determined by the County Engineer.

B6 - Base Material

B6.1 Base material shall conform to Item 247 of the current edition of the TxDOT Standard Specifications for Construction, "Flexible Base". The base material shall be Type A Grade 4, or as approved by the County Engineer. Grade 4 material shall conform to the requirements of Table B6.1 below:

Table B6.1: Gradation Specification for TY A, Grade 4

Master gradation sieve size	Cumulative % Retained
2 ½"	-
1 ¾"	0
7/8"	10% - 35%
3/8"	30% - 65%
#4	45% - 75%
#40	70% - 90%
#200	87% - 95%

B6.2 Each layer of base course shall be tested for in-place dry density and measured for compacted thickness. The number and location of all base test samples shall be determined by the County Engineer.

B6.3 The base shall be prepared and compacted to achieve a minimum of 100% of the maximum (Proctor) dry density or as approved by the County Engineer upon recommendation by the testing laboratory. The maximum lift shall not exceed six inches. The base must be inspected and approved by an Independent Testing Laboratory and a certified copy of the test results furnished to the County Engineer for approval. Prior to the placement of the first lift of base, the stockpile shall be tested for the specifications found in Item 247 Table 1 and the result furnished to the County Engineer for approval.

B7 - Bituminous Pavement

B7.1 Urban roads require a minimum 2 inch wearing surface of HMAC Type D. The mix shall be from a TxDOT certified plant and the mix design shall be submitted to the County Engineer for approval prior to placement of the material.

B7.2 If Providing mixture Type C or D, use performance grade (PG) binder 70-22. Provide PG binder that does not contain Recycled Engine Oil Bottoms (REOBs) or Poly Phosphoric Acid (PPA). Recycled Asphalt Pavement (RAP) is not permitted for use as a component of the HMACP. The Contractor is also not permitted the use Recycled Asphalt Shingles (RAS) as a component of the HMACP.

B7.3 If providing mixture Type B, use PG binder 64-22. Provide PG binders that do not contain REOBs or PPA. For subsurface course Type B, the use of twenty percent (20%) RAP is permitted in the mix design. The Contractor is not permitted to use RAS as a component of the HMACP.

B7.4 Target laboratory molded density is 96.5% for all mixtures without RAP and when using a Texas Gyratory Compactor (TGC) for designing the mixture. When using Superpave Gyratory Compactor (SGC) to design mixtures, submit the SGC mix design to the Engineer for approval.

B7.5 All mixtures must meet the Hamburg requirement as stated in the table below.

High-Temperature Binder Grade	Test Method	Hamburg Wheel Test Requirements*
		Minimum # of Passes @ 0.5" Rut Depth, Tested @122°F
PG 64 or lower	Tex-242-F	7,000
PG 70	Tex-242-F	15,000
PG 76 or higher	Tex-242-F	20,000

** The County Engineer may accept Hamburg Wheel test results for production and placement if no more than 1of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.*

B7.6 Submit any proposed adjustments or changes to a job mix formula to the County Engineer before production of the new job mix formula.

B7.7 Unless otherwise approved, provide Type B mixtures that have no less than 4.5% asphalt binder, and TY C and D mixtures with no less than 4.7% binder.

B7.8 For Mixture Design Verification, provide the Engineer with two 5-gallon buckets of each aggregate stockpile to be used on the project and three gallons of each PG binder to be used on the project. Also provide sufficient quantities of any other additives that will be used in the HMA mixture. This must be done prior to approval of the mix design, unless already performed within a one-year time period.

B7.9 Prior to allowing production of the trial batch, the Engineer will use the materials provided by the Contractor to perform the following tests to verify the HMA mixture design.

1. Indirect Tensile Test in accordance with Tex-226-F
2. Hamburg Wheel Test in accordance with Tex-242-F
3. Overlay Test in accordance with Tex-248-F
4. Cantabro Test in accordance with Tex-245-F

For mixtures designed with a Texas Gyratory Compactor (TGC), the Engineer may require that the target laboratory molded density be raised to no more than 97.5% or may lower the design number of gyrations to no less than 35 for mixtures designed with an SGC if any of the following conditions exist.

1. The Indirect Tensile Test results in a value greater than 200 PSI
2. The Hamburg Wheel Test results in a value less than 3.0 mm
3. The Overlay Test results in a value less than 100 cycles
4. The Cantabro Test results in a value of more than 20% loss

In lieu of, or in addition to evaluating the mixture design prior to allowing a trial batch to be produced, the Engineer may also evaluate the mixture produced during the trial batch for compliance with the 4 tests listed above.

B7.10 Contractor's Quality Control (CQC) test reports shall be submitted to the County Engineer on a daily basis. As a minimum, daily CQC testing on the produced mix shall include: Sieve Analysis TEX-200-F, Asphalt Content TEX-236-F, Hveem Stability TEX-208-F, Laboratory Compacted Density TEX-207-F, and Maximum Specific Gravity TEX-227-F. The number and location of all HMAC tests shall be determined by the County Engineer with a minimum of three, 6-inch diameter field cores secured and tested by the contractor from each day's paving. Each HMAC course shall be tested for in-place density, bituminous content and aggregate gradation, and shall be measured for compacted thickness. The number and location of all HMAC test samples shall be determined by the County Engineer.

B7.11 Rural roads may use either the specifications found in Section B7.1 or a two-course surface in accordance with Item 316, treatment wearing surface, of the current edition of the TxDOT Standard Specifications for Construction. The type and rate of asphalt and aggregate shall be indicated on the plans as a basis of estimate and shall be determined at the preconstruction conference. Aggregate used in the mix shall be on the TxDOT Quality Monitoring Schedule. Aggregate shall be Type B Grade 4. Gradation tests shall be required for each 300 cubic yards of material placed with a minimum of two tests per each grade per each project. Test results shall be reviewed by the County Engineer prior to application of the material.

B8 - Concrete Pavement

B8.1 In lieu of bituminous pavement, Portland cement concrete pavement may be used. In such cases, the pavement thickness shall be a minimum of 9 inches of concrete, and shall be jointed and reinforced in accordance with the detail included in Appendix I. The mix shall be from a TxDOT certified plant. The mix design shall be submitted to the County Engineer for approval prior to placement of the material.

B9 - Concrete - General

B9.1 Unless otherwise specified, concrete shall be in accordance with Item 421 of the current edition of the TxDOT Standard Specifications for Construction and be placed in accordance with the applicable item.

B9.2 All concrete shall be tested for compressive strength. One set of three concrete test cylinders shall be molded for every 50 cubic yards of concrete placed for each class of concrete per day, or at any other interval as determined by the County Engineer. A slump test shall be required with each set of test cylinders. One cylinder shall be tested for compressive strength at an age of seven days and the remaining two cylinders shall be tested at 28 days of age.

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
02/11/2025

PAPE-DAWSON ENGINEERS
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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 6
CITY OF LEANDER, TEXAS

CONSTRUCTION NOTES (3 OF 3)

CITY NO. -------
JOB NO. 50816-26
DATE JANUARY 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 4 of 83

Date: Jan 31, 2025, 11:56am User ID: dyosief
File: H:\Projects\508\16\26\301 Construction Documents\Civil\CN50816-26.dwg

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Impervious Cover & Water Quality Treatment Summary (Ultimate Development, including Phase 6)						
LIVELY TRACT, PHASE 2 MODIFIED CZP						
B.M.P.	**Area (AC)**		**I.C. (AC)**		**TSS Removal (lb.)**	
Batch Detention Pond H	81.10		43.35		44,271	
Batch Detention Pond J	15.93		8.71		8,889	
Residential VFS D	9.87		5.29		5,046	
Residential VFS E	6.68		3.68		3,507	
Residential VFS F	3.86		2.12		2,021	
Open Space Area	3.16		0		0	
						Required
Total CZP	120.60		63.15		63,734	63,734

SCALE: 1"= 200'

0' 200' 400' 600'

LEGEND

CZP POND J TREATMENT AREA

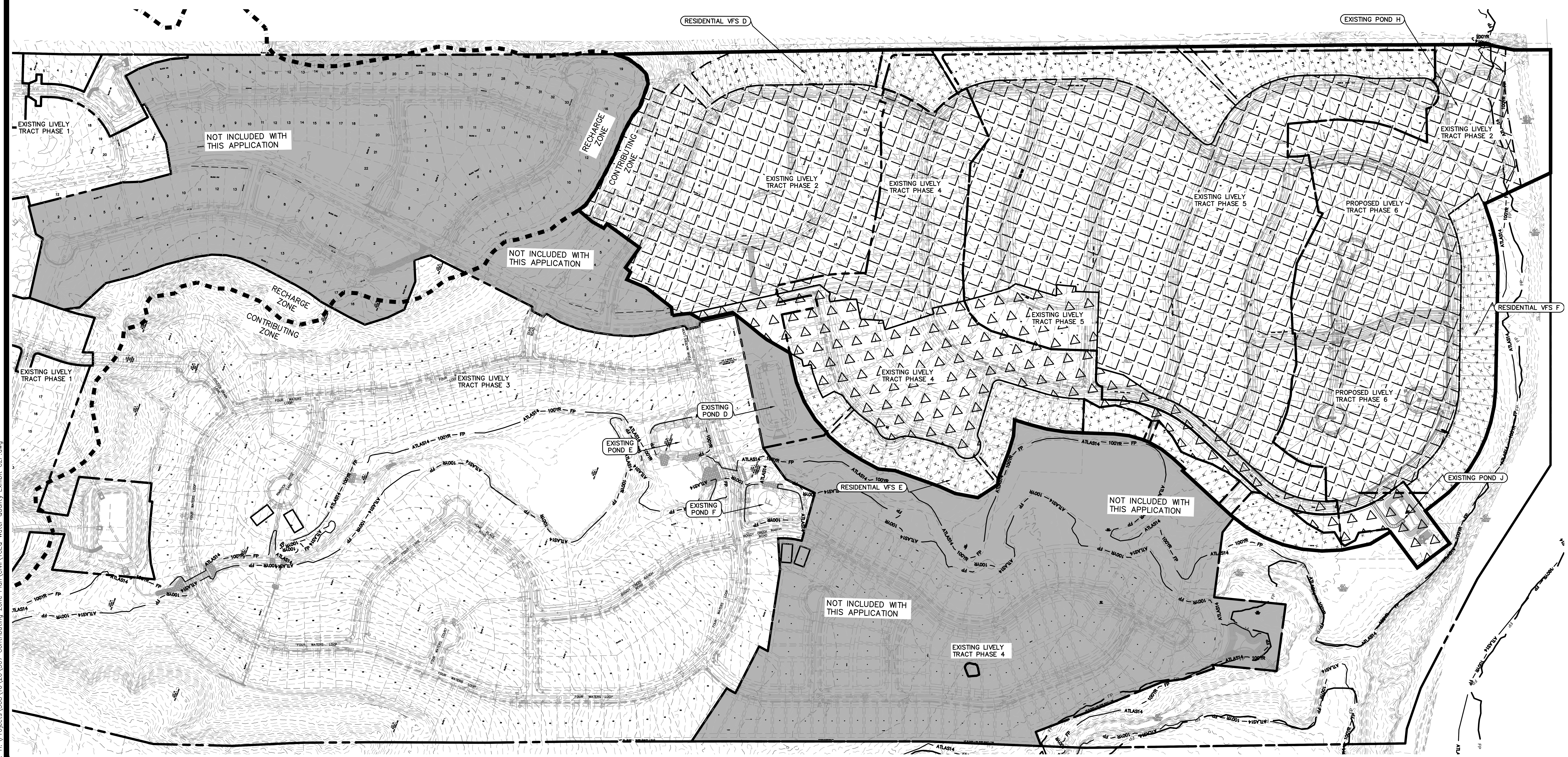
CZP POND H TREATMENT AREA

FILTER STRIP TREATMENT AREA

PHASE 2, 4, 5 & 6 BOUNDARIES

DRAINAGE AREA BOUNDARY

CZP BOUNDARY



STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

NO. | REVISION | DATE

PAPE-DAWSON ENGINEERS

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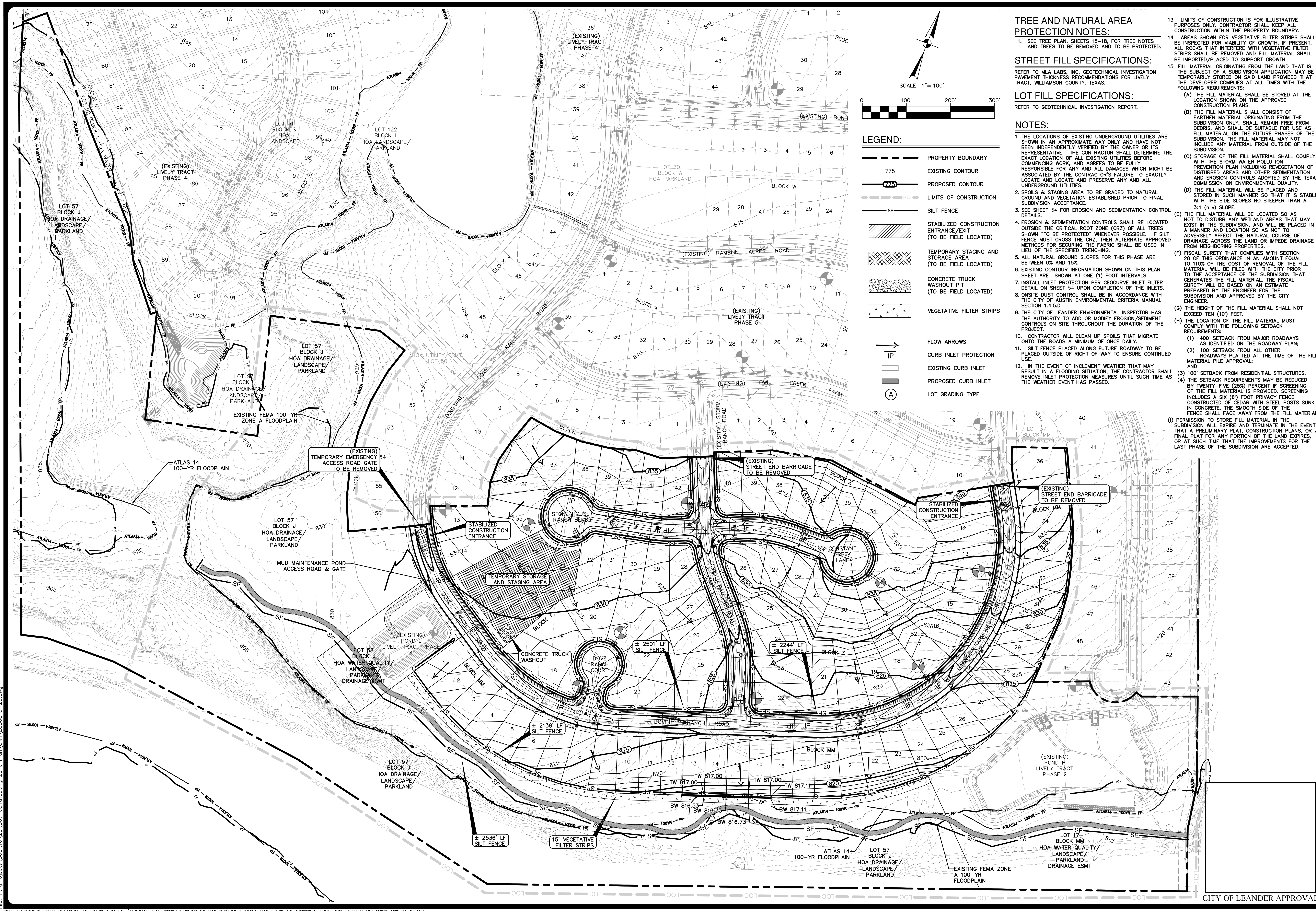
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

TCEQ WATER QUALITY EXHIBIT CZP ULTIMATE CONDITIONS

CITY JOB No.
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER
CHECKED TCK DRAWN DY
SHEET 5 OF 83

Date: Apr 10, 2025, 11:36am User ID: dyosief
File: H:\Projects\508\16\26\07 Contributing Zone Plan\Civil\TCEQ Water Quality Exhibit CZP.dwg



TREE AND NATURAL AREA PROTECTION NOTES:

1. SEE TREE PLAN, SHEETS 15–18, FOR TREE NOTES AND TREES TO BE REMOVED AND TO BE PROTECTED.

STREET FILL SPECIFICATIONS:

REFER TO MLA LABS, INC. GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS FOR LIVELY TRACT, WILLIAMSON COUNTY, TEXAS.

LOT FILL SPECIFICATIONS:

REFER TO GEOTECHNICAL INVESTIGATION REPORT.

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. SPOILS & STAGING AREA TO BE GRADED TO NATURAL GROUND AND VEGETATION ESTABLISHED PRIOR TO FINAL SUBDIVISION ACCEPTANCE.
3. SEE SHEET 54 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LOCATED OUTSIDE THE CRITICAL ROOT ZONE (CRZ) OF ALL TREES SHOWN "TO BE PROTECTED" WHENEVER POSSIBLE. IF SILT FENCE MUST CROSS THE CRZ, THEN ALTERNATE APPROVED METHODS FOR SECURING THE FABRIC SHALL BE USED IN LIEU OF THE SPECIFIED TRENCHING.
5. ALL NATURAL GROUND SLOPES FOR THIS PHASE ARE BETWEEN 0% AND 15%.
6. EXISTING CONTOUR INFORMATION SHOWN ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS.
7. INSTALL INLET PROTECTION PER GEOCURVE INLET FILTER DETAIL ON SHEET 54 UPON COMPLETION OF THE INLETS.
8. ONSITE DUST CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D
9. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
11. SILT FENCE PLACED ALONG FUTURE ROADWAY TO BE PLACED OUTSIDE OF RIGHT OF WAY TO ENSURE CONTINUED USE.
12. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.
13. LIMITS OF CONSTRUCTION IS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL KEEP ALL CONSTRUCTION WITHIN THE PROPERTY BOUNDARY.
14. AREAS SHOWN FOR VEGETATIVE FILTER STRIPS SHALL BE INSPECTED FOR VIABILITY OF GROWTH. IF PRESENT, ALL ROCKS THAT INTERFERE WITH VEGETATIVE FILTER STRIPS SHALL BE REMOVED AND FILL MATERIAL SHALL BE IMPORTED/PLACED TO SUPPORT GROWTH.
15. FILL MATERIAL ORIGINATING FROM THE LAND THAT IS THE SUBJECT OF A SUBDIVISION APPLICATION MAY BE TEMPORARILY STORED ON SAID LAND PROVIDED THAT THE DEVELOPER COMPLIES AT ALL TIMES WITH THE FOLLOWING REQUIREMENTS:
    - (A) THE FILL MATERIAL SHALL BE STORED AT THE LOCATION SHOWN ON THE APPROVED CONSTRUCTION PLANS.
    - (B) THE FILL MATERIAL SHALL CONSIST OF EARTHEN MATERIAL ORIGINATING FROM THE SUBDIVISION ONLY, SHALL REMAIN FREE FROM DEBRIS, AND SHALL BE SUITABLE FOR USE AS FILL MATERIAL ON THE FUTURE PHASES OF THE SUBDIVISION. THE FILL MATERIAL MAY NOT INCLUDE ANY MATERIAL FROM OUTSIDE OF THE SUBDIVISION.
    - (C) STORAGE OF THE FILL MATERIAL SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING REVEGETATION OF DISTURBED AREAS AND OTHER SEDIMENTATION AND EROSION CONTROLS ADOPTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
    - (D) THE FILL MATERIAL WILL BE PLACED AND STORED IN SUCH MANNER SO THAT IT IS STABLE, WITH THE SIDE SLOPES NO STEEPER THAN A 3:1 (h:v) SLOPE.
    - (E) THE FILL MATERIAL WILL BE LOCATED SO AS NOT TO DISTURB ANY WETLAND AREAS THAT MAY EXIST IN THE SUBDIVISION, AND WILL BE PLACED IN A MANNER AND LOCATION SO AS NOT TO ADVERSELY AFFECT THE NATURAL COURSE OF DRAINAGE ACROSS THE LAND OR IMPEDE DRAINAGE FROM NEIGHBORING PROPERTIES.
    - (F) FISCAL SURETY THAT COMPLIES WITH SECTION 28 OF THIS ORDINANCE IN AN AMOUNT EQUAL TO 110% OF THE COST OF REMOVAL OF THE FILL MATERIAL WILL BE FILED WITH THE CITY PRIOR TO THE ACCEPTANCE OF THE SUBDIVISION THAT GENERATES THE FILL MATERIAL. THE FISCAL SURETY WILL BE BASED ON AN ESTIMATE PREPARED BY THE ENGINEER FOR THE SUBDIVISION AND APPROVED BY THE CITY ENGINEER.
    - (G) THE HEIGHT OF THE FILL MATERIAL SHALL NOT EXCEED TEN (10') FEET.
    - (H) THE LOCATION OF THE FILL MATERIAL MUST COMPLY WITH THE FOLLOWING SETBACK REQUIREMENTS:
        - (1) 400' SETBACK FROM MAJOR ROADWAYS AS IDENTIFIED ON THE ROADWAY PLAN;
        - (2) 100' SETBACK FROM ALL OTHER ROADWAYS PLATTED AT THE TIME OF THE FILL MATERIAL PILE APPROVAL; AND
        - (3) 100' SETBACK FROM RESIDENTIAL STRUCTURES.
        - (4) THE SETBACK REQUIREMENTS MAY BE REDUCED BY TWENTY-FIVE (25%) PERCENT IF SCREENING OF THE FILL MATERIAL IS PROVIDED. SCREENING INCLUDES A SIX (6') FOOT PRIVACY FENCE CONSTRUCTED OF CEDAR WITH STEEL POSTS SUNK IN CONCRETE. THE SMOOTH SIDE OF THE FENCE SHALL FACE AWAY FROM THE FILL MATERIAL.
    - (I) PERMISSION TO STORE FILL MATERIAL IN THE SUBDIVISION WILL EXPIRE AND TERMINATE IN THE EVENT THAT A PRELIMINARY PLAT, CONSTRUCTION PLANS, OR A FINAL PLAT FOR ANY PORTION OF THE LAND EXPIRES, OR AT SUCH TIME THAT THE IMPROVEMENTS FOR THE LAST PHASE OF THE SUBDIVISION ARE ACCEPTED.

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

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LIVELY TRACT, PHASE 2 MODIFIED CZP
EROSION & SEDIMENTATION CONTROL

PHASE 6 ESC

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL

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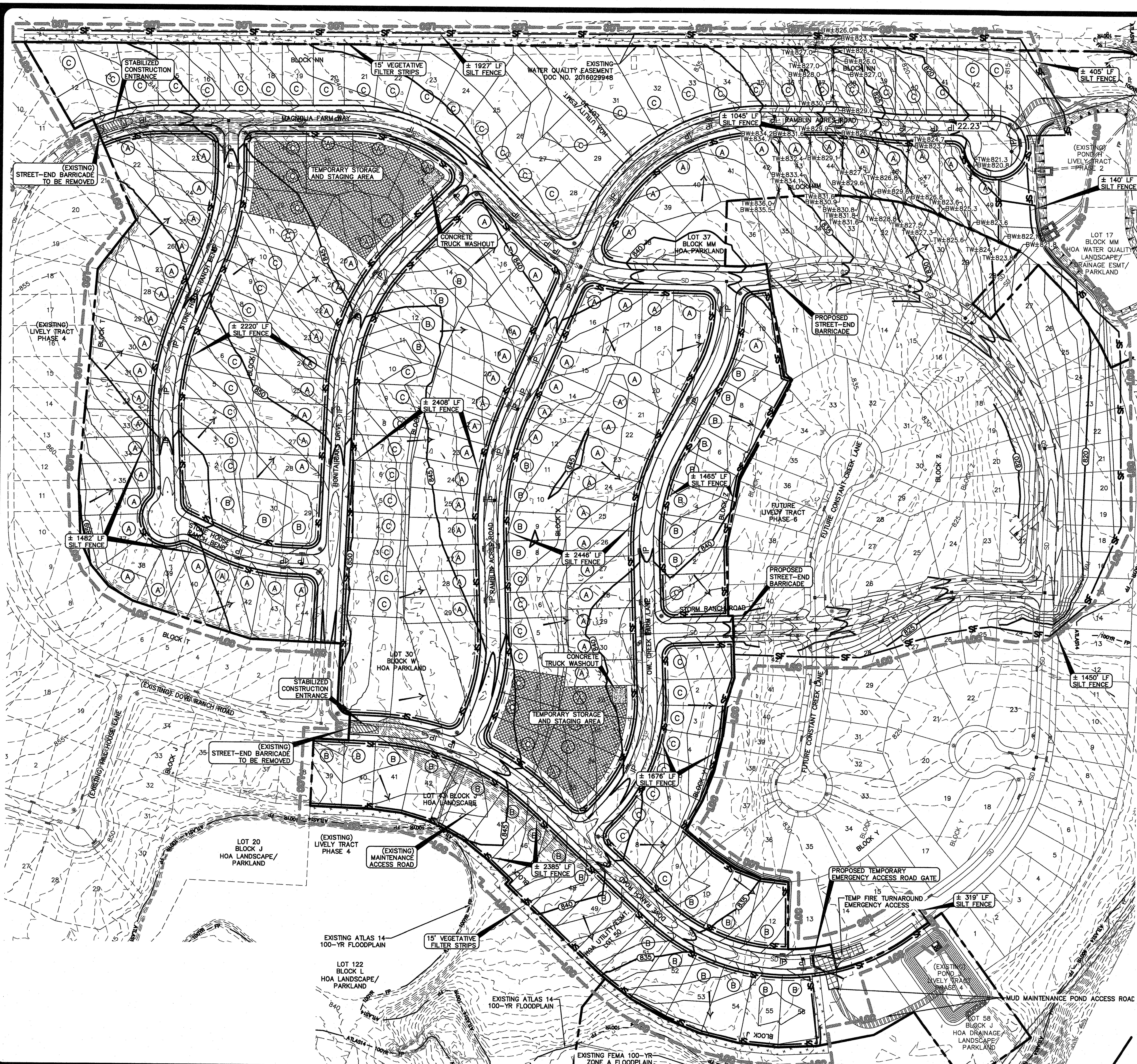


SCALE: 1"= 100'

0' 100' 200' 300'

LEGEND:

- PROPERTY BOUNDARY
- 775 EXISTING CONTOUR
- 775 PROPOSED CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- TEMPORARY STAGING AND STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- VEGETATIVE FILTER STRIPS
- FLOW ARROWS
- IP CURB INLET PROTECTION
- EXISTING CURB INLET
- PROPOSED CURB INLET
- A LOT GRADING TYPE

TREE AND NATURAL AREA PROTECTION NOTES:

1. SEE TREE PLAN, SHEETS 16–21, FOR TREE NOTES AND TREES TO BE REMOVED AND TO BE PROTECTED.

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. SPOILS & STAGING AREA TO BE GRADED TO NATURAL GROUND AND VEGETATION ESTABLISHED PRIOR TO FINAL SUBDIVISION ACCEPTANCE.
3. SEE SHEET 94 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LOCATED OUTSIDE THE CRITICAL ROOT ZONE (CRZ) OF ALL TREES SHOWN "TO BE PROTECTED" WHENEVER POSSIBLE. IF SILT FENCE MUST CROSS THE CRZ, THEN ALTERNATE APPROVED METHODS FOR SECURING THE FABRIC SHALL BE USED IN LIEU OF THE SPECIFIED TRENCHING.
5. ALL NATURAL GROUND SLOPES FOR THIS PHASE ARE BETWEEN 0% AND 15%.
6. EXISTING CONTOUR INFORMATION SHOWN ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS.
7. INSTALL INLET PROTECTION PER GEOCURVE INLET FILTER DETAIL ON SHEET 94 UPON COMPLETION OF THE INLETS.
8. ONSITE DUST CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D
9. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
11. SILT FENCE PLACED ALONG FUTURE ROADWAY TO BE PLACED OUTSIDE OF RIGHT OF WAY TO ENSURE CONTINUED USE.
12. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.
13. LIMITS OF CONSTRUCTION IS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL KEEP ALL CONSTRUCTION WITHIN THE PROPERTY BOUNDARY.
14. AREAS SHOWN FOR VEGETATIVE FILTER STRIPS SHALL BE INSPECTED FOR VIABILITY OF GROWTH. IF PRESENT, ALL ROCKS THAT INTERFERE WITH VEGETATIVE FILTER STRIPS SHALL BE REMOVED AND FILL MATERIAL SHALL BE IMPORTED/PLACED TO SUPPORT GROWTH.
15. FILL MATERIAL ORIGINATING FROM THE LAND THAT IS THE SUBJECT OF A SUBDIVISION APPLICATION MAY BE TEMPORARILY STORED ON SAID LAND PROVIDED THAT THE DEVELOPER COMPLIES AT ALL TIMES WITH THE FOLLOWING REQUIREMENTS:
    (A) THE FILL MATERIAL SHALL BE STORED AT THE LOCATION SHOWN ON THE APPROVED CONSTRUCTION PLANS.
    (B) THE FILL MATERIAL SHALL CONSIST OF EARTHEN MATERIAL ORIGINATING FROM THE SUBDIVISION ONLY, SHALL REMAIN FREE FROM DEBRIS, AND SHALL BE SUITABLE FOR USE AS FILL MATERIAL ON THE FUTURE PHASES OF THE SUBDIVISION. THE FILL MATERIAL MAY NOT INCLUDE ANY MATERIAL FROM OUTSIDE OF THE SUBDIVISION.
    (C) STORAGE OF THE FILL MATERIAL SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING REVEGETATION OF DISTURBED AREAS AND OTHER SEDIMENTATION AND EROSION CONTROLS ADOPTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
    (D) THE FILL MATERIAL WILL BE PLACED AND STORED IN SUCH MANNER SO THAT IT IS STABLE, WITH THE SIDE SLOPES NO STEEPER THAN A 3:1 (h:v) SLOPE.
    (E) THE FILL MATERIAL WILL BE LOCATED SO AS NOT TO DISTURB ANY WETLAND AREAS THAT MAY EXIST IN THE SUBDIVISION, AND WILL BE PLACED IN A MANNER AND LOCATION SO AS NOT TO ADVERSELY AFFECT THE NATURAL COURSE OF DRAINAGE ACROSS THE LAND OR IMPEDE DRAINAGE FROM NEIGHBORING PROPERTIES.
    (F) FISCAL SURETY THAT COMPLIES WITH SECTION 28 OF THIS ORDINANCE IN AN AMOUNT EQUAL TO 110% OF THE COST OF REMOVAL OF THE FILL MATERIAL WILL BE FILED WITH THE CITY PRIOR TO THE ACCEPTANCE OF THE SUBDIVISION THAT GENERATES THE FILL MATERIAL. THE FISCAL SURETY WILL BE BASED ON AN ESTIMATE PREPARED BY THE ENGINEER FOR THE SUBDIVISION AND APPROVED BY THE CITY ENGINEER.
    (G) THE HEIGHT OF THE FILL MATERIAL SHALL NOT EXCEED TEN (10') FEET.
    (H) THE LOCATION OF THE FILL MATERIAL MUST COMPLY WITH THE FOLLOWING SETBACK REQUIREMENTS:
        (1) 400' SETBACK FROM MAJOR ROADWAYS AS IDENTIFIED ON THE ROADWAY PLAN;
        (2) 100' SETBACK FROM ALL OTHER ROADWAYS PLATTED AT THE TIME OF THE FILL MATERIAL PILE APPROVAL; AND
        (3) 100' SETBACK FROM RESIDENTIAL STRUCTURES.
        (4) THE SETBACK REQUIREMENTS MAY BE REDUCED BY TWENTY-FIVE (25%) PERCENT IF SCREENING OF THE FILL MATERIAL IS PROVIDED. SCREENING INCLUDES A SIX (6') FOOT PRIVACY FENCE CONSTRUCTED OF CEDAR WITH STEEL POSTS SUNK IN CONCRETE. THE SMOOTH SIDE OF THE FENCE SHALL FACE AWAY FROM THE FILL MATERIAL.
    (I) PERMISSION TO STORE FILL MATERIAL IN THE SUBDIVISION WILL EXPIRE AND TERMINATE IN THE EVENT THAT A PRELIMINARY PLAT, CONSTRUCTION PLANS, OR A FINAL PLAT FOR ANY PORTION OF THE LAND EXPIRES, OR AT SUCH TIME THAT THE IMPROVEMENTS FOR THE LAST PHASE OF THE SUBDIVISION ARE ACCEPTED.

STREET FILL SPECIFICATIONS:

REFER TO MLA LABS, INC. GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS FOR LIVELY TRACT, WILLIAMSON COUNTY, TEXAS.

LOT FILL SPECIFICATIONS:

REFER TO GEOTECHNICAL INVESTIGATION REPORT.

APPROVED

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

GRADING, EROSION & SEDIMENTATION CONTROL

CITY NO.	PICP-24-0120
JOB NO.	50816-25
DATE	SEPTEMBER 2024
DESIGNER	RBB
CHECKED	TCK DRAWN ADS
SHEET	7 of 83

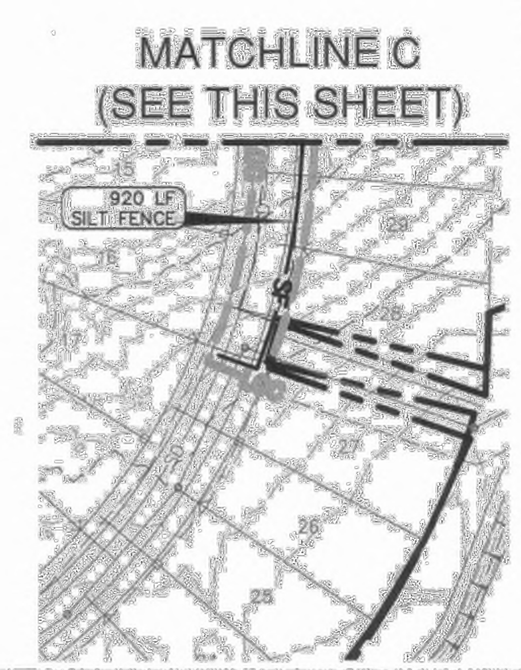
Date: Sep 19, 2024, 9:00am User ID: lkrause
File: H:\Projects\508\16\24\301 Construction Documents\Civil\EC50816-24.dwg

LEGEND:

- PROPERTY BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- LIMITS OF CONSTRUCTION
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- TEMPORARY STAGING AND STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- VEGETATIVE FILTER STRIPS
- GRATE INLET PROTECTION
- FLOW ARROWS
- CURB INLET PROTECTION
- EXISTING CURB INLET
- PROPOSED CURB INLET
- LOT GRADING TYPE
- DIVERSION DIKE
- FEMA 100-YR FLOODPLAIN
- ATLAS-14 100-YR FLOODPLAIN

TREE AND NATURAL AREA PROTECTION NOTES:

1. SEE TREE PLAN, SHEETS 13 – 15 & 107 – 111, FOR TREE NOTES AND TREES TO BE REMOVED AND TO BE PROTECTED.



NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. SPOILS & STAGING AREA TO BE GRADED TO NATURAL GROUND AND VEGETATION ESTABLISHED PRIOR TO FINAL SUBDIVISION ACCEPTANCE.
3. SEE SHEET 98 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LOCATED OUTSIDE THE CRITICAL ROOT ZONE (CRZ) OF ALL TREES SHOWN "TO BE PROTECTED" WHENEVER POSSIBLE. IF SILT FENCE MUST CROSS THE CRZ, THEN ALTERNATE APPROVED METHODS FOR SECURING THE FABRIC SHALL BE USED IN LIEU OF THE SPECIFIED TRENCHING.
5. ALL NATURAL GROUND SLOPES FOR THIS PHASE ARE BETWEEN 0% AND 15%.
6. EXISTING CONTOUR INFORMATION SHOWN ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS.
7. INSTALL INLET PROTECTION PER GEO CURVE INLET FILTER DETAIL ON SHEET 98 UPON COMPLETION OF THE INLETS.
8. ONSITE DUST CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D.
9. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
11. SILT FENCE PLACED ALONG FUTURE ROADWAY TO BE PLACED OUTSIDE OF RIGHT OF WAY TO ENSURE CONTINUED USE.
12. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.
13. LIMITS OF CONSTRUCTION IS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL KEEP ALL CONSTRUCTION WITHIN THE PROPERTY BOUNDARY.
14. AREAS SHOWN FOR VEGETATIVE FILTER STRIPS SHALL BE INSPECTED FOR VIABILITY OF GROWTH. IF PRESENT, ALL ROCKS THAT INTERFERE WITH VEGETATIVE FILTER STRIPS SHALL BE REMOVED AND FILL MATERIAL SHALL BE IMPORTED/PLACED TO SUPPORT GROWTH.
15. FILL MATERIAL ORIGINATING FROM THE LAND THAT IS THE SUBJECT OF A SUBDIVISION APPLICATION MAY BE TEMPORARILY STORED ON SAID LAND PROVIDED THAT THE DEVELOPER COMPLIES AT ALL TIMES WITH THE FOLLOWING REQUIREMENTS:
   (A) THE FILL MATERIAL SHALL BE STORED AT THE LOCATION SHOWN ON THE APPROVED CONSTRUCTION PLANS.
   (B) THE FILL MATERIAL SHALL CONSIST OF EARTHEN MATERIAL ORIGINATING FROM THE SUBDIVISION ONLY, SHALL REMAIN FREE FROM DEBRIS, AND SHALL BE SUITABLE FOR USE AS FILL MATERIAL ON THE FUTURE PHASES OF THE SUBDIVISION. THE FILL MATERIAL MAY NOT INCLUDE ANY MATERIAL FROM OUTSIDE OF THE SUBDIVISION.
   (C) STORAGE OF THE FILL MATERIAL SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING REVEGETATION OF DISTURBED AREAS AND OTHER SEDIMENTATION AND EROSION CONTROLS ADOPTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
   (D) THE FILL MATERIAL WILL BE PLACED AND STORED IN SUCH MANNER SO THAT IT IS STABLE, WITH THE SIDE SLOPES NO STEEPER THAN A 3:1 (h:v) SLOPE.
   (E) THE FILL MATERIAL WILL BE LOCATED SO AS NOT TO DISTURB ANY WETLAND AREAS THAT MAY EXIST IN THE SUBDIVISION, AND WILL BE PLACED IN A MANNER AND LOCATION SO AS NOT TO ADVERSELY AFFECT THE NATURAL COURSE OF DRAINAGE ACROSS THE LAND OR IMPEDE DRAINAGE FROM NEIGHBORING PROPERTIES.
   (F) FISCAL SURETY THAT COMPLIES WITH SECTION 28 OF THIS ORDINANCE IN AN AMOUNT EQUAL TO 110% OF THE COST OF REMOVAL OF THE FILL MATERIAL WILL BE FILED WITH THE CITY PRIOR TO THE ACCEPTANCE OF THE SUBDIVISION THAT GENERATES THE FILL MATERIAL. THE FISCAL SURETY WILL BE BASED ON AN ESTIMATE PREPARED BY THE ENGINEER FOR THE SUBDIVISION AND APPROVED BY THE CITY ENGINEER.
   (G) THE HEIGHT OF THE FILL MATERIAL SHALL NOT EXCEED TEN (10) FEET.
   (H) THE LOCATION OF THE FILL MATERIAL MUST COMPLY WITH THE FOLLOWING SETBACK REQUIREMENTS:
      (1) 400 SETBACK FROM MAJOR ROADWAYS AS IDENTIFIED ON THE ROADWAY PLAN;
      (2) 100 SETBACK FROM ALL OTHER ROADWAYS PLATTED AT THE TIME OF THE FILL MATERIAL PILE APPROVAL; AND
      (3) 100 SETBACK FROM RESIDENTIAL STRUCTURES.
      (4) THE SETBACK REQUIREMENTS MAY BE REDUCED BY TWENTY-FIVE (25%) PERCENT IF SCREENING OF THE FILL MATERIAL IS PROVIDED. SCREENING INCLUDES A SIX (6) FOOT PRIVACY FENCE CONSTRUCTED OF CEDAR WITH STEEL POSTS SUNK IN CONCRETE. THE SMOOTH SIDE OF THE FENCE SHALL FACE AWAY FROM THE FILL MATERIAL.
   (I) PERMISSION TO STORE FILL MATERIAL IN THE SUBDIVISION WILL EXPIRE AND TERMINATE IN THE EVENT THAT A PRELIMINARY PLAT, CONSTRUCTION PLANS, OR A FINAL PLAT FOR ANY PORTION OF THE LAND EXPIRES, OR AT SUCH TIME THAT THE IMPROVEMENTS FOR THE LAST PHASE OF THE SUBDIVISION ARE ACCEPTED.

STREET FILL SPECIFICATIONS:

REFER TO MLA LABS, INC. GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS FOR LIVELY TRACT, WILLIAMSON COUNTY, TEXAS.

LOT FILL SPECIFICATIONS:

REFER TO GEOTECHNICAL INVESTIGATION REPORT.

CITY OF LEANDER APPROVAL

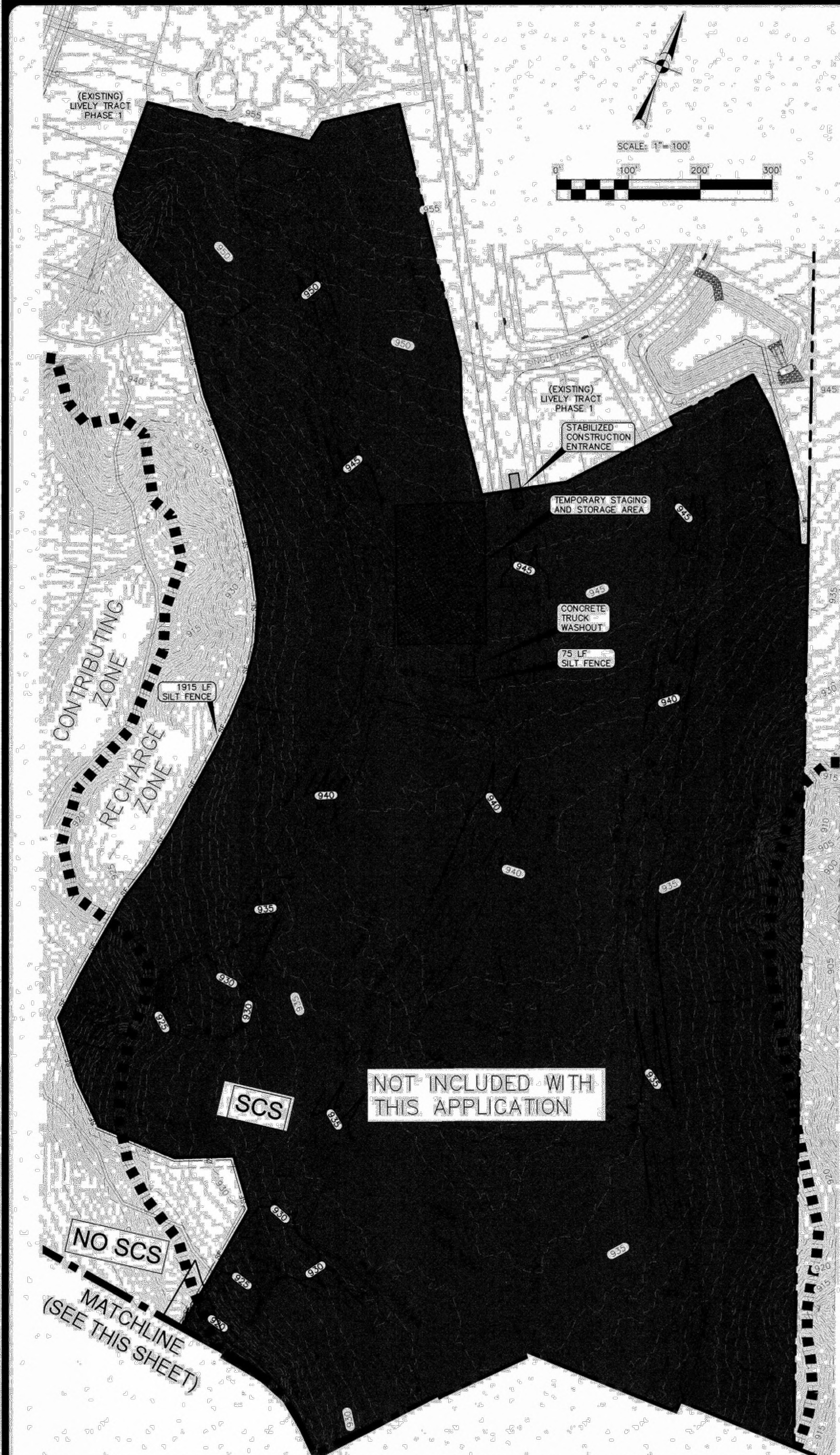
NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
05/09/2022

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS
GRADING, EROSION & SEDIMENTATION CONTROL (2 OF 2)

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED RS DRAWN ADS
SHEET 8 of 83



LEGEND :

- PROPERTY BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- LIMITS OF CONSTRUCTION
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- TEMPORARY STAGING AND STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- VEGETATIVE FILTER STRIPS
- GRATE INLET PROTECTION
- FLOW ARROWS
- CURB INLET PROTECTION
- EXISTING CURB INLET
- PROPOSED CURB INLET
- CZP BOUNDARY

STREET FILL SPECIFICATIONS:

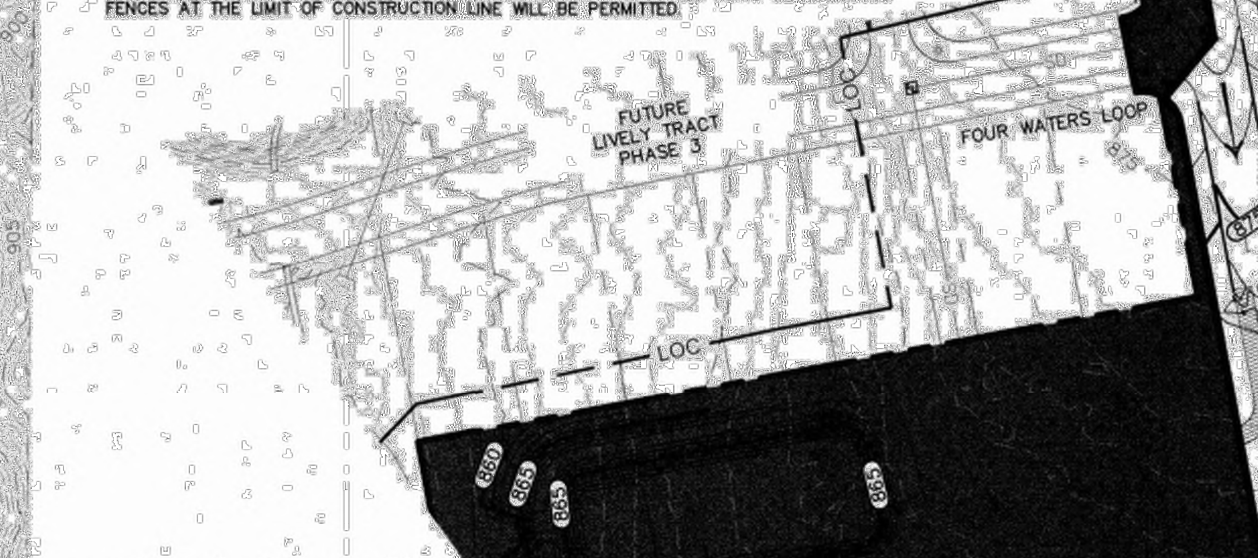
REFER TO MLA LABS, INC. GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS FOR LIVELY TRACT, WILLIAMSON COUNTY, TEXAS.

LOT FILL SPECIFICATIONS:

REFER TO GEOTECHNICAL INVESTIGATION REPORT.

TREE AND NATURAL AREA PROTECTION NOTES:

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.
3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
5. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DRIP LINE) . FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
   - A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
   - B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL), OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ARBORIST;
   - C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
   - D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
6. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   - A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE,IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED;
   - B. WHERE PERMEABLE PAVING IS TO BE INSTALLED WITHIN A TREE'S DRIP LINE, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA (PRIOR TO SITE GRADING SO THAT THIS AREA IS GRADED SEPARATELY PRIOR TO PAVING INSTALLATION TO MINIMIZED ROOT DAMAGE);
   - C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE TO ALLOW 6 TO 10 FEET OF WORK SPACE BETWEEN THE FENCE AND THE BUILDING;
   - D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TOTRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST AT 974-1876 TO DISCUSS ALTERNATIVES. SPECIAL NOTE: FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.



TREE AND NATURAL AREA PROTECTION NOTES (CONT.):

7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
8. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
10. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
11. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
12. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.)
13. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE CITY ARBORIST).
14. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.
15. SEE TREE PLAN, SHEETS 11 – 14, FOR TREES TO BE REMOVED AND TO BE PROTECTED.

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. SPOILS & STAGING AREA TO BE GRADED TO NATURAL GROUND AND VEGETATION ESTABLISHED PRIOR TO FINAL SUBDIVISION ACCEPTANCE.
3. SEE SHEET 76 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LOCATED OUTSIDE THE CRITICAL ROOT ZONE (CRZ) OF ALL TREES SHOWN "TO BE PROTECTED" WHENEVER POSSIBLE. IF SILT FENCE MUST CROSS THE CRZ, THEN ALTERNATE APPROVED METHODS FOR SECURING THE FABRIC SHALL BE USED IN LIEU OF THE SPECIFIED TRENCHING.
5. ALL NATURAL GROUND SLOPES FOR THIS PHASE ARE BETWEEN 0% AND 15%.
6. EXISTING CONTOUR INFORMATION SHOWN ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS.
7. INSTALL INLET PROTECTION PER GEO CURVE INLET FILTER DETAIL ON SHEET 76 UPON COMPLETION OF THE INLETS.
8. ONSITE DUST CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D.
9. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
11. SILT FENCE PLACED ALONG FUTURE ROADWAY TO BE PLACED OUTSIDE OF RIGHT OF WAY TO ENSURE CONTINUED USE.
12. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

NOTES (CONT.):

13. FILL MATERIAL ORIGINATING FROM THE LAND THAT IS THE SUBJECT OF A SUBDIVISION APPLICATION MAY BE TEMPORARILY STORED ON SAID LAND PROVIDED THAT THE DEVELOPER COMPLIES AT ALL TIMES WITH THE FOLLOWING REQUIREMENTS:
    - (A) THE FILL MATERIAL SHALL BE STORED AT THE LOCATION SHOWN ON THE APPROVED CONSTRUCTION PLANS.
    - (B) THE FILL MATERIAL SHALL CONSIST OF EARTHEN MATERIAL ORIGINATING FROM THE SUBDIVISION ONLY, SHALL REMAIN FREE FROM DEBRIS, AND SHALL BE SUITABLE FOR USE AS FILL MATERIAL ON THE FUTURE PHASES OF THE SUBDIVISION. THE FILL MATERIAL MAY NOT INCLUDE ANY MATERIAL FROM OUTSIDE OF THE SUBDIVISION.
    - (C) STORAGE OF THE FILL MATERIAL SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING REVEGETATION OF DISTURBED AREAS AND OTHER SEDIMENTATION AND EROSION CONTROLS ADOPTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
    - (D) THE FILL MATERIAL WILL BE PLACED AND STORED IN SUCH MANNER SO THAT IT IS STABLE, WITH THE SIDE SLOPES NO STEEPER THAN A 3:1 (h:v) SLOPE.
    - (E) THE FILL MATERIAL WILL BE LOCATED SO AS NOT TO DISTURB ANY WETLAND AREAS THAT MAY EXIST IN THE SUBDIVISION, AND WILL BE PLACED IN A MANNER AND LOCATION SO AS NOT TO ADVERSELY AFFECT THE NATURAL COURSE OF DRAINAGE ACROSS THE LAND OR IMPEDE DRAINAGE FROM NEIGHBORING PROPERTIES.
    - (F) FISCAL SURETY THAT COMPLIES WITH SECTION 28 OF THIS ORDINANCE IN AN AMOUNT EQUAL TO 110% OF THE COST OF REMOVAL OF THE FILL MATERIAL WILL BE FILED WITH THE CITY PRIOR TO THE ACCEPTANCE OF THE SUBDIVISION THAT GENERATES THE FILL MATERIAL. THE FISCAL SURETY WILL BE BASED ON AN ESTIMATE PREPARED BY THE ENGINEER FOR THE SUBDIVISION AND APPROVED BY THE CITY ENGINEER.
    - (G) THE HEIGHT OF THE FILL MATERIAL SHALL NOT EXCEED TEN (10') FEET.
    - (H) THE LOCATION OF THE FILL MATERIAL MUST COMPLY WITH THE FOLLOWING SETBACK REQUIREMENTS:
      - (1) 400' SETBACK FROM MAJOR ROADWAYS AS IDENTIFIED ON THE ROADWAY PLAN;
      - (2) 100' SETBACK FROM ALL OTHER ROADWAYS PLATTED AT THE TIME OF THE FILL MATERIAL PILE APPROVAL; AND
      - (3) 100' SETBACK FROM RESIDENTIAL STRUCTURES.
      - (4) THE SETBACK REQUIREMENTS MAY BE REDUCED BY TWENTY-FIVE (25%) PERCENT IF SCREENING OF THE FILL MATERIAL IS PROVIDED. SCREENING INCLUDES A SIX (6) FOOT PRIVACY FENCE CONSTRUCTED OF CEDAR WITH STEEL POSTS SUNK IN CONCRETE. THE SMOOTH SIDE OF THE FENCE SHALL FACE AWAY FROM THE FILL MATERIAL.
    - (I) PERMISSION TO STORE FILL MATERIAL IN THE SUBDIVISION WILL EXPIRE AND TERMINATE IN THE EVENT THAT A PRELIMINARY PLAT, CONSTRUCTION PLANS, OR A FINAL PLAT FOR ANY PORTION OF THE LAND EXPIRES, OR AT SUCH TIME THAT THE IMPROVEMENTS FOR THE LAST PHASE OF THE SUBDIVISION ARE ACCEPTED.

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

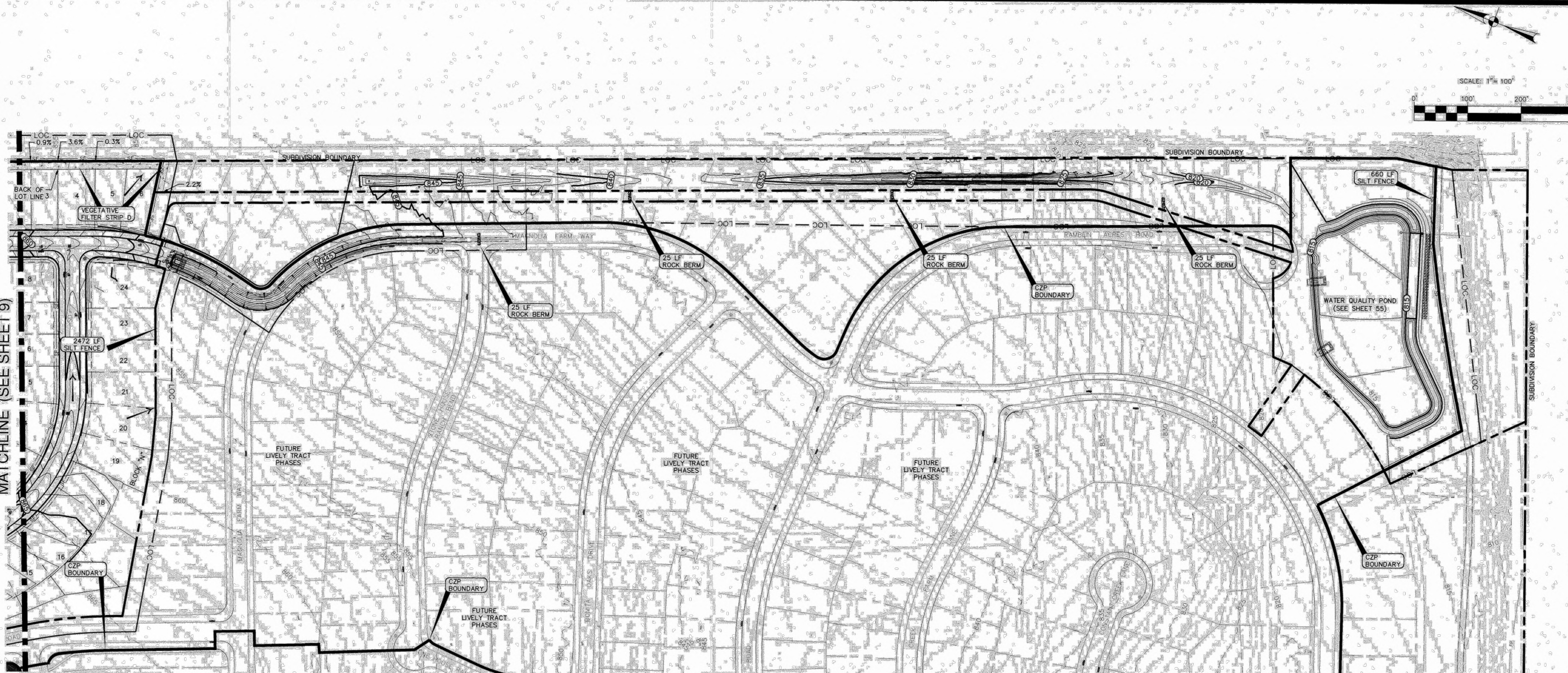
DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 3/8/19

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

EROSION AND SEDIMENTATION CONTROL PLAN

CITY JOB No. -
JOB NO. 50816-21
DATE MARCH 2019
DESIGNER RBB
CHECKED DRAWN TK



TREE AND NATURAL AREA PROTECTION NOTES:

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.
3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
5. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DRIP LINE) . FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
   - A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
   - B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL), OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ARBORIST;
   - C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
   - D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
6. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   - A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE,IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED;
   - B. WHERE PERMEABLE PAVING IS TO BE INSTALLED WITHIN A TREE'S DRIP LINE, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA (PRIOR TO SITE GRADING SO THAT THIS AREA IS GRADED SEPARATELY PRIOR TO PAVING INSTALLATION TO MINIMIZED ROOT DAMAGE);
   - C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE TO ALLOW 6 TO 10 FEET OF WORK SPACE BETWEEN THE FENCE AND THE BUILDING;
   - D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TOTRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST AT 974-1876 TO DISCUSS ALTERNATIVES.

SPECIAL NOTE: FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.

TREE AND NATURAL AREA PROTECTION NOTES (CONT.):

7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
8. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
10. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
11. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
12. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.).
13. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE CITY ARBORIST).
14. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.

LEGEND:

- PROPERTY BOUNDARY
- 775 EXISTING CONTOUR
- 775 PROPOSED CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- TEMPORARY STAGING AND STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- VEGETATIVE FILTER STRIPS
- GRATE INLET PROTECTION
- FLOW ARROWS
- IP CURB INLET PROTECTION
- EXISTING CURB INLET
- PROPOSED CURB INLET
- CZP BOUNDARY

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. SPOILS & STAGING AREA TO BE GRADED TO NATURAL GROUND AND VEGETATION ESTABLISHED PRIOR TO FINAL SUBDIVISION ACCEPTANCE.
3. SEE SHEET 76 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
4. EROSION & SEDIMENTATION CONTROLS SHALL BE LOCATED OUTSIDE THE CRITICAL ROOT ZONE (CRZ) OF ALL TREES SHOWN "TO BE PROTECTED" WHENEVER POSSIBLE. IF SILT FENCE MUST CROSS THE CRZ, THEN ALTERNATE APPROVED METHODS FOR SECURING THE FABRIC SHALL BE USED IN LIEU OF THE SPECIFIED TRENCHING.
5. ALL NATURAL GROUND SLOPES FOR THIS PHASE ARE BETWEEN 0% AND 15%.
6. EXISTING CONTOUR INFORMATION SHOWN ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS.
7. INSTALL INLET PROTECTION PER GEO CURVE INLET FILTER DETAIL ON SHEET 76 UPON COMPLETION OF THE INLETS.
8. ONSITE DUST CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D
9. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
11. SILT FENCE PLACED ALONG FUTURE ROADWAY TO BE PLACED OUTSIDE OF RIGHT OF WAY TO ENSURE CONTINUED USE.
12. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.
13. FILL MATERIAL ORIGINATING FROM THE LAND THAT IS THE SUBJECT OF A SUBDIVISION APPLICATION MAY BE TEMPORARILY STORED ON SAID LAND PROVIDED THAT THE DEVELOPER COMPLIES AT ALL TIMES WITH THE FOLLOWING REQUIREMENTS:
   - (A) THE FILL MATERIAL SHALL BE STORED AT THE LOCATION SHOWN ON THE APPROVED CONSTRUCTION PLANS.
   - (B) THE FILL MATERIAL SHALL CONSIST OF EARTHEN MATERIAL ORIGINATING FROM THE SUBDIVISION ONLY, SHALL REMAIN FREE FROM DEBRIS, AND SHALL BE SUITABLE FOR USE AS FILL MATERIAL ON THE FUTURE PHASES OF THE SUBDIVISION. THE FILL MATERIAL MAY NOT INCLUDE ANY MATERIAL FROM OUTSIDE OF THE SUBDIVISION.
   - (C) STORAGE OF THE FILL MATERIAL SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING REVEGETATION OF DISTURBED AREAS AND OTHER SEDIMENTATION AND EROSION CONTROLS ADOPTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
   - (D) THE FILL MATERIAL WILL BE PLACED AND STORED IN SUCH MANNER SO THAT IT IS STABLE, WITH THE SIDE SLOPES NO STEEPER THAN A 3:1 (h:v) SLOPE.
   - (E) THE FILL MATERIAL WILL BE LOCATED SO AS NOT TO DISTURB ANY WETLAND AREAS THAT MAY EXIST IN THE SUBDIVISION, AND WILL BE PLACED IN A MANNER AND LOCATION SO AS NOT TO ADVERSELY AFFECT THE NATURAL COURSE OF DRAINAGE ACROSS THE LAND OR IMPEDE DRAINAGE FROM NEIGHBORING PROPERTIES.
   - (F) FISCAL SURETY THAT COMPLIES WITH SECTION 28 OF THIS ORDINANCE IN AN AMOUNT EQUAL TO 110% OF THE COST OF REMOVAL OF THE FILL MATERIAL WILL BE FILED WITH THE CITY PRIOR TO THE ACCEPTANCE OF THE SUBDIVISION THAT GENERATES THE FILL MATERIAL. THE FISCAL SURETY WILL BE BASED ON AN ESTIMATE PREPARED BY THE ENGINEER FOR THE SUBDIVISION AND APPROVED BY THE CITY ENGINEER.
   - (G) THE HEIGHT OF THE FILL MATERIAL SHALL NOT EXCEED TEN (10') FEET.
   - (H) THE LOCATION OF THE FILL MATERIAL MUST COMPLY WITH THE FOLLOWING SETBACK REQUIREMENTS:
     - (1) 400' SETBACK FROM MAJOR ROADWAYS AS IDENTIFIED ON THE ROADWAY PLAN;
     - (2) 100' SETBACK FROM ALL OTHER ROADWAYS PLATTED AT THE TIME OF THE FILL MATERIAL PILE APPROVAL; AND
     - (3) 100' SETBACK FROM RESIDENTIAL STRUCTURES.
     - (4) THE SETBACK REQUIREMENTS MAY BE REDUCED BY TWENTY-FIVE (25%) PERCENT IF SCREENING OF THE FILL MATERIAL IS PROVIDED. SCREENING INCLUDES A SIX (6) FOOT PRIVACY FENCE CONSTRUCTED OF CEDAR WITH STEEL POSTS SUNK IN CONCRETE. THE SMOOTH SIDE OF THE FENCE SHALL FACE AWAY FROM THE FILL MATERIAL.
   - (I) PERMISSION TO STORE FILL MATERIAL IN THE SUBDIVISION WILL EXPIRE AND TERMINATE IN THE EVENT THAT A PRELIMINARY PLAT, CONSTRUCTION PLANS, OR A FINAL PLAT FOR ANY PORTION OF THE LAND EXPIRES, OR AT SUCH TIME THAT THE IMPROVEMENTS FOR THE LAST PHASE OF THE SUBDIVISION ARE ACCEPTED.

STREET FILL SPECIFICATIONS:

REFER TO MLA LABS, INC. GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS FOR LIVELY TRACT, WILLIAMSON COUNTY, TEXAS.

LOT FILL SPECIFICATIONS:

REFER TO GEOTECHNICAL INVESTIGATION REPORT.

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

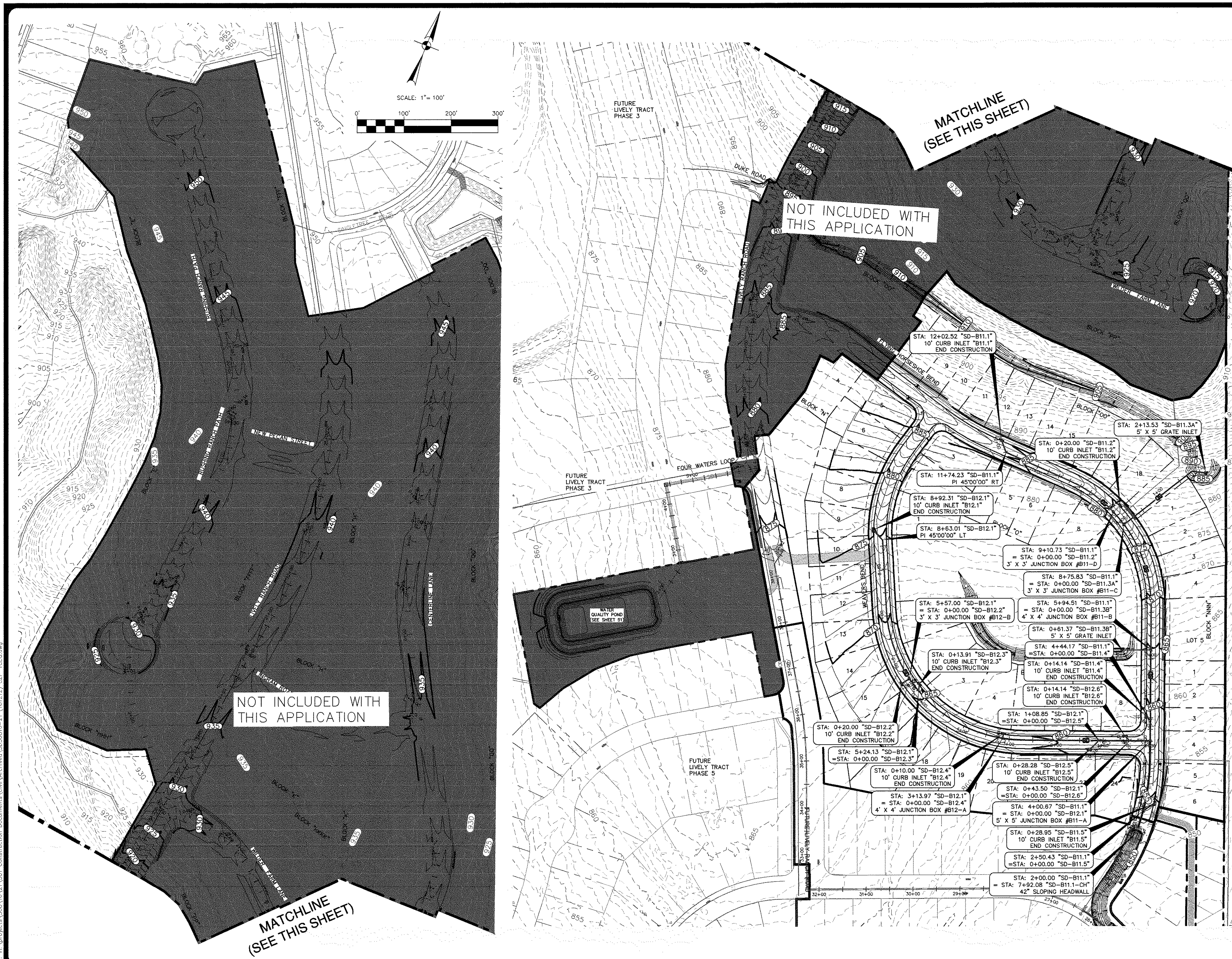
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
3/6/19

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

EROSION AND SEDIMENTATION CONTROL (2 OF 2)

CITY JOB No. -
JOB NO. 50816-21
DATE MARCH 2019
DESIGNER RBB
CHECKED DRAWN TK



SCALE: 1"= 100'

0' 100' 200' 300'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT 1 FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING CITY OF AUSTIN DATA.

LEGEND

- SD — STORM DRAIN LINE
- SD — SD MANHOLE
- SD INLET
- DRAINAGE FLOW ARROW
- DRAINAGE AREA BOUNDARY
- HEADWALL
- (786) PROPOSED CONTOUR LINE
- 786 EXISTING CONTOUR LINE
- FP 100 YEAR FEMA FLOODPLAIN
- 100 YEAR FULLY DEVELOPED FLOODPLAIN

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
2/15/19

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2

CITY OF LEANDER, TEXAS

OVERALL STORM DRAIN PLAN SHEET 1 OF 2

CITY JOB No. -
JOB NO. 50816-21
DATE FEBRUARY 2019
DESIGNER RBB
CHECKED PS DRAWN TK

SCALE: 1"= 100'

0' 100' 200' 300'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT 1 FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING CITY OF AUSTIN DATA.

LEGEND

- STORM DRAIN LINE
- SD MANHOLE
- SD INLET
- DRAINAGE FLOW ARROW
- DRAINAGE AREA BOUNDARY
- HEADWALL
- PROPOSED CONTOUR LINE
- EXISTING CONTOUR LINE
- 100 YEAR FEMA FLOODPLAIN
- 100 YEAR FULLY DEVELOPED FLOODPLAIN

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91605
LICENSED PROFESSIONAL ENGINEER
2/15/19

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
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LIVELY TRACT, PHASE 2

CITY OF LEANDER, TEXAS

OVERALL STORM DRAIN PLAN SHEET 2 OF 2

CITY JOB No. -
JOB NO. 50816-21
DATE FEBRUARY 2019
DESIGNER RBB
CHECKED DRAWN TK
SHEET 12 of 83

DRAINAGE AREA	AREA (acres)	COMPOSITE C C_{25}	COMPOSITE C C_{100}	$A \cdot C_{25}$	$A \cdot C_{100}$	I.C. %	Cumulative Tc (min)	INTENSITY I 25yr (in/hr)	INTENSITY I 100yr (in/hr)	DISCHARGE Q 25 (cfs)	DISCHARGE Q 100 (cfs)
ULTIMATE CONDITION DRAINAGE AREAS											
A1.01	0.35	0.79	0.81	0.28	0.28	70%	5.00	10.1	12.5	2.8	3.6
A1.02	0.71	0.69	0.72	0.49	0.51	53%	5.00	10.1	12.5	5.0	6.4
A1.03	1.10	0.63	0.67	0.70	0.74	43%	5.00	10.1	12.5	7.0	9.3
A1.04	1.46	0.64	0.68	0.94	0.99	44%	10.15	8.1	10.3	7.6	10.3
A1.05	0.55	0.79	0.81	0.44	0.45	70%	5.00	10.1	12.5	4.4	5.6
A1.06	1.89	0.64	0.68	1.21	1.29	44%	6.73	9.3	11.7	11.3	15.1
A1.07	1.75	0.49	0.55	0.86	0.96	18%	6.73	9.3	11.7	8.0	11.2
A1.08	0.48	0.57	0.61	0.27	0.30	31%	5.00	10.1	12.5	2.7	3.7
A1.09	0.38	0.79	0.81	0.30	0.31	70%	5.00	10.1	12.5	3.0	3.9
A1.10	1.07	0.69	0.73	0.74	0.78	53%	5.00	10.1	12.5	7.5	9.8
A2.01	0.87	0.65	0.69	0.57	0.60	46%	5.00	10.1	12.5	5.7	7.5
A3.01	1.34	0.70	0.73	0.94	0.98	55%	8.89	8.5	10.8	8.0	10.6
A3.02	0.98	0.63	0.67	0.62	0.66	42%	8.69	8.6	10.9	5.3	7.1
A3.03	0.58	0.80	0.82	0.47	0.48	72%	5.00	10.1	12.5	4.7	6.0
A3.04	0.45	0.65	0.69	0.29	0.31	45%	5.00	10.1	12.5	2.9	3.9
A3.05	0.24	0.81	0.83	0.19	0.20	73%	5.00	10.1	12.5	2.0	2.5
A3.06	0.91	0.65	0.69	0.59	0.63	46%	6.24	9.5	11.9	5.7	7.5
A3.07	0.61	0.63	0.67	0.38	0.41	41%	6.24	9.5	11.9	3.6	4.9
A3.08	0.71	0.67	0.71	0.48	0.50	49%	5.00	10.1	12.5	4.8	6.3
A4.01	1.57	0.62	0.66	0.98	1.04	41%	7.42	9.1	11.4	8.9	11.9
A4.02	1.27	0.60	0.65	0.77	0.82	38%	7.48	9.0	11.4	6.9	9.4
A4.03	0.53	0.64	0.68	0.34	0.36	44%	5.00	10.1	12.5	3.4	4.5
A4.04	0.48	0.75	0.78	0.36	0.37	63%	5.00	10.1	12.5	3.6	4.7
A4.05	1.20	0.70	0.73	0.83	0.87	54%	5.00	10.1	12.5	8.4	11.0
A4.06	0.26	0.82	0.84	0.21	0.22	75%	5.00	10.1	12.5	2.2	2.7
A4.07	1.27	0.62	0.66	0.78	0.84	39%	6.26	9.5	11.9	7.4	9.9
A5.01	1.24	0.67	0.71	0.84	0.88	50%	5.81	9.7	12.1	8.1	10.7
A5.02	0.77	0.68	0.72	0.53	0.55	51%	5.00	10.1	12.5	5.3	6.9
A5.03	0.64	0.76	0.79	0.49	0.50	66%	5.72	9.8	12.2	4.8	6.1
A5.04	0.82	0.66	0.70	0.54	0.57	48%	5.79	9.7	12.1	5.3	7.0
A5.05	0.78	0.68	0.71	0.53	0.55	50%	6.12	9.6	12.0	5.1	6.6
A5.06	0.36	0.67	0.71	0.24	0.26	50%	5.00	10.1	12.5	2.5	3.2
AO1.1	0.50	0.72	0.75	0.36	0.37	58%	5.49	9.9	12.3	3.6	4.6
B11.1	1.09	0.66	0.70	0.72	0.76	48%	5.00	10.1	12.5	7.3	9.6
B11.2	1.34	0.64	0.68	0.86	0.91	44%	5.00	10.1	12.5	8.7	11.4
B11.3A	3.21	0.53	0.58	1.70	1.87	24%	9.34	8.4	10.6	14.2	19.8
B11.3B	2.90	0.47	0.53	1.38	1.55	15%	12.63	7.5	9.6	10.3	14.8
B11.4	0.79	0.69	0.72	0.54	0.57	52%	5.00	10.1	12.5	5.5	7.1
B11.5	1.14	0.64	0.68	0.73	0.78	44%	5.00	10.1	12.5	7.4	9.7
B11.6	0.99	0.65	0.69	0.65	0.68	46%	5.19	10.0	12.4	6.5	8.5
B11.7	0.11	0.79	0.81	0.09	0.09	69%	5.00	10.1	12.5	0.9	1.1
B12.1	0.90	0.74	0.76	0.66	0.69	61%	5.00	10.1	12.5	6.7	8.6
B12.2	1.04	0.73	0.76	0.76	0.79	60%	5.00	10.1	12.5	7.7	9.9
B12.3	1.77	0.59	0.64	1.05	1.13	36%	10.01	8.2	10.4	8.6	11.8
B12.4	0.66	0.63	0.67	0.42	0.44	42%	5.00	10.1	12.5	4.2	5.5
B12.5	0.66	0.75	0.77	0.49	0.51	62%	5.00	10.1	12.5	5.0	6.4
B12.6	1.11	0.63	0.67	0.70	0.75	43%	5.30	10.0	12.4	7.0	9.3
INT-1	1.80	0.39	0.46	0.70	0.83	0%	18.29	6.3	8.2	4.4	6.8
INT-2	44.37	0.40	0.47	17.57	20.64	1%	30.64	4.8	6.4	84.9	131.1

STREET FLOW AND INLET CALCULATIONS
25 YEAR STORM

						STREET CAPACITY						INLET ON GRADE CAPACITY										SUMP INLET CAPACITY			
Inlet No.	Inlet Type	Drainage Area	Q 25 (cfs)	Q spill Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Gutter Slope (%)	a (ft)	Yo (ft)	Ponded Width (ft)	Reduction Factor (%)	Qa/La	La (ft)	Length (ft)	L/La	a/Yo	Q/Qa	Qa (cfs)	Q pass (cfs)	Pass to Inlet #	Clogging Factor (%)	Q total (cfs)	Length (ft)	h (ft)
LIVELY TRACT, PHASE 2																									
ULTIMATE CONDITION DRAINAGE AREAS																									
A1.01	G-1	0.35	2.8	-	2.8	36	P	1.90%	0.42	0.30	5.49	0%	0.75	3.70	10	2.70	1.42	0.37	7.55	0.0	-	-	-	-	-
A1.02	G-1	0.71	5.0		5.0	36	P	1.00%	0.42	0.40	8.10	0%	0.86	5.74	10	1.74	1.05	0.57	8.64	0.0	-	-	-	-	-
A1.03	G-1	1.10	7.0		7.0	36	P	1.00%	0.42	0.45	9.64	0%	0.92	7.66	10	1.30	0.94	0.77	9.18	0.0	-	-	-	-	-
A1.04	G-1	1.46	7.6		7.6	36	P	2.90%	0.42	0.39	7.72	0%	0.85	8.98	10	1.11	1.09	0.90	8.49	0.0	-	-	-	-	-
A1.05	G-1	0.55	4.4		4.4	36	P	8.30%	0.42	0.27	4.90	0%	0.73	6.05	10	1.65	1.56	0.60	7.28	0.0	-	-	-	-	-
A1.06	G-1	1.89	11.3		11.3	36	P	8.30%	0.42	0.37	7.28	0%	0.83	13.62	15	1.10	1.14	0.91	12.48	0.0	-	-	-	-	-
A1.07	G-1	1.75	8.0		8.0	-	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	20%	8.0	20	0.33
A1.08	G-1	0.48	2.7		2.7	36	P	2.10%	0.42	0.29	5.35	0%	0.75	3.67	10	2.72	1.45	0.37	7.48	0.0	-	-	-	-	-
A1.09	G-1	0.38	3.0		3.0	36	P	2.00%	0.42	0.30	5.62	0%	0.76	3.99	10	2.51	1.40	0.40	7.61	0.0	-	-	-	-	-
A1.10	G-1	1.07	7.5		7.5	36	P	2.00%	0.42	0.41	8.37	0%	0.87	8.60	10	1.16	1.03	0.86	8.74	0.0	-	-	-	-	-
A2.01	G-1	0.87	5.7		5.7	30	P	1.90%	0.42	0.39	7.62	0%	0.86	6.70	10	1.49	1.07	0.67	8.57	0.0	-	-	-	-	-
A3.01	G-1	1.34	8.0		8.0	30	P	1.50%	0.42	0.46	9.83	0%	0.93	8.68	10	1.15	0.92	0.87	9.27	0.0	-	-	-	-	-
A3.02	G-1	0.98	5.3		5.3	30	P	1.40%	0.42	0.40	7.92	0%	0.87	6.12	10	1.63	1.04	0.61	8.68	0.0	-	-	-	-	-
A3.03	G-1	0.58	4.7		4.7	30	P	1.40%	0.42	0.39	7.45	0%	0.85	5.53	10	1.81	1.09	0.55	8.51	0.0	-	-	-	-	-
A3.04	G-1	0.45	2.9		2.9	30	P	1.40%	0.42	0.33	6.00	0%	0.79	3.72	10	2.69	1.27	0.37	7.92	0.0	-	-	-	-	-
A3.05	G-1	0.24	2.0		2.0	30	P	1.80%	0.42	0.28	4.79	0%	0.74	2.66	10	3.76	1.51	0.27	7.37	0.0	-	-	-	-	-
A3.06	G-1	0.91	5.7		5.7	30	P	1.80%	0.42	0.39	7.67	0%	0.86	6.59	10	1.52	1.07	0.66	8.59	0.0	-	-	-	-	-
A3.07	G-1	0.61	3.6		3.6	30	P	2.00%	0.42	0.34	6.09	0%	0.80	4.58	10	2.18	1.25	0.46	7.96	0.0	-	-	-	-	-
A3.08	G-1	0.71	4.8		4.8	30	P	2.00%	0.42	0.37	6.91	0%	0.83	5.80	10	1.72	1.14	0.58	8.30	0.0	-	-	-	-	-
A4.01	G-1	1.57	8.9		8.9	30	P	2.00%	0.42	0.45	9.54	0%	0.92	9.64	10	1.04	0.93	0.96	9.20	0.0	-	-	-	-	-
A4.02	G-1	1.27	6.9		6.9	30	P	1.70%	0.42	0.43	8.68	0%	0.89	7.77	10	1.29	0.99	0.78	8.94	0.0	-	-	-	-	-
A4.03	G-1	0.53	3.4		3.4	30	P	0.50%	0.42	0.41	8.24	0%	0.88	3.89	10	2.57	1.02	0.39	8.79	0.0	-	-	-	-	-
A4.04	G-1	0.48	3.6		3.6	30	P	0.50%	0.42	0.42	8.52	0%	0.89	4.10	10	2.44	1.00	0.41	8.89	0.0	-	-	-	-	-
A4.05	G-1	1.20	8.4		8.4	30	P	4.30%	0.42	0.39	7.53	0%	0.85	9.87	10	1.01	1.08	0.99	8.54	0.0	-	-	-	-	-
A4.06	G-1	0.26	2.2		2.2	30	P	4.50%	0.42	0.25	4.14	0%	0.71	3.06	10	3.27	1.70	0.31	7.05	0.0	-	-	-	-	-
A4.07	G-1	1.27	7.4		7.4	30	P	1.00%	0.42	-	-	0%	-	-	10	-	-	-	-	-	-	10%	7.4	10	0.42
A5.01	G-1	1.24	8.1		8.1	30	P	1.90%	0.42	0.44	9.21	0%	0.91	8.95	10	1.12	0.95	0.89	9.10	0.0	-	-	-	-	-
A5.02	G-1	0.77	5.3		5.3	30	P	1.90%	0.42	0.38	7.34	0%	0.85	6.27	10	1.59	1.10	0.63	8.47	0.0	-	-	-	-	-
A5.03	G-1	0.64	4.8		4.8	30	P	0.50%	0.42	0.46	10.01	0%	0.93	5.13	10	1.95	0.91	0.51	9.32	0.0	-	-	-	-	-
A5.04	G-1	0.82	5.3		5.3	30	P	0.50%	0.42	0.48	10.78	0%	0.95	5.58	10	1.79	0.88	0.56	9.50	0.0	-	-	-	-	-
A5.05	G-1	0.78	5.1		5.1	30	P	0.50%	0.42	0.47	10.41	0%	0.94	5.37	10	1.86	0.89	0.54	9.42	0.0	-	-	-	-	-
A5.06	G-1	0.36	2.5		2.5	30	P	0.50%	0.42	0.37	6.97	0%	0.83	2.94	10	3.40	1.14	0.29	8.33	0.0	-	-	-	-	-
AO1.1	G-1	0.50	3.6		3.6	30	P	0.50%	0.42	-	-	0%	-	-	15	-	-	-	-	-	-	10%	3.6	15	0.21
B11.1	G-1	1.09	7.3		7.3	30	P	1.20%	0.42	0.46	9.94	0%	0.93	7.87	10	1.27	0.92	0.79	9.30	0.0	-	-	-	-	-
B11.2	G-1	1.34	8.7		8.7	30	P	4.60%	0.42	0.39	7.51	0%	0.85	10.15	10	0.98	1.08	1.02	8.53	0.1	P B11.5	-	-	-	-
B11.3A	G-1	3.21	14.2		14.2	30	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	10%	14.2	20	0.45
B11.3B	G-1	2.90	10.3		10.3	30	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	10%	10.3	20	0.36
B11.4	G-1	0.79	5.5		5.5	30	P	2.20%	0.42	0.38	7.19	0%	0.84	6.52	10	1.53	1.11	0.65	8.41	0.0	-	-	-	-	-
B11.5	G-1	1.14	7.4	0.20	7.6	30	P	3.50%	0.42	0.39	7.53	0%	0.85	8.90	10	1.12	1.08	0.89	8.54	0.0	-	-	-	-	-
B11.6	G-1	0.99	6.5		6.5	30	P	0.50%	0.42	0.51	MAX	0%	0.99	6.56	10	1.52	0.82	0.66	9.87	0.0	-	-	-	-	-
B11.7	G-1	0.11	0.9		0.9	30	P	0.50%	0.42	0.26	4.48	0%	0.72	1.21	10	8.25	1.60	0.12	7.22	0.0	-	-	-	-	-
B12.1	G-1	0.90	6.7		6.7	30	P	2.90%	0.42	0.39	7.41	0%	0.85	7.89	10	1.27	1.09	0.79	8.50	0.0	-	-	-	-	-
B12.2	G-1	1.04	7.7		7.7	30	P	2.70%	0.42	0.41	8.08	0%	0.87	8.79	10	1.14	1.03	0.88	8.74	0.0	-	-	-	-	-
B12.3	G-1	1.77	8.6		8.6	30	P	2.70%	0.42	0.42	8.60	0%	0.89	9.67	10	1.03	0.99	0.97	8.91	0.0	-	-	-	-	-
B12.4	G-1	0.66	4.2		4.2	30	P	0.90%	0.42	0.40	7.86	0%	0.87	4.85	10	2.06	1.05	0.48	8.66	0.0	-	-	-	-	-
B12.5	G-1	0.66	5.0		5.0	30	P	0.90%	0.42	0.42	8.60	0%	0.89	5.58	10	1.79	0.99	0.56	8.91	0.0	-	-	-	-	-
B12.6	G-1	1.11	7.0		7.0	30	P	0.90%	0.42	0.47	10.64	0%	0.95	7.39	10	1.35	0.89	0.74	9.47	0.0	-	-	-	-	-

STREET FLOW AND INLET CALCULATIONS
100 YEAR STORM

						STREET CAPACITY						INLET ON GRADE CAPACITY										SUMP INLET CAPACITY			
Inlet No.	Inlet Type	Drainage Area	Q 100 (cfs)	Q spill Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Gutter Slope (%)	a (ft)	Yo (ft)	Ponded Width (ft)	Reduction Factor (%)	Qa/La	La (ft)	Length (ft)	L/La	a/Yo	Q/Qa	Qa (cfs)	Q pass (cfs)	Pass to Inlet #	Clogging Factor (%)	Q total (cfs)	Length (ft)	h (ft)
LIVELY TRACT, PHASE 2																									
ULTIMATE CONDITION DRAINAGE AREAS																									
A1.01	G-1	0.35	3.6		3.6	36	P	1.90%	0.42	0.32	6.07	0%	0.78	4.56	10	2.19	1.31	0.46	7.8	0.0	-	-	-	-	-
A1.02	G-1	0.71	6.4		6.4	36	P	1.00%	0.42	0.44	9.21	0%	0.90	7.13	10	1.40	0.97	0.71	9.0	0.0	-	-	-	-	-
A1.03	G-1	1.10	9.3		9.3	36	P	1.00%	0.42	0.49	11.27	0%	0.97	9.60	10	1.04	0.85	0.96	9.7	0.0	-	-	-	-	-
A1.04	G-1	1.46	10.3		10.3	36	P	2.90%	0.42	0.43	8.90	0%	0.89	11.50	10	0.87	0.99	1.15	8.9	1.3	P A1.6	-	-	-	-
A1.05	G-1	0.55	5.6		5.6	36	P	8.30%	0.42	0.29	5.40	0%	0.75	7.46	10	1.34	1.44	0.75	7.5	0.0	-	-	-	-	-
A1.06	G-1	1.89	15.1	1.3	16.4	36	P	8.30%	0.42	0.42	8.65	0%	0.88	18.54	15	0.81	1.01	1.24	13.3	3.1	P A1.8	-	-	-	-
A1.07	G-1	1.75	11.2		11.2	-	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	20%	11.2	20	0.41
A1.08	G-1	0.48	3.7	3.1	6.8	36	P	2.10%	0.42	0.39	7.91	0%	0.86	7.97	10	1.25	1.07	0.80	8.6	0.0	-	-	-	-	-
A1.09	G-1	0.38	3.9		3.9	36	P	2.00%	0.42	0.33	6.21	0%	0.79	4.91	10	2.04	1.29	0.49	7.9	0.0	-	-	-	-	-
A1.10	G-1	1.07	9.8		9.8	36	P	2.00%	0.42	0.45	9.54	0%	0.91	10.67	10	0.94	0.94	1.07	9.1	0.6	P Offsite	-	-	-	-
A2.01	G-1	0.87	7.5		7.5	30	P	1.90%	0.42	0.43	8.60	0%	0.90	8.40	10	1.19	0.98	0.84	9.0	0.0	-	-	-	-	-
A3.01	G-1	1.34	10.6		10.6	30	P	1.50%	0.42	0.50	MAX	0%	0.98	10.88	10	0.92	0.84	1.09	9.8	0.9	P A3.2	-	-	-	-
A3.02	G-1	0.98	7.1	0.9	8.0	30	P	1.40%	0.42	0.46	10.01	0%	0.93	8.58	10	1.17	0.91	0.86	9.3	0.0	-	-	-	-	-
A3.03	G-1	0.58	6.0	1.1	7.1	30	P	1.40%	0.42	0.44	9.27	0%	0.91	7.76	10	1.29	0.95	0.78	9.1	0.0	-	-	-	-	-
A3.04	G-1	0.45	3.9		3.9	30	P	1.40%	0.42	0.36	6.79	0%	0.83	4.69	10	2.13	1.16	0.47	8.3	0.0	-	-	-	-	-
A3.05	G-1	0.24	2.5		2.5	30	P	1.80%	0.42	0.30	5.28	0%	0.76	3.27	10	3.06	1.40	0.33	7.6	0.0	-	-	-	-	-
A3.06	G-1	0.91	7.5		7.5	30	P	1.80%	0.42	0.43	8.90	0%	0.90	8.30	10	1.20	0.97	0.83	9.0	0.0	-	-	-	-	-
A3.07	G-1	0.61	4.9		4.9	30	P	2.00%	0.42	0.37	6.94	0%	0.83	5.84	10	1.71	1.14	0.58	8.3	0.0	-	-	-	-	-
A3.08	G-1	0.71	6.3		6.3	30	P	2.00%	0.42	0.40	7.88	0%	0.87	7.26	10	1.38	1.05	0.73	8.7	0.0	-	-	-	-	-
A4.01	G-1	1.57	11.9		11.9	30	P	2.00%	0.42	0.49	11.84	0%	0.97	12.24	10	0.82	0.85	1.22	9.7	2.2	P A4.2	-	-	-	-
A4.02	G-1	1.27	9.4	2.2	11.5	30	P	1.70%	0.42	0.50	MAX	0%	0.98	11.76	10	0.85	0.83	1.18	9.8	1.7	P A4.3	-	-	-	-
A4.03	G-1	0.53	4.5	1.7	6.2	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.36	10	1.57	0.84	0.64	9.8	0.0	-	-	-	-	-
A4.04	G-1	0.48	4.7		4.7	30	P	0.50%	0.42	0.46	9.87	0%	0.93	5.04	10	1.99	0.92	0.50	9.3	0.0	-	-	-	-	-
A4.05	G-1	1.20	11.0		11.0	30	P	4.30%	0.42	0.42	8.64	0%	0.89	12.28	10	0.81	0.99	1.23	8.9	2.0	P A4.7	-	-	-	-
A4.06	G-1	0.26	2.7		2.7	30	P	4.50%	0.42	0.27	4.55	0%	0.73	3.77	10	2.66	1.58	0.38	7.3	0.0	-	-	-	-	-
A4.07	G-1	1.27	9.9	2.0	12.0	30	P	1.00%	0.42	-	-	0%	-	-	10	-	-	-	-	-	-	10%	12.0	10	0.58
A5.01	G-1	1.24	10.7		10.7	30	P	1.90%	0.42	0.48	11.04	0%	0.96	11.17	10	0.90	0.87	1.12	9.6	1.1	P A5.2	-	-	-	-
A5.02	G-1	0.77	6.9	1.1	8.0	30	P	1.90%	0.42	0.44	9.14	0%	0.91	8.85	10	1.13	0.96	0.89	9.1	0.0	-	-	-	-	-
A5.03	G-1	0.64	6.1		6.1	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.29	10	1.59	0.84	0.63	9.8	0.0	-	-	-	-	-
A5.04	G-1	0.82	7.0	-0.7	6.3	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.40	10	1.56	0.83	0.64	9.8	0.0	S A3.3	-	-	-	-
A5.05	G-1	0.78	6.6	-0.4	6.2	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.37	10	1.57	0.83	0.64	9.8	0.0	S A3.3	-	-	-	-
A5.06	G-1	0.36	3.2		3.2	30	P	0.50%	0.42	0.40	7.95	0%	0.87	3.68	10	2.72	1.04	0.37	8.7	0.0	-	-	-	-	-
AO1.1	G-1	0.50	4.6		4.6	30	P	0.50%	0.42	-	-	0%	-	-	15	-	-	-	-	-	-	10%	4.6	15	0.25
B11.1	G-1	1.09	9.6		9.6	30	P	1.20%	0.42	0.50	MAX	0%	0.98	9.79	10	1.02	0.84	0.98	9.8	0.0	-	-	-	-	-
B11.2	G-1	1.34	11.4		11.4	30	P	4.60%	0.42	0.43	8.67	0%	0.89	12.77	10	0.78	0.99	1.28	8.9	2.5	P B11.5	-	-	-	-
B11.3A	G-1	3.21	19.8		19.8	30	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	10%	19.8	20	0.56
B11.3B	G-1	2.90	14.8		14.8	30	P	0.00%	0.42	-	-	0%	-	-	5x5	-	-	-	-	-	-	10%	14.8	20	0.46
B11.4	G-1	0.79	7.1		7.1	30	P	2.20%	0.42	0.41	8.21	0%	0.88	8.13	10	1.23	1.02	0.81	8.8	0.0	-	-	-	-	-
B11.5	G-1	1.14	9.7	2.5	12.2	30	P	3.50%	0.42	0.46	9.79	0%	0.93	13.19	10	0.76	0.92	1.32	9.3	3.0	P 11.7	-	-	-	-
B11.6	G-1	0.99	8.5	-2.2	6.3	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.43	10	1.56	0.83	0.64	9.8	0.0	S 11.7	-	-	-	-
B11.7	G-1	0.11	1.1	5.2	6.3	30	P	0.50%	0.42	0.50	MAX	0%	0.98	6.39	10	1.56	0.83	0.64	9.8	0.0	-	-	-	-	-
B12.1	G-1	0.90	8.6		8.6	30	P	2.90%	0.42	0.42	8.44	0%	0.89	9.74	10	1.03	1.00	0.97	8.9	0.0	-	-	-	-	-
B12.2	G-1	1.04	9.9		9.9	30	P	2.70%	0.42	0.44	9.31	0%	0.91	10.84	10	0.92	0.95	1.08	9.1	0.8	P B12.5	-	-	-	-
B12.3	G-1	1.77	11.8		11.8	30	P	2.70%	0.42	0.47	10.42	0%	0.94	12.49	10	0.80	0.89	1.25	9.4	2.3	P B12.4	-	-	-	-
B12.4	G-1	0.66	5.5	2.3	7.9	30	P	0.90%	0.42	0.49	11.73	0%	0.97	8.14	10	1.23	0.85	0.81	9.7	0.0	-	-	-	-	-
B12.5	G-1	0.66	6.4	0.8	7.2	30	P	0.90%	0.42	0.48	10.81	0%	0.95	7.52	10	1.33	0.88	0.75	9.5	0.0	-	-	-	-	-
B12.6	G-1	1.11	9.3		9.3	30	P	0.90%	0.42	0.52	MAX	0%	1.00	9.26	10	1.08	0.81	0.93	10.0	0.0	-	-	-	-	-

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
12/12/18

PAPE-DAWSON ENGINEERS

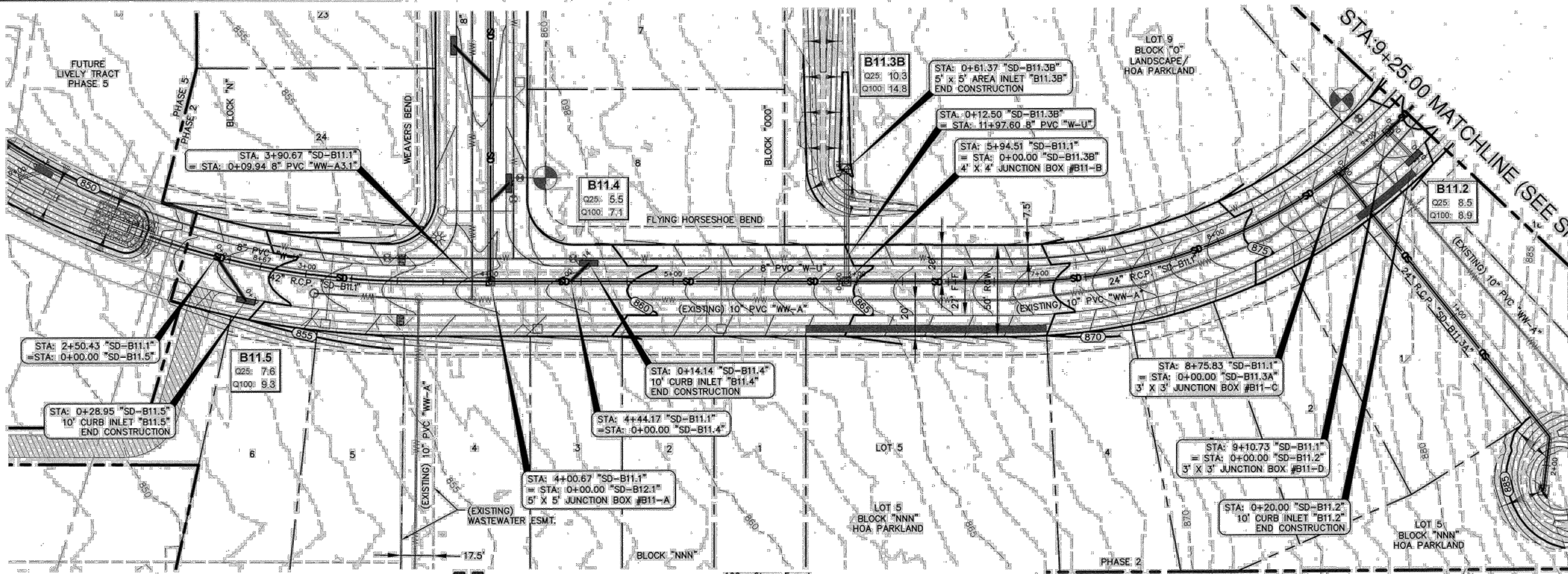
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

DRAINAGE CALCULATIONS

CITY OF LEANDER APPROVAL

CITY JOB No. -
JOB NO. 50816-21
DATE DECEMBER 2018
DESIGNER RBB
CHECKED PS DRAWN TK



NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING CITY OF LEANDER DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

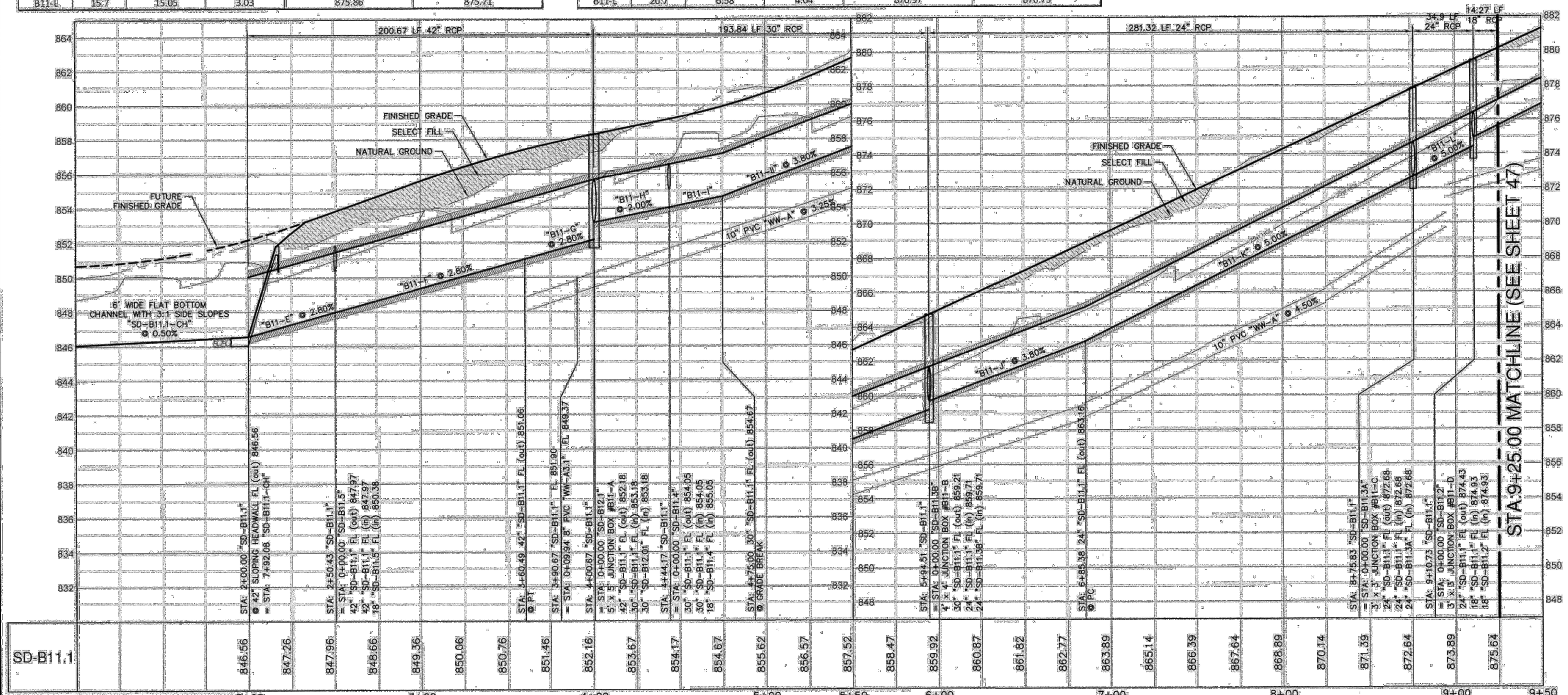
SCALE: 1" = 40'

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-E	74.3	17.98	3.44	850.68	848.43
B11-F	69.1	17.64	3.45	853.66	851.42
B11-G	69.2	17.65	1.87	854.79	852.92
B11-H	38.9	13.47	2.62	856.16	855.81
B11-I	34.9	13.13	2.72	856.75	856.78
B11-II	35.0	16.70	2.08	861.22	856.75
B11-J	27.3	15.71	2.28	864.98	861.99
B11-K	27.5	17.44	1.00	874.50	864.17
B11-L	15.7	15.05	3.03	875.86	875.71

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-E	101.9	10.59	5.59	851.51	850.57
B11-F	94.8	19.14	4.14	854.06	852.12
B11-G	94.9	19.14	2.26	855.19	853.32
B11-H	54.0	11.00	3.35	857.17	856.53
B11-I	48.6	9.90	3.85	858.28	857.91
B11-II	48.8	18.16	3.61	861.49	858.28
B11-J	37.4	16.82	2.90	865.10	862.61
B11-K	37.6	18.79	1.23	874.63	864.40
B11-L	20.7	6.58	4.04	876.97	876.73



SD-B11.1

LEGEND

WATER LINE
WASTEWATER LINE & MH
STORM DRAIN LINE & MH
CURB INLET
SINGLE WATER SERVICE
DOUBLE WATER SERVICE
SINGLE WW SERVICE
DOUBLE WW SERVICE
GATE VALVE
FIRE HYDRANT
EXISTING GATE VALVE
EXISTING FIRE HYDRANT
EXISTING WATER LINE
EXISTING WASTEWATER LINE
EXISTING STORM DRAIN LINE
EXISTING CONTOUR LINE
PROPOSED CONTOUR LINE
INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
12/12/18

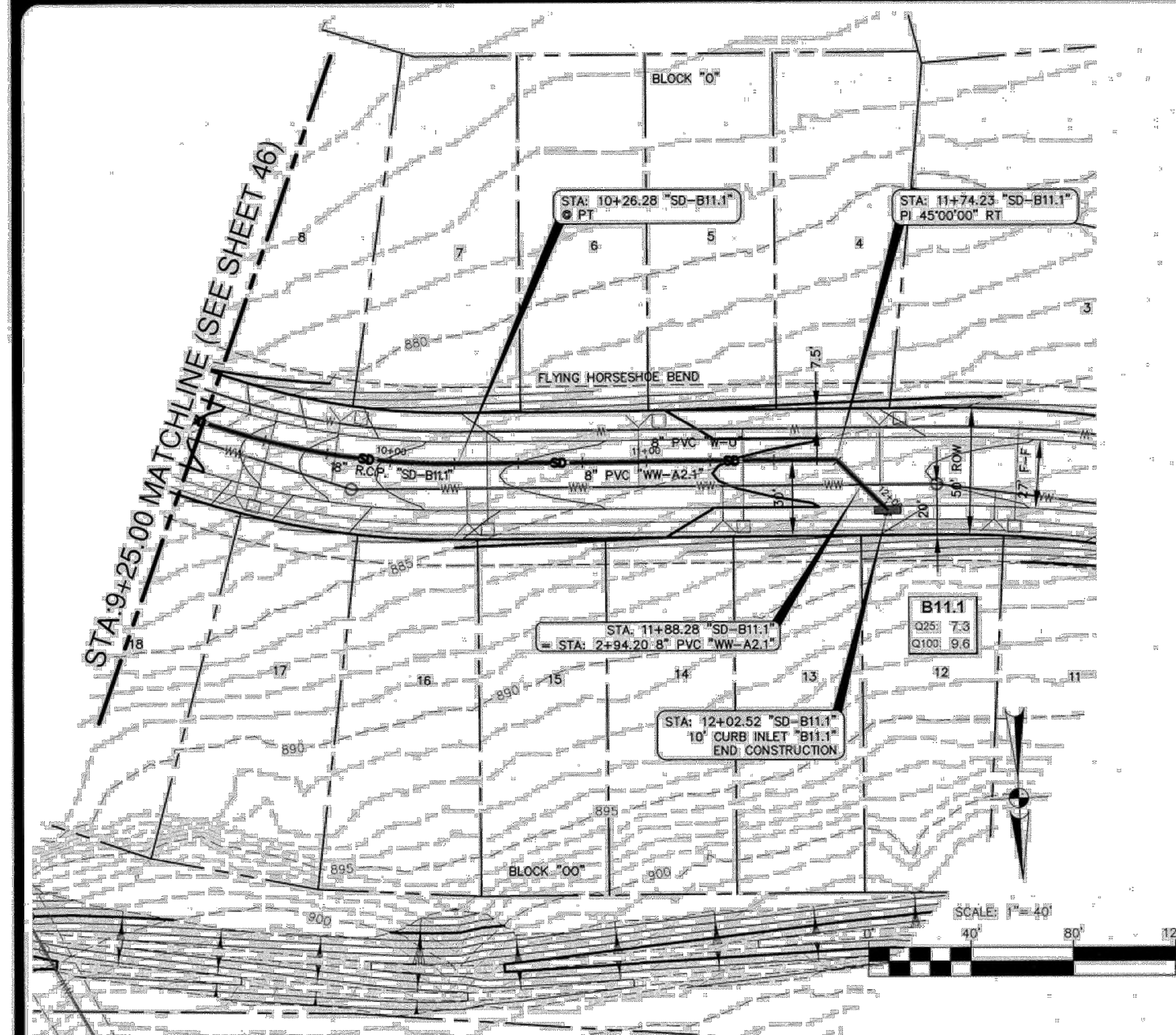
NO. | REVISION | DATE

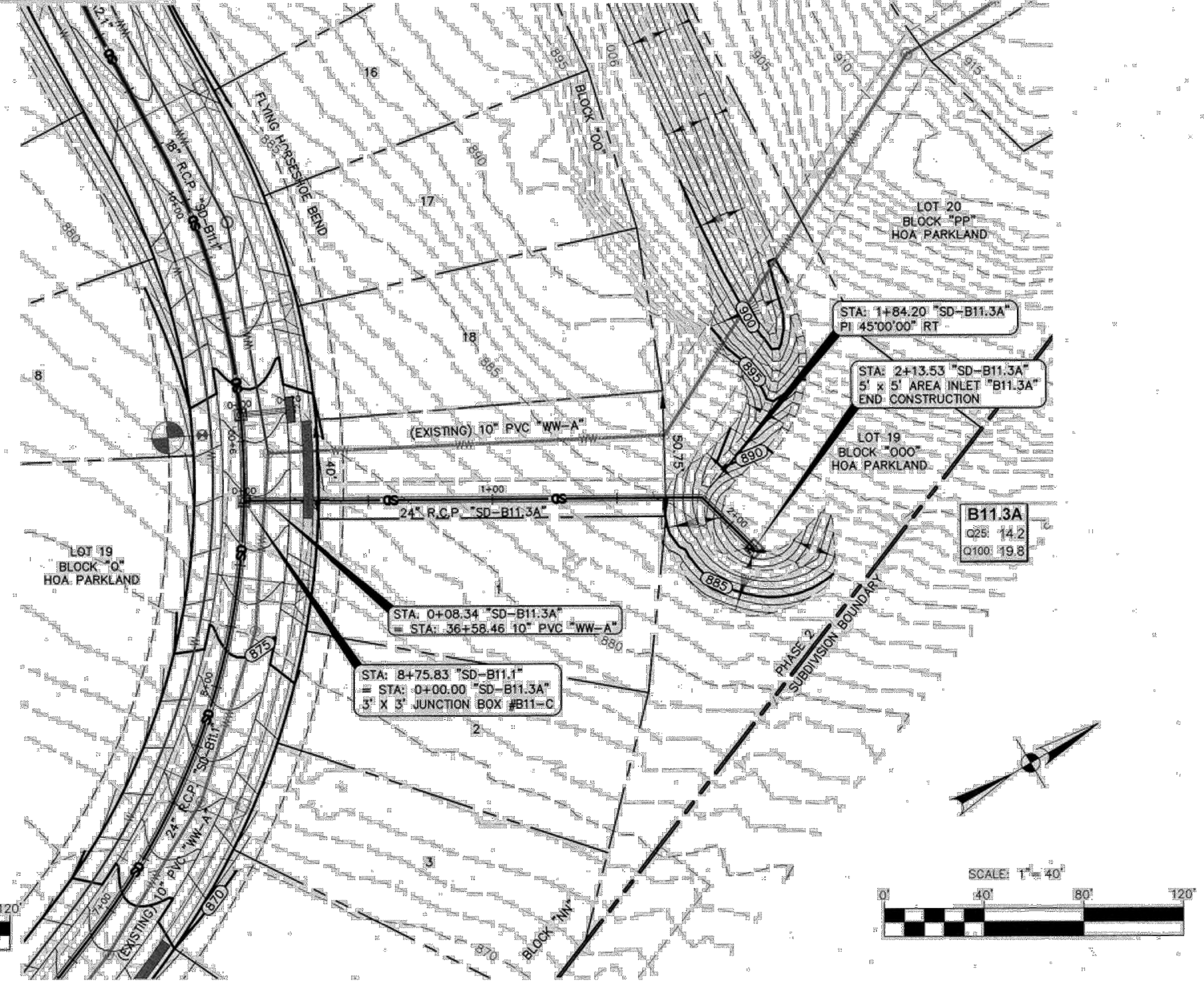
LIVELY TRACT, PHASE 2

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE B11.1 (1 OF 2)

CITY JOB No. -
JOB NO. 50816-21
DATE DECEMBER 2018
DESIGNER RBB
CHECKED DRAWN TK





NOTES:

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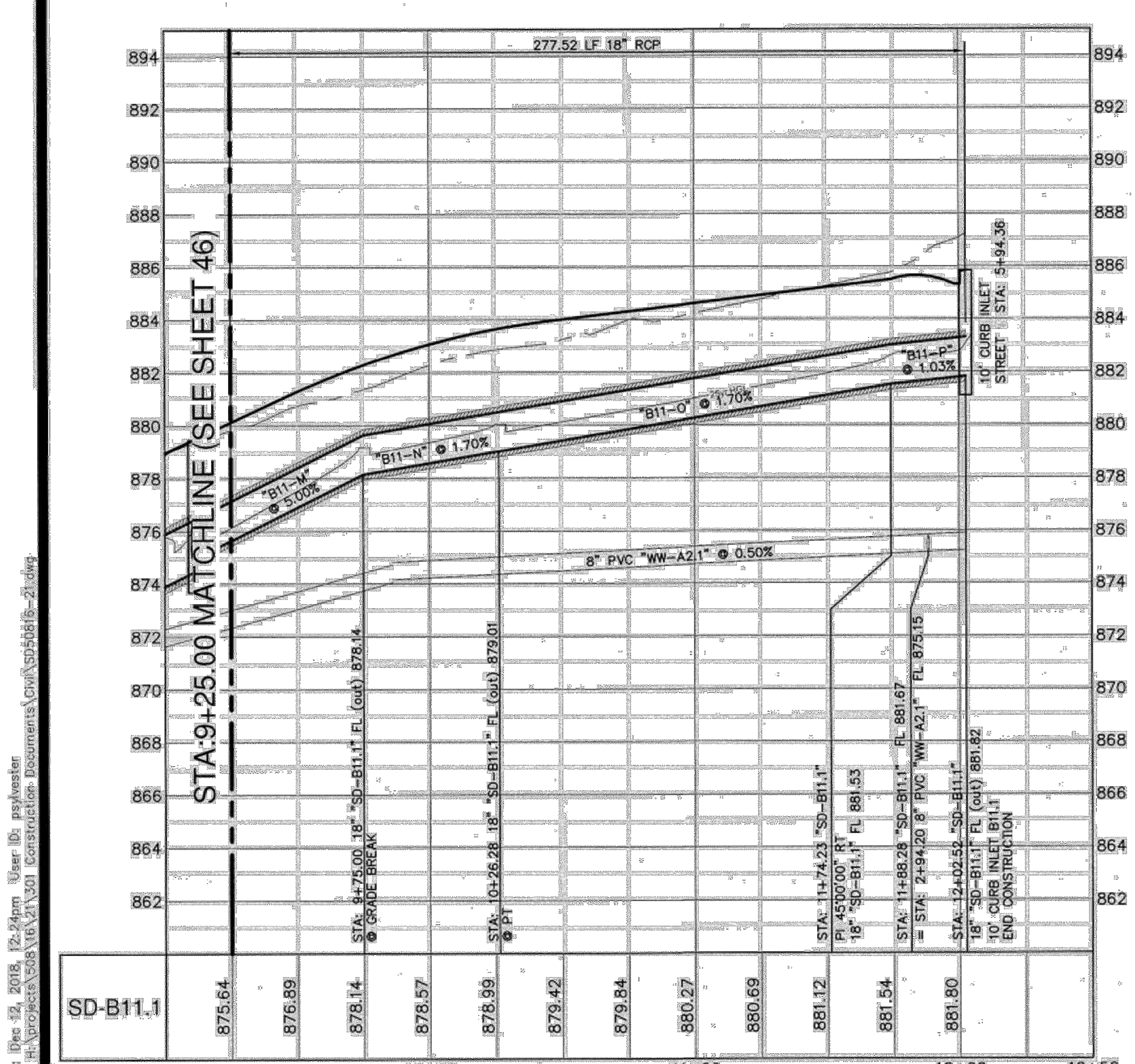
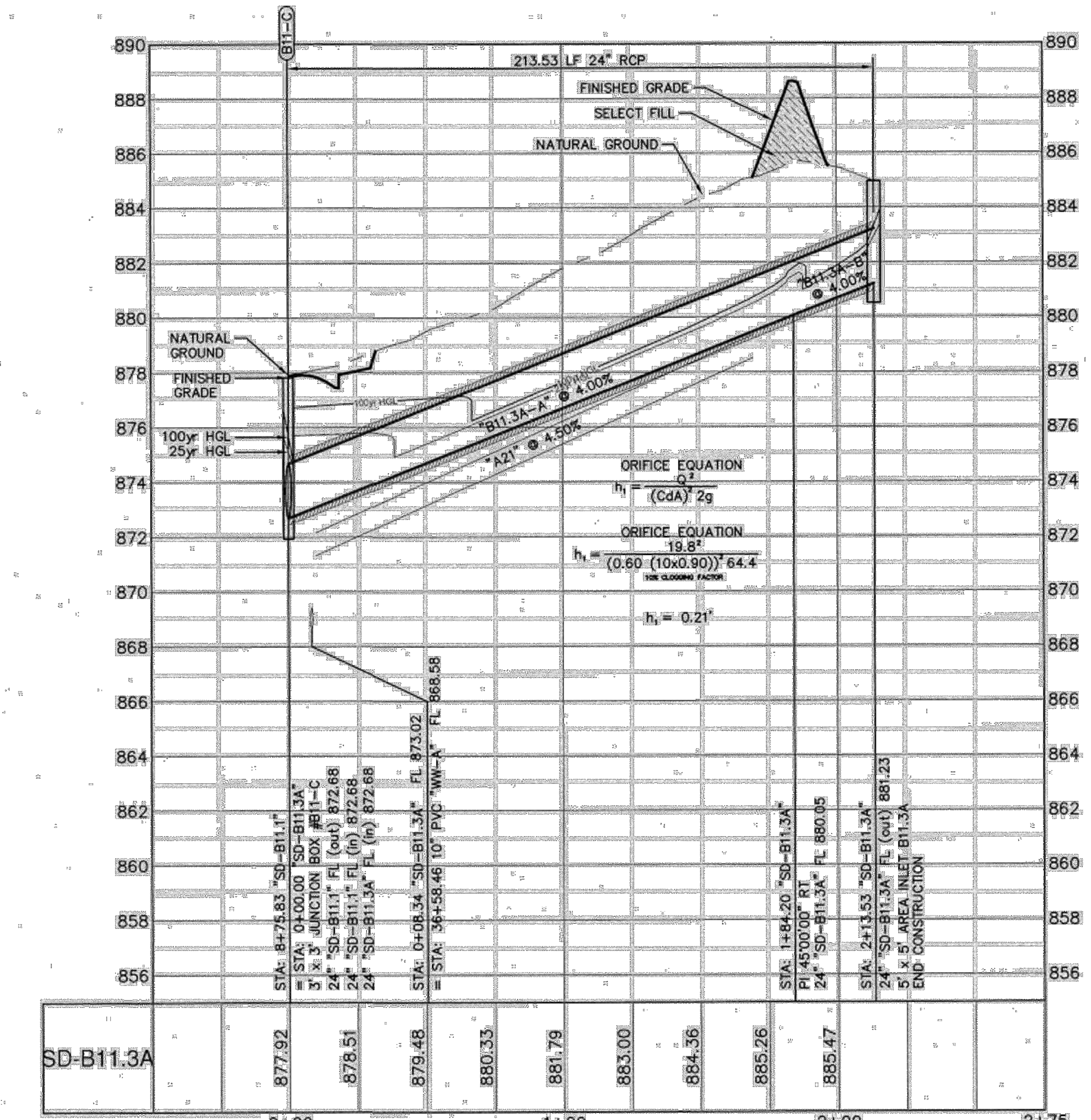
LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q_{25}:Q25 Q_{100}:Q100 — INLET # / CAPTURE Q= 25/100 YEAR





25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-M	7.2	12.37	1.50	879.18	876.43
B11-N	7.2	8.34	0.76	880.06	878.91
B11-O	7.3	8.37	0.74	882.58	879.76
B11-P	7.3	6.93	1.22	882.87	882.75
B11.3A-A	14.4	13.54	3.03	881.42	875.71
B11.3A-B	14.4	13.55	1.58	882.59	881.63

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-M	9.4	13.32	2.55	879.33	877.48
B11-N	9.5	8.90	0.90	880.21	879.05
B11-O	9.6	8.92	0.88	882.73	879.89
B11-P	9.6	7.32	1.41	883.02	882.95
B11.3A-A	20.0	14.81	4.04	881.66	876.73
B11.3A-B	20.0	14.81	1.90	882.83	881.96

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

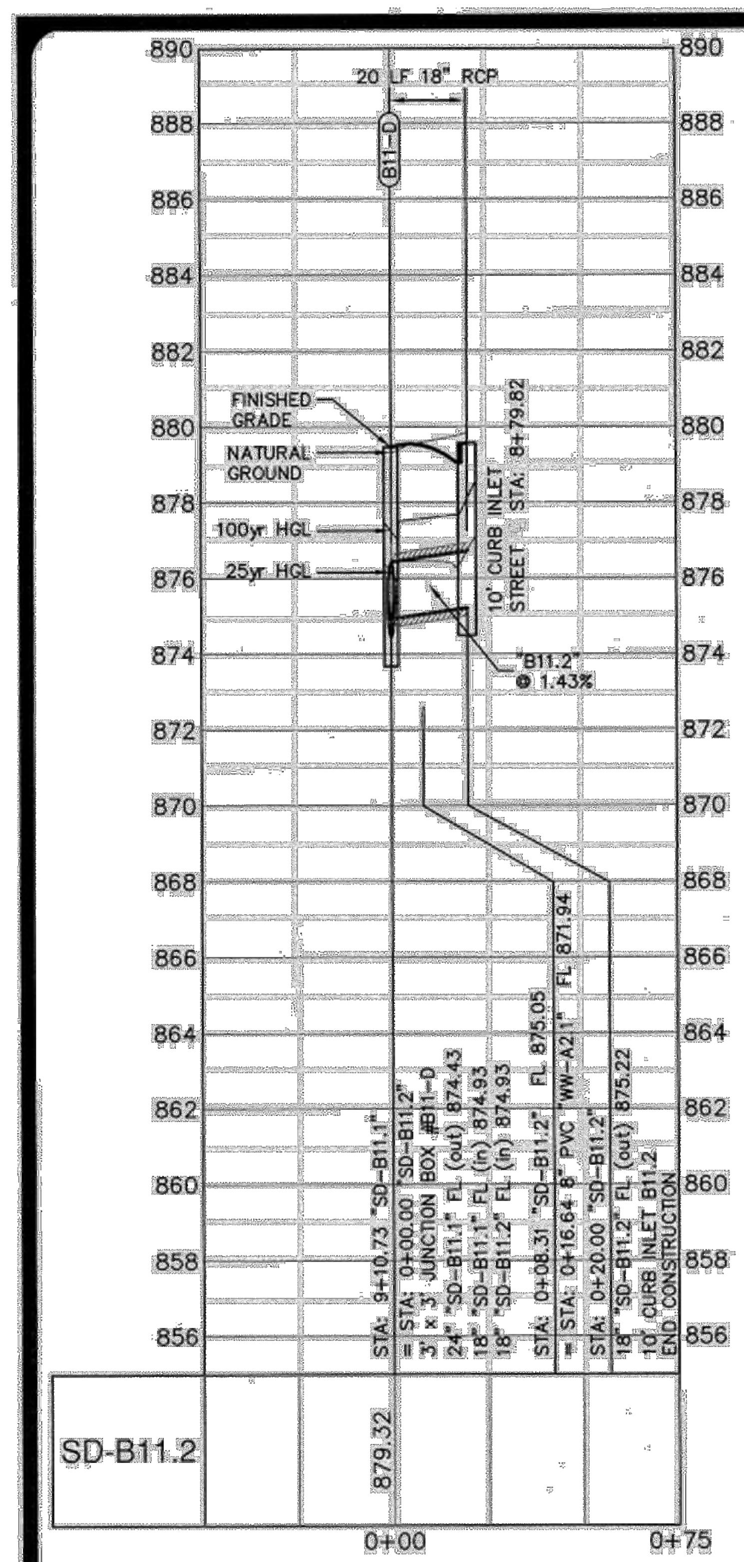
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
12/12/18

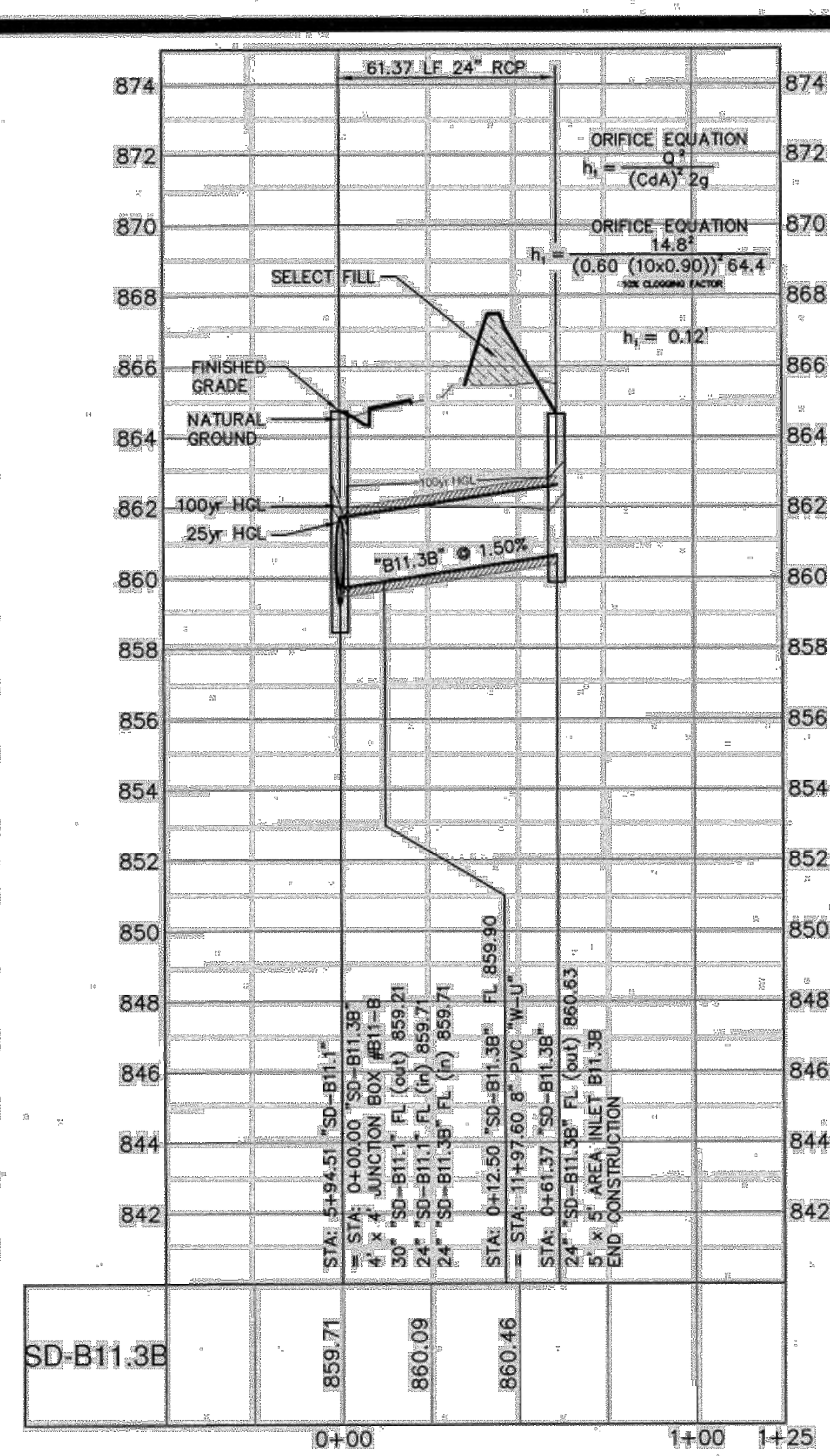
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

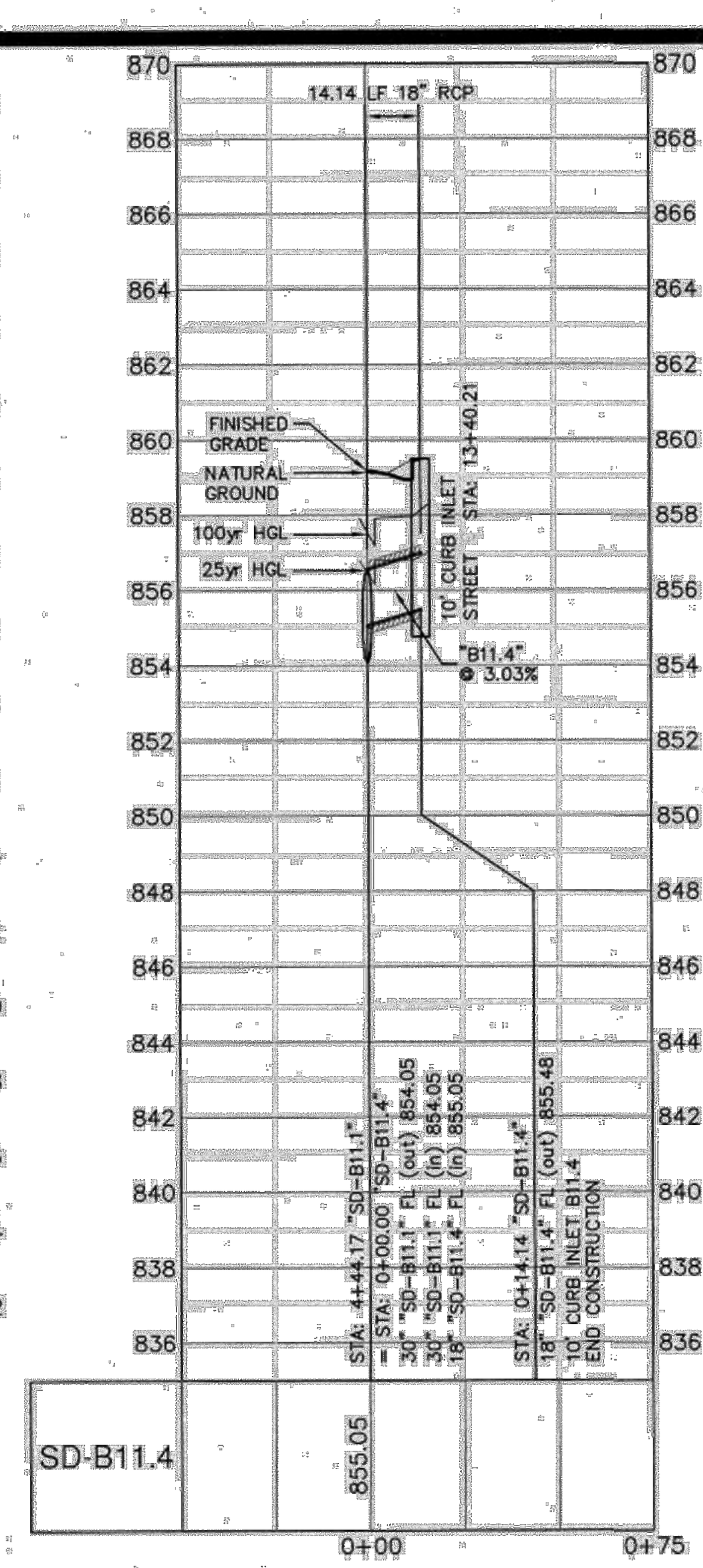
LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

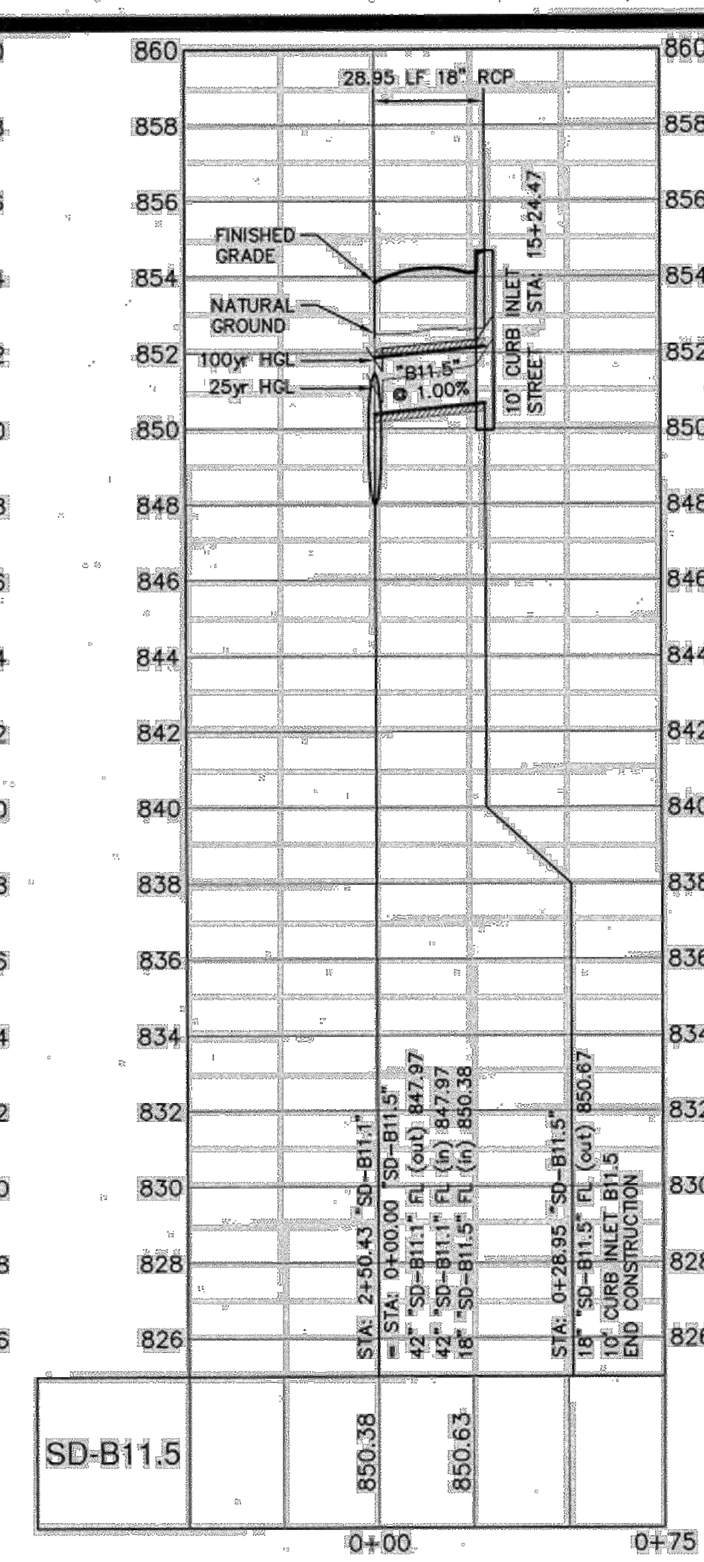
STORMDRAIN PLAN & PROFILE LINE B11.1 (2 OF 2) & LINE B11.3A

CITY JOB No. -
JOB NO. 50816-21
DATE DECEMBER 2018
DESIGNER RBB
CHECKED DRAWN TK









PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

NOTES:

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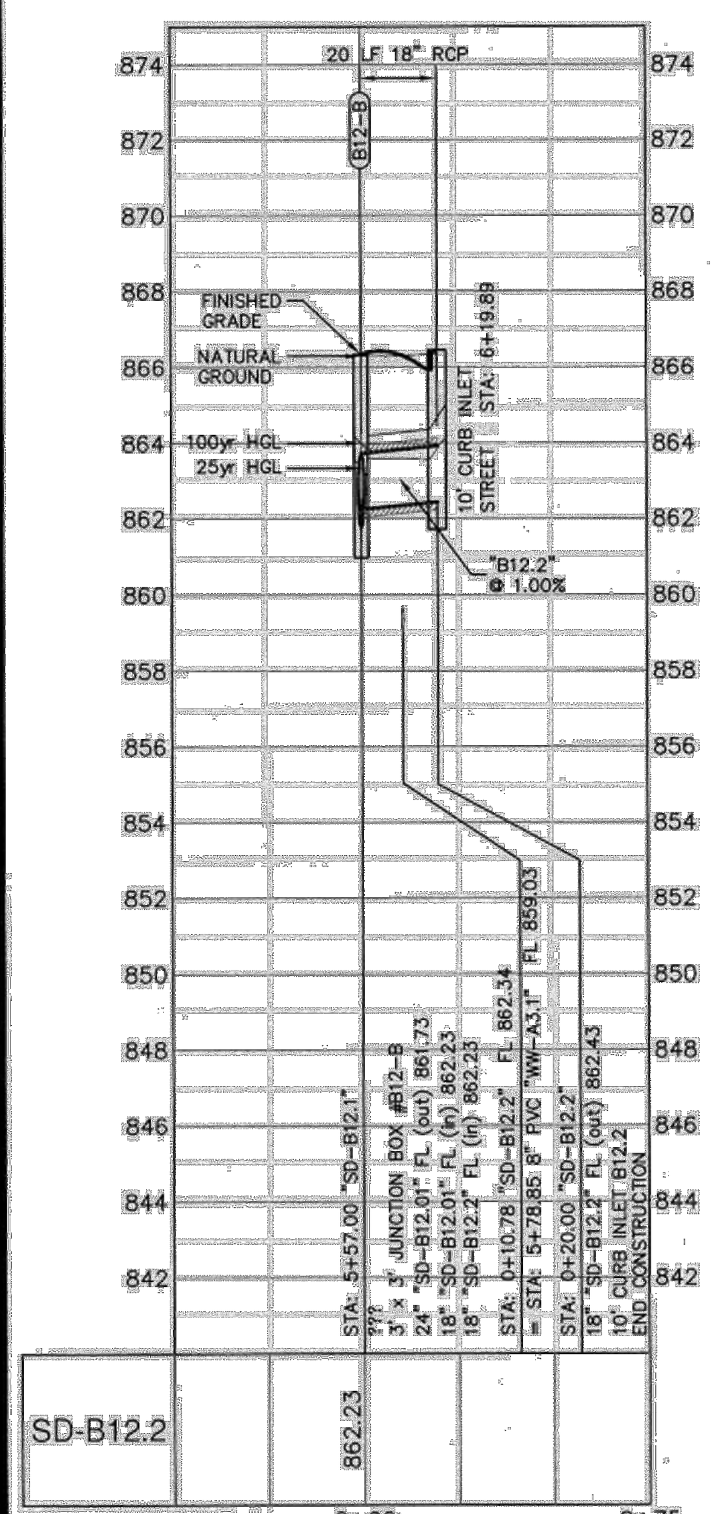
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

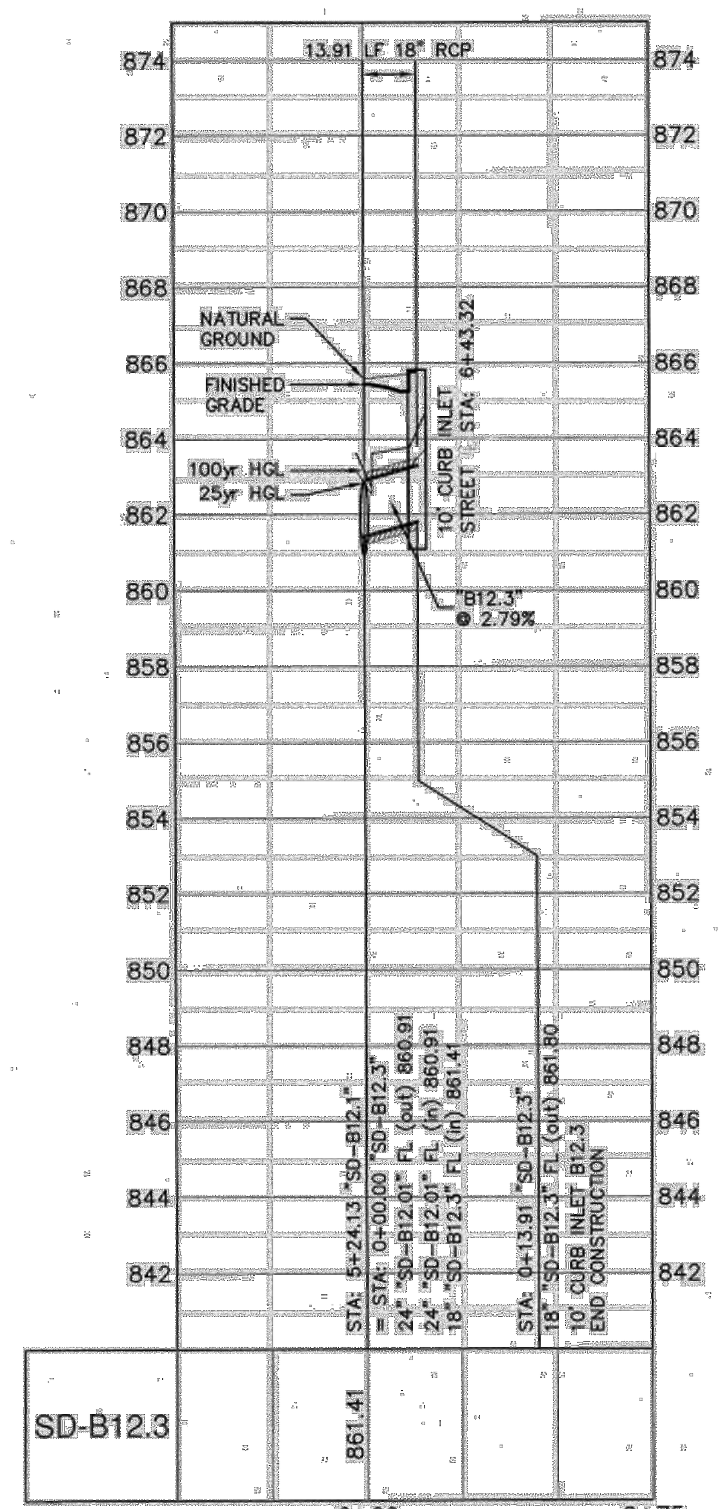
25 yr Storm Event

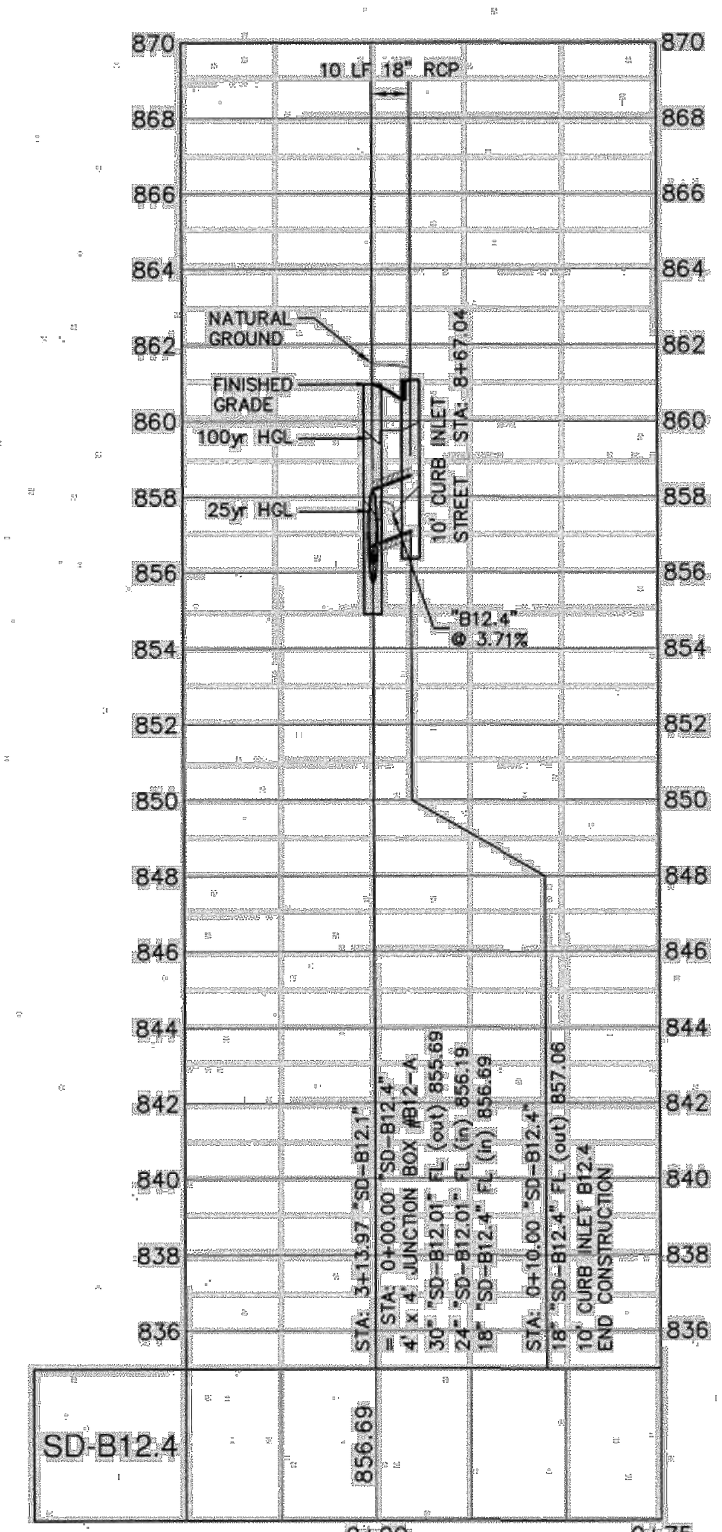
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11.2	8.8	8.18	1.50	876.36	876.43
B11.3B	10.4	8.69	2.28	861.89	861.99
B11.4	5.5	9.59	1.72	856.78	856.78
B11.5	7.4	6.86	0.91	851.72	851.29
B12.2	7.8	6.92	1.37	863.57	863.61
B12.3	8.7	10.51	1.75	863.24	863.17
B12.4	4.3	9.62	1.18	857.86	857.88
B12.5	5.0	6.72	1.77	856.87	856.82
B12.6	7.0	3.98	1.84	856.42	856.37

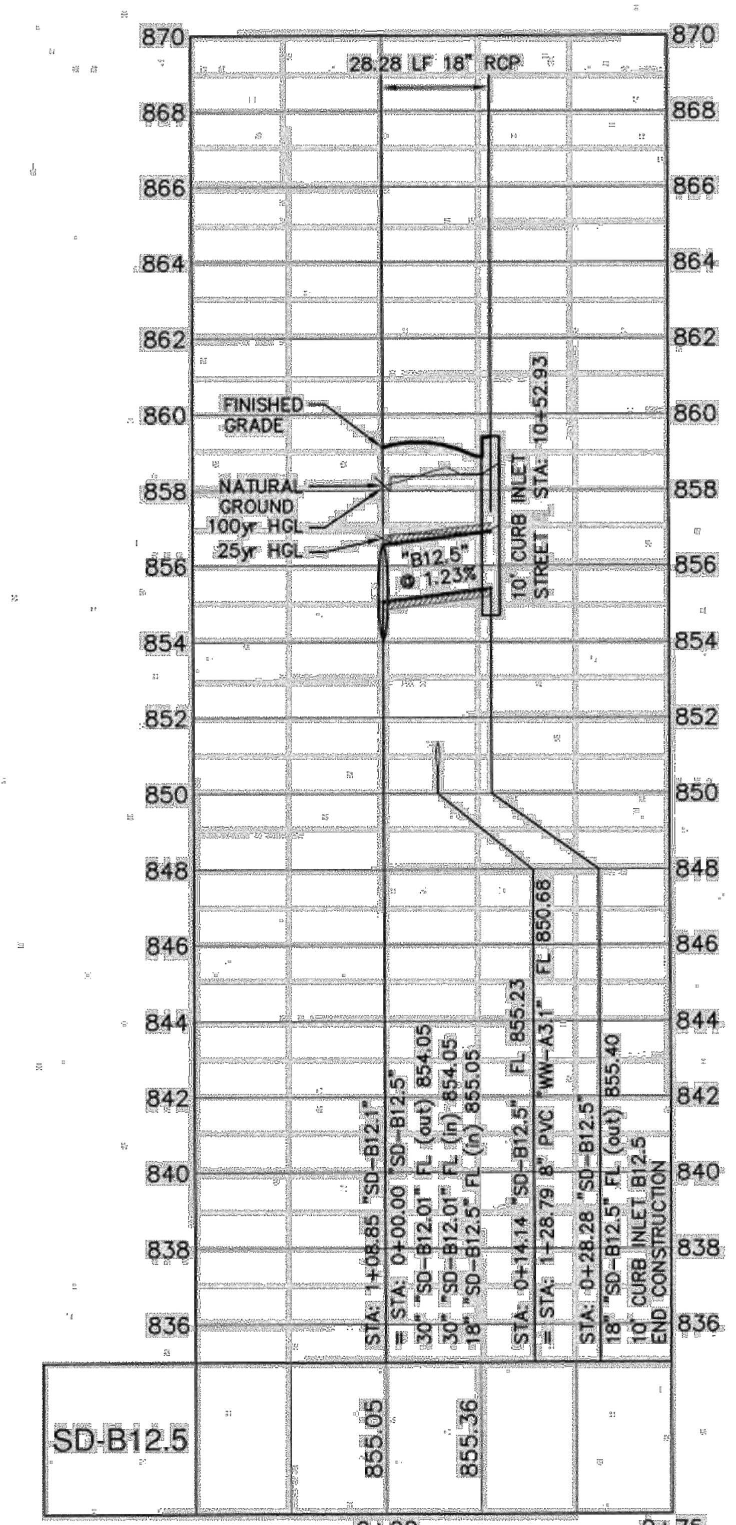
100 yr Storm Event

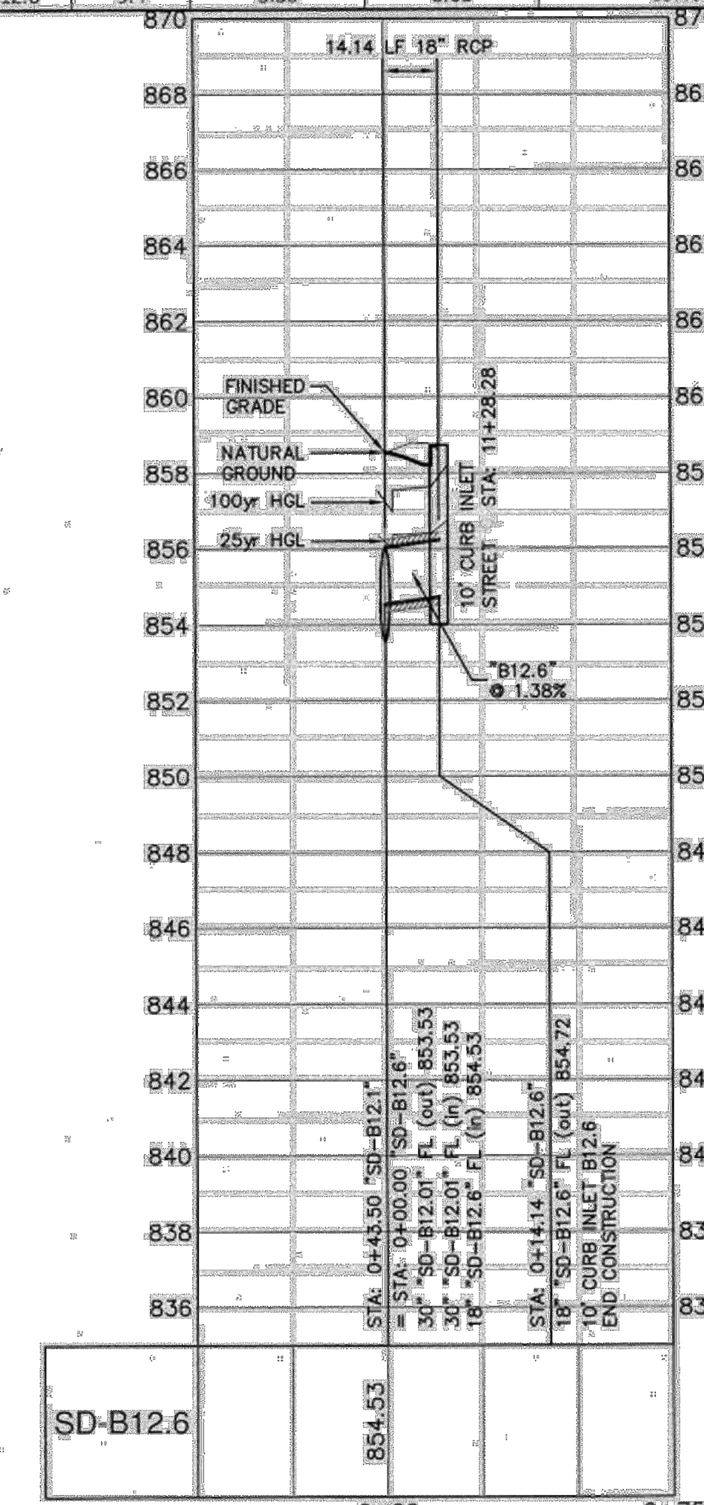
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11.2	11.5	6.51	2.55	877.69	877.48
B11.3B	15.0	4.76	2.90	862.84	862.61
B11.4	7.2	4.08	2.85	857.96	857.91
B11.5	9.9	5.58	1.74	852.34	852.12
B12.2	10.0	5.65	1.98	864.37	864.21
B12.3	11.8	6.70	2.21	863.78	863.63
B12.4	5.6	3.15	3.04	859.76	859.74
B12.5	6.5	3.65	3.29	858.44	858.35
B12.6	9.4	5.30	3.01	857.64	857.54











CITY OF LEANDER APPROVAL

LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE B11 LATERALS

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
12/12/18

NO.	REVISION	DATE

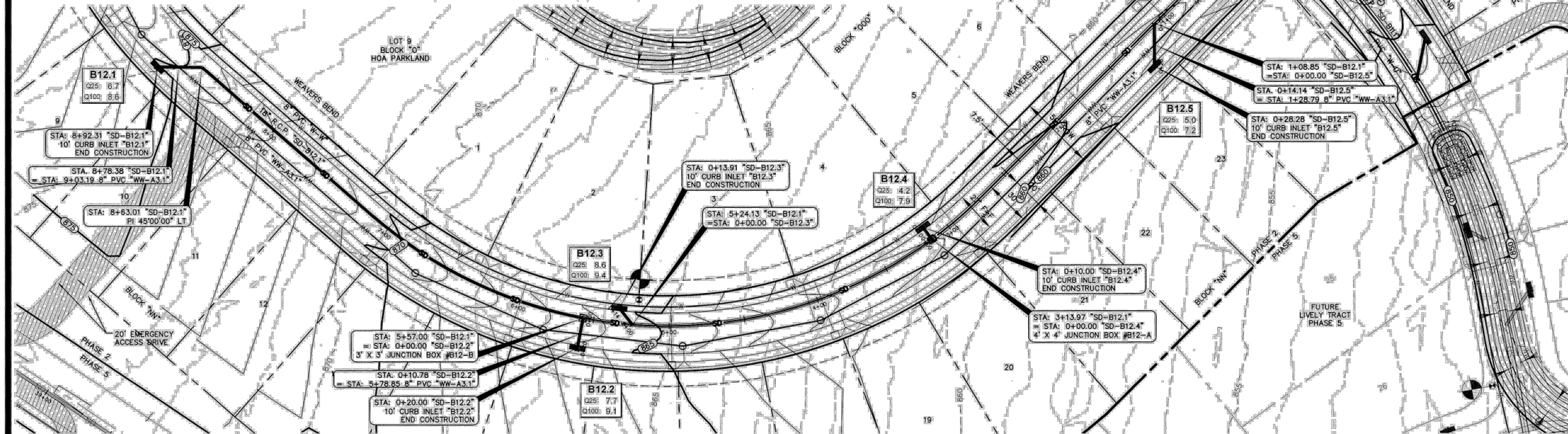
CITY JOB NO. -
JOB NO. 50816-21
DATE DECEMBER 2018
DESIGNER RBB
CHECKED DRAWN TK

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-A	32.6	6.64	2.62	856.04	855.81
B12-B	27.2	5.54	2.84	856.61	856.37
B12-C	23.5	8.43	2.77	856.99	856.82
B12-D	23.6	8.44	1.43	857.35	856.77
B12-E	20.2	8.71	1.68	858.17	857.88
B12-F	20.4	12.49	1.03	862.53	857.58
B12-G	14.1	11.35	2.25	863.09	863.17
B12-H	6.6	9.41	1.37	867.14	863.61
B12-I	6.7	9.44	0.63	870.89	866.78
B12-J	6.7	12.14	1.16	872.35	871.04

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-A	43.7	8.90	3.35	856.95	856.53
B12-B	36.3	7.39	4.01	857.98	857.54
B12-C	31.5	6.42	4.29	859.15	858.35
B12-D	31.6	6.44	3.82	859.38	859.15
B12-E	27.1	8.63	3.54	860.18	859.74
B12-F	27.3	13.37	3.62	862.73	860.18
B12-G	18.3	5.82	2.71	863.81	863.63
B12-H	8.6	10.08	1.98	867.28	864.21
B12-I	8.7	10.10	0.74	871.03	866.88
B12-J	8.7	13.03	1.34	872.49	871.23



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SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
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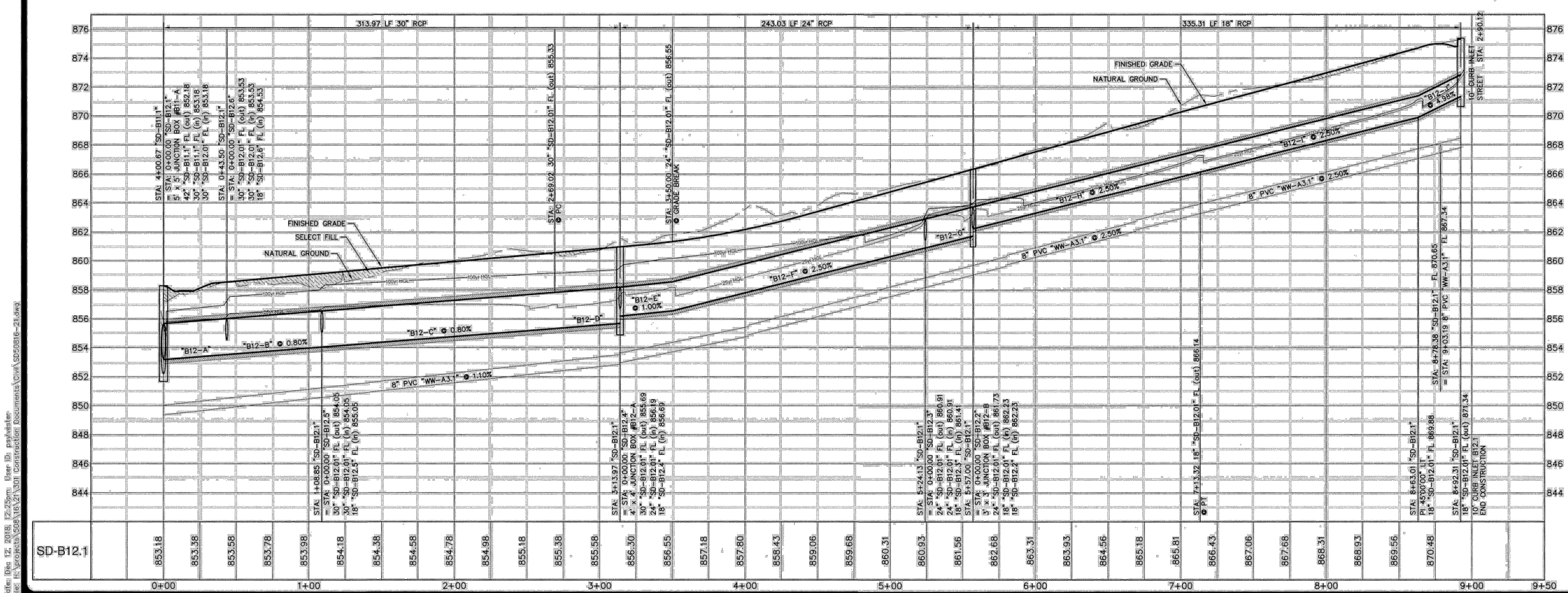
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q_{25}: Q25 Q_{100}: Q100 — INLET # / CAPTURE Q= 25/100 YEAR



PROFILE SCALES:

1" = 40' HORIZONTAL

1" = 4' VERTICAL

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

LIVELY TRACT, PHASE 2

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE

LINE B12.1

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

STATE OF TEXAS DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 12/12/18

NO.	REVISION	DATE

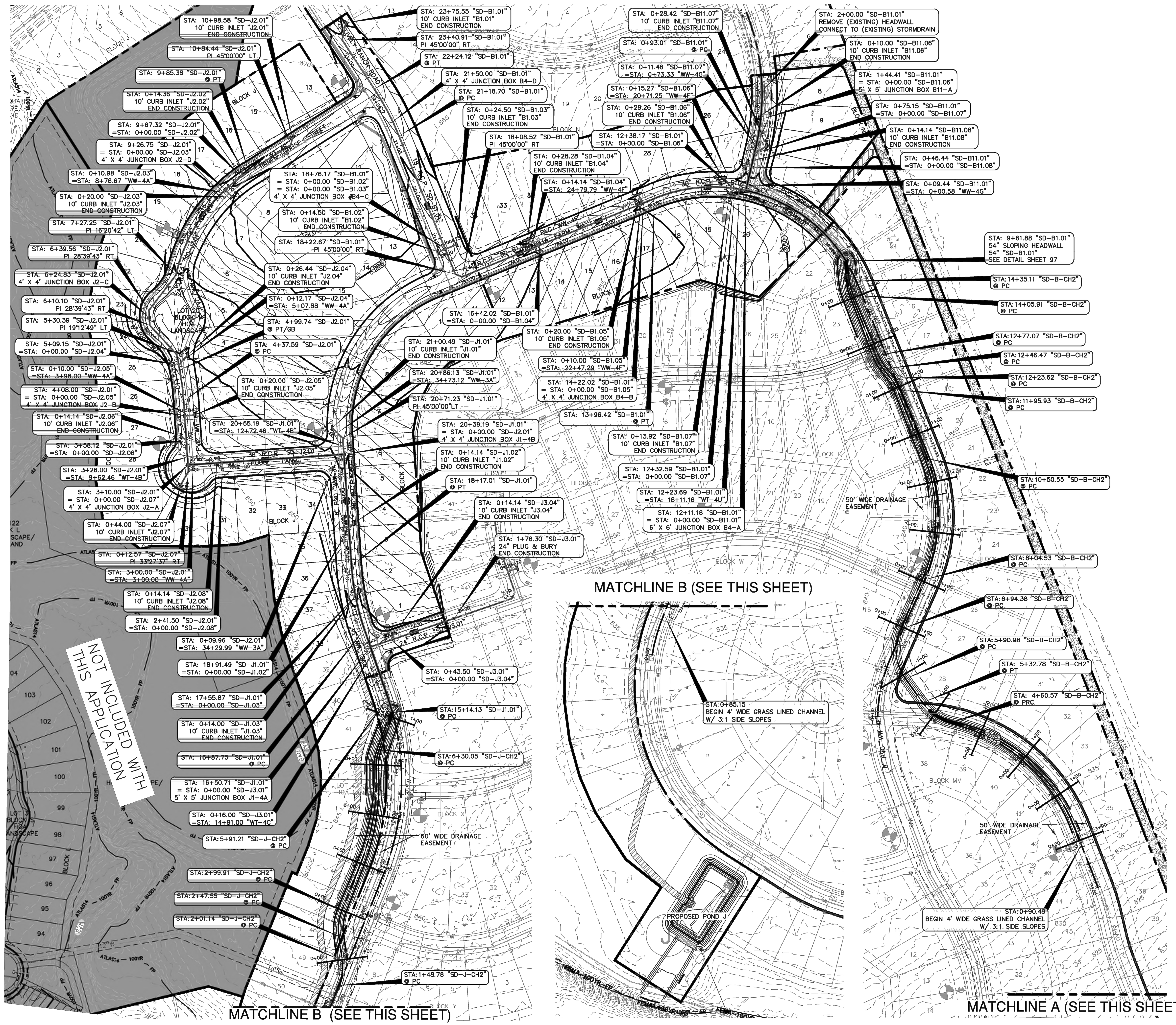
CITY JOB No. -

JOB NO. 50816-21

DATE DECEMBER 2018

DESIGNER RBB

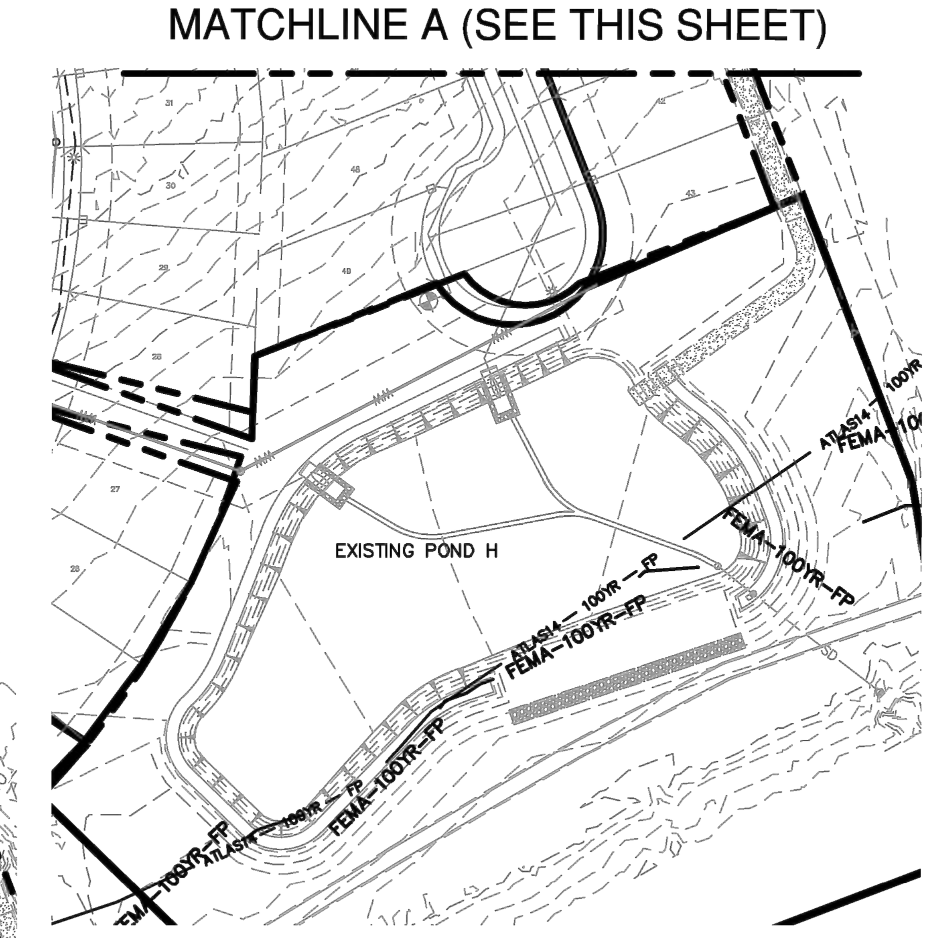
CHECKED PS DRAWN TK



SCALE: 1"= 100'

0' 100' 200' 300'

MATCHLINE A (SEE THIS SHEET)



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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE

NO.	REVISION	DATE

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 4 STORM DRAIN PLAN
OVERALL STORM DRAIN

CITY OF LEANDER APPROVAL

CITY JOB No. -
JOB NO. ----
DATE AUGUST 2021
DESIGNER RBB
CHECKED DRAWN SYL

Date: Mar 25, 2024, 1:33pm User ID: Gyadaf
File: H:\Projects\508\16\23\307 TCEQ Contributing Zone Plan CZP\Modified Phase 2 CZP\Civil\SD50816-23 CZP TCEQ.dwg

STREET FLOW AND INLET CALCULATIONS
25 YEAR STORM

Inlet No.	Inlet Type	Drainage Area	Q 25 (cfs)	Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (ft)	Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	Sump Qtotal (cfs)	Sump Length (ft)	d (ft)	d (ft) (d ≤ h + a)
ULTIMATE CONDITION DRAINAGE AREAS																											
G1.01	G-1	1.08	6.58		6.6	27	P	0.50	0.60%	0.42	0.50	0.50	12.42	0.34	0.28	0.04	0.13	11.48	10	0.97	6.4	0.2	Pass G1.02	-	-	-	-
G1.02	G-1	0.89	5.11	0.2	5.3	27	P	0.50	1.00%	0.42	0.42	0.50	8.25	0.54	0.28	0.04	0.19	9.89	10	1.00	5.3	0.0	-	-	-	-	-
G1.03	G-1	0.23	1.96		2.0	27	P	0.50	0.60%	0.42	0.33	0.50	5.70	0.85	0.28	0.04	0.27	4.47	10	1.00	2.0	0.0	-	-	-	-	-
G1.04	G-1	0.71	3.95		3.9	27	P	0.50	0.50%	0.42	0.43	0.50	8.54	0.52	0.28	0.04	0.18	7.25	10	1.00	3.9	0.0	-	-	-	-	-
G1.05	G-1	0.72	4.23		4.2	27	P	0.50	0.50%	0.42	0.44	0.50	8.92	0.49	0.28	0.04	0.17	7.65	10	1.00	4.2	0.0	-	-	-	-	-
G1.06	G-1	0.61	4.09		4.1	27	P	0.50	0.50%	0.42	0.44	0.50	8.73	0.51	0.28	0.04	0.18	7.45	10	1.00	4.1	0.0	-	-	-	-	-
G1.07	G-1	0.37	3.01		3.0	27	P	0.50	0.50%	0.42	0.40	0.50	7.32	0.63	0.28	0.04	0.21	5.91	10	1.00	3.0	0.0	-	-	-	-	-
G1.08	G-1	1.09	7.99		8.0	27	P	0.50	1.90%	0.42	0.44	0.50	8.74	0.51	0.28	0.04	0.18	14.74	15	1.00	8.0	0.0	-	-	-	-	-
G1.09	G-1	0.40	3.20		3.2	27	P	0.50	1.90%	0.42	0.32	0.50	5.48	0.85	0.28	0.04	0.27	7.75	10	1.00	3.2	0.0	-	-	-	-	-
G1.10	S-1	0.55	3.51		3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	3.5	10	0.24	0.24
G2.01	G-1	0.63	3.49		3.5	27	P	0.50	0.60%	0.42	0.40	0.50	7.55	0.60	0.28	0.04	0.20	6.77	10	1.00	3.5	0.0	-	-	-	-	-
G2.02	S-1	1.03	6.84		6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	6.8	15	0.30	0.30
G3.01	G-1	0.80	5.63		5.6	27	P	0.50	1.00%	0.42	0.43	0.50	8.58	0.52	0.28	0.04	0.18	10.39	10	1.00	5.6	0.0	-	-	-	-	-
G3.02	G-1	0.77	5.14		5.1	27	P	0.50	1.00%	0.42	0.42	0.50	8.12	0.55	0.28	0.04	0.19	9.69	10	1.00	5.1	0.0	-	-	-	-	-
G3.03	G-1	0.20	1.69		1.7	27	P	0.50	1.00%	0.42	0.29	0.50	4.78	0.85	0.28	0.04	0.27	4.89	10	1.00	1.7	0.0	-	-	-	-	-
G4.01	G-1	1.18	6.71		6.7	27	P	0.50	2.60%	0.42	0.39	0.50	7.24	0.63	0.28	0.04	0.21	13.49	10	0.91	6.1	0.6	Pass A2.02	-	-	-	-
G4.02	G-1	0.40	3.02	0.6	3.6	27	P	0.50	1.90%	0.42	0.34	0.50	5.79	0.84	0.28	0.04	0.27	8.21	10	1.00	3.6	0.0	-	-	-	-	-
G4.03	G-1	0.83	4.72		4.7	27	P	0.50	0.60%	0.42	0.45	0.50	9.02	0.49	0.28	0.04	0.17	8.51	10	1.00	4.7	0.0	-	-	-	-	-
G4.04	G-1	0.31	2.44		2.4	27	P	0.50	1.90%	0.42	0.30	0.50	4.88	0.85	0.28	0.04	0.27	6.92	10	1.00	2.4	0.0	-	-	-	-	-
G4.05	G-1	0.67	4.58		4.6	27	P	0.50	2.20%	0.42	0.36	0.50	6.25	0.76	0.28	0.04	0.25	9.97	10	1.00	4.6	0.0	-	-	-	-	-
G4.06	G-1	0.71	4.42		4.4	27	P	0.50	1.80%	0.42	0.36	0.50	6.44	0.73	0.28	0.04	0.24	9.43	10	1.00	4.4	0.0	-	-	-	-	-
G4.07	G-1	0.40	3.25		3.2	27	P	0.50	1.00%	0.42	0.36	0.50	6.40	0.74	0.28	0.04	0.24	8.92	10	1.00	3.2	0.0	-	-	-	-	-
G4.08	G-1	0.40	3.32		3.3	27	P	0.50	1.00%	0.42	0.36	0.50	6.47	0.73	0.28	0.04	0.24	7.03	10	1.00	3.3	0.0	-	-	-	-	-
G4.09	G-1	0.58	3.97		4.0	27	P	0.50	1.00%	0.42	0.39	0.50	7.07	0.65	0.28	0.04	0.22	8.01	10	1.00	4.0	0.0	-	-	-	-	-
G4.10	G-1	0.63	4.35		4.3	27	P	0.50	1.00%	0.42	0.40	0.50	7.41	0.62	0.28	0.04	0.21	8.56	10	1.00	4.3	0.0	-	-	-	-	-
G4.11	G-1	0.61	4.30		4.3	27	P	0.50	1.00%	0.42	0.40	0.50	7.36	0.62	0.28	0.04	0.21	8.49	10	1.00	4.3	0.0	-	-	-	-	-
G4.12	G-1	0.75	4.93		4.9	27	P	0.50	1.00%	0.42	0.41	0.50	7.93	0.57	0.28	0.04	0.19	9.39	10	1.00	4.9	0.0	-	-	-	-	-
G4.13	G-1	0.33	2.73		2.7	27	P	0.50	1.00%	0.42	0.34	0.50	5.90	0.82	0.28	0.04	0.26	6.10	10	1.00	2.7	0.0	-	-	-	-	-
J1.01	G-1	1.08	5.78		5.8	27	P	0.50	2.20%	0.42	0.36	0.50	7.00	0.66	0.28	0.04	0.22	11.81	10	0.97	5.6	0.2	-	-	-	-	-
J1.02	G-1	0.92	5.93		5.9	27	P	0.50	1.90%	0.42	0.40	0.50	7.37	0.62	0.28	0.04	0.21	11.79	10	0.97	5.7	0.2	-	-	-	-	-
J1.03	G-1	0.42	2.76		2.8	27	P	0.50	1.60%	0.42	0.32	0.50	5.34	0.85	0.28	0.04	0.27	6.93	10	1.00	2.8	0.0	-	-	-	-	-
J1.04	G-1	1.06	5.69		5.7	27	P	0.50	1.00%	0.42	0.44	0.50	8.64	0.51	0.28	0.04	0.18	10.48	10	1.00	5.7	0.0	-	-	-	-	-
J1.05	G-1	0.50	3.90		3.9	27	P	0.50	1.00%	0.42	0.38	0.50	7.00	0.66	0.28	0.04	0.22	7.90	10	1.00	3.9	0.0	-	-	-	-	-
J2.01	G-1	1.13	5.30		5.3	27	P	0.50	0.60%	0.42	0.46	0.50	9.80	0.44	0.28	0.04	0.16	9.34	10	1.00	5.3	0.0	-	-	-	-	-
J2.02	G-1	0.64	3.05		3.0	27	P	0.50	0.60%	0.42	0.39	0.50	7.03	0.66	0.28	0.04	0.22	6.13	10	1.00	3.0	0.0	-	-	-	-	-
J2.03	G-1	0.77	4.82		4.8	27	P	0.50	0.70%	0.42	0.44	0.50	8.71	0.51	0.28	0.04	0.18	8.82	10	1.00	4.8	0.0	-	-	-	-	-
J2.04	G-1	1.24	6.71		6.7	27	P	0.50	1.80%	0.42	0.42	0.50	8.00	0.56	0.28	0.04	0.19	12.81	10	0.93	6.3	0.4	-	-	-	-	-
J2.05	G-1	0.79	4.74		4.7	27	P	0.50	1.50%	0.42	0.38	0.50	6.97	0.66	0.28	0.04	0.22	9.66	10	1.00	4.7	0.0	-	-	-	-	-
J2.06	G-1	0.58	4.37		4.4	27	P	0.50	1.50%	0.42	0.37	0.50	6.70	0.70	0.28	0.04	0.23	9.10	10	1.00	4.4	0.0	-	-	-	-	-
J2.07	S-1	0.53	3.70		3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	3.7	10	0.25	0.25
J2.08	G-1	0.64	3.37		3.4	27	P	0.50	1.60%	0.42	0.34	0.50	5.83	0.83	0.28	0.04	0.27	7.61	10	1.00	3.4	0.0	-	-	-	-	-
J3.04	G-1	0.66	4.04		4.0	27	P	0.50	0.60%	0.42	0.42	0.50	8.20	0.55	0.28	0.04	0.19	7.56	10	1.00	4.0	0.0	-	-	-	-	-
B1.01	G-1	1.75	7.38		7.4	36	P	0.50	2.00%	0.42	0.41	0.50	10.17	0.45	0.28	0.03	0.15	15.92	15	0.99	7.3	0.0	-	-	-	-	-
B1.02	G-1	0.63	3.37		3.4	36	P	0.50	0.80%	0.42	0.36	0.50	8.60	0.55	0.28	0.03	0.16	7.85	10	1.00	3.4	0.0	-	-	-	-	-
B1.03	G-1	0.53	3.43		3.4	36	P	0.50	0.80%	0.42	0.37	0.50	8.67	0.54	0.28	0.03	0.16	7.95	10	1.00	3.4	0.0	-	-	-	-	-
B1.04	G-1	1.23	5.79		5.8	27	P	0.50	2.00%	0.42	0.39	0.50	7.18	0.64	0.28	0.04	0.22	11.65	15	1.00	5.8	0.0	-	-	-	-	-
B1.05	G-1	1.46	6.42		6.4	27	P	0.50	3.00%	0.42	0.38	0.50	6.82	0.68	0.28	0.04	0.23	13.33	15	1.00	6.4	0.0	-	-	-	-	-
B1.06	G-1	1.20	6.12		6.1	27	P	0.50	1.00%	0.42	0.45	0.50	9.05	0.49	0.28	0.04	0.17	11.08	15	1.00	6.1	0.0	-	-	-	-	-
B1.07	G-1	0.61	4.78		4.8	27	P	0.50	1.00%	0.42	0.41	0.50	7.60	0.58	0.28	0.04	0.20	9.19	10	1.00	4.8	0.0	-	-	-	-	-
B1.08	G-1	0.93	5.06		5.1	27	P	0.50	1.70%	0.42	0.38	0.50	6.99	0.66	0.28	0.04	0.22	10.33	10	1.00	5.1	0.0	-	-	-	-	-
B11.06	G-1	0.99	6.76		6.8	27	P	0.50	1.20%	0.42	0.45	0.50	9.10	0.48	0.28	0.04	0.17	12.24	10	0.95	6.4	0.3	-	-	-	-	-
B11.07	G-1	0.11	0.91		0.9	27	P	0.50	0.60%	0.42	0.26	0.50	4.12	0.85	0.28	0.04	0.27	3.24	10	1.00	0.9	0.0	-	-	-	-	-
B11.08	G-1	0.45	2.90		2.9	27	P	0.50	0.60%	0.42	0.38	0.50	6.86	0.68	0.28	0.04	0.23	5.91	10	1.00	2.9	0.0	-	-	-	-	-

STREET FLOW AND INLET CALCULATIONS
100 YEAR STORM

Inlet No.	Inlet Type	Drainage Area	Q 100 (cfs)	Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (-) (ft)	Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	Sump Qtotal (cfs)	Sump Length (ft)	d (ft)	d (ft) d ≤ h + a
ULTIMATE CONDITION DRAINAGE AREAS																											
G1.01	G-1	1.08	9.82	[illegible]	6.8	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.09	10	0.96	6.5	0.3	Spill G1.03 / Pass G1.02	-	-	-	-
G1.02	G-1	0.89	7.65	[illegible]	7.9	27	P	0.50	1.00%	0.42	0.49	0.50	11.21	0.38	0.28	0.04	0.14	13.80	10	0.90	7.2	0.8	Pass G1.04	-	-	-	-
G1.03	G-1	0.23	2.89	[illegible]	5.9	27	P	0.50	0.60%	0.42	0.48	0.50	10.73	0.40	0.28	0.04	0.15	10.22	10	1.00	5.9	0.0	-	-	-	-	-
G1.04	G-1	0.71	5.91	[illegible]	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.07	10	0.99	6.2	0.1	Spill G1.07 / Pass G1.05	-	-	-	-
G1.05	G-1	0.72	6.32	[illegible]	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.04	10	0.99	6.2	0.1	Spill G1.07 / Pass G1.06	-	-	-	-
G1.06	G-1	0.61	6.10	[illegible]	6.2	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	10.99	10	0.99	6.1	0.1	Pass G1.08	-	-	-	-
G1.07	G-1	0.37	4.46	[illegible]	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.04	10	0.99	6.2	0.1	Spill G1.08 / Pass G1.09	-	-	-	-
G1.08	G-1	1.09	11.92	[illegible]	12.2	27	P	0.50	1.90%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	21.82	15	0.88	10.7	1.5	Pass G1.10	-	-	-	-
G1.09	G-1	0.40	4.74	[illegible]	4.8	27	P	0.50	1.90%	0.42	0.37	0.50	6.64	0.71	0.28	0.04	0.23	10.14	10	1.00	4.8	0.0	-	-	-	-	-
G1.10	S-1	0.55	5.24	[illegible]	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	7.3	10	0.40	0.40
G2.01	G-1	0.63	5.22		5.2	27	P	0.50	0.60%	0.42	0.46	0.50	9.69	0.45	0.28	0.04	0.16	9.23	10	1.00	5.2	0.0	-	-	-	-	-
G2.02	S-1	1.03	10.21		10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	10.2	15	0.40	0.40
G3.01	G-1	0.80	8.38	[illegible]	8.9	27	P	0.50	1.00%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	15.74	10	0.84	7.4	1.4	Pass G3.02	-	-	-	-
G3.02	G-1	0.77	7.66	[illegible]	8.9	27	P	0.50	1.00%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	15.77	10	0.84	7.4	1.5	Spill G3.03 / Pass G1.05	-	-	-	-
G3.03	G-1	0.20	2.50	[illegible]	3.0	27	P	0.50	1.00%	0.42	0.35	0.50	6.16	0.78	0.28	0.04	0.25	6.52	10	1.00	3.0	0.0	-	-	-	-	-
G4.01	G-1	1.18	10.03		10.0	27	P	0.50	2.60%	0.42	0.45	0.50	9.15	0.48	0.28	0.04	0.17	18.28	10	0.76	7.6	2.4	Pass G4.04	-	-	-	-
G4.02	G-1	0.40	4.50		4.5	27	P	0.50	1.90%	0.42	0.38	0.50	6.41	0.74	0.28	0.04	0.24	9.82	10	1.00	4.5	0.0	-	-	-	-	-
G4.03	G-1	0.83	7.05	[illegible]	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.12	10	0.96	6.6	0.3	Spill G4.05 / Pass G4.05	-	-	-	-
G4.04	G-1	0.31	3.62	[illegible]	6.0	27	P	0.50	1.90%	0.42	0.40	0.50	7.43	0.61	0.28	0.04	0.21	11.93	10	0.96	5.8	0.2	Pass G4.08	-	-	-	-
G4.05	G-1	0.67	6.83	[illegible]	7.3	27	P	0.50	2.20%	0.42	0.42	0.50	7.95	0.57	0.28	0.04	0.19	14.07	10	0.89	6.5	0.8	Pass G3.01	-	-	-	-
G4.06	G-1	0.71	6.57		6.6	27	P	0.50	1.80%	0.42	0.41	0.50	7.90	0.57	0.28	0.04	0.20	12.61	10	0.94	6.2	0.4	Pass G4.07	-	-	-	-
G4.07	G-1	0.40	4.81	[illegible]	5.2	27	P	0.50	1.00%	0.42	0.42	0.50	8.18	0.55	0.28	0.04	0.19	9.78	10	1.00	5.2	0.0	-	-	-	-	-
G4.08	G-1	0.40	4.91	[illegible]	5.1	27	P	0.50	1.00%	0.42	0.42	0.50	8.12	0.55	0.28	0.04	0.19	9.69	10	1.00	5.1	0.0	-	-	-	-	-
G4.09	G-1	0.58	5.91	[illegible]	5.9	27	P	0.50	1.00%	0.42	0.44	0.50	8.85	0.50	0.28	0.04	0.18	10.78	10	0.99	5.9	0.1	Pass G4.10	-	-	-	-
G4.10	G-1	0.63	6.47	[illegible]	6.5	27	P	0.50	1.00%	0.42	0.46	0.50	9.46	0.46	0.28	0.04	0.17	11.66	10	0.97	6.3	0.2	Pass G4.11	-	-	-	-
G4.11	G-1	0.61	6.40	[illegible]	6.6	27	P	0.50	1.00%	0.42	0.46	0.50	9.53	0.46	0.28	0.04	0.16	11.75	10	0.97	6.4	0.2	Pass G4.12	-	-	-	-
G4.12	G-1	0.75	7.38	[illegible]	7.6	27	P	0.50	1.00%	0.42	0.48	0.50	10.71	0.40	0.28	0.04	0.15	13.25	10	0.92	7.0	0.6	Pass G1.10	-	-	-	-
G4.13	G-1	0.33	4.04		4.0	27	P	0.50	1.00%	0.42	0.39	0.50	7.13	0.65	0.28	0.04	0.22	8.11	10	1.00	4.0	0.0	-	-	-	-	-
J1.01	G-1	1.08	8.66		8.7	27	P	0.50	2.20%	0.42	0.44	0.50	8.79	0.50	0.28	0.04	0.18	16.00	10	0.83	7.2	1.5	Pass J2.08	-	-	-	-
J1.02	G-1	0.92	8.83		8.8	27	P	0.50	1.90%	0.42	0.45	0.50	9.34	0.47	0.28	0.04	0.17	15.94	10	0.83	7.3	1.5	Pass J1.03	-	-	-	-
J1.03	G-1	0.42	4.11	[illegible]	5.6	27	P	0.50	1.60%	0.42	0.40	0.50	7.49	0.61	0.28	0.04	0.21	11.03	10	0.99	5.5	0.1	Pass J1.04	-	-	-	-
J1.04	G-1	1.06	8.57	[illegible]	8.9	27	P	0.50	1.00%	0.42	0.51	0.50	13.50	0.31	0.28	0.04	0.12	15.81	10	0.84	7.5	1.5	Pass Future	-	-	-	-
J1.05	G-1	0.50	5.79		5.8	27	P	0.50	1.00%	0.42	0.44	0.50	8.73	0.51	0.28	0.04	0.18	10.62	10	0.99	5.8	0.0	-	-	-	-	-
J2.01	G-1	1.13	7.98	[illegible]	6.8	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.06	10	0.96	6.5	0.3	Spill J2.06 / Pass J2.02	-	-	-	-
J2.02	G-1	0.64	4.59	[illegible]	4.9	27	P	0.50	0.60%	0.42	0.45	0.50	9.22	0.48	0.28	0.04	0.17	8.73	10	1.00	4.9	0.0	-	-	-	-	-
J2.03	G-1	0.77	7.29	[illegible]	7.4	27	P	0.50	0.70%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	13.10	10	0.93	6.8	0.6	Pass J2.04	-	-	-	-
J2.04	G-1	1.24	10.07	[illegible]	10.6	27	P	0.50	1.80%	0.42	0.49	0.50	11.18	0.38	0.28	0.04	0.14	18.58	10	0.75	8.0	2.6	Pass J2.06	-	-	-	-
J2.05	G-1	0.79	7.08	[illegible]	9.7	27	P	0.50	1.50%	0.42	0.49	0.50	11.23	0.38	0.28	0.04	0.14	16.99	10	0.80	7.8	2.0	Pass J2.07	-	-	-	-
J2.06	G-1	0.58	6.50	[illegible]	7.6	27	P	0.50	1.50%	0.42	0.45	0.50	9.14	0.48	0.28	0.04	0.17	13.78	10	0.90	6.9	0.7	Pass J2.07	-	-	-	-
J2.07	S-1	0.53	5.49	[illegible]	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	8.5	10	0.44	0.44
J2.08	G-1	0.64	5.09	[illegible]	6.6	27	P	0.50	1.60%	0.42	0.42	0.50	8.18	0.55	0.28	0.04	0.19	12.43	10	0.95	6.2	0.3	Pass J2.07	-	-	-	-
J3.04	G-1	0.66	6.01	[illegible]	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.12	10	0.96	6.6	0.3	Pass J1.04	-	-	-	-
B1.01	G-1	1.75	11.27		11.3	36	P	0.50	2.00%	0.42	0.47	0.50	13.38	0.32	0.28	0.03	0.12	22.12	15	0.87	9.8	1.5	Pass B1.03	-	-	-	-
B1.02	G-1	0.63	5.13		5.1	36	P	0.50	0.80%	0.42	0.42	0.50	10.72	0.42	0.28	0.03	0.14	10.70	10	0.99	5.1	0.0	-	-	-	-	-
B1.03	G-1	0.53	5.17	[illegible]	6.6	36	P	0.50	0.80%	0.42	0.46	0.50	12.66	0.35	0.28	0.03	0.12	13.07	10	0.93	6.1	0.5	Pass B1.04	-	-	-	-
B1.04	G-1	1.23	8.77	[illegible]	9.3	27	P	0.50	2.00%	0.42	0.46	0.50	9.48	0.46	0.28	0.04	0.17	16.65	15	0.98	9.1	0.1	Pass B1.05	-	-	-	-
B1.05	G-1	1.46	9.68	[illegible]	9.8	27	P	0.50	3.00%	0.42	0.43	0.50	8.62	0.51	0.28	0.04	0.18	18.30	15	0.95	9.4	0.5	Pass B1.06	-	-	-	-
B1.06	G-1	1.20	9.17	[illegible]	8.9	27	P	0.50	1.00%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	15.78	15	1.00	8.9	0.0	Spill B1.07	-	-	-	-
B1.07	G-1	0.61	7.10	[illegible]	7.8	27	P	0.50	1.00%	0.42	0.48	0.50	11.01	0.39	0.28	0.04	0.15	13.58	10	0.91	7.1	0.7	Pass B1.08	-	-	-	-
B1.08	G-1	0.93	7.60	[illegible]	8.3	27	P	0.50	1.70%	0.42	0.45	0.50	9.30	0.47	0.28	0.04	0.17	14.99	10	0.86	7.2	1.1	-	-	-	-	-
B11.06	G-1	0.99	10.12	[illegible]	9.7	27	P	0.50	1.20%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	17.28	10	0.79	7.7	2.1	Spill B11.07 / Pass B11.08	-	-	-	-
B11.07	G-1	0.11	1.35	[illegible]	3.9	27	P	0.50	0.60%	0.42	0.42	0.50	8.09	0.56	0.28	0.04	0.19	7.42	10	1.00	3.9	0.0	-	-	-	-	-
B11.08	G-1	0.45	4.33	[illegible]	6.4	27	P	0.50	0.60%	0.42	0.49	0.50	11.77	0.36	0.28	0.04	0.14	11.06	10	0.99	6.3	0.1	Spill B11.07 / Pass B11.08	-	-	-	-

DRAINAGE AREA	INLET NUMBER	AREA (acres)	COMPOSITE C: C_{25}	COMPOSITE C: C_{100}	$A \cdot C_{25}$	$A \cdot C_{100}$	SHEET FLOW Length (ft)	SHEET FLOW Manning's (n)	SHEET FLOW Slope ft/ft	SHEET FLOW Tc (min)	SHALLOW CONCENTRATED FLOW Length (ft)	Paved/ Unpaved	SHALLOW CONC. Slope ft/ft	SHALLOW CONC. Tc (min)	CHANNELIZED FLOW Length (ft)	CHANNELIZED Manning's (n)	CHANNELIZED Slope ft/ft	Velocity ft/s	CHANNELIZED Tc (min)	Cumulative Tc (min)	INTENSITY I 25yr (in/hr)	INTENSITY I 100yr (in/hr)	DISCHARGE Q 25 (cfs)	DISCHARGE Q 100 (cfs)
ULTIMATE CONDITION DRAINAGE AREAS																								
G1.01	G1.01	1.08	0.64	0.72	0.694	0.781	65	0.24	0.030	7.77	130	U	0.024	0.87	56	0.015	0.006	3.0	0.313	8.95	9.48	12.57	6.6	9.8
G1.02	G1.02	0.89	0.62	0.70	0.552	0.623	65	0.24	0.029	7.87	160	U	0.027	1.01	160	0.015	0.010	3.8	0.693	9.57	9.25	12.27	5.1	7.6
G1.03	G1.03	0.23	0.75	0.84	0.173	0.193	0	0.24	0.017	0.00	0	U	0.040	0.00	421	0.015	0.006	3.0	2.355	5.00	11.30	15.00	2.0	2.9
G1.04	G1.04	0.71	0.61	0.69	0.433	0.489	54	0.24	0.017	8.40	129	U	0.040	0.67	145	0.015	0.005	2.7	0.888	9.96	9.12	12.09	3.9	5.9
G1.05	G1.05	0.72	0.64	0.72	0.461	0.519	56	0.24	0.028	7.09	147	U	0.011	1.45	201	0.015	0.005	2.7	1.232	9.77	9.19	12.18	4.2	6.3
G1.06	G1.06	0.61	0.64	0.72	0.392	0.441	20	0.24	0.014	4.10	200	U	0.012	1.89	110	0.015	0.005	2.7	0.674	6.66	10.45	13.85	4.1	6.1
G1.07	G1.07	0.37	0.72	0.80	0.266	0.297	0	0.24	0.014	0.00	0	U	0.012	0.00	614	0.015	0.005	2.7	3.762	5.00	11.30	15.00	3.0	4.5
G1.08	G1.08	1.09	0.65	0.73	0.707	0.795	0	0.24	0.010	0.00	130	U	0.015	1.10	180	0.015	0.019	5.3	0.566	5.00	11.30	15.00	8.0	11.9
G1.09	G1.09	0.40	0.71	0.79	0.283	0.316	0	0.24	0.010	0.00	0	U	0.020	0.00	640	0.015	0.019	5.3	2.012	5.00	11.30	15.00	3.2	4.7
G1.10	G1.10	0.55	0.64	0.72	0.353	0.396	30	0.24	0.010	6.49	0	U	0.020	0.00	416	0.015	0.019	5.3	1.308	7.80	9.94	13.18	3.5	5.2
G2.01	G2.01	0.63	0.61	0.68	0.382	0.432	64	0.24	0.025	8.25	178	U	0.022	1.24	77	0.015	0.006	3.0	0.431	9.92	9.13	12.10	3.5	5.2
G2.02	G2.02	1.03	0.64	0.72	0.660	0.743	30	0.24	0.024	4.57	196	U	0.016	1.60	120	0.015	0.006	3.0	0.671	6.85	10.36	13.74	6.8	10.2
G3.01	G3.01	0.80	0.67	0.75	0.532	0.597	20	0.24	0.016	3.89	278	U	0.015	2.34	33	0.015	0.010	3.8	0.143	6.38	10.58	14.03	5.6	8.4
G3.02	G3.02	0.77	0.64	0.73	0.496	0.558	20	0.24	0.015	3.99	308	U	0.015	2.60	64	0.015	0.010	3.8	0.277	6.87	10.35	13.72	5.1	7.7
G3.03	G3.03	0.20	0.75	0.83	0.149	0.166	0	0.24	0.015	0.00	0	U	0.015	0.00	360	0.015	0.010	3.8	1.560	5.00	11.30	15.00	1.7	2.5
G4.01	G4.01	1.18	0.62	0.70	0.731	0.825	75	0.24	0.032	8.49	113	U	0.013	1.11	73	0.015	0.026	6.2	0.196	9.80	9.18	12.16	6.7	10.0
G4.02	G4.02	0.40	0.67	0.75	0.267	0.300	0	0.24	0.020	0.00	40	U	0.020	0.29	160	0.015	0.019	5.3	0.503	5.00	11.30	15.00	3.0	4.5
G4.03	G4.03	0.83	0.62	0.70	0.518	0.584	60	0.24	0.020	8.57	135	U	0.018	1.04	72	0.015	0.006	3.0	0.403	10.01	9.10	12.06	4.7	7.1
G4.04	G4.04	0.31	0.70	0.78	0.216	0.241	0	0.24	0.020	0.00	60	U	0.020	0.44	288	0.015	0.019	5.3	0.905	5.00	11.30	15.00	2.4	3.6
G4.05	G4.05	0.67	0.65	0.73	0.437	0.491	20	0.24	0.011	4.52	184	U	0.011	1.81	80	0.015	0.022	5.7	0.234	6.56	10.49	13.91	4.6	6.8
G4.06	G4.06	0.71	0.67	0.75	0.474	0.532	40	0.24	0.010	8.17	166	U	0.030	0.99	78	0.015	0.018	5.2	0.252	9.42	9.31	12.34	4.4	6.6
G4.07	G4.07	0.40	0.72	0.80	0.287	0.321	0	0.24	0.020	0.00	0	U	0.020	0.00	694	0.015	0.010	3.8	3.007	5.00	11.30	15.00	3.2	4.8
G4.08	G4.08	0.40	0.73	0.82	0.294	0.327	0	0.24	0.020	0.00	0	U	0.020	0.00	694	0.015	0.010	3.8	3.007	5.00	11.30	15.00	3.3	4.9
G4.09	G4.09	0.58	0.67	0.75	0.390	0.437	29	0.24	0.019	4.89	235	U	0.019	1.76	130	0.015	0.010	3.8	0.563	7.21	10.19	13.51	4.0	5.9
G4.10	G4.10	0.63	0.66	0.74	0.416	0.467	29	0.24	0.022	4.64	238	U	0.022	1.67	80	0.015	0.010	3.8	0.347	6.66	10.45	13.85	4.3	6.5
G4.11	G4.11	0.61	0.67	0.75	0.408	0.458	29	0.24	0.023	4.53	238	U	0.023	1.62	80	0.015	0.010	3.8	0.347	6.50	10.52	13.96	4.3	6.4
G4.12	G4.12	0.75	0.61	0.69	0.459	0.519	32	0.24	0.027	4.60	134	U	0.027	0.84	147	0.015	0.010	3.8	0.637	6.07	10.73	14.23	4.9	7.4
G4.13	G4.13	0.33	0.73	0.82	0.241	0.269	0	0.24	0.027	0.00	0	U	0.027	0.00	568	0.015	0.010	3.8	2.461	5.00	11.30	15.00	2.7	4.0
J1.01	J1.01	1.08	0.59	0.67	0.637	0.721	52	0.24	0.021	7.49	218	U	0.015	1.84	256	0.015	0.022	5.7	0.745	10.08	9.08	12.03	5.8	8.7
J1.02	J1.02	0.92	0.66	0.74	0.607	0.682	50	0.24	0.023	7.00	123	U	0.020	0.90	95	0.015	0.019	5.3	0.299	8.20	9.78	12.96	5.9	8.8
J1.03	J1.03	0.42	0.67	0.75	0.280	0.314	47	0.24	0.023	6.66	125	U	0.020	0.91	105	0.015	0.016	4.9	0.360	7.94	9.88	13.10	2.8	4.1
J1.04	J1.04	1.06	0.57	0.65	0.603	0.685	49	0.24	0.025	6.66	137	U	0.020	1.00	319	0.015	0.010	3.8	1.382	9.05	9.45	12.52	5.7	8.6
J1.05	J1.05	0.50	0.69	0.77	0.345	0.386	0	0.24	0.023	0.00	0	U	0.015	0.00	643	0.015	0.010	3.8	2.786	5.00	11.30	15.00	3.9	5.8
J2.01	J2.01	1.13	0.57	0.64	0.641	0.729	75	0.24	0.018	10.68	249	U	0.019	1.87	36	0.015	0.006	3.0	0.201	12.75	8.26	10.96	5.3	8.0
J2.02	J2.02	0.64	0.57	0.64	0.362	0.412	70	0.24	0.019	9.89	255	U	0.021	1.82	95	0.015	0.006	3.0	0.531	12.24	8.40	11.14	3.0	4.6
J2.03	J2.03	0.77	0.55	0.63	0.427	0.486	0	0.24	0.019	0.00	125	U	0.015	1.05	170	0.015	0.007	3.2	0.880	5.00	11.30	15.00	4.8	7.3
J2.04	J2.04	1.24	0.59	0.67	0.732	0.829	51	0.24	0.021	7.38	177	U	0.011	1.74	223	0.015	0.018	5.2	0.720	9.84	9.16	12.14	6.7	10.1
J2.05	J2.05	0.79	0.62	0.70	0.488	0.550	72	0.24	0.052	6.76	152	U	0.015	1.28	90	0.015	0.015	4.7	0.318	8.36	9.71	12.87	4.7	7.1
J2.06	J2.06	0.58	0.67	0.75	0.386	0.434	0	0.24	0.052	0.00	94	U	0.015	0.79	560	0.015	0.015	4.7	1.981	5.00	11.30	15.00	4.4	6.5
J2.07	J2.07	0.53	0.69	0.77	0.365	0.409	56	0.24	0.049	5.67	131	U	0.011	1.29	113	0.015	0.015	4.7	0.400	7.36	10.13	13.43	3.7	5.5
J2.08	J2.08	0.64	0.54	0.61	0.345	0.393	55	0.24	0.067	4.93	78	U	0.017	0.62	780	0.015	0.016	4.9	2.672	8.22	9.77	12.95	3.4	5.1
J3.04	J3.04	0.66	0.67	0.75	0.443	0.497	39	0.24	0.014	7.00	126	U	0.011	1.24	300	0.015	0.008	3.0	1.678	9.92	9.13	12.10	4.0	6.0
B1.01	B1.01	1.75	0.49	0.57	0.859	0.989	100	0.24	0.047	9.16	286	U	0.026	1.83	200	0.015	0.020	5.4	0.613	11.61	8.59	11.39	7.4	11.3
B1.02	B1.02	0.63	0.51	0.59	0.322	0.370	30	0.24	0.013	5.85	58	U	0.013	0.53	54	0.015	0.008	3.4	0.262	6.63	10.46	13.87	3.4	5.1
B1.03	B1.03	0.53	0.57	0.65	0.303	0.345	0	0.24	0.013	0.00	0	U	0.013	0.00	488	0.015	0.008	3.4	2.364	5.00	11.30	15.00	3.4	5.2
B1.04	B1.04	1.23	0.53	0.60	0.650	0.744	63	0.24	0.023	8.42	153	U	0.015	1.29	300	0.015	0.020	5.4	0.919	10.63	8.89	11.79	5.8	8.8
B1.05	B1.05	1.46	0.56	0.64	0.817	0.929	70	0.24	0.012	11.89	225	U	0.015	1.90	215	0.015	0.030	6.7	0.538	14.33	7.86	10.42	6.4	9.7
B1.06	B1.06	1.20	0.61	0.68	0.726	0.821	100	0.24	0.036	10.19	187	U	0.017	1.32	155	0.015	0.010	3.8	0.672	12.19	8.42	11.16	6.1	9.2
B1.07	B1.07	0.61	0.69	0.78	0.423	0.474	0	0.24	0.012	0.00	0	U	0.015	0.00	700	0.015	0.010	3.8	3.033	5.00	11.30	15.00	4.8	7.1
B1.08	B1.08	0.93	0.60	0.68	0.556	0.629	64	0.24	0.025	8.25	140	U	0.015	1.18	164	0.015	0.017	5.0	0.545	9.98	9.11	12.08	5.1	7.6
B11.06	B11.06	0.99	0.62	0.70	0.610	0.689	30	0.24	0.046	3.53	234	U	0.023	1.59	72	0.015	0.012	4.2	0.285	5.41	11.08	14.70	6.8	10.1
B11.07	B11.07	0.11	0.73	0.82	0.081	0.090	0	0.24	0.046	0.00	0	U	0.023	0.00	190	0.015	0.006	3.0	1.063	5.00	11.30	15.00	0.9	1.3
B11.08	B11.08	0.45	0.63	0.71	0.282	0.318	30	0.24	0.025	4.50	323	U	0.023	2.20	53	0.015	0.006	3.0	0.296	7.00	10.29	13.64	2.9	4.3

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

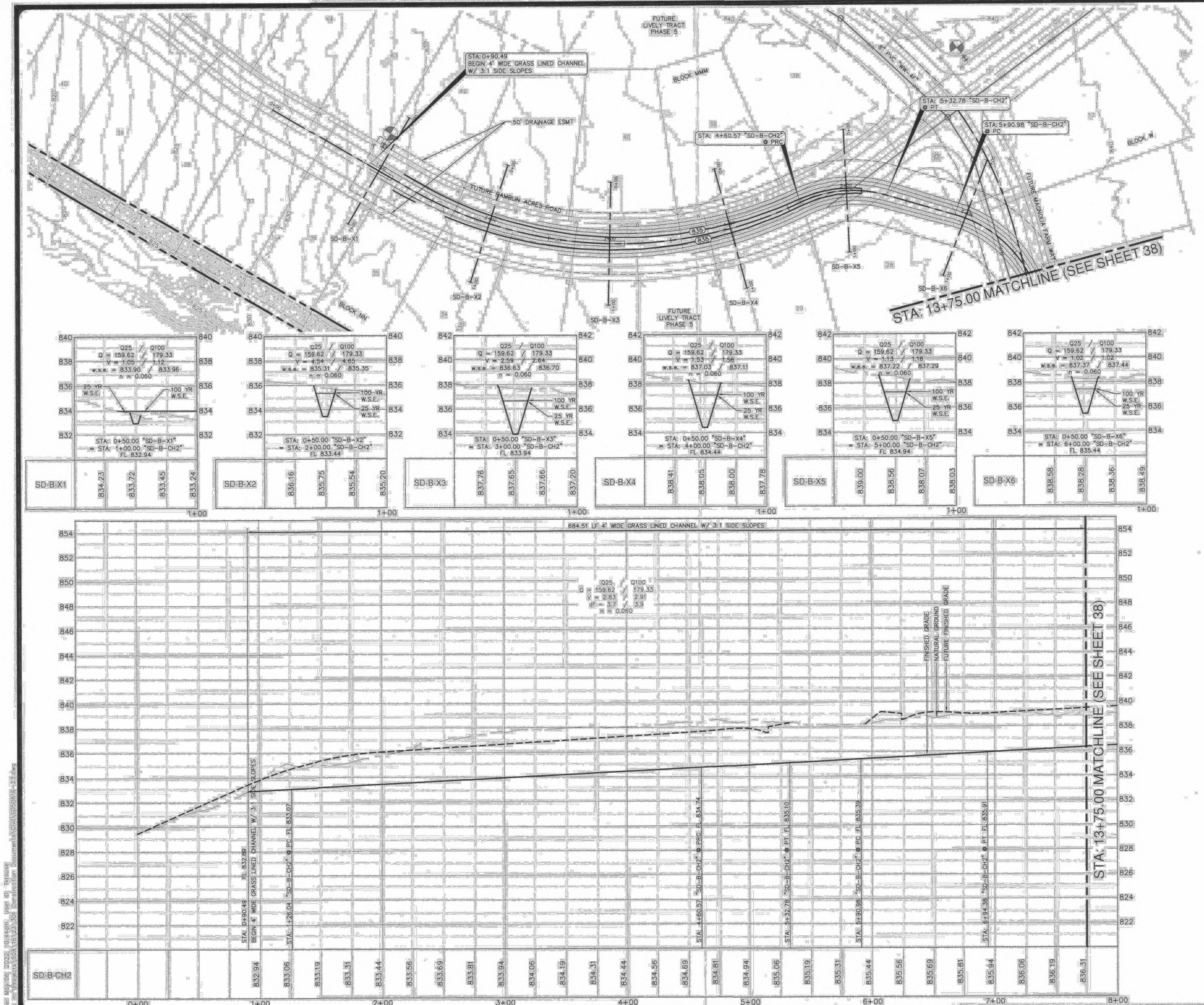
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
05/09/2022

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

DRAINAGE CALCULATIONS

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN RBB



SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

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5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

05/09/2022

PAPE-DAWSON ENGINEERS

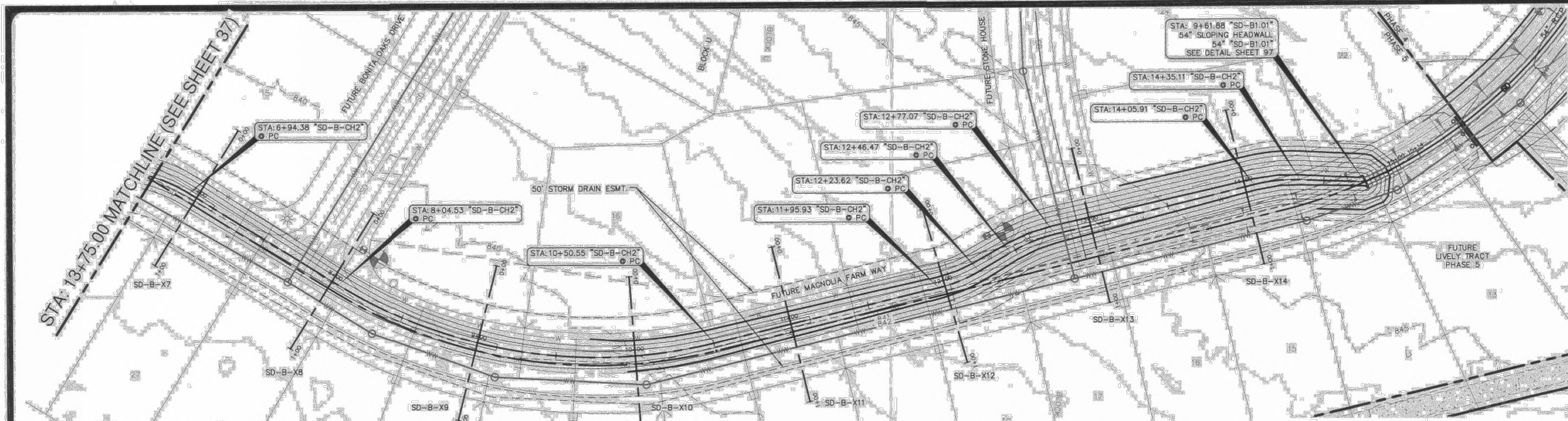
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

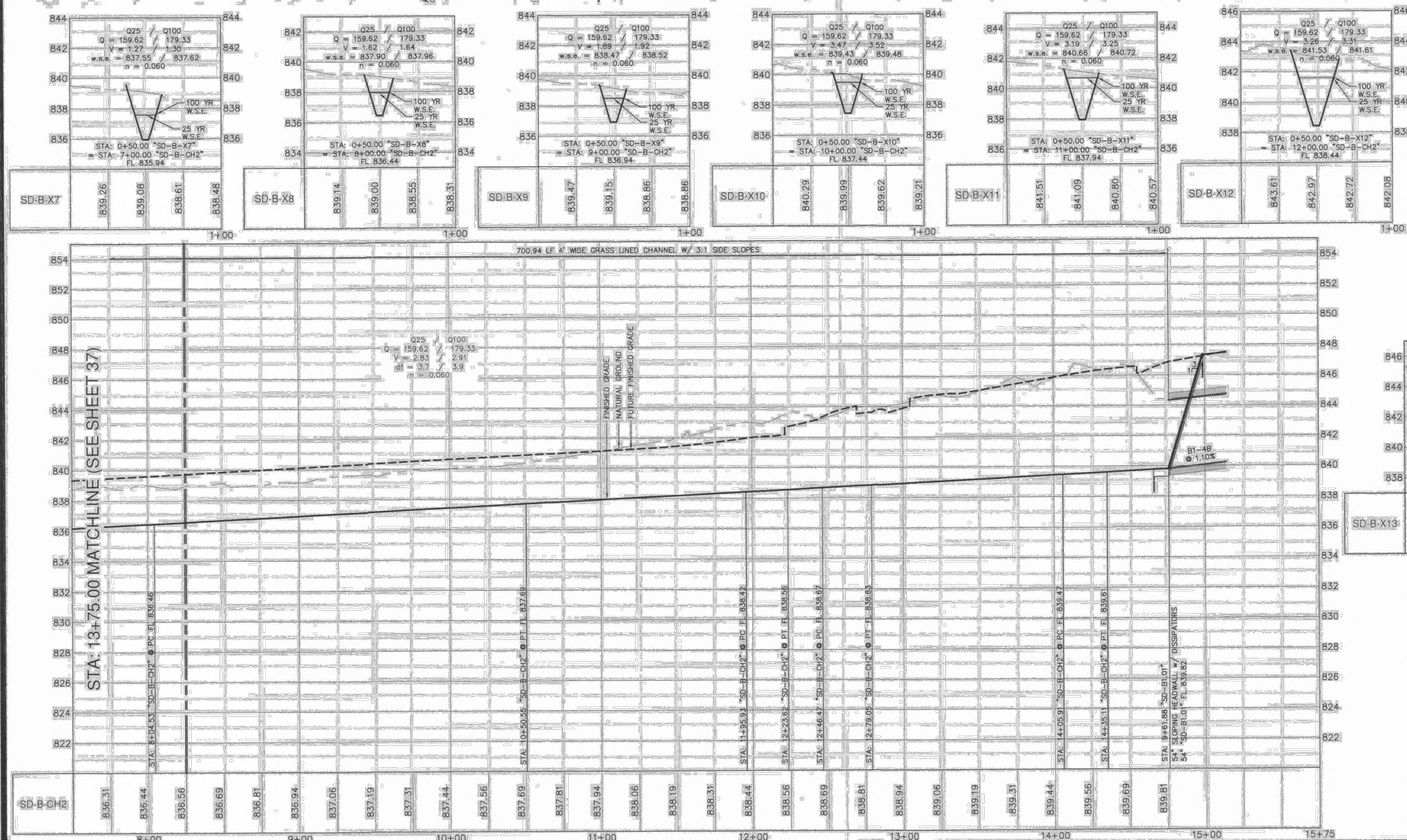
LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

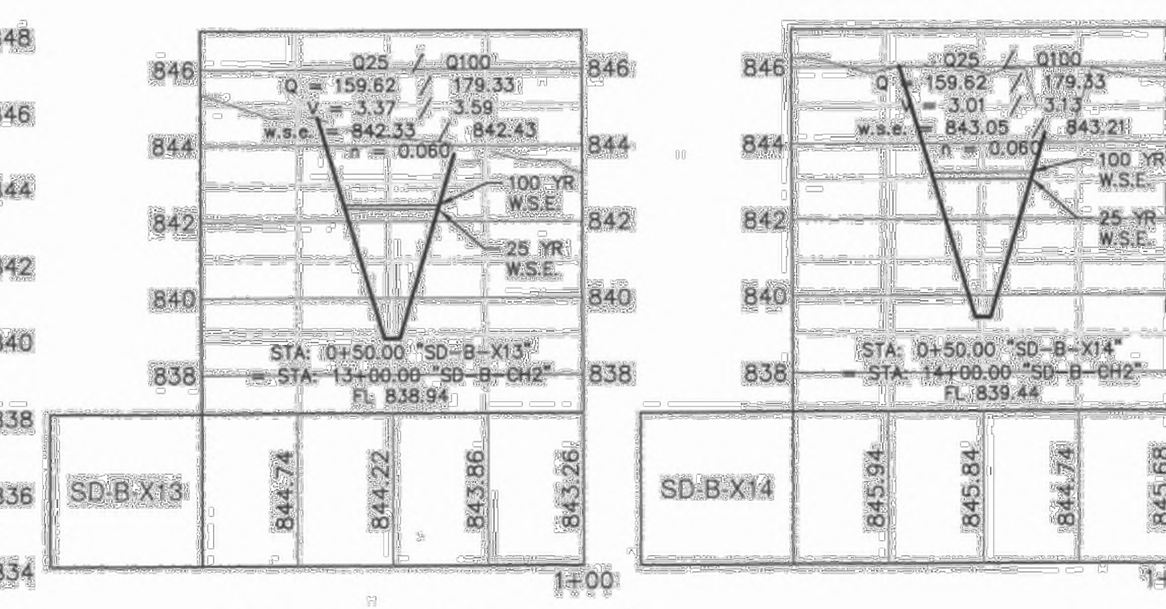
STORMDRAIN PLAN & PROFILE
LINE B-CH (1 OF 2)

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC

21-PICP-027







SCALE: 1" = 40'

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- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:
- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

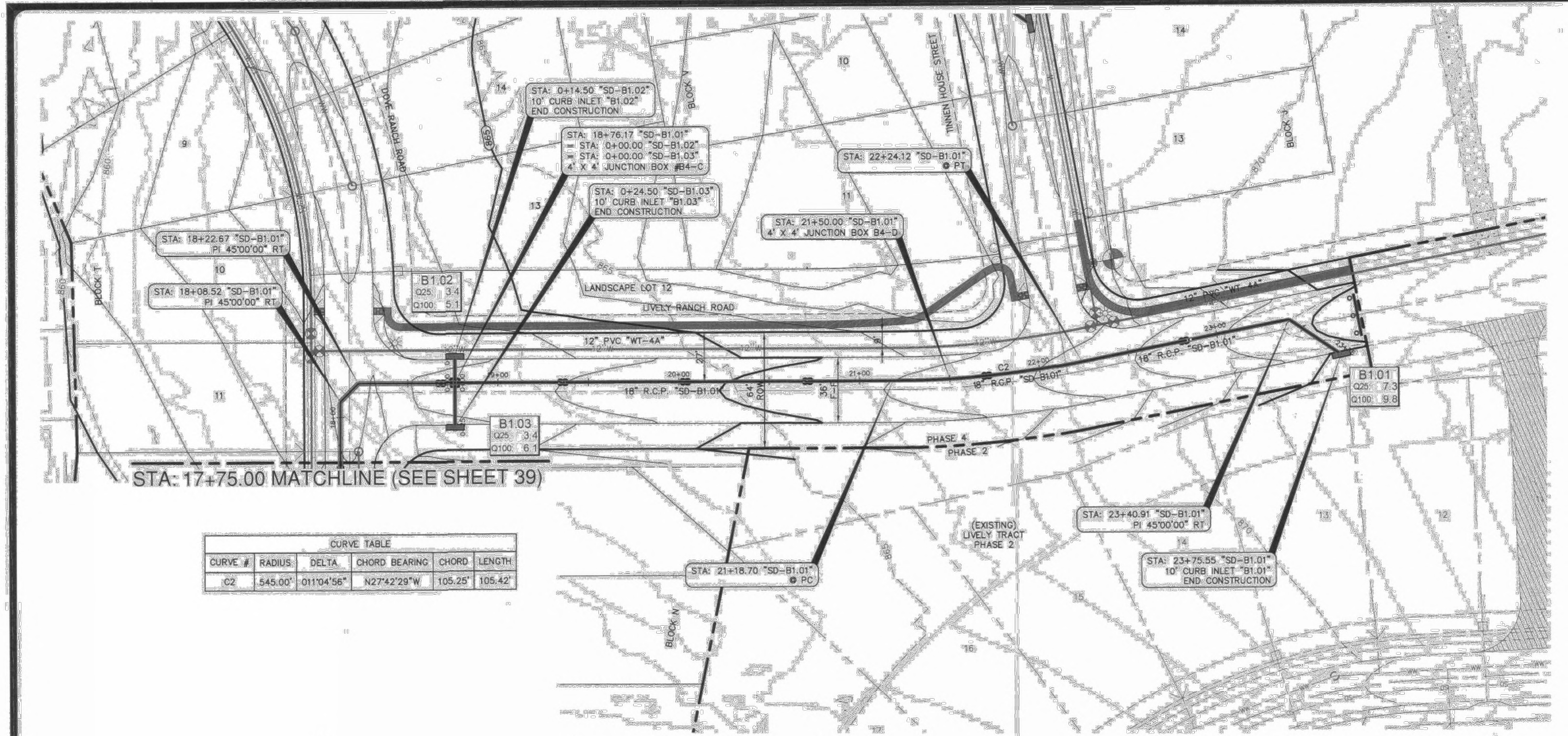
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

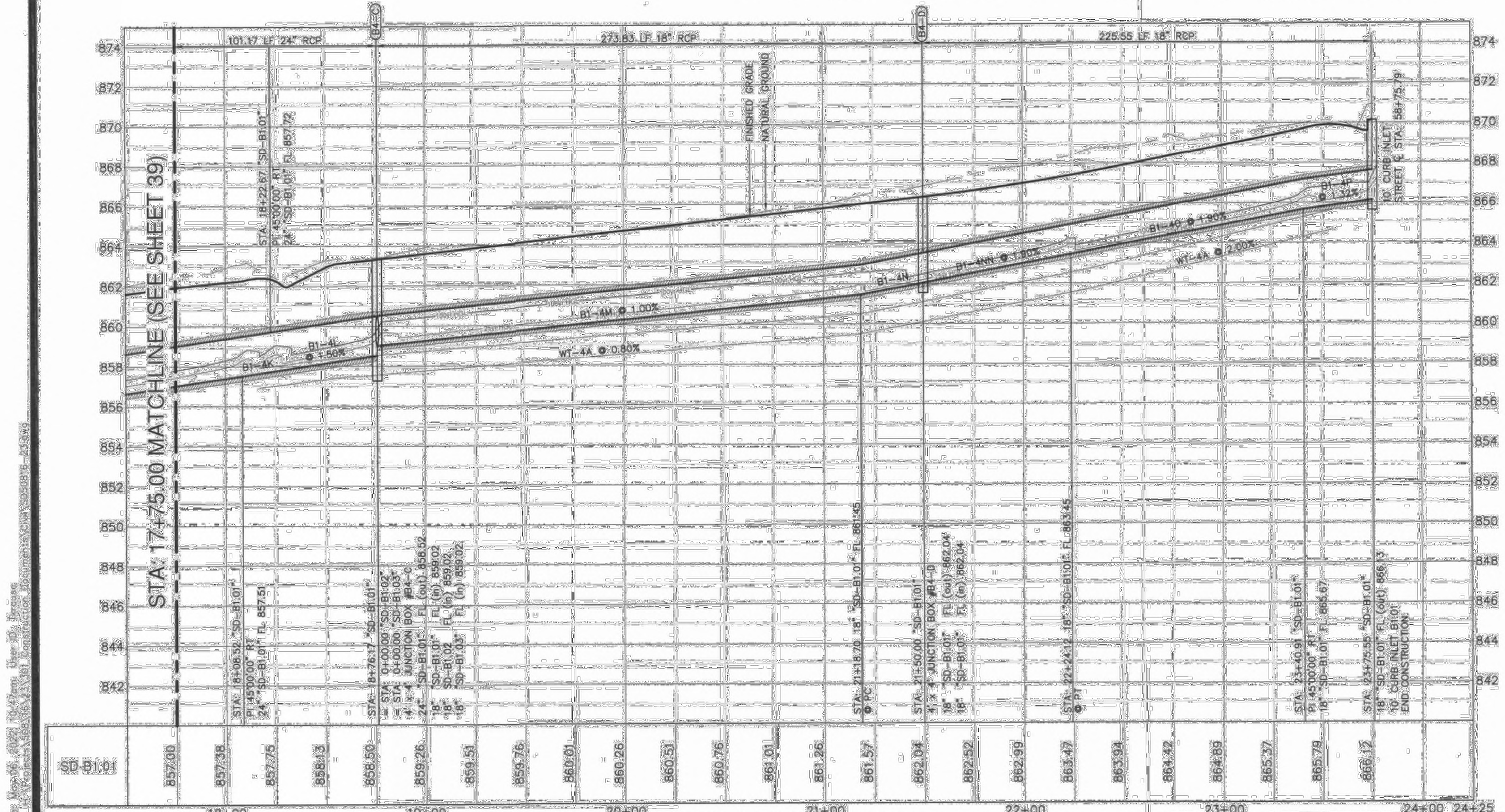
STORMDRAIN PLAN & PROFILE LINE B-CH (2 OF 2)

NO. | REVISION | DATE

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 21 of 83



CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C2	545.00'	011°04'56"	N27°42'29"W	105.25'	105.42'



SCALE: 1"= 40'

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LEGEND

WATER LINE
WASTEWATER LINE & MH
STORM DRAIN LINE & MH
CURB INLET
SINGLE WATER SERVICE
DOUBLE WATER SERVICE
SINGLE WW SERVICE
DOUBLE WW SERVICE
GATE VALVE
FIRE HYDRANT
EXISTING GATE VALVE
EXISTING FIRE HYDRANT
EXISTING WATER LINE
EXISTING WASTEWATER LINE
EXISTING STORM DRAIN LINE
EXISTING CONTOUR LINE
PROPOSED CONTOUR LINE
INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-4K	12.34	9.09	1.45	858.98	858.96
B1-4L	12.38	9.09	1.45	859.79	859.17
B1-4M	7.31	6.84	1.22	862.49	860.24
B1-4N	7.36	8.74	0.72	864.5	862.17
B1-4O	7.42	8.76	0.73	866.72	864.18
B1-4P	7.44	7.64	1.22	867.18	866.89

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-4K	18.8	10.08	1.84	859.28	859.34
B1-4L	18.9	10.09	1.84	860.08	859.56
B1-4M	11.2	6.32	1.70	863.06	860.72
B1-4N	11.3	9.65	1.62	864.73	863.06
B1-4O	11.3	9.67	0.95	866.95	864.40
B1-4P	11.4	8.34	1.55	867.48	867.22

APPROVED

CITY OF LEANDER APPROVAL

NO. REVISION DATE

PAPE-DAWSON ENGINEERS

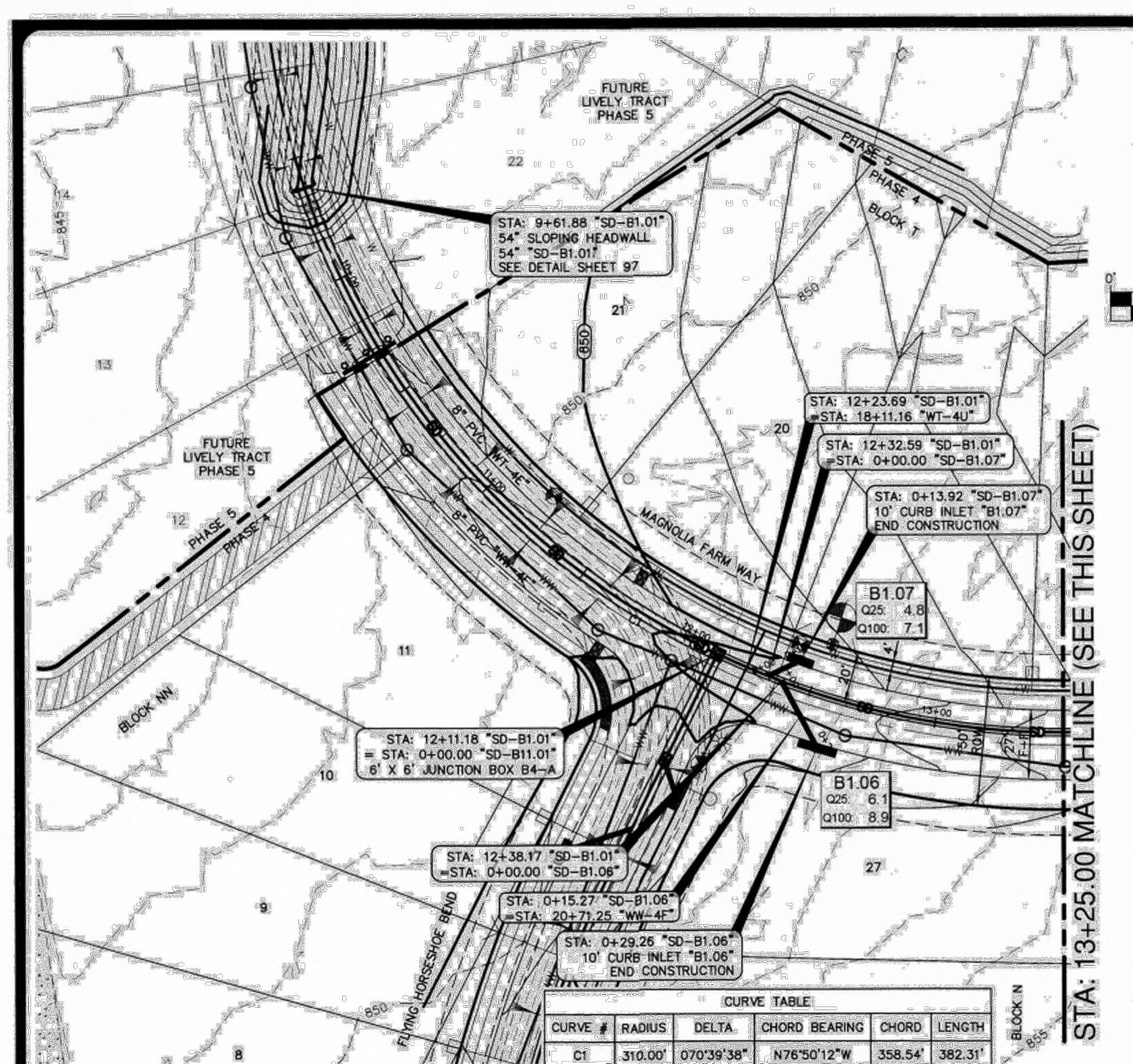
LIVELY TRACT, PHASE 4

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B1.01 (2 OF 2)

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 22 of 83

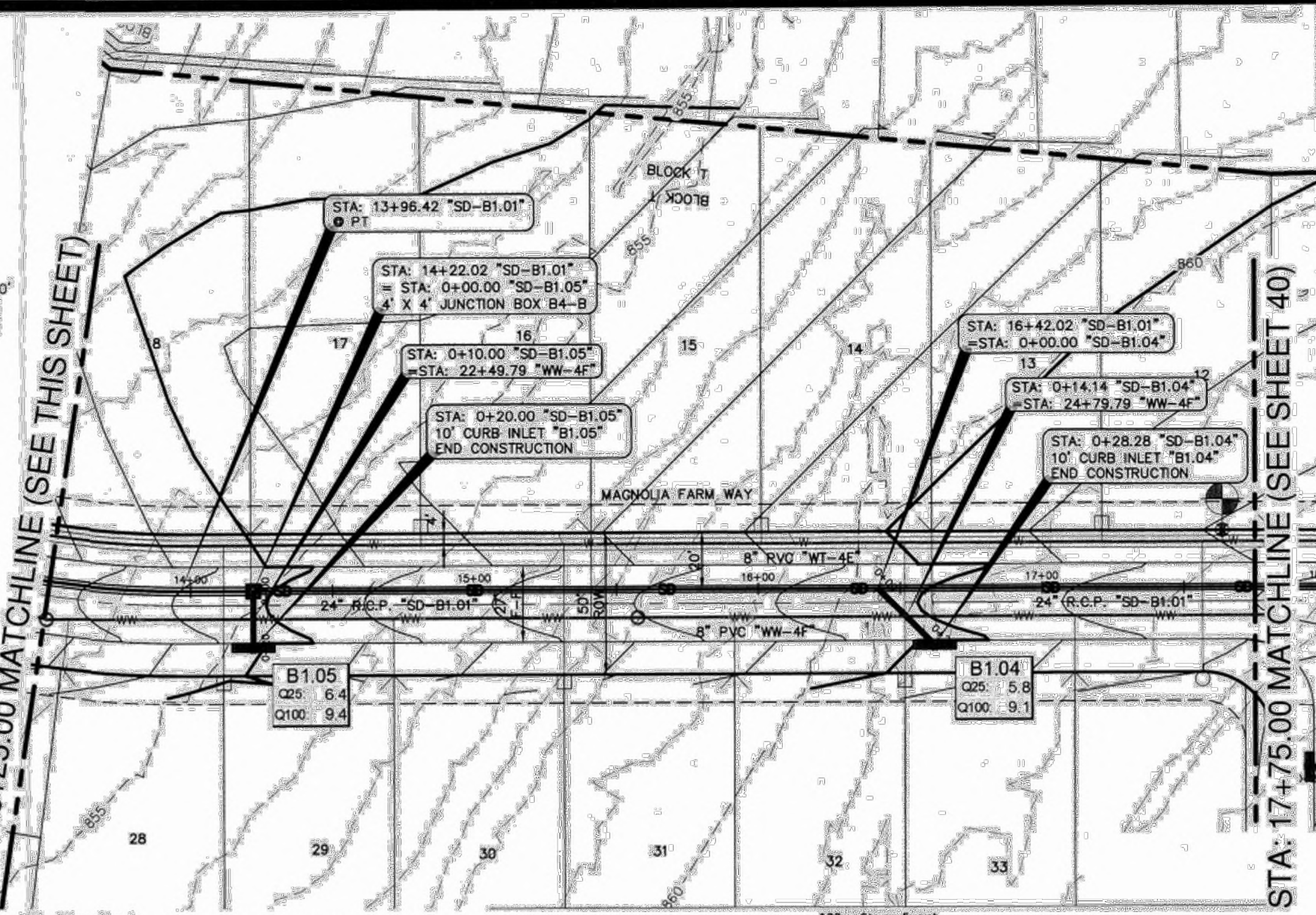
21-PICP-027



SCALE: 1" = 40'

CURVE TABLE

CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	310.00'	070°39'38"	N76°50'12"W	358.54'	382.31'



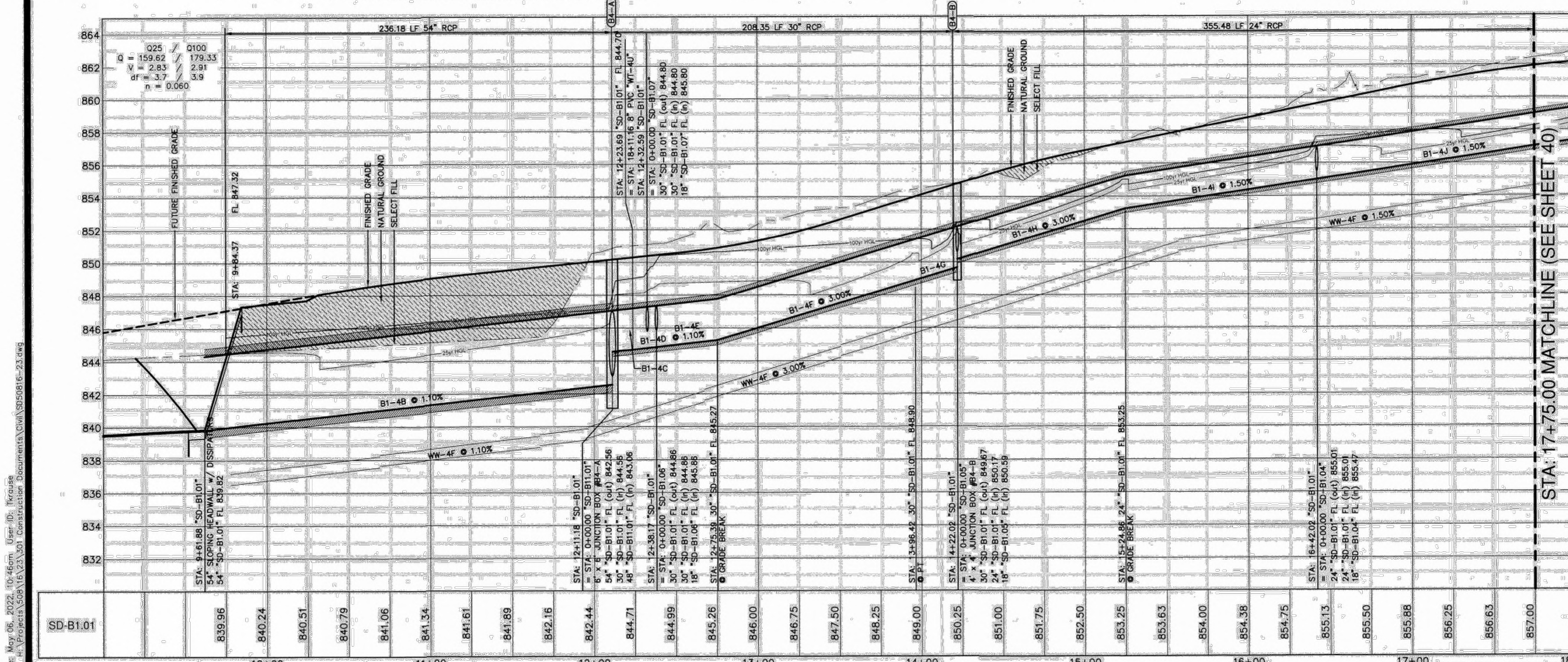
SCALE: 1" = 40'

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-4B	159.9	15.27	4.50	846.28	844.49
B1-4C	32.1	6.54	3.49	848.16	848.05
B1-4D	28.8	5.87	3.63	848.45	848.43
B1-4E	23.2	4.73	3.87	848.83	848.73
B1-4F	23.3	13.74	3.56	850.54	848.83
B1-4G	23.3	13.75	1.17	851.24	850.07
B1-4H	17.4	12.85	1.72	854.76	851.82
B1-4I	17.6	9.93	1.11	856.48	854.36
B1-4J	12.33	9.08	2.07	858.77	857.04

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-4B	179.95	11.31	5.51	847.19	845.5
B1-4C	48.38	9.85	4.33	849.15	848.89
B1-4D	43.48	8.86	4.95	849.8	849.74
B1-4E	35.07	7.14	5.56	850.65	850.42
B1-4F	35.37	7.21	5.38	851.42	850.65
B1-4G	35.4	15.35	2.52	851.61	851.42
B1-4H	26.58	14.26	2.32	855.05	852.41
B1-4I	26.73	10.8	1.49	856.77	854.74
B1-4J	18.78	10.08	2.64	859.07	857.61



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LEGEND

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- STORM DRAIN LINE & MH
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- SINGLE WW SERVICE
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- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
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- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q_{25}:Q25 Q_{100}:Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

JUSTIN J. GOSS — LICENSED PROFESSIONAL ENGINEER — 05/09/2022

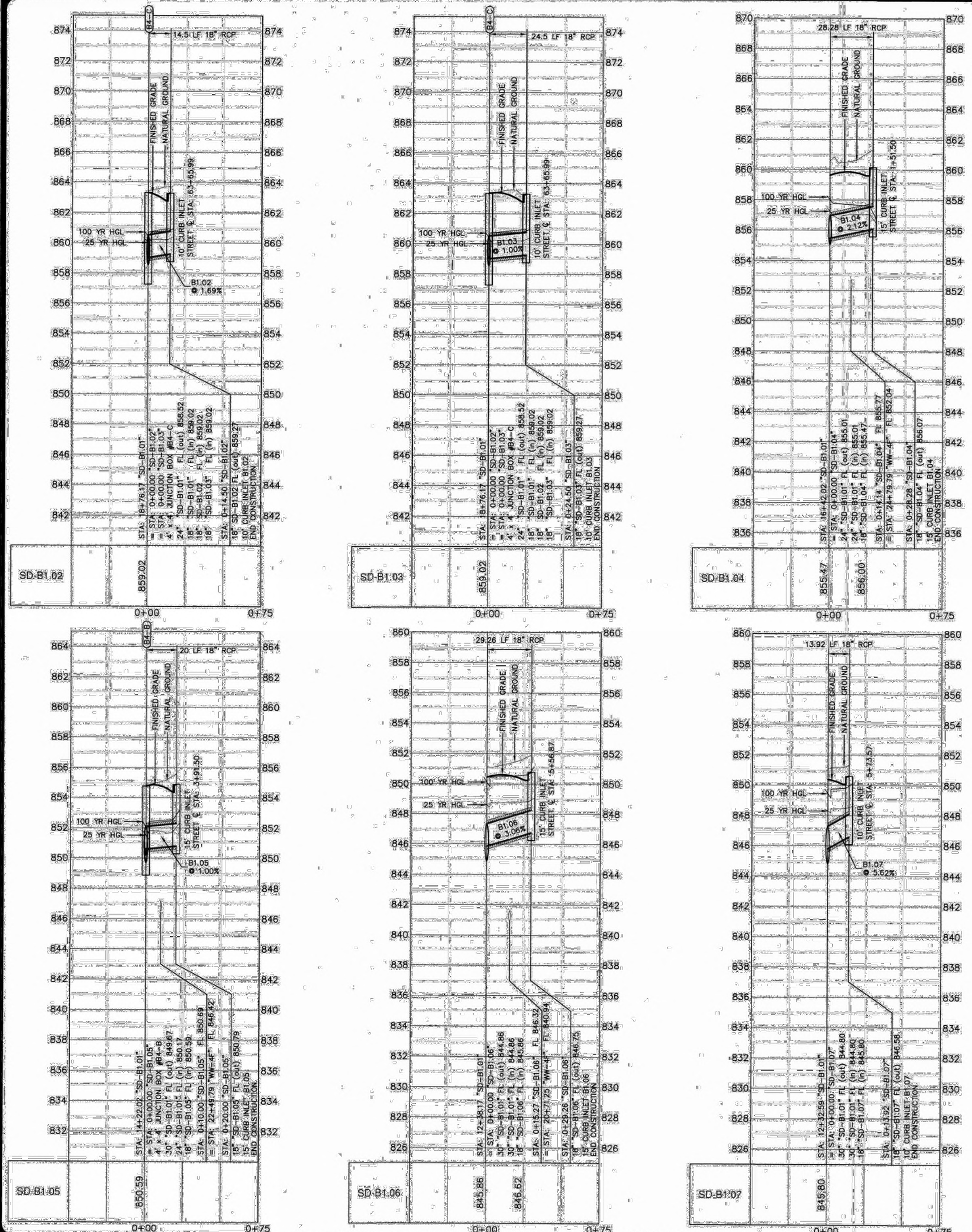
PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B1.01 (1 OF 2)

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 23 of 83



25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.02	3.4	6.8	1.22	860.2	860.24
B1.03	3.45	5.65	1.22	860.22	860.24
B1.04	5.83	8.56	1.57	857	857.04
B1.05	6.47	6.65	1.22	851.78	851.82
B1.06	6.16	3.49	2.26	848.81	848.73
B1.07	4.8	2.73	1.99	848.45	848.43

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.02	5.17	7.63	1.7	860.75	860.72
B1.03	5.22	2.95	1.7	860.78	860.72
B1.04	8.84	5	2.14	857.78	857.61
B1.05	9.76	5.52	1.82	852.56	852.41
B1.06	9.24	5.23	3.96	850.61	850.42
B1.07	7.2	4.06	3.30	849.80	849.74

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PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 05/09/2022

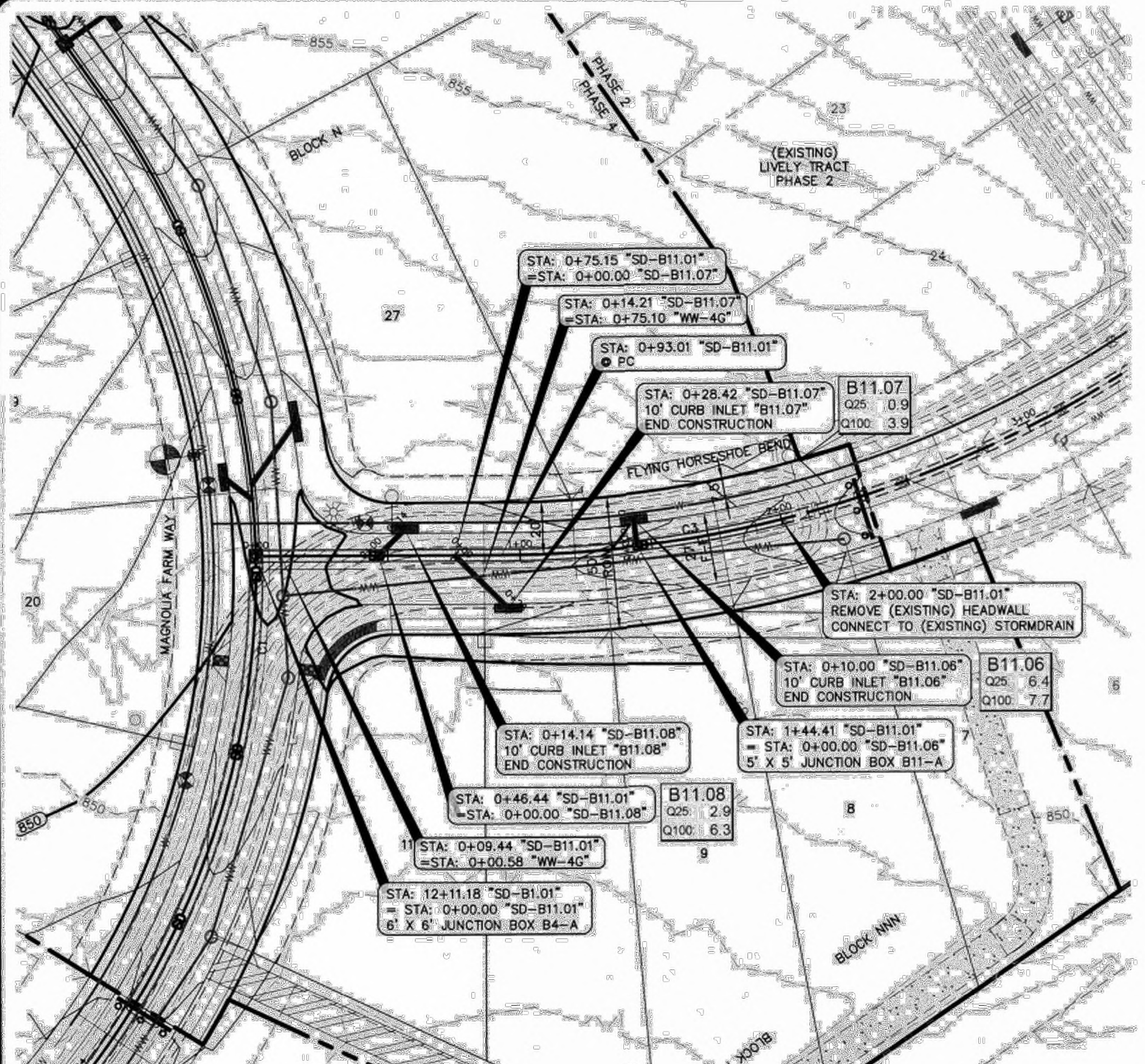
PAPE-DAWSON ENGINEERS

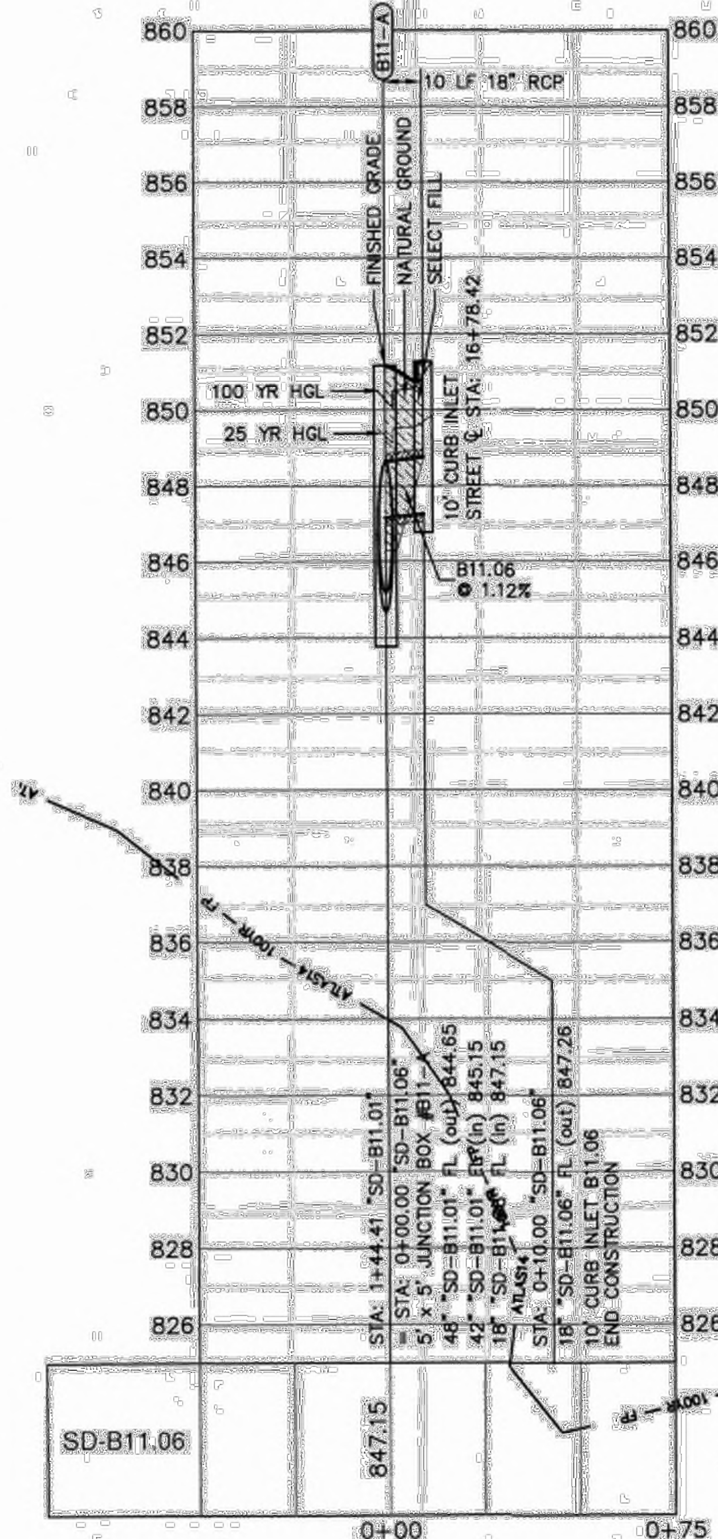
LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

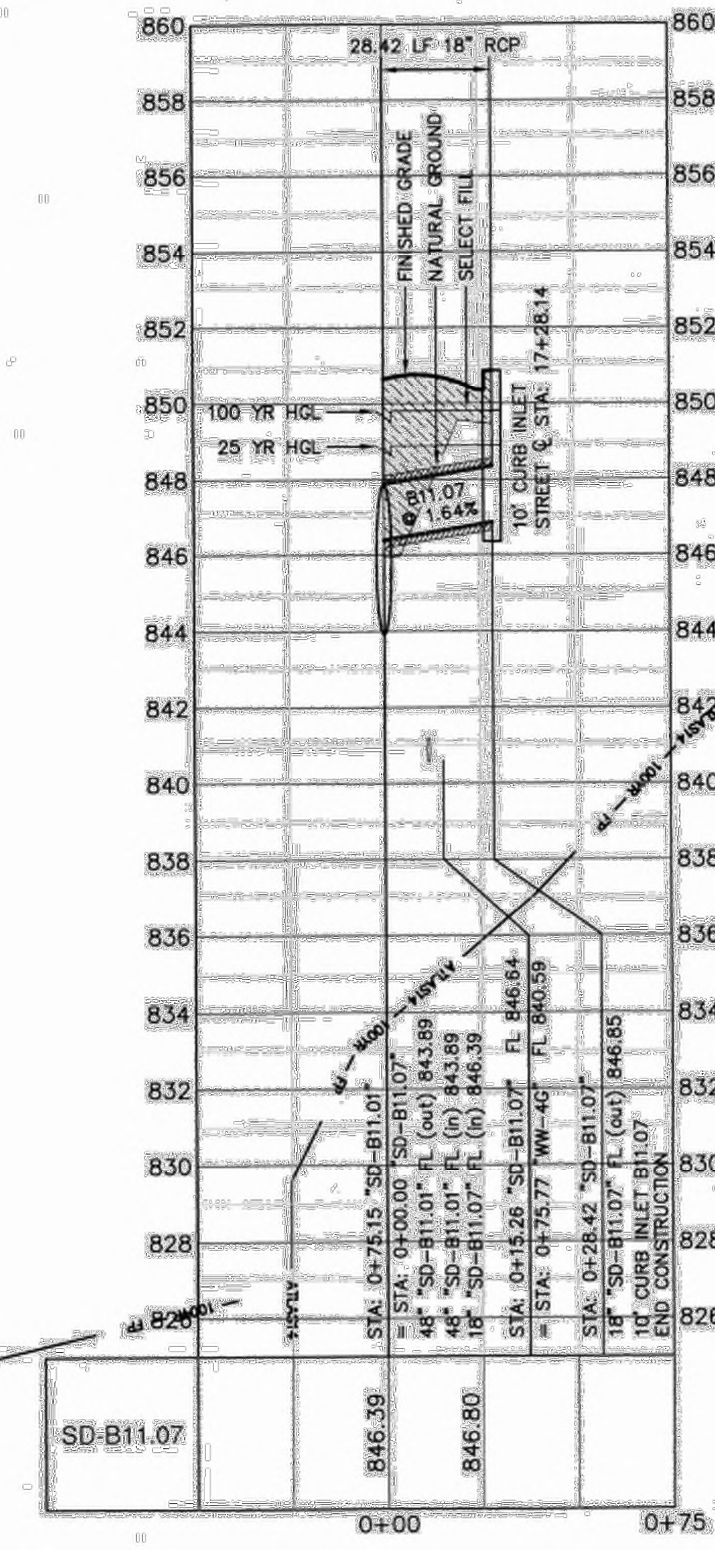
STORMDRAIN PLAN & PROFILE
LINE SD-B1.02-B1.07 LATERALS

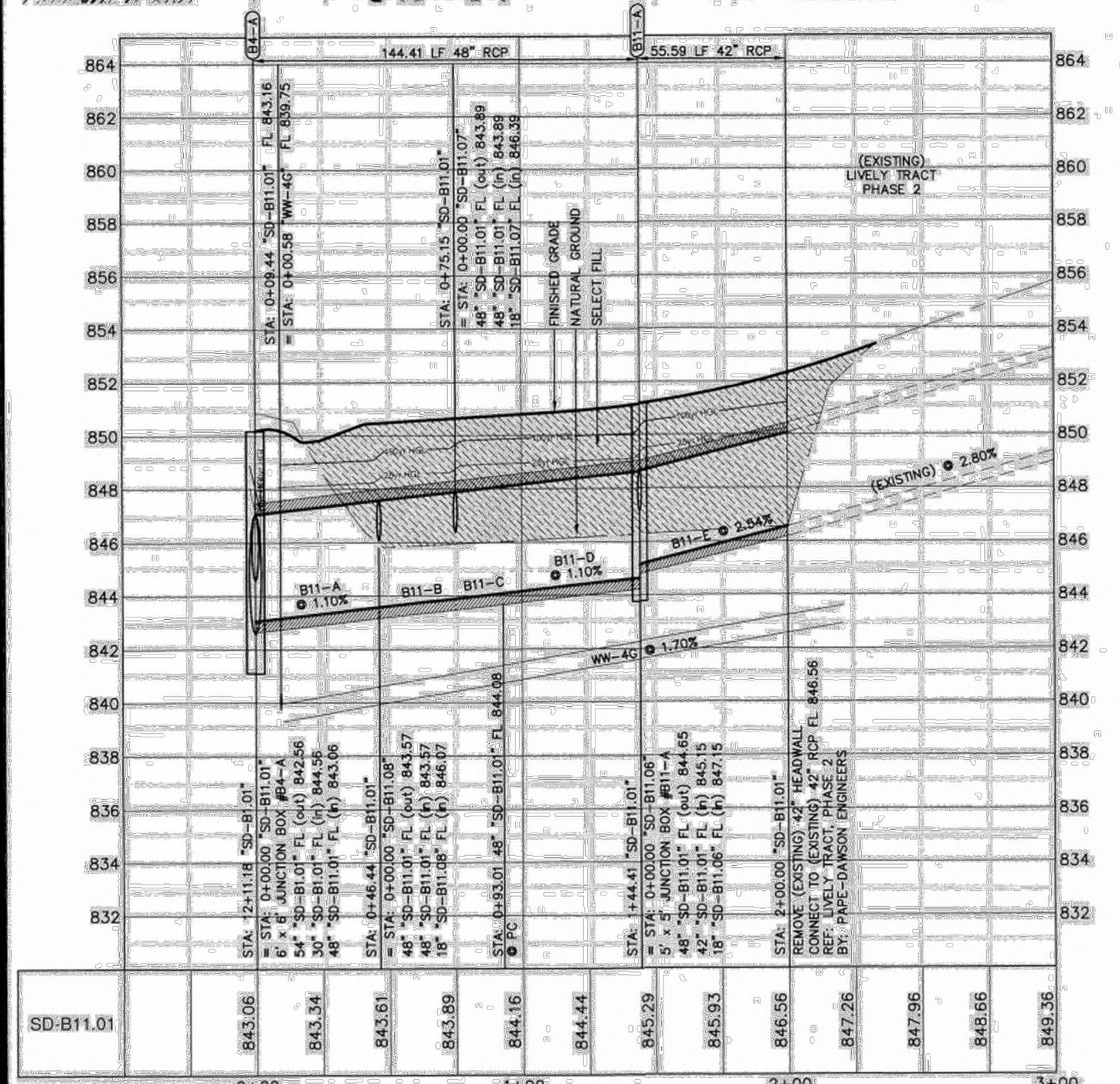
CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 24 of 83

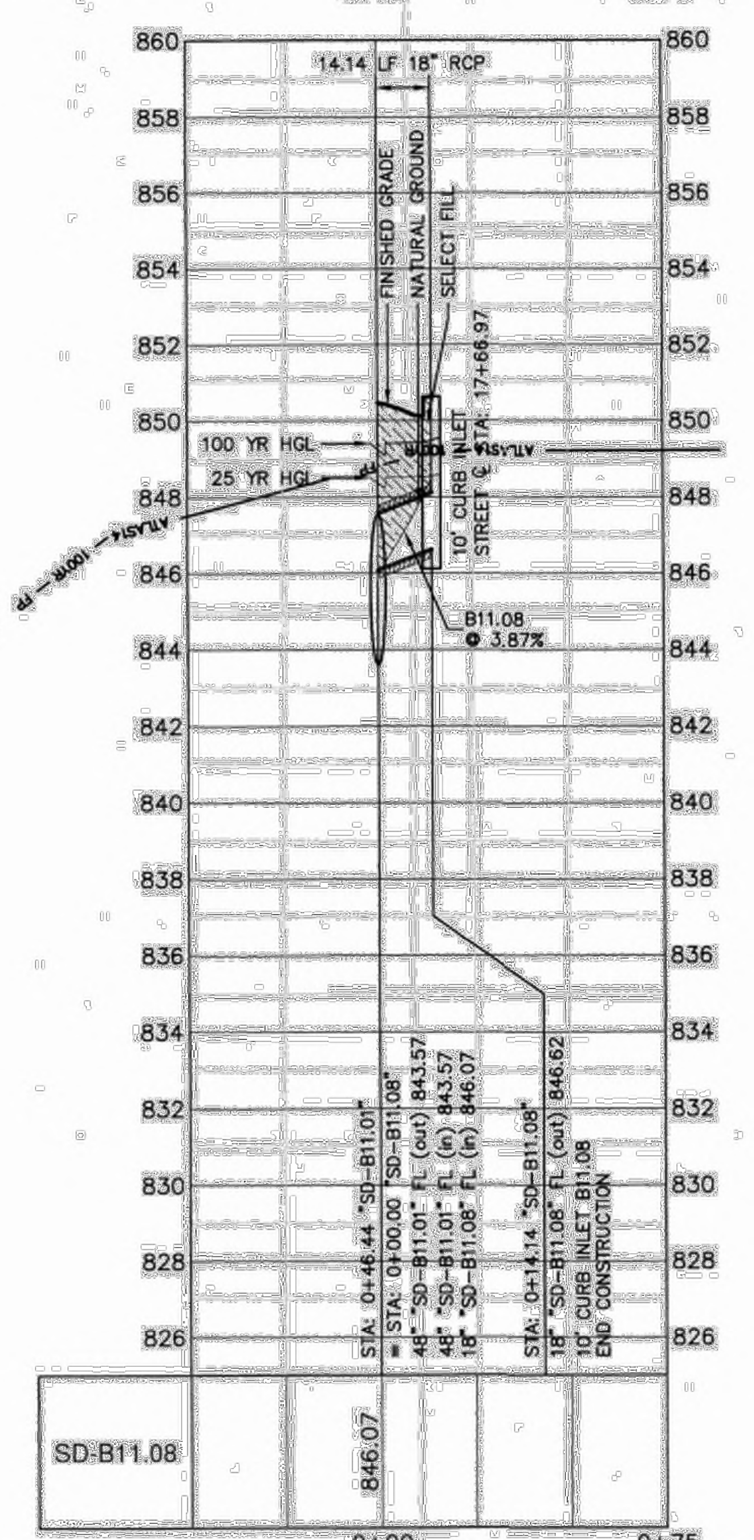
21-PICP-027











25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-A	130.3	8.19	5.49	848.23	848.05
B11-B	127.8	8.04	5.45	848.62	848.52
B11-C	127.0	7.99	5.49	848.94	848.88
B11-D	127.1	7.99	5.36	849.13	848.94
B11-E	120.3	12.50	4.36	850.19	849.51
B11.06	6.8	3.85	2.36	849.55	849.51
B11.07	0.9	0.52	2.49	848.88	848.88
B11.08	2.9	1.66	2.44	848.53	848.52

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B11-A	135.3	8.51	6.33	849.08	848.89
B11-B	131.7	8.28	6.34	849.52	849.41
B11-C	130.4	8.20	6.41	849.87	849.80
B11-D	130.5	8.20	6.29	850.06	849.87
B11-E	120.3	12.50	5.35	851.17	850.50
B11.06	10.2	5.78	3.35	850.58	850.50
B11.07	1.4	0.77	3.41	849.80	849.80
B11.08	4.4	2.47	3.33	849.43	849.41

SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE

#01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

SUBGRADE

PROPOSED STORM DRAIN

25-YR HGL

100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C3	445.00'	013°46'32"	N06°06'25"E	106.73'	106.99'

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

05/09/2022

PAPE-DAWSON ENGINEERS

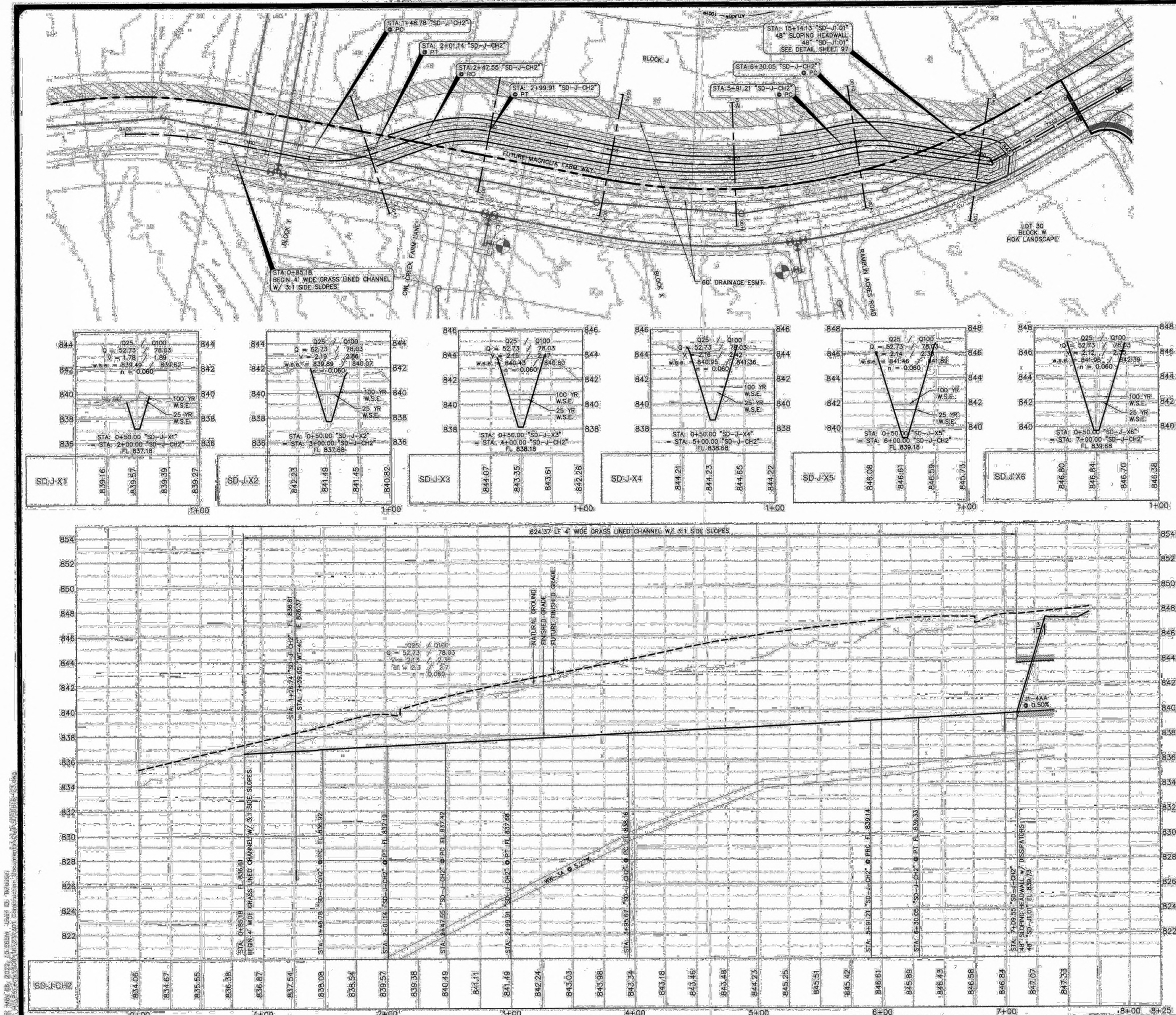
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B11.01 & B11.06-B11.08

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC



SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
05/09/2022

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE J-CH

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 26 of 83

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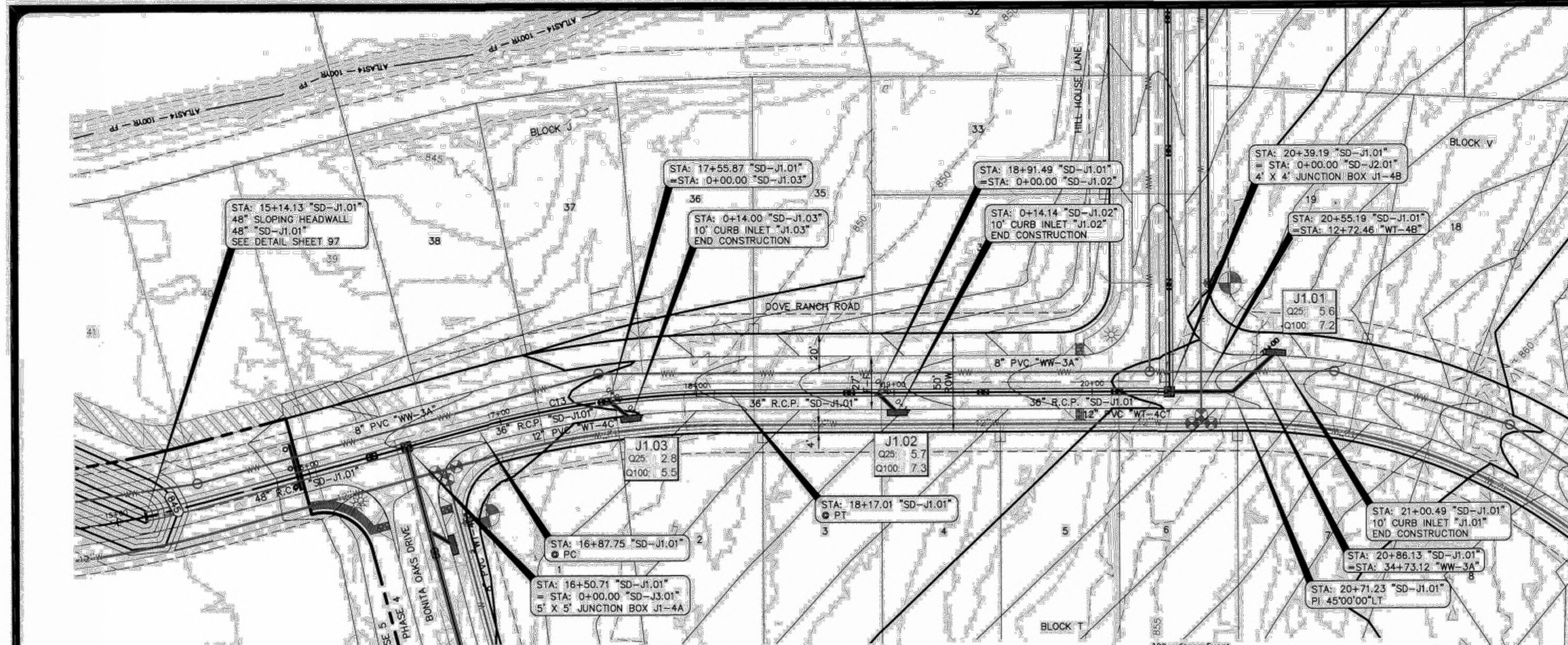
21-PICP-027

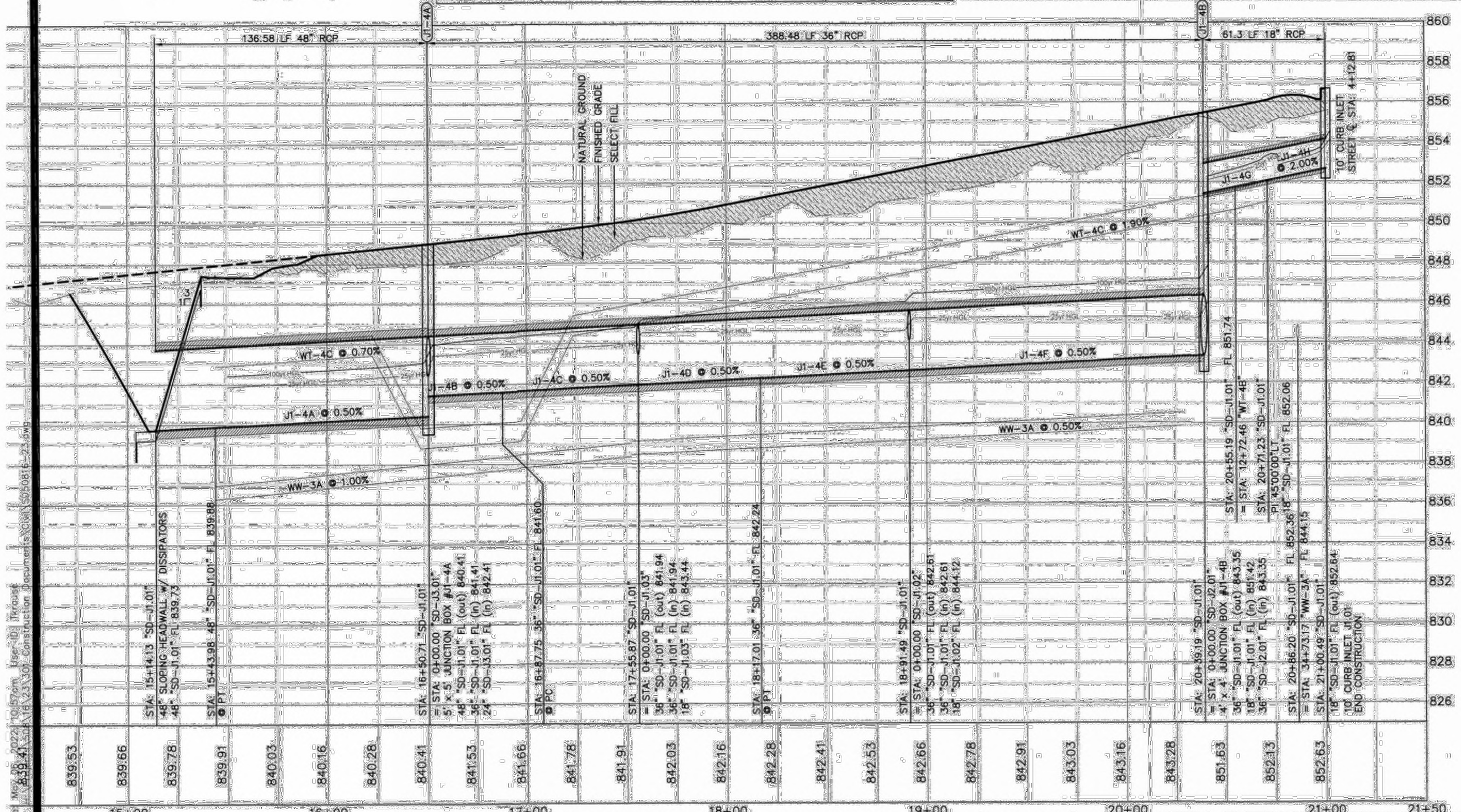


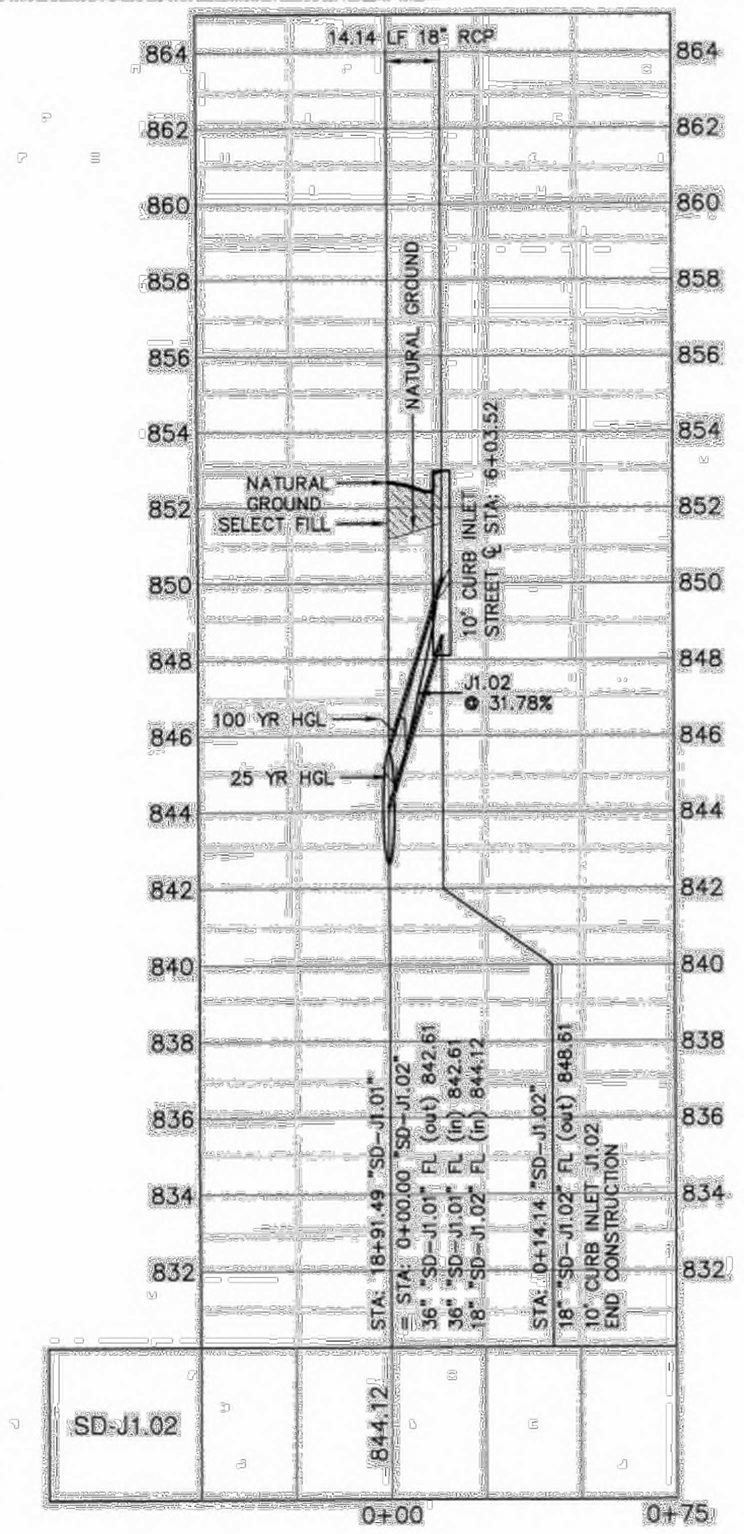
25 yr Storm Event

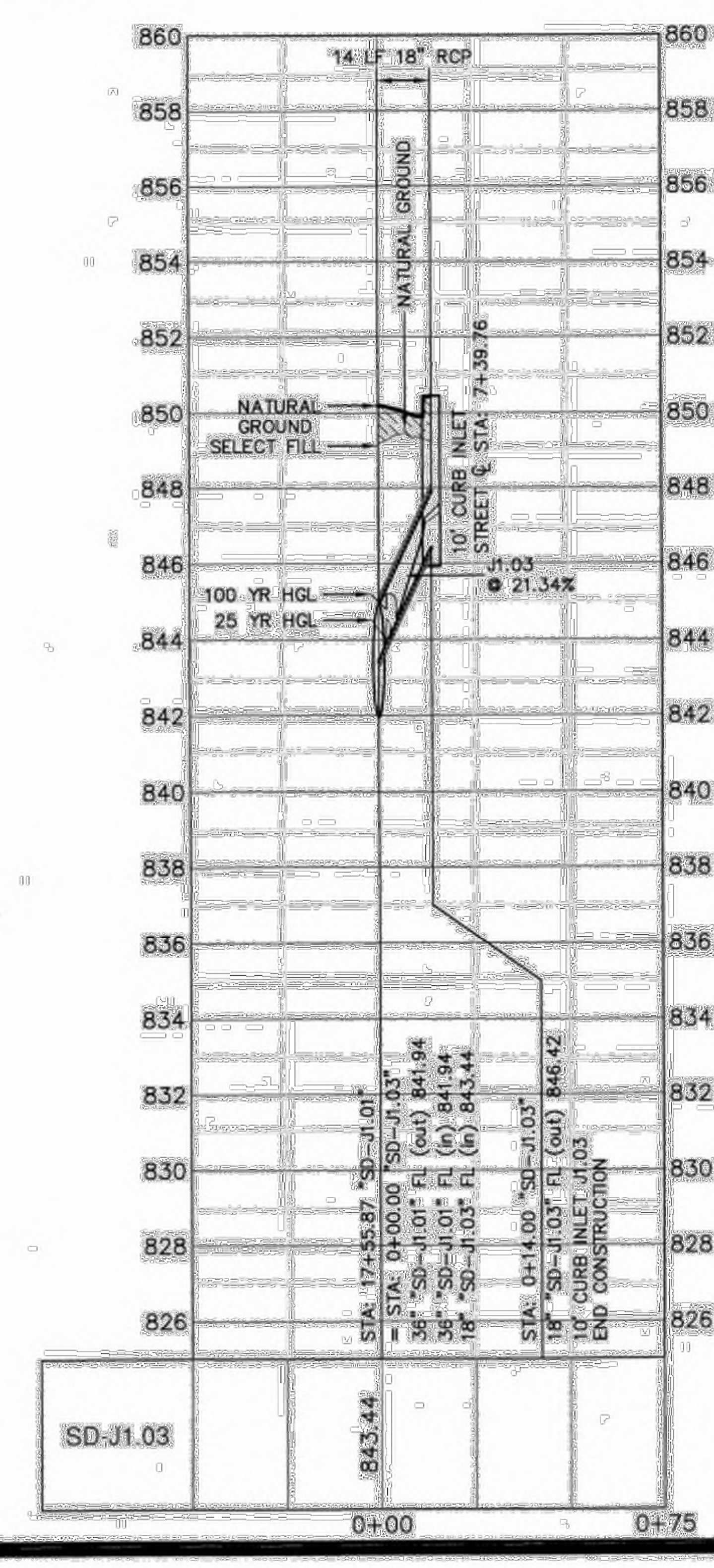
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-4A	53.03	8.68	1.97	842.6	841.88
J1-4B	40.14	8	2.01	843.66	843.42
J1-4C	40.31	8.01	2.01	844.01	843.61
J1-4D	38.31	7.93	2.6	844.61	844.54
J1-4E	38.49	7.94	2.36	844.64	844.61
J1-4F	34.14	7.74	2.6	845.25	845.21
J1-4G	5.82	8.37	0.67	852.99	852.08
J1-4H	5.83	8.37	1.07	853.58	853.13
J1.02	5.98	22.36	1.1	849.56	845.21
J1.03	2.79	15.65	1.1	847.06	844.54

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-4A	78.63	6.26	4.89	845.06	844.8
J1-4B	59.58	8.43	3.98	845.64	845.39
J1-4C	59.81	8.46	4.04	846.11	845.64
J1-4D	56.87	8.04	4.53	846.85	846.47
J1-4E	57.12	8.08	4.6	847.31	846.85
J1-4F	50.73	7.18	5.11	848.45	847.73
J1-4G	8.73	9.29	0.85	853.2	852.27
J1-4H	8.74	9.3	1.34	853.79	853.4
J1.02	8.91	25.1	3.61	849.77	847.73
J1.03	4.15	17.6	3.03	847.21	846.47







SCALE: 1" = 40'

NOTES:

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LEGEND

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- EXISTING FIRE HYDRANT
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- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE

CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C13	495.00'	014°57'41"	S11°25'05"E	128.89'	129.26'

CITY OF LEANDER APPROVAL

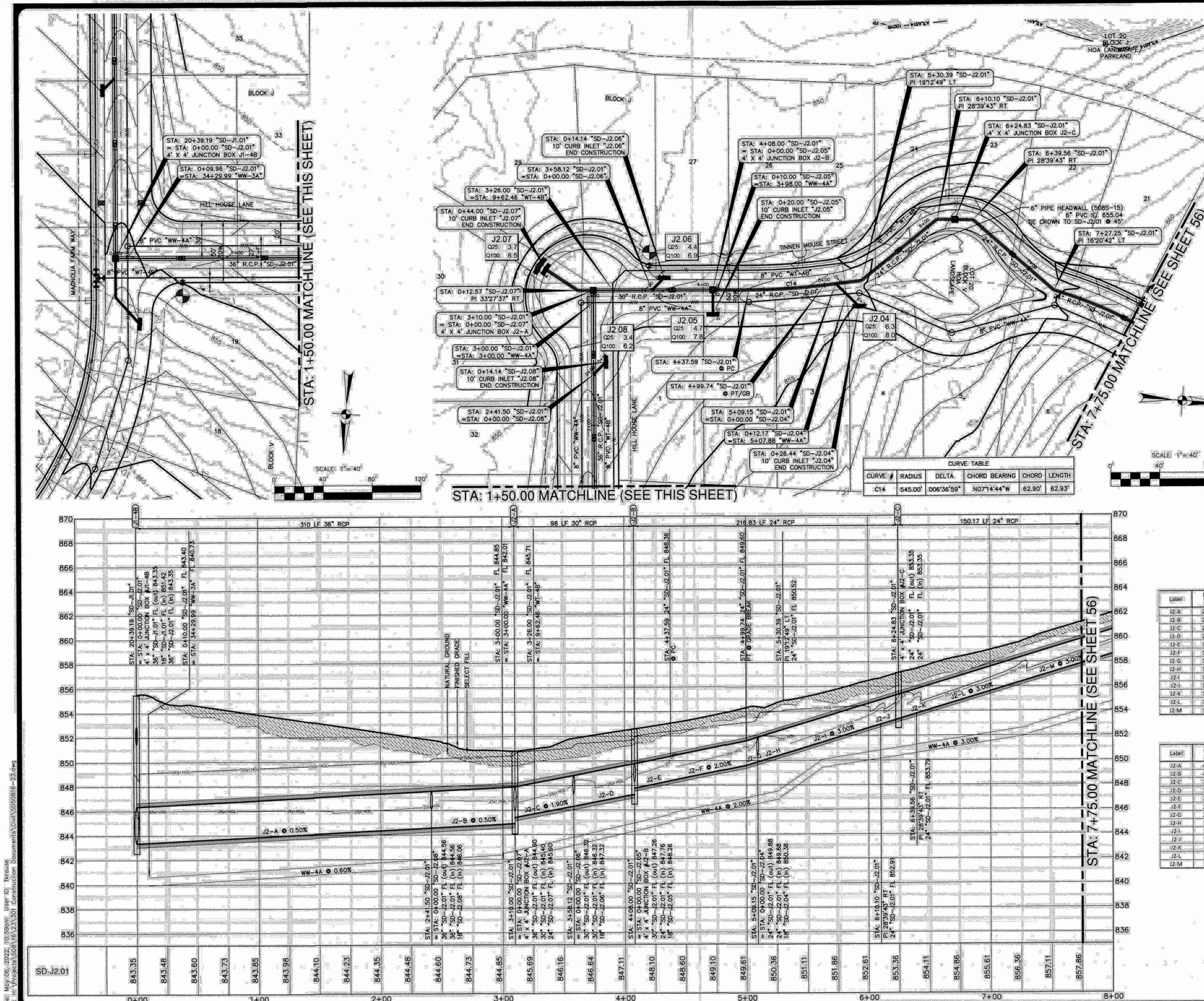
DUSTIN J. GOSS
LICENSED PROFESSIONAL ENGINEER
05/09/2022

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N. MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-J1.01

CITY JOB No.	21-PICP-027
JOB NO.	50816-23
DATE	MAY 2022
DESIGNER	RBB
CHECKED	PS
DRAWN	ABC
SHEET	27 of 83



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- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2-A	29.61	7.49	2.63	846.32	845.99
J2-B	27.01	7.33	2.22	846.75	846.79
J2-C	24.17	11.74	1.71	847.99	847.12
J2-D	21.14	11.33	2.16	848.83	848.48
J2-E	17.27	11.02	1.56	849.86	849.33
J2-F	17.32	11.03	1.06	851.1	849.42
J2-G	17.33	12.83	1.19	851.38	850.79
J2-H	11.47	11.47	2.08	851.74	851.96
J2-I	11.52	11.49	1.32	854.13	851.84
J2-J	11.52	11.49	1.37	854.57	854.28
J2-K	11.53	11.49	1.67	855.01	855.02
J2-L	11.58	11.51	1.37	857.65	855.17
J2-M	11.63	11.52	1.32	860.27	857.75

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2-A	44.21	6.25	5.75	850.01	849.1
J2-B	40.36	5.71	5.67	850.45	850.23
J2-C	36.19	7.37	5.34	851.06	850.74
J2-D	31.75	6.47	5.1	851.67	851.42
J2-E	25.99	8.27	4.29	852.39	852.06
J2-F	26.09	8.3	4.03	853.1	852.39
J2-G	26.11	8.31	3.49	853.2	853.1
J2-H	17.33	5.52	4.04	854.04	853.92
J2-I	17.39	12.84	3.51	854.34	854.14
J2-J	17.39	12.84	1.72	854.6	854.56
J2-K	17.4	12.84	2.12	855.23	855.22
J2-L	17.45	12.85	2.02	857.05	855.38
J2-M	17.54	12.87	1.65	860.87	857.19

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

DUSTIN J. GOSS
91805
LICENSED
05/09/2022

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-J2.01 (1 OF 2)

CITY JOB NO. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 28 of 83

Date: May 05, 2022, 10:59am User ID: Tkrause
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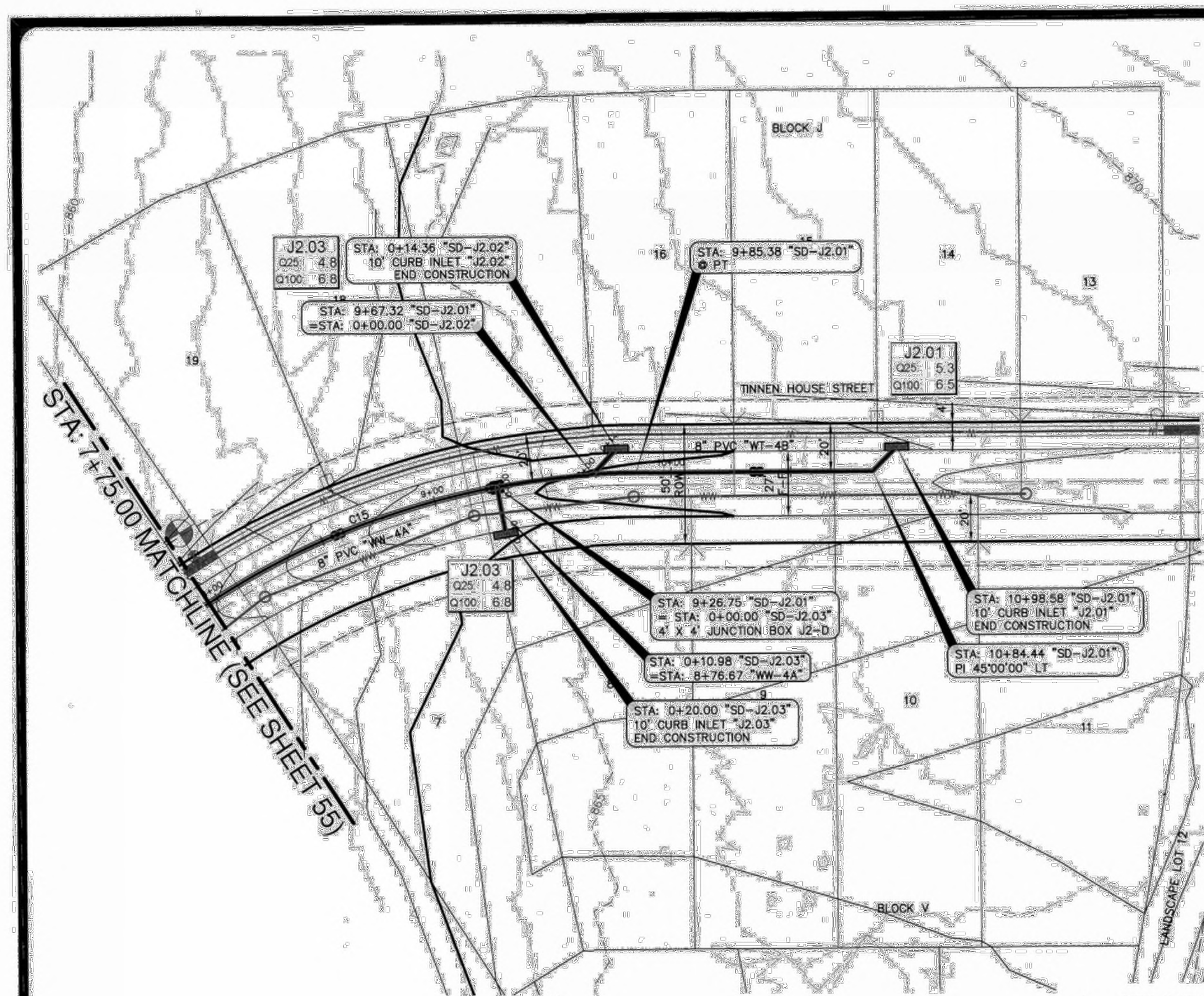

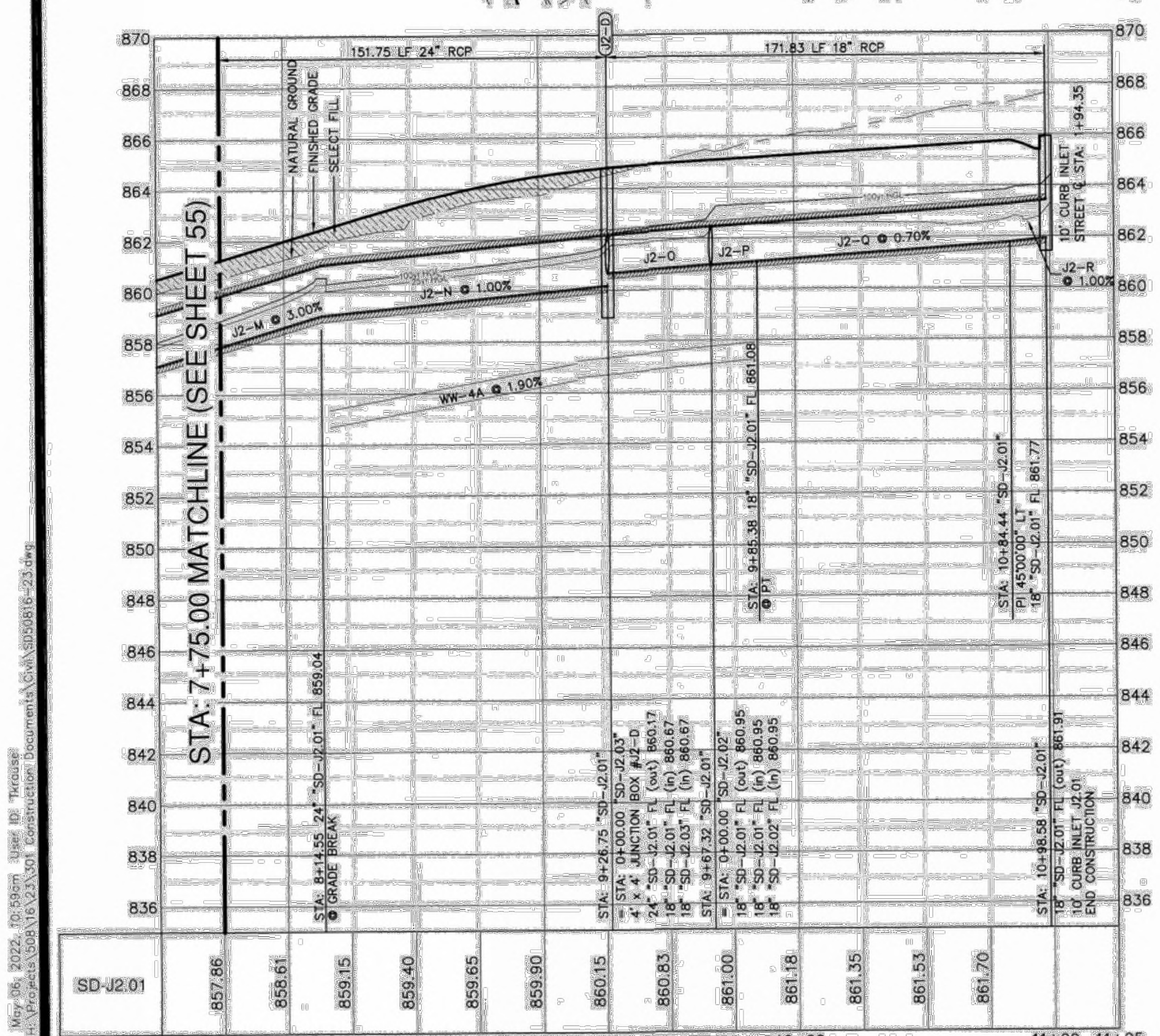

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2-M	11.63	11.52	1.32	860.27	857.75
J2-N	11.72	7.72	0.97	861.4	860.02
J2-O	8.25	6.07	1.12	862.06	861.78
J2-P	5.28	5.53	1.54	862.53	862.5
J2-Q	5.33	5.54	1.45	862.66	862.53
J2-R	5.34	6.34	1.02	862.8	862.79

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2-M	17.54	12.87	1.65	860.87	857.19
J2-N	17.63	8.49	1.27	861.68	860.63
J2-O	12.4	7.02	1.56	862.71	862.23
J2-P	7.94	4.49	2.29	863.33	863.24
J2-Q	8.04	4.55	2.25	863.83	863.33
J2-R	8.05	4.56	2.17	864.01	863.94

SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

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2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
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LEGEND

- WATER LINE
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- SINGLE WW SERVICE
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- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C15	330.00'	044°48'58"	S35°06'29"W	251.59'	258.12'

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 05/09/2022

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

LIVELY TRACT, PHASE 4

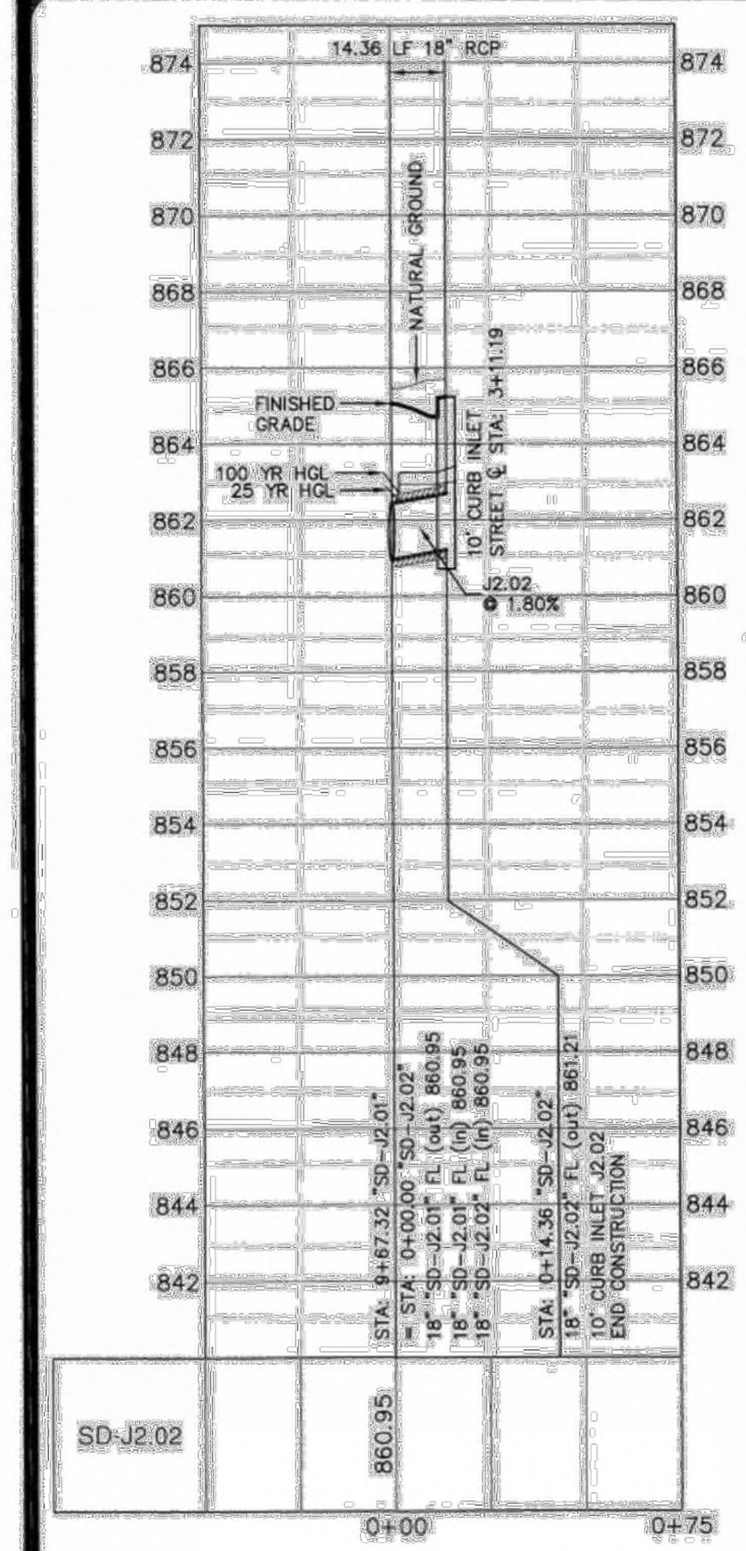
CITY OF LEANDER, TEXAS

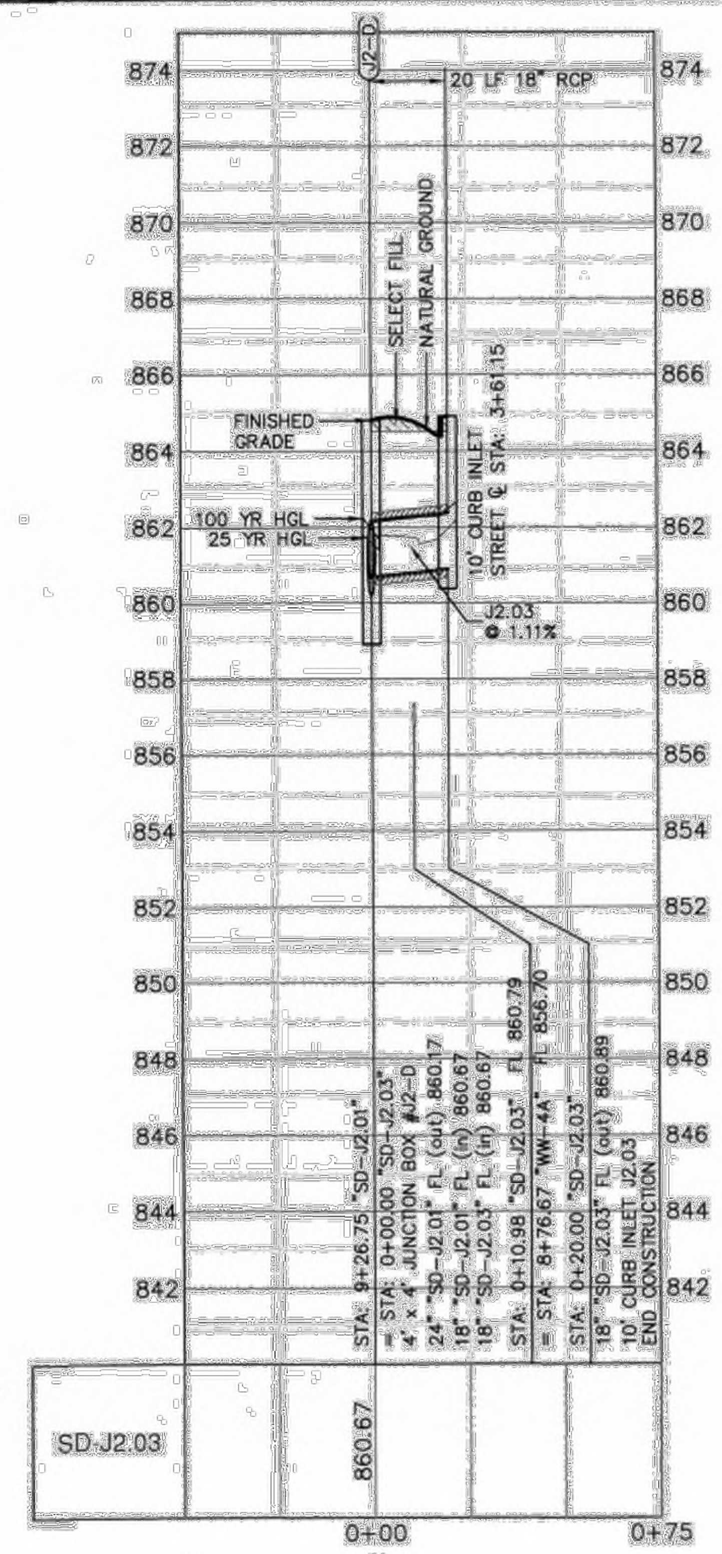
STORMDRAIN PLAN & PROFILE LINE SD-J2.01 (2 OF 2)

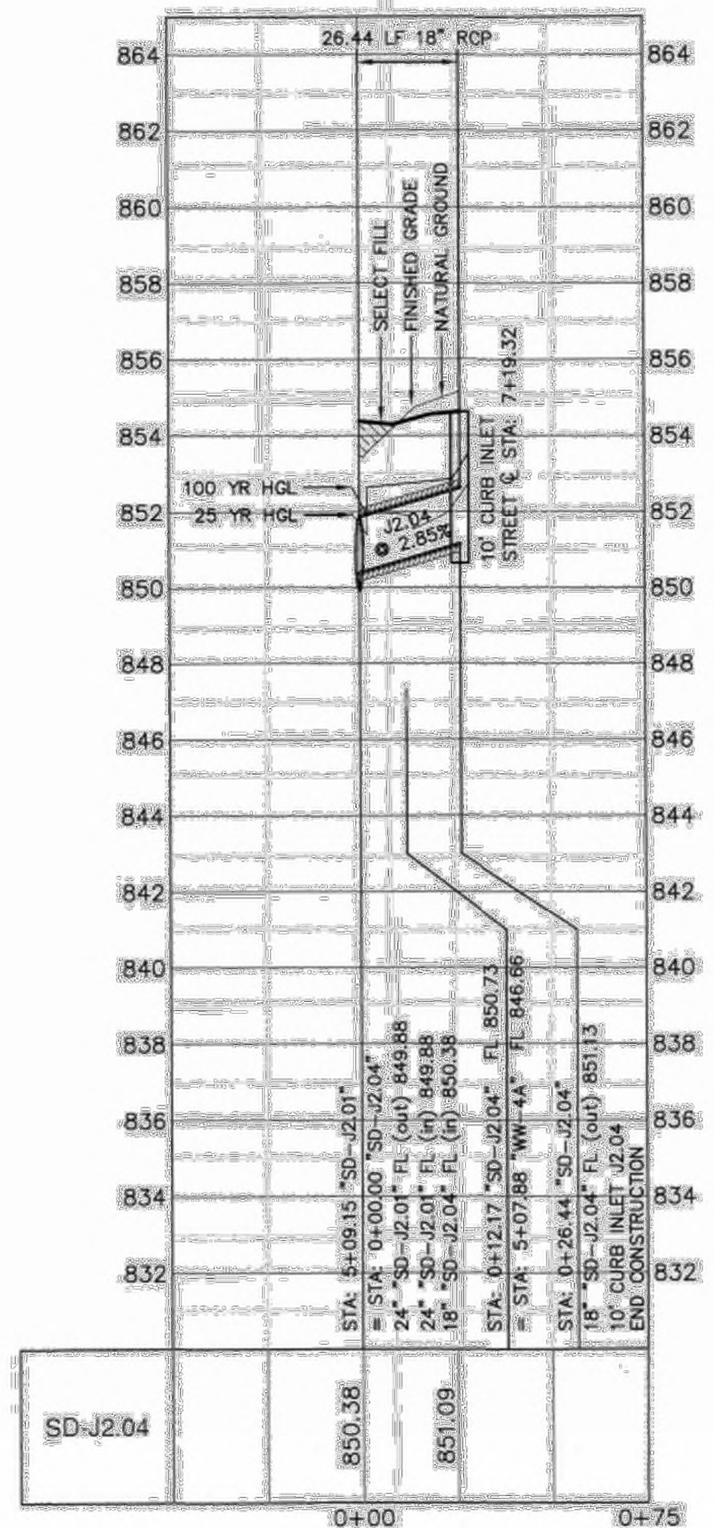
CITY JOB No.	21-PICP-027
JOB NO.	50816-23
DATE	MAY 2022
DESIGNER	RBB
CHECKED	PS DRAWN ABG
SHEET	29 of 83

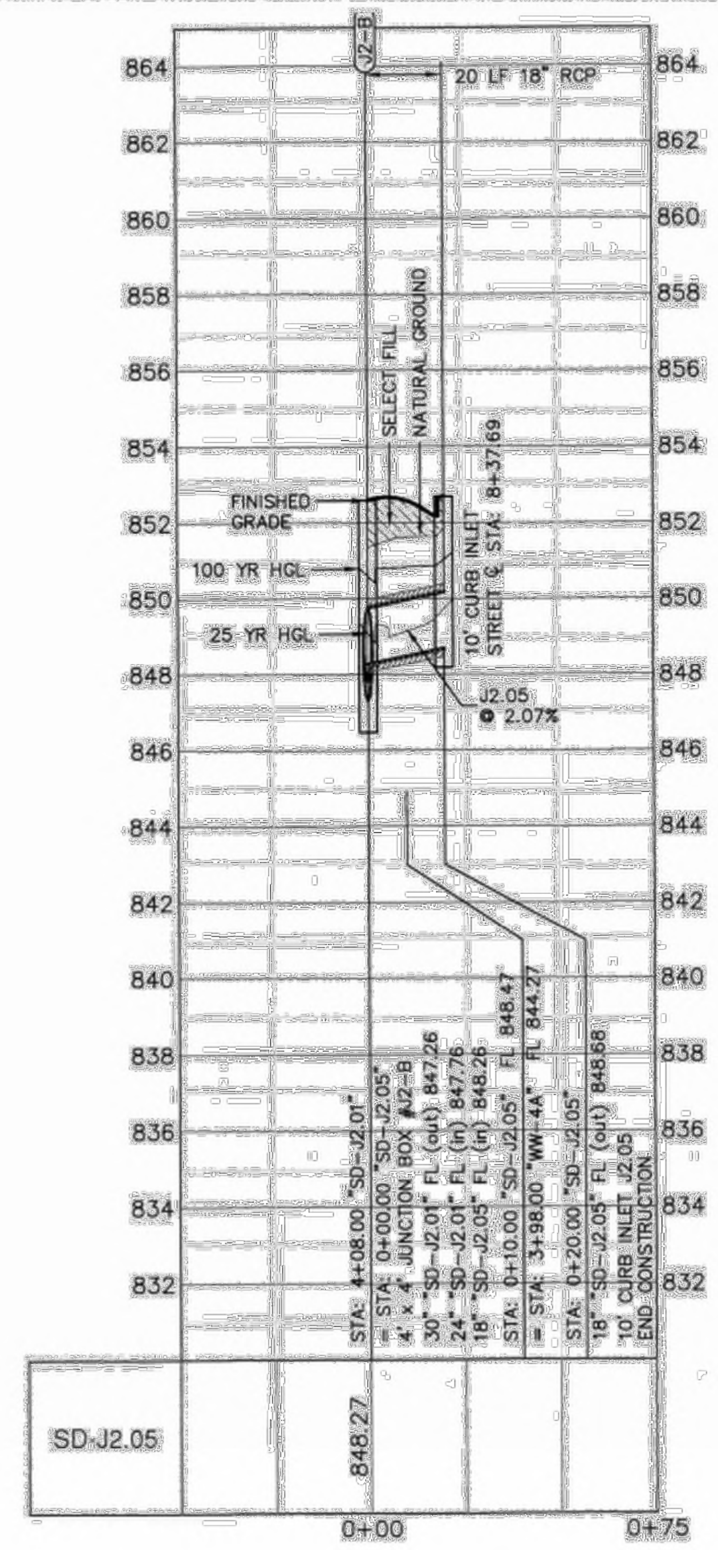
21-PICP-027

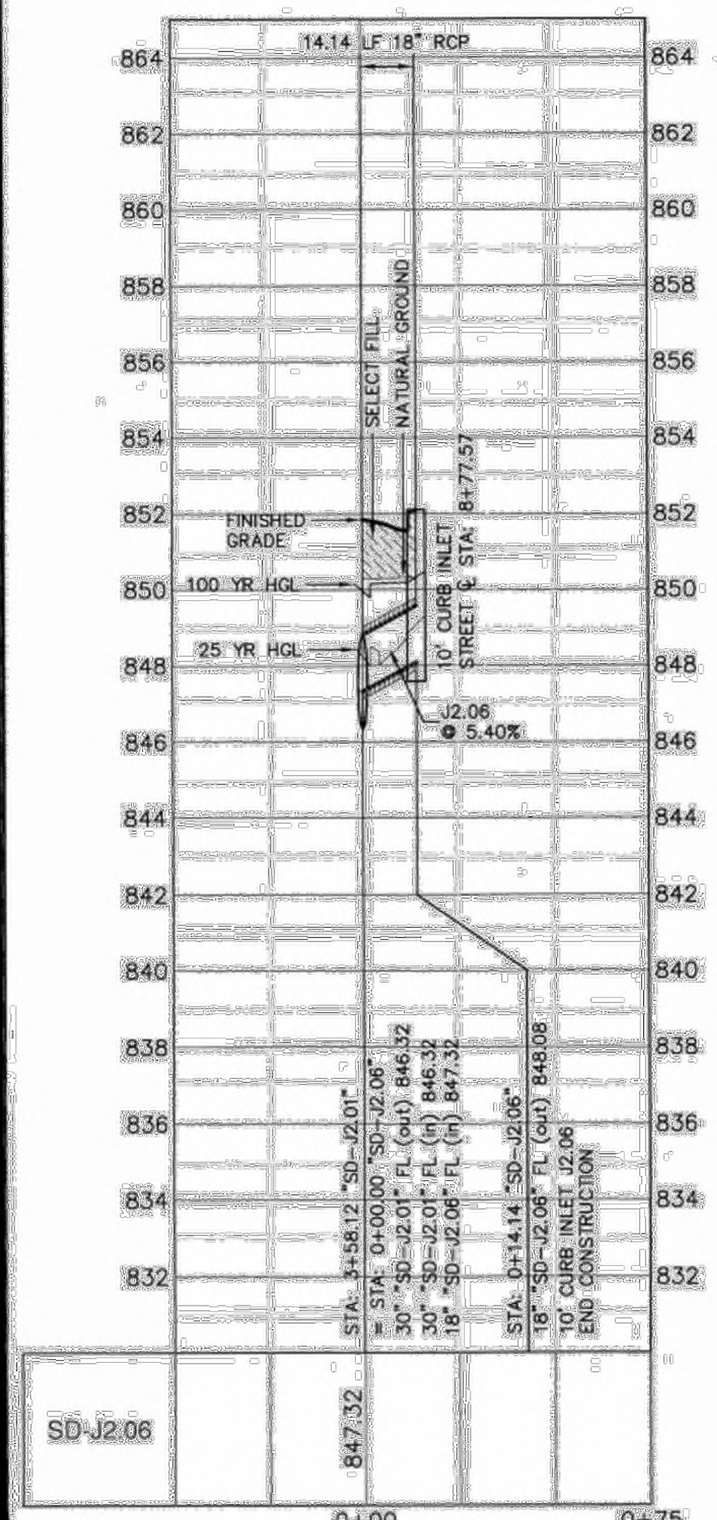
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

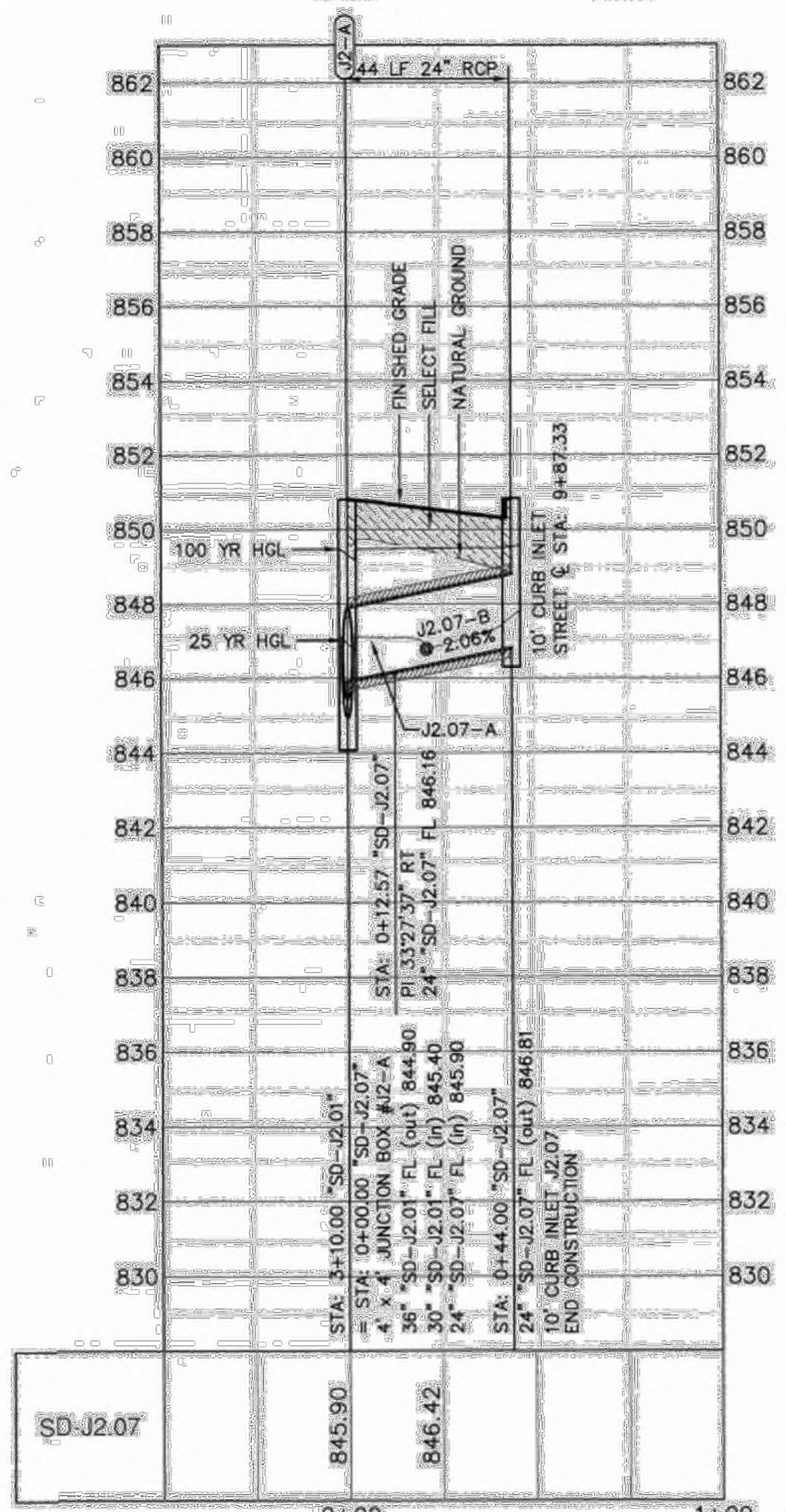


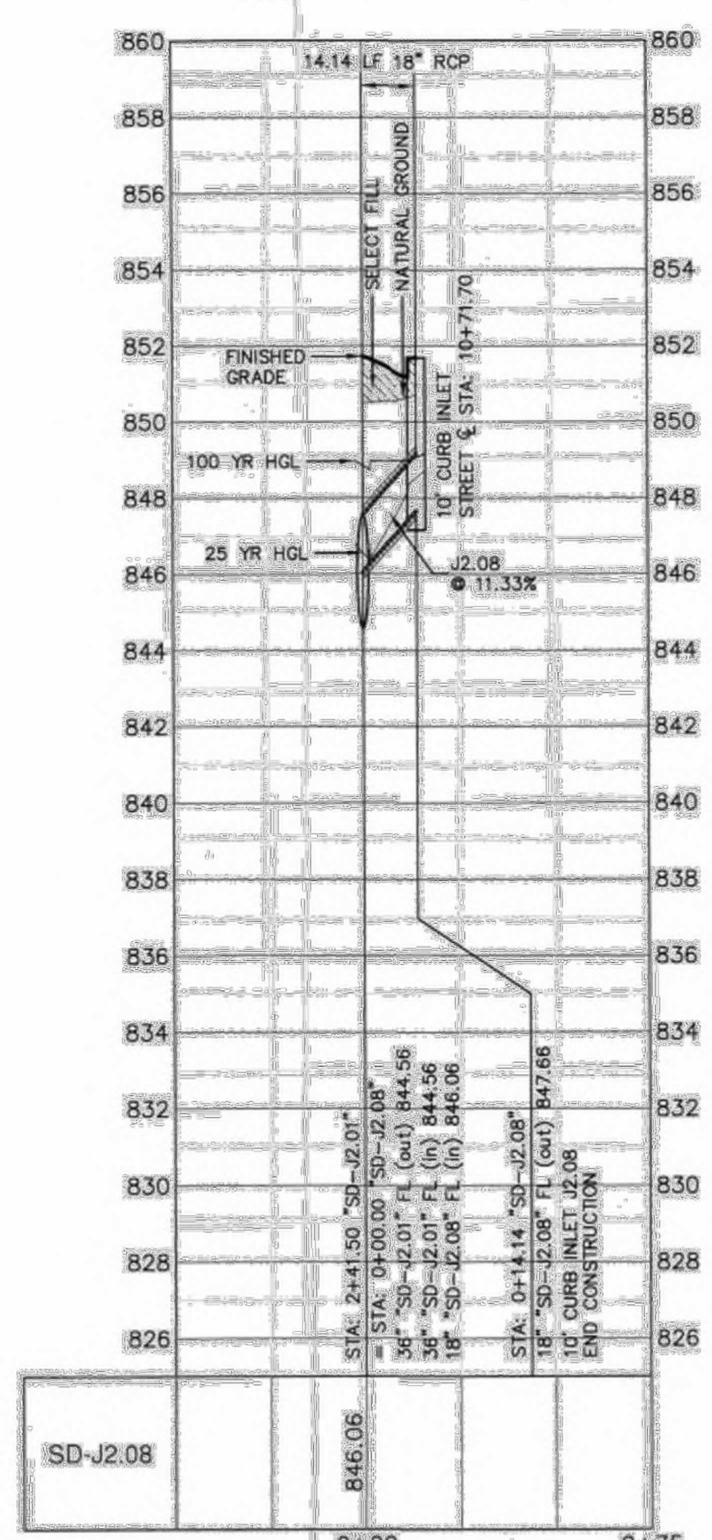












25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2.02	3.07	6.76	1.54	862.5	862.5
J2.03	4.87	6.43	1.12	861.74	861.78
J2.04	6.76	9.91	1.58	852.14	851.96
J2.05	4.78	8.03	1.06	849.52	849.33
J2.06	4.4	11.08	1.16	848.89	848.48
J2.07-A	3.71	7.28	1.22	847.07	847.12
J2.07-B	3.73	7.29	0.94	847.49	847.11
J2.08	3.4	13.35	0.73	848.37	846.79

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J2.02	4.63	2.62	2.29	863.27	863.24
J2.03	7.35	7.13	1.56	862.3	862.23
J2.04	10.15	5.74	3.54	854.13	853.92
J2.05	7.14	4.04	3.79	852.14	852.06
J2.06	6.56	3.71	4.1	851.47	851.42
J2.07-A	5.47	1.74	4.84	850.75	850.74
J2.07-B	5.54	1.76	4.6	850.78	850.76
J2.08	5.13	2.9	4.17	850.26	850.23

NOTES:

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2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

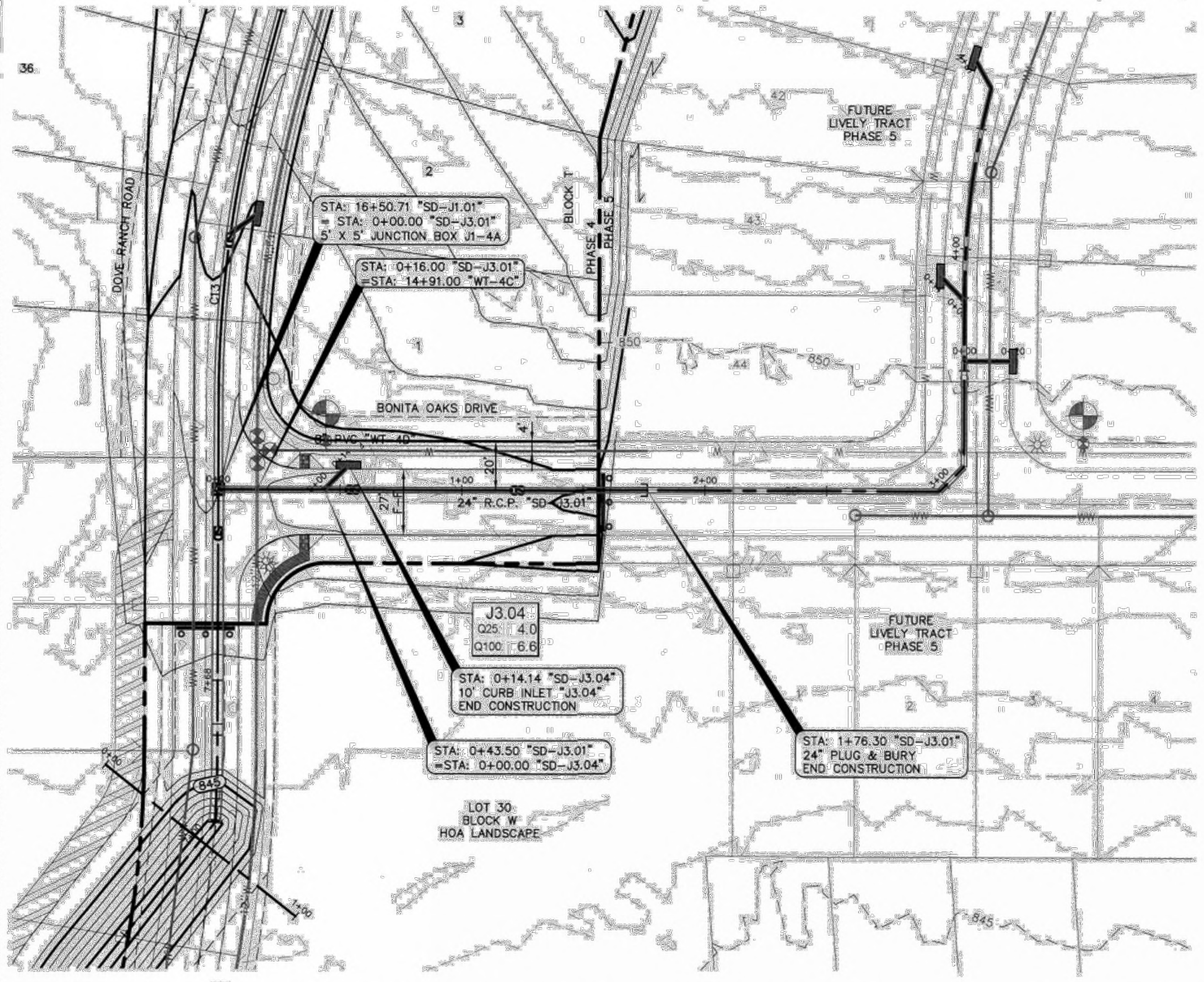
PAPE-DAWSON ENGINEERS

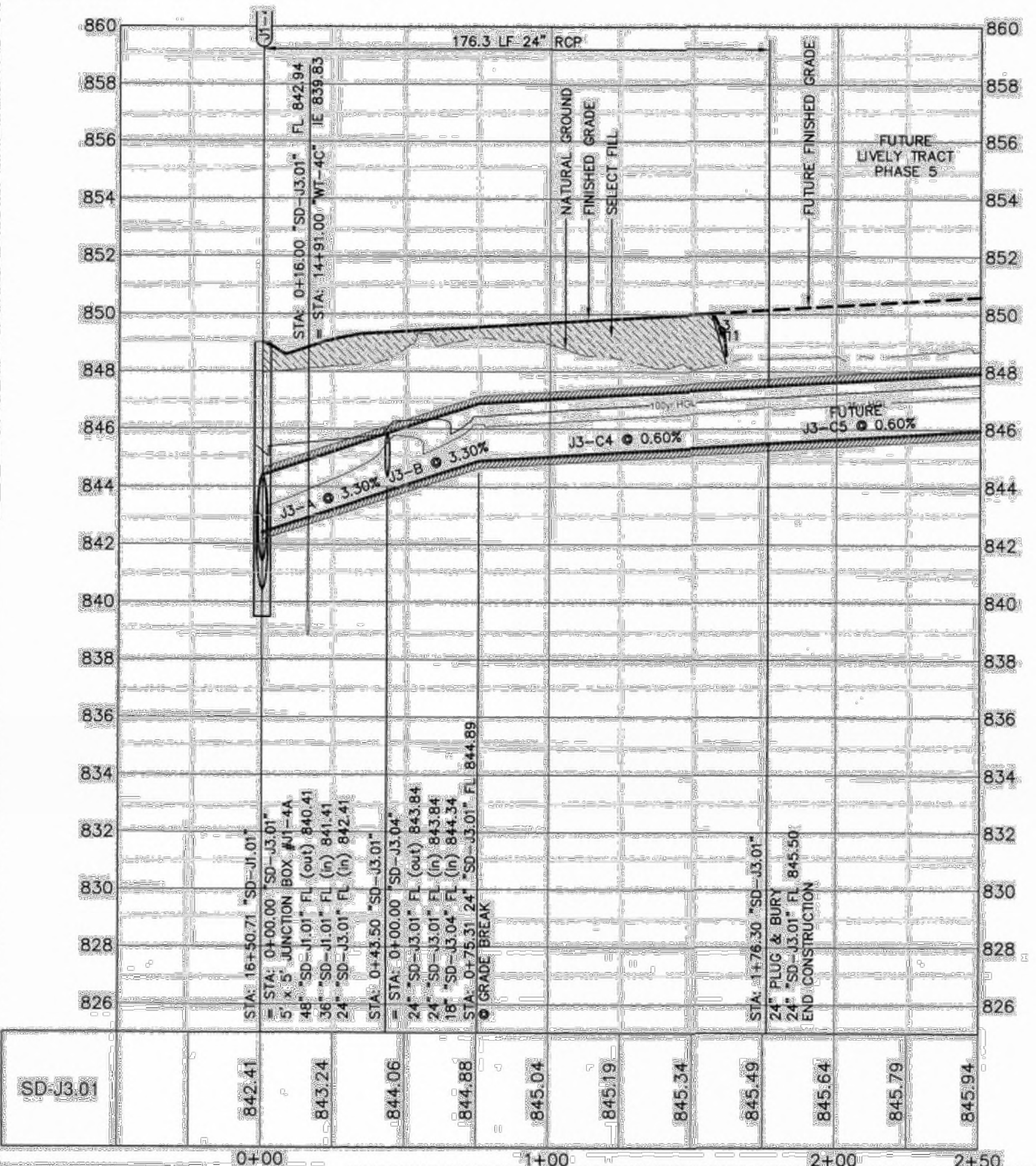
LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

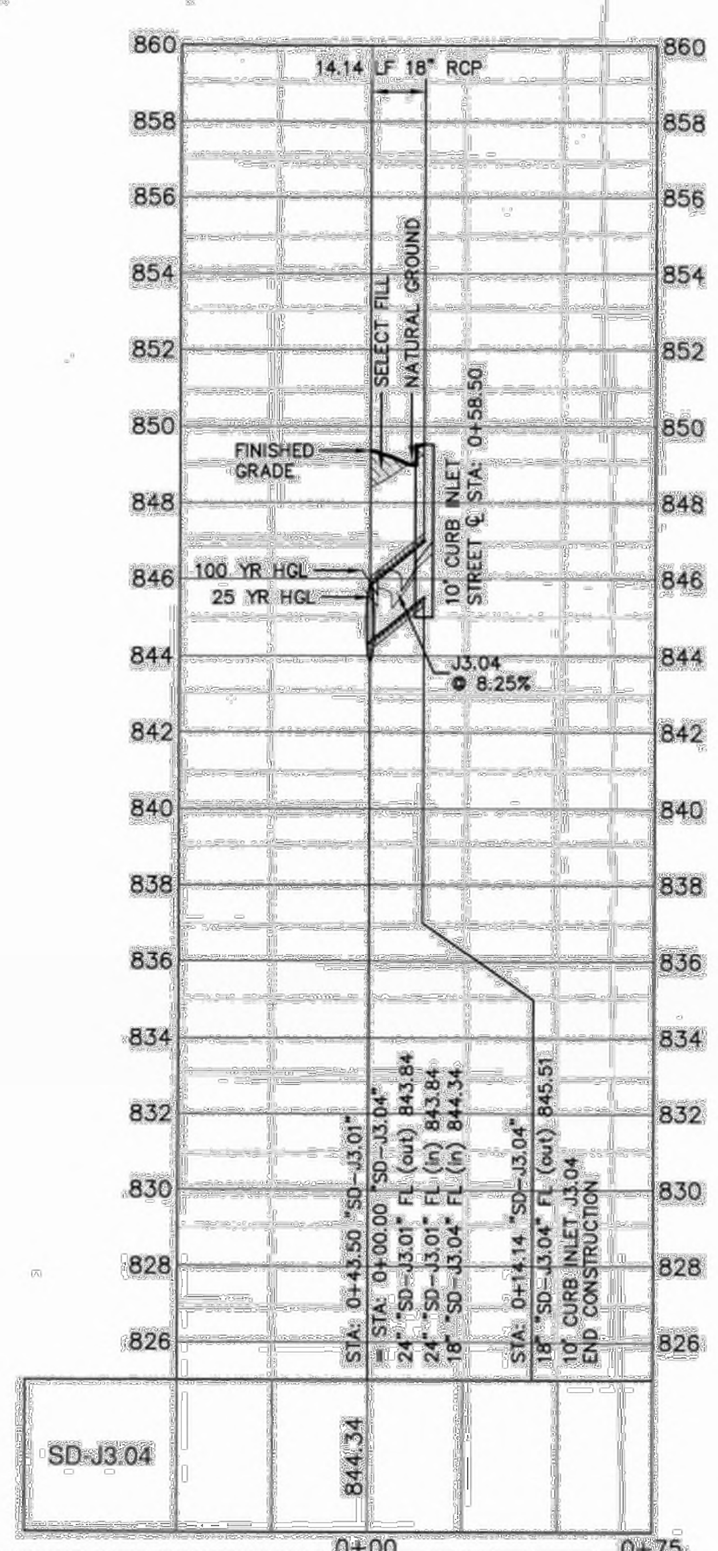
STORMDRAIN PLAN & PROFILE LINE SD-J2.02-J2.08 LATERALS

CITY JOB NO.	21-PICP-027
JOB NO.	50816-23
DATE	MAY 2022
DESIGNER	RBB
CHECKED	PS
DRAWN	ABC
SHEET	30 of 83

21-PICP-027







25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J3-A	15.71	12.94	0.92	845.28	843.33
J3-B	12.21	12.08	1.91	846.15	845.76
J3-C4	12.34	6.43	1.18	846.76	846.07
J3-C5	12.5	6.46	1.18	847.5	846.68
J3.04	4.08	12.59	1.41	846.29	845.76

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J3-A	23.44	14.34	2.98	845.76	845.39
J3-B	18.22	13.46	2.41	846.43	846.26
J3-C4	18.41	6.89	1.55	847.09	846.44
J3-C5	18.63	6.9	1.59	847.83	847.09
J3.04	6.06	14.12	1.91	846.46	846.26

SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q_{25}: Q25 Q_{100}: Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

AUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 05.09.2022

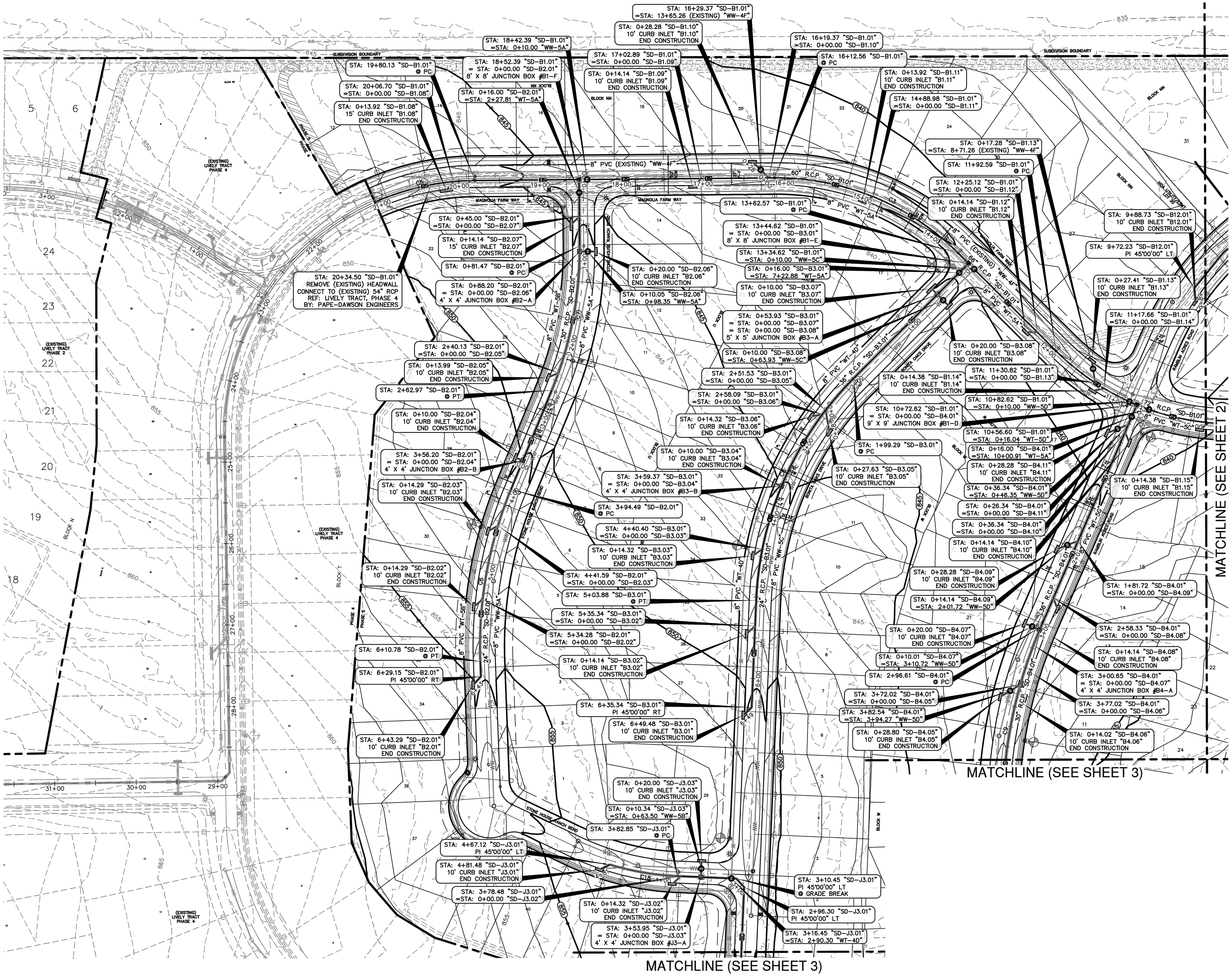
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-J3.01

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN ABC
SHEET 31 of 83

21-PICP-027



SCALE: 1"= 60'

0' 60' 120' 180'

NOTES:

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- SINGLE WW SERVICE
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- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
03/28/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 5 STORM DRAIN
OVERALL STORM DRAIN PLAN (1 OF 3)

CITY NO. –
JOB NO. 50816-25
DATE MARCH 2024
DESIGNER RBB
CHECKED TCK DRAWN DY
SHEET 32 of 83

Date: Mar 19, 2024, 3:39pm User ID: dyadaf
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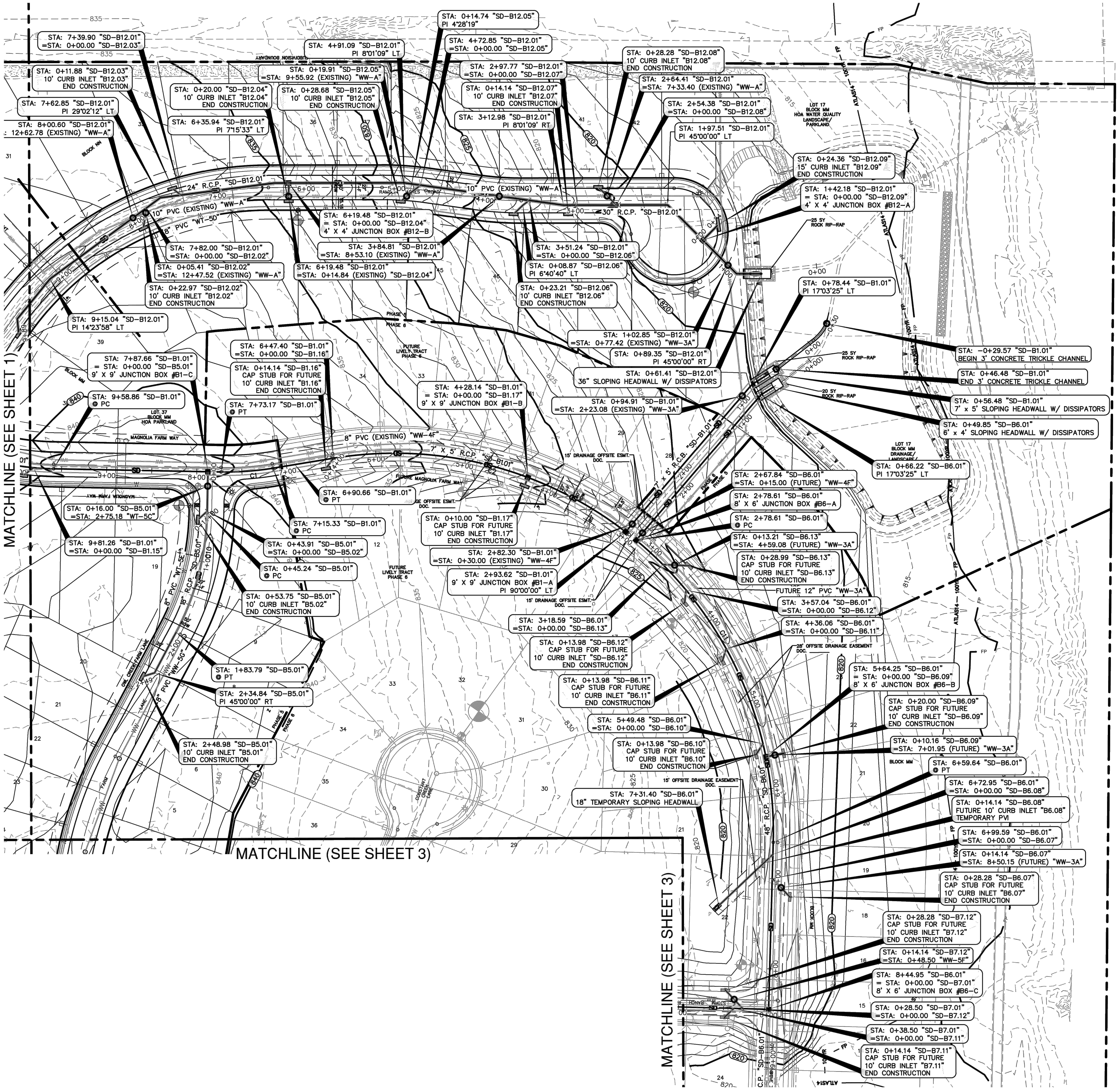

SCALE: 1"= 60'

0' 60' 120' 180'

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- PROPOSED CONTOUR LINE

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
03/28/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 5 STORM DRAIN
OVERALL STORM DRAIN PLAN (2 OF 3)

CITY NO. –
JOB NO. 50816-25
DATE MARCH 2024
DESIGNER RBB
CHECKED TCK DRAWN DY

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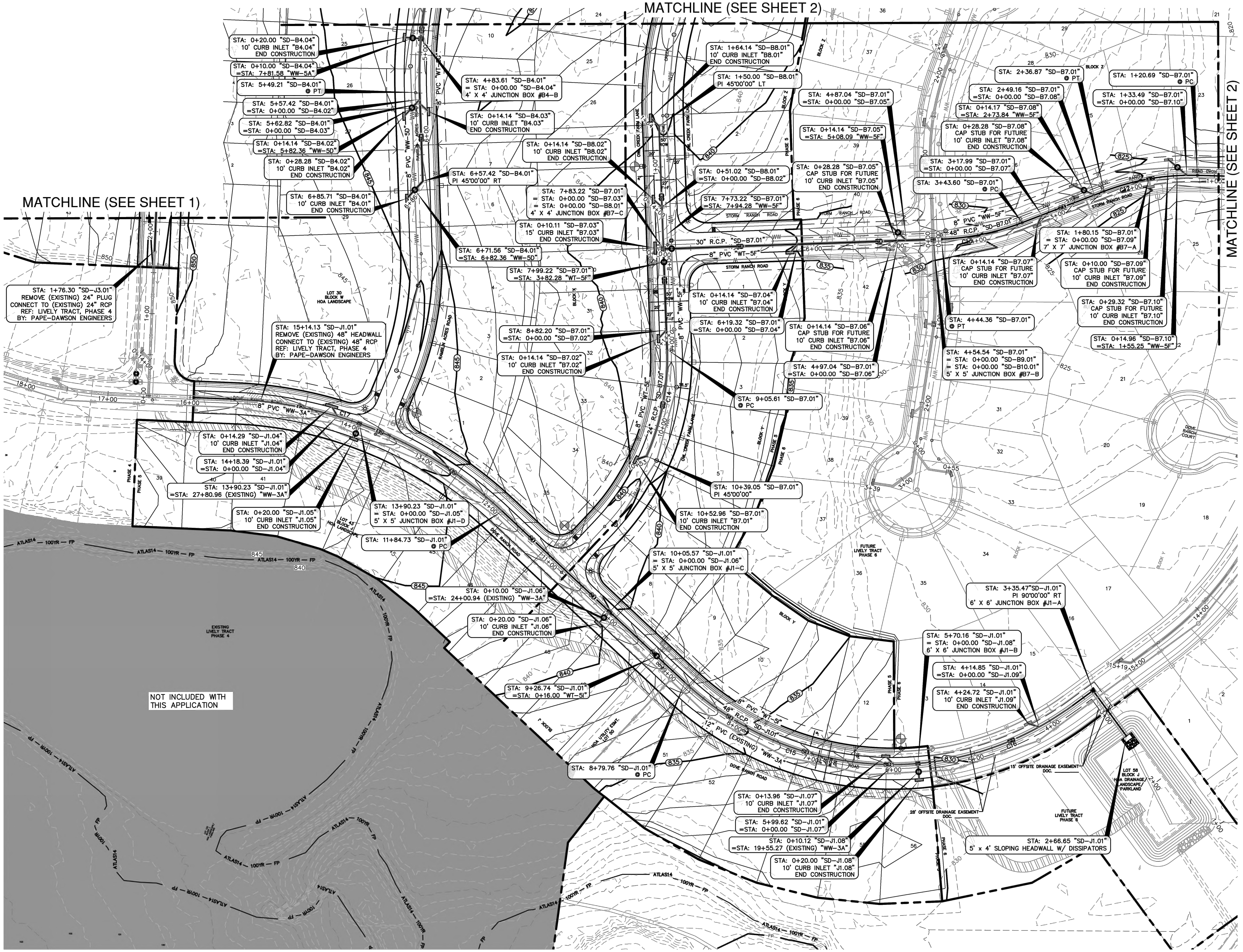

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NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
03/28/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 5 STORM DRAIN
OVERALL STORM DRAIN PLAN (3 OF 3)

CITY NO. –
JOB NO. 50816-25
DATE MARCH 2024
DESIGNER RBB
CHECKED TCK DRAWN DY
SHEET 34 of 83

Date: Mar 19, 2024, 3:40pm User ID: dyosief
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DRAINAGE AREA	INLET NUMBER	AREA (acres)	COMPOSITE C C_{25}	COMPOSITE C C_{100}	$A \cdot C_{25}$	$A \cdot C_{100}$	SHEET FLOW Length (ft)	SHEET FLOW Manning's (n)	SHEET FLOW Slope ft/ft	SHEET FLOW Tc (min)	SHALLOW CONCENTRATED FLOW Length (ft)	SHALLOW CONCENTRATED FLOW Paved/ Unpaved	SHALLOW CONCENTRATED FLOW Slope ft/ft	SHALLOW CONCENTRATED FLOW Tc (min)	CHANNELIZED FLOW Length (ft)	CHANNELIZED FLOW Manning's (n)	CHANNELIZED FLOW Slope ft/ft	CHANNELIZED FLOW Velocity ft/s	CHANNELIZED FLOW Tc (min)	Cumulative Tc (min)	INTENSITY I 25yr (in/hr)	INTENSITY I 100yr (in/hr)	DISCHARGE Q 25 (cfs)	DISCHARGE Q 100 (cfs)
ULTIMATE CONDITION DRAINAGE AREAS																								
B1.08	B1.08	0.93	0.66	0.74	0.616	0.691	50	0.24	0.030	6.30	145	U	0.020	1.06	197	0.015	0.017	5.0	0.655	8.01	9.85	13.06	6.1	9.0
B1.09	B1.09	0.53	0.64	0.72	0.338	0.381	27	0.24	0.023	4.29	90	U	0.016	0.73	266	0.015	0.005	2.7	1.630	6.66	10.45	13.85	3.5	5.3
B1.10	B1.10	0.47	0.76	0.84	0.356	0.396	0	0.24	0.020	0.00	0	U	0.020	0.00	783	0.015	0.005	2.7	4.798	5.00	11.30	15.00	4.0	5.9
B1.11	B1.11	0.84	0.66	0.74	0.553	0.621	23	0.24	0.021	3.90	227	U	0.015	1.91	202	0.015	0.005	2.7	1.238	7.05	10.26	13.61	5.7	8.5
B1.12	B1.12	0.50	0.67	0.75	0.335	0.376	20	0.24	0.020	3.56	157	U	0.015	1.32	249	0.015	0.005	2.7	1.526	6.41	10.57	14.01	3.5	5.3
B1.13	B1.13	0.29	0.67	0.75	0.194	0.217	0	0.24	0.036	0.00	0	U	0.017	0.00	351	0.015	0.005	2.7	2.151	5.00	11.30	15.00	2.2	3.3
B1.14	B1.14	0.46	0.66	0.74	0.305	0.343	15	0.24	0.048	1.99	137	U	0.020	1.00	37	0.015	0.005	2.7	0.227	5.00	11.30	15.00	3.4	5.1
B1.15	B1.15	0.46	0.67	0.75	0.307	0.345	10	0.24	0.036	1.62	148	U	0.024	0.98	56	0.015	0.019	5.3	0.176	5.00	11.30	15.00	3.5	5.2
B1.16	B1.16	0.79	0.66	0.75	0.524	0.589	0	0.24	0.015	0.00	80	U	0.015	0.67	492	0.015	0.019	5.3	1.538	5.00	11.30	15.00	5.9	8.8
B1.17	B1.17	0.81	0.66	0.74	0.537	0.602	90	0.24	0.049	8.32	110	U	0.015	0.93	56	0.015	0.043	8.0	0.117	9.36	9.33	12.37	5.0	7.5
B2.01	B2.01	1.06	0.66	0.74	0.699	0.785	20	0.24	0.022	3.42	290	U	0.024	1.93	90	0.015	0.016	4.8	0.312	5.67	10.94	14.51	7.6	11.4
B2.02	B2.02	0.74	0.66	0.74	0.490	0.550	20	0.24	0.026	3.20	290	U	0.023	1.96	78	0.015	0.019	5.3	0.245	5.40	11.08	14.70	5.4	8.1
B2.03	B2.03	0.79	0.66	0.74	0.522	0.586	20	0.24	0.027	3.16	290	U	0.019	2.18	78	0.015	0.017	5.0	0.261	5.60	10.98	14.56	5.7	8.5
B2.04	B2.04	0.88	0.66	0.74	0.584	0.655	20	0.24	0.015	3.99	290	U	0.015	2.45	80	0.015	0.014	4.6	0.293	6.73	10.41	13.81	6.1	9.0
B2.05	B2.05	0.51	0.67	0.75	0.342	0.384	20	0.24	0.072	2.13	185	U	0.020	1.37	90	0.015	0.016	4.9	0.304	5.00	11.30	15.00	3.9	5.8
B2.06	B2.06	0.40	0.73	0.82	0.293	0.326	0	0.24	0.020	0.00	0	U	0.020	0.00	708	0.015	0.019	5.3	2.225	5.00	11.30	15.00	3.3	4.9
B2.07	B2.07	0.63	0.68	0.76	0.426	0.477	20	0.24	0.028	3.10	134	U	0.015	1.12	173	0.015	0.019	5.3	0.544	5.00	11.30	15.00	4.8	7.2
B3.01	B3.01	0.70	0.67	0.75	0.466	0.523	17	0.24	0.077	1.82	271	U	0.014	2.34	43	0.015	0.011	4.1	0.176	5.00	11.30	15.00	5.3	7.8
B3.02	B3.02	0.71	0.67	0.75	0.473	0.530	17	0.24	0.044	2.27	275	U	0.014	2.38	87	0.015	0.020	5.4	0.267	5.00	11.30	15.00	5.3	8.0
B3.03	B3.03	0.75	0.66	0.75	0.498	0.560	17	0.24	0.054	2.10	281	U	0.015	2.36	85	0.015	0.020	5.4	0.260	5.00	11.30	15.00	5.6	8.4
B3.04	B3.04	0.71	0.66	0.75	0.471	0.529	17	0.24	0.024	2.92	282	U	0.011	2.78	78	0.015	0.020	5.4	0.239	5.94	10.80	14.32	5.1	7.6
B3.05	B3.05	0.53	0.69	0.77	0.366	0.410	0	0.24	0.020	0.00	0	U	0.002	0.00	510	0.015	0.020	5.4	1.562	5.00	11.30	15.00	4.1	6.1
B3.06	B3.06	0.67	0.66	0.74	0.444	0.499	17	0.24	0.027	2.77	288	U	0.011	2.84	84	0.015	0.020	5.4	0.257	5.86	10.84	14.37	4.8	7.2
B3.07	B3.07	1.06	0.67	0.75	0.706	0.793	17	0.24	0.028	2.74	317	U	0.011	3.12	206	0.015	0.020	5.4	0.631	6.50	10.53	13.96	7.4	11.1
B3.08	B3.08	0.51	0.66	0.74	0.338	0.379	0	0.24	0.020	0.00	116	U	0.020	0.85	195	0.015	0.020	5.4	0.597	5.00	11.30	15.00	3.8	5.7
B4.01	B4.01	1.22	0.53	0.61	0.646	0.738	80	0.24	0.021	10.54	171	U	0.015	1.45	65	0.015	0.006	3.0	0.364	12.35	8.37	11.10	5.4	8.2
B4.02	B4.02	0.61	0.66	0.74	0.404	0.453	17	0.24	0.051	2.14	277	U	0.015	2.35	40	0.015	0.006	3.0	0.224	5.00	11.30	15.00	4.6	6.8
B4.03	B4.03	0.28	0.75	0.84	0.211	0.235	0	0.24	0.020	0.00	0	U	0.020	0.00	398	0.015	0.006	3.0	2.226	5.00	11.30	15.00	2.4	3.5
B4.04	B4.04	0.66	0.66	0.74	0.435	0.489	17	0.24	0.054	2.11	280	U	0.015	2.36	85	0.015	0.006	3.0	0.475	5.00	11.30	15.00	4.9	7.3
B4.05	B4.05	0.79	0.66	0.74	0.521	0.585	17	0.24	0.070	1.90	288	U	0.018	2.24	85	0.015	0.006	3.0	0.475	5.00	11.30	15.00	5.9	8.8
B4.06	B4.06	0.39	0.69	0.77	0.270	0.302	0	0.24	0.020	0.00	109	U	0.020	0.80	60	0.015	0.006	3.0	0.336	5.00	11.30	15.00	3.0	4.5
B4.07	B4.07	0.70	0.66	0.74	0.462	0.519	17	0.24	0.044	2.28	270	U	0.018	2.09	86	0.015	0.006	3.0	0.481	5.00	11.30	15.00	5.2	7.8
B4.08	B4.08	0.35	0.68	0.76	0.237	0.266	10	0.24	0.022	1.97	112	U	0.022	0.78	57	0.015	0.006	3.0	0.319	5.00	11.30	15.00	2.7	4.0
B4.09	B4.09	0.75	0.66	0.74	0.494	0.555	20	0.24	0.031	2.97	312	U	0.015	2.63	88	0.015	0.012	4.1	0.354	5.96	10.79	14.31	5.3	7.9
B4.10	B4.10	0.61	0.68	0.76	0.412	0.462	10	0.24	0.020	2.04	116	U	0.020	0.85	165	0.015	0.014	4.6	0.604	5.00	11.30	15.00	4.7	6.9
B4.11	B4.11	0.59	0.66	0.74	0.389	0.437	20	0.24	0.042	2.66	145	U	0.015	1.22	141	0.015	0.014	4.6	0.516	5.00	11.30	15.00	4.4	6.5
B12.1	B12.1	0.66	0.69	0.77	0.454	0.509	30	0.24	0.036	3.90	148	U	0.024	0.98	215	0.015	0.006	3.0	1.203	6.09	10.72	14.22	4.9	7.2
B12.2	B12.2	0.55	0.67	0.75	0.367	0.412	30	0.24	0.010	6.49	118	U	0.010	1.22	190	0.015	0.006	3.0	1.063	8.78	9.55	12.66	3.5	5.2
B12.3	B12.3	0.31	0.69	0.77	0.213	0.239	0	0.24	0.020	0.00	0	U	0.020	0.00	436	0.015	0.006	3.0	2.439	5.00	11.30	15.00	2.4	3.6
B12.4	B12.4	0.79	0.63	0.71	0.494	0.557	90	0.24	0.016	13.06	147	U	0.020	1.07	436	0.015	0.006	3.0	2.439	16.57	7.35	9.75	3.6	5.4
B12.5	B12.5	0.63	0.67	0.75	0.421	0.472	20	0.24	0.037	2.79	266	U	0.016	2.17	106	0.015	0.045	8.2	0.216	5.18	11.20	14.86	4.7	7.0
B12.6	B12.6	0.73	0.67	0.76	0.492	0.552	20	0.24	0.100	1.87	302	U	0.019	2.26	112	0.015	0.045	8.2	0.229	5.00	11.30	15.00	5.6	8.3
B12.7	B12.7	0.39	0.67	0.75	0.260	0.292	20	0.24	0.100	1.87	283	U	0.021	2.04	43	0.015	0.020	5.4	0.132	5.00	11.30	15.00	2.9	4.4
B12.8	B12.8	0.27	0.72	0.81	0.195	0.217	0	0.24	0.020	0.00	0	U	0.020	0.00	471	0.015	0.020	5.4	1.443	5.00	11.30	15.00	2.2	3.3
B12.9A	B12.9A	0.89	0.66	0.74	0.583	0.655	20	0.24	0.100	1.87	302	U	0.015	2.55	180	0.015	0.020	5.4	0.551	5.00	11.30	15.00	6.6	9.8
B12.9B	B12.9B	0.12	0.61	0.69	0.073	0.082	0	0.24	0.100	0.00	0	U	0.015	0.00	141	0.015	0.020	5.4	0.432	5.00	11.30	15.00	0.8	1.2
B12.9	B12.9	1.01	0.65	0.73	0.656	0.738	-	-	-	-	-	-	-	-	-	-	0.020	-	-	5.00	11.30	15.00	7.4	11.1
B5.01	B5.01	0.49	0.68	0.76	0.331	0.371	20	0.24	0.015	3.99	120	U	0.015	1.01	145	0.015	0.006	3.0	0.811	5.81	10.86	14.41	3.6	5.4
B5.02	B5.02	0.37	0.68	0.76	0.251	0.282	0	0.24	0.015	0.00	80	U	0.015	0.67	194	0.015	0.006	3.0	1.085	5.00	11.30	15.00	2.8	4.2
B7.01	B7.01	0.73	0.65	0.73	0.474	0.533	20	0.24	0.032	2.96	275	U	0.013	2.49	75	0.015	0.009	3.7	0.339	5.79	10.87	14.42	5.2	7.7
B7.02	B7.02	0.65	0.67	0.75	0.435	0.488	20	0.24	0.028	3.10	270	U	0.016	2.18	138	0.015	0.005	2.7	0.846	6.13	10.70	14.19	4.7	6.9
B7.03A	B7.03A	0.66	0.67	0.75	0.444	0.498	20	0.24	0.023	3.38	280	U	0.016	2.27	85	0.015	0.005	2.7	0.521	6.17	10.68	14.17	4.7	7.1
B7.03B	B7.03B	0.75	0.66	0.74	0.495	0.556	20	0.24	0.043	2.63	280	U	0.015	2.36	0	0.015	0.010	3.8	0.000	5.00	11.30	15.00	5.6	8.3
B7.03	B7.03	1.41	0.67	0.75	0.938	1.053	-	-	-	-	-	-	-	-	-	-	0.010	-	-	6.17	10.68	14.17	10.0	14.9
B7.04	B7.04	0.47	0.70	0.78	0.329	0.368	0	0.24	0.020	0.00	0	U	0.020	0.00	673	0.015	0.019	5.3	2.115	5.00	11.30	15.00	3.7	5.5
B7.05	B7.05	0.86	0.68	0.76	0.583	0.653	20	0.24	0.015	3.99	0	U	0.020	0.00	561	0.015	0.019	5.3	1.763	5.76	10.89	14.45	6.3	9.4
B7.06	B7.06	0.35	0.67	0.75	0.235	0.264	20	0.24	0.044	2.60	226	U	0.025	1.46	10	0.015	0.019	5.3	0.031	5.00	11.30	15.00	2.7	4.0
B8.01	B8.01	0.78	0.67	0.75	0.524	0.588	20	0.24	0.015	3.99	125	U	0.015	1.05	179	0.015	0.019	5.3	0.563	5.61	10.97	14.55	5.7	8.6
B8.02	B8.02	0.54	0.67	0.75	0.361	0.405	0	0.24	0.015	0.00	266	U	0.015	2.24	50	0.015	0.005	2.7	0.306	5.00	11.30	15.00	4.1	6.1
J1.04	J1.04	0.82	0.64	0.72	0.526	0.593	20	0.24	0.028	3.11	128	U	0.020	0.93	340	0.015	0.010	3.8	1.473	5.52	11.02	14.62	5.8	8.7
J1.05	J1.05	0.51	0.70	0.78	0.355	0.397	0	0.24	0.028	0.00	0	U	0.020	0.00	655	0.015	0.010	3.8	2.838	5.00	11.30	15.00	4.0	6.0
J1.06	J1.06	0.73	0.67	0.75	0.489	0.549	0	0.24	0.028	0.00	60	U	0.015	0.51	380	0.015	0.020	5.4	1.164	5.00	11.30	15.00	5.5	8.2
J1.07	J1.07	0.68	0.67	0.75	0.457	0.513	20	0.24	0.015	3.99	105	U	0.015	0.89	90	0.015	0.018	5.1	0.294	5.17	11.21	14.87	5.1	7.6
J1.08	J1.08	0.51	0.75	0.83	0.381	0.424	0	0.24	0.028	0.00	0	U	0.015	0.00	444	0.015	0.008	3.5	2.099	5.00	11.30	15.00	4.3	6.4
J3.01	J3.01	1.26	0.66	0.74	0.835	0.938	20	0.24	0.020	3.56	250	U	0.022	1.74	171	0.015	0.019	5.3	0.537	5.84	10.85	14.39	9.1	13.5
J3.02	J3.02	0.39	0.67	0.75	0.262	0.294	20	0.24	0.015	3.99	115	U	0.015	0.97	88	0.015	0.019	5.3	0.277	5.24	11.17	14.82	2.9	4.4
J3.03	J3.03	0.33	0.67	0.75	0.222	0.249	0	0.24	0.015	0.00	0	U	0.015	0.00	295	0.015	0.019	5.3	0.927	5.00	11.30	15.00	2.5	3.7
J3.04	J3.04	0.66	0.68	0.76	0.446	0.500	0	0.24	0.015	0.00	60	U	0.015	0.51	300	0.015	0.006	3.0	1.678	5.00	11.30	15.00	5.0	7.5

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

DRAINAGE CALCULATIONS (1 OF 2)

APPROVED
RMG
CITY OF LEANDER APPROVAL

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER ABC
CHECKED TCK DRAWN ABC
SHEET 35 of 83

Date: Sep 19, 2024, 10:14am User ID: tkrause
File: H:\Projects\508\16\24\301 Construction Documents\Civil\DD50816-24.dwg

STREET FLOW AND INLET CALCULATIONS
25 YEAR STORM

Inlet No.	Inlet Type	Drainage Area	Q 25 (cfs)	Q pass (cfs)	Q total (cfs)	STREET CAPACITY: Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (ft)	INLET ON GRADE CAPACITY: Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	SUMP INLET CAPACITY CURB (with Depression): Qtotal (cfs)	Length (ft)	d (ft)	d (ft) (d ≤ h + a)
ULTIMATE CONDITION DRAINAGE AREAS																											
B1.08	G-1	0.93	6.07		6.1	27	P	0.50	1.70%	0.42	0.41	0.50	7.68	0.59	0.28	0.04	0.20	11.80	15	1.00	6.1	0.0	-	-	-	-	-
B1.09	G-1	0.53	3.54		3.5	27	P	0.50	0.50%	0.42	0.42	0.50	8.00	0.56	0.28	0.04	0.19	6.67	10	1.00	3.5	0.0	-	-	-	-	-
B1.10	G-1	0.47	4.03		4.0	27	P	0.50	0.50%	0.42	0.44	0.50	8.64	0.51	0.28	0.04	0.18	7.36	10	1.00	4.0	0.0	-	-	-	-	-
B1.11	G-1	0.84	5.67		5.7	27	P	0.50	0.50%	0.42	0.49	0.50	11.36	0.38	0.28	0.04	0.14	9.80	10	1.00	5.7	0.0	-	-	-	-	-
B1.12	G-1	0.50	3.55		3.5	27	P	0.50	0.50%	0.42	0.42	0.50	8.01	0.56	0.28	0.04	0.19	6.68	10	1.00	3.5	0.0	-	-	-	-	-
B1.13	G-1	0.29	2.19		2.2	27	P	0.50	0.50%	0.42	0.36	0.50	6.25	0.76	0.28	0.04	0.25	4.69	10	1.00	2.2	0.0	-	-	-	-	-
B1.14	G-1	0.46	3.45		3.4	27	P	0.50	0.50%	0.42	0.41	0.50	7.89	0.57	0.28	0.04	0.20	6.55	10	1.00	3.4	0.0	-	-	-	-	-
B1.15	G-1	0.46	3.47		3.5	27	P	0.50	1.90%	0.42	0.33	0.50	5.69	0.85	0.28	0.04	0.27	8.03	10	1.00	3.5	0.0	-	-	-	-	-
B1.16	G-1	0.79	5.93		5.9	27	P	0.50	1.92%	0.42	0.40	0.50	7.35	0.62	0.28	0.04	0.21	11.80	10	0.97	5.7	0.2	-	-	-	-	-
B1.17	G-1	0.81	5.01		5.0	27	P	0.50	4.30%	0.42	0.33	0.50	5.58	0.85	0.28	0.04	0.27	11.96	15	1.00	5.0	0.0	-	-	-	-	-
B2.01	G-1	1.06	7.65		7.6	27	P	0.50	1.56%	0.42	0.45	0.50	9.06	0.49	0.28	0.04	0.17	13.91	10	0.90	6.9	0.8	-	-	-	-	-
B2.02	G-1	0.74	5.43		5.4	27	P	0.50	1.90%	0.42	0.39	0.50	7.04	0.66	0.28	0.04	0.22	11.04	10	0.99	5.4	0.1	-	-	-	-	-
B2.03	G-1	0.79	5.73		5.7	27	P	0.50	1.68%	0.42	0.40	0.50	7.48	0.61	0.28	0.04	0.21	11.29	10	0.98	5.6	0.1	-	-	-	-	-
B2.04	G-1	0.88	6.08		6.1	27	P	0.50	1.40%	0.42	0.42	0.50	8.12	0.55	0.28	0.04	0.19	11.51	10	0.97	5.9	0.2	-	-	-	-	-
B2.05	G-1	0.51	3.87		3.9	27	P	0.50	1.64%	0.42	0.35	0.50	6.18	0.77	0.28	0.04	0.25	8.45	10	1.00	3.9	0.0	-	-	-	-	-
B2.06	G-1	0.40	3.31		3.3	27	P	0.50	1.90%	0.42	0.33	0.50	5.56	0.85	0.28	0.04	0.27	7.86	10	1.00	3.3	0.0	-	-	-	-	-
B2.07	G-1	0.63	4.81		4.8	27	P	0.50	1.90%	0.42	0.37	0.50	6.62	0.71	0.28	0.04	0.23	10.11	15	1.00	4.8	0.0	-	-	-	-	-
B3.01	G-1	0.70	5.27		5.3	27	P	0.50	1.12%	0.42	0.42	0.50	7.98	0.56	0.28	0.04	0.19	10.03	10	1.00	5.3	0.0	-	-	-	-	-
B3.02	G-1	0.71	5.34		5.3	27	P	0.50	2.00%	0.42	0.38	0.50	6.89	0.67	0.28	0.04	0.22	10.99	10	0.99	5.3	0.1	-	-	-	-	-
B3.03	G-1	0.75	5.63		5.6	27	P	0.50	2.00%	0.42	0.39	0.50	7.08	0.65	0.28	0.04	0.22	11.43	10	0.98	5.5	0.1	-	-	-	-	-
B3.04	G-1	0.71	5.09		5.1	27	P	0.50	2.00%	0.42	0.37	0.50	6.73	0.69	0.28	0.04	0.23	10.61	10	0.99	5.1	0.0	-	-	-	-	-
B3.05	G-1	0.53	4.14		4.1	27	P	0.50	2.00%	0.42	0.35	0.50	6.09	0.79	0.28	0.04	0.26	9.13	10	1.00	4.1	0.0	-	-	-	-	-
B3.06	G-1	0.67	4.81		4.8	27	P	0.50	2.00%	0.42	0.37	0.50	6.54	0.72	0.28	0.04	0.24	10.19	10	1.00	4.8	0.0	-	-	-	-	-
B3.07	G-1	1.06	7.43		7.4	27	P	0.50	2.00%	0.42	0.42	0.50	8.23	0.54	0.28	0.04	0.19	14.04	15	1.00	7.4	0.0	-	-	-	-	-
B3.08	G-1	0.51	3.82		3.8	27	P	0.50	2.00%	0.42	0.34	0.50	5.87	0.82	0.28	0.04	0.27	8.62	10	1.00	3.8	0.0	-	-	-	-	-
B4.01	G-1	1.22	5.41		5.4	27	P	0.50	0.60%	0.42	0.47	0.50	9.96	0.44	0.28	0.04	0.16	9.49	10	1.00	5.4	0.0	-	-	-	-	-
B4.02	G-1	0.61	4.56		4.6	27	P	0.50	0.60%	0.42	0.44	0.50	8.83	0.50	0.28	0.04	0.18	8.29	10	1.00	4.6	0.0	-	-	-	-	-
B4.03	G-1	0.28	2.38		2.4	27	P	0.50	0.60%	0.42	0.36	0.50	6.24	0.76	0.28	0.04	0.25	5.13	10	1.00	2.4	0.0	-	-	-	-	-
B4.04	G-1	0.66	4.92		4.9	27	P	0.50	0.60%	0.42	0.45	0.50	9.28	0.47	0.28	0.04	0.17	8.79	10	1.00	4.9	0.0	-	-	-	-	-
B4.05	G-1	0.79	5.89		5.9	27	P	0.50	0.60%	0.42	0.48	0.50	10.72	0.40	0.28	0.04	0.15	10.22	10	1.00	5.9	0.0	-	-	-	-	-
B4.06	G-1	0.39	3.05		3.0	27	P	0.50	0.60%	0.42	0.39	0.50	7.03	0.66	0.28	0.04	0.22	6.13	10	1.00	3.0	0.0	-	-	-	-	-
B4.07	G-1	0.70	5.23		5.2	27	P	0.50	0.60%	0.42	0.46	0.50	9.70	0.45	0.28	0.04	0.16	9.23	10	1.00	5.2	0.0	-	-	-	-	-
B4.08	G-1	0.35	2.68		2.7	27	P	0.50	0.60%	0.42	0.37	0.50	6.60	0.71	0.28	0.04	0.23	5.59	10	1.00	2.7	0.0	-	-	-	-	-
B4.09	G-1	0.75	5.33		5.3	27	P	0.50	1.16%	0.42	0.42	0.50	7.95	0.57	0.28	0.04	0.19	10.16	10	1.00	5.3	0.0	-	-	-	-	-
B4.10	G-1	0.61	4.66		4.7	27	P	0.50	1.40%	0.42	0.39	0.50	7.03	0.66	0.28	0.04	0.22	9.45	10	1.00	4.7	0.0	-	-	-	-	-
B4.11	G-1	0.59	4.39		4.4	27	P	0.50	1.40%	0.42	0.38	0.50	6.83	0.68	0.28	0.04	0.23	9.05	10	1.00	4.4	0.0	-	-	-	-	-
B12.1	G-1	0.66	4.87		4.9	27	P	0.50	0.60%	0.42	0.45	0.50	9.22	0.48	0.28	0.04	0.17	8.73	10	1.00	4.9	0.0	-	-	-	-	-
B12.2	G-1	0.55	3.50		3.5	27	P	0.50	0.60%	0.42	0.40	0.50	7.57	0.60	0.28	0.04	0.20	6.79	10	1.00	3.5	0.0	-	-	-	-	-
B12.3	G-1	0.31	2.41		2.4	27	P	0.50	0.60%	0.42	0.36	0.50	6.27	0.76	0.28	0.04	0.25	5.17	10	1.00	2.4	0.0	-	-	-	-	-
B12.4	G-1	0.79	3.63		3.6	27	P	0.50	0.60%	0.42	0.41	0.50	7.72	0.59	0.28	0.04	0.20	6.97	10	1.00	3.6	0.0	-	-	-	-	-
B12.5	G-1	0.63	4.71		4.7	27	P	0.50	4.50%	0.42	0.32	0.50	5.38	0.85	0.28	0.04	0.27	11.82	10	0.97	4.5	0.2	-	-	-	-	-
B12.6	G-1	0.73	5.56		5.6	27	P	0.50	4.50%	0.42	0.34	0.50	5.79	0.84	0.28	0.04	0.27	12.76	10	0.94	5.2	0.4	-	-	-	-	-
B12.7	G-1	0.39	2.94		2.9	27	P	0.50	2.00%	0.42	0.31	0.50	5.23	0.85	0.28	0.04	0.27	7.60	10	1.00	2.9	0.0	-	-	-	-	-
B12.8	G-1	0.27	2.20		2.2	27	P	0.50	2.00%	0.42	0.28	0.50	4.62	0.85	0.28	0.04	0.27	6.73	10	1.00	2.2	0.0	-	-	-	-	-
B12.9A	S-1	0.89	6.59		6.6	27	P	0.50	2.00%	0.42	0.41	0.50	7.69	0.59	0.28	0.04	0.20	12.84	15	1.00	6.6	0.0	-	-	-	-	-
B12.9B	S-1	0.12	0.82		0.8	27	P	0.50	2.00%	0.42	0.21	0.50	3.13	0.85	0.28	0.04	0.27	4.46	15	1.00	0.8	0.0	-	-	-	-	-
B12.9	S-1	1.01	7.42		7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	7.4	15	0.32	0.32
B5.01	G-1	0.49	3.60		3.6	27	P	0.50	0.60%	0.42	0.41	0.50	7.68	0.59	0.28	0.04	0.20	6.93	10	1.00	3.6	0.0	-	-	-	-	-
B5.02	G-1	0.37	2.84		2.8	27	P	0.50	0.60%	0.42	0.38	0.50	6.79	0.69	0.28	0.04	0.23	5.82	10	1.00	2.8	0.0	-	-	-	-	-
B7.01	G-1	0.73	5.16		5.2	27	P	0.50	0.92%	0.42	0.43	0.50	8.35	0.53	0.28	0.04	0.19	9.61	10	1.00	5.2	0.0	-	-	-	-	-
B7.02	G-1	0.65	4.66		4.7	27	P	0.50	0.50%	0.42	0.46	0.50	9.53	0.46	0.28	0.04	0.16	8.25	10	1.00	4.7	0.0	-	-	-	-	-
B7.03A	G-1	0.66	4.74		4.7	27	P	0.50	0.50%	0.42	0.46	0.50	9.65	0.45	0.28	0.04	0.16	8.37	15	1.00	4.7	0.0	-	-	-	-	-
B7.03B	G-1	0.75	5.59		5.6	27	P	0.50	1.00%	0.42	0.43	0.50	8.55	0.52	0.28	0.04	0.18	10.34	15	1.00	5.6	0.0	-	-	-	-	-
B7.03	S-1	1.41	10.03		10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	10.0	15	0.39	0.39
B7.04	G-1	0.47	3.72		3.7	27	P	0.50	1.90%	0.42	0.34	0.50	5.87	0.82	0.28	0.04	0.27	8.39	10	1.00	3.7	0.0	-	-	-	-	-
B7.05	G-1	0.86	6.35		6.3	27	P	0.50	1.90%	0.42	0.41	0.50	7.64	0.59	0.28	0.04	0.20	12.39	15	1.00	6.3	0.0	-	-	-	-	-
B7.06	G-1	0.35	2.66		2.7	27	P	0.50	1.90%	0.42	0.30	0.50	5.06	0.85	0.28	0.04	0.27	7.17	10	1.00	2.7	0.0	-	-	-	-	-
B7.07	G-1	0.48	3.60		3.6	27	P	0.50	2.48%	0.42	0.32	0.50	5.45	0.85	0.28	0.04	0.27	8.83	10	1.00	3.6	0.0	-	-	-	-	-
B7.08	G-1	0.60	4.00		4.0	27	P	0.50	3.00%	0.42	0.32	0.50	5.47	0.85	0.28	0.04	0.27	9.77	10	1.00	4.0	0.0	-	-	-	-	-
B7.09	G-1	0.52	3.47		3.5	27	P	0.50	1.36%	0.42	0.35	0.50	6.13	0.78	0.28	0.04	0.25	7.59	10	1.00	3.5	0.0	-	-	-	-	-
B7.10	G-1	0.80	5.97		6.0	27	P	0.50	0.60%	0.42	0.48	0.50	10.88	0.40	0.28	0.04	0.15	10.35	10	1.00	6.0	0.0	-	-	-	-	-
B7.11	G-1	0.56	4.09		4.1	27	P	0.50	0.60%	0.42	0.42	0.50	8.26	0.54	0.28	0.04	0.19	7.63	10	1.00	4.1	0.0	-	-	-	-	-
B7.12	G-1	0.44	2.99		3.0	27	P	0.50	0.60%	0.42	0.38	0.50	6.96	0.67	0.28	0.04	0.22	6.04	10	1.00	3.0	0.0	-	-	-	-	-
B8.01	G-1	0.78	5.75		5.7	27	P	0.50	1.90%	0.42	0.39	0.50	7.25	0.63	0.28	0.04	0.21	11.52	10	0.97	5.6	0.1	-	-	-	-	-
B8.02	G-1	0.54	4.08		4.1	27	P	0.50	0.50%	0.42	0.44	0.50	8.72	0.51	0.28	0.04	0.18	7.44	10	1.00	4.1	0.0	-	-	-	-	-
J1.04	G-1	0.82	5.80		5.8	27	P	0.50	1.00%	0.42	0.44	0.50	8.74	0.51	0.28	0.04	0.18	10.63	15	1.00	5.8	0.0	-	-	-	-	-
J1.05	G-1	0.51	4.01		4.0	27	P	0.50	1.00%	0.42	0.39	0.50	7.10	0.65	0.28	0.04	0.22	8.06	10	1.00	4.0	0.0	-	-	-	-	-
J1.06	G-1	0.73	5.53		5.5	27	P	0.50	2.00%	0.42	0.38	0.50	7.01	0.66	0.28	0.04	0.22	11.27	10	0.98	5.4	0.1	-	-	-	-	-
J1.07	G-1	0.68	5.13		5.1	27	P	0.50	1.76%	0.42	0.38	0.50	6.97	0.66	0.28	0.04	0.22	10.47	10	1.00	5.1	0.0	-	-	-	-	-
J1.08	G-1	0.51	4.30		4.3	27	P	0.50	0.84%	0.42	0.41	0.50	7.72	0.59	0.28	0.04	0.20	8.29	10	1.00	4.3	0.0	-	-	-	-	-
J3.01	G-1	1.26	9.06		9.1	27	P	0.50	1.90%	0.42	0.46	0.50	9.51	0.46	0.28	0.04	0.16	16.27	10	0.82	7.4	1.6	-	-	-	-	-
J3.02	G-1	0.39	2.93		2.9	27	P	0.50	1.90%	0.42	0.31	0.50	5.28	0.85	0.28	0.04	0.27	7.47	10	1.00	2.9	0.0	-	-	-	-	-
J3.03	G-1	0.33	2.51		2.5	27	P	0.50	1.90%	0.42	0.30	0.50	4.94	0.85	0.28	0.04	0.27	7.00	10	1.00	2.5	0.0	-	-	-	-	-
J3.04	G-1	0.66	5.05		5.0	27	P	0.50	0.60%	0.42	0.46	0.50	9.45	0.46	0.28	0.04	0.17	8.97	10	1.00	5.0	0.0	-	-	-	-	-

STREET FLOW AND INLET CALCULATIONS
100 YEAR STORM

Inlet No.	Inlet Type	Drainage Area	Q 100 (cfs)	Q pass (cfs)	Q total (cfs)	STREET CAPACITY: Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (-) (ft)	INLET ON GRADE CAPACITY: Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	SUMP INLET CAPACITY CURB (with Depression): Qtotal (cfs)	Length (ft)	d (ft)	d (ft) d ≤ h + a
ULTIMATE CONDITION DRAINAGE AREAS																											
B1.08	G-1	0.93	9.03		9.0	27	P	0.50	1.70%	0.42	0.46	0.50	9.89	0.44	0.28	0.04	0.16	16.04	15	0.99	9.0	0.1	Pass B1.09	-	-	-	-
B1.09	G-1	0.53	5.28	0.8	6.0	27	P	0.50	0.50%	0.42	0.50	0.50	12.60	0.34	0.28	0.04	0.13	10.56	10	0.99	6.0	0.0	-	-	-	-	-
B1.10	G-1	0.47	5.94		5.9	27	P	0.50	0.50%	0.42	0.49	0.50	12.14	0.35	0.28	0.04	0.13	10.31	10	1.00	5.9	0.0	-	-	-	-	-
B1.11	G-1	0.84	8.45	-2.2	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.04	10	0.99	6.2	0.1	pass B1.12	-	-	-	-
B1.12	G-1	0.50	5.27	1.0	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.06	10	0.99	6.2	0.1	-	-	-	-	-
B1.13	G-1	0.29	3.26	3.0	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.05	10	0.99	6.2	0.1	pass B4.15	-	-	-	-
B1.14	G-1	0.46	5.14	0.3	5.4	27	P	0.50	0.50%	0.42	0.48	0.50	10.84	0.40	0.28	0.04	0.15	9.41	10	1.00	5.4	0.0	-	-	-	-	-
B1.15	G-1	0.46	5.17		5.2	27	P	0.50	1.90%	0.42	0.38	0.50	6.87	0.68	0.28	0.04	0.23	10.66	10	0.99	5.1	0.0	-	-	-	-	-
B1.16	G-1	0.79	8.83		8.8	27	P	0.50	1.92%	0.42	0.45	0.50	9.31	0.47	0.28	0.04	0.17	15.96	10	0.83	7.3	1.5	pass B1.17	-	-	-	-
B1.17	G-1	0.81	7.45	1.5	8.9	27	P	0.50	4.30%	0.42	0.40	0.50	7.38	0.62	0.28	0.04	0.21	17.91	15	0.96	8.6	0.3	-	-	-	-	-
B2.01	G-1	1.06	11.39	-0.3	11.1	27	P	0.50	1.56%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	19.76	10	0.72	8.0	3.1	spill B2.06 / pass B2.02	-	-	-	-
B2.02	G-1	0.74	8.09	3.1	11.2	27	P	0.50	1.90%	0.42	0.49	0.50	11.55	0.37	0.28	0.04	0.14	19.61	10	0.72	8.1	3.1	pass B2.03	-	-	-	-
B2.03	G-1	0.79	8.54	3.0	11.5	27	P	0.50	1.68%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	20.55	10	0.70	8.1	3.5	spill B2.06 / pass B2.04	-	-	-	-
B2.04	G-1	0.88	9.05	1.5	10.5	27	P	0.50	1.40%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	18.74	10	0.75	7.9	2.7	pass B2.05	-	-	-	-
B2.05	G-1	0.51	5.76	2.7	8.4	27	P	0.50	1.64%	0.42	0.46	0.50	9.52	0.46	0.28	0.04	0.16	15.11	10	0.86	7.2	1.2	pass B2.07	-	-	-	-
B2.06	G-1	0.40	4.89	2.4	7.3	27	P	0.50	1.90%	0.42	0.42	0.50	8.27	0.54	0.28	0.04	0.19	13.75	10	0.90	6.6	0.7	pass B1.09	-	-	-	-
B2.07	G-1	0.63	7.16	1.2	8.4	27	P	0.50	1.90%	0.42	0.44	0.50	8.99	0.49	0.28	0.04	0.17	15.26	15	1.00	8.3	0.0	-	-	-	-	-
B3.01	G-1	0.70	7.84		7.8	27	P	0.50	1.12%	0.42	0.47	0.50	10.47	0.41	0.28	0.04	0.15	13.73	10	0.90	7.1	0.8	pass B3.02	-	-	-	-
B3.02	G-1	0.71	7.96	0.8	8.7	27	P	0.50	2.00%	0.42	0.45	0.50	9.09	0.48	0.28	0.04	0.17	15.86	10	0.83	7.3	1.4	pass B3.03	-	-	-	-
B3.03	G-1	0.75	8.39	1.4	9.8	27	P	0.50	2.00%	0.42	0.47	0.50	9.93	0.44	0.28	0.04	0.16	17.50	10	0.78	7.7	2.1	pass B3.04	-	-	-	-
B3.04	G-1	0.71	7.58	2.1	9.7	27	P	0.50	2.00%	0.42	0.46	0.50	9.83	0.44	0.28	0.04	0.16	17.32	10	0.79	7.7	2.1	pass B3.06	-	-	-	-
B3.05	G-1	0.53	6.15		6.1	27	P	0.50	2.00%	0.42	0.40	0.50	7.41	0.62	0.28	0.04	0.21	12.18	10	0.95	5.9	0.3	pass B3.08	-	-	-	-
B3.06	G-1	0.67	7.17	2.1	9.2	27	P	0.50	2.00%	0.42	0.46	0.50	9.46	0.46	0.28	0.04	0.17	16.61	10	0.81	7.5	1.8	pass B3.07	-	-	-	-
B3.07	G-1	1.06	11.06	1.5	12.6	27	P	0.50	2.00%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	22.44	15	0.86	10.8	1.7	pass B1.12	-	-	-	-
B3.08	G-1	0.51	5.69	0.6	6.3	27	P	0.50	2.00%	0.42	0.40	0.50	7.49	0.61	0.28	0.04	0.21	12.36	10	0.95	5.9	0.3	pass B1.12	-	-	-	-
B4.01	G-1	1.22	8.20	-1.3	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.15	10	0.96	6.6	0.3	spill B4.03 / pass B4.02	-	-	-	-
B4.02	G-1	0.61	6.80	0.1	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.16	10	0.96	6.6	0.3	spill B4.03 / pass B4.04	-	-	-	-
B4.03	G-1	0.28	3.52	1.5	5.0	27	P	0.50	0.60%	0.42	0.45	0.50	9.42	0.46	0.28	0.04	0.17	8.94	10	1.00	5.0	0.0	-	-	-	-	-
B4.04	G-1	0.66	7.33	-0.5	6.8	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.10	10	0.96	6.5	0.3	spill B4.06 / pass B4.05	-	-	-	-
B4.05	G-1	0.79	8.78	-1.9	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.14	10	0.96	6.6	0.3	spill B4.06 / pass B4.07	-	-	-	-
B4.06	G-1	0.39	4.53	2.3	6.8	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.10	10	0.96	6.5	0.3	spill B4.07 / pass B4.08	-	-	-	-
B4.07	G-1	0.70	7.79	-0.9	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.15	10	0.96	6.6	0.3	spill B4.08 / pass B4.09	-	-	-	-
B4.08	G-1	0.35	3.99	1.9	5.9	27	P	0.50	0.60%	0.42	0.48	0.50	10.73	0.40	0.28	0.04	0.15	10.22	10	1.00	5.9	0.0	-	-	-	-	-
B4.09	G-1	0.75	7.94	0.3	8.2	27	P	0.50	1.16%	0.42	0.48	0.50	10.79	0.40	0.28	0.04	0.15	14.39	10	0.88	7.3	1.0	pass B4.10	-	-	-	-
B4.10	G-1	0.61	6.93	1.0	7.9	27	P	0.50	1.40%	0.42	0.46	0.50	9.62	0.45	0.28	0.04	0.16	14.10	10	0.89	7.0	0.9	pass B4.13	-	-	-	-
B4.11	G-1	0.59	6.55		6.5	27	P	0.50	1.40%	0.42	0.43	0.50	8.49	0.52	0.28	0.04	0.18	12.17	10	0.96	6.3	0.3	pass B1.15	-	-	-	-
B12.1	G-1	0.66	7.23	-0.4	6.8	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.10	10	0.96	6.5	0.3	pass B14.14	-	-	-	-
B12.2	G-1	0.55	5.21	0.3	5.5	27	P	0.50	0.60%	0.42	0.47	0.50	10.10	0.43	0.28	0.04	0.16	9.63	10	1.00	5.5	0.0	-	-	-	-	-
B12.3	G-1	0.31	3.58	1.7	5.3	27	P	0.50	0.60%	0.42	0.46	0.50	9.78	0.45	0.28	0.04	0.16	9.32	10	1.00	5.3	0.0	-	-	-	-	-
B12.4	G-1	0.79	5.43		5.4	27	P	0.50	0.60%	0.42	0.47	0.50	9.99	0.43	0.28	0.04	0.16	9.53	10	1.00	5.4	0.0	-	-	-	-	-
B12.5	G-1	0.63	7.02		7.0	27	P	0.50	4.50%	0.42	0.36	0.50	6.45	0.73	0.28	0.04	0.24	15.09	10	0.86	6.0	1.0	pass B4.18	-	-	-	-
B12.6	G-1	0.73	8.27	1.0	9.3	27	P	0.50	4.50%	0.42	0.40	0.50	7.43	0.62	0.28	0.04	0.21	18.49	10	0.75	7.0	2.3	pass B4.19	-	-	-	-
B12.7	G-1	0.39	4.38	2.3	6.7	27	P	0.50	2.00%	0.42	0.41	0.50	7.74	0.59	0.28	0.04	0.20	12.94	10	0.93	6.2	0.5	pass B4.21	-	-	-	-
B12.8	G-1	0.27	3.26		3.3	27	P	0.50	2.00%	0.42	0.32	0.50	5.47	0.85	0.28	0.04	0.27	7.94	10	1.00	3.3	0.0	-	-	-	-	-
B12.9A	S-1	0.89	9.83	0.5	10.3	27	P	0.50	2.00%	0.42	0.47	0.50	10.31	0.42	0.28	0.04	0.15	18.17	15	0.96	9.8	0.4	-	-	-	-	-
B12.9B	S-1	0.12	1.24	0.4	1.7	27	P	0.50	2.00%	0.42	0.26	0.50	4.14	0.85	0.28	0.04	0.27	6.01	15	1.00	1.7	0.0	-	-	-	-	-
B12.9	S-1	1.01	11.07		12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	12.0	15	0.44	0.44
B5.01	G-1	0.49	5.35		5.4	27	P	0.50	0.60%	0.42	0.46	0.50	9.88	0.44	0.28	0.04	0.16	9.41	10	1.00	5.4	0.0	-	-	-	-	-
B5.02	G-1	0.37	4.23		4.2	27	P	0.50	0.60%	0.42	0.43	0.50	8.42	0.53	0.28	0.04	0.18	7.82	10	1.00	4.2	0.0	-	-	-	-	-
B7.01	G-1	0.73	7.69		7.7	27	P	0.50	0.92%	0.42	0.49	0.50	11.35	0.38	0.28	0.04	0.14	13.36	10	0.92	7.0	0.6	pass B7.02	-	-	-	-
B7.02	G-1	0.65	6.93	-0.7	6.2	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.02	10	0.99	6.1	0.1	pass B7.03	-	-	-	-
B7.03A	G-1	0.66	7.05	-0.8	6.3	27	P	0.50	0.50%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	11.04	15	1.00	6.3	0.0	-	-	-	-	-
B7.03B	G-1	0.75	8.33	0.3	8.6	27	P	0.50	1.00%	0.42	0.50	0.50	12.90	0.33	0.28	0.04	0.13	15.24	15	1.00	8.6	0.0	-	-	-	-	-
B7.03	S-1	1.41	14.92		14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	14.9	15	0.51	0.51
B7.04	G-1	0.47	5.52	2.2	7.7	27	P	0.50	1.90%	0.42	0.43	0.50	8.55	0.52	0.28	0.04	0.18	14.35	10	0.88	6.8	0.9	pass B7.06	-	-	-	-
B7.05	G-1	0.86	9.44		9.4	27	P	0.50	1.90%	0.42	0.46	0.50	9.81	0.44	0.28	0.04	0.16	16.82	15	0.98	9.3	0.2	pass B7.08	-	-	-	-
B7.06	G-1	0.35	3.95	0.9	4.9	27	P	0.50	1.90%	0.42	0.37	0.50	6.65	0.70	0.28	0.04	0.23	10.17	10	1.00	4.8	0.0	-	-	-	-	-
B7.07	G-1	0.48	5.37	1.1	6.5	27	P	0.50	2.48%	0.42	0.39	0.50	7.19	0.64	0.28	0.04	0.21	13.04	10	0.93	6.0	0.5	pass B7.09	-	-	-	-
B7.08	G-1	0.60	5.96	0.2	6.1	27	P	0.50	3.00%	0.42	0.37	0.50	6.67	0.70	0.28	0.04	0.23	12.90	10	0.93	5.7	0.4	pass B7.10	-	-	-	-
B7.09	G-1	0.52	5.15	0.5	5.6	27	P	0.50	1.36%	0.42	0.41	0.50	7.84	0.58	0.28	0.04	0.20	10.81	10	0.99	5.6	0.1	pass B7.11	-	-	-	-
B7.10	G-1	0.80	8.90	-2.0	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.16	10	0.96	6.6	0.3	spill B7.11 / pass BB7.12	-	-	-	-
B7.11	G-1	0.56	6.09	0.8	6.9	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.15	10	0.96	6.6	0.3	spill B7.12 / pass B6.08	-	-	-	-
B7.12	G-1	0.44	4.44	1.7	6.1	27	P	0.50	0.60%	0.42	0.49	0.50	11.20	0.38	0.28	0.04	0.14	10.63	10	0.99	6.1	0.0	-	-	-	-	-
B8.01	G-1	0.78	8.55		8.6	27	P	0.50	1.90%	0.42	0.45	0.50	9.14	0.48	0.28	0.04	0.17	15.54	10	0.84	7.2	1.3	pass B8.02	-	-	-	-
B8.02	G-1	0.54	6.08	1.3	7.4	27	P	0.50	0.50%	0.42	0.53	0.50	13.50	0.31	0.28	0.04	0.12	11.94	10	0.96	7.1	0.3	pass B7.03B	-	-	-	-
J1.04	G-1	0.82	8.66	0.8	9.5	27	P	0.50	1.00%	0.42	0.51	0.50	13.50	0.31	0.28	0.04	0.12	16.22	15	0.99	9.4	0.1	-	-	-	-	-
J1.05	G-1	0.51	5.95		6.0	27	P	0.50	1.00%	0.42	0.44	0.50	8.89	0.50	0.28	0.04	0.17	10.85	10	0.99	5.9	0.1	pass J1.06	-	-	-	-
J1.06	G-1	0.73	8.23	0.1	8.3	27	P	0.50	2.00%	0.42	0.44	0.50	8.80	0.50	0.28	0.04	0.18	15.26	10	0.85	7.1	1.2	pass J1.08	-	-	-	-
J1.07	G-1	0.68	7.63		7.6	27	P	0.50	1.76%	0.42	0.44	0.50	8.69	0.51	0.28	0.04	0.18	14.08	10	0.89	6.8	0.8	pass J1.09	-	-	-	-
J1.08	G-1	0.51	6.36	1.2	7.6	27	P	0.50	0.84%	0.42	0.49	0.50	11.82	0.36	0.28	0.04	0.14	13.17	10	0.92	7.0	0.6	pass offsite	-	-	-	-
J3.01	G-1	1.26	13.50	-1.2	12.3	27	P	0.50	1.90%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	21.90	10	0.67	8.2	4.1	spill J3.03 / pass J3.02	-	-	-	-
J3.02	G-1	0.39	4.36	4.1	8.5	27	P	0.50	1.90%	0.42	0.45	0.50	9.07	0.49	0.28	0.04	0.17	15.41	10	0.85	7.2	1.3	pass J3.04	-	-	-	-
J3.03	G-1	0.33	3.73	1.2	4.9	27	P	0.50	1.90%	0.42	0.37	0.50	6.71	0.70	0.28	0.04	0.23	10.30	10	1.00	4.9	0.0	-	-	-	-	-
J3.04	G-1	0.66	7.51	1.3	8.8	27	P	0.50	0.60%	0.42	0.55	0.50	13.50	0.31	0.28	0.04	0.12	13.59	10	0.91	8.0	0.8	pass J1.04	-	-	-	-

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

DRAINAGE CALCULATIONS (2 OF 2)

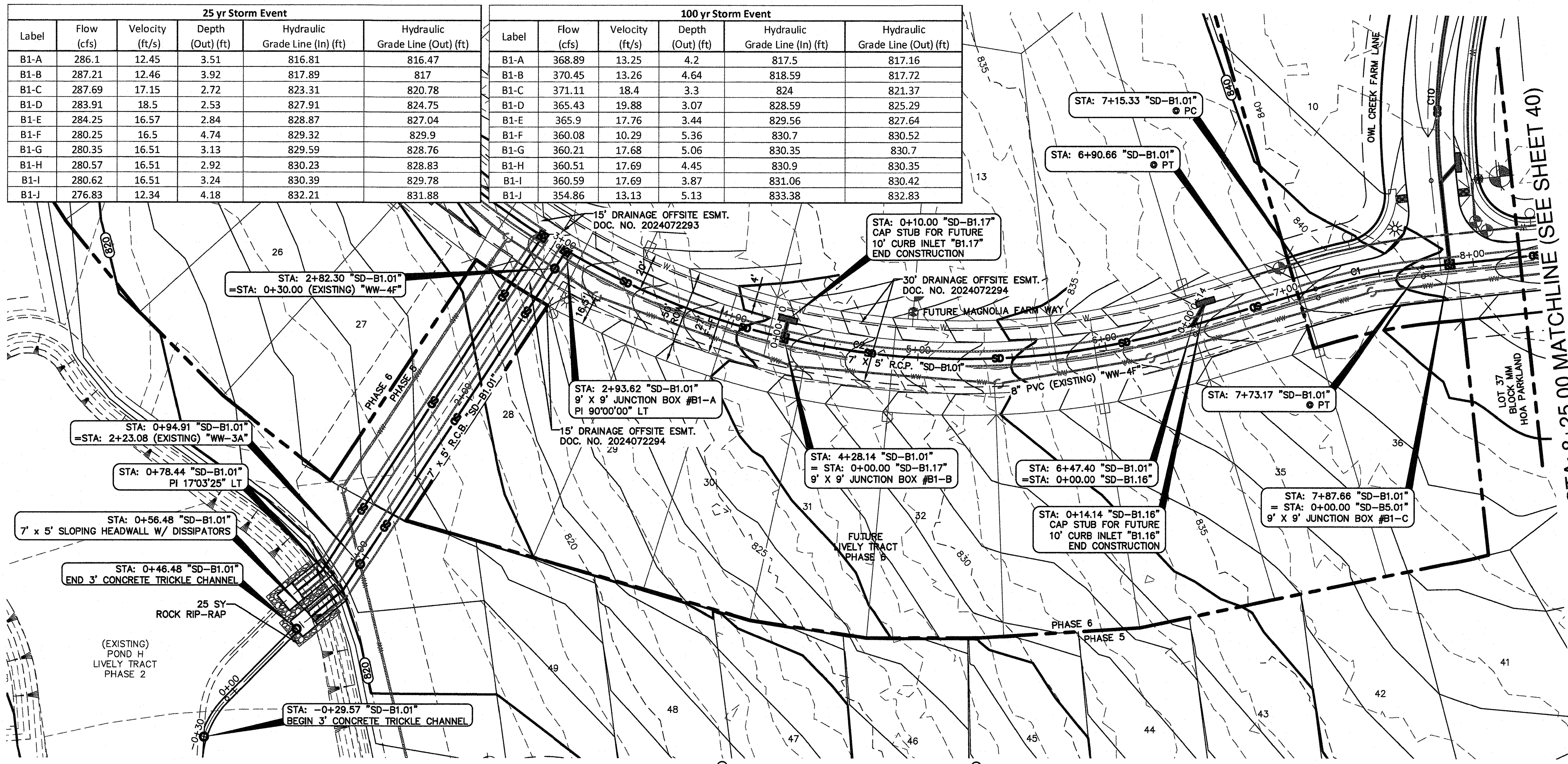
APPROVED
RMG
CITY OF LEANDER APPROVAL

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER ABC
CHECKED TCK DRAWN ABC
SHEET 36 of 83

Date: Sep 19, 2024, 10:14am User ID: tkrause
File: H:\Projects\508\16\24\301 Construction Documents\Civil\0050816-24.dwg

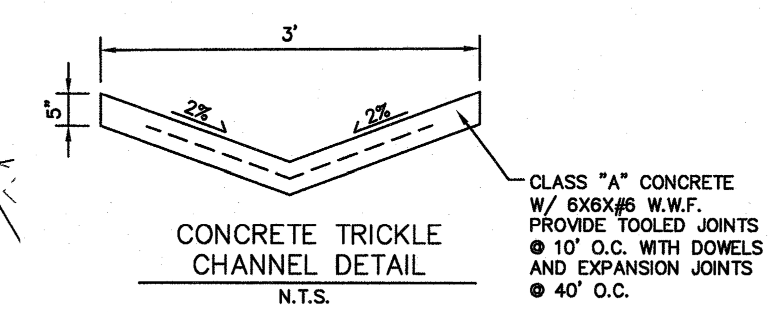
25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-A	286.1	12.45	3.51	816.81	816.47
B1-B	287.21	12.46	3.92	817.89	817
B1-C	287.69	17.15	2.72	823.31	820.78
B1-D	283.91	18.5	2.53	827.91	824.75
B1-E	284.25	16.57	2.84	828.87	827.04
B1-F	280.25	16.5	4.74	829.32	829.9
B1-G	280.35	16.51	3.13	829.59	828.76
B1-H	280.57	16.51	2.92	830.23	828.83
B1-I	280.62	16.51	3.24	830.39	829.78
B1-J	276.83	12.34	4.18	832.21	831.88

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-A	368.89	13.25	4.2	817.5	817.16
B1-B	370.45	13.26	4.64	818.59	817.72
B1-C	371.11	18.4	3.3	824	821.37
B1-D	365.43	19.88	3.07	828.59	825.29
B1-E	365.9	17.76	3.44	829.56	827.64
B1-F	360.08	10.29	5.36	830.7	830.52
B1-G	360.21	17.68	5.06	830.35	830.7
B1-H	360.51	17.69	4.45	830.9	830.35
B1-I	360.59	17.69	3.87	831.06	830.42
B1-J	354.86	13.13	5.13	833.38	832.83



SCALE: 1" = 40'

0' 40' 80' 120'



CONCRETE TRICKLE CHANNEL DETAIL

N.T.S.

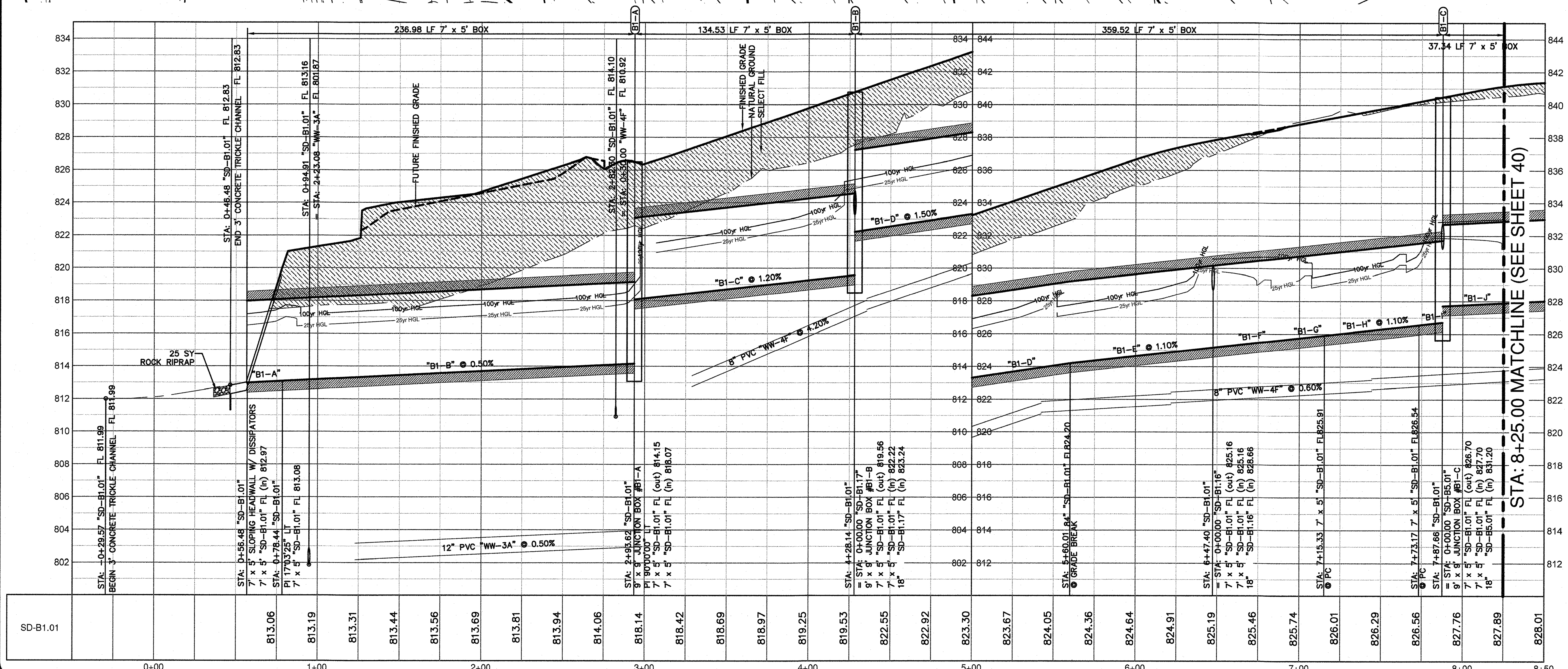
NOTE: CONCRETE TRICKLE CHANNEL IS NOT SUBJECT TO DECORATIVE REQUIREMENTS FOR EXPOSED CONCRETE.

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
6. EXPOSED CONCRETE THAT IS VISIBLE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE INCLUDING BUT NOT LIMITED TO LEDGESTONE, FIELDSTONE, CAST STONE, OR OTHER DECORATIVE MATERIALS SUCH AS STAMPED AND TINTED CONCRETE THAT RESEMBLES STONE OR BRICK. THE CONCRETE TRICKLE CHANNEL IS NOT SUBJECT TO THIS REQUIREMENT.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- INLET # / CAPTURE Q= 25/100 YEAR



PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	318.50'	010°24'15"	S25°26'36"E	57.76'	57.84'
C2	420.00'	046°53'48"	S07°11'50"E	334.25'	343.77'

APPROVED

RMG

CITY OF LEANDER APPROVAL

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

NO. | REVISION | DATE

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5

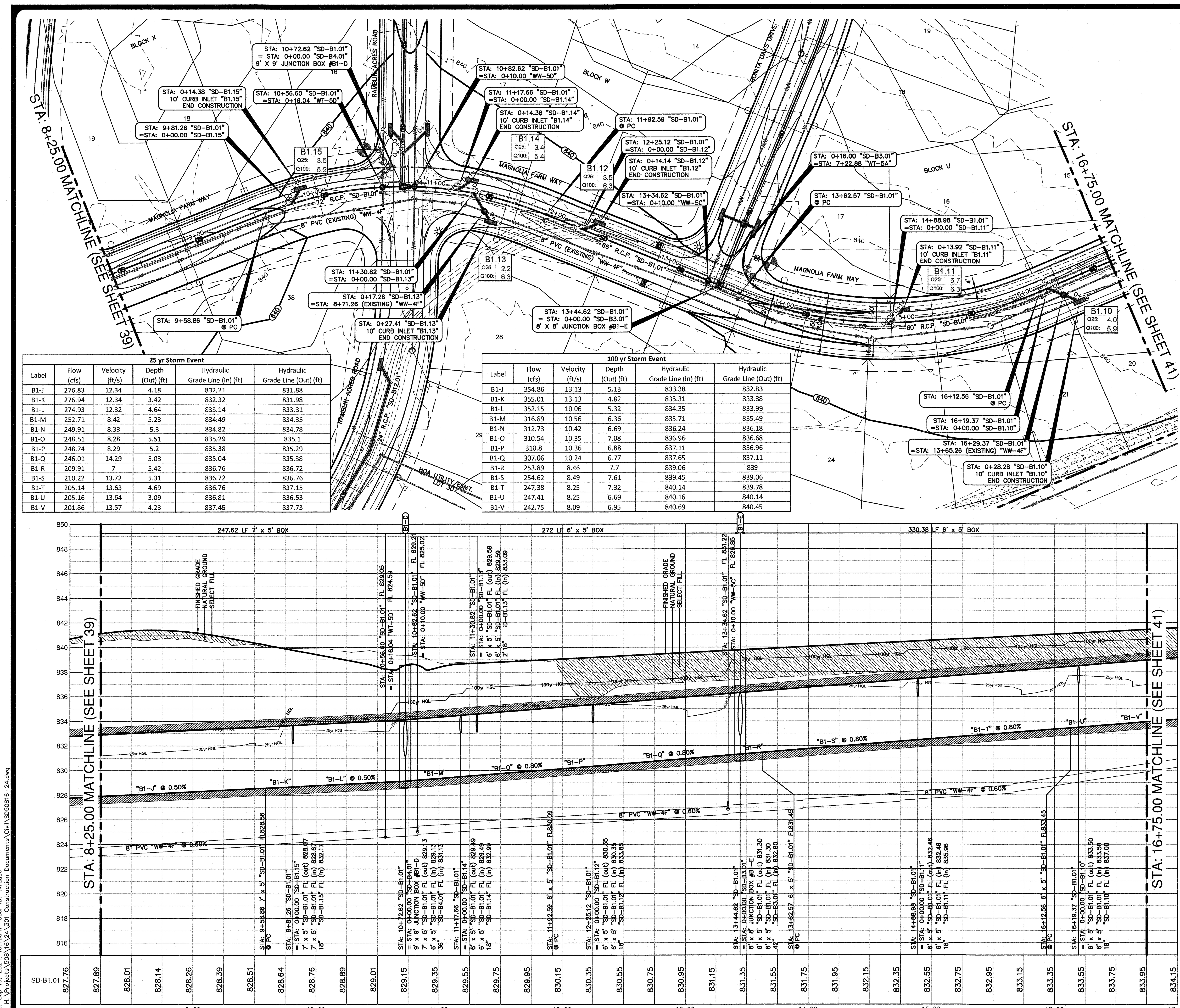
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B1.01 (1 OF 3)

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS

Date: Sep 19, 2024, 10:15am User ID: tkrouse
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg

PICP-24-0120



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-J	276.83	12.34	4.18	832.21	831.88
B1-K	276.94	12.34	3.42	832.32	831.98
B1-L	274.93	12.32	4.64	833.14	833.31
B1-M	252.71	8.42	5.23	834.49	834.35
B1-N	249.91	8.33	5.3	834.82	834.78
B1-O	248.51	8.28	5.51	835.29	835.1
B1-P	248.74	8.29	5.2	835.38	835.29
B1-Q	246.01	14.29	5.03	835.04	835.38
B1-R	209.91	7	5.42	836.76	836.72
B1-S	210.22	13.72	5.31	836.72	836.76
B1-T	205.14	13.63	4.69	836.76	837.15
B1-U	205.16	13.64	3.09	836.81	836.53
B1-V	201.86	13.57	4.23	837.45	837.73

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-J	354.86	13.13	5.13	833.38	832.83
B1-K	355.01	13.13	4.82	833.31	833.38
B1-L	352.15	10.06	5.32	834.35	833.99
B1-M	316.89	10.56	6.36	835.71	835.49
B1-N	312.73	10.42	6.69	836.24	836.18
B1-O	310.54	10.35	7.08	836.96	836.68
B1-P	310.8	10.36	6.88	837.11	836.96
B1-Q	307.06	10.24	6.77	837.65	837.11
B1-R	253.89	8.46	7.7	839.06	839
B1-S	254.62	8.49	7.61	839.45	839.06
B1-T	247.38	8.25	7.32	840.14	839.78
B1-U	247.41	8.25	6.69	840.16	840.14
B1-V	242.75	8.09	6.95	840.69	840.45

SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
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4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C3	315.00'	045°28'17"	N00°55'51"E	243.48'	249.99'
C4	305.00'	043°54'28"	S01°42'45"W	228.06'	233.73'

APPROVED
RMG
CITY OF LEANDER APPROVAL

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B1.01 (2 OF 3)

NO. REVISION DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

CITY NO. PICP-24-0120
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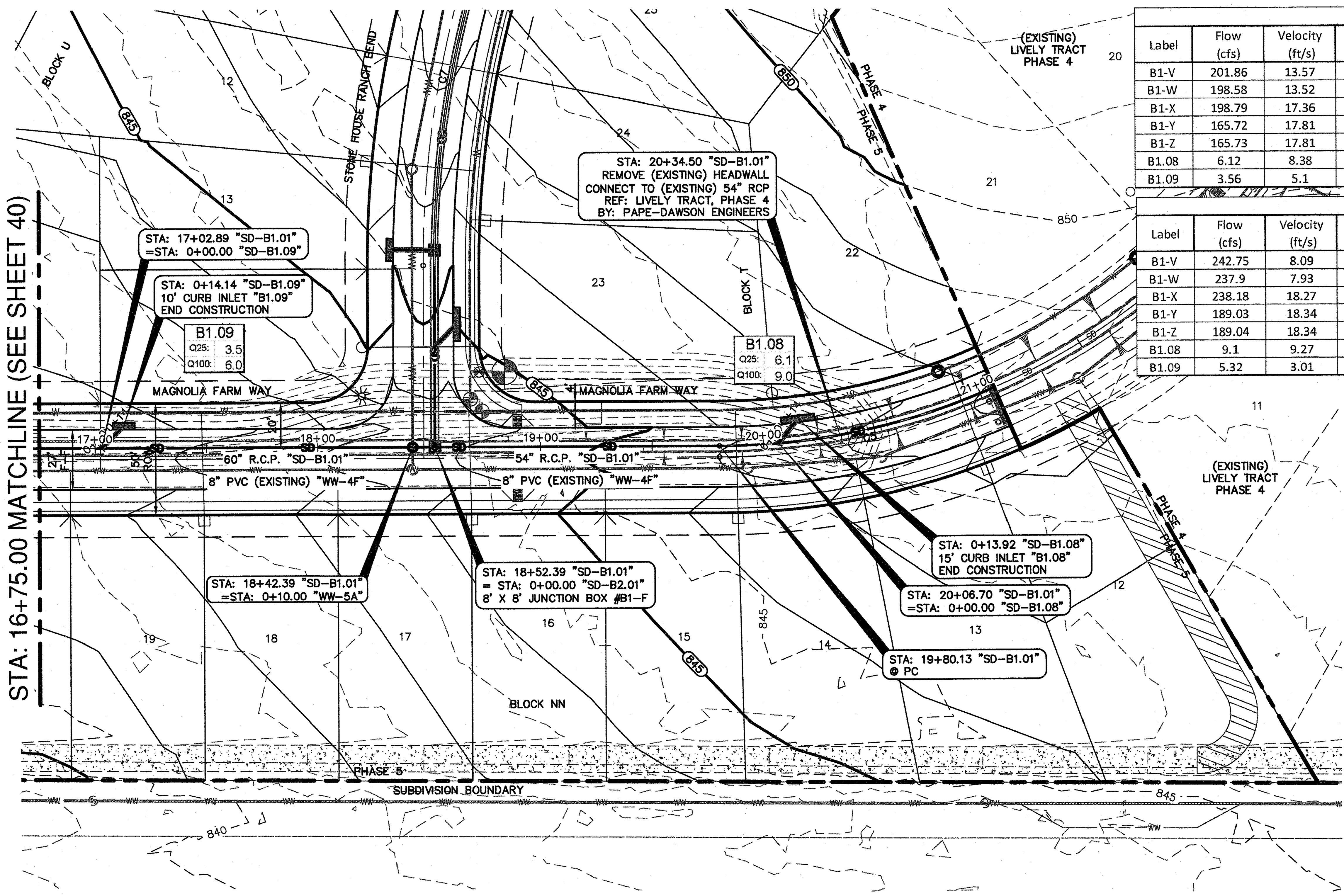
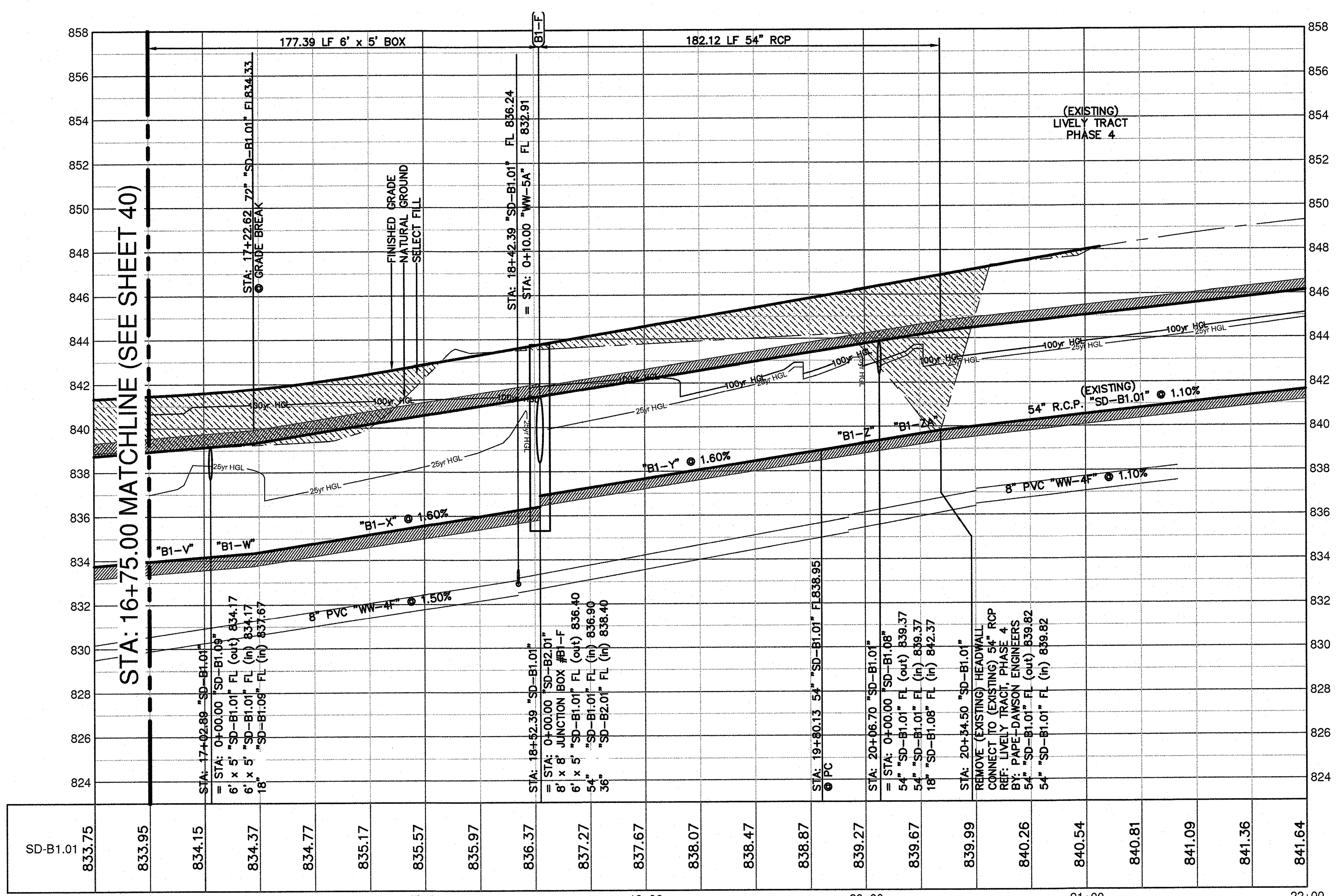
Date: Sep 19, 2024, 10:16am User ID: tkrouse
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg

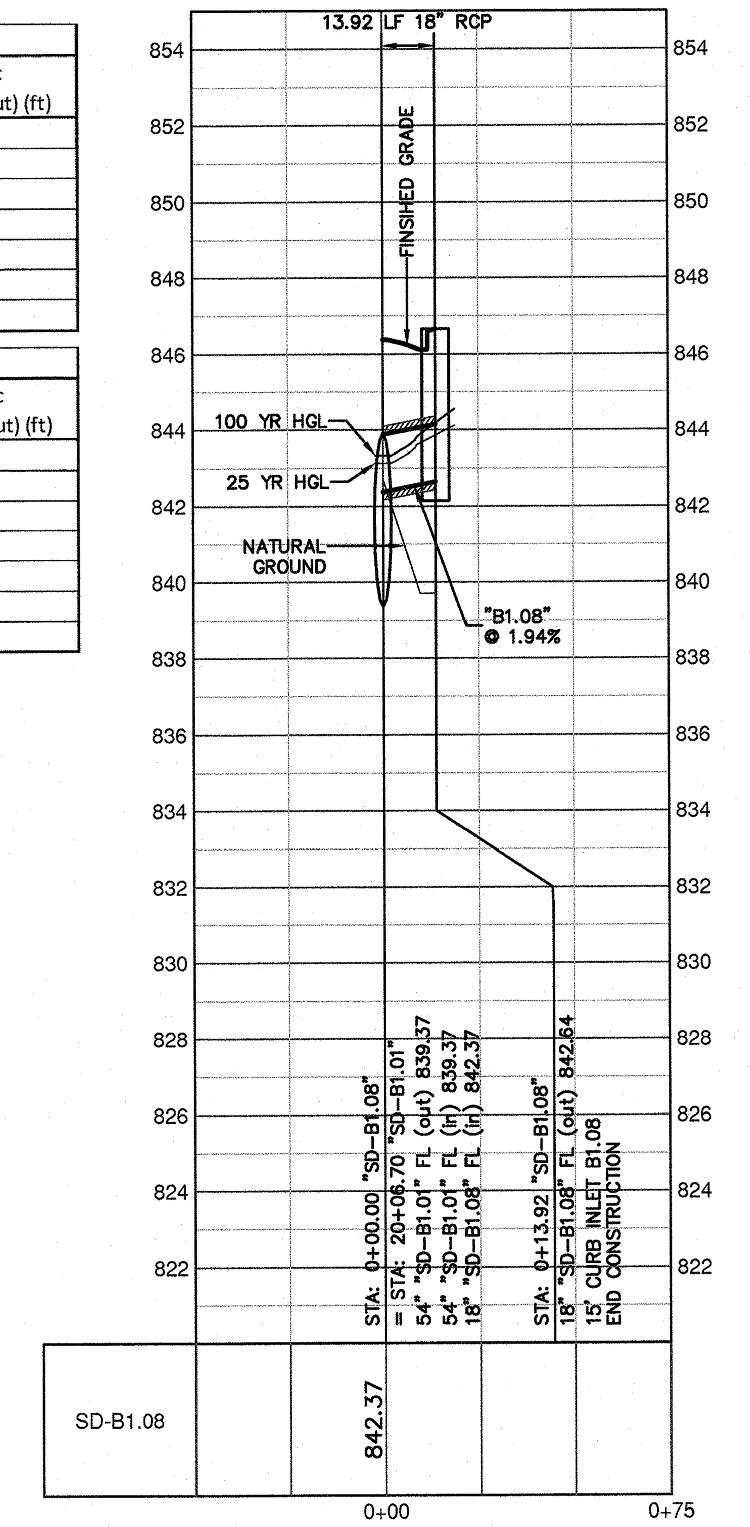
PICP-24-0120

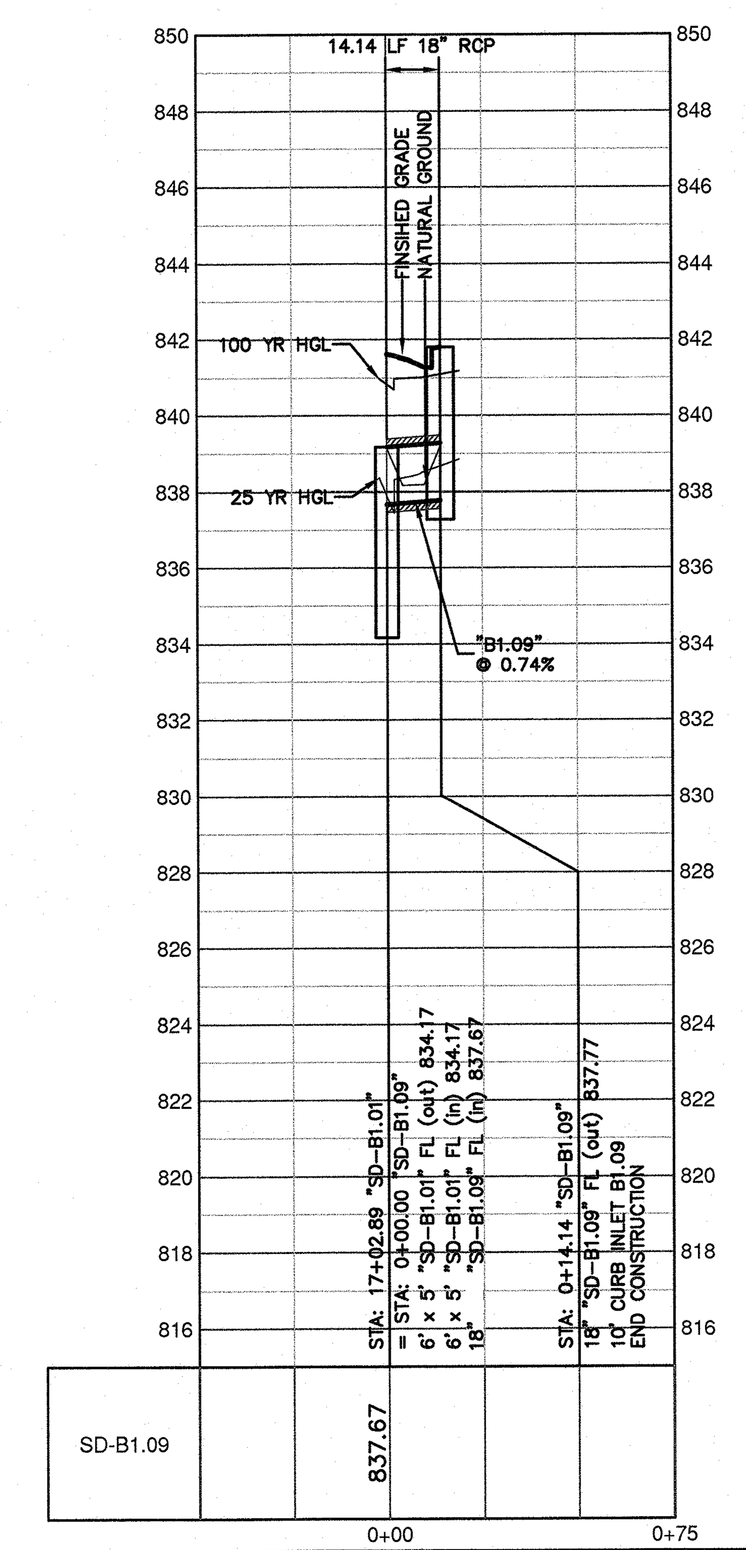


25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-V	201.86	13.57	4.23	837.45	837.73
B1-W	198.58	13.52	4.19	838.28	838.36
B1-X	198.79	17.36	3.95	839.65	838.28
B1-Y	165.72	17.81	3.86	842.7	840.76
B1-Z	165.73	17.81	3.21	843.13	842.16
B1.08	6.12	8.38	0.74	843.6	843.12
B1.09	3.56	5.1	0.64	838.49	838.31

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1-V	242.75	8.09	6.95	840.69	840.45
B1-W	237.9	7.93	6.81	841.03	840.97
B1-X	238.18	18.27	6.7	841.36	841.03
B1-Y	189.03	18.34	4.91	842.91	841.81
B1-Z	189.04	18.34	3.45	843.33	842.4
B1.08	9.1	9.27	0.94	843.81	843.32
B1.09	5.32	3.01	3.3	841.01	840.97







SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

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4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C5	310.00'	023°23'55"	N33°30'15"W	125.72'	126.60'

APPROVED RMG

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 09/21/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B1.01 (3 OF 3) & LATERALS B1.08-B1.09

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 39 of 83

Date: Sep 19, 2024, 10:18am User ID: tkrause
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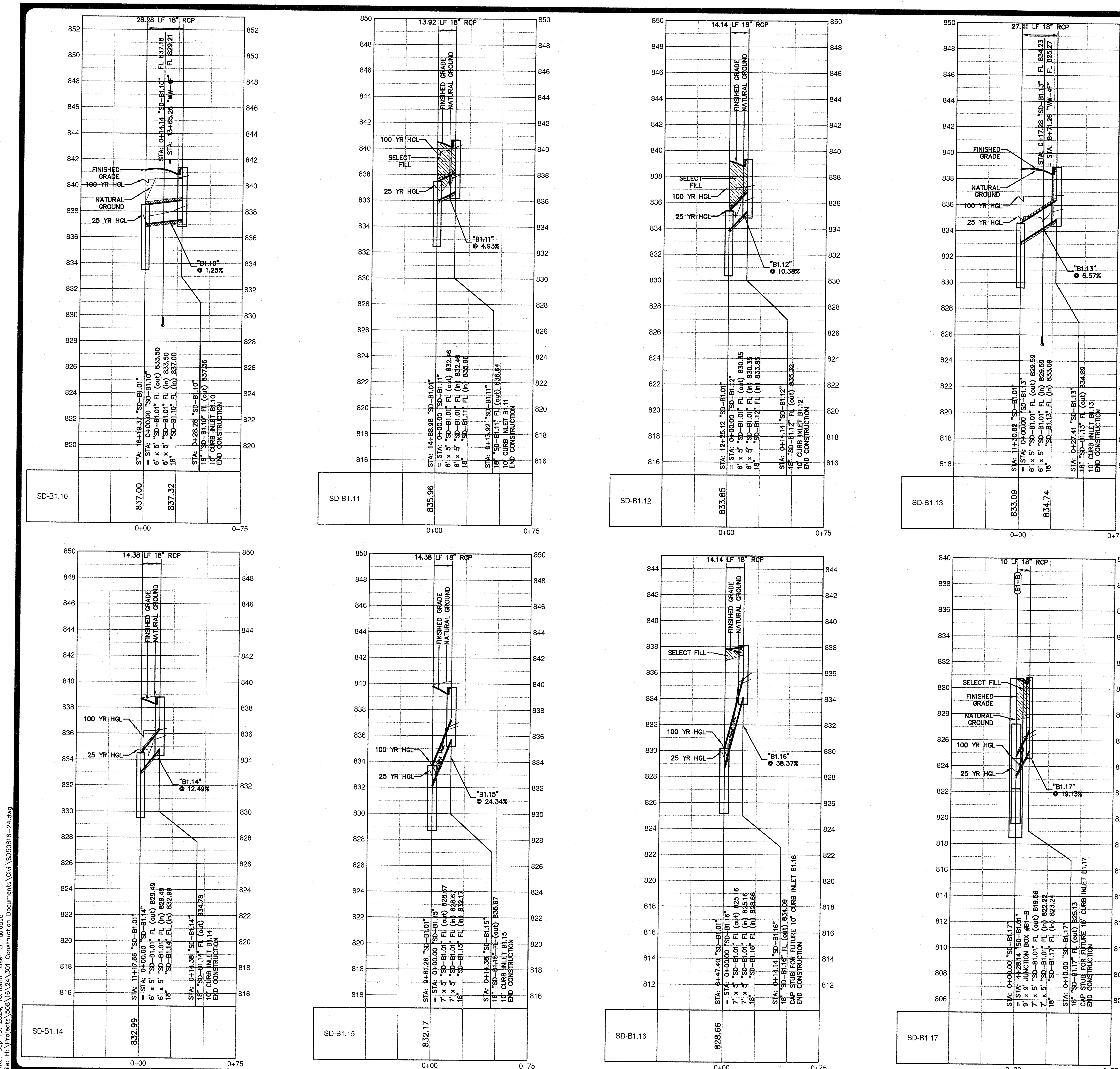
PICP-24-0120



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.10	4.06	6.4	0.61	838.13	837.61
B1.11	5.72	11.55	1.19	837.57	837.15
B1.12	3.57	13.13	1.53	836.04	835.38
B1.13	2.21	9.71	2.01	835.46	835.1
B1.14	3.48	13.91	1.8	835.5	834.78
B1.15	3.5	17.51	1.14	836.39	833.31
B1.16	5.97	23.71	1.24	835.03	829.9
B1.17	5.05	17.98	0.43	825.99	823.66

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.10	5.99	3.39	3.45	840.53	840.45
B1.11	8.52	4.82	3.82	839.86	839.78
B1.12	5.31	3.01	3.27	837.14	837.11
B1.13	3.28	1.86	3.58	836.7	836.68
B1.14	5.19	15.63	3.19	836.2	836.18
B1.15	5.22	19.68	1.82	836.55	833.99
B1.16	8.91	26.64	1.86	835.24	830.52
B1.17	7.5	20.16	1.45	826.19	824.68

NOTES:

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5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL
APPROVED RMG

NO. REVISION DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B1.01 LATERALS B1.10-B1.17

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 40 of 83

Date: Sep 19, 2024, 10:18am User ID: lkrouse
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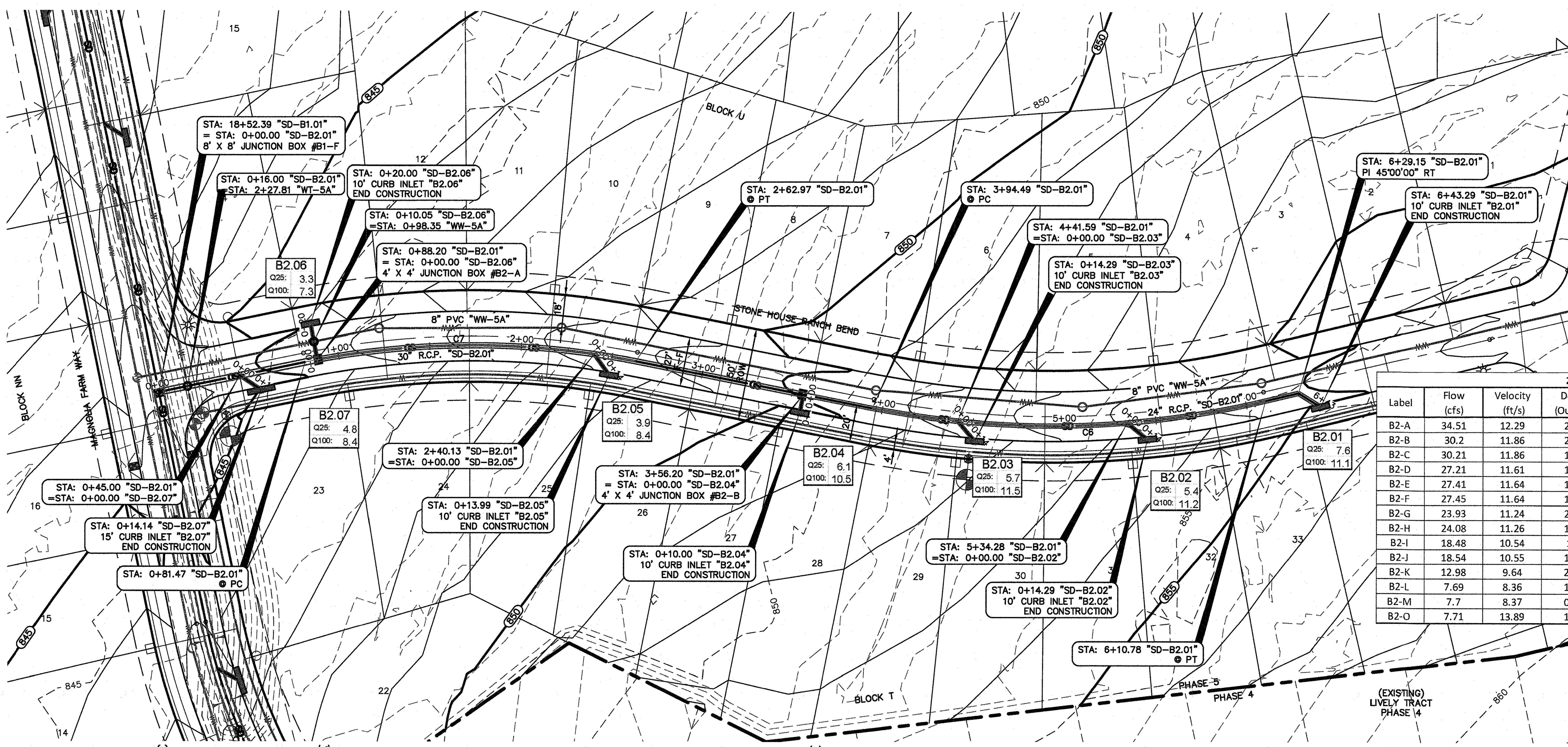

SCALE: 1" = 40'

0' 40' 80' 120'

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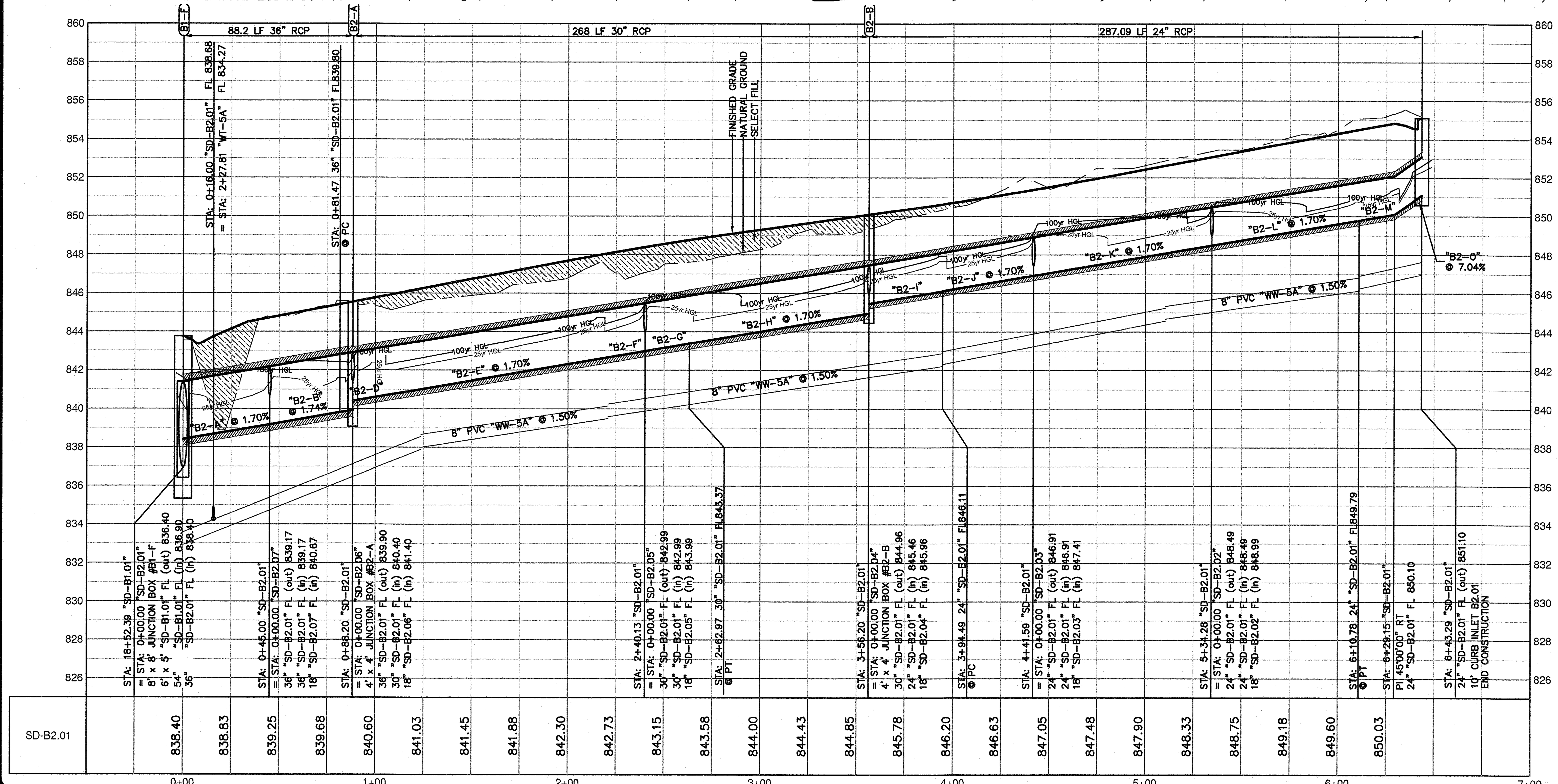
25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B2-A	34.51	12.29	2.36	841.08	840.76
B2-B	30.2	11.86	2.45	841.59	841.62
B2-C	30.21	11.86	1.56	841.68	841.36
B2-D	27.21	11.61	1.83	842.38	842.23
B2-E	27.41	11.64	1.25	844.38	841.85
B2-F	27.45	11.64	1.43	844.77	844.02
B2-G	23.93	11.24	2.32	845.04	845.31
B2-H	24.08	11.26	1.17	846.63	844.55
B2-I	18.48	10.54	1.2	847.66	846.65
B2-J	18.54	10.55	1.18	848.46	847.29
B2-K	12.98	9.64	2.13	849.78	849.04
B2-L	7.69	8.36	1.78	850.77	850.27
B2-M	7.7	8.37	0.76	851.09	850.54
B2-O	7.71	13.89	1.12	852.08	851.22

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C6	505.00'	024°32'24"	S78°46'51"W	214.64'	216.29'
C7	455.00'	022°51'20"	N79°37'23"E	180.30'	181.50'



PROFILE SCALES:

1" = 40' HORIZONTAL

1" = 4' VERTICAL

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B2-A	51.35	13.62	3.41	841.99	841.81
B2-B	44.94	13.17	3.21	842.41	842.38
B2-C	44.95	13.17	2.61	842.34	842.41
B2-D	40.52	12.76	2.5	842.92	842.91
B2-E	40.79	12.79	2.32	844.74	842.92
B2-F	40.85	12.79	1.81	845.13	844.4
B2-G	35.63	7.26	2.82	845.95	845.81
B2-H	35.83	12.42	2.58	846.99	845.95
B2-I	27.57	11.44	1.55	847.93	847.01
B2-J	27.66	11.45	1.53	848.73	847.64
B2-K	19.35	10.65	2.7	850.07	849.61
B2-L	11.45	9.33	2.25	851	850.73
B2-M	11.47	9.33	0.95	851.32	850.74
B2-O	11.48	15.58	1.4	852.31	851.49

APPROVED RMG

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711

TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B2.01

CITY NO. PICP-24-0120

JOB NO. 50816-25

DATE SEPTEMBER 2024

DESIGNER RBB

CHECKED TCK DRAWN ADS

SHEET 41 of 83

Date: Sep 19, 2024, 10:19am User ID: tkrause
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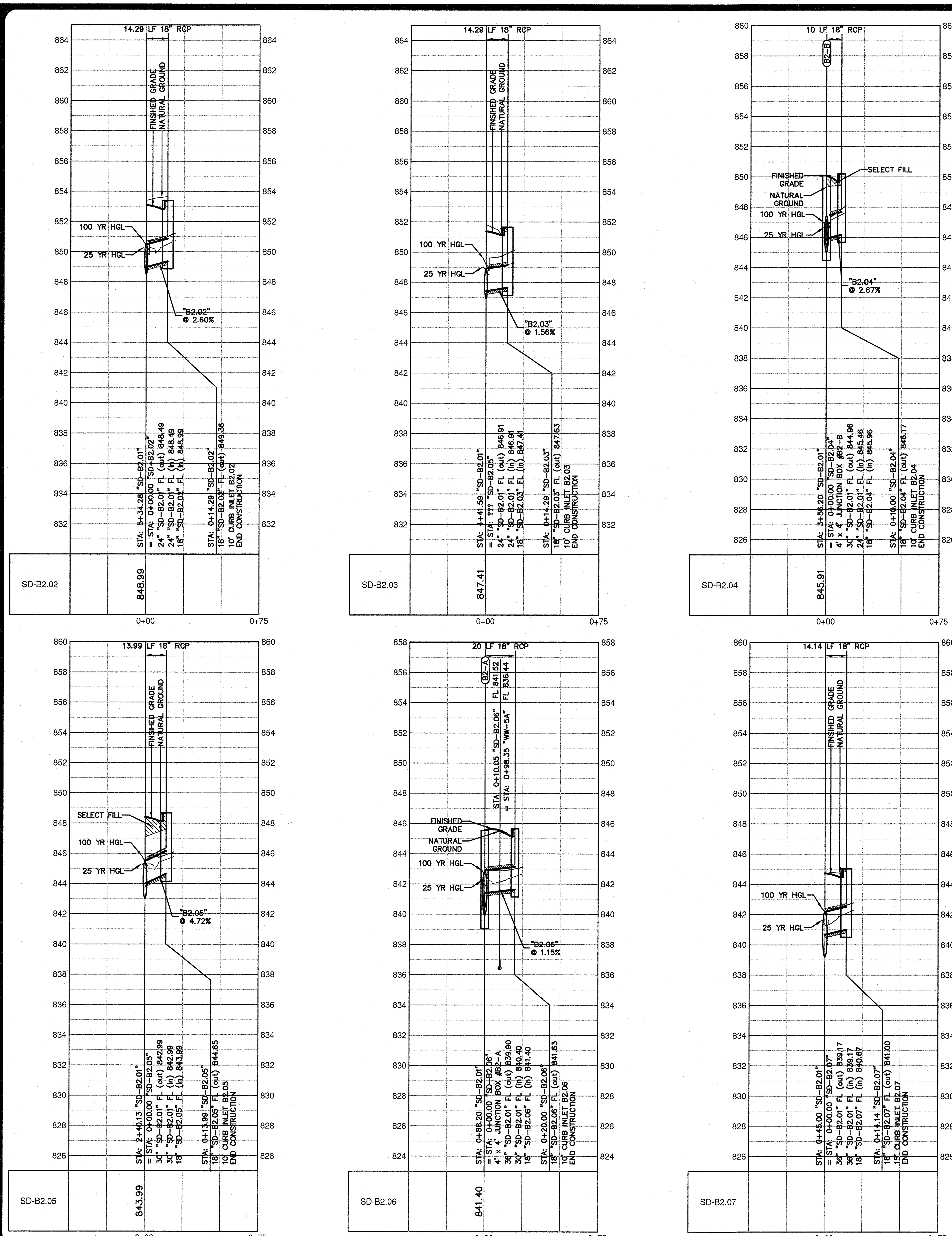

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B2.02	5.47	9.07	1.28	850.26	850.27
B2.03	5.78	7.63	1.63	849.08	849.04
B2.04	6.13	9.43	0.74	847.13	846.7
B2.05	3.9	10.2	1.32	845.4	845.31
B2.06	3.34	5.88	0.83	842.33	842.23
B2.07	4.85	8.44	0.95	841.85	841.62

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B2.02	8.15	10.08	1.75	850.8	850.73
B2.03	8.6	4.87	2.2	849.69	849.61
B2.04	9.12	10.47	0.94	847.34	846.9
B2.05	5.81	11.43	1.82	845.73	845.81
B2.06	4.93	6.53	1.5	842.92	842.91
B2.07	7.21	9.39	1.71	842.43	842.38

NOTES:

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PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
25yr HGL
100-YR HGL
100yr HGL

APPROVED
RMG
CITY OF LEANDER APPROVAL

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

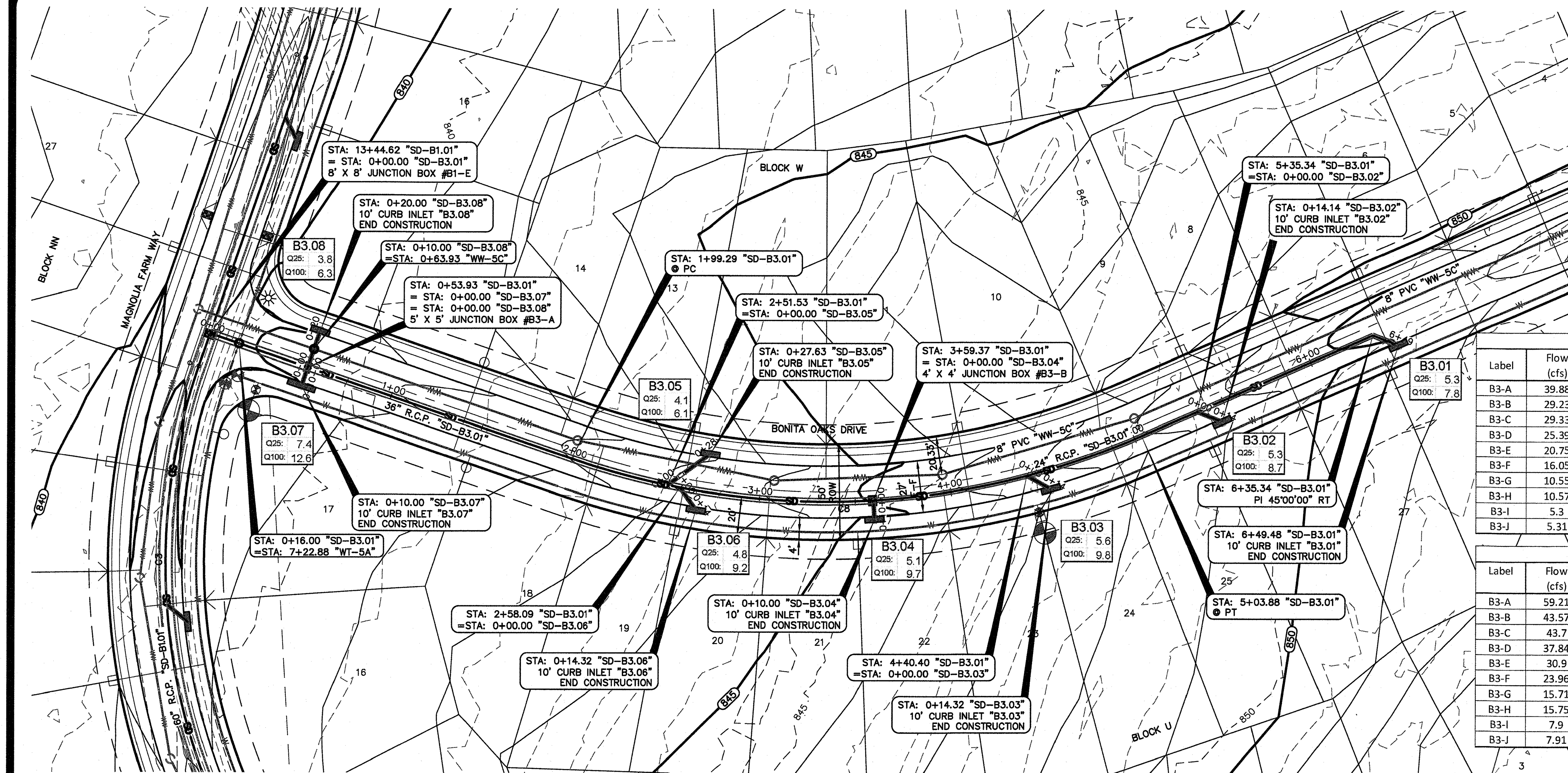
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B2.01 LATERALS B2.02-B2.07

NO. | REVISION | DATE

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 42 of 83



SCALE: 1" = 40'

0' 40' 80' 120'

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B3-A	39.88	12.68	3.92	836.74	836.72
B3-B	29.23	11.76	2.77	838.44	836.99
B3-C	29.33	11.77	1.27	839.33	837.97
B3-D	25.39	11.31	2.25	839.79	839.83
B3-E	20.75	10.69	2.31	840.88	840
B3-F	16.05	11.02	0.98	843.56	841.39
B3-G	10.55	9.86	1.99	844.61	844.11
B3-H	10.57	9.86	0.83	845.27	844.28
B3-I	5.3	8.12	1.17	847.02	845.27
B3-J	5.31	7.26	0.92	847.24	847.13

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B3-A	59.21	6.15	6.2	839.16	839
B3-B	43.57	6.16	5.38	840.13	839.6
B3-C	43.7	13.08	3.44	840.23	840.13
B3-D	37.84	12.6	3	840.58	840.58
B3-E	30.9	11.94	3.12	841.22	840.82
B3-F	23.96	12.13	1.26	843.85	841.68
B3-G	15.71	10.96	2.51	844.88	844.62
B3-H	15.75	10.97	1.05	845.54	844.5
B3-I	7.9	9.09	1.82	847.21	845.93
B3-J	7.91	8.12	1.14	847.43	847.35

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
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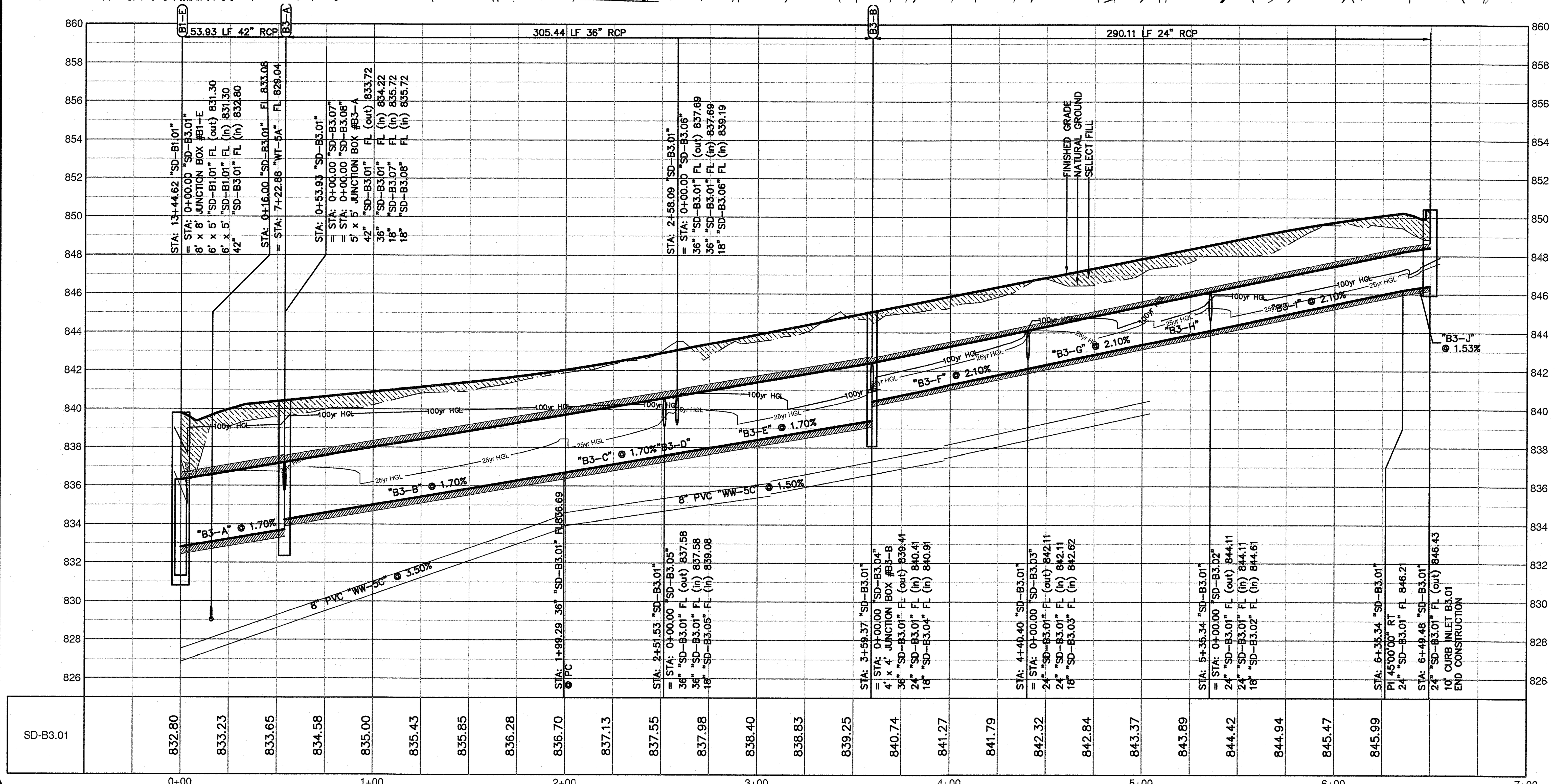
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR



PROFILE SCALES:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C8	410.00'	042°33'55"	N87°36'58"W	297.64'	304.59'

APPROVED
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

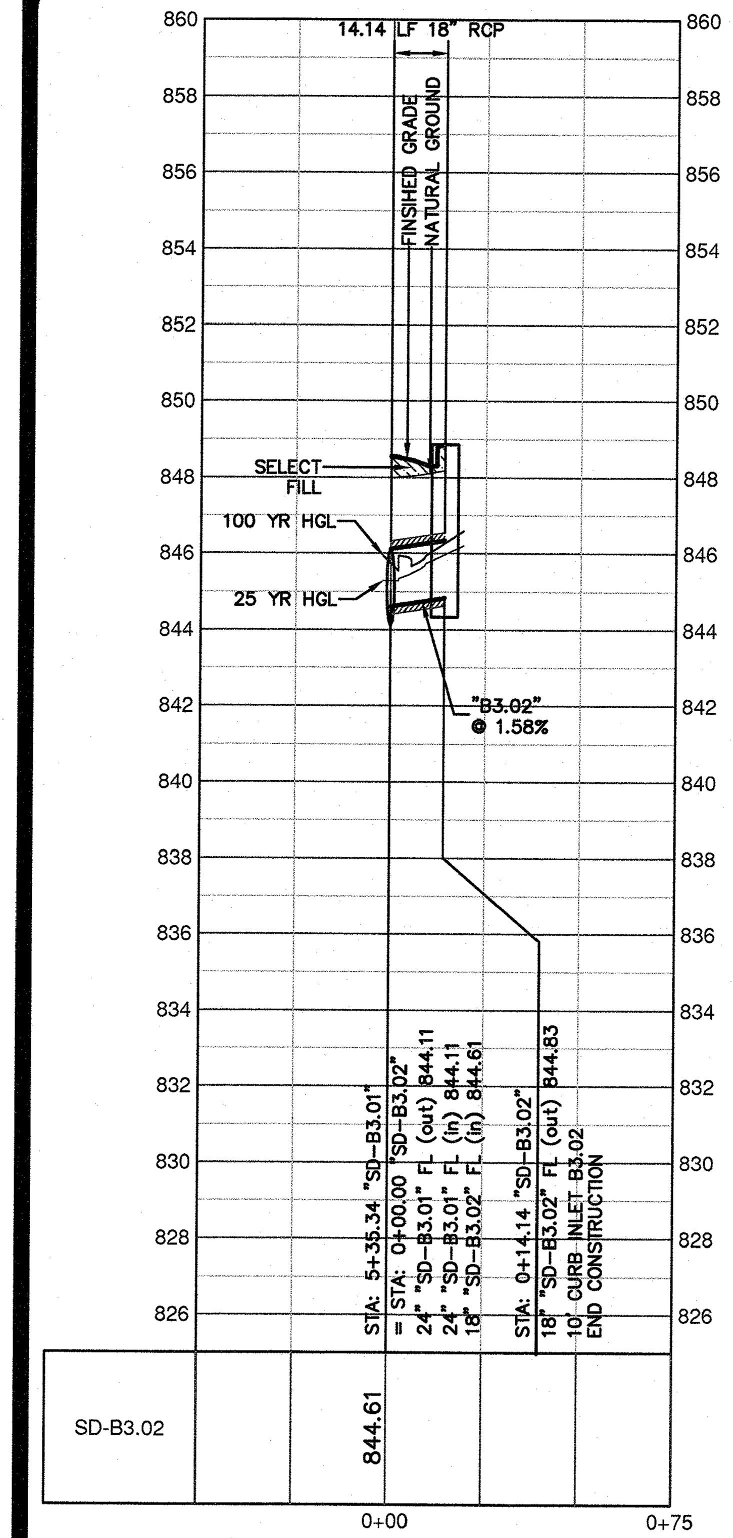
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

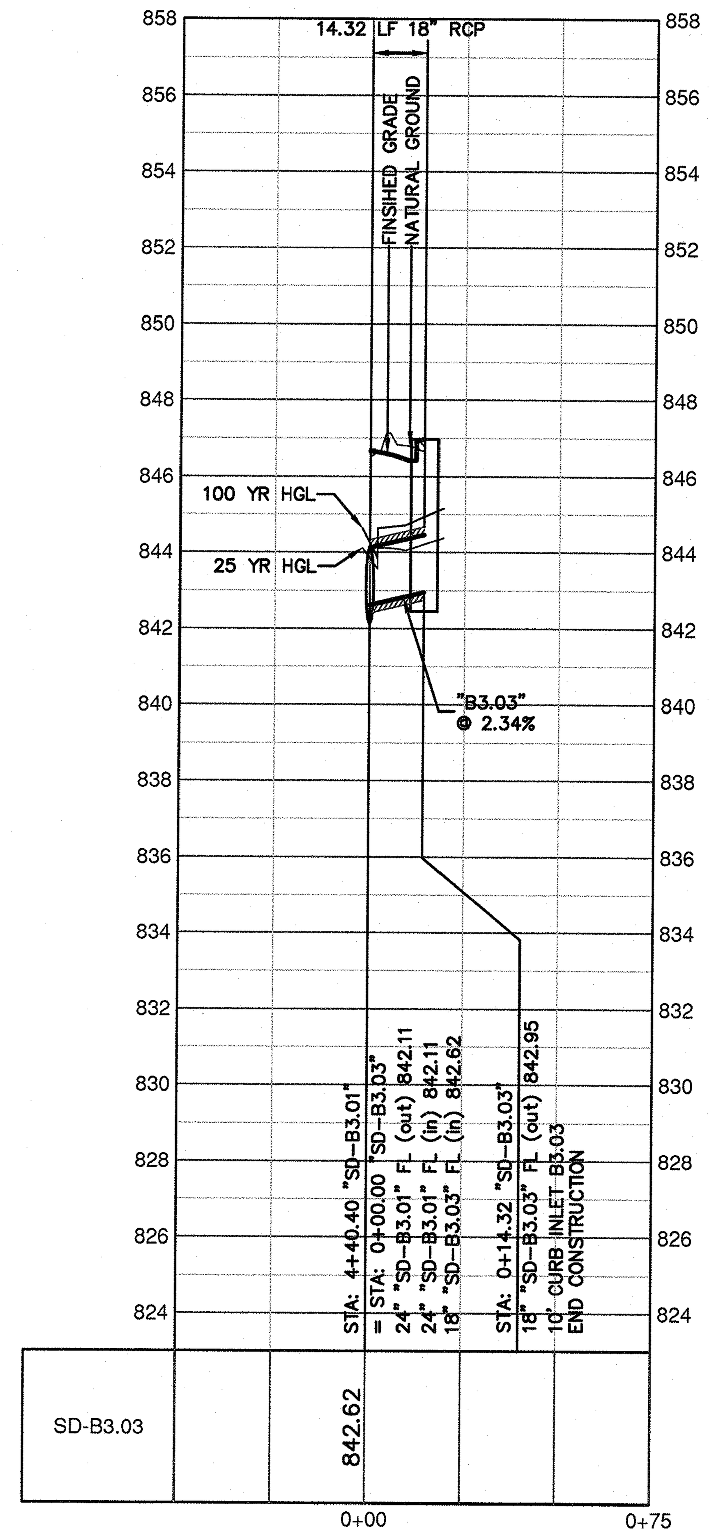
LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

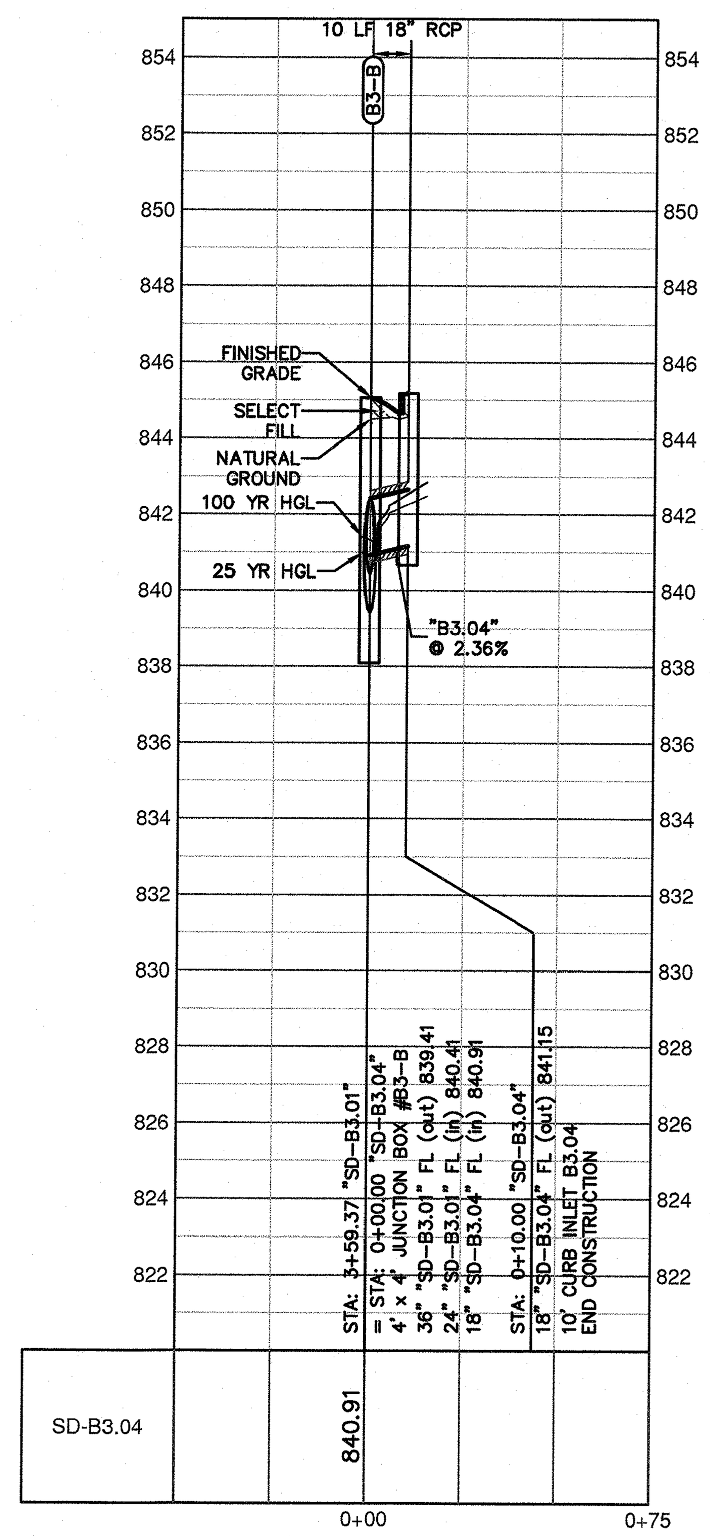
STORMDRAIN PLAN & PROFILE LINE SD-B3.01

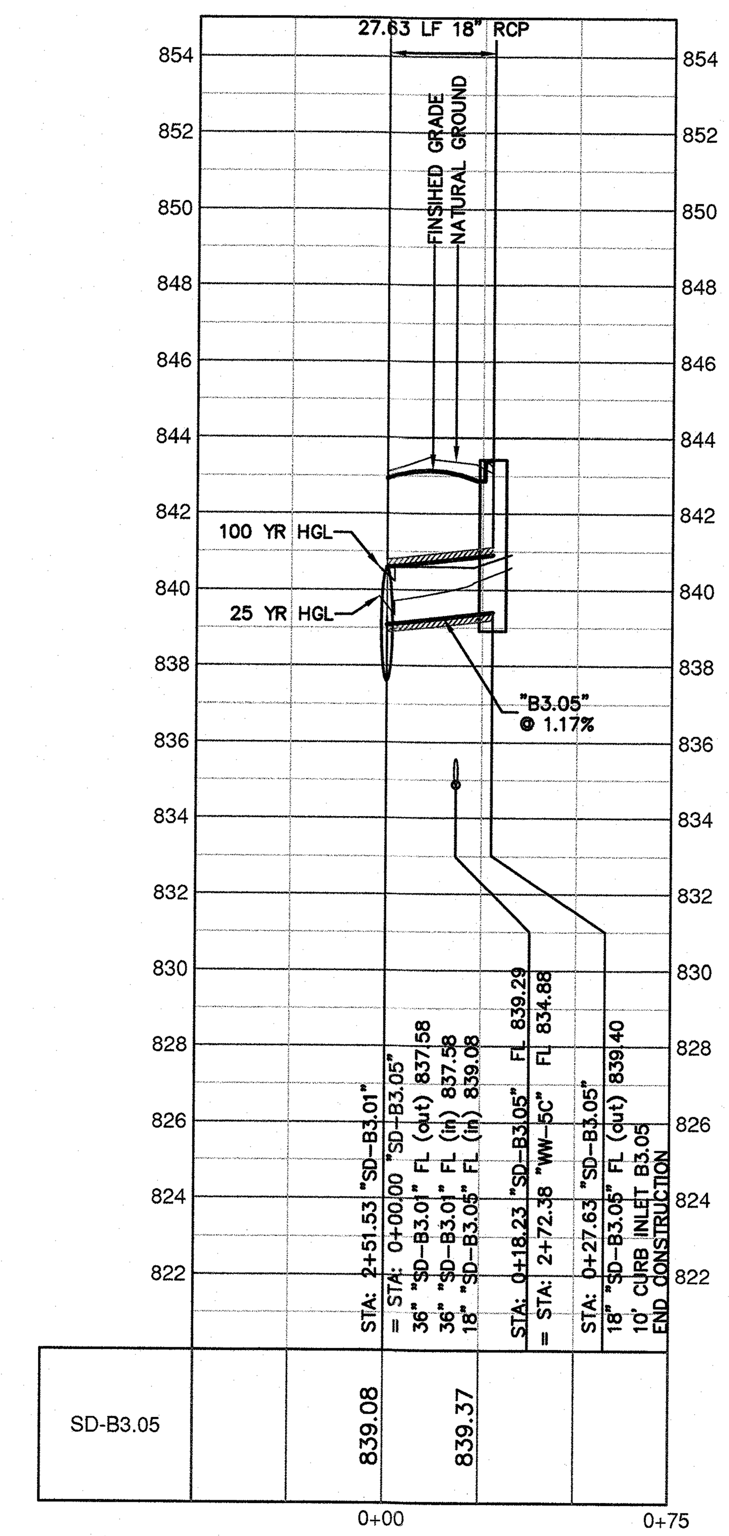
CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS

Date: Sep 19, 2024, 10:21am User ID: tkrouse
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg









25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B3.02	5.39	7.52	0.71	845.73	845.32
B3.03	5.67	8.8	1.49	844.04	844.11
B3.04	5.13	8.59	0.67	842.02	841.58
B3.05	4.17	6.29	0.62	840.19	839.7
B3.06	4.85	6.39	0.72	840.19	839.91
B3.07	7.49	14.81	1.27	837.58	836.99
B3.08	3.85	9.57	1.27	837.27	836.99

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B3.02	8.01	8.32	1.32	845.93	845.93
B3.03	8.47	4.79	2.01	844.7	844.62
B3.04	7.64	9.55	0.85	842.22	841.76
B3.05	6.2	6.98	1.5	840.57	840.58
B3.06	7.23	4.09	1.62	840.87	840.82
B3.07	11.15	6.31	3.88	839.7	839.6
B3.08	5.73	3.24	3.88	839.65	839.6

NOTES:

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2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND

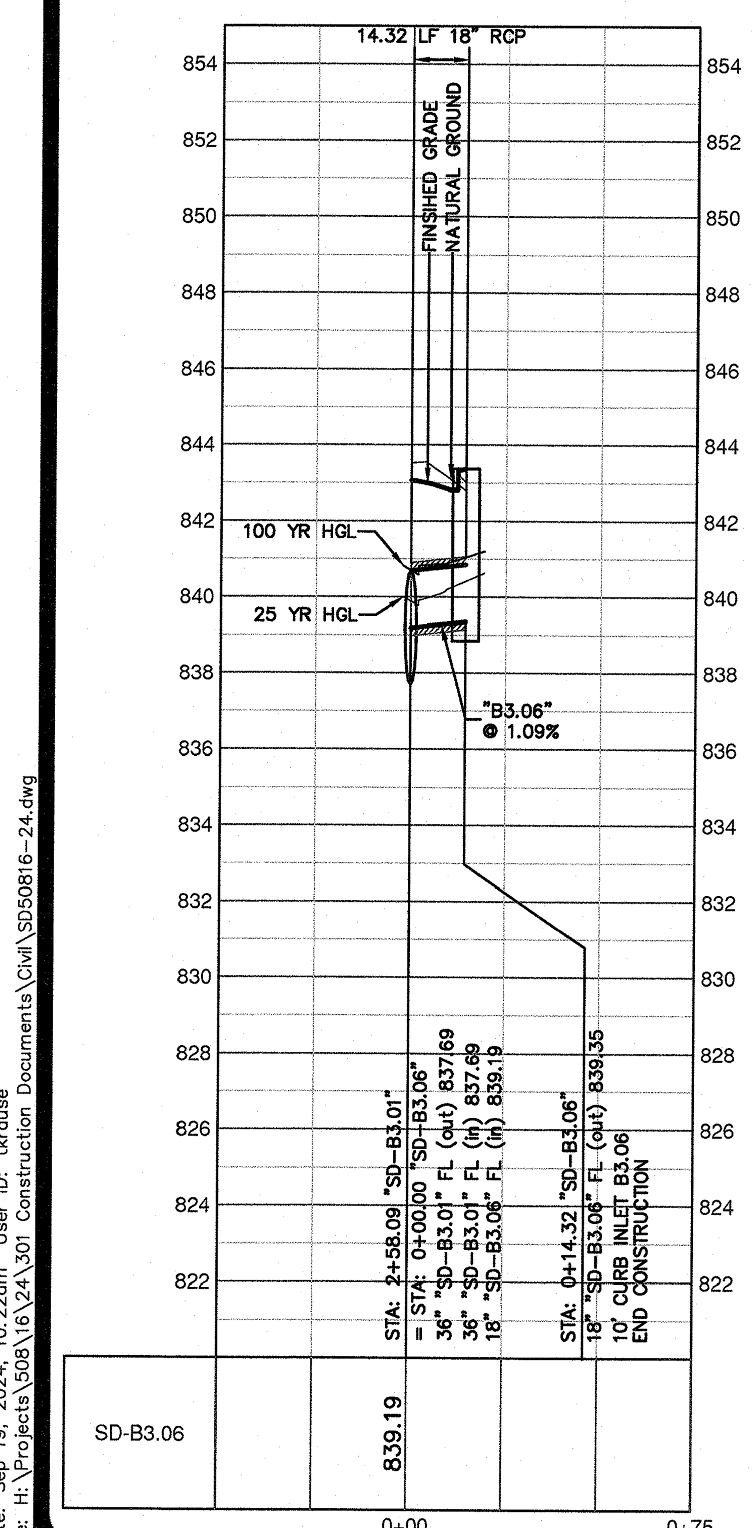
FINISHED GRADE

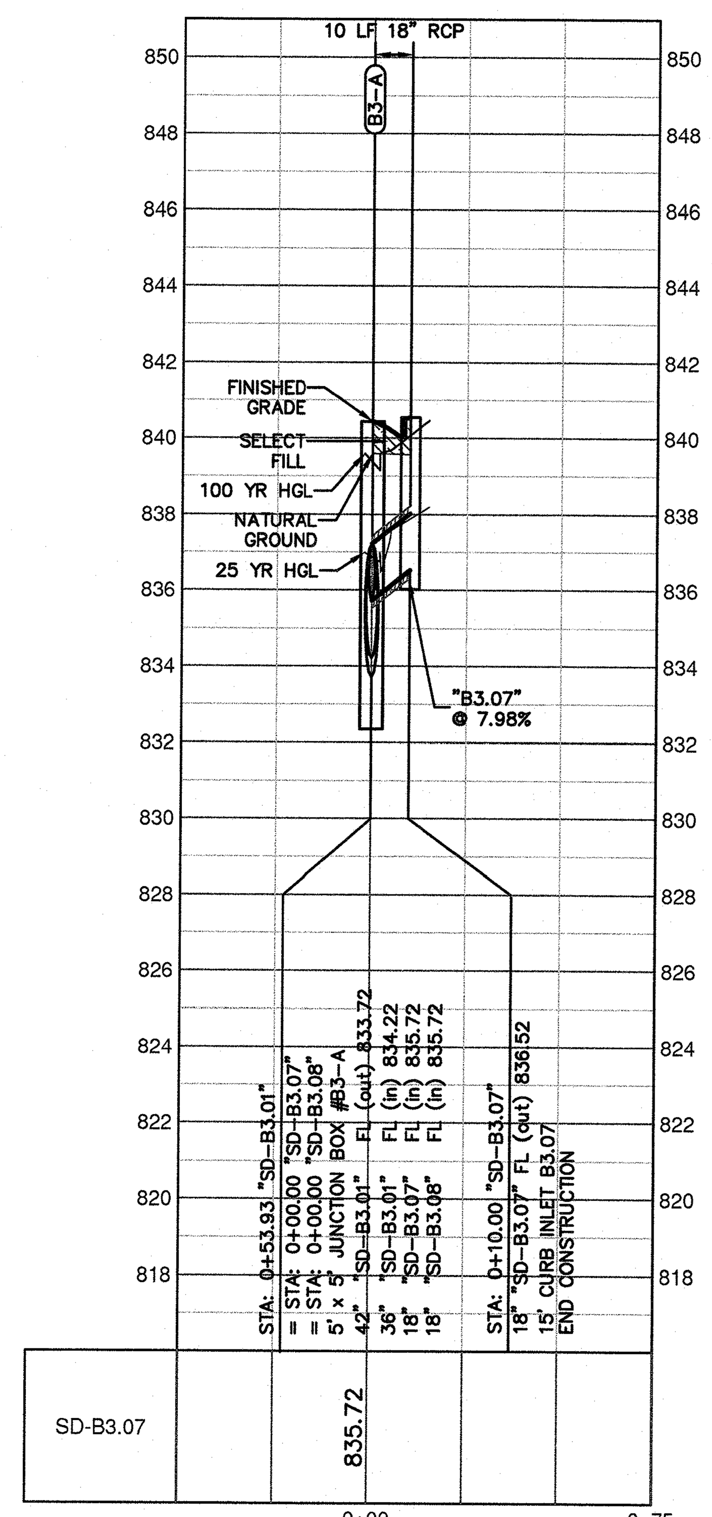
SUBGRADE

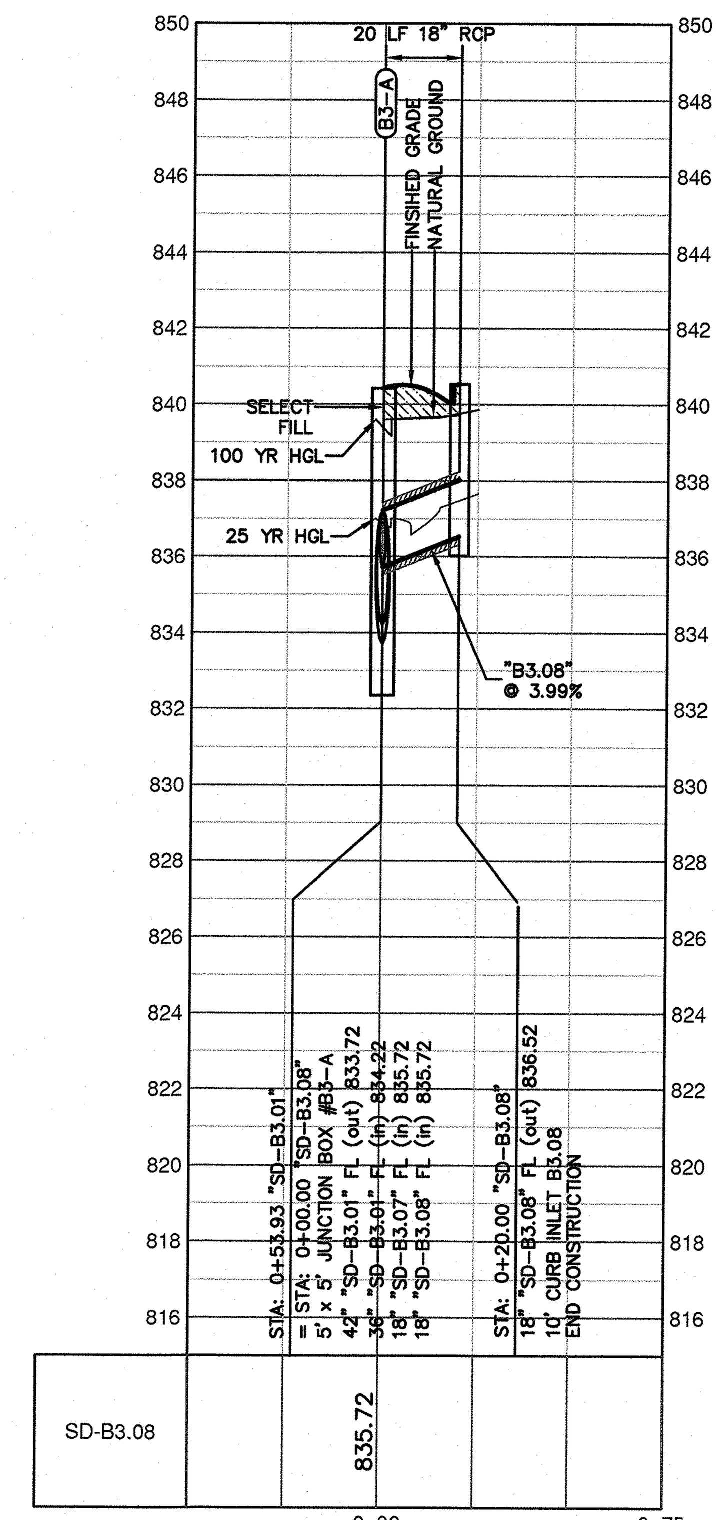
PROPOSED STORM DRAIN

25-YR HGL — 25yr HGL

100-YR HGL — 100yr HGL







APPROVED
RMG
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

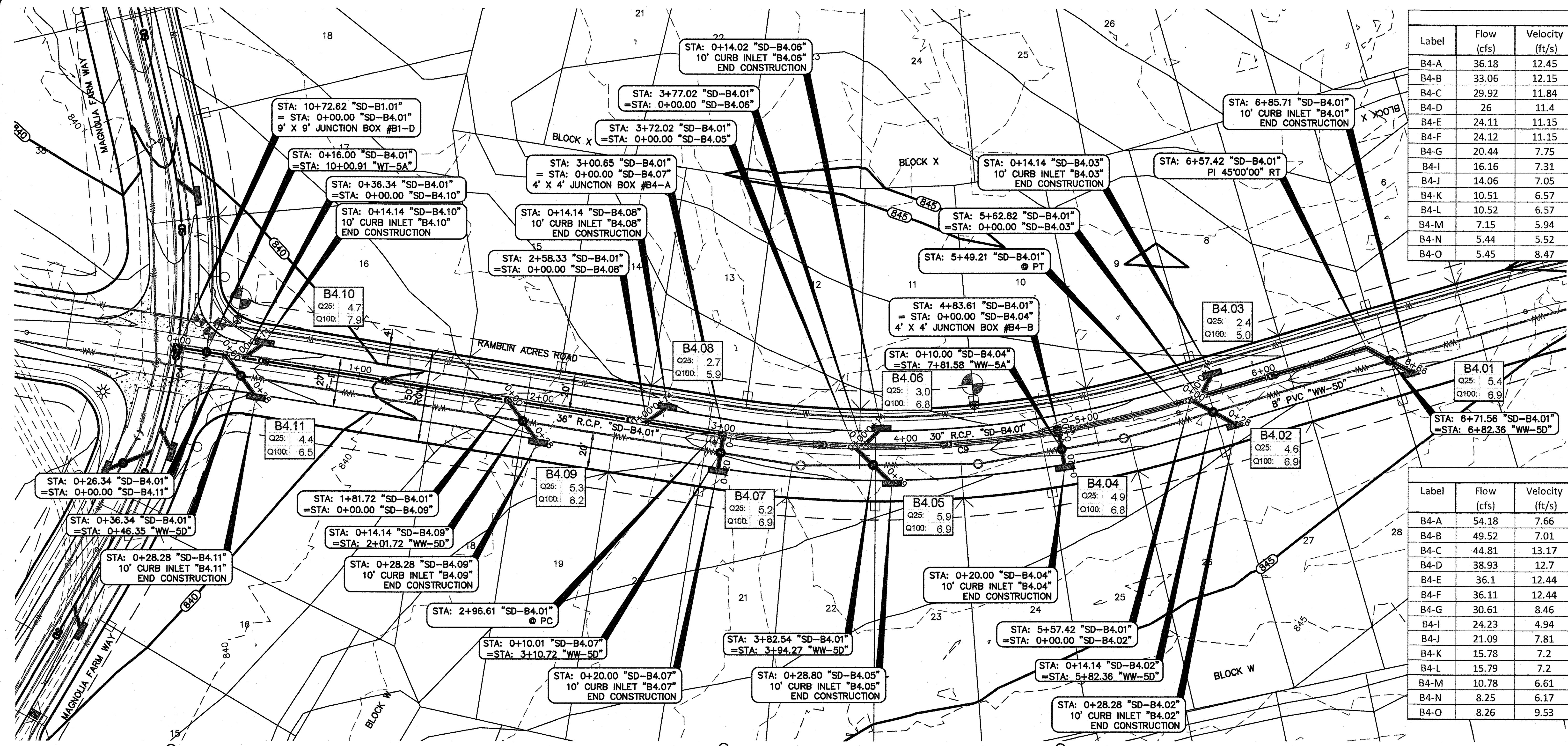
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B3.01 LATERALS B3.02-B3.08

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 44 of 83

Date: Sep 19, 2024, 10:22am User ID: tkrause
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg



25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B4-A	36.18	12.45	3.22	834.4	834.35
B4-B	33.06	12.15	2.99	834.57	834.57
B4-C	29.92	11.84	2.83	835.99	834.57
B4-D	26	11.4	2.27	837.17	836.49
B4-E	24.11	11.15	2.06	837.76	837.58
B4-F	24.12	11.15	1.4	837.83	837.58
B4-G	20.44	7.75	1.56	838.78	838.3
B4-I	16.16	7.31	2.02	839.26	839.26
B4-J	14.06	7.05	2.09	839.29	839.37
B4-K	10.51	6.57	1.02	840.15	839.54
B4-L	10.52	6.57	1.08	840.2	840.06
B4-M	7.15	5.94	1.55	840.6	840.6
B4-N	5.44	5.52	1.59	840.57	840.67
B4-O	5.45	8.47	0.93	841.22	840.67

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B4-A	54.18	7.66	4.36	835.64	835.49
B4-B	49.52	7.01	4.4	836.03	835.98
B4-C	44.81	13.17	4.28	836.4	836.03
B4-D	38.93	12.7	2.84	837.56	837.06
B4-E	36.1	12.44	2.57	838.13	838.1
B4-F	36.11	12.44	1.75	838.2	837.93
B4-G	30.61	8.46	2.12	839.13	838.87
B4-I	24.23	4.94	2.52	839.78	839.77
B4-J	21.09	7.81	2.67	840.1	839.95
B4-K	15.78	7.2	1.83	840.42	840.36
B4-L	15.79	7.2	1.36	840.48	840.35
B4-M	10.78	6.61	1.96	841.01	841
B4-N	8.25	6.17	2.04	841.15	841.12
B4-O	8.26	9.53	1.47	841.42	841.21

SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE

#01 Q25 / Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

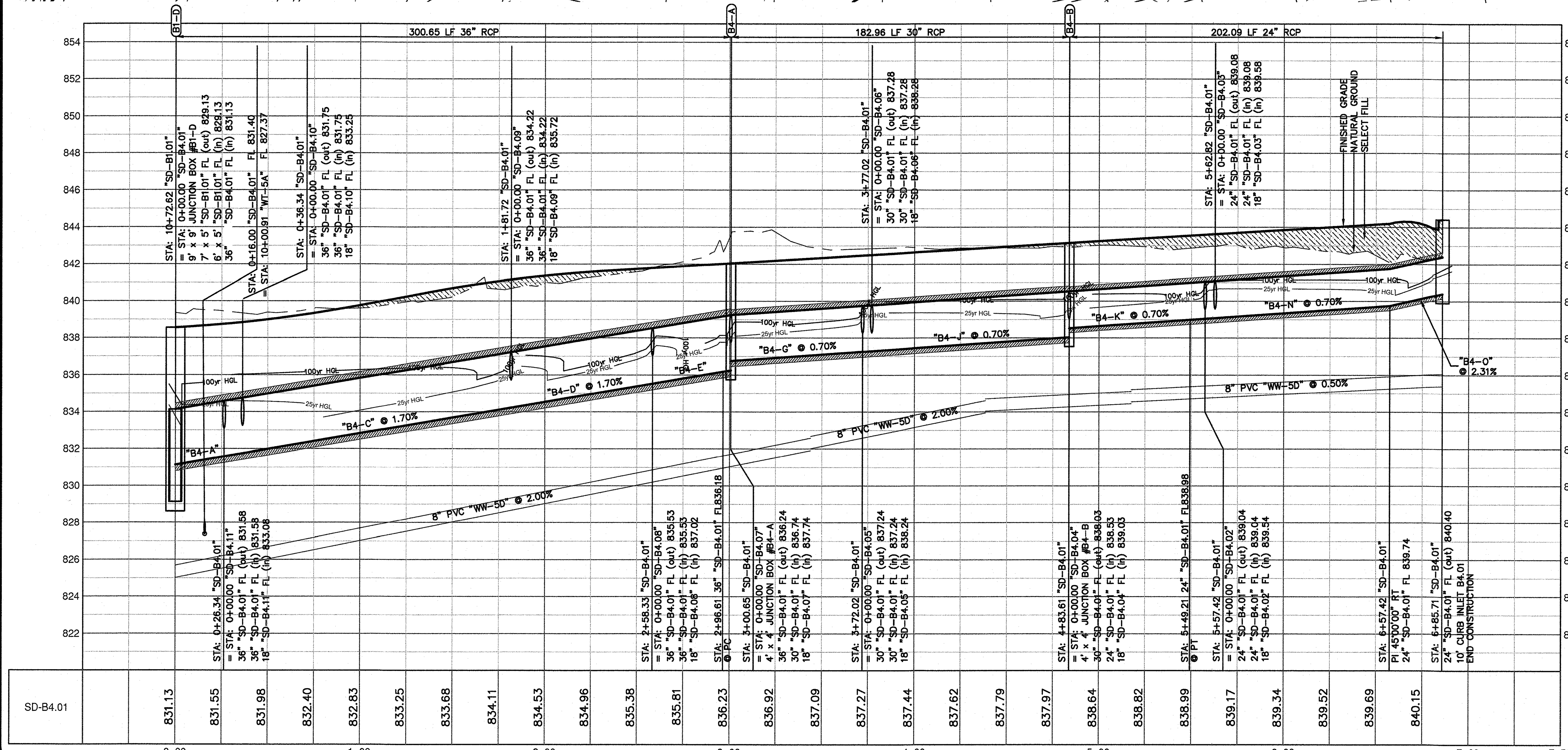
1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE

CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C9	570.00'	025°23'31"	S79°22'22"W	250.55'	252.61'



DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B4.01

NO.	REVISION	DATE

APPROVED
CITY OF LEANDER APPROVAL

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 45 of 83

Date: Sep 19, 2024, 10:23am User ID: bkrouse
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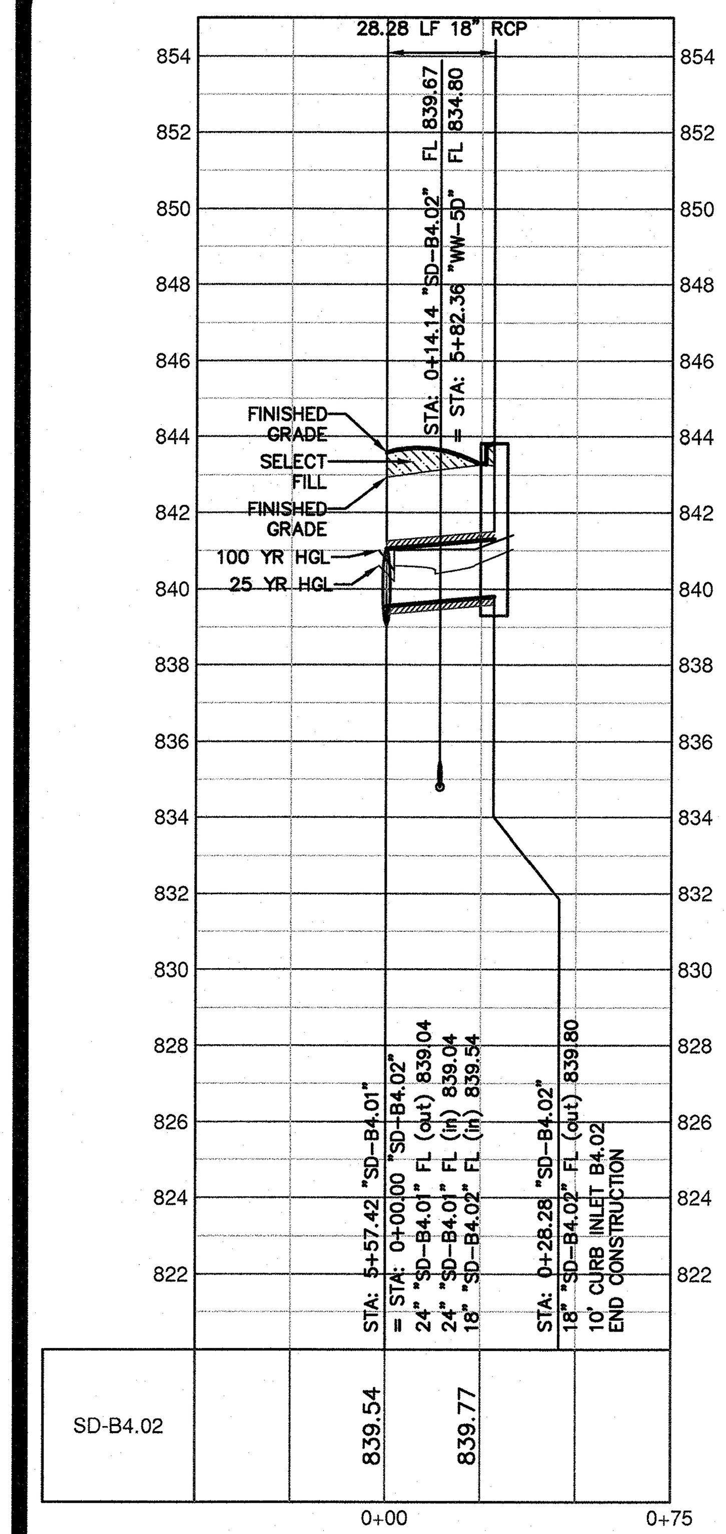

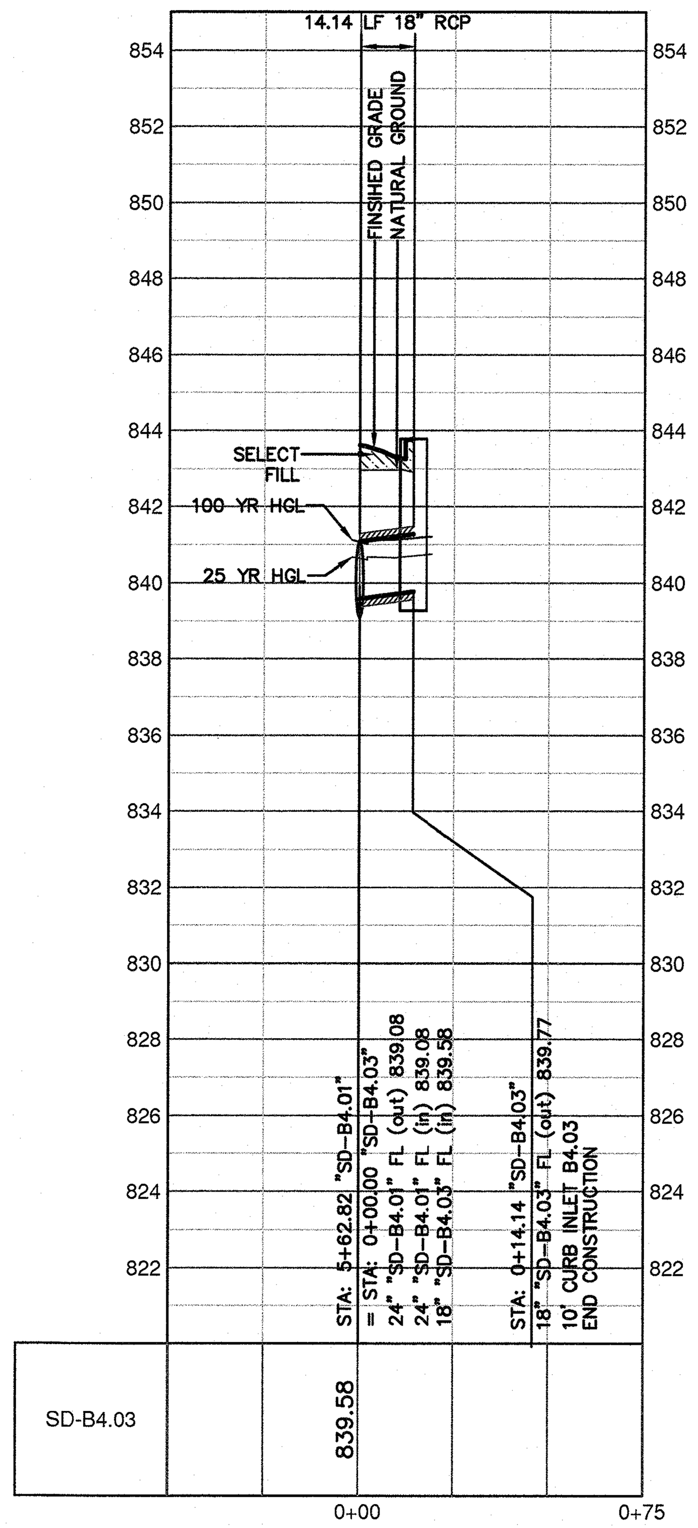

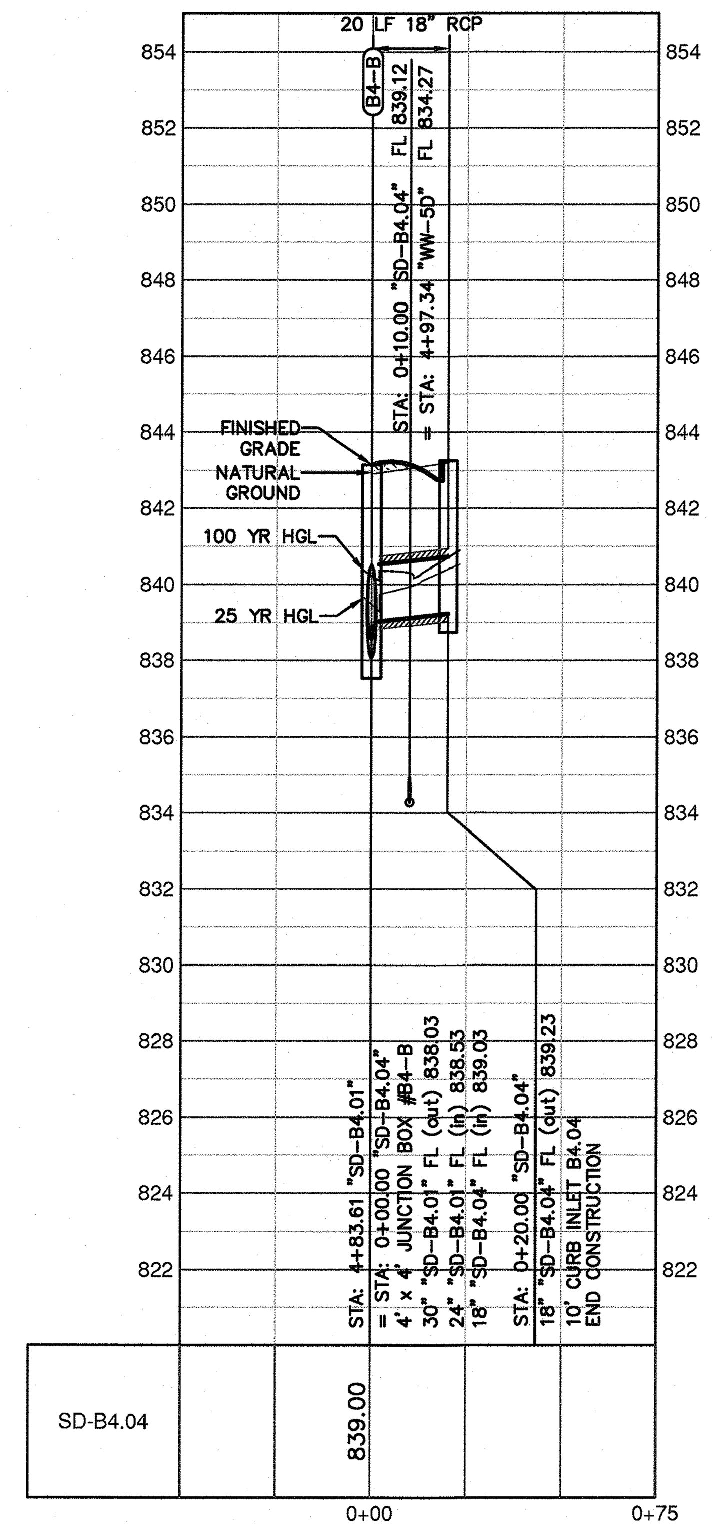

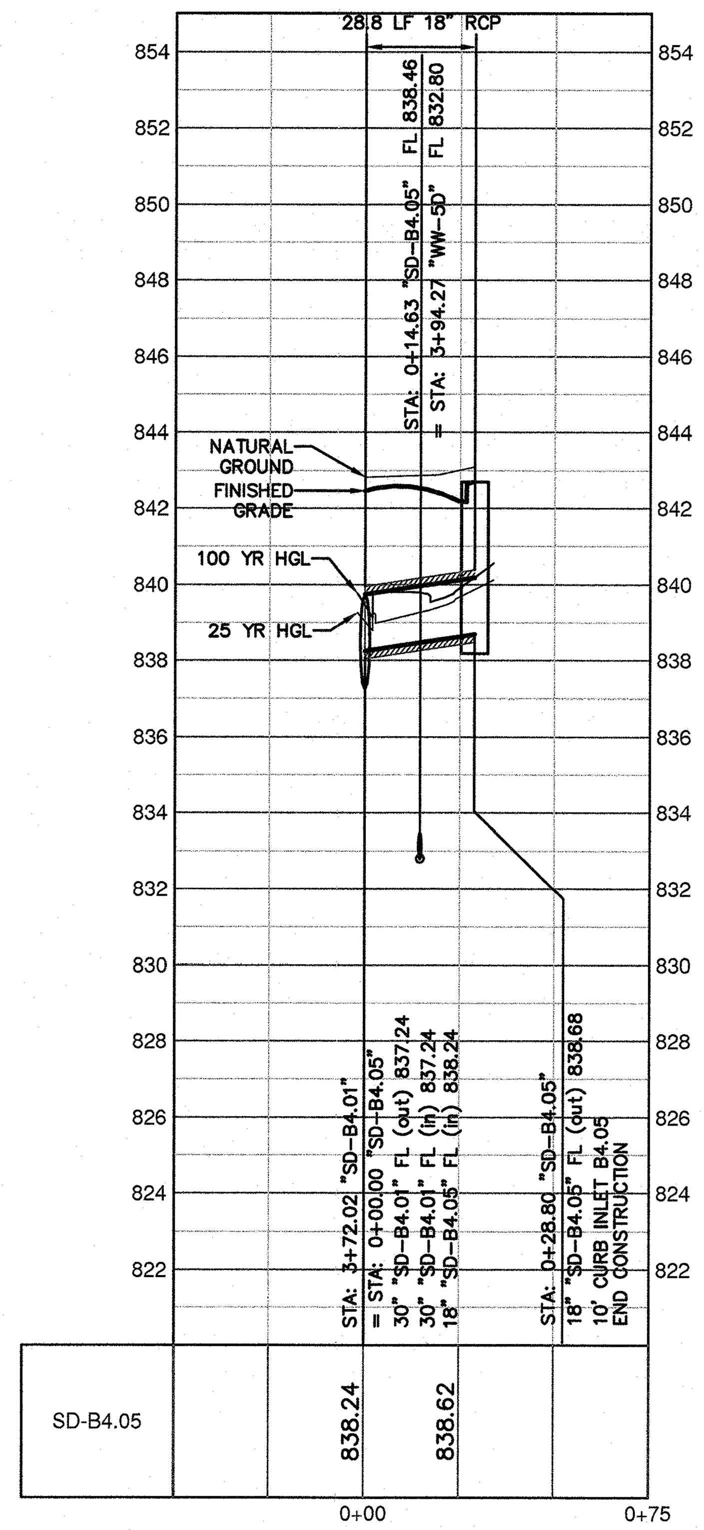

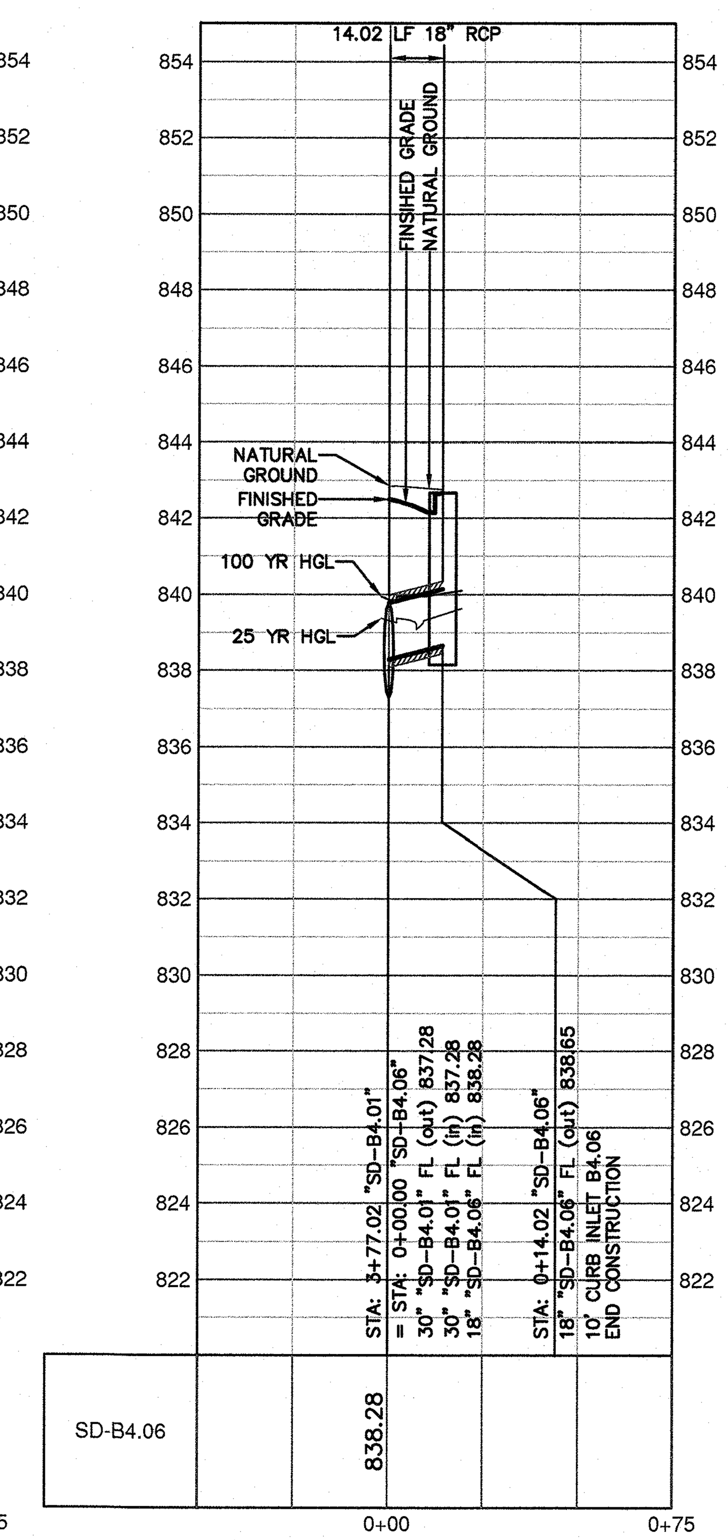

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B4.02	4.6	5.86	1.05	840.62	840.6
B4.03	2.4	5.67	1.09	840.65	840.67
B4.04	4.96	6.52	0.71	840.09	839.74
B4.05	5.94	7.59	1.02	839.62	839.26
B4.06	3.08	7.72	1.09	839.31	839.37
B4.07	5.26	8.3	0.65	839.01	838.4
B4.08	2.7	10.21	0.36	838.55	837.38
B4.09	5.37	12.31	0.49	838.36	836.21
B4.10	4.69	15.26	1.33	835.87	834.57
B4.11	4.43	12.14	1.49	835.85	834.57

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B4.02	6.85	6.47	1.46	841.03	841
B4.03	3.55	6.32	1.54	841.12	841.12
B4.04	7.39	7.2	1.33	840.28	840.36
B4.05	8.84	8.37	1.52	839.83	839.77
B4.06	4.57	8.63	1.67	839.95	839.95
B4.07	7.85	9.22	1.12	839.21	838.87
B4.08	4.02	11.46	1.07	838.7	838.1
B4.09	8.01	13.76	1.34	838.56	837.06
B4.10	6.98	17.1	2.78	836.06	836.03
B4.11	6.61	13.6	2.9	836.03	835.98

NOTES:

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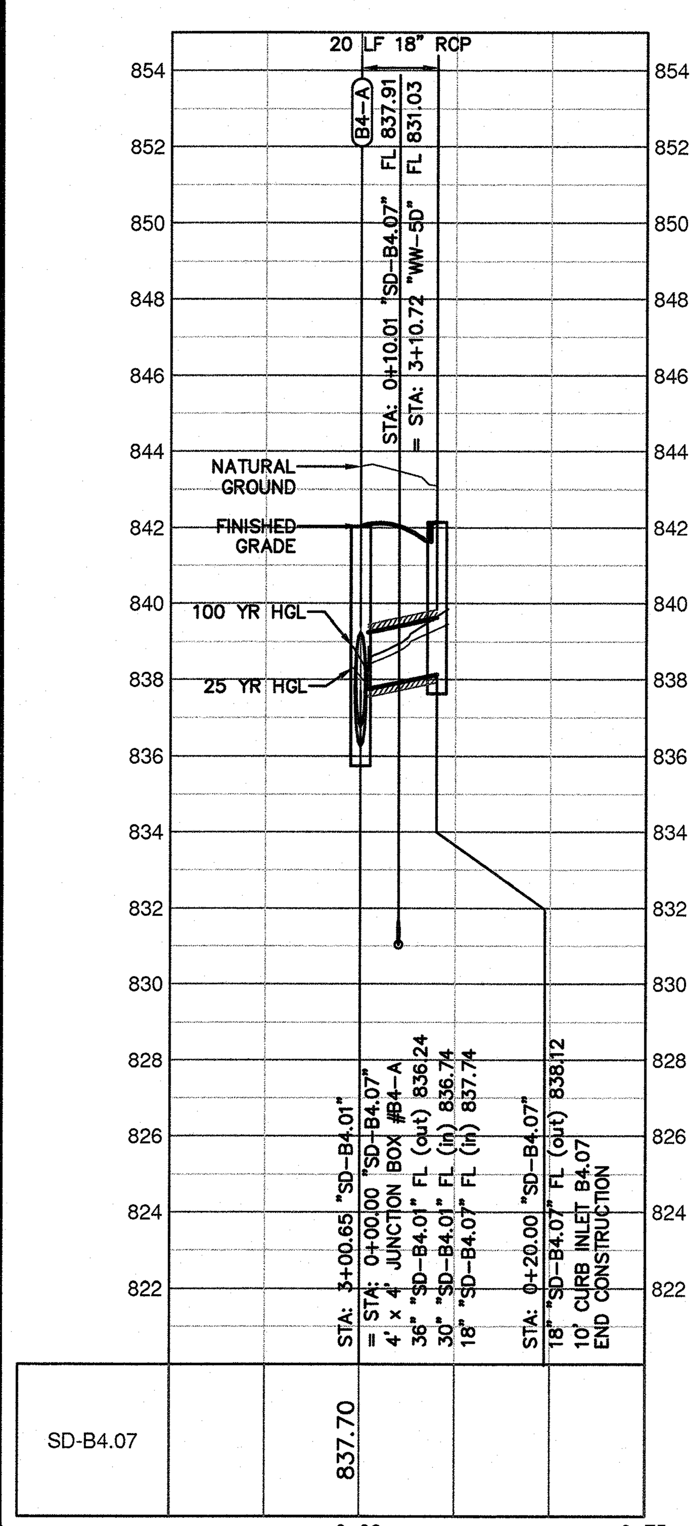
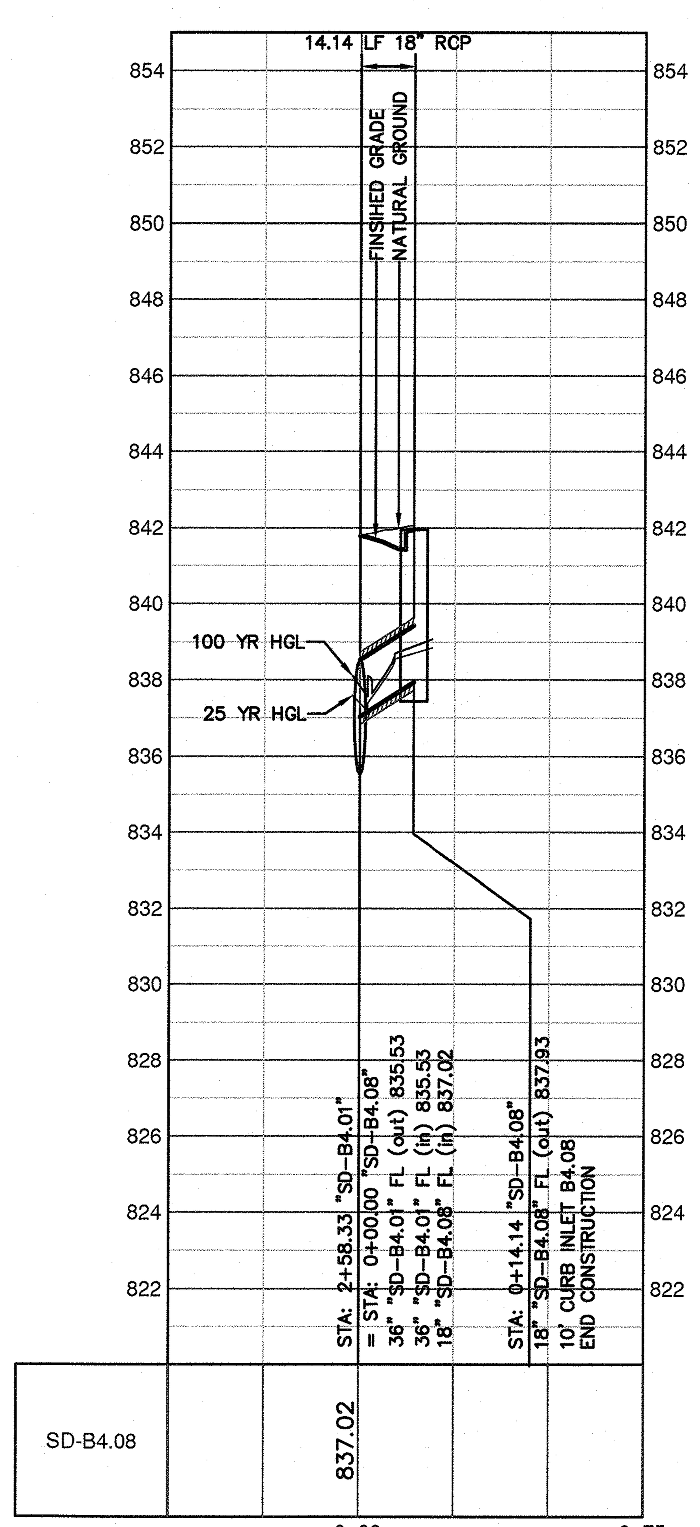
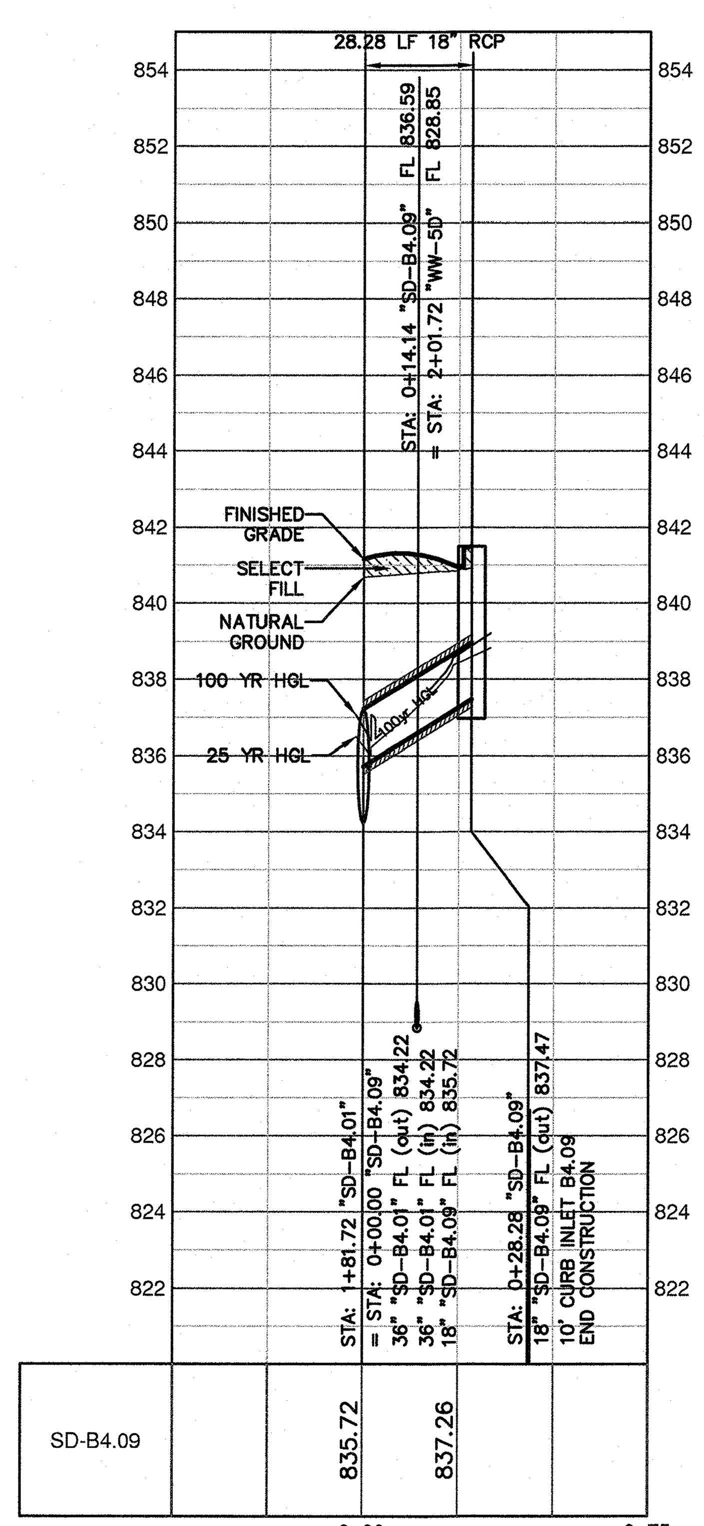
PROFILE SCALES:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

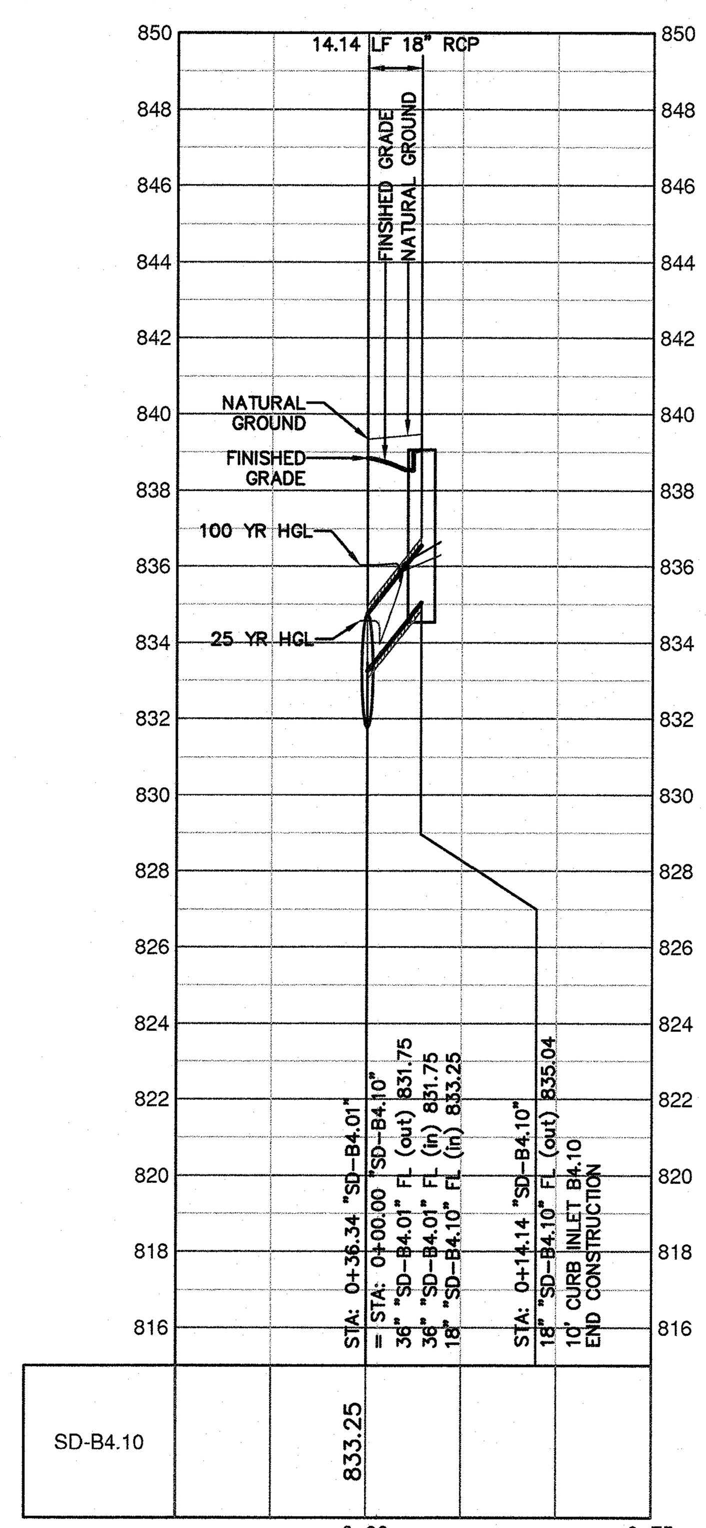
PROFILE LEGEND:

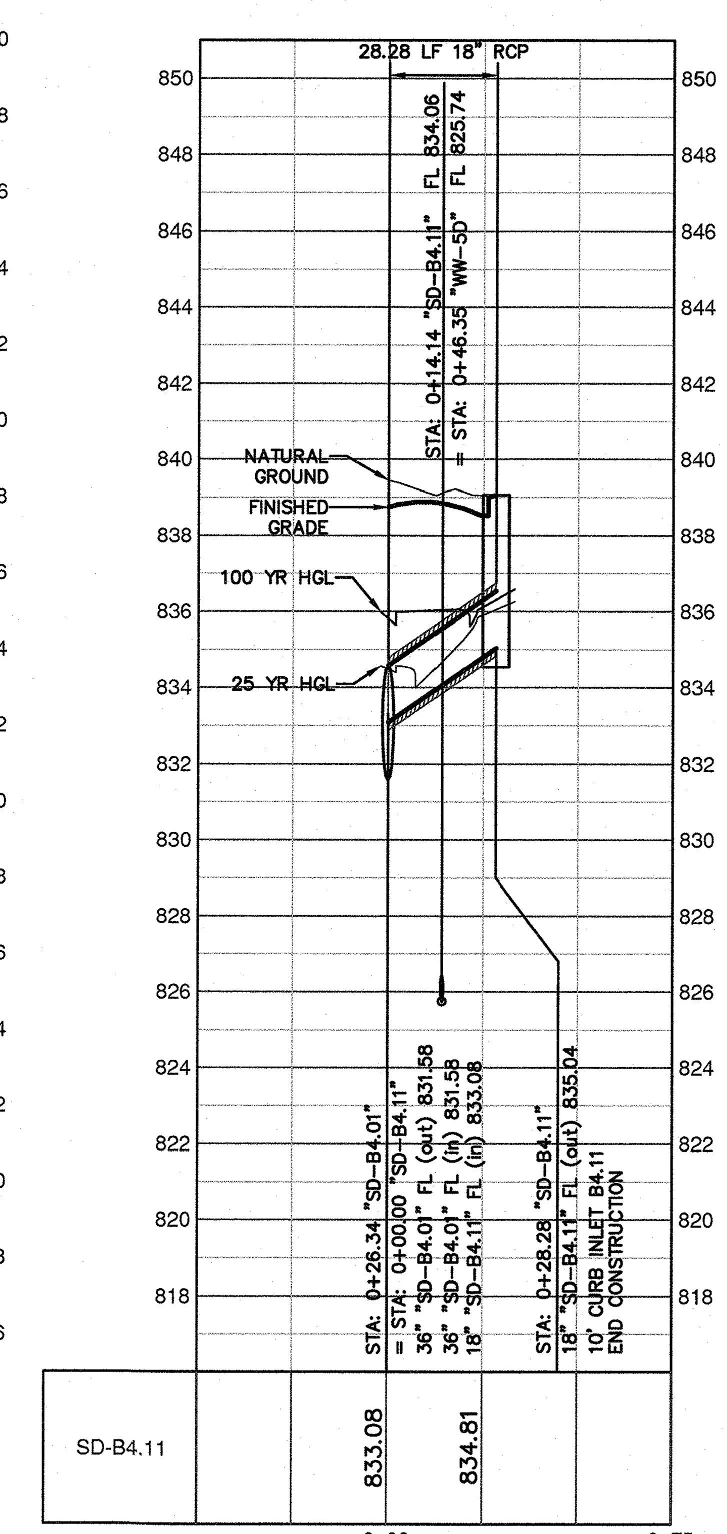
NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL — 25yr HGL
100-YR HGL — 100yr HGL











APPROVED
RMG
CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B4.01 LATERALS B4.02-B4.11

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 46 of 83

Date: Sep 19, 2024, 10:26am User ID: tkrouse
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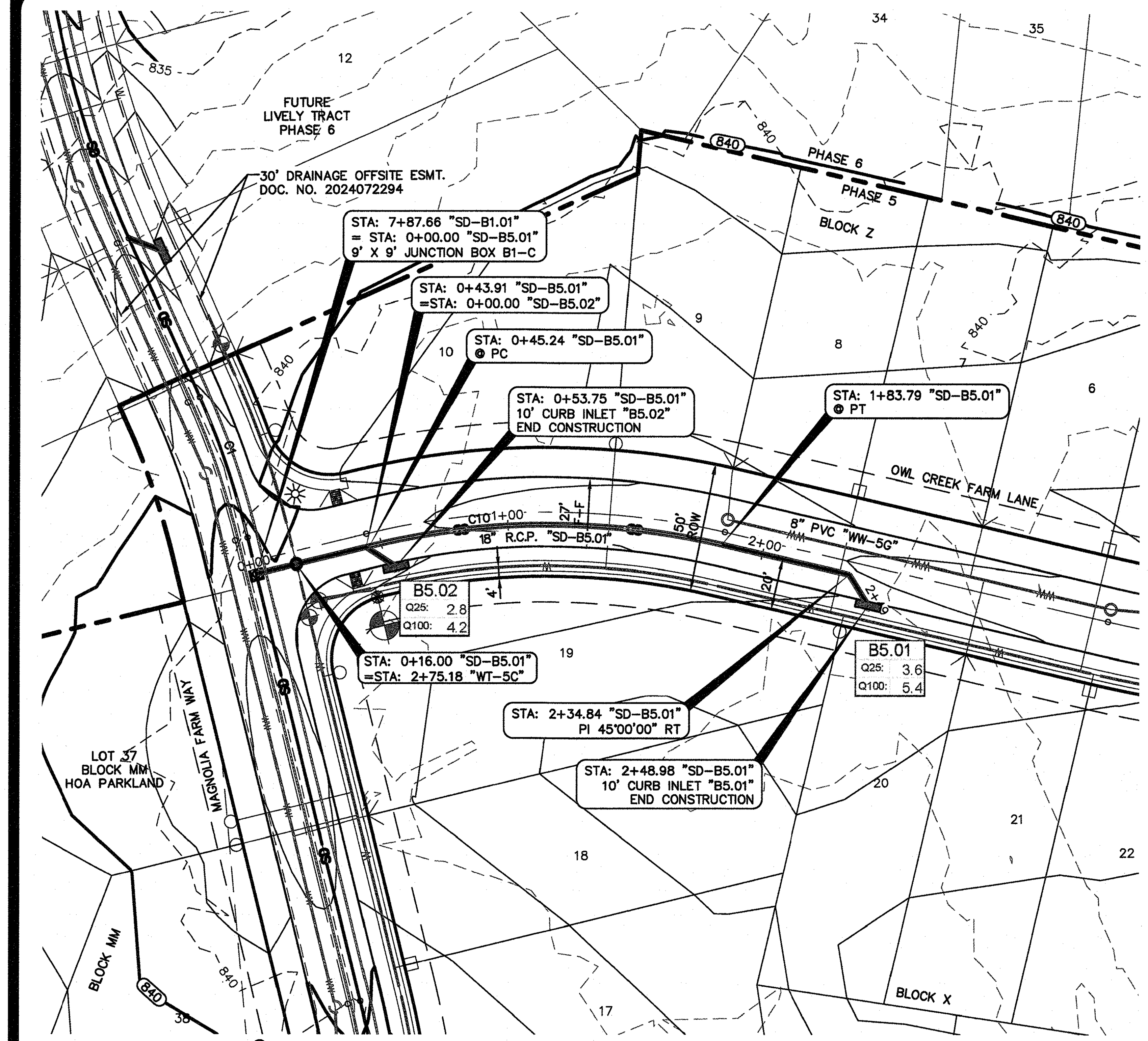
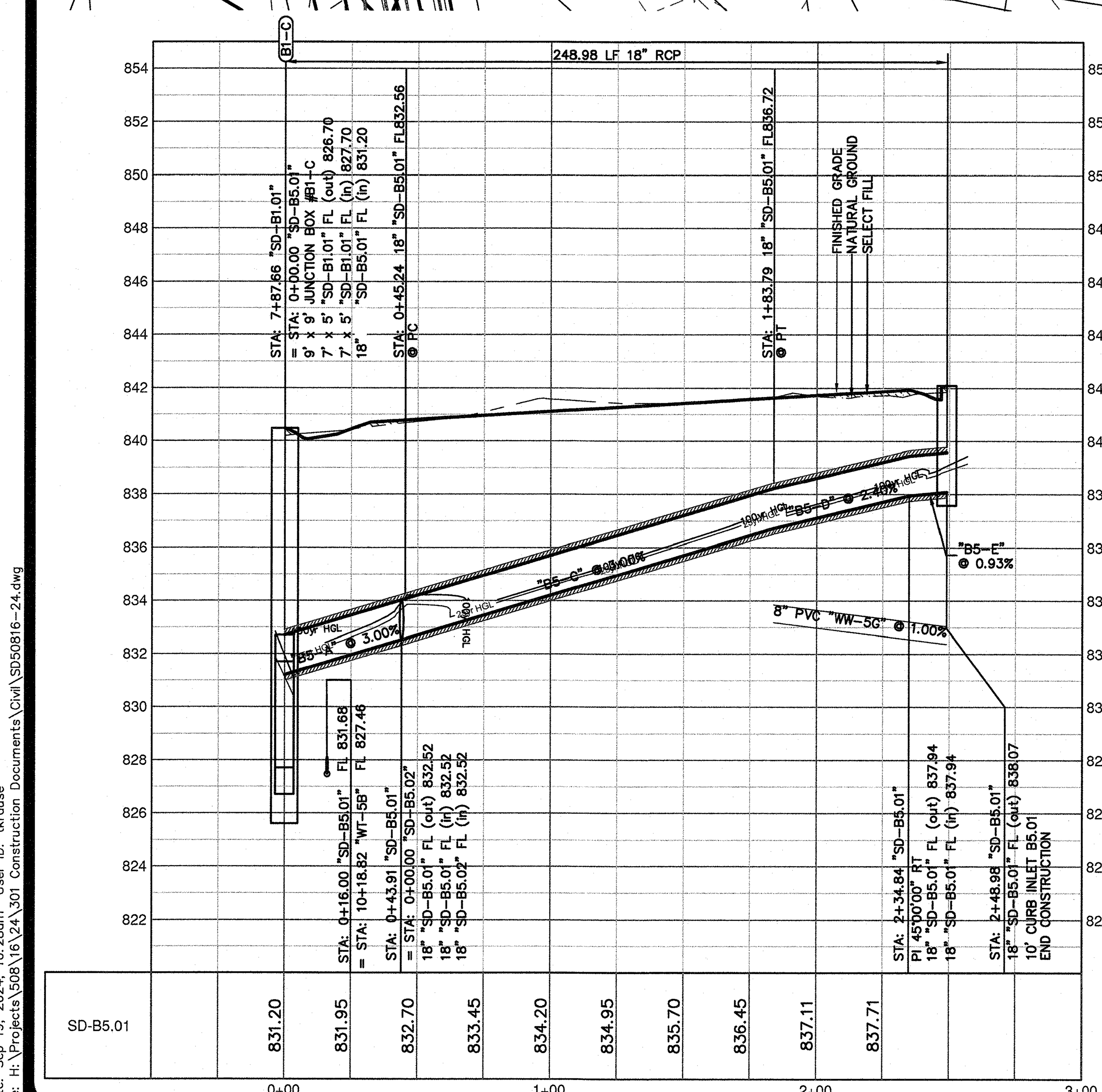
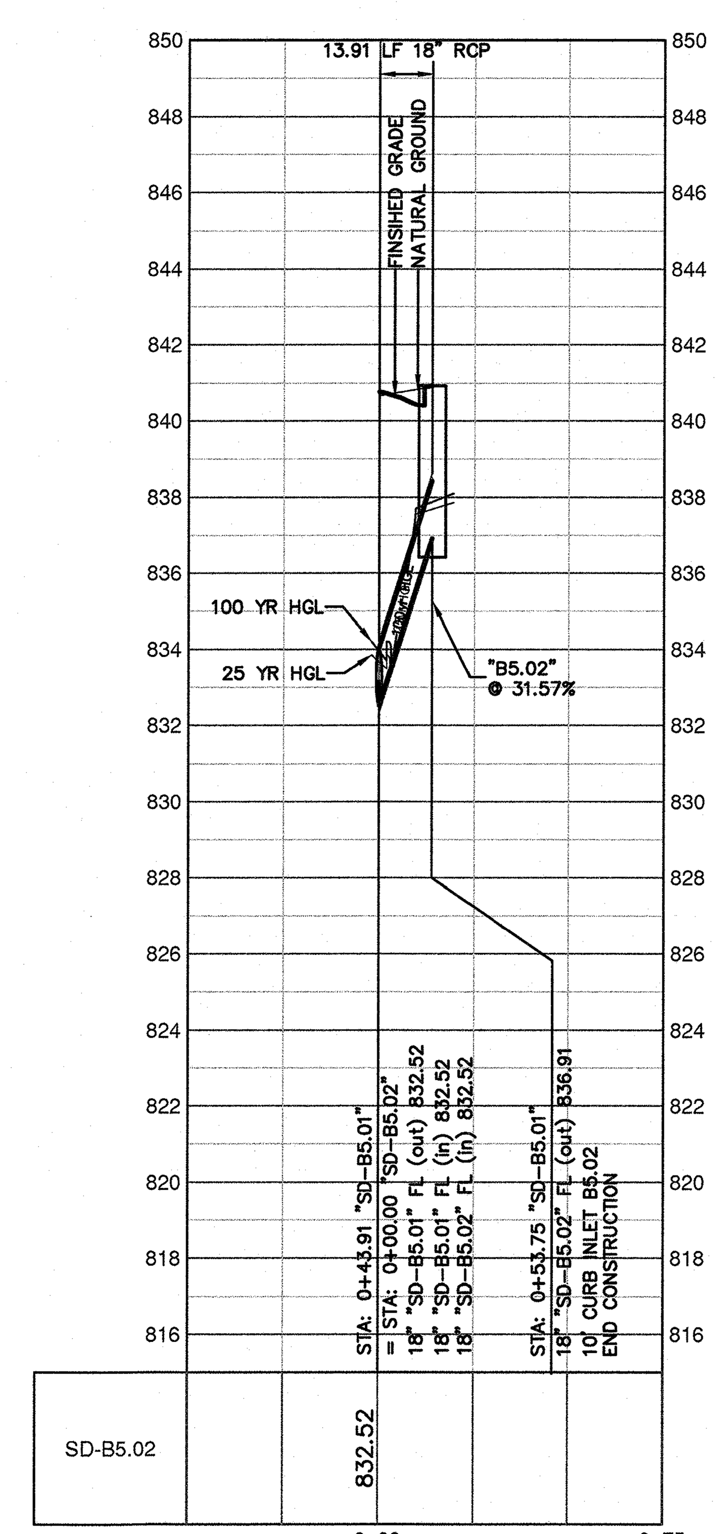


SCALE: 1"= 40'

0' 40' 80' 120'





25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B5-A	6.25	9.9	0.61	833.49	831.81
B5-B	3.55	8.45	1.33	833.85	833.85
B5-C	3.6	8.49	1.29	837.44	833.85
B5-D	3.62	7.84	0.47	838.67	837.19
B5-E	3.63	5.57	0.83	838.8	838.77
B5.02	2.86	17.94	1.33	837.55	833.85

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B5-A	9.31	11.01	1.63	833.7	832.83
B5-B	5.29	3	1.68	834.2	834.2
B5-C	5.36	9.49	1.64	837.61	834.2
B5-D	5.38	8.76	0.59	838.84	837.31
B5-E	5.39	6.18	1.02	838.97	838.97
B5.02	4.26	20.2	1.68	837.7	834.2

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C10	295.00'	026°54'34"	N83°12'48"E	137.28'	138.55'

APPROVED

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 09/21/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

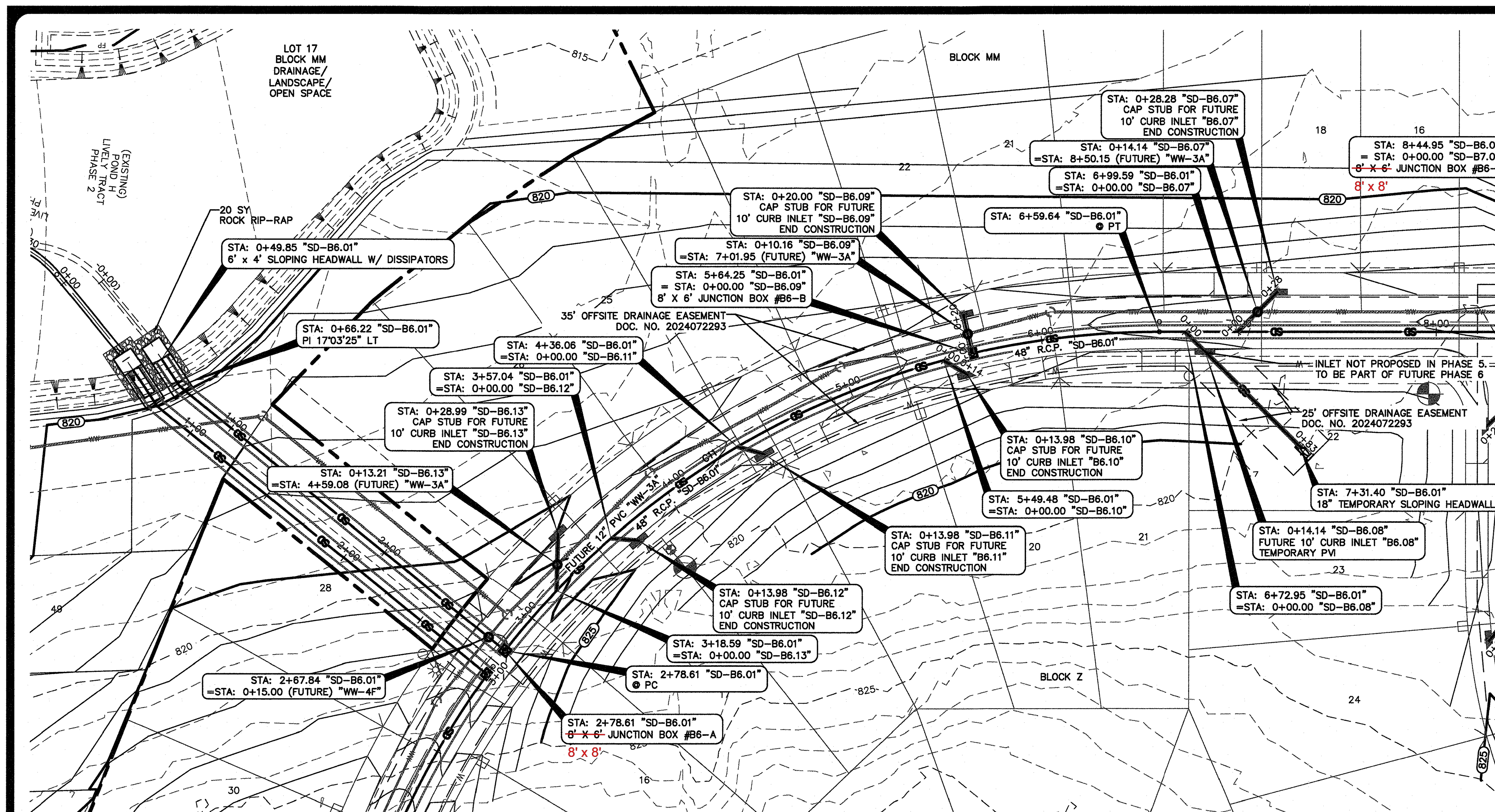
LIVELY TRACT, PHASE 5

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B5.01 & LATERAL B5.02

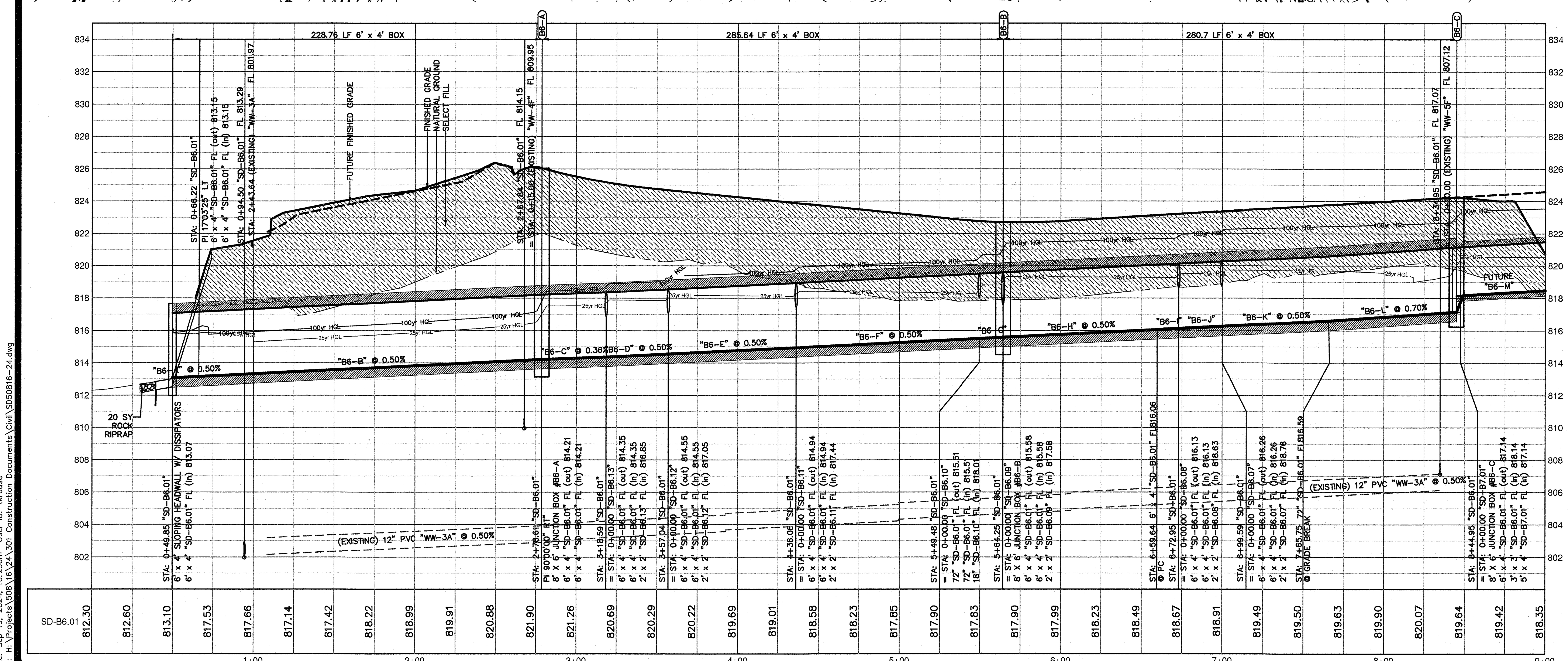
CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 47 of 83

Date: Sep 19, 2024, 10:28am User ID: tkrouse
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6-A	140.18	10.2	2.77	815.79	815.84
B6-B	141.99	10.24	2.73	816.55	815.88
B6-C	142.37	9.26	3.31	817.52	817.52
B6-D	140.03	10.36	3.53	817.85	817.88
B6-E	135.81	10.27	3.63	818.11	818.17
B6-F	133.77	10.23	3.48	818.25	818.42
B6-G	125.08	10.04	3.31	818.8	818.81
B6-H	124.3	10.02	3.75	819.29	819.34
B6-I	124.41	10.02	3.23	819.27	819.29
B6-J	121.7	9.96	3.41	819.52	819.53
B6-K	120.33	9.93	3.47	819.69	819.73
B6-L	120.88	11.2	3.1	819.47	819.69

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6-A	204.38	11.38	3.03	816.13	816.1
B6-B	206.67	11.41	3.13	817.21	816.28
B6-C	207.25	8.64	4.22	818.58	818.42
B6-D	203.98	8.5	4.54	819.04	818.89
B6-E	198.02	8.25	4.82	819.64	819.36
B6-F	195.35	8.14	4.98	820.31	819.93
B6-G	182.7	7.61	5.16	820.71	820.66
B6-H	181.9	7.58	5.8	821.67	821.39
B6-I	182.1	7.59	5.61	821.7	821.67
B6-J	178.22	7.43	5.83	822.03	821.96
B6-K	176.49	7.35	6	822.44	822.26
B6-L	177.7	7.4	5.85	822.66	822.44



SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

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4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C11	420.00'	051°58'48"	N44°17'19"E	368.10'	381.03'

City of Leander APPROVED RMG

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 09/21/2024

PAPE-DAWSON ENGINEERS

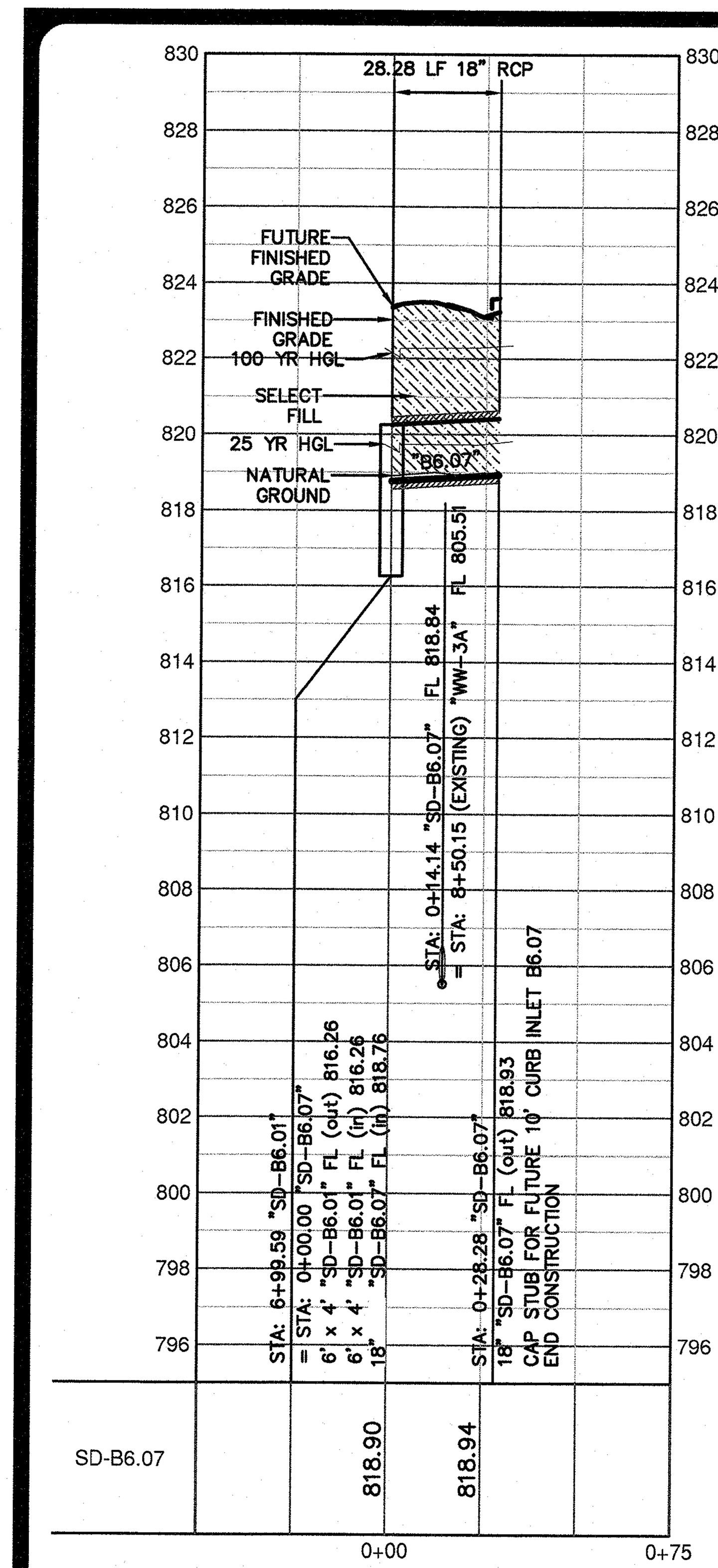
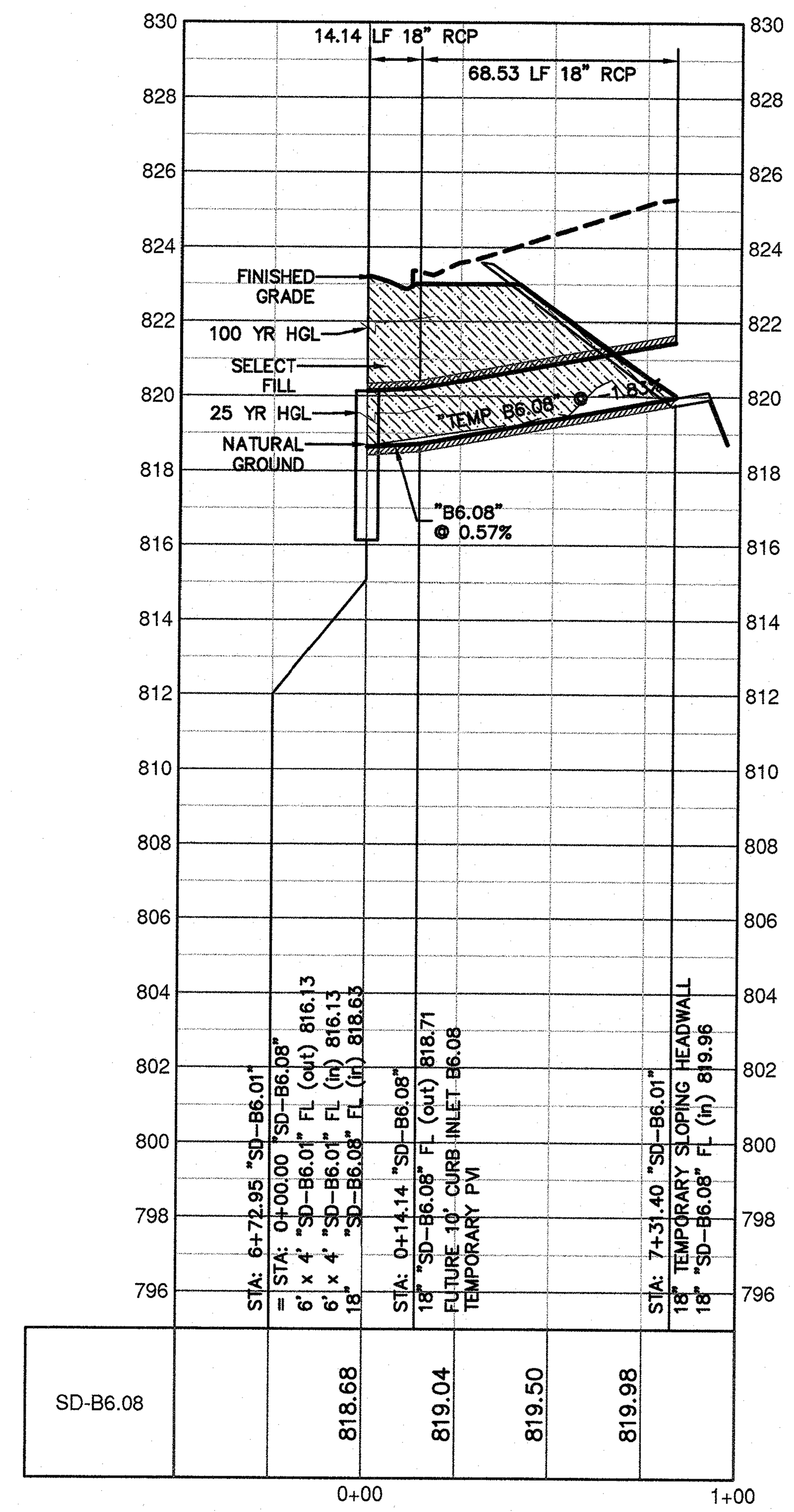
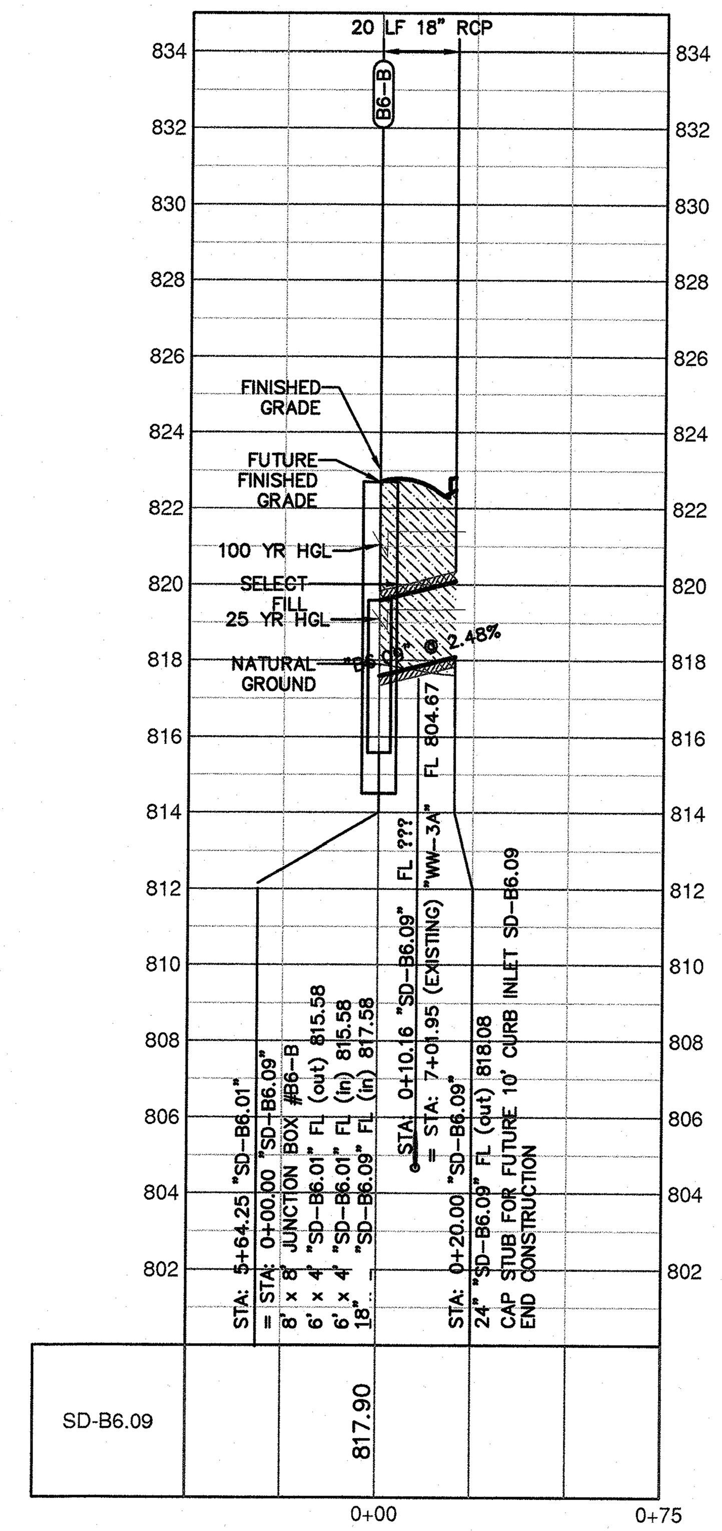
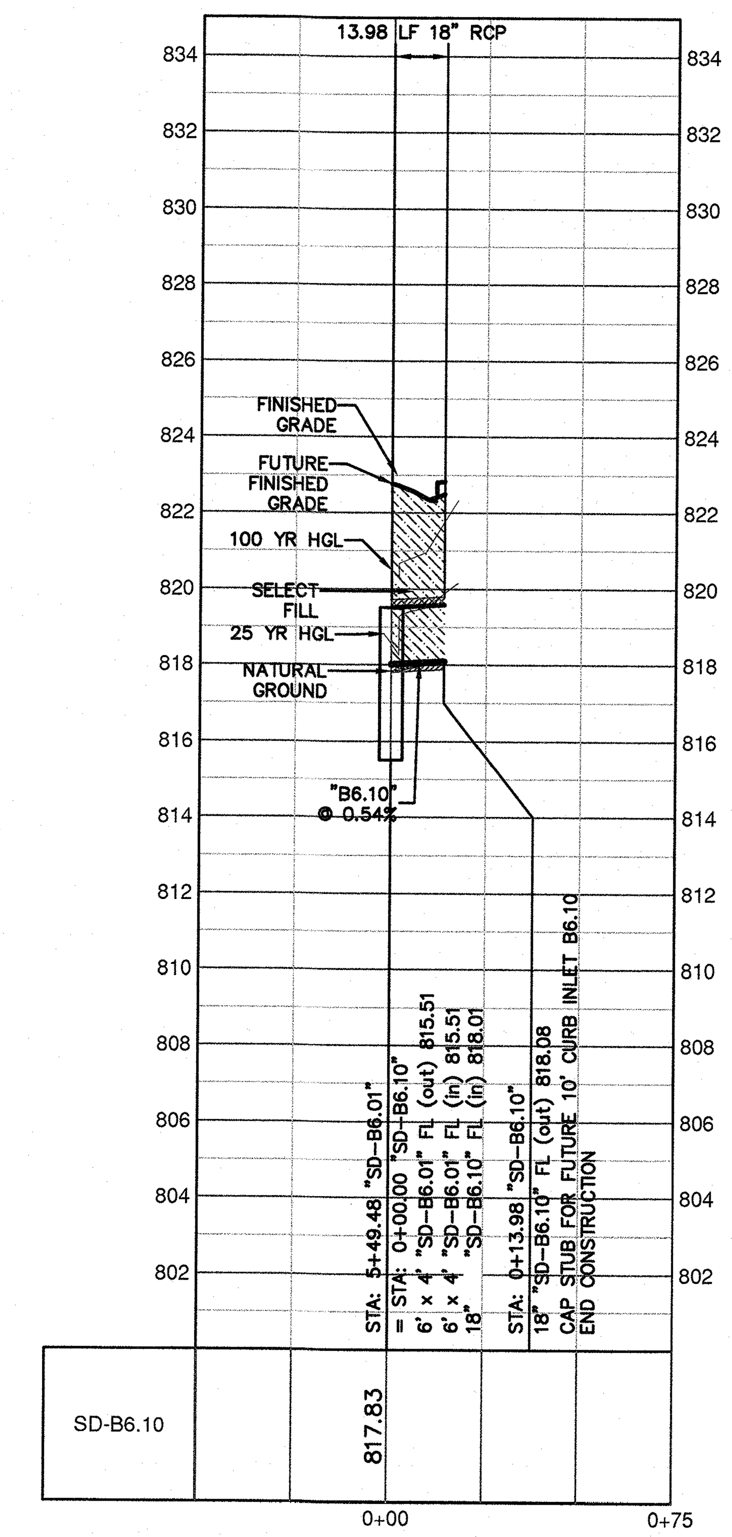
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B6.01

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 48 of 83

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6.07	2.3	4.18	0.97	819.72	819.73
B6.08	3.46	4.6	0.91	819.52	819.53
B6.09	1.88	6.35	1.75	819.33	819.34
B6.10	10.84	6.13	1.26	819.49	819.27
B6.11	3.68	12.72	0.98	819.46	818.42
B6.12	5.38	17.02	1.13	820.1	818.17
B6.13	3.32	12.16	1.03	820.12	817.88

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6.07	3.39	1.92	3.5	822.28	822.26
B6.08	5.16	2.92	3.33	821.99	821.96
B6.09	2.78	0.89	3.8	821.39	821.39
B6.10	16.15	9.14	2.66	820.95	820.66
B6.11	5.49	14.28	2.48	819.89	819.93
B6.12	8.01	19.08	2.32	820.31	819.36
B6.13	4.88	13.61	2.04	820.27	818.89

NOTES:

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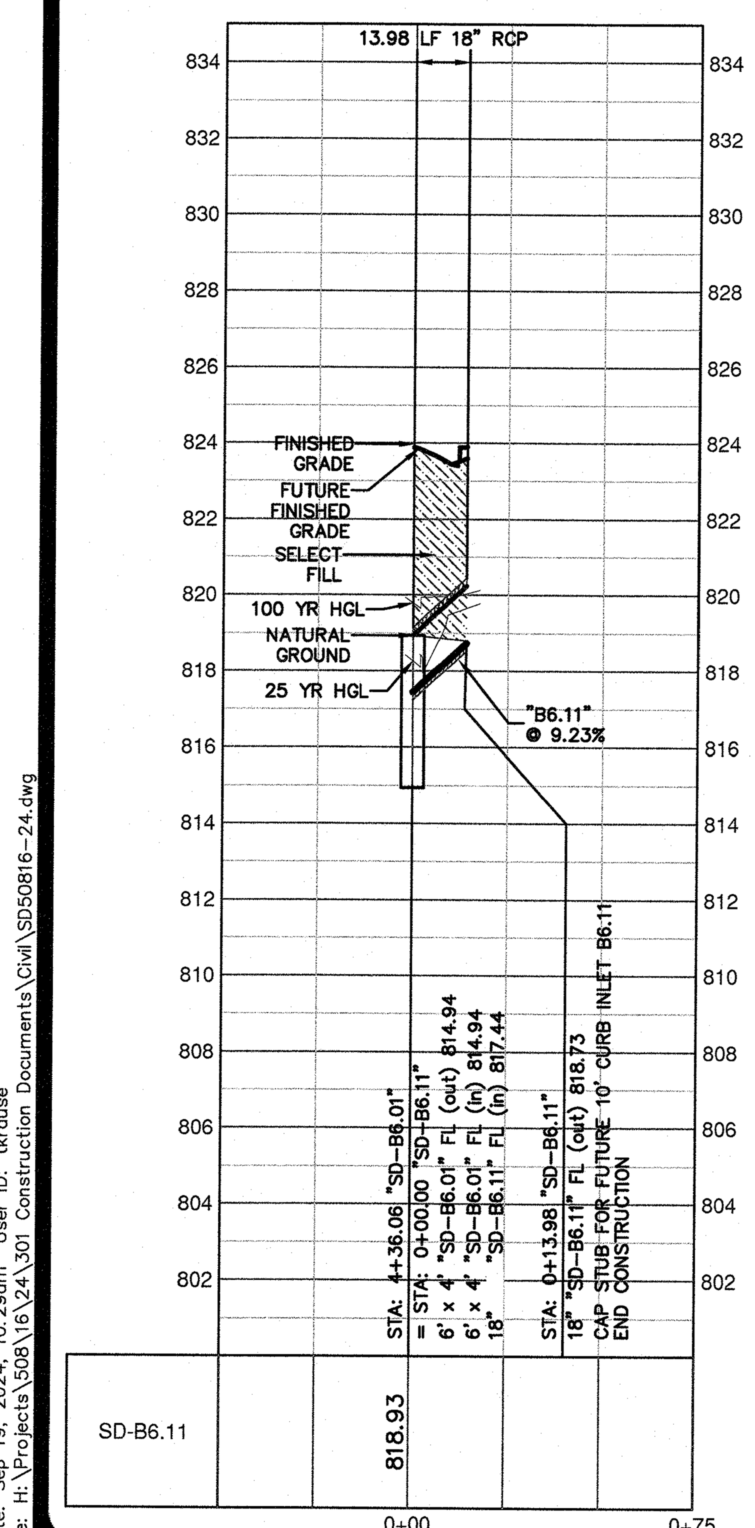
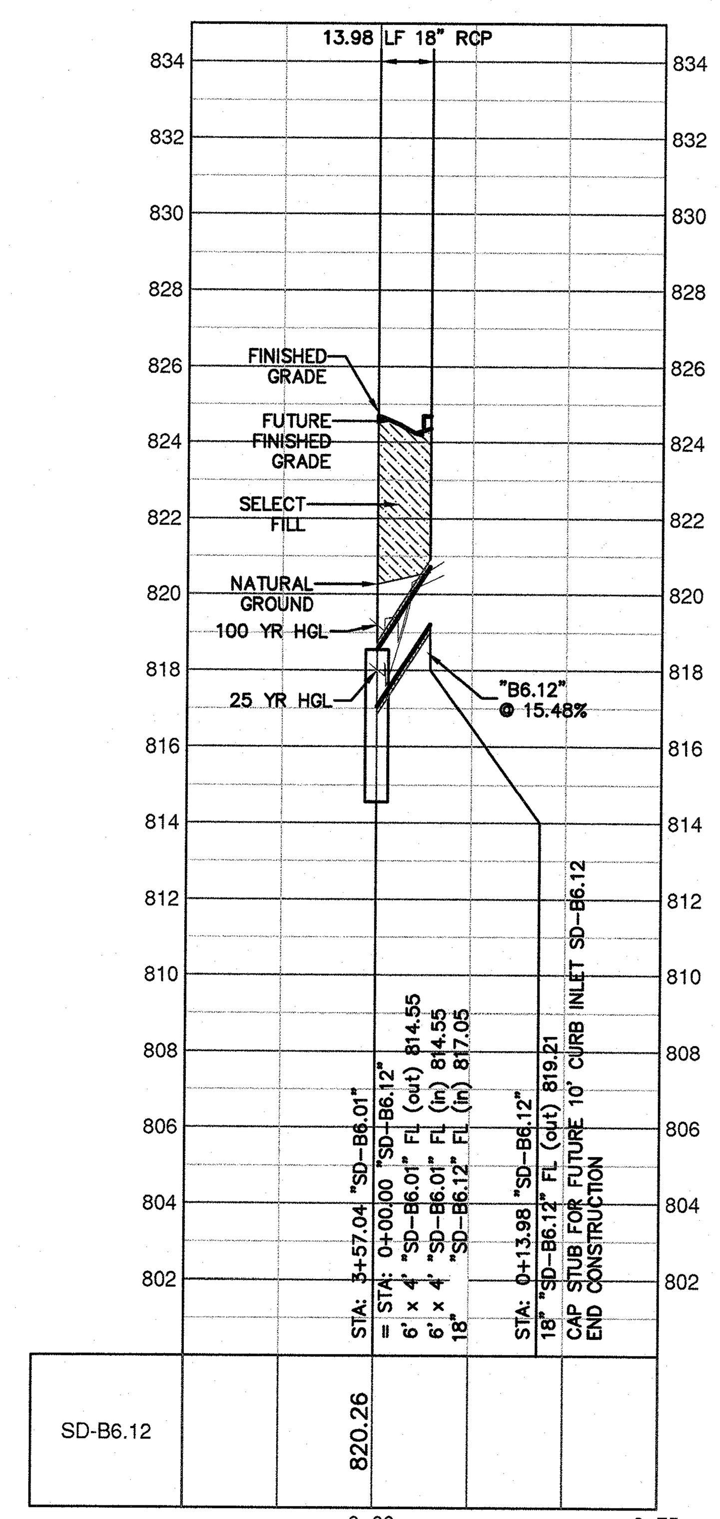
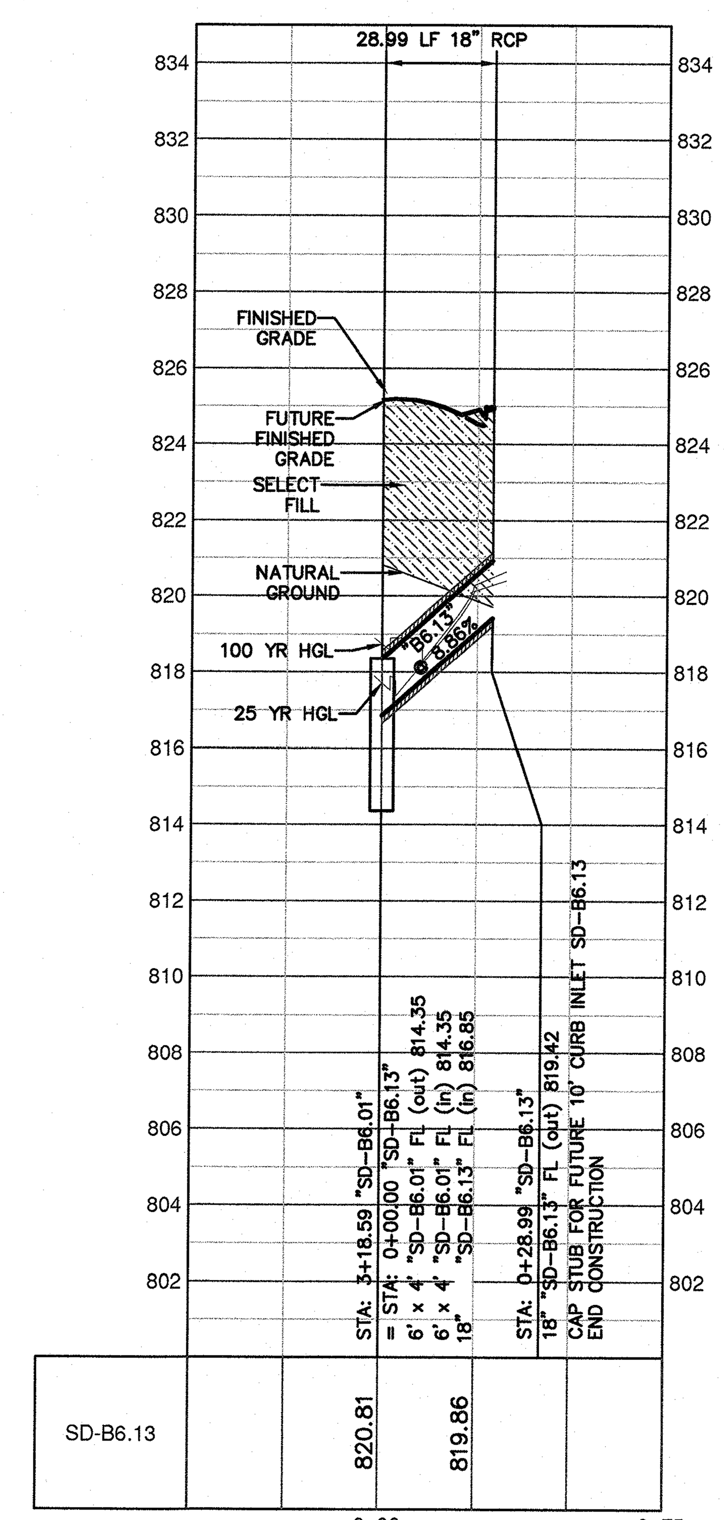

PROFILE SCALES:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:
NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL — 25yr HGL
100-YR HGL — 100yr HGL

APPROVED
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91905
LICENSED
PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B6.01 LATERALS B6.07-B6.13

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 49 of 83

Date: Sep 19, 2024, 10:29am User ID: tkrouse
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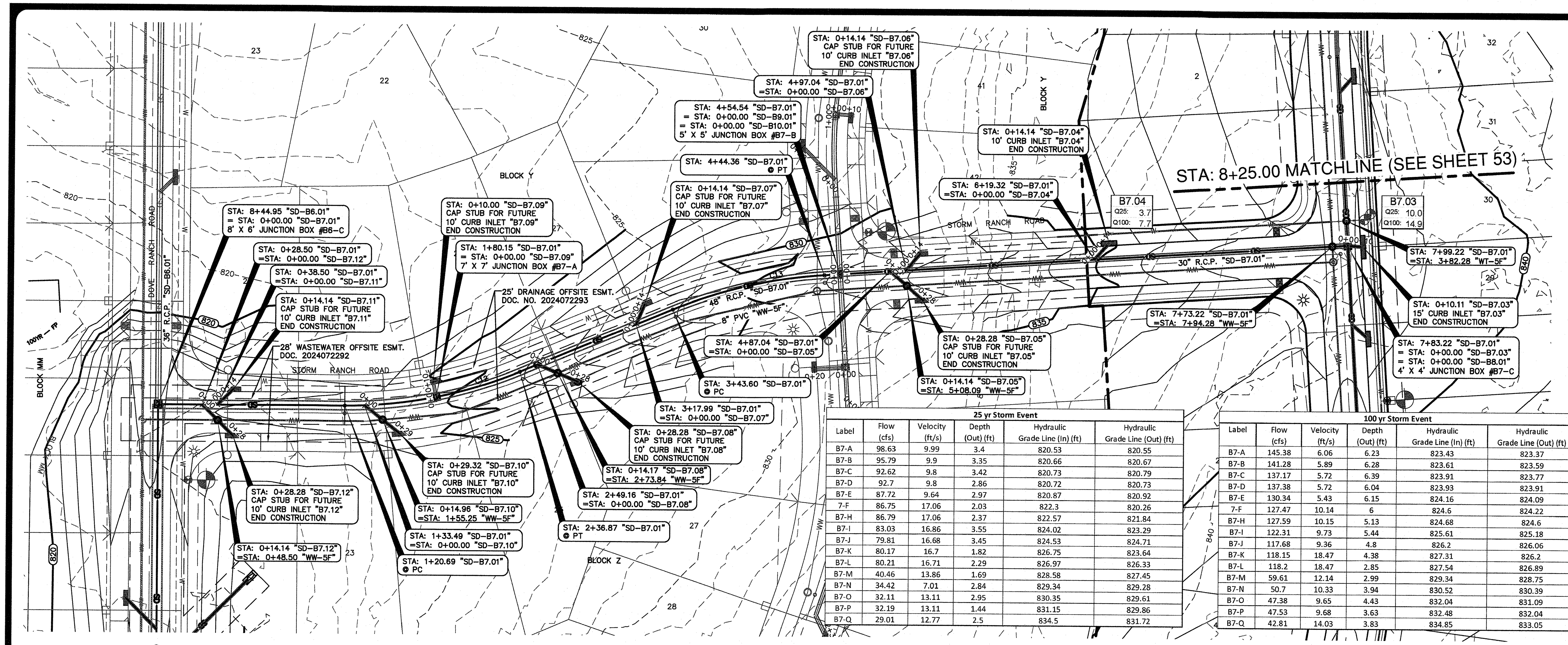
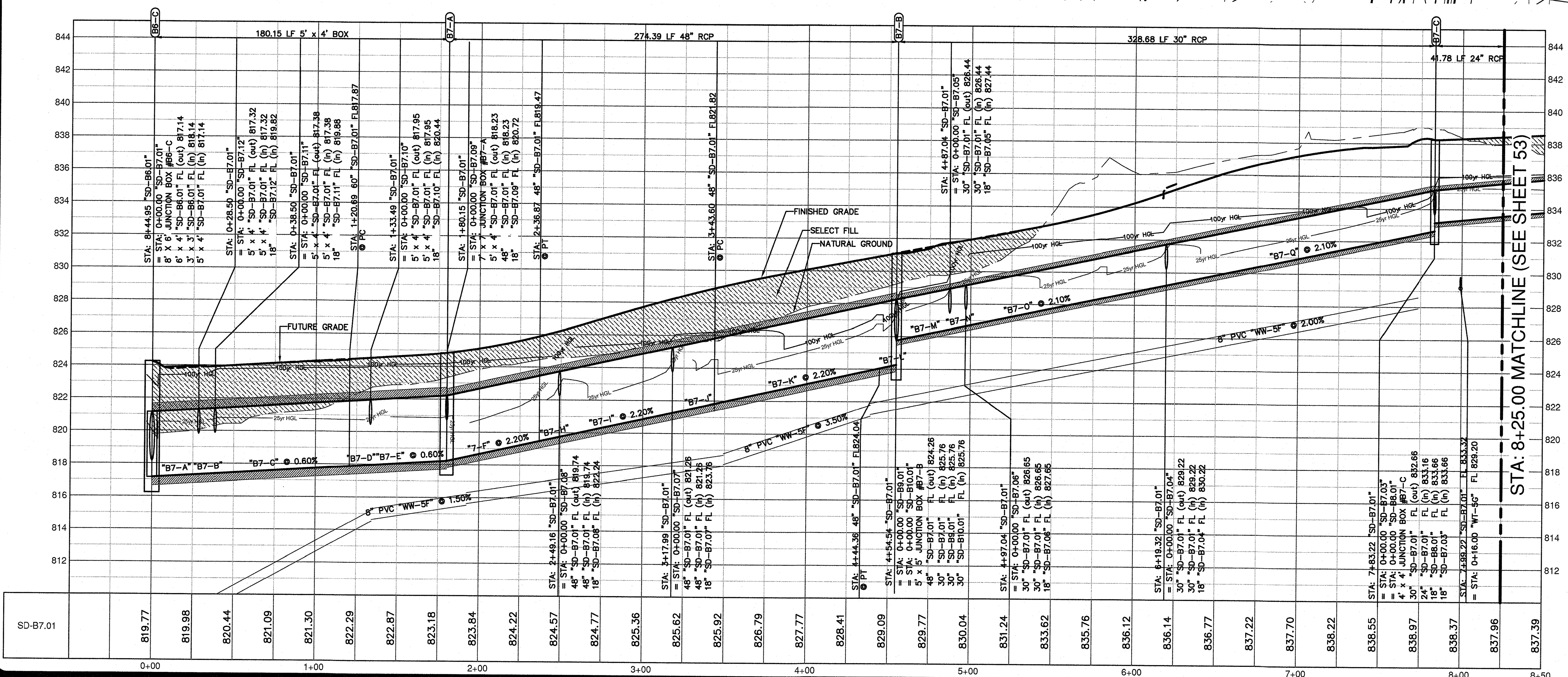


25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7-A	98.63	9.99	3.4	820.53	820.55
B7-B	95.79	9.9	3.35	820.66	820.67
B7-C	92.62	9.8	3.42	820.73	820.79
B7-D	92.7	9.8	2.86	820.72	820.73
B7-E	87.72	9.64	2.97	820.87	820.92
7-F	86.75	17.06	2.03	822.3	820.26
B7-H	86.79	17.06	2.37	822.57	821.84
B7-I	83.03	16.86	3.55	824.02	823.29
B7-J	79.81	16.68	3.45	824.53	824.71
B7-K	80.17	16.7	1.82	826.75	823.64
B7-L	80.21	16.71	2.29	826.97	826.33
B7-M	40.46	13.86	1.69	828.58	827.45
B7-N	34.42	7.01	2.84	829.34	829.28
B7-O	32.11	13.11	2.95	830.35	829.61
B7-P	32.19	13.11	1.44	831.15	829.86
B7-Q	29.01	12.77	2.5	834.5	831.72

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7-A	145.38	6.06	6.23	823.43	823.37
B7-B	141.28	5.89	6.28	823.61	823.59
B7-C	137.17	5.72	6.39	823.91	823.77
B7-D	137.38	5.72	6.04	823.93	823.91
B7-E	130.34	5.43	6.15	824.16	824.09
7-F	127.47	10.14	6	824.6	824.22
B7-H	127.59	10.15	5.13	824.68	824.6
B7-I	122.31	9.73	5.44	825.61	825.18
B7-J	117.68	9.36	4.8	826.2	826.06
B7-K	118.15	18.47	4.38	827.31	826.2
B7-L	118.2	18.47	2.85	827.54	826.89
B7-M	59.61	12.14	2.99	829.34	828.75
B7-N	50.7	10.33	3.94	830.52	830.39
B7-O	47.38	9.65	4.43	832.04	831.09
B7-P	47.53	9.68	3.63	832.48	832.04
B7-Q	42.81	14.03	3.83	834.85	833.05



SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
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- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C12	295.00'	022°33'55"	S31°00'14"E	115.43'	116.18'
C13	305.00'	018°55'39"	S32°49'23"E	100.30'	100.76'

APPROVED
RMG
CITY OF LEANDER APPROVAL

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B7.01 (1 OF 2)

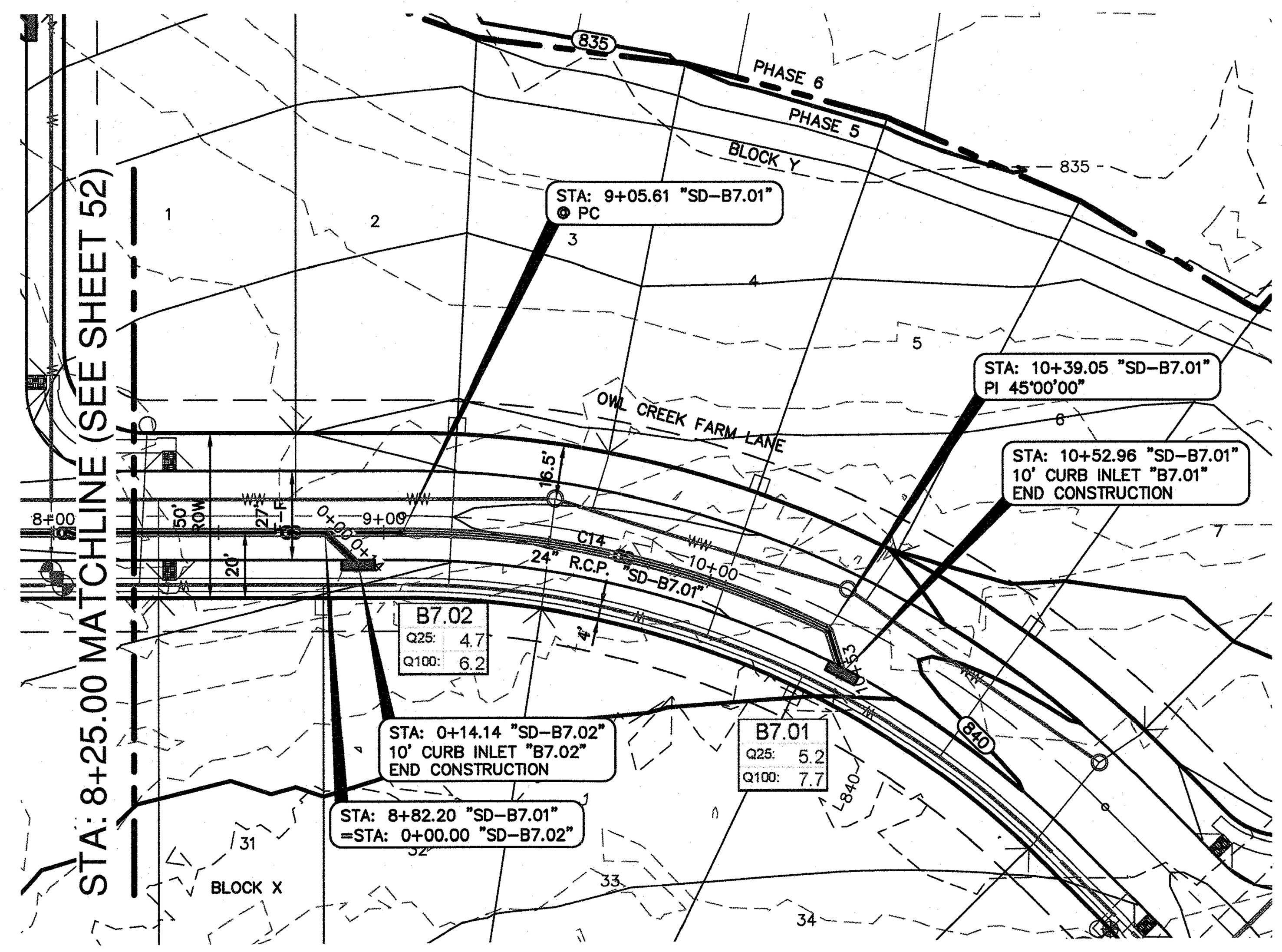
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

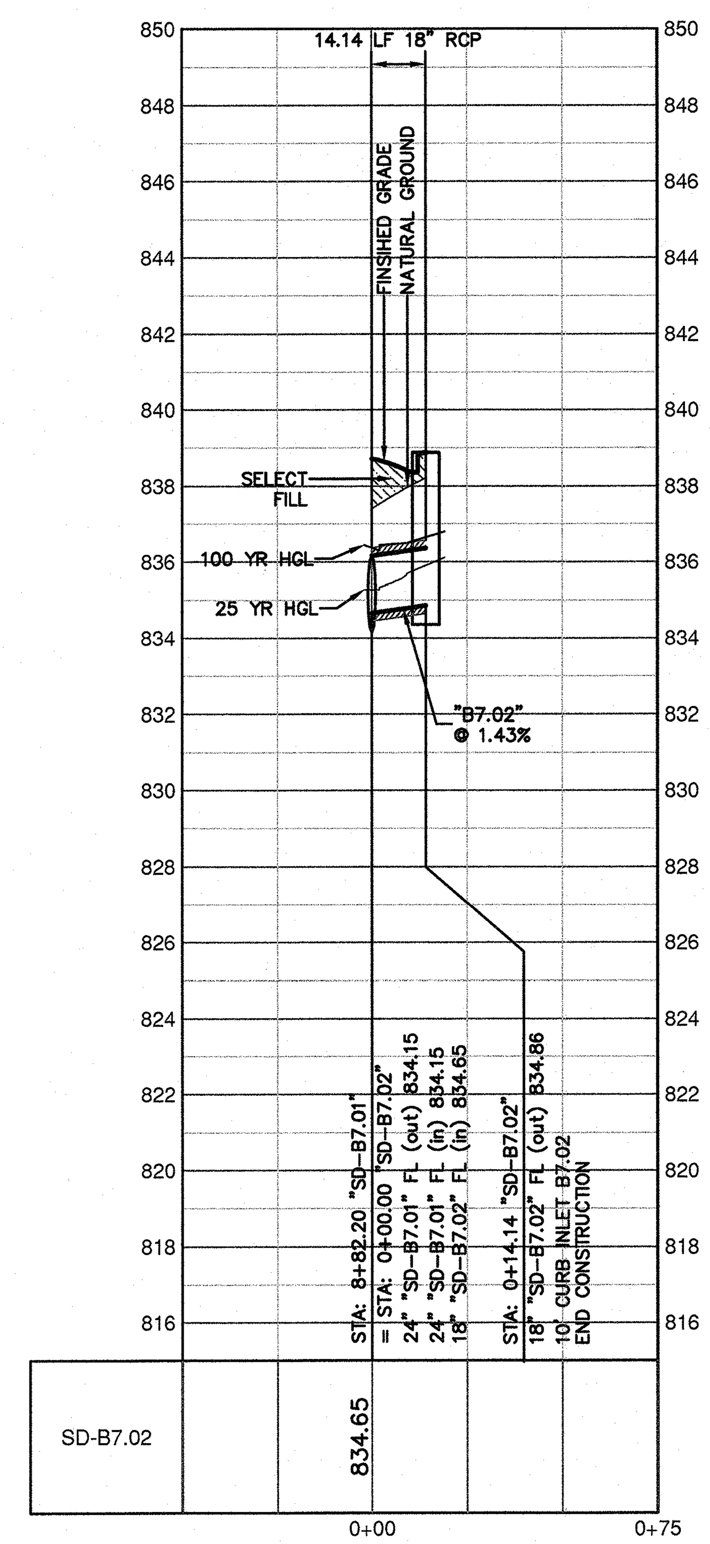
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

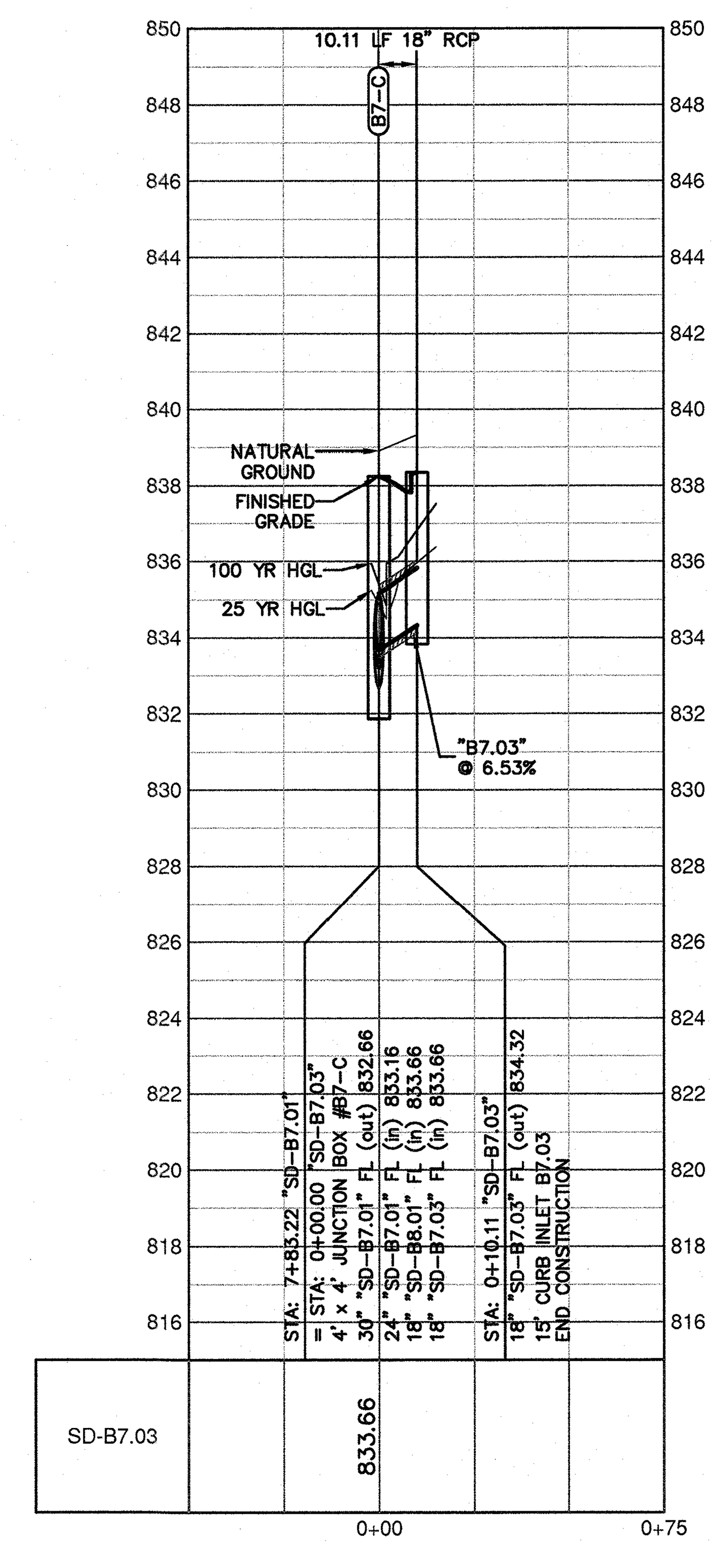
NO.	REVISION	DATE

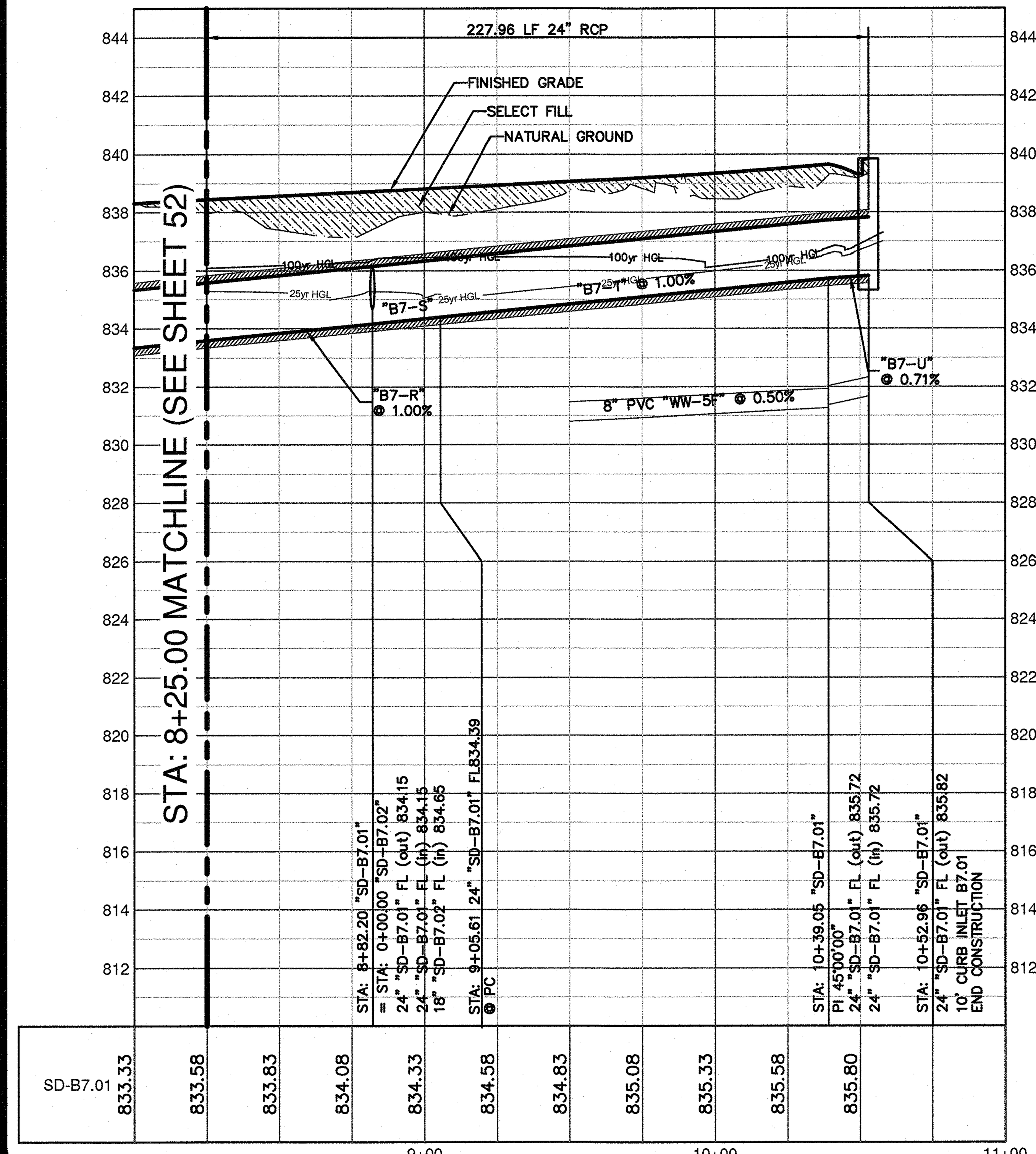
CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 50 of 83

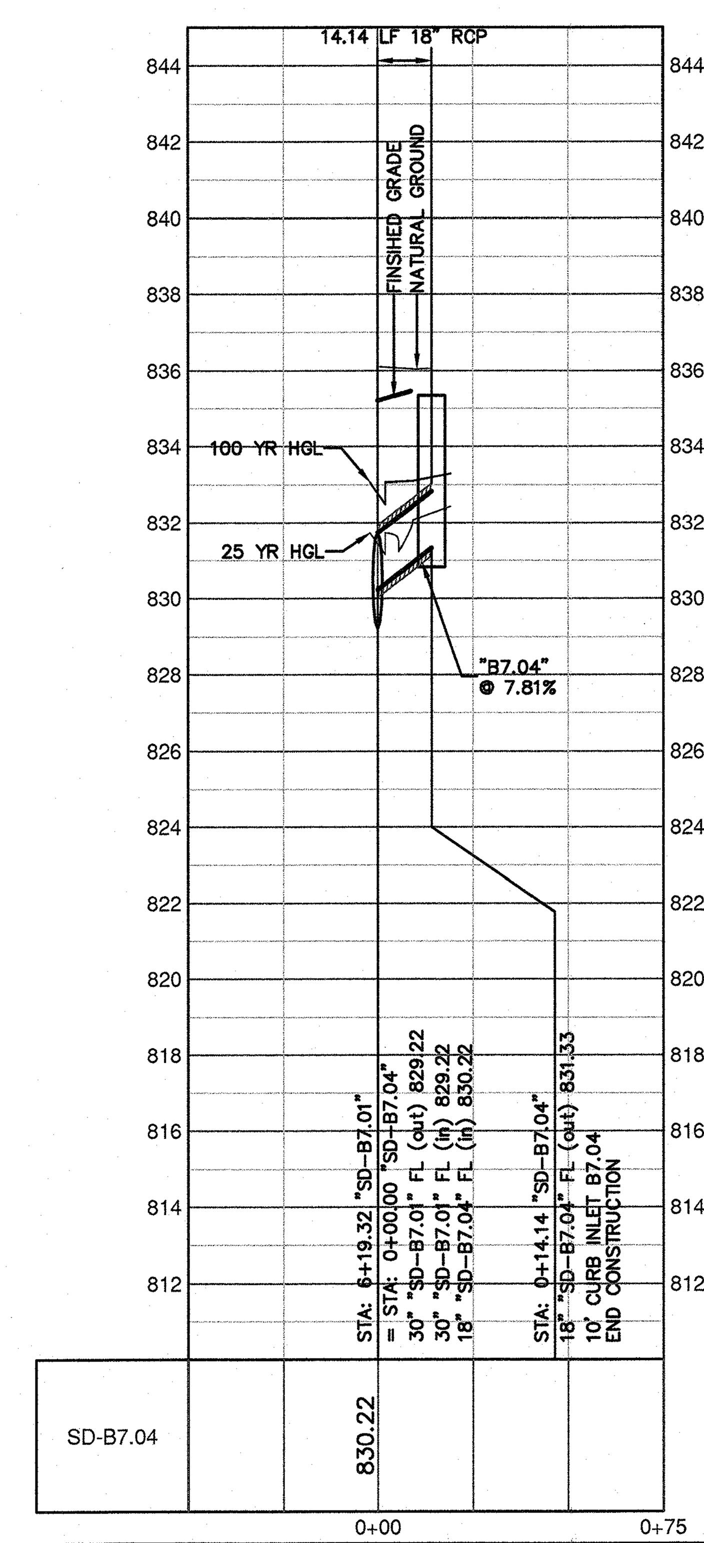
PICP-24-0120











25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7-S	5.1	6.15	1.12	835.18	835.27
B7-T	5.19	6.19	0.62	836.52	835.01
B7-U	5.2	5.48	0.91	836.62	836.63
B7.02	4.69	6.98	0.67	835.69	835.32
B7.03	10.1	14.96	1.58	835.55	835.25
B7.04	3.75	12.05	1.5	832.07	831.72

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7-S	7.62	2.43	2.28	836.46	836.44
B7-T	7.74	6.91	2.07	836.71	836.46
B7-U	7.75	6.12	1.12	836.81	836.85
B7.02	6.98	3.95	1.78	836.49	836.44
B7.03	15.04	8.51	2.28	836.12	835.94
B7.04	5.56	3.15	2.83	833.09	833.05

SCALE: 1" = 40'

0' 40' 80' 120'

NOTES:

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- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C14	295.00'	025°55'07"	N79°36'00"E	132.31'	133.45'

APPROVED
RMG
CITY OF LEANDER APPROVAL

DUSTIN J. GOSS 91805 LICENSED PROFESSIONAL ENGINEER 09/21/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

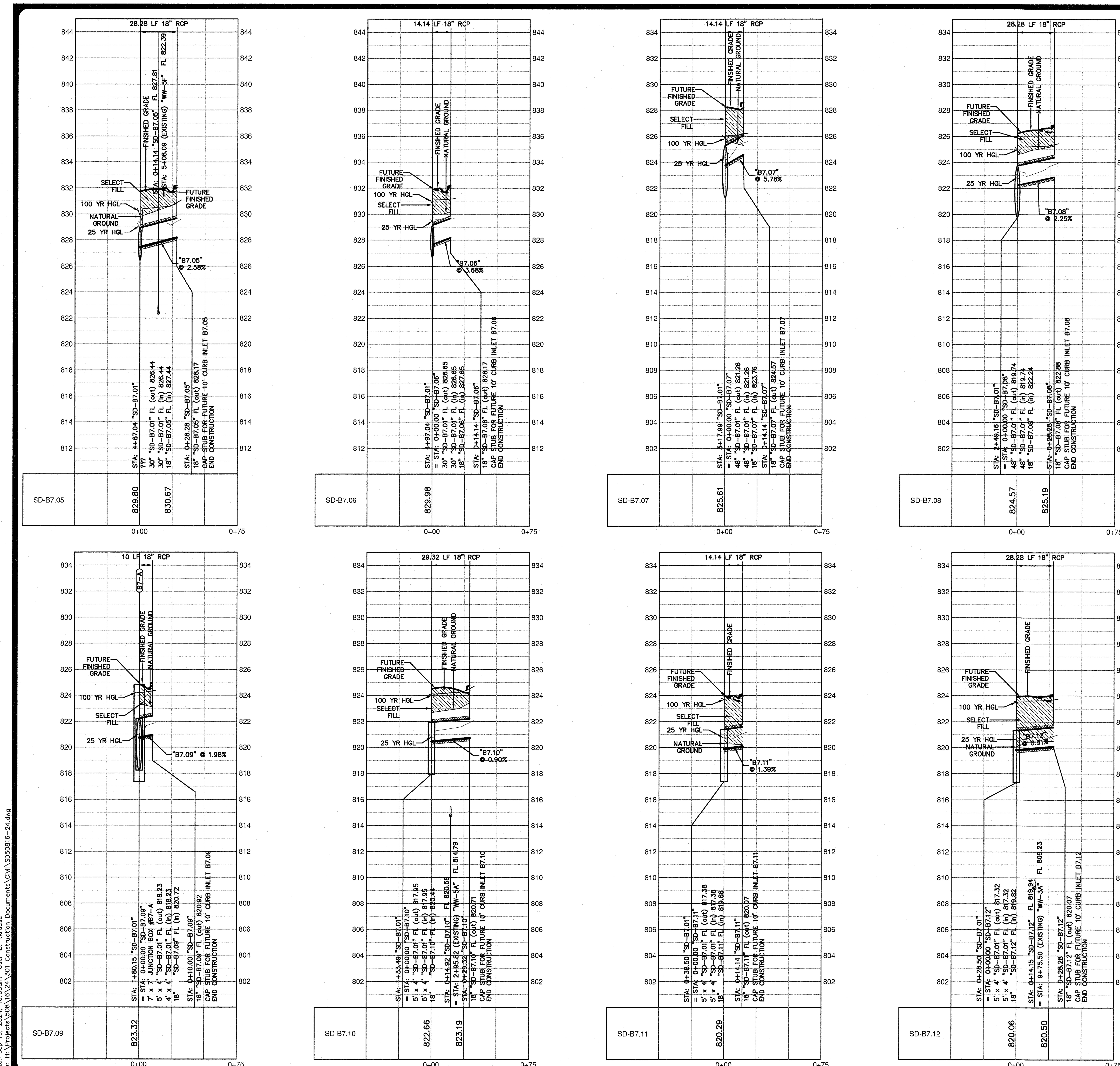
LIVELY TRACT, PHASE 5

CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B7.01 (2 OF 2) & LATERALS B7.02-B7.04

NO. REVISION DATE

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 51 of 83



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7.05	6.4	9.43	1.84	829.15	829.28
B7.06	2.68	8.39	1.95	829.61	829.61
B7.07	3.63	10.74	0.95	825.3	824.71
B7.08	4.03	7.91	1.05	823.65	823.29
B7.09	3.5	7.26	0.55	821.64	821.28
B7.10	6.03	6.29	0.82	821.66	821.26
B7.11	4.13	6.67	0.92	820.85	820.79
B7.12	3.01	5.25	0.85	820.73	820.67

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7.05	9.51	5.38	2.94	830.58	830.39
B7.06	3.99	2.26	3.43	831.11	831.09
B7.07	5.41	3.06	2.3	826.09	826.06
B7.08	6	3.4	2.94	825.26	825.18
B7.09	5.2	2.94	3.5	824.24	824.22
B7.10	8.98	5.08	3.65	824.27	824.09
B7.11	6.13	3.47	3.89	823.81	823.77
B7.12	4.47	2.53	3.78	823.64	823.59

NOTES:

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5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

APPROVED
CITY OF LEANDER APPROVAL

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B7.01 LATERALS B7.05-B7.12

NO. | REVISION | DATE

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 52 of 83

Date: Sep 19, 2024, 10:33am User ID: tkrouse
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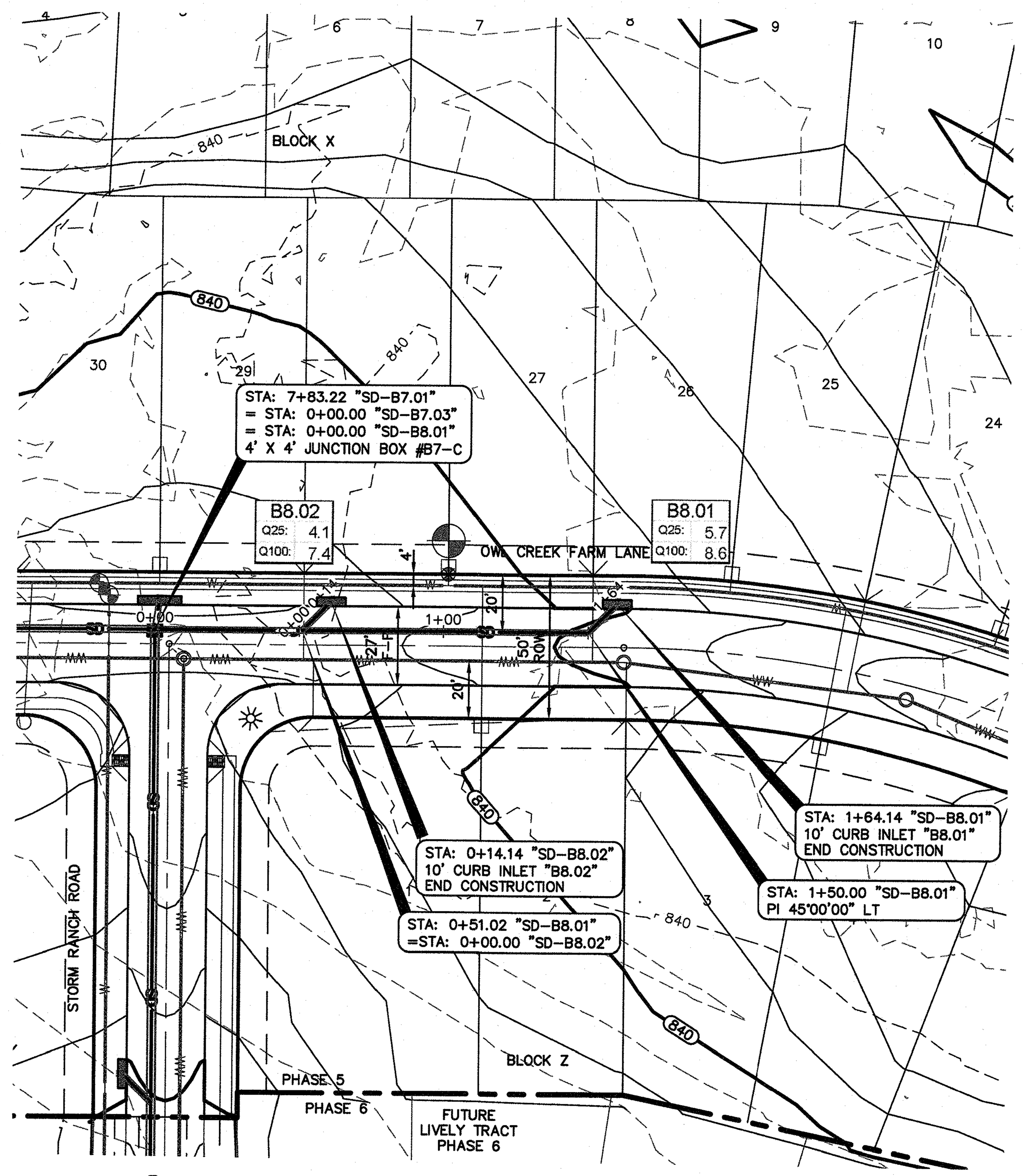

SCALE: 1"= 40'

0' 40' 80' 120'

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B8-A	9.67	8.94	1.58	835.73	835.25
B8-B	5.79	7.87	1.71	837.14	836.24
B8-C	5.79	7.61	1.07	837.36	837.28
B8.02	4.11	2.33	1.71	836.26	836.24

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B8-A	14.3	8.09	2.28	836.75	835.94
B8-B	8.6	4.87	2.96	838.06	837.49
B8-C	8.63	4.88	1.97	838.27	838.18
B8.02	6.12	3.47	2.96	837.53	837.49

NOTES:

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3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
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LEGEND

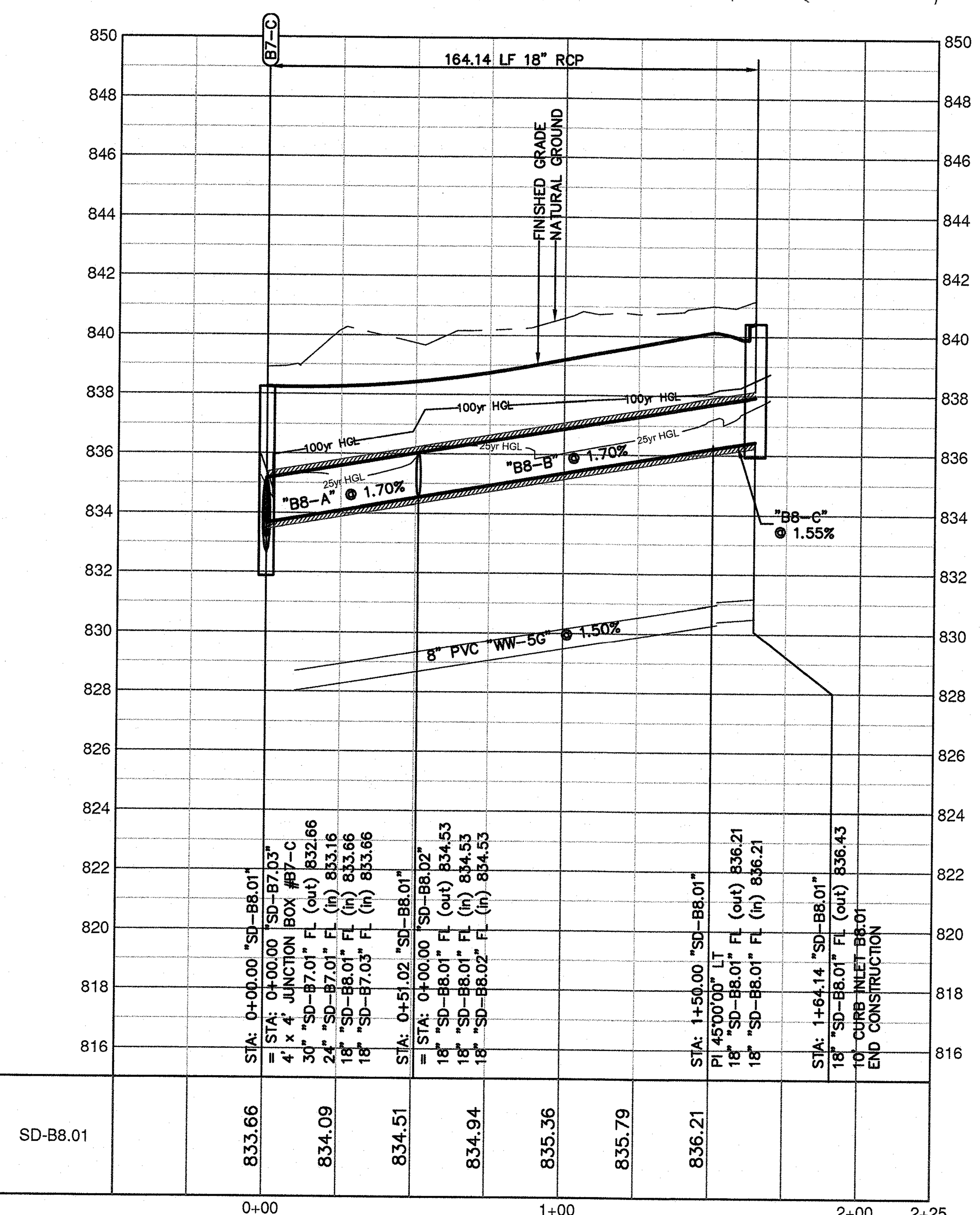
WATER LINE
WASTEWATER LINE & MH
STORM DRAIN LINE & MH
CURB INLET
SINGLE WATER SERVICE
DOUBLE WATER SERVICE
SINGLE WW SERVICE
DOUBLE WW SERVICE
GATE VALVE
FIRE HYDRANT
EXISTING GATE VALVE
EXISTING FIRE HYDRANT
EXISTING WATER LINE
EXISTING WASTEWATER LINE
EXISTING STORM DRAIN LINE
EXISTING CONTOUR LINE
PROPOSED CONTOUR LINE
INLET # / CAPTURE Q= 25/100 YEAR

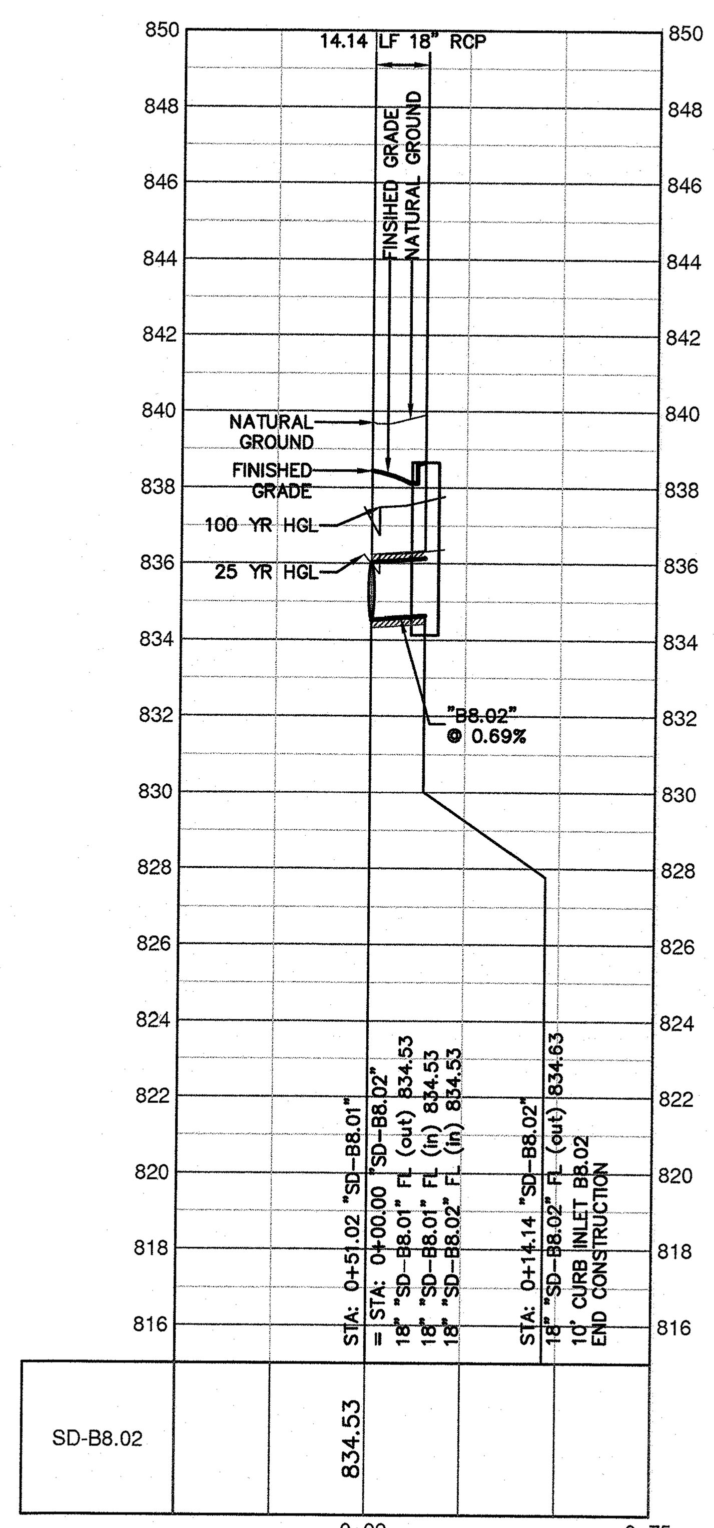
PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL





APPROVED
RMG
CITY OF LEANDER APPROVAL

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B8.01 & LATERAL B8.02

NO.	REVISION	DATE

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 53 of 83

Date: Sep 19, 2024, 10:34am User ID: hbrouse
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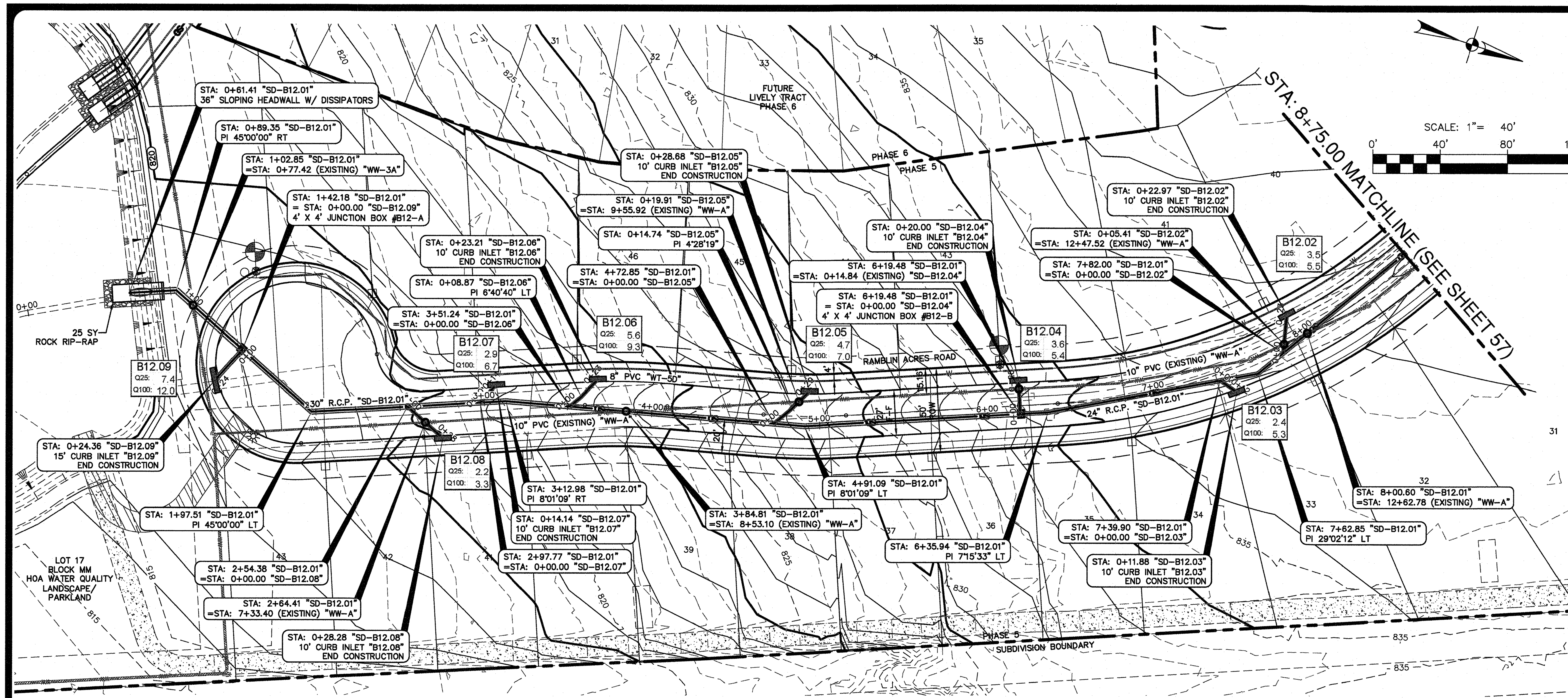

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-A	25.58	3.62	3.85	815.88	815.84
B12-B	25.75	3.64	3.67	816.01	815.95
B12-C	21.06	4.29	2.85	816.21	816.15
B12-D	21.09	11.32	2.62	816.2	816.21
B12-E	21.13	11.33	2.24	816.73	816.33
B12-F	19.75	11.12	1.96	817.5	817.13
B12-G	17.86	10.82	1.91	817.72	817.91
B12-H	17.88	14.28	0.87	819.29	817.16
B12-I	14.34	13.41	1.86	824.12	819.72
B12-J	11.25	12.5	1.28	824.71	824.12
B12-K	11.3	12.52	1.17	829.98	824.75
B12-L	9.81	7.88	0.93	830.67	830.28
B12-M	9.9	7.9	1.17	831.92	830.72
B12-N	7.87	7.42	1.47	832.12	832.26
B12-O	7.89	7.42	1.17	832.3	832.24
B12-P	4.86	6.49	1	833.67	832.3

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-A	38.29	5.42	4.11	816.18	816.1
B12-B	38.45	5.44	4.07	816.49	816.34
B12-C	31.4	6.4	3.49	816.93	816.79
B12-D	31.46	6.41	3.34	817.07	816.93
B12-E	31.53	12.57	3.2	817.55	817.29
B12-F	29.47	12.36	2.62	817.85	817.79
B12-G	26.65	12.04	2.38	818.28	818.38
B12-H	26.68	15.97	1.99	819.62	818.28
B12-I	21.39	15.02	2.34	824.41	820.19
B12-J	16.78	14.03	1.57	824.97	824.41
B12-K	16.86	14.04	1.44	830.24	825.03
B12-L	14.61	8.73	1.17	830.93	830.52
B12-M	14.72	8.74	1.44	832.18	830.99
B12-N	11.71	8.25	1.83	832.59	832.63
B12-O	11.73	8.25	1.63	832.53	832.71
B12-P	7.24	7.25	1.57	833.85	832.88

NOTES:

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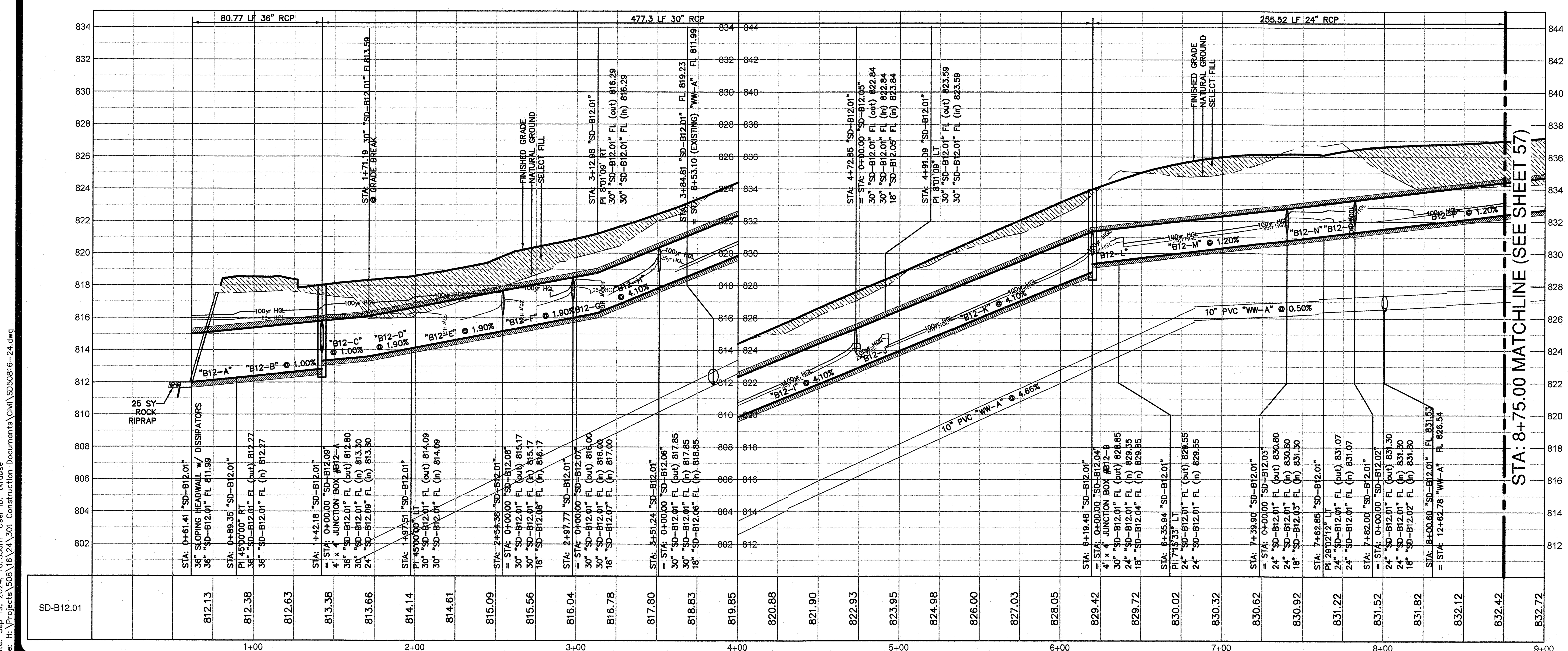
LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 INLET # / CAPTURE Q= 25/100 YEAR



PROFILE SCALES:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:
NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

APPROVED
PMG
CITY OF LEANDER APPROVAL

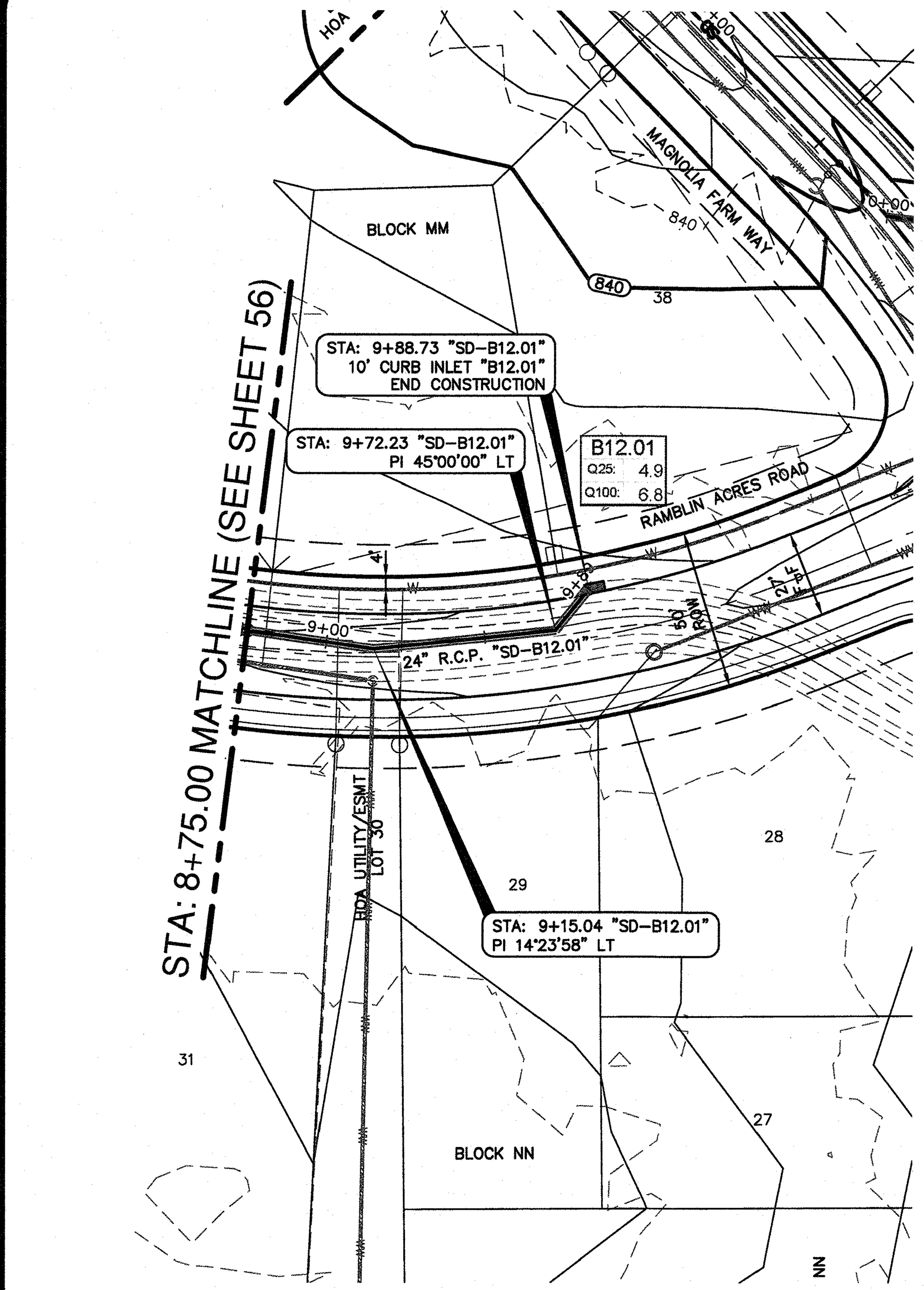
LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

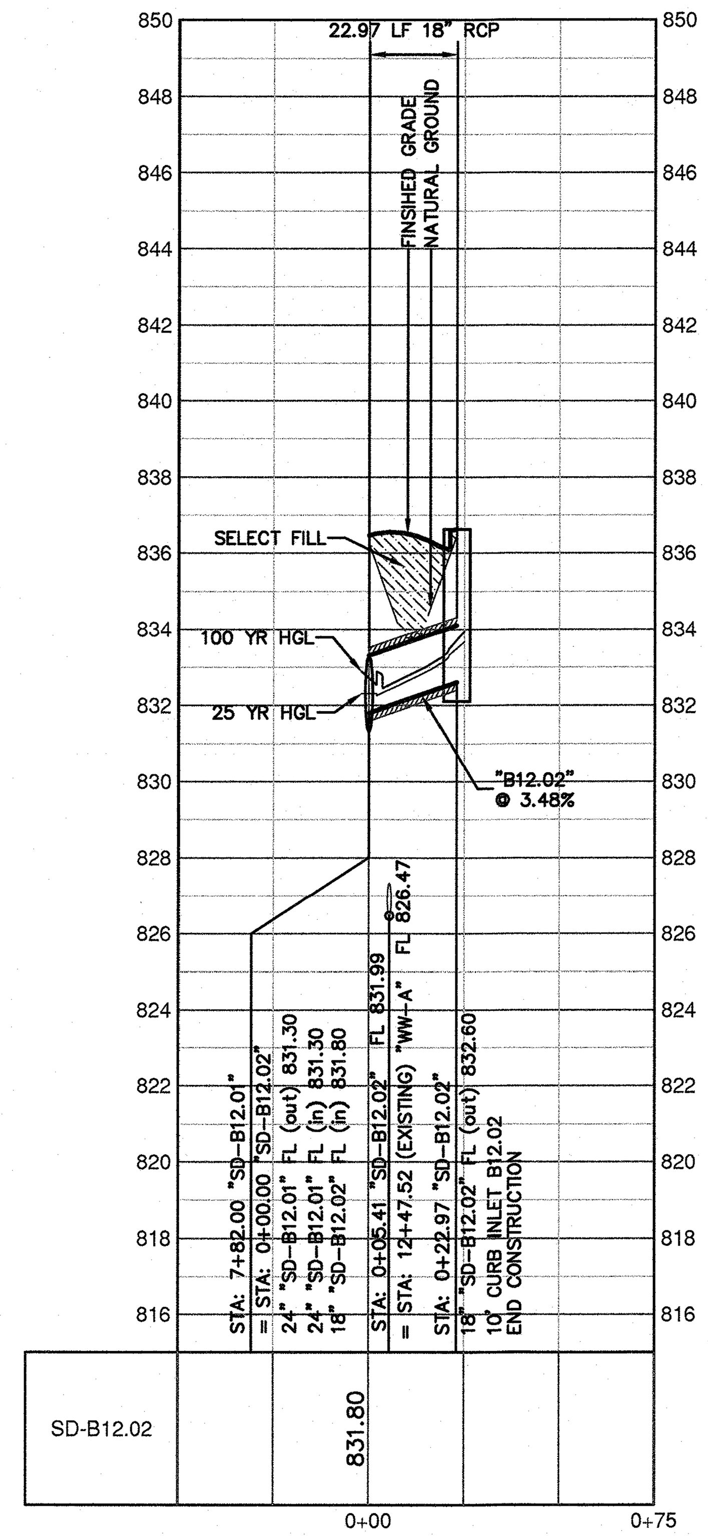
STORMDRAIN PLAN & PROFILE LINE SD-B12.01 (1 OF 2)

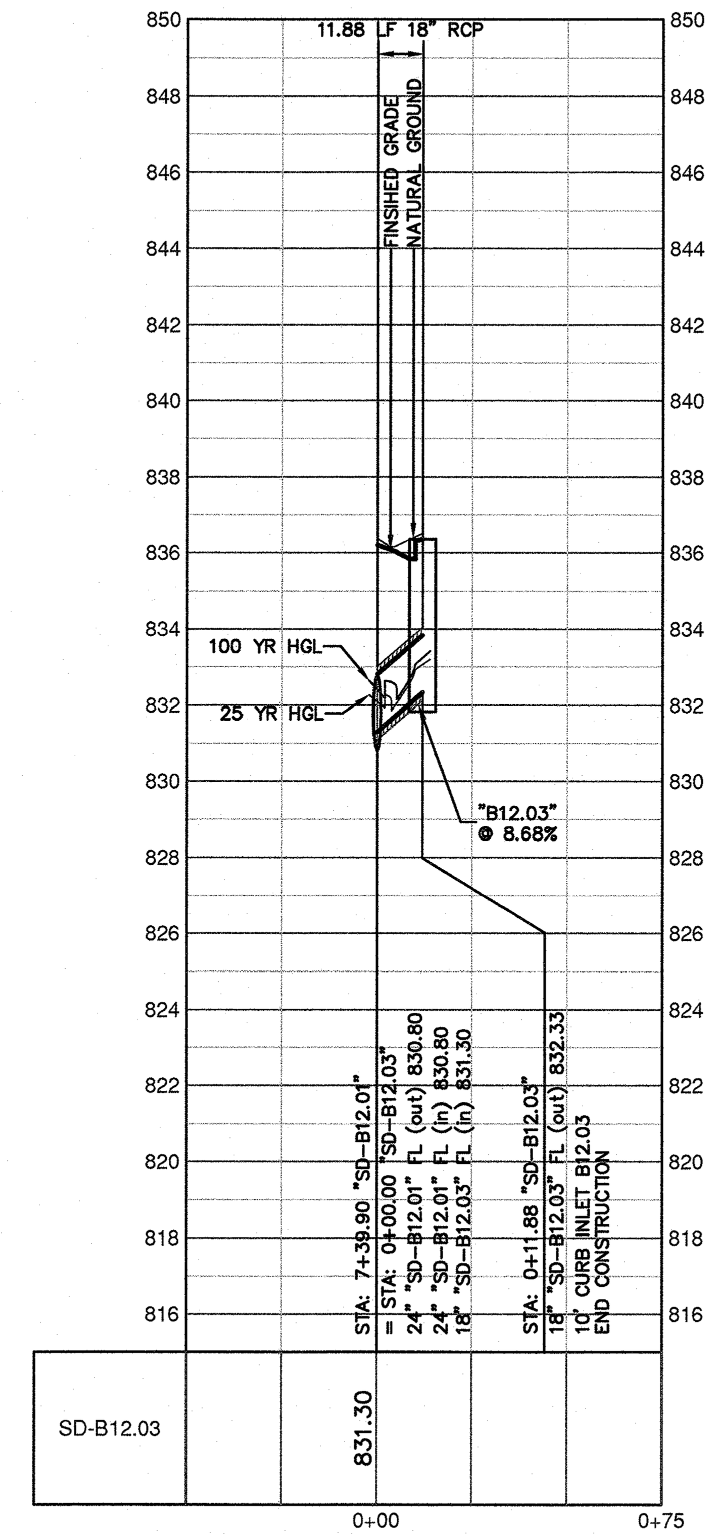
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

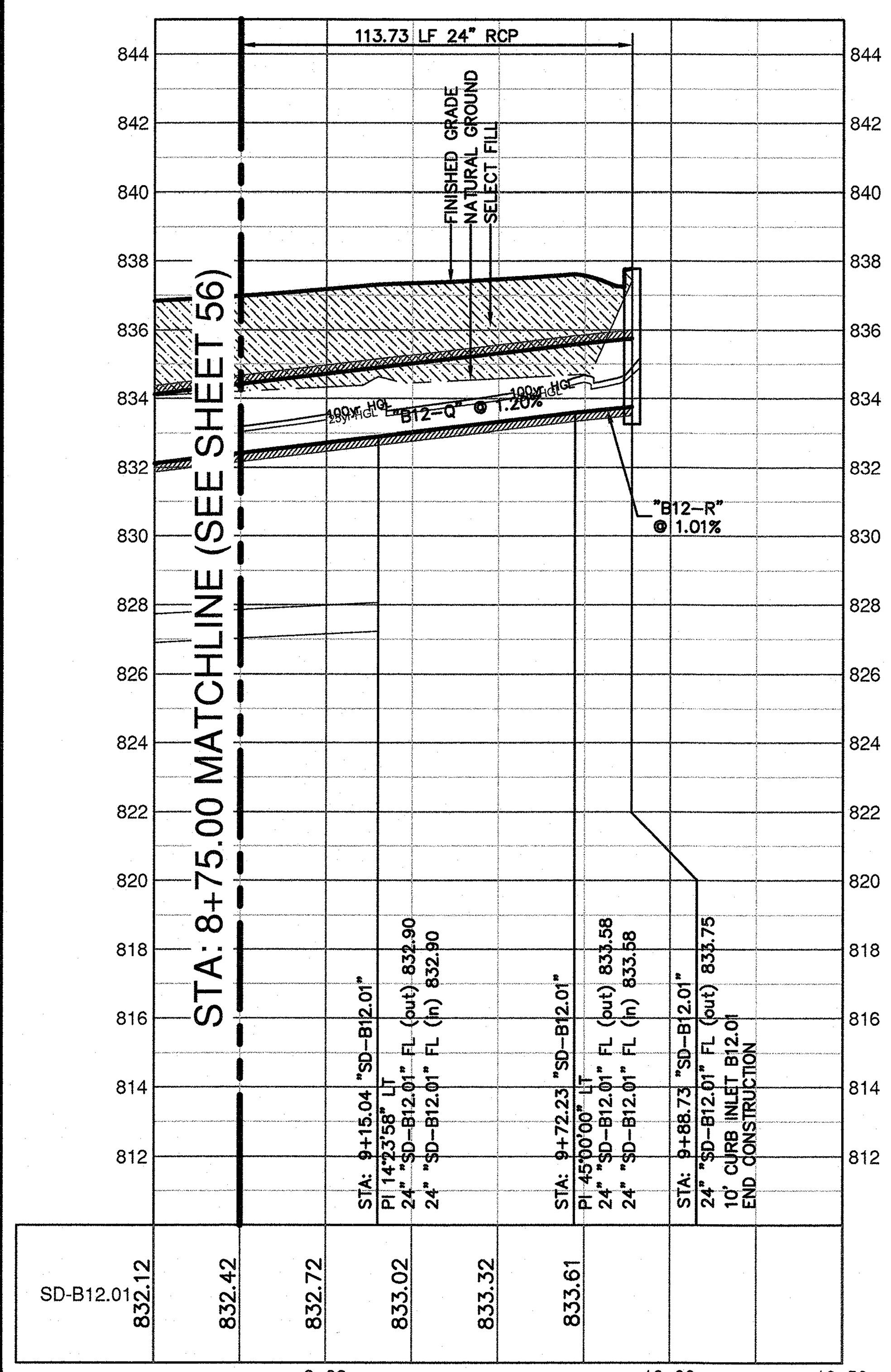
NO.	REVISION	DATE

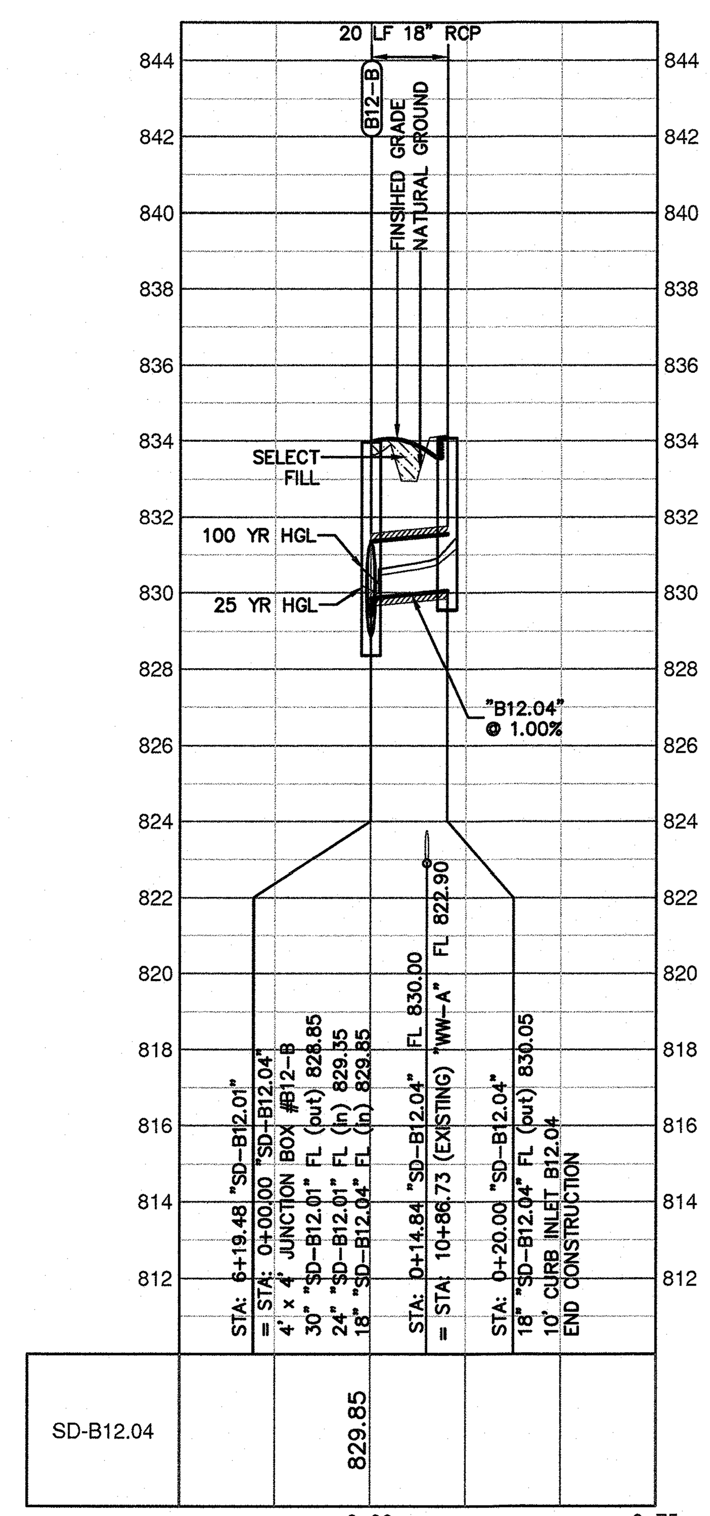
CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 54 of 83











SCALE: 1"= 40'

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-P	4.86	6.49	1	833.67	832.3
B12-Q	4.9	6.5	0.58	834.36	833.48
B12-R	4.91	6.11	0.88	834.53	834.47
B12.02	3.53	8.9	0.45	833.32	832.26
B12.03	2.43	11.02	0.97	832.92	832.26
B12.04	3.66	5.74	0.61	830.78	830.46

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12-P	7.24	7.25	1.57	833.85	832.88
B12-Q	7.28	7.27	0.73	834.54	833.63
B12-R	7.3	6.83	1.09	834.71	834.67
B12.02	5.26	9.96	1.08	833.49	832.88
B12.03	3.61	12.38	1.33	833.05	832.63
B12.04	5.48	6.38	0.77	830.95	830.62

APPROVED
RMG
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE SD-B12.01 (2 OF 2) & LATERALS B12.02-B12.04

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 55 of 83

Date: Sep 19, 2024, 10:36am User ID: tkrouse
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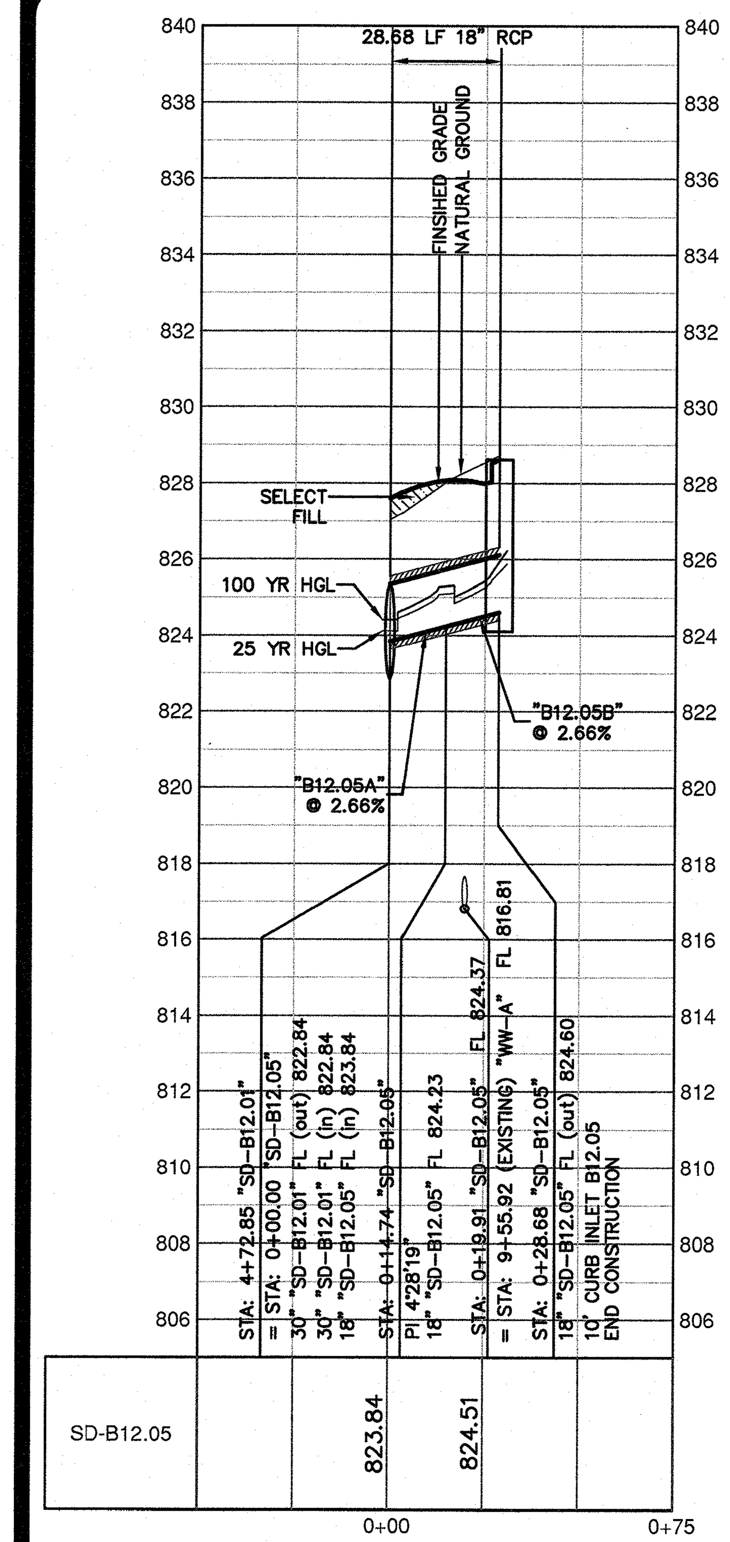
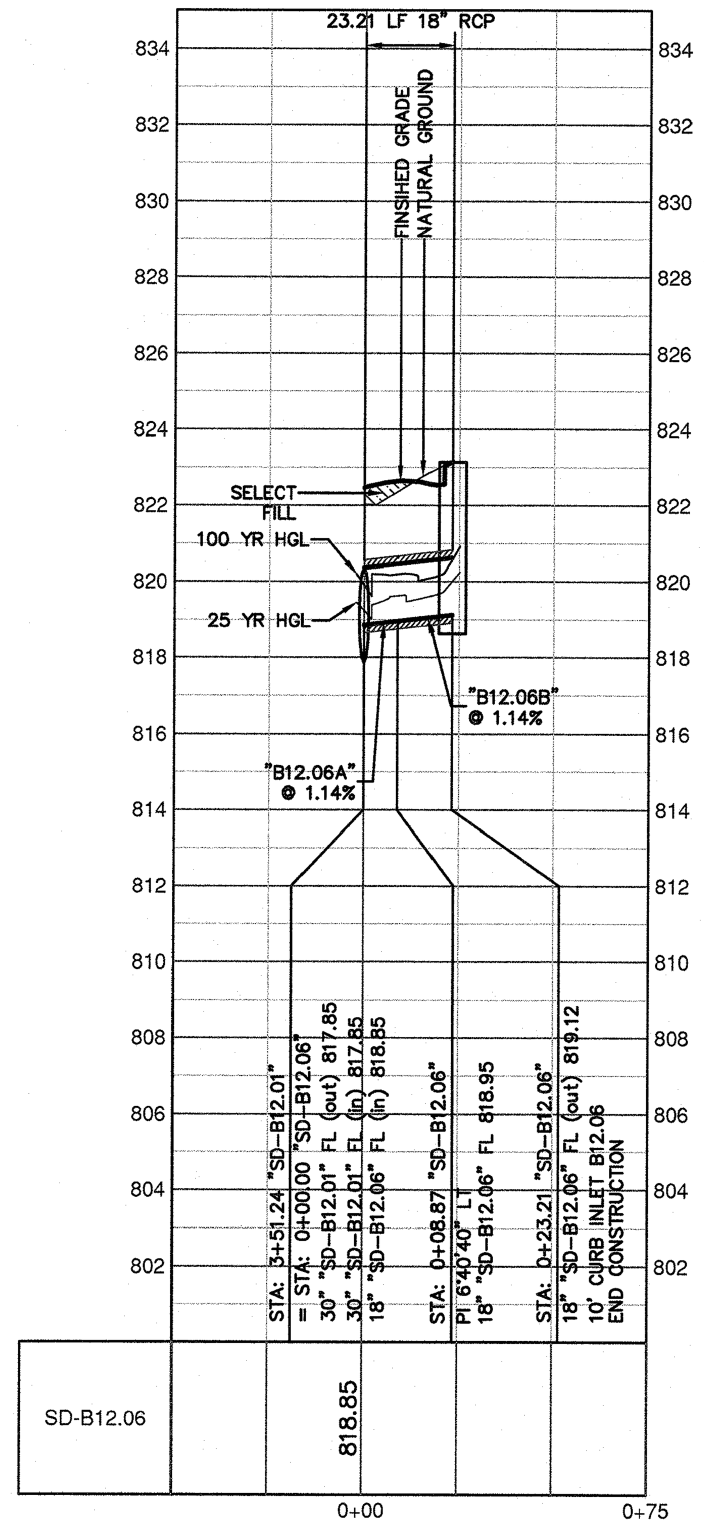
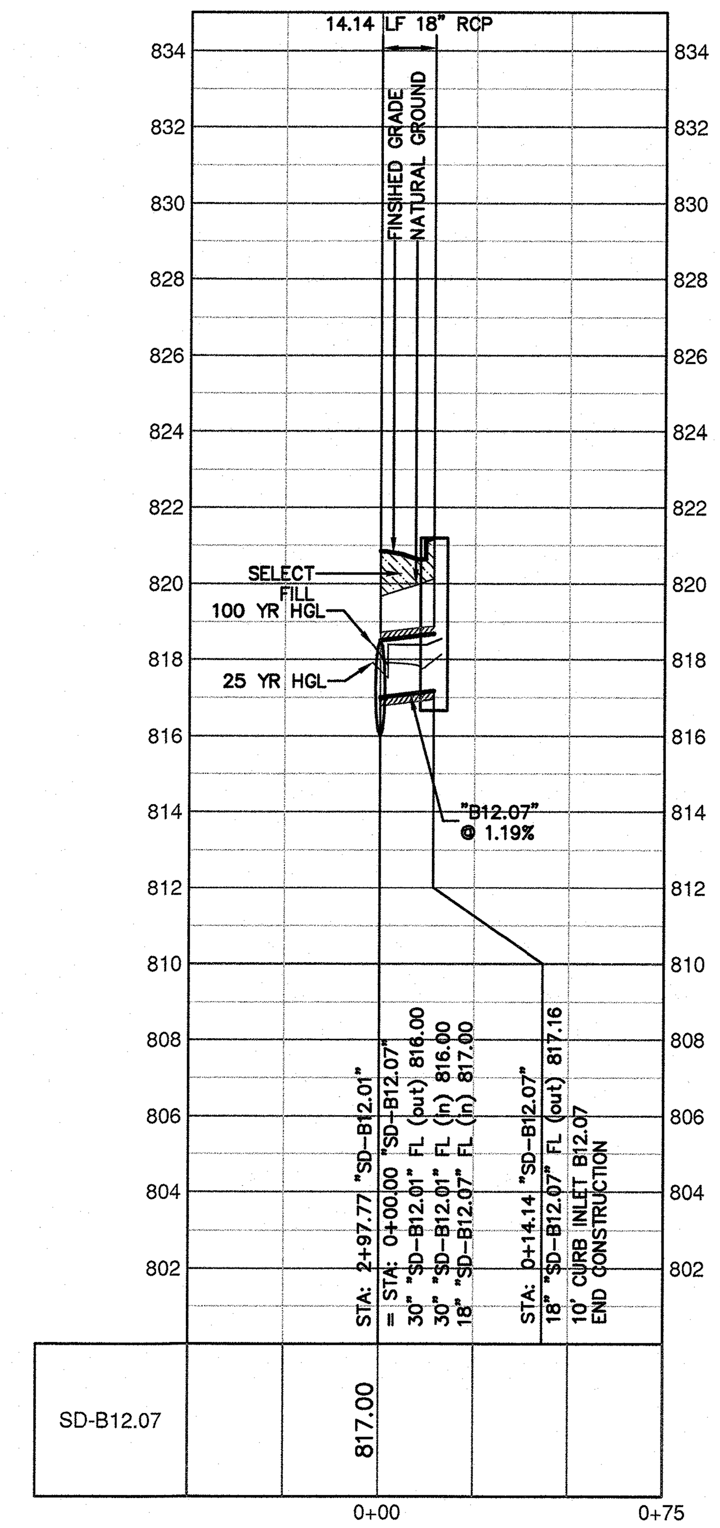
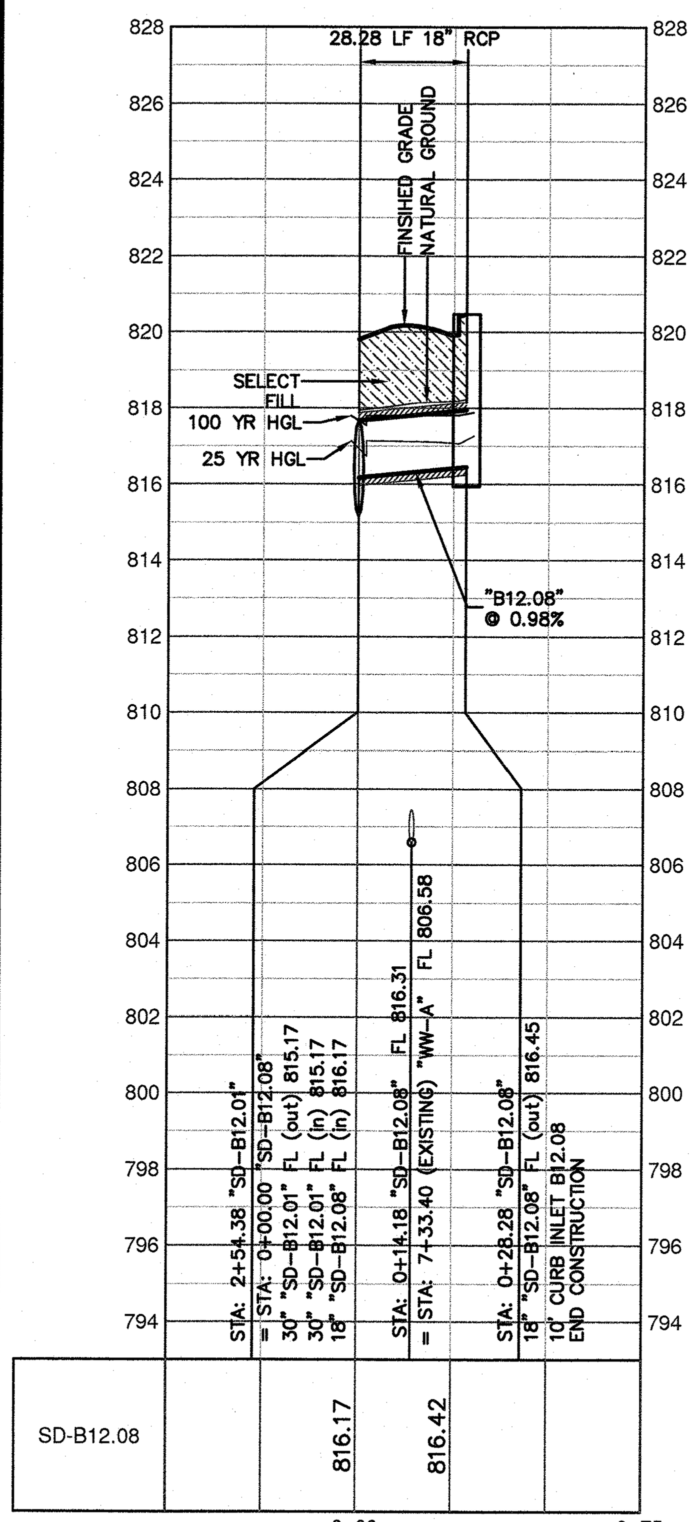
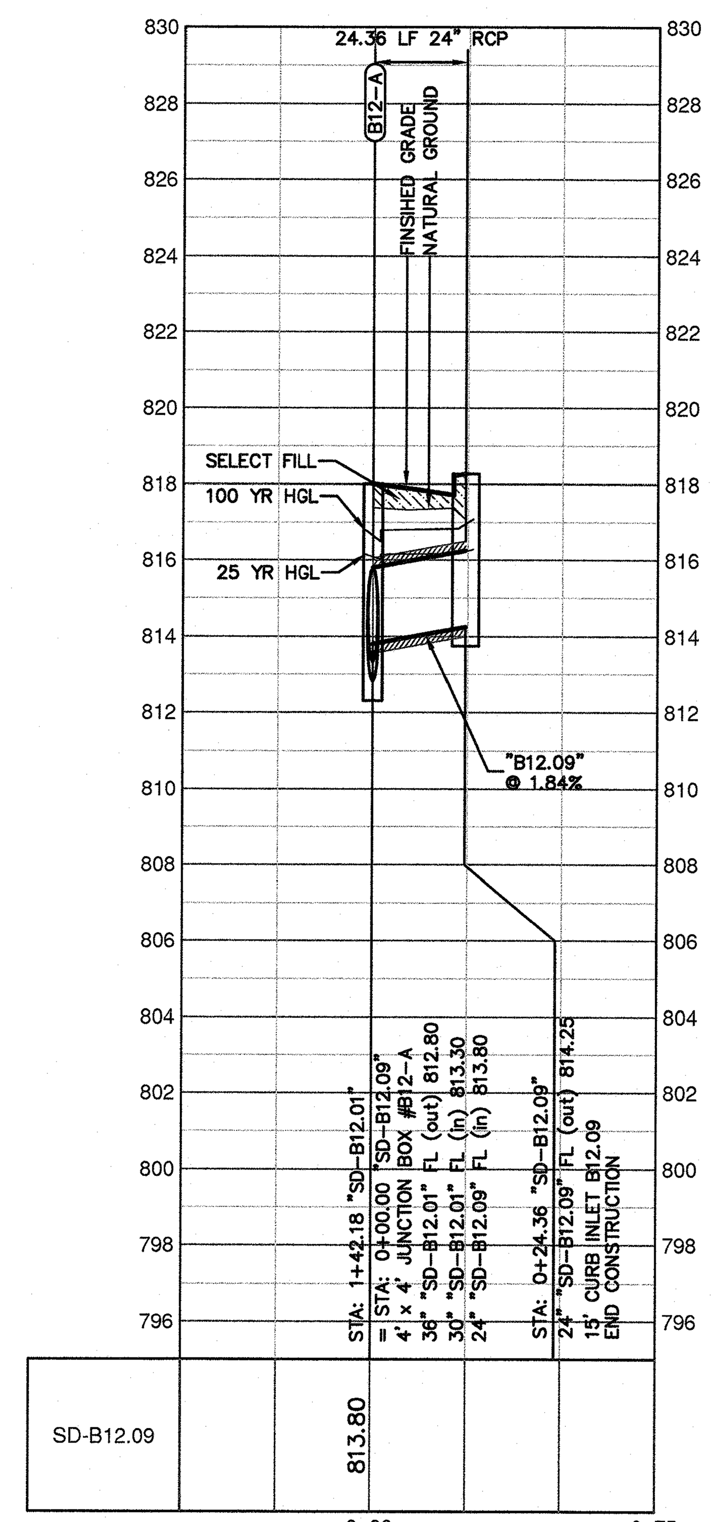
PICP-24-0120











NOTES:

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PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12.05A	4.75	8.79	0.6	825.07	824.44
B12.05B	4.75	8.79	0.87	825.44	825.1
B12.06A	5.6	6.73	0.79	819.87	819.65
B12.06B	5.61	6.73	0.95	820.03	819.91
B12.07	2.96	5.77	0.91	817.82	817.91
B12.08	2.22	4.95	0.96	817.06	817.13
B12.09	7.47	8.53	2.35	816.17	816.15

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B12.05A	7.06	9.79	0.76	825.26	824.6
B12.05B	7.07	9.8	1.08	825.63	825.31
B12.06A	8.33	7.39	1.34	820.16	820.19
B12.06B	8.35	7.4	1.25	820.24	820.21
B12.07	4.41	6.44	1.38	818.38	818.38
B12.08	3.28	5.52	1.62	817.81	817.79
B12.09	11.16	3.55	2.99	816.84	816.79

APPROVED
RMG
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE SD-B12.01 LATERALS B12.05-B12.09

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 56 of 83

Date: Sep 19, 2024, 10:37am User ID: lkrouse
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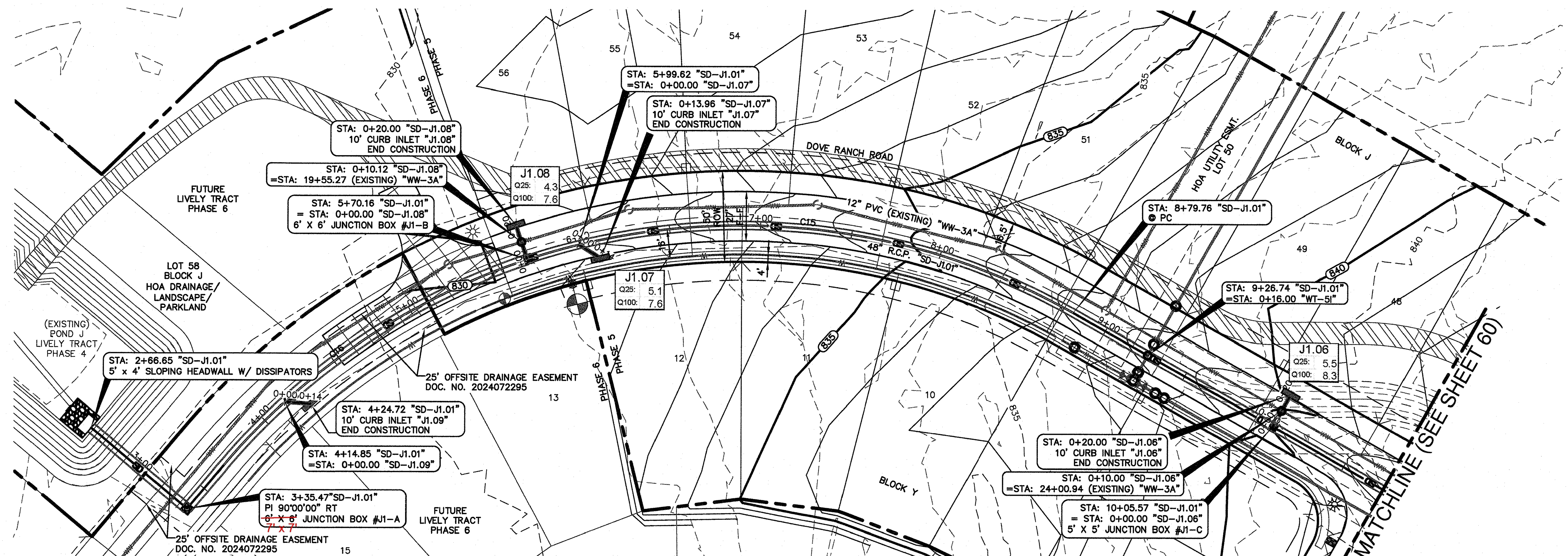
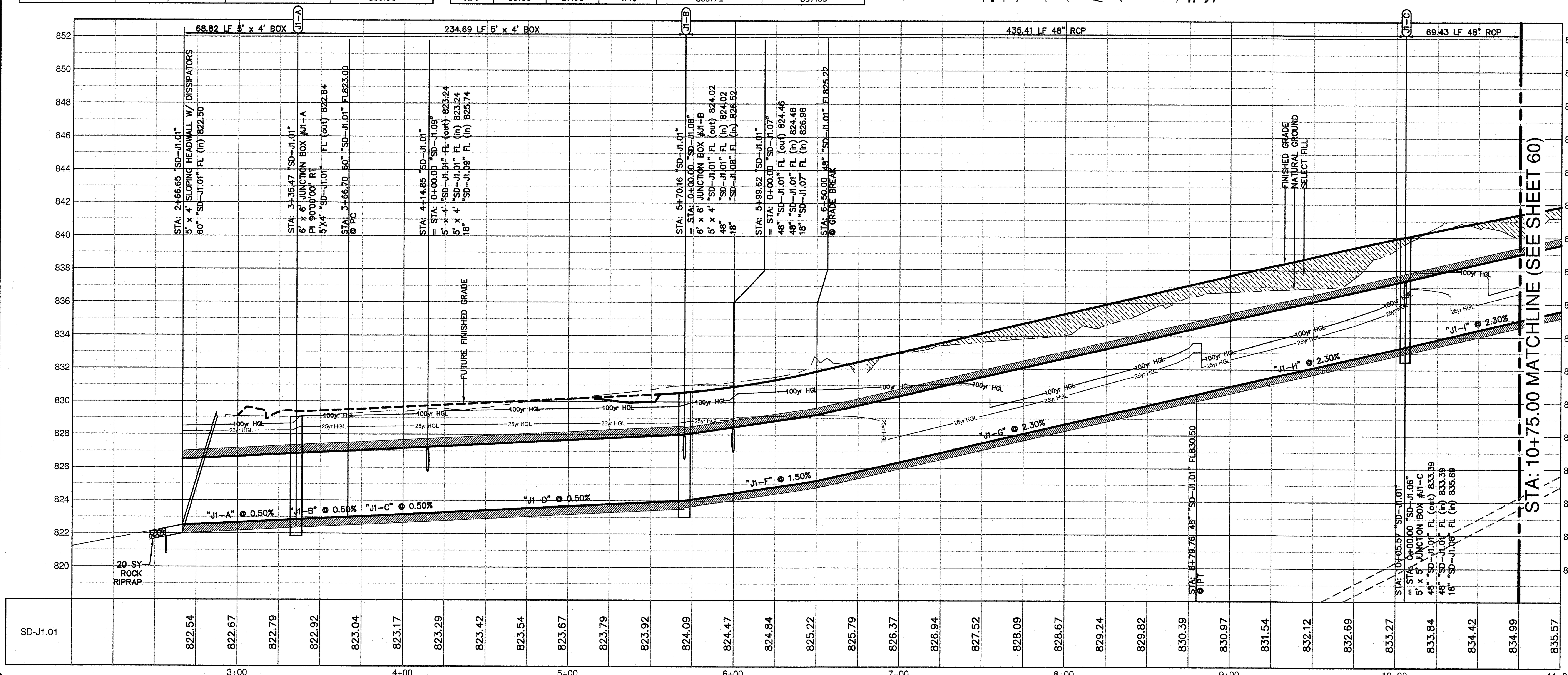


25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-A	81.12	4.06	5.67	828.23	828.17
J1-B	81.33	4.07	5.58	828.45	828.43
J1-C	81.65	4.08	5.45	828.5	828.45
J1-D	79.04	3.95	5.34	828.71	828.58
J1-E	75.43	6	4.8	828.89	828.82
J1-F	71.01	14.05	4.61	829.18	829.07
1-G	71.31	16.45	3.96	833.05	829.18
J1-H	71.48	16.45	1.64	835.95	832.14
J1-I	66.75	16.15	3.54	839.17	836.93

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-A	121.12	6.06	6	828.64	828.5
J1-B	121.33	6.07	6.23	829.14	829.07
J1-C	121.66	6.08	6.13	829.24	829.14
J1-D	117.27	5.86	6.17	829.71	829.41
J1-E	111.9	8.9	5.92	830.09	829.94
J1-F	105.44	8.39	6.04	830.73	830.5
1-G	105.84	18.27	5.52	833.61	830.73
J1-H	106.06	18.28	2.08	836.51	832.58
J1-I	99.03	17.96	4.46	839.71	837.85



SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 / Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

SUBGRADE

PROPOSED STORM DRAIN

25-YR HGL

100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C15	370.00'	053°17'07"	S04°46'55"E	331.83'	344.10'
C16	370.00'	026°09'54"	S44°30'26"E	167.50'	168.97'

APPROVED
RMG
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

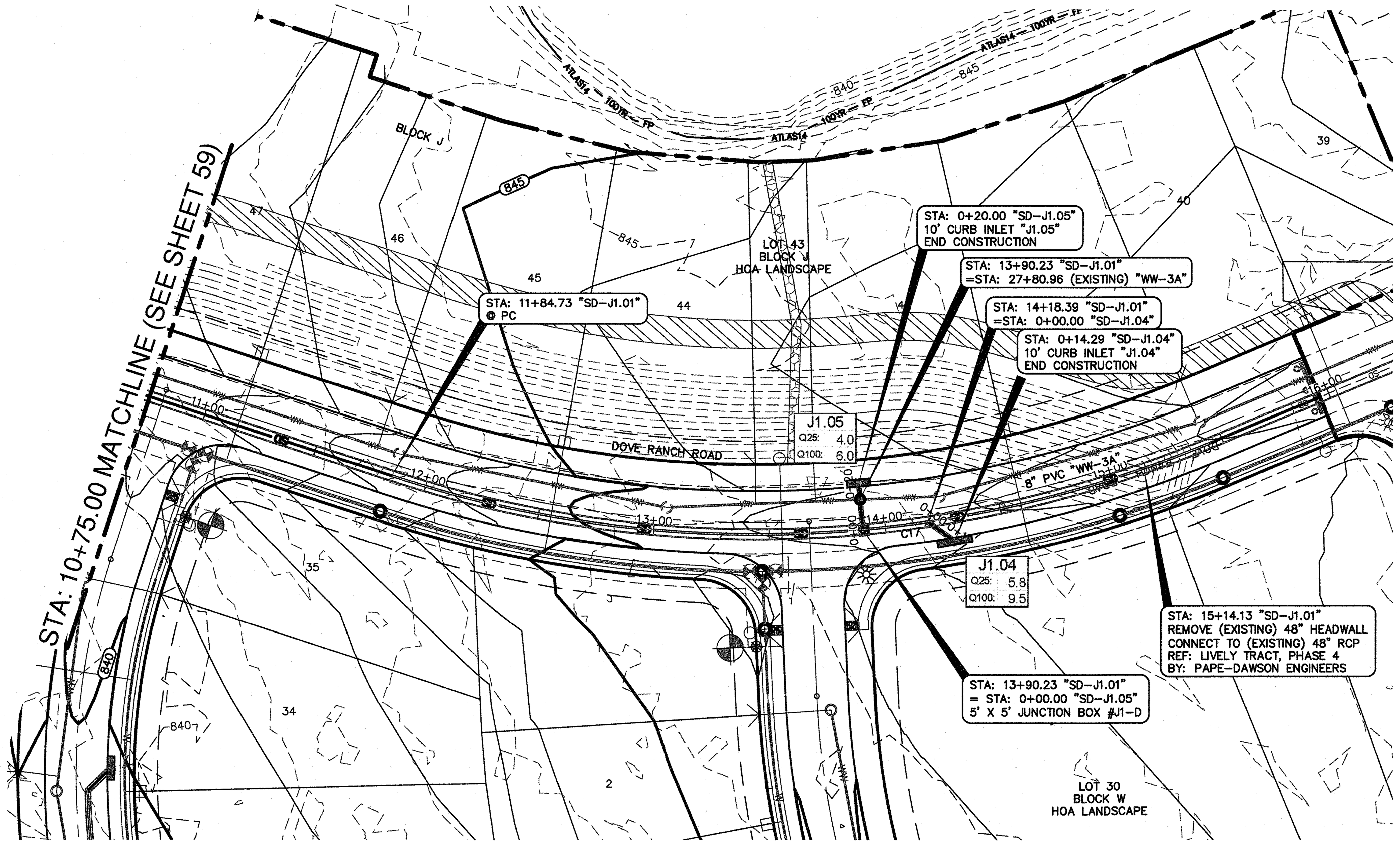
LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE J1.01 (1 OF 2)

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS

Date: Sep 19, 2024, 10:38am User ID: lkrouse
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg

PICP-24-0120



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-I	66.75	16.15	3.54	839.17	836.93
J1-K	66.80	11.91	2.08	839.52	838.77
J1-L	67.13	11.93	1.87	841.58	838.92
J1-M	63.56	9.07	3.4	842.52	842.51
J1-N	58.31	8.88	3.5	842.77	842.75
J1-O	58.36	8.88	3.05	842.77	842.77

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1-I	99.03	17.96	4.46	839.71	837.85
J1-K	99.11	13.12	2.62	840.07	839.32
J1-L	99.55	13.13	2.38	842.13	839.43
J1-M	94.3	7.5	4.29	843.5	843.4
J1-N	86.58	6.89	4.57	844.12	843.82
J1-O	86.66	6.9	4.39	844.21	844.12

SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
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LEGEND

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- WW — WASTEWATER LINE & MH
- SD — STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
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- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- W — EXISTING WATER LINE
- WW — EXISTING WASTEWATER LINE
- SD — EXISTING STORM DRAIN LINE
- 786 — EXISTING CONTOUR LINE
- 786 — PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

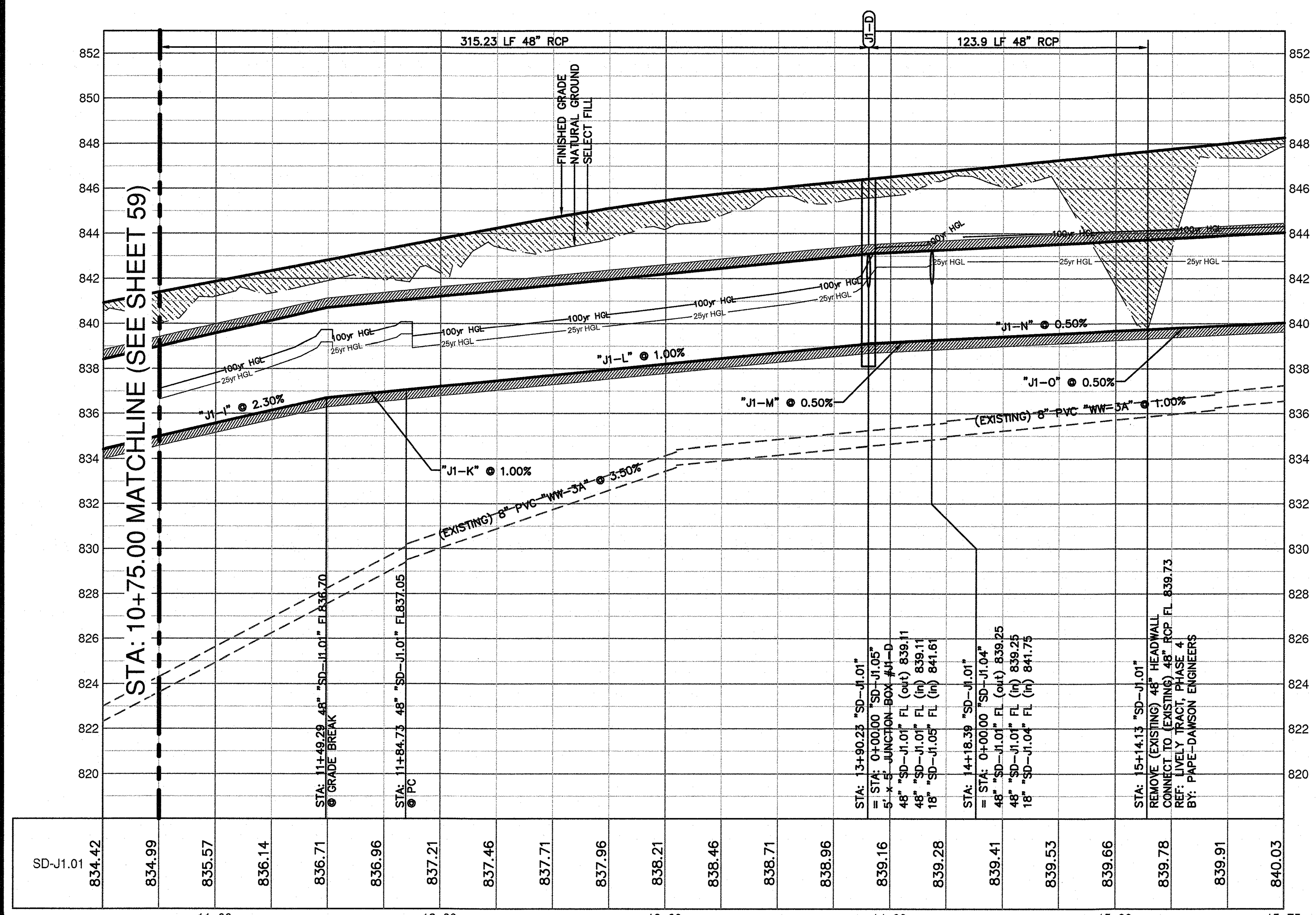
PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL — 25yr HGL
- 100-YR HGL — 100yr HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C17	505.00'	040°45'34"	N01°28'51"E	351.72'	359.25'



APPROVED
RMG
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE J1.01 (2 OF 2)

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 58 of 83

Date: Sep 19, 2024, 10:38am User ID: tkrause
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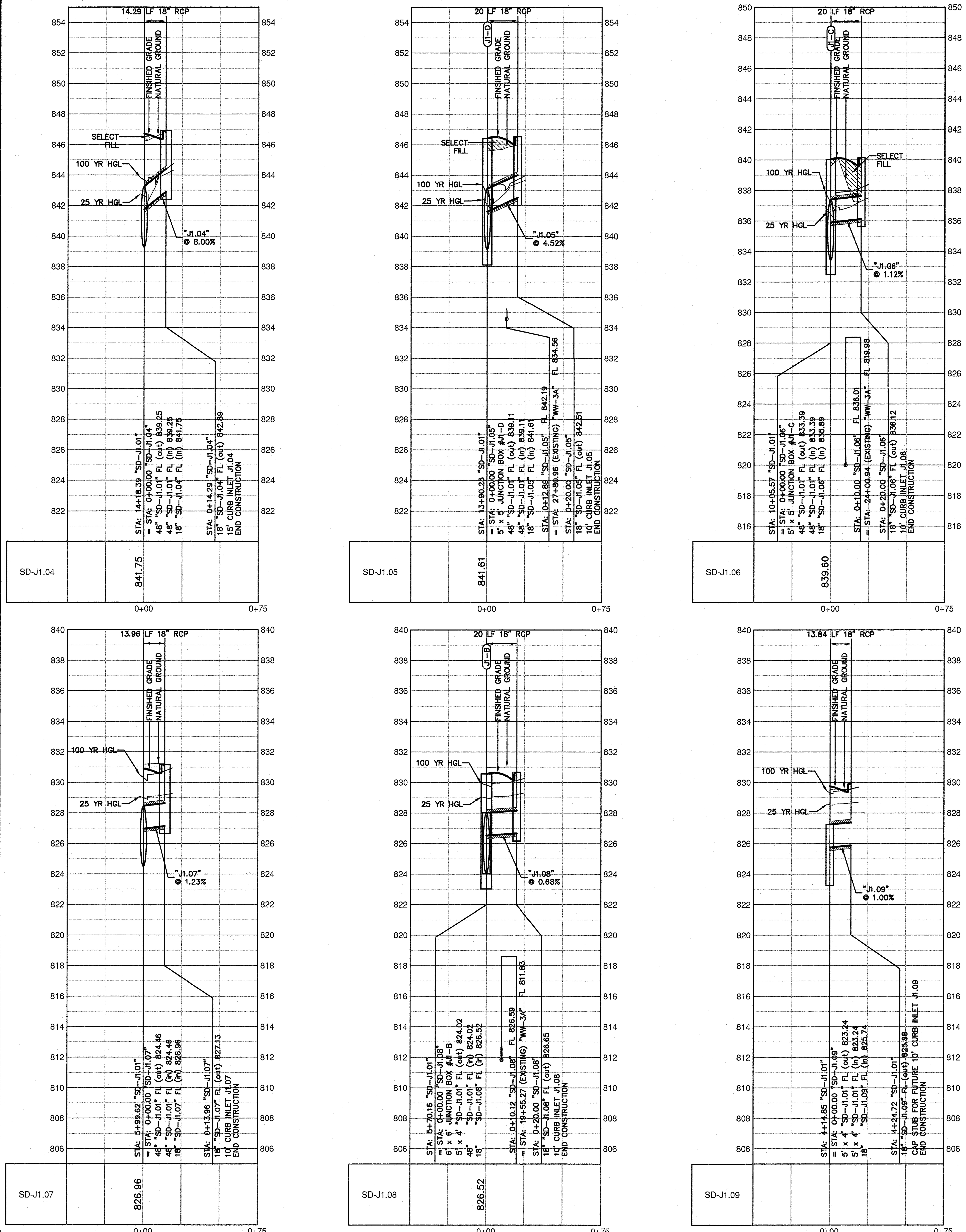

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1.04	5.84	13.82	1	843.82	842.75
J1.05	4.05	10.15	0.9	843.28	842.51
J1.06	5.57	6.69	1.04	837.03	836.93
J1.07	5.16	2.92	2.11	829.1	829.07
J1.08	4.34	2.46	2.3	828.85	828.82
J1.09	4.13	2.34	2.84	828.6	828.58

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J1.04	8.74	15.47	2.07	844.04	843.82
J1.05	6	11.35	1.79	843.46	843.4
J1.06	8.3	4.7	1.96	837.96	837.85
J1.07	7.69	4.35	3.54	830.57	830.5
J1.08	6.41	3.63	3.42	830	829.94
J1.09	6.14	3.47	3.67	829.45	829.41

NOTES:

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PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

SUBGRADE

PROPOSED STORM DRAIN

25-YR HGL — 25yr HGL

100-YR HGL — 100yr HGL

APPROVED

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE LINE J1.01 LATERALS J1.04-J1.09

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 59 of 83

Date: Sep 19, 2024, 10:40am User ID: tkrause
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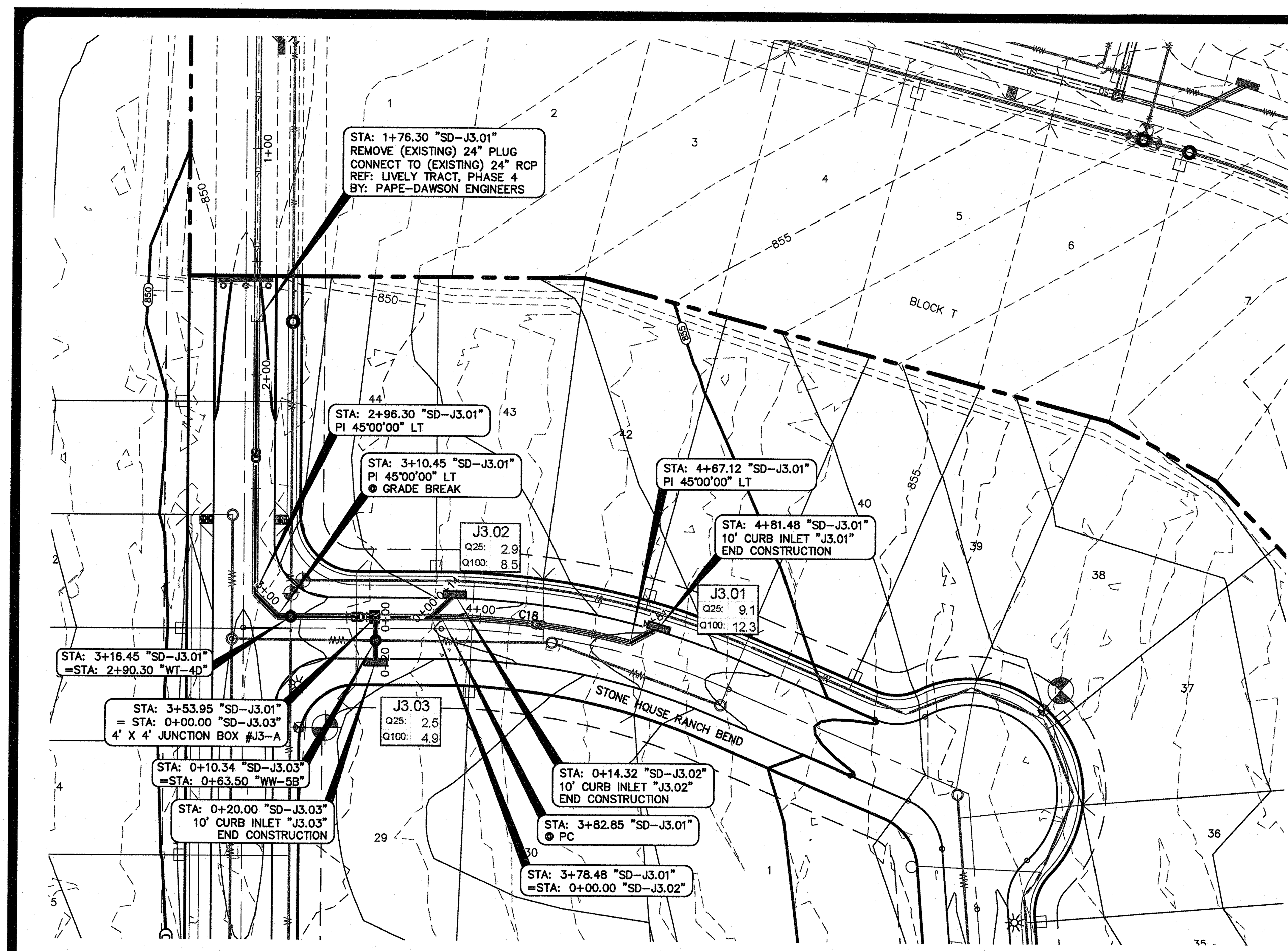

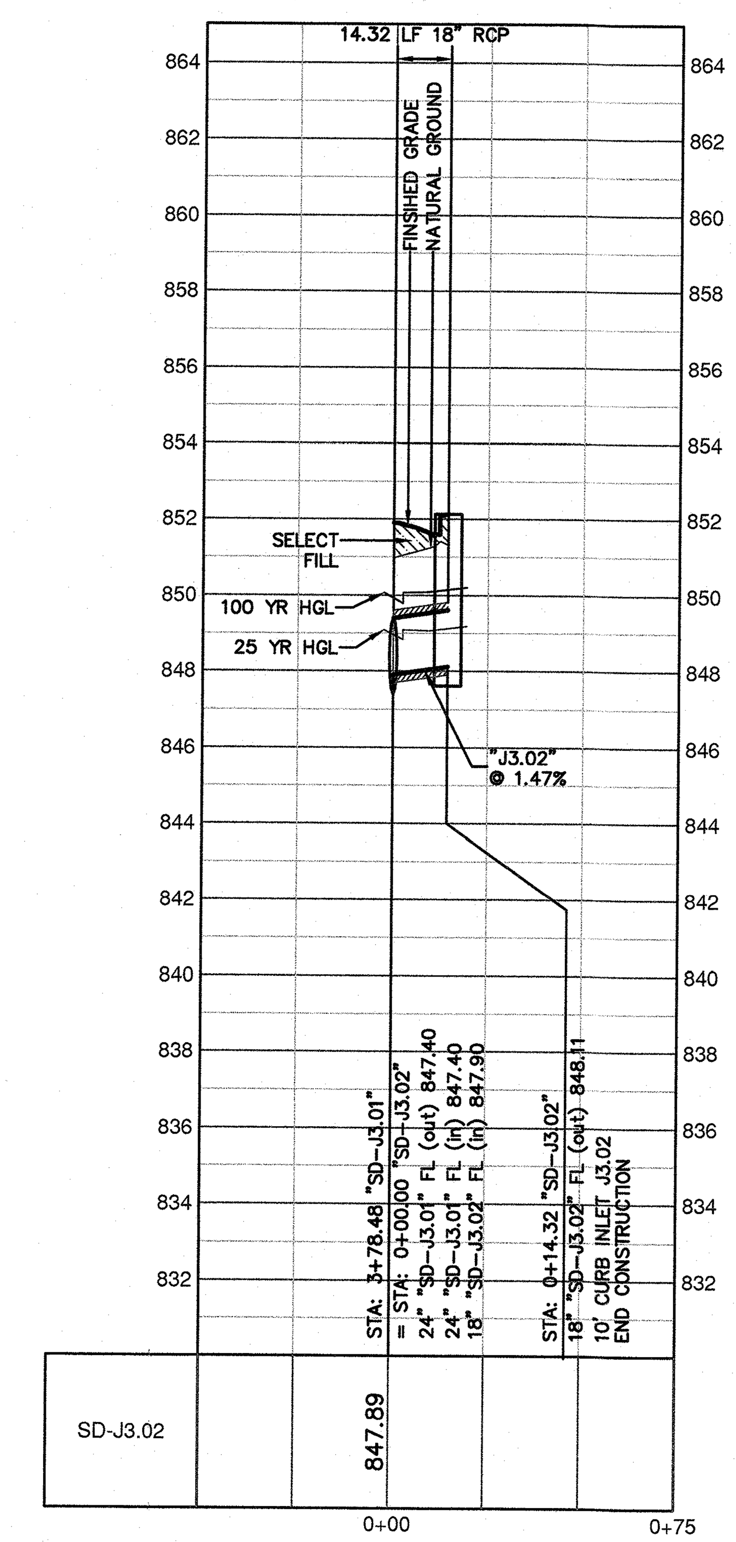

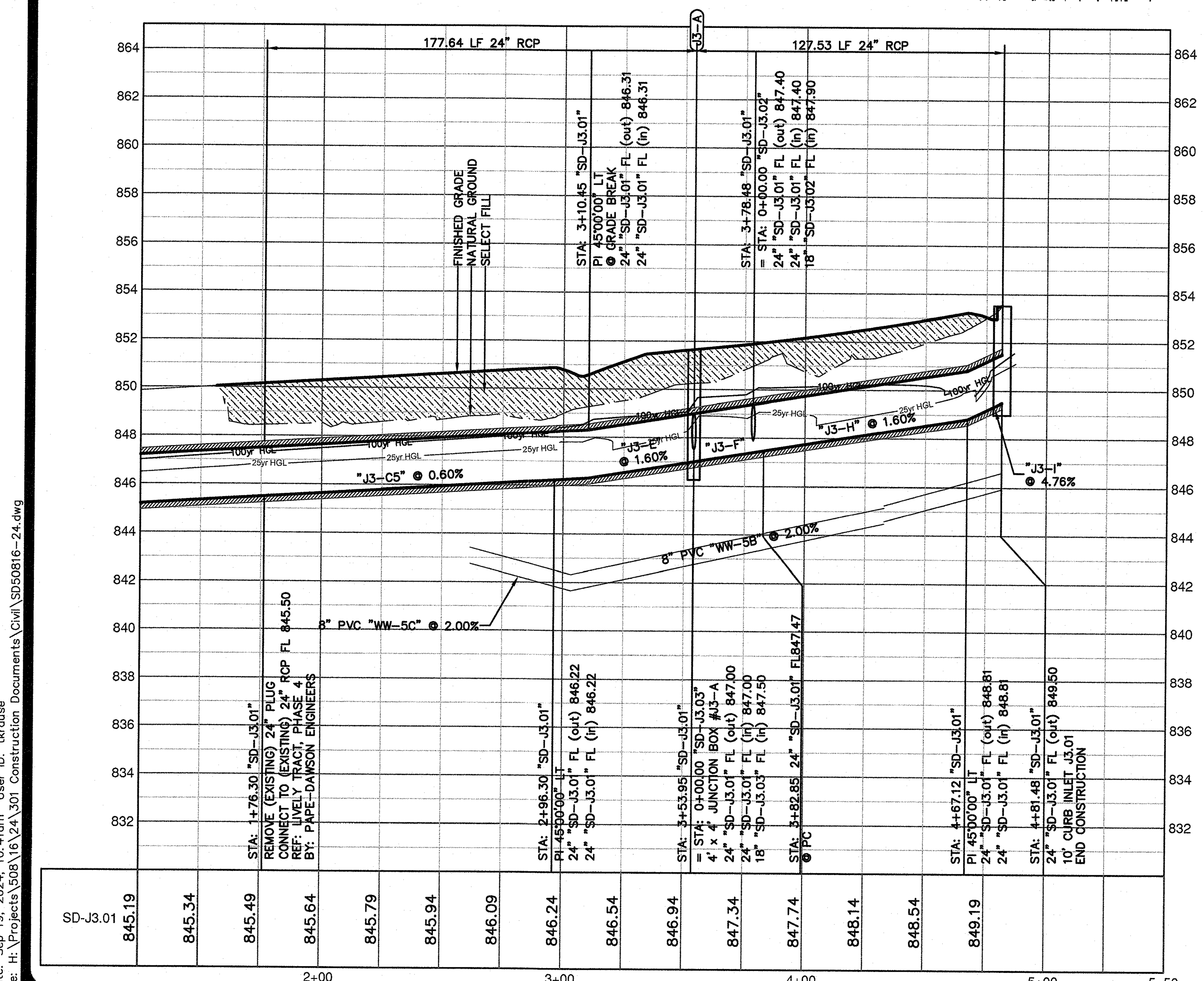

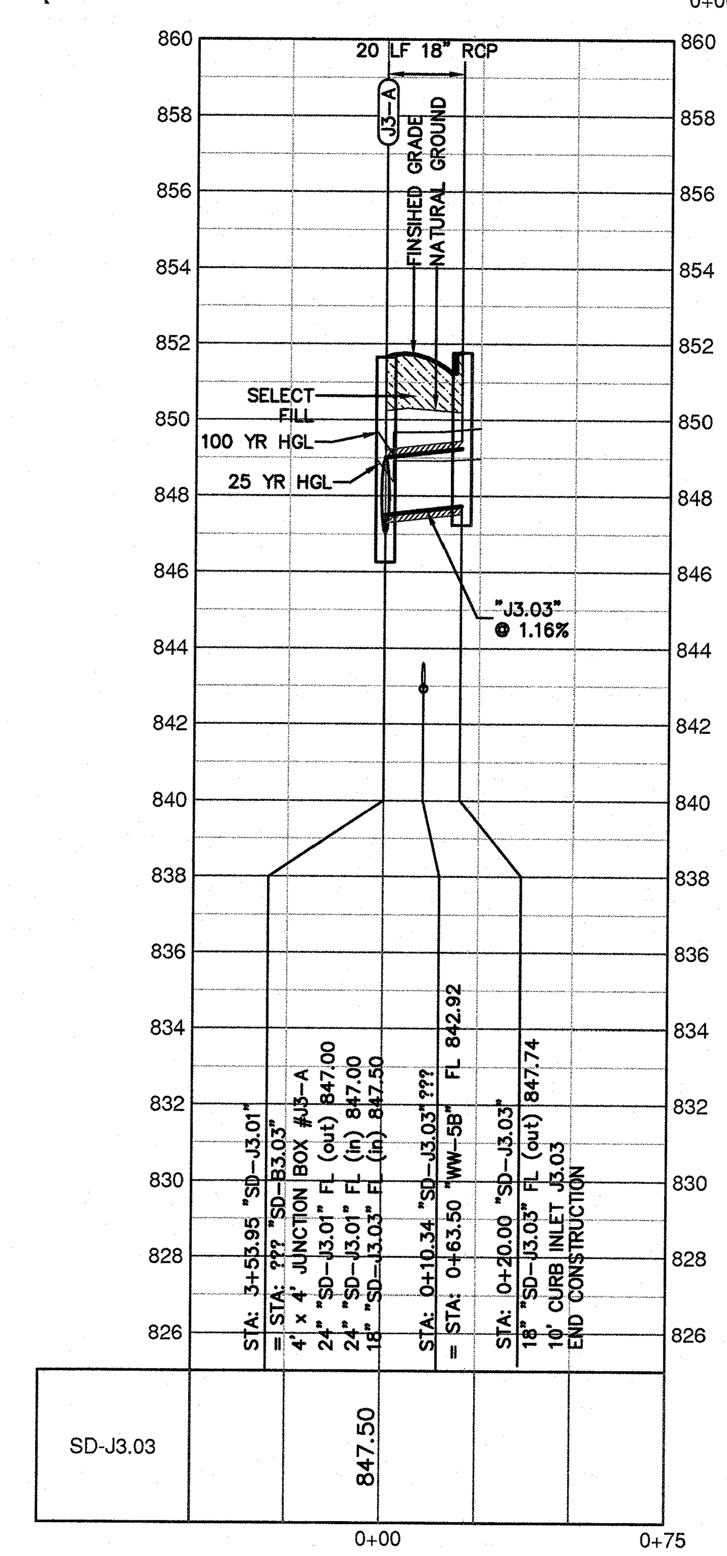

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0' 40' 80' 120'

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- SD — EXISTING STORM DRAIN LINE
- 786 — EXISTING CONTOUR LINE
- 786 — PROPOSED CONTOUR LINE
- #01 / Q25: Q25 / Q100: Q100 — INLET # / CAPTURE Q= 25/100 YEAR

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J3-C5	14.19	6.63	1.29	847.58	846.79
J3-D	14.22	6.63	1.57	847.8	847.79
J3-E	14.27	9.66	1.66	848.36	847.97
J3-F	11.89	9.21	1.91	848.82	848.92
J3-G	9.05	8.56	1.69	849.08	849.08
J3-H	9.12	8.58	1.61	849.89	849.08
J3-I	9.13	12.69	1.23	850.58	850.04
J3.02	2.95	6.22	1.19	849.06	849.08
J3.03	2.53	5.47	1.41	848.91	848.92
J3.04	5.08	13.42	1.6	846.38	845.95

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
J3-C5	21.09	6.71	1.83	848.14	847.33
J3-D	21.12	6.72	2.17	848.5	848.4
J3-E	21.23	6.76	2.44	849.07	848.75
J3-F	17.72	5.64	2.66	849.79	849.66
J3-G	13.5	4.3	2.67	850.08	850.07
J3-H	13.6	9.55	2.61	850.14	850.08
J3-I	13.61	14.21	1.53	850.83	850.35
J3.02	4.39	2.49	2.17	850.09	850.07
J3.03	3.76	2.13	2.16	849.68	849.66
J3.04	7.56	15.03	2.12	846.58	846.47

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL — 25yr HGL
- 100-YR HGL — 100yr HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C18	330.00'	014°37'47"	S11°35'02"E	84.03'	84.26'

APPROVED
RMG

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
09/21/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
CITY OF LEANDER, TEXAS

STORMDRAIN PLAN & PROFILE
LINE J3.01 & LATERALS J3.02-3.03

CITY NO. PICP-24-0120
JOB NO. 50816-25
DATE SEPTEMBER 2024
DESIGNER RBB
CHECKED TCK DRAWN ADS
SHEET 60 of 83

Date: Sep 19, 2024, 10:41am User ID: lkrause
File: H:\Projects\508\16\24\301 Construction Documents\Civil\SD50816-24.dwg

NOTES:

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LEGEND

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- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN
PH 6 SD OVERALL

CITY JOB No. --------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 61 of 83

Date: Apr 09, 2025, 4:06pm User ID: dyesief
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DRAINAGE AREA	INLET NUMBER	AREA (acres)	COMPOSITE C C_{25}	COMPOSITE C C_{100}	$A \cdot C_{25}$	$A \cdot C_{100}$	SHEET FLOW Length (ft)	SHEET FLOW Manning's (n)	SHEET FLOW Slope ft/ft	SHEET FLOW Tc (min)	SHALLOW CONCENTRATED FLOW Length (ft)	SHALLOW CONCENTRATED FLOW Paved/ Unpaved	SHALLOW CONCENTRATED FLOW Slope ft/ft	SHALLOW CONCENTRATED FLOW Tc (min)	CHANNELIZED FLOW Length (ft)	CHANNELIZED FLOW Manning's (n)	CHANNELIZED FLOW Slope ft/ft	CHANNELIZED FLOW Velocity ft/s	CHANNELIZED FLOW Tc (min)	Cumulative Tc (min)	INTENSITY I 25yr (in/hr)	INTENSITY I 100yr (in/hr)	DISCHARGE Q 25 (cfs)	DISCHARGE Q 100 (cfs)
ULTIMATE CONDITION DRAINAGE AREAS												b												
B1.16	B1.16	0.79	0.69	0.77	0.541	0.607	34.83	0.24	0.028	4.85	0	U	0.015	0.00	462.02	0.015	0.010	3.8	2.002	6.85	10.36	13.73	5.6	8.3
B1.17	B1.17	0.81	0.67	0.75	0.544	0.611	84.01	0.24	0.045	8.11	202.14	U	0.027	1.27	65.74	0.015	0.034	7.1	0.154	9.53	9.27	12.28	5.0	7.5
B6.01	B6.01	0.73	0.67	0.75	0.486	0.546	96.18	0.24	0.017	13.34	173.36	U	0.020	1.27	126.93	0.015	0.005	2.7	0.778	15.38	7.61	10.09	3.7	5.5
B6.02	B6.02	0.82	0.67	0.75	0.551	0.618	100	0.24	0.017	13.76	174.27	U	0.016	1.42	255.62	0.015	0.006	3.1	1.390	16.57	7.35	9.75	4.0	6.0
B6.03	B6.03	0.85	0.66	0.74	0.560	0.630	100	0.24	0.021	12.64	147.76	U	0.020	1.08	107.25	0.015	0.012	4.2	0.424	14.15	7.90	10.48	4.4	6.6
B6.04	B6.04	0.88	0.66	0.74	0.579	0.650	81.11	0.24	0.019	11.13	171.52	U	0.016	1.40	138.38	0.015	0.008	3.4	0.670	13.20	8.14	10.80	4.7	7.0
B6.05	B6.05	0.48	0.69	0.77	0.331	0.370	11.9	0.24	0.020	2.35	0	U	0.024	0.00	644.17	0.015	0.007	3.2	3.384	5.73	10.91	14.47	3.6	5.4
B6.06	B6.06	0.53	0.66	0.74	0.348	0.391	100	0.24	0.020	12.89	20.72	U	0.020	0.15	53.43	0.015	0.009	3.7	0.242	13.29	8.12	10.77	2.8	4.2
B6.07	B6.07	0.26	0.73	0.81	0.189	0.211	12.02	0.24	0.022	2.28	0	U	0.024	0.00	439.48	0.015	0.006	2.9	2.551	5.00	11.30	15.00	2.1	3.2
B6.08	B6.08	0.35	0.67	0.75	0.234	0.263	33.04	0.24	0.013	6.32	0	U	0.024	0.00	283.81	0.015	0.005	2.7	1.722	8.04	9.84	13.05	2.3	3.4
B6.09A	B6.09A	0.09	0.72	0.80	0.065	0.072	11.98	0.24	0.020	2.36	0	U	0.024	0.00	149.7	0.015	0.005	2.6	0.947	5.00	11.30	15.00	0.7	1.1
B6.09B	B6.09B	0.12	0.76	0.84	0.091	0.101	13.18	0.24	0.022	2.45	0	U	0.024	0.00	217.42	0.015	0.009	3.7	0.990	5.00	11.30	15.00	1.0	1.5
B6.09	B6.09	0.21	0.74	0.82	0.155	0.173	-	-	-	-	-	-	-	-	-	-	0.020	-	-	5.00	11.30	15.00	1.8	2.6
B6.10A	B6.10A	0.70	0.66	0.75	0.465	0.522	15	0.24	0.045	2.04	304.09	U	0.043	1.51	39.88	0.015	0.004	2.4	0.273	5.00	11.30	15.00	5.3	7.8
B6.10B	B6.10B	0.74	0.67	0.75	0.493	0.553	87.76	0.24	0.044	8.47	213.47	U	0.045	1.04	103.22	0.015	0.009	3.6	0.471	9.98	9.11	12.08	4.5	6.7
B6.10	B6.10	1.44	0.67	0.75	0.958	1.076	-	-	-	-	-	-	-	-	-	-	0.020	-	-	9.98	9.11	12.08	8.7	13.0
B6.11	B6.11	0.49	0.67	0.75	0.326	0.366	100	0.24	0.039	9.87	208.86	U	0.042	1.05	67.84	0.015	0.011	4.0	0.284	11.21	8.71	11.55	2.8	4.2
B6.12	B6.12	0.80	0.68	0.76	0.541	0.606	100	0.24	0.033	10.55	162.03	U	0.029	0.98	208.71	0.015	0.027	6.3	0.550	12.09	8.45	11.20	4.6	6.8
B6.13	B6.13	0.38	0.71	0.79	0.270	0.301	10.32	0.24	0.019	2.14	0	U	0.015	0.00	651.47	0.015	0.025	6.1	1.785	5.00	11.30	15.00	3.0	4.5
B7.05	B7.05	0.86	0.68	0.76	0.586	0.657	31.19	0.24	0.032	4.21	0	U	0.020	0.00	537.74	0.015	0.019	5.3	1.690	5.90	10.82	14.35	6.3	9.4
B7.06	B7.06	0.35	0.66	0.74	0.232	0.261	63.46	0.24	0.017	9.56	164.89	U	0.020	1.20	108.83	0.015	0.024	6.0	0.304	11.07	8.75	11.60	2.0	3.0
B7.07	B7.07	0.48	0.70	0.78	0.336	0.376	61.33	0.24	0.023	8.25	114	U	0.032	0.66	212.36	0.015	0.016	4.9	0.727	9.63	9.23	12.24	3.1	4.6
B7.08	B7.08	0.60	0.70	0.78	0.419	0.469	100	0.24	0.037	10.08	109.89	U	0.037	0.59	257.53	0.015	0.029	6.6	0.655	11.33	8.68	11.50	3.6	5.4
B7.09	B7.09	0.52	0.66	0.74	0.344	0.387	51.2	0.24	0.022	7.26	160.36	U	0.020	1.17	139.95	0.015	0.024	5.9	0.396	8.83	9.53	12.63	3.3	4.9
B7.10	B7.10	0.80	0.66	0.75	0.531	0.596	0	0.24	0.043	0.00	276.72	U	0.040	1.43	50.17	0.015	0.010	3.9	0.216	5.00	11.30	15.00	6.0	8.9
B7.11	B7.11	0.70	0.66	0.74	0.460	0.517	0	0.24	0.033	0.00	306.93	U	0.021	2.19	43.76	0.015	0.006	3.0	0.245	5.00	11.30	15.00	5.2	7.8
B7.12	B7.12	0.44	0.67	0.75	0.296	0.332	100	0.24	0.045	9.32	87.9	U	0.023	0.60	99.03	0.015	0.006	3.0	0.554	10.47	8.95	11.86	2.6	3.9
B9.01	B9.01	0.71	0.66	0.74	0.466	0.524	49.56	0.24	0.016	8.04	351.78	U	0.020	2.57	29.71	0.015	0.007	3.2	0.154	10.76	8.85	11.73	4.1	6.1
B9.02	B9.02	0.70	0.66	0.74	0.460	0.517	67.52	0.24	0.018	9.82	264.03	U	0.016	2.16	141.57	0.015	0.006	3.0	0.792	12.77	8.26	10.95	3.8	5.7
B9.03	B9.03	0.84	0.76	0.84	0.640	0.712	53.27	0.24	0.020	7.79	276.32	U	0.023	1.88	112.71	0.015	0.007	3.1	0.597	10.27	9.01	11.95	5.8	8.5
B9.04	B9.04	0.59	0.66	0.74	0.391	0.439	100	0.24	0.021	12.64	179	U	0.027	1.13	102.8	0.015	0.006	3.0	0.575	14.34	7.85	10.41	3.1	4.6
B9.05	B9.05	0.22	0.72	0.80	0.158	0.176	13.39	0.24	0.018	2.69	0	U	0.015	0.00	199.28	0.015	0.006	3.0	1.095	5.00	11.30	15.00	1.8	2.6
B10.01	B10.01	1.25	0.66	0.74	0.823	0.924	100	0.24	0.022	12.41	177.68	U	0.035	0.98	43.24	0.015	0.013	4.4	0.164	13.56	8.05	10.67	6.6	9.9
B10.03	B10.03	1.20	0.66	0.74	0.798	0.895	100	0.24	0.026	11.61	214.16	U	0.038	1.13	39.02	0.015	0.013	4.4	0.148	12.89	8.22	10.90	6.6	9.8
B10.04	B10.04	0.25	0.70	0.78	0.174	0.195	11.79	0.24	0.019	2.38	0	U	0.020	0.00	352.86	0.015	0.013	4.4	1.341	5.00	11.30	15.00	2.0	2.9
J1.09	J1.09	0.57	0.68	0.76	0.385	0.432	56.63	0.24	0.036	6.47	123.45	U	0.020	0.90	169.19	0.015	0.006	3.0	0.946	8.31	9.73	12.90	3.7	5.6

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
PHASE 6
PH 6 DRAINAGE CALCULATIONS (1 OF 2)

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 62 of 83

Date: Apr 09, 2025, 4:06pm User ID: dyesief
File: H:\Projects\508\16\26\107 Contributing Zone Plan\Civil\CD50816-26.dwg

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STREET FLOW AND INLET CALCULATIONS
25 YEAR STORM

						STREET CAPACITY								INLET ON GRADE CAPACITY										SUMP INLET CAPACITY CURB (with Depression)			
Inlet No.	Inlet Type	Drainage Area	Q 25 (cfs)	Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (ft)	Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	Qtotal (cfs)	Length (ft)	d (ft)	d (ft) (d ≤ h + a)
ULTIMATE CONDITION DRAINAGE AREAS																											
B1.16	G-1	0.79	5.61		5.6	27	P	0.50	1.00%	0.42	0.43	0.50	8.56	0.52	0.28	0.04	0.18	10.36	10	1.00	5.6	0.0	-	-	-	-	-
B1.17	G-1	0.81	5.05		5.0	27	P	0.50	3.40%	0.42	0.34	0.50	5.91	0.82	0.28	0.04	0.26	11.41	10	0.98	4.9	0.1	pass B6.12	-	-	-	-
B6.01	G-1	0.73	3.70		3.7	27	P	0.50	0.50%	0.42	0.42	0.50	8.21	0.54	0.28	0.04	0.19	6.90	10	1.00	3.7	0.0	-	-	-	-	-
B6.02	G-1	0.82	4.05		4.0	27	P	0.50	0.64%	0.42	0.42	0.50	8.07	0.56	0.28	0.04	0.19	7.62	10	1.00	4.0	0.0	-	-	-	-	-
B6.03	G-1	0.85	4.43		4.4	40	P	0.50	1.20%	0.42	0.37	0.50	9.85	0.48	0.28	0.03	0.16	10.80	10	0.99	4.4	0.0	-	-	-	-	-
B6.04	G-1	0.88	4.71		4.7	40	P	0.50	0.80%	0.42	0.41	0.50	11.37	0.40	0.28	0.03	0.14	10.71	10	0.99	4.7	0.0	-	-	-	-	-
B6.05	G-1	0.48	3.61		3.6	27	P	0.50	0.68%	0.42	0.40	0.50	7.43	0.61	0.28	0.04	0.21	7.06	10	1.00	3.6	0.0	-	-	-	-	-
B6.06	G-1	0.53	2.82		2.8	27	P	0.50	0.92%	0.42	0.35	0.50	6.11	0.78	0.28	0.04	0.25	6.17	10	1.00	2.8	0.0	-	-	-	-	-
B6.07	G-1	0.26	2.13		2.1	27	P	0.50	0.56%	0.42	0.35	0.50	6.03	0.80	0.28	0.04	0.26	4.68	10	1.00	2.1	0.0	-	-	-	-	-
B6.08	G-1	0.35	2.30		2.3	27	P	0.50	0.51%	0.42	0.36	0.50	6.38	0.74	0.28	0.04	0.24	4.88	10	1.00	2.3	0.0	-	-	-	-	-
B6.09A	G-1	0.09	0.73		0.7	27	P	0.50	0.47%	0.42	0.25	0.50	3.96	0.85	0.28	0.04	0.27	2.74	10	1.00	0.7	0.0	-	-	-	-	-
B6.09B	G-1	0.12	1.02		1.0	27	P	0.50	0.91%	0.42	0.25	0.50	3.98	0.85	0.28	0.04	0.27	3.85	10	1.00	1.0	0.0	-	-	-	-	-
B6.09	S-1	0.21	1.75		1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	1.8	10	0.15	0.15
B6.10A	G-1	0.70	5.26		5.3	27	P	0.50	0.40%	0.42	0.49	0.50	11.93	0.36	0.28	0.04	0.14	9.08	15	1.00	5.3	0.0	-	-	-	-	-
B6.10B	G-1	0.74	4.49		4.5	27	P	0.50	0.90%	0.42	0.41	0.50	7.76	0.58	0.28	0.04	0.20	8.64	15	1.00	4.5	0.0	-	-	-	-	-
B6.10	S-1	1.44	8.73		8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	8.7	15	0.36	0.36
B6.11	G-1	0.49	2.84		2.8	27	P	0.50	1.07%	0.42	0.34	0.50	5.91	0.82	0.28	0.04	0.26	6.34	10	1.00	2.8	0.0	-	-	-	-	-
B6.12	G-1	0.80	4.57	0.1	4.7	27	P	0.50	2.70%	0.42	0.35	0.50	6.01	0.80	0.28	0.04	0.26	10.42	10	1.00	4.7	0.0	-	-	-	-	-
B6.13	G-1	0.38	3.05		3.0	27	P	0.50	2.50%	0.42	0.30	0.50	5.06	0.85	0.28	0.04	0.27	8.25	10	1.00	3.0	0.0	-	-	-	-	-
B7.05	G-1	0.86	6.34		6.3	27	P	0.50	1.90%	0.42	0.41	0.50	7.64	0.59	0.28	0.04	0.20	12.38	10	0.95	6.0	0.3	pass B6.08	-	-	-	-
B7.06	G-1	0.35	2.03		2.0	27	P	0.50	2.40%	0.42	0.27	0.50	4.31	0.85	0.28	0.04	0.27	6.87	10	1.00	2.0	0.0	-	-	-	-	-
B7.07	G-1	0.48	3.10		3.1	27	P	0.50	1.60%	0.42	0.33	0.50	5.62	0.85	0.28	0.04	0.27	7.27	10	1.00	3.1	0.0	-	-	-	-	-
B7.08	G-1	0.60	3.63	0.3	3.9	27	P	0.50	2.90%	0.42	0.32	0.50	5.47	0.85	0.28	0.04	0.27	9.60	10	1.00	3.9	0.0	-	-	-	-	-
B7.09	G-1	0.52	3.28		3.3	27	P	0.50	2.35%	0.42	0.32	0.50	5.29	0.85	0.28	0.04	0.27	8.35	10	1.00	3.3	0.0	-	-	-	-	-
B7.10	G-1	0.80	6.01		6.0	27	P	0.50	1.01%	0.42	0.44	0.50	8.91	0.50	0.28	0.04	0.17	10.93	10	0.99	5.9	0.1	pass B7.12	-	-	-	-
B7.11	G-1	0.70	5.20		5.2	27	P	0.50	0.60%	0.42	0.46	0.50	9.67	0.45	0.28	0.04	0.16	9.20	10	1.00	5.2	0.0	-	-	-	-	-
B7.12	G-1	0.44	2.65	0.1	2.7	27	P	0.50	0.60%	0.42	0.37	0.50	6.68	0.70	0.28	0.04	0.23	5.68	10	1.00	2.7	0.0	-	-	-	-	-
B9.01	G-1	0.71	4.13		4.1	48	P	0.50	0.70%	0.42	0.39	0.50	12.74	0.36	0.28	0.02	0.12	10.41	10	1.00	4.1	0.0	-	-	-	-	-
B9.02	G-1	0.70	3.80		3.8	48	P	0.50	0.60%	0.42	0.39	0.50	12.71	0.36	0.28	0.02	0.12	9.59	10	1.00	3.8	0.0	-	-	-	-	-
B9.03	G-1	0.84	5.77		5.8	27	P	0.50	0.67%	0.42	0.47	0.50	10.03	0.43	0.28	0.04	0.16	10.12	10	1.00	5.8	0.0	-	-	-	-	-
B9.04	G-1	0.59	3.07		3.1	27	P	0.50	0.60%	0.42	0.39	0.50	7.06	0.65	0.28	0.04	0.22	6.17	10	1.00	3.1	0.0	-	-	-	-	-
B9.05	G-1	0.22	1.78		1.8	27	P	0.50	0.62%	0.42	0.32	0.50	5.42	0.85	0.28	0.04	0.27	4.34	10	1.00	1.8	0.0	-	-	-	-	-
B10.01	G-1	1.25	6.62		6.6	48	P	0.50	1.30%	0.42	0.41	0.50	14.02	0.32	0.28	0.02	0.11	16.20	10	0.82	5.4	1.2	pass B10.03	-	-	-	-
B10.03	G-1	1.20	6.56	1.2	7.8	27	P	0.50	1.30%	0.42	0.46	0.50	9.76	0.45	0.28	0.04	0.16	13.79	15	1.00	7.8	0.0	-	-	-	-	-
B10.04	G-1	0.25	1.97		2.0	48	P	0.50	1.30%	0.42	0.27	0.50	7.63	0.70	0.28	0.02	0.22	6.52	10	1.00	2.0	0.0	-	-	-	-	-
J1.09	G-1	0.57	3.75		3.7	27	P	0.50	0.60%	0.42	0.41	0.50	7.85	0.58	0.28	0.04	0.20	7.14	10	1.00	3.7	0.0	-	-	-	-	-

STREET FLOW AND INLET CALCULATIONS
100 YEAR STORM

						STREET CAPACITY								INLET ON GRADE CAPACITY										SUMP INLET CAPACITY CURB (with Depression)			
Inlet No.	Inlet Type	Drainage Area	Q 100 (cfs)	Q pass (cfs)	Q total (cfs)	Street Width F-F (ft)	Crown Type	Curb Height (ft)	Gutter Slope (%)	a (ft)	Yo (ft)	Crown Height (ft)	Ponded Width (-) (ft)	Eo	S'w	Sx	Se	LT	L	E	Qi	Qpass (cfs)	Pass to Inlet #	Qtotal (cfs)	Length (ft)	d (ft)	d (ft) d ≤ h + a
ULTIMATE CONDITION DRAINAGE AREAS																											
B1.16	G-1	0.79	8.33		8.3	27	P	0.50	1.00%	0.42	0.49	0.50	11.96	0.36	0.28	0.04	0.14	14.52	10	0.88	7.3	1.0	pass B1.17	-	-	-	-
B1.17	G-1	0.81	7.50	1.0	8.5	27	P	0.50	3.40%	0.42	0.41	0.50	7.65	0.59	0.28	0.04	0.20	16.69	10	0.81	6.9	1.6	pass B6.12	-	-	-	-
B6.01	G-1	0.73	5.51	0.1	5.6	27	P	0.50	0.50%	0.42	0.49	0.50	11.21	0.38	0.28	0.04	0.14	9.69	10	1.00	5.6	0.0	-	-	-	-	-
B6.02	G-1	0.82	6.02	0.0	6.0	27	P	0.50	0.64%	0.42	0.48	0.50	10.66	0.40	0.28	0.04	0.15	10.46	10	1.00	6.0	0.0	-	-	-	-	-
B6.03	G-1	0.85	6.60	0.3	6.9	40	P	0.50	1.20%	0.42	0.43	0.50	12.67	0.35	0.28	0.03	0.12	15.10	10	0.86	5.9	1.0	pass B6.06	-	-	-	-
B6.04	G-1	0.88	7.02	0.4	7.4	40	P	0.50	0.80%	0.42	0.48	0.50	15.64	0.28	0.28	0.03	0.10	15.42	10	0.85	6.3	1.1	pass B6.06	-	-	-	-
B6.05	G-1	0.48	5.36	0.6	6.0	27	P	0.50	0.68%	0.42	0.47	0.50	10.24	0.42	0.28	0.04	0.15	10.42	10	1.00	5.9	0.0	-	-	-	-	-
B6.06	G-1	0.53	4.20	2.1	6.3	27	P	0.50	0.92%	0.42	0.46	0.50	9.53	0.46	0.28	0.04	0.16	11.24	10	0.98	6.2	0.1	-	-	-	-	-
B6.07	G-1	0.26	3.16	1.5	4.6	27	P	0.50	0.56%	0.42	0.45	0.50	9.12	0.48	0.28	0.04	0.17	8.30	10	1.00	4.6	0.0	-	-	-	-	-
B6.08	G-1	0.35	3.43	0.5	4.0	27	P	0.50	0.51%	0.42	0.43	0.50	8.50	0.52	0.28	0.04	0.18	7.28	10	1.00	4.0	0.0	-	-	-	-	-
B6.09A	G-1	0.09	1.08		1.1	27	P	0.50	0.47%	0.42	0.29	0.50	4.65	0.85	0.28	0.04	0.27	3.23	10	1.00	1.1	0.0	-	-	-	-	-
B6.09B	G-1	0.12	1.51		1.5	27	P	0.50	0.91%	0.42	0.29	0.50	4.66	0.85	0.28	0.04	0.27	4.53	10	1.00	1.5	0.0	-	-	-	-	-
B6.09	S-1	0.21	2.59		2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	2.6	10	0.20	0.20
B6.10A	G-1	0.70	7.84	-2.5	5.3	27	P	0.50	0.40%	0.42	0.50	0.50	12.23	0.35	0.28	0.04	0.13	9.24	15	1.00	5.3	0.0	-	-	-	-	-
B6.10B	G-1	0.74	6.68		6.7	27	P	0.50	0.90%	0.42	0.47	0.50	10.03	0.43	0.28	0.04	0.16	11.76	15	1.00	6.7	0.0	-	-	-	-	-
B6.10	S-1	1.44	12.99		12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	12.0	15	0.44	0.44
B6.11	G-1	0.49	4.22	1.4	5.7	27	P	0.50	1.07%	0.42	0.43	0.50	8.44	0.53	0.28	0.04	0.18	10.53	10	1.00	5.6	0.0	-	-	-	-	-
B6.12	G-1	0.80	6.79	1.6	8.4	27	P	0.50	2.70%	0.42	0.42	0.50	8.10	0.55	0.28	0.04	0.19	16.01	10	0.83	7.0	1.4	pass B6.11	-	-	-	-
B6.13	G-1	0.38	4.52		4.5	27	P	0.50	2.50%	0.42	0.35	0.50	6.02	0.80	0.28	0.04	0.26	10.06	10	1.00	4.5	0.0	-	-	-	-	-
B7.05	G-1	0.86	9.43		9.4	27	P	0.50	1.90%	0.42	0.46	0.50	9.80	0.44	0.28	0.04	0.16	16.80	10	0.80	7.6	1.9	pass B7.08	-	-	-	-
B7.06	G-1	0.35	3.02	0.9	3.9	27	P	0.50	2.40%	0.42	0.33	0.50	5.70	0.85	0.28	0.04	0.27	9.06	10	1.00	3.9	0.0	-	-	-	-	-
B7.07	G-1	0.48	4.60		4.6	27	P	0.50	1.60%	0.42	0.38	0.50	6.76	0.69	0.28	0.04	0.23	9.54	10	1.00	4.6	0.0	-	-	-	-	-
B7.08	G-1	0.60	5.39	3.1	8.5	27	P	0.50	2.90%	0.42	0.42	0.50	8.01	0.56	0.28	0.04	0.19	16.38	10	0.82	7.0	1.6	pass B7.10	-	-	-	-
B7.09	G-1	0.52	4.88		4.9	27	P	0.50	2.35%	0.42	0.36	0.50	6.34	0.75	0.28	0.04	0.24	10.55	10	1.00	4.9	0.0	-	-	-	-	-
B7.10	G-1	0.80	8.95	-0.2	8.7	27	P	0.50	1.01%	0.42	0.50	0.50	13.33	0.32	0.28	0.04	0.13	15.57	10	0.84	7.3	1.4	spill B7.11 / pass B7.12	-	-	-	-
B7.11	G-1	0.70	7.76	-1.0	6.7	27	P	0.50	0.60%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	12.01	10	0.96	6.4	0.3	spill B7.12 / pass B6.08	-	-	-	-
B7.12	G-1	0.44	3.93	2.8	6.7	27	P	0.50	0.60%	0.42	0.50	0.50	13.44	0.32	0.28	0.04	0.12	11.98	10	0.96	6.4	0.3	spill B6.07 / pass B6.08	-	-	-	-
B9.01	G-1	0.71	6.14		6.1	48	P	0.50	0.70%	0.42	0.45	0.50	16.41	0.27	0.28	0.02	0.10	14.24	10	0.89	5.5	0.7	pass B9.03	-	-	-	-
B9.02	G-1	0.70	5.66		5.7	48	P	0.50	0.60%	0.42	0.45	0.50	16.35	0.27	0.28	0.02	0.10	13.11	10	0.92	5.2	0.4	pass B9.05	-	-	-	-
B9.03	G-1	0.84	8.50	-1.4	7.1	27	P	0.50	0.67%	0.42	0.50	0.50	13.41	0.32	0.28	0.04	0.13	12.66	10	0.94	6.7	0.4	spill B9.05 / pass B9.04	-	-	-	-
B9.04	G-1	0.59	4.58	0.4	5.0	27	P	0.50	0.60%	0.42	0.45	0.50	9.36	0.47	0.28	0.04	0.17	8.87	10	1.00	5.0	0.0	-	-	-	-	-
B9.05	G-1	0.22	2.64	2.5	5.2	27	P	0.50	0.62%	0.42	0.46	0.50	9.47	0.46	0.28	0.04	0.17	9.16	10	1.00	5.2	0.0	-	-	-	-	-
B10.01	G-1	1.25	9.86		9.9	48	P	0.50	1.30%	0.42	0.48	0.50	18.89	0.23	0.28	0.02	0.08	22.50	10	0.65	6.4	3.4	pass B10.03	-	-	-	-
B10.03	G-1	1.20	9.76	0.1	9.9	27	P	0.50	1.30%	0.42	0.50	0.50	13.50	0.31	0.28	0.04	0.12	17.81	15	0.96	9.5	0.4	spill B10.04 / pass B7.08	-	-	-	-
B10.04	G-1	0.25	2.93	3.3	6.2	48	P	0.50	1.30%	0.42	0.40	0.50	13.48	0.34	0.28	0.02	0.11	15.40	10	0.85	5.3	0.9	pass B7.08	-	-	-	-
J1.09	G-1	0.57	5.57	0.8	6.4	27	P	0.50	0.60%	0.42	0.49	0.50	11.73	0.36	0.28	0.04	0.14	11.03	10	0.99	6.3	0.1	pass B6.01	-	-	-	-

Date: Apr 09, 2025, 4:06pm User ID: dyasief
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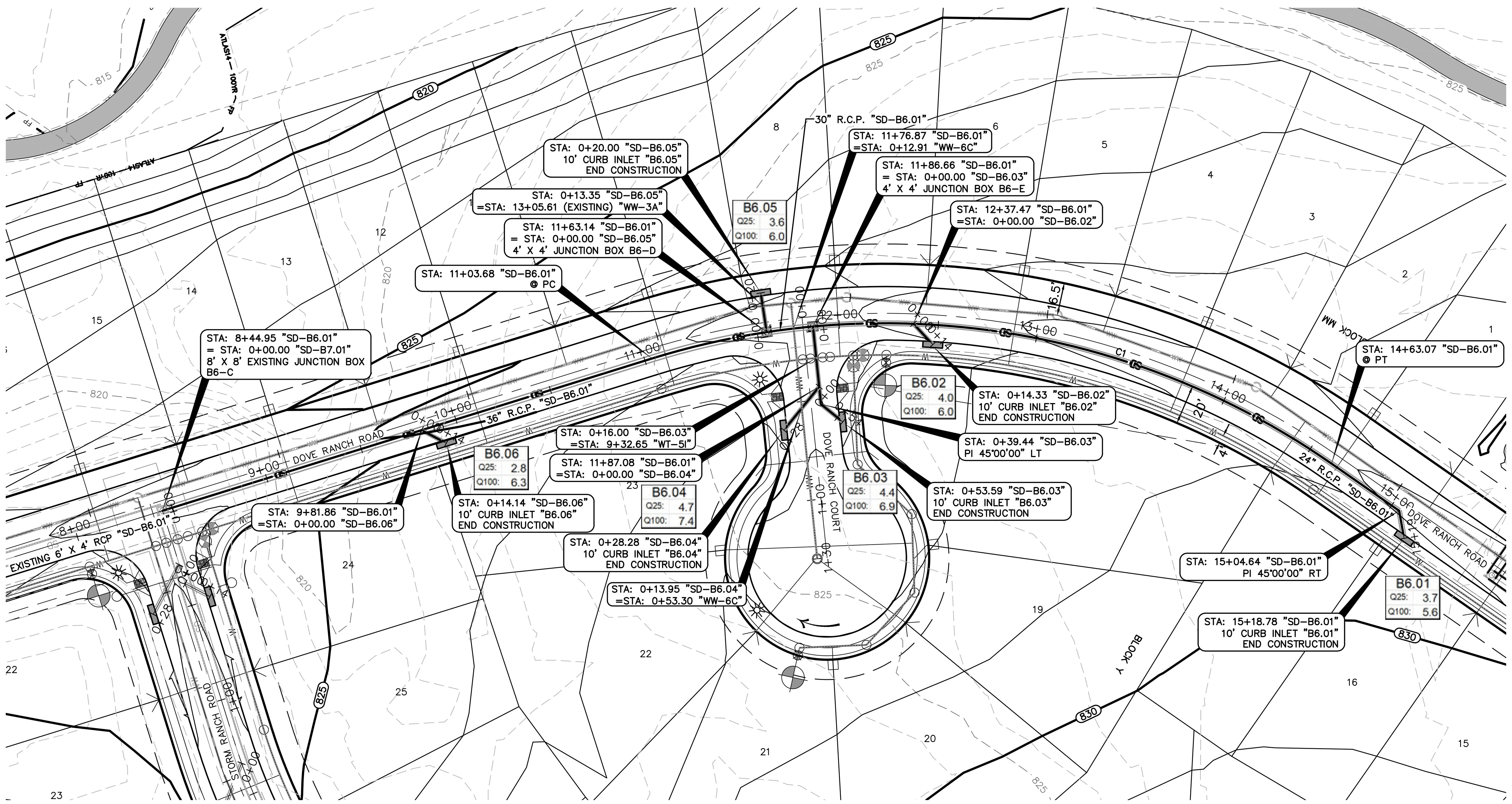
NO.	REVISION	DATE

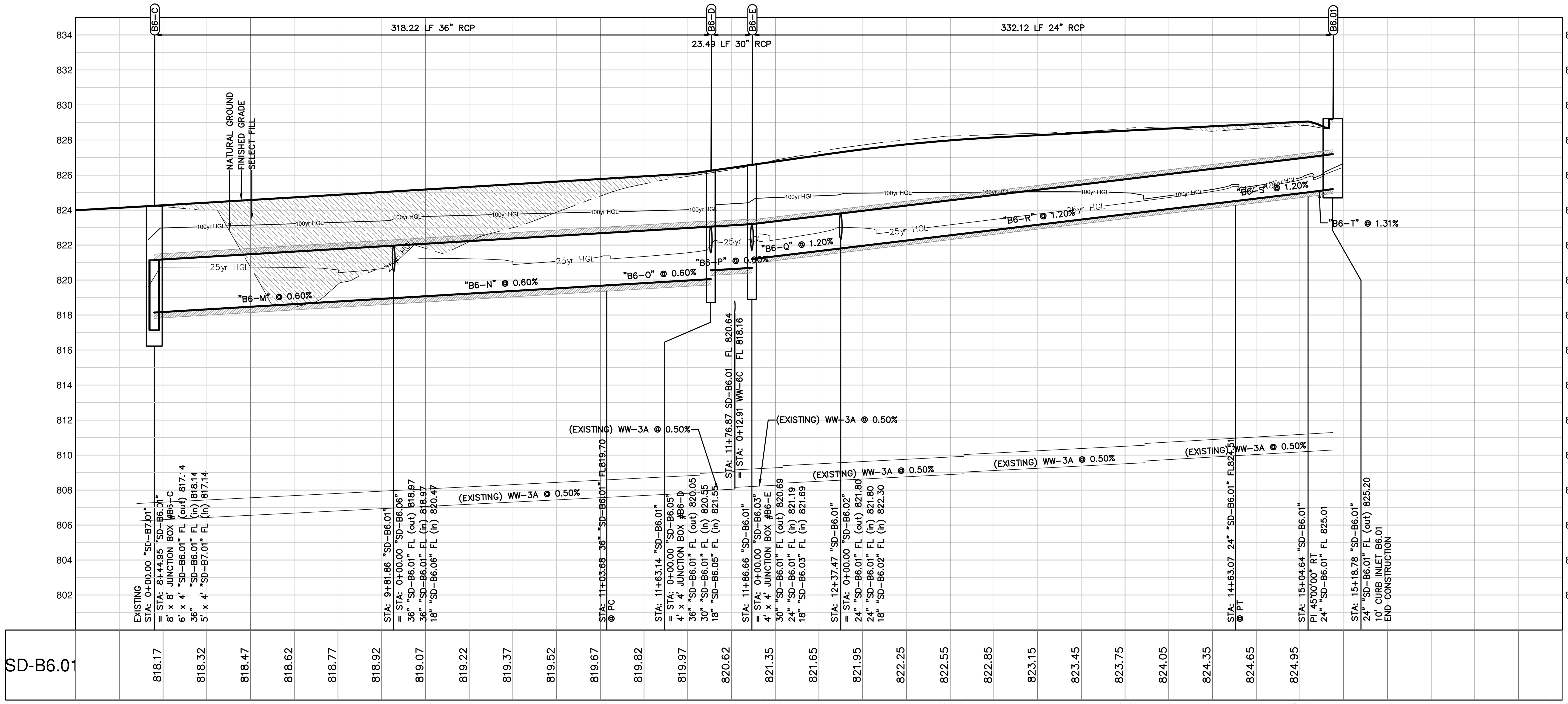
STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
PHASE 6
PH 6 DRAINAGE CALCULATIONS (2 OF 2)

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL





25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6-M	30.61	8.1	2.59	820.76	820.73
B6-N	27.26	7.87	2.28	821.38	821.25
B6-O	27.4	7.88	1.51	821.75	821.2
B6-P	23.64	7.56	1.71	822.35	822.27
B6-Q	11.21	8.16	1.46	823.01	822.65
B6-R	5.41	6.69	1.2	825.33	823.01
B6-S	5.44	6.69	0.63	825.83	825.14
B6-T	5.44	6.91	0.93	826.02	825.94

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6-M	40.19	5.69	4.82	823.39	822.97
B6-N	36	5.09	4.63	823.89	823.59
B6-O	36.28	5.13	4.2	824.04	823.89
B6-P	31.3	6.38	3.74	824.41	824.29
B6-Q	14.89	4.74	3.47	824.85	824.67
B6-R	7.18	7.24	3.15	825.46	824.95
B6-S	7.21	7.24	0.74	825.96	825.25
B6-T	7.22	7.48	1.08	826.15	826.09

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	395.00'	052°07'54"	S83°39'20"E	347.13'	359.40'

SCALE: 1"= 40'

0' 40' 80' 120'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
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4. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS THEY ARE COMPUTER GENERATED USING FIELD SURVEY DATA.
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6. EXPOSED CONCRETE THAT IS VISIBLE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE INCLUDING BUT NOT LIMITED TO LEDGESTONE, FIELDSTONE, CAST STONE, OR OTHER DECORATIVE MATERIALS SUCH AS STAMPED AND TINTED CONCRETE THAT RESEMBLES STONE OR BRICK. THE CONCRETE TRICKLE CHANNEL IS NOT SUBJECT TO THIS REQUIREMENT.

LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS

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10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN SD-B6.01

NO.	REVISION	DATE

CITY OF LEANDER APPROVAL

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL

Date: Apr 09, 2025, 4:07pm User ID: dyssef
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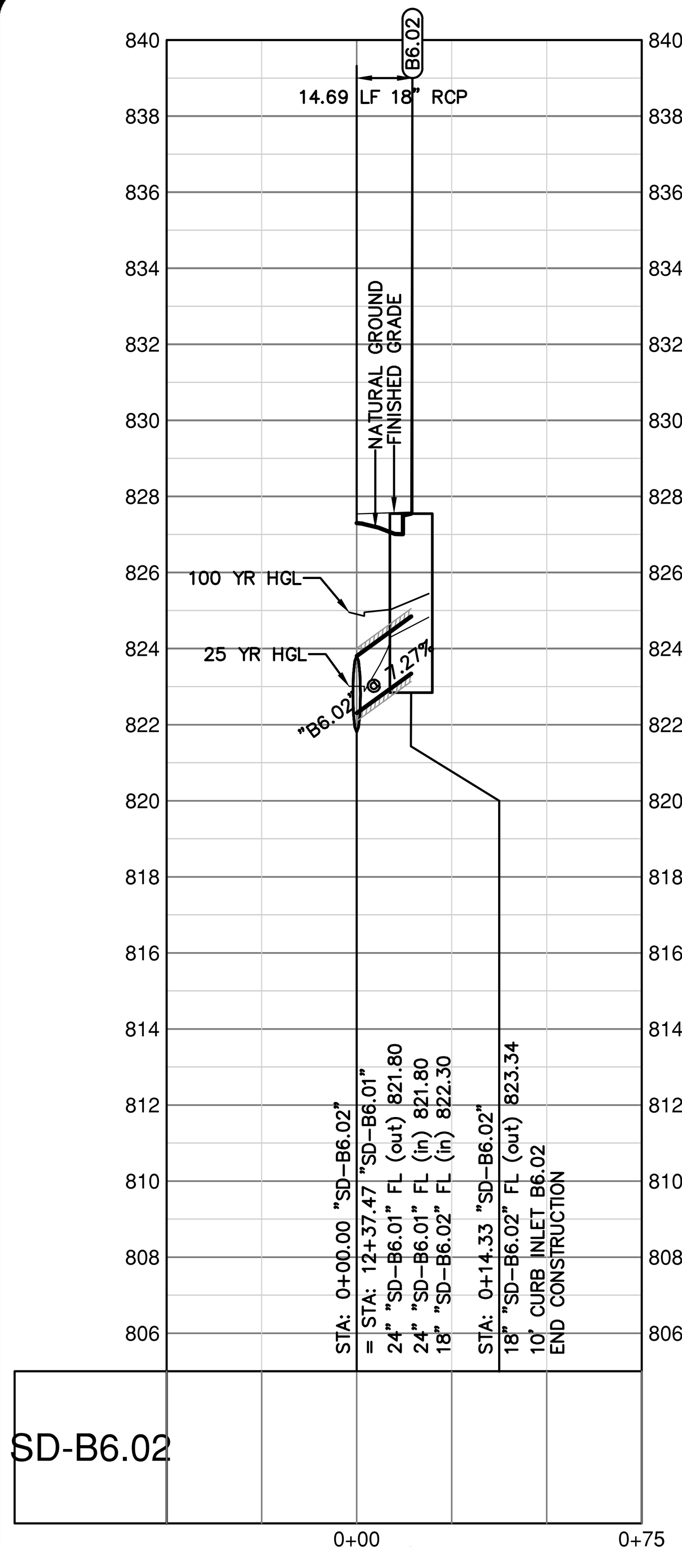

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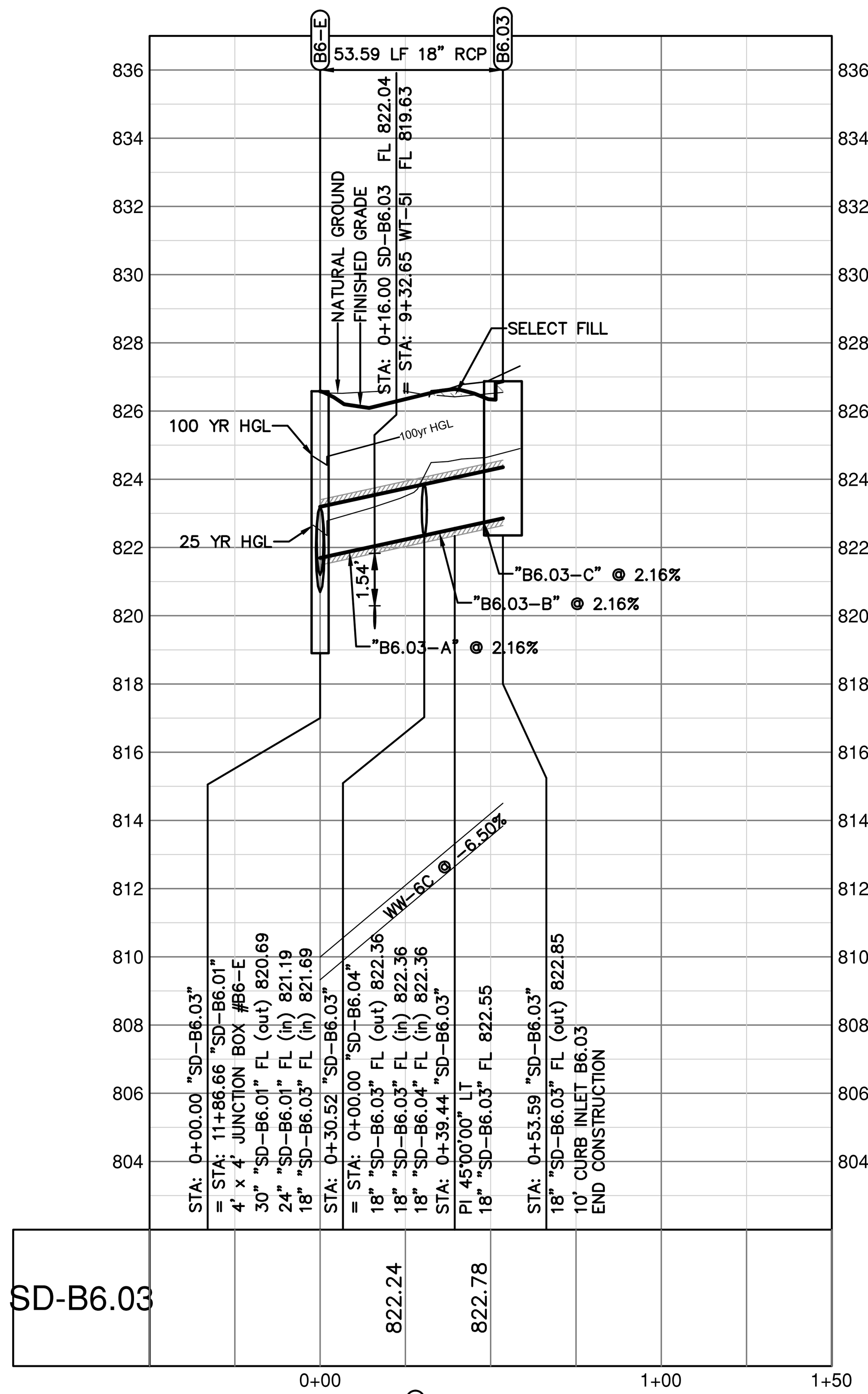

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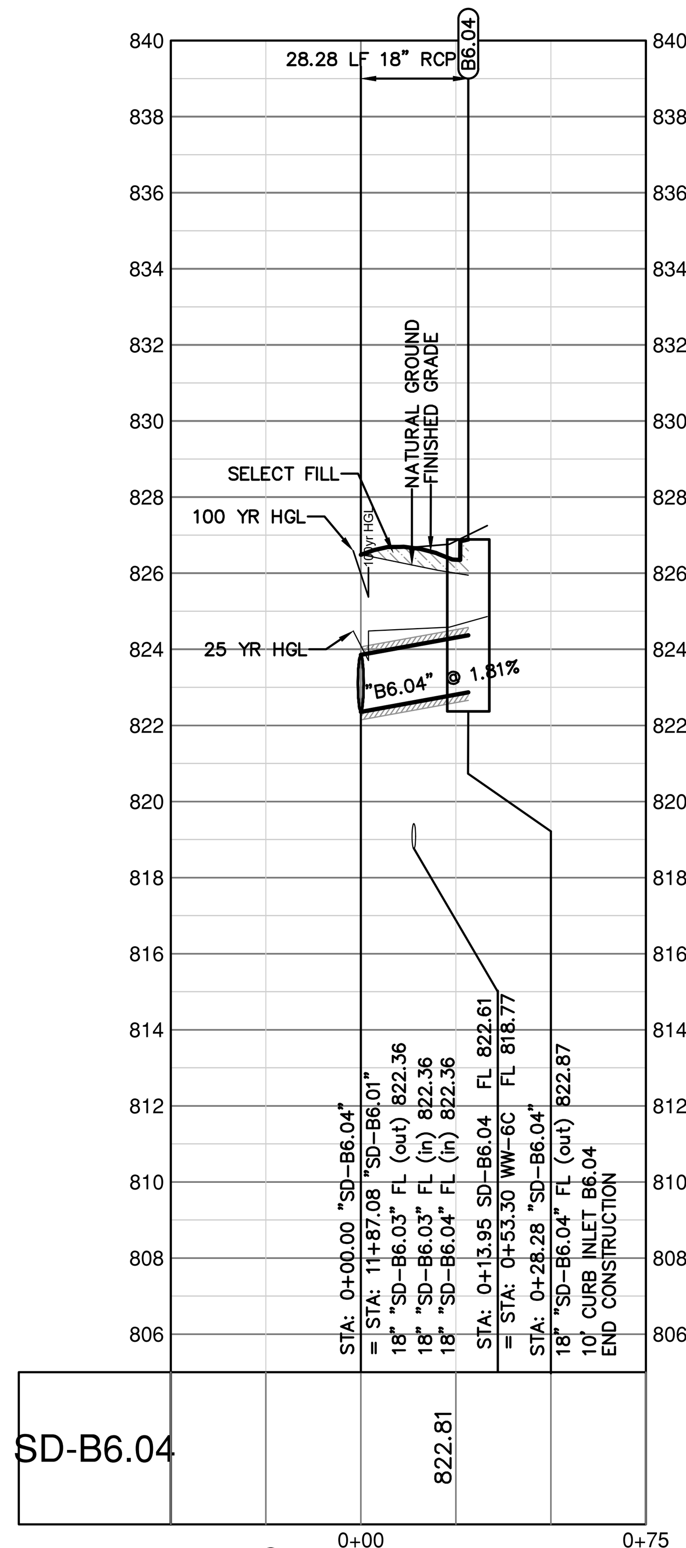

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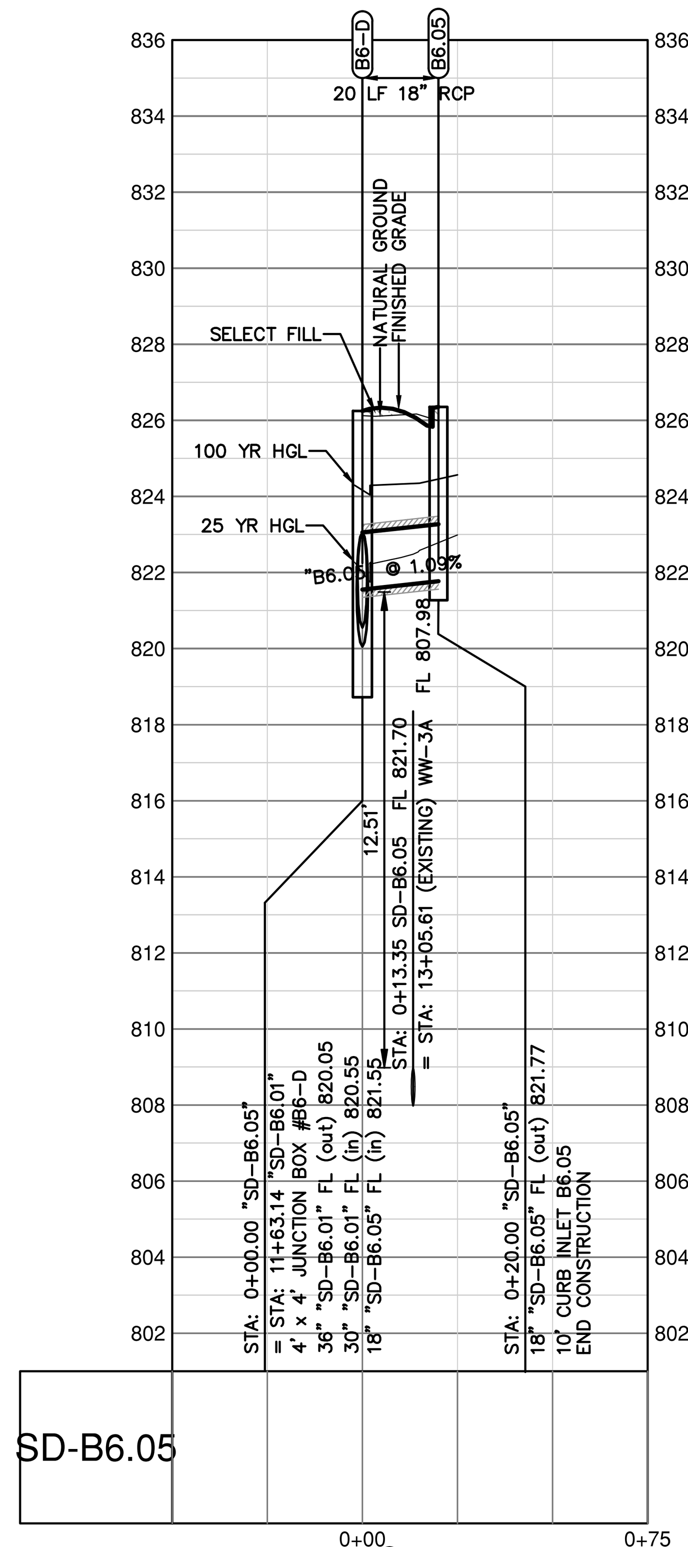

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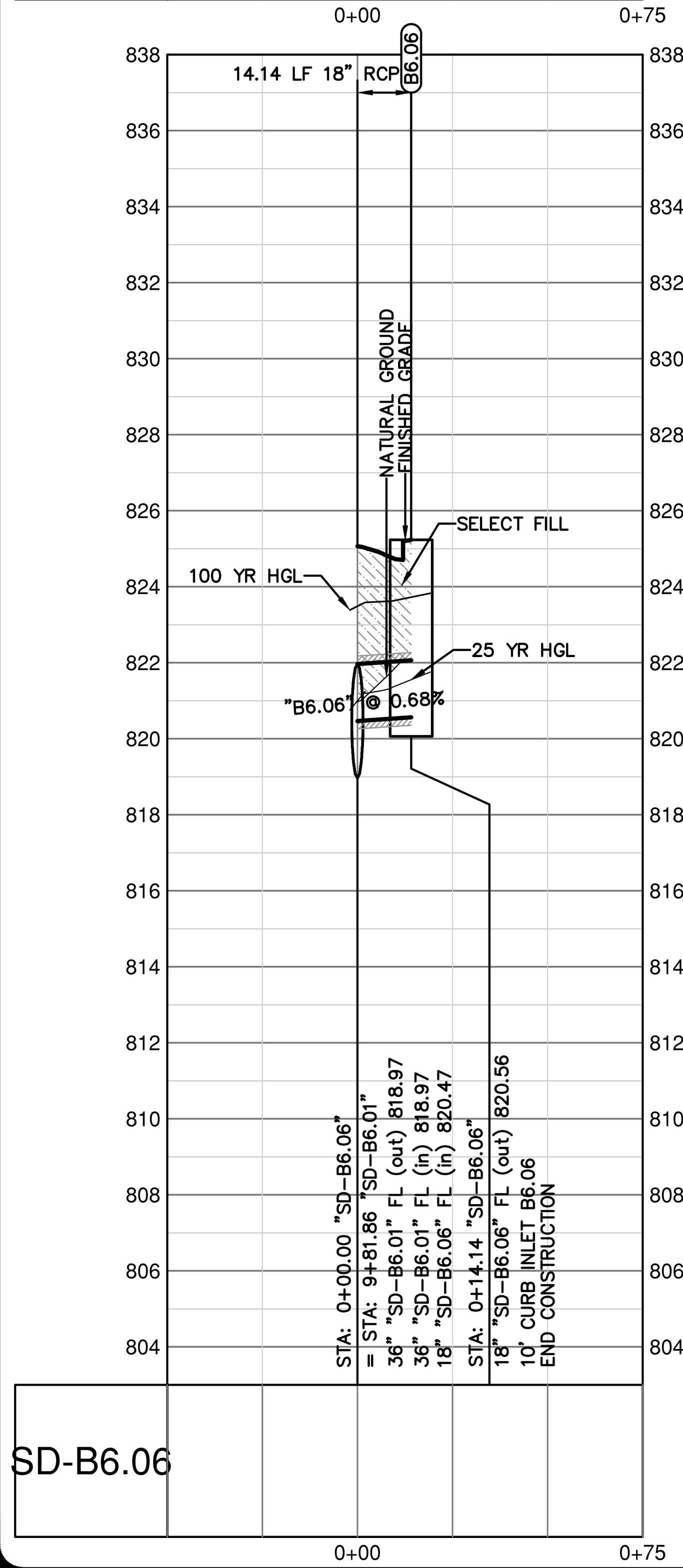

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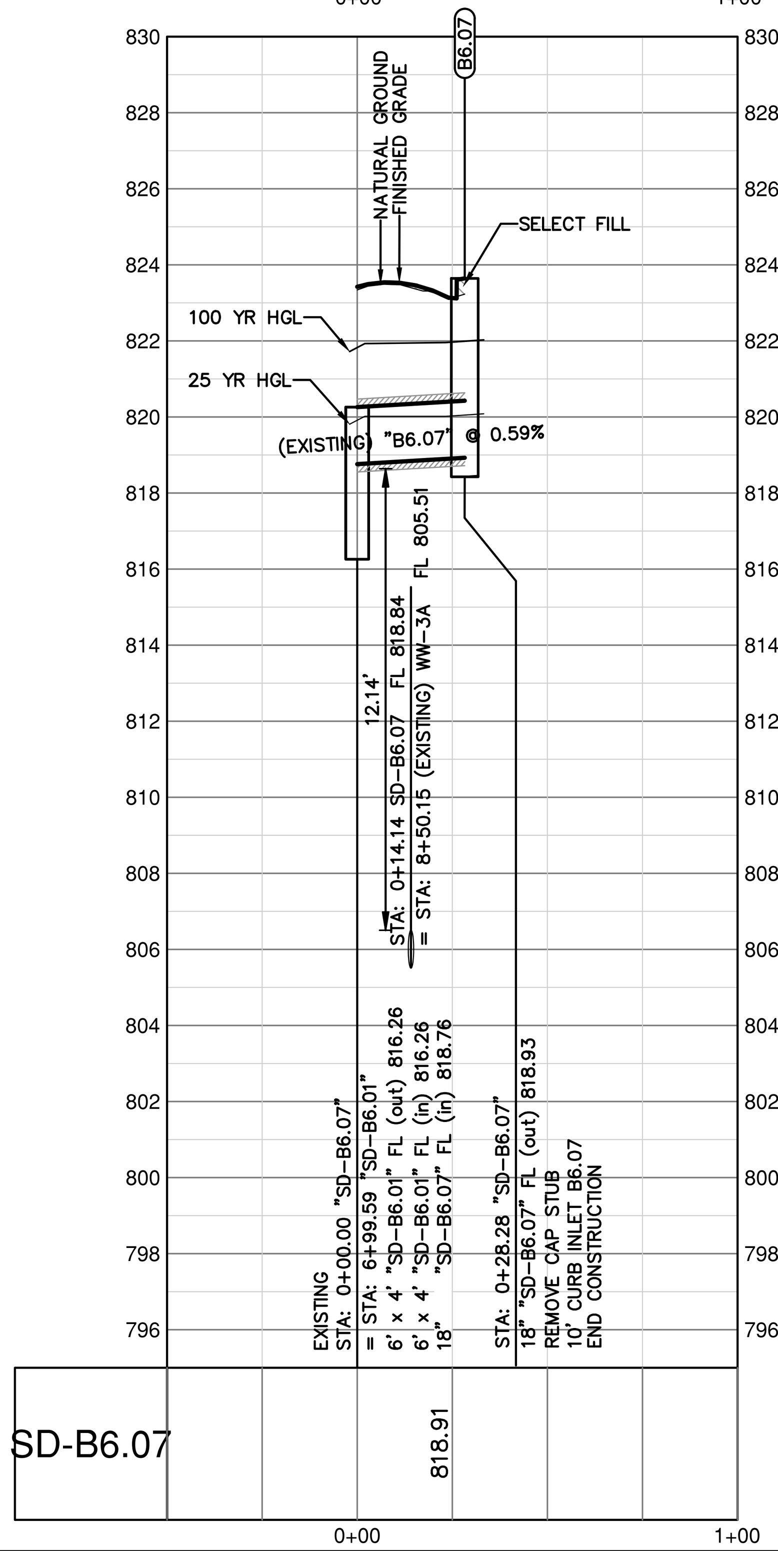

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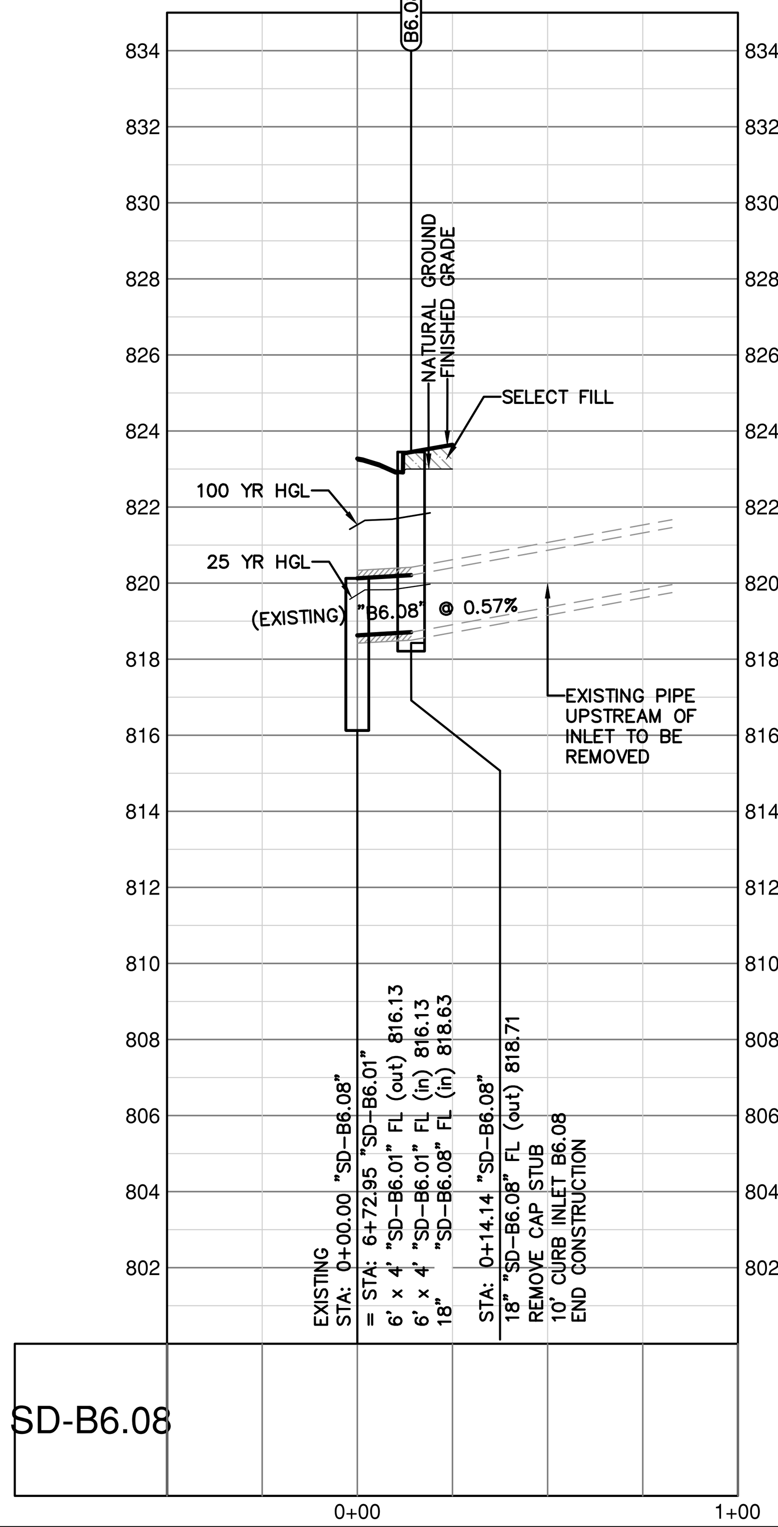

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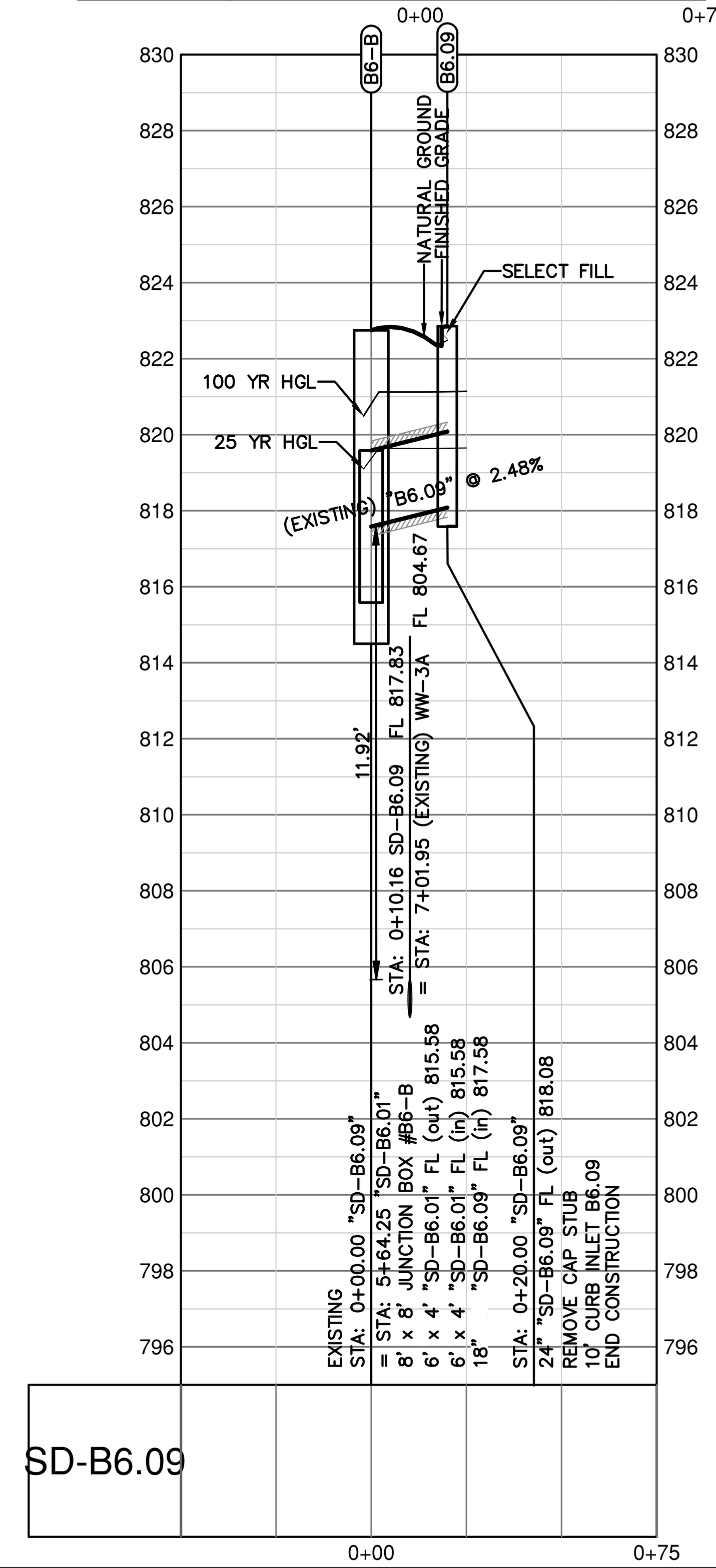

SD-B6.09

25 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6.02	6.18	13.69	0.57	824.3	822.87
B6.03-A	13.11	10.49	1.09	823.71	822.78
B6.03-B	6.48	3.67	2.13	824.52	824.49
B6.03-C	6.5	3.68	2.04	824.64	824.59
B6.04	6.71	3.79	2.13	824.59	824.49
B6.05	4.48	6.25	0.67	822.58	822.22
B6.06	4.32	5.19	0.73	821.36	821.20
B6.07	2.55	4.3	1.26	820.02	820.01
B6.08	3.89	4.75	1.2	819.83	819.82
B6.09	2.1	6.56	2.01	819.59	819.59

100 yr Storm Event

Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B6.02	8.19	4.63	2.65	825.03	824.95
B6.03-A	17.41	9.85	2.97	825.38	824.67
B6.03-B	8.6	4.87	4.24	826.65	826.59
B6.03-C	8.62	4.88	4.23	826.86	826.77
B6.04	8.89	5.03	4.24	826.77	826.59
B6.05	5.94	3.36	2.74	824.35	824.29
B6.06	5.73	3.24	3.13	823.63	823.59
B6.07	3.39	1.92	3.17	821.96	821.93
B6.08	5.16	2.92	3.02	821.68	821.65
B6.09	2.78	0.89	3.54	821.12	821.12

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- STORM DRAIN LINE & MH
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- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
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- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

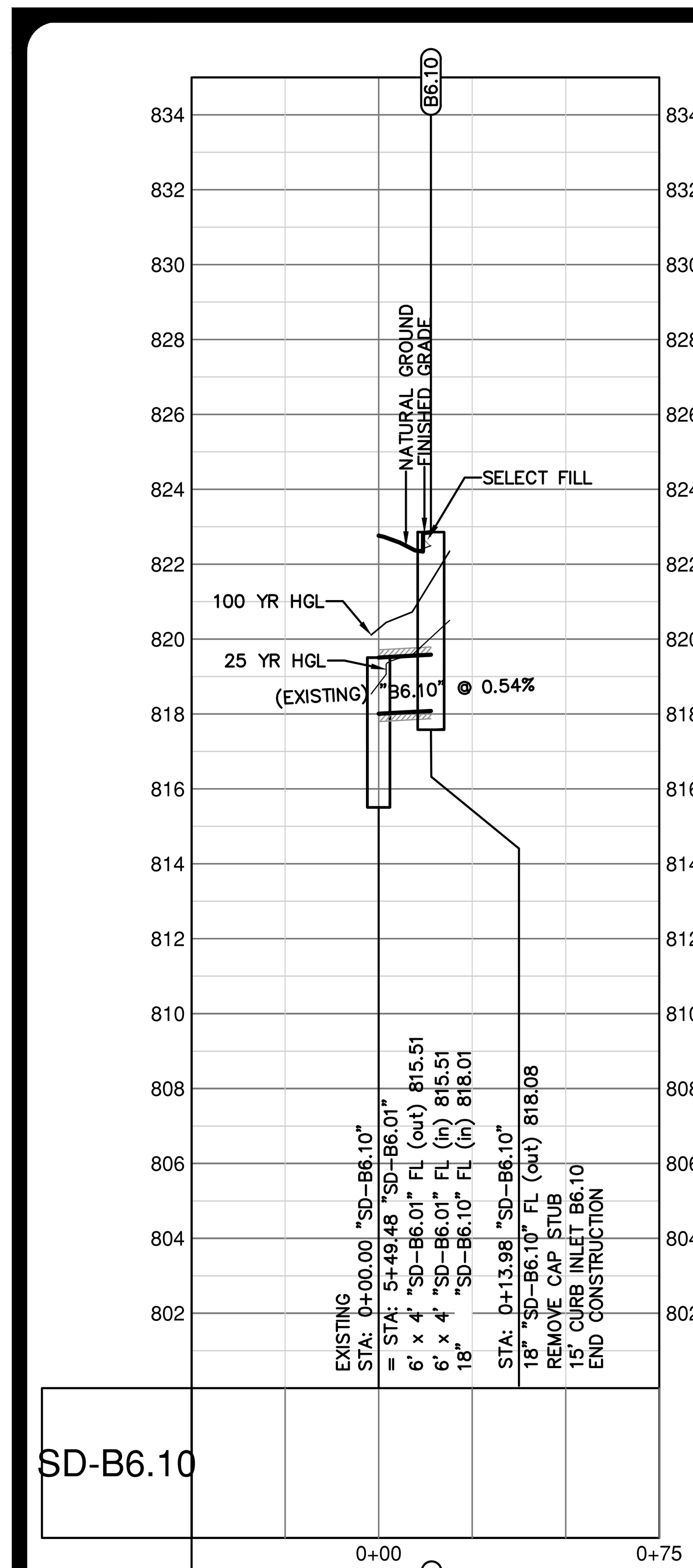
CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS
PHASE 6 STORM DRAIN
SD-B6.01 LATERALS B6.02-B6.09

CITY JOB No. --------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 65 of 83



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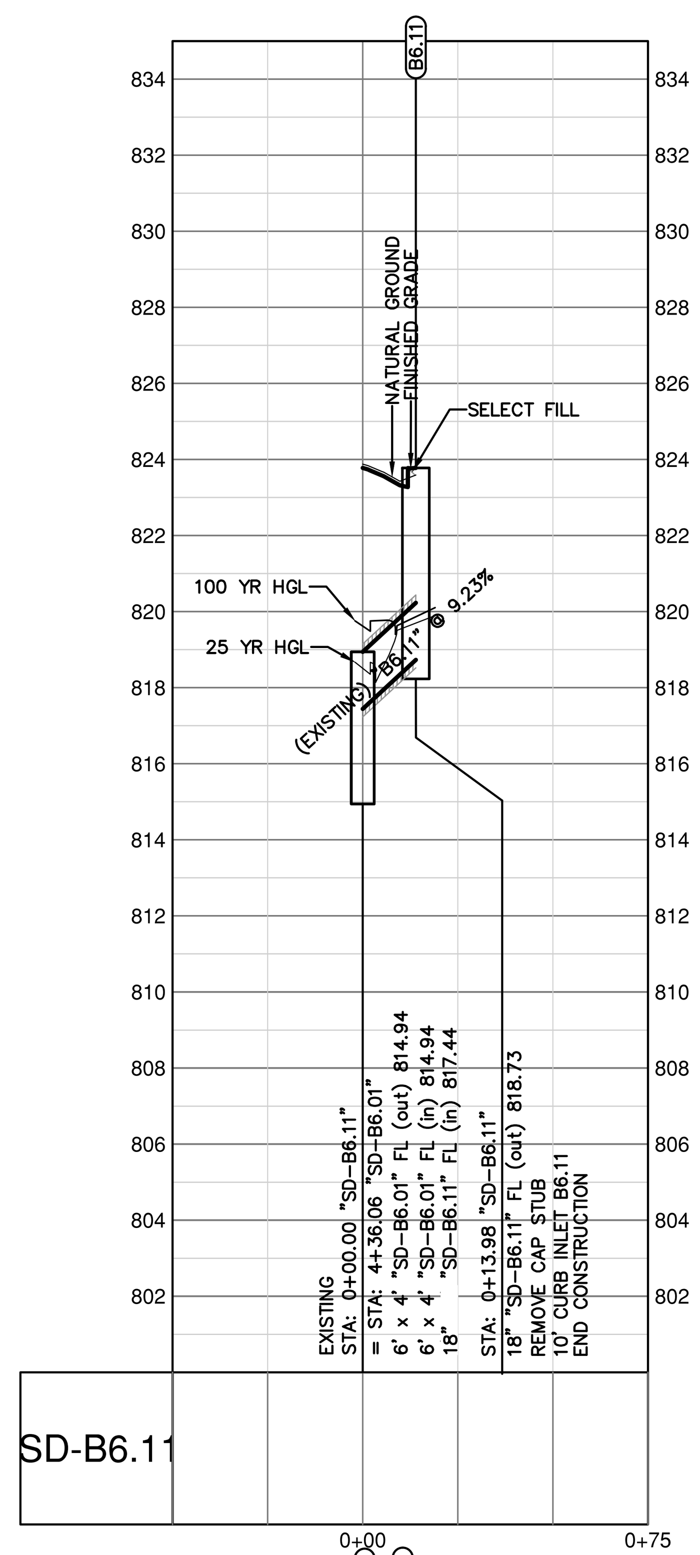

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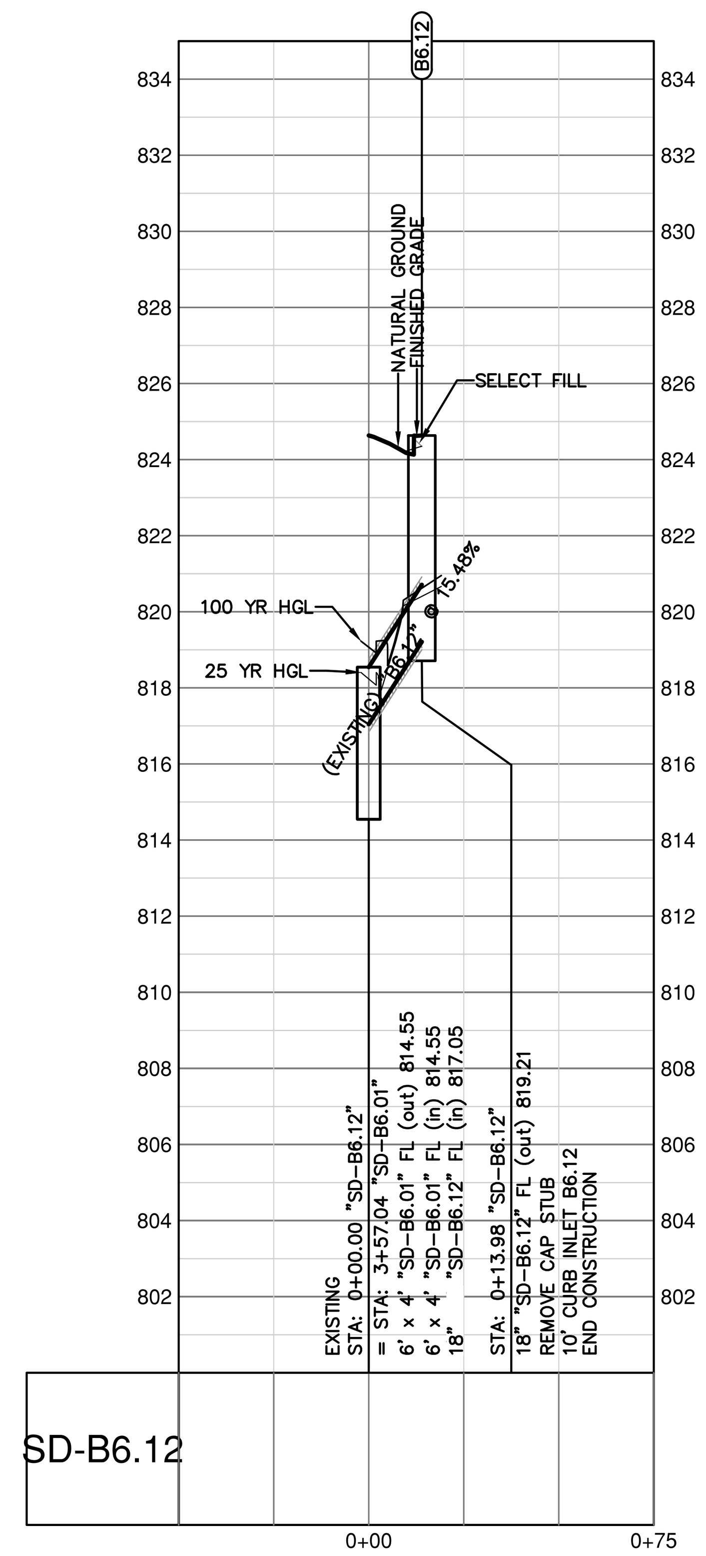

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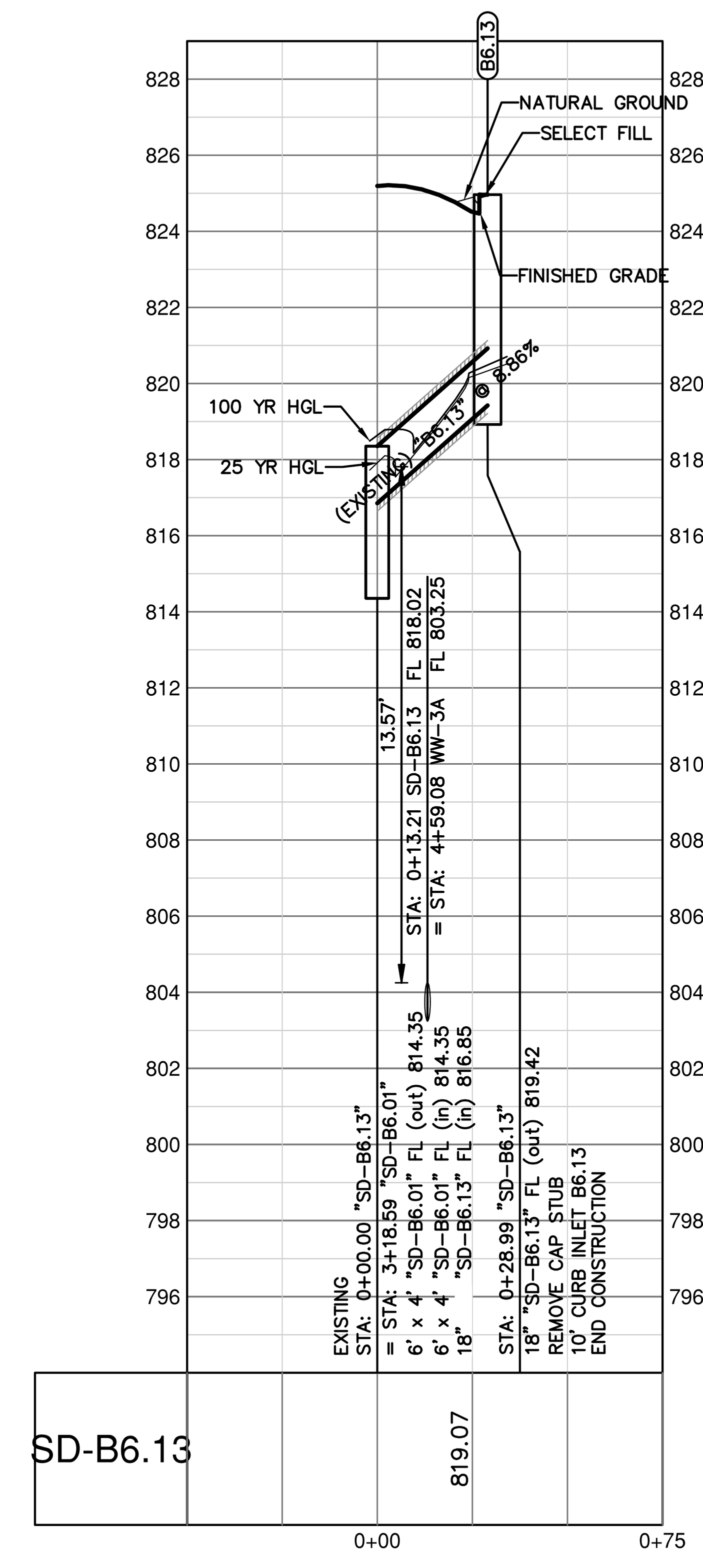

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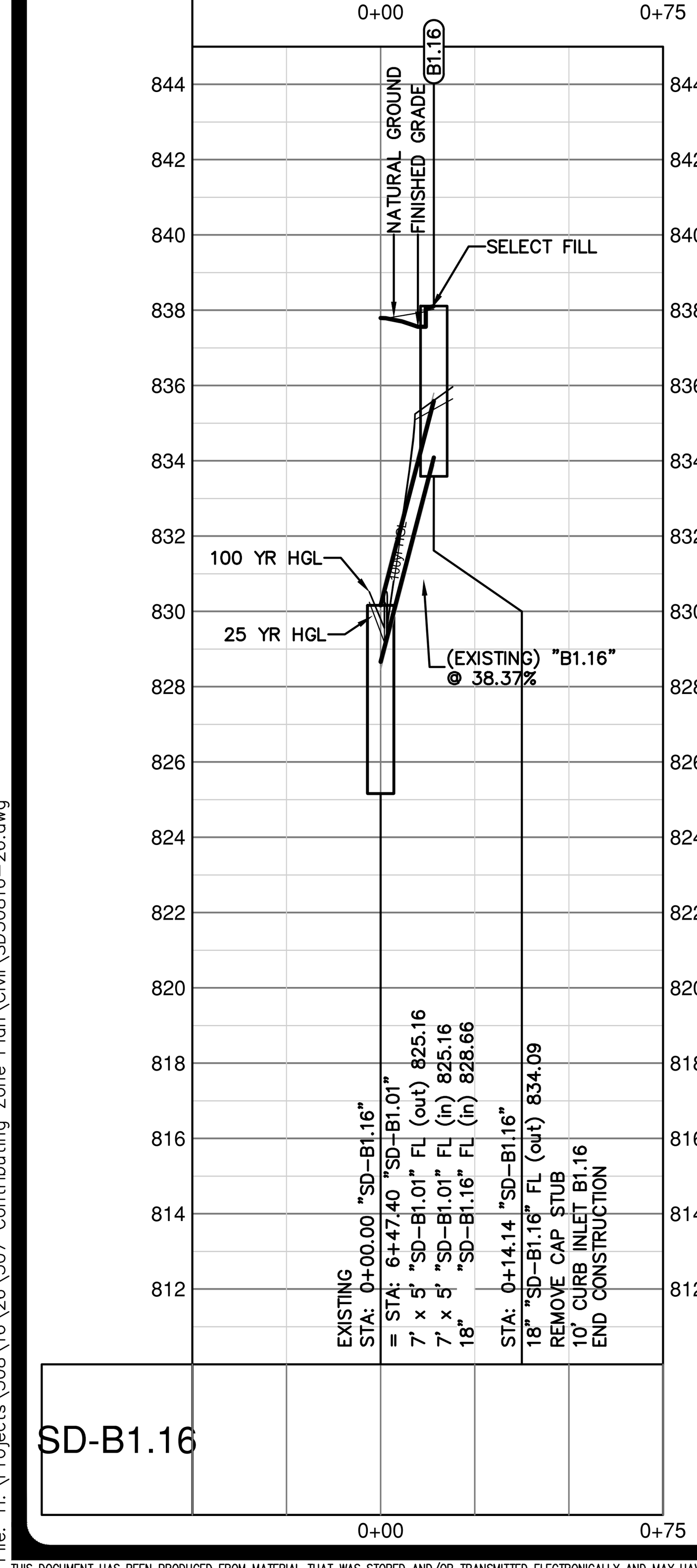

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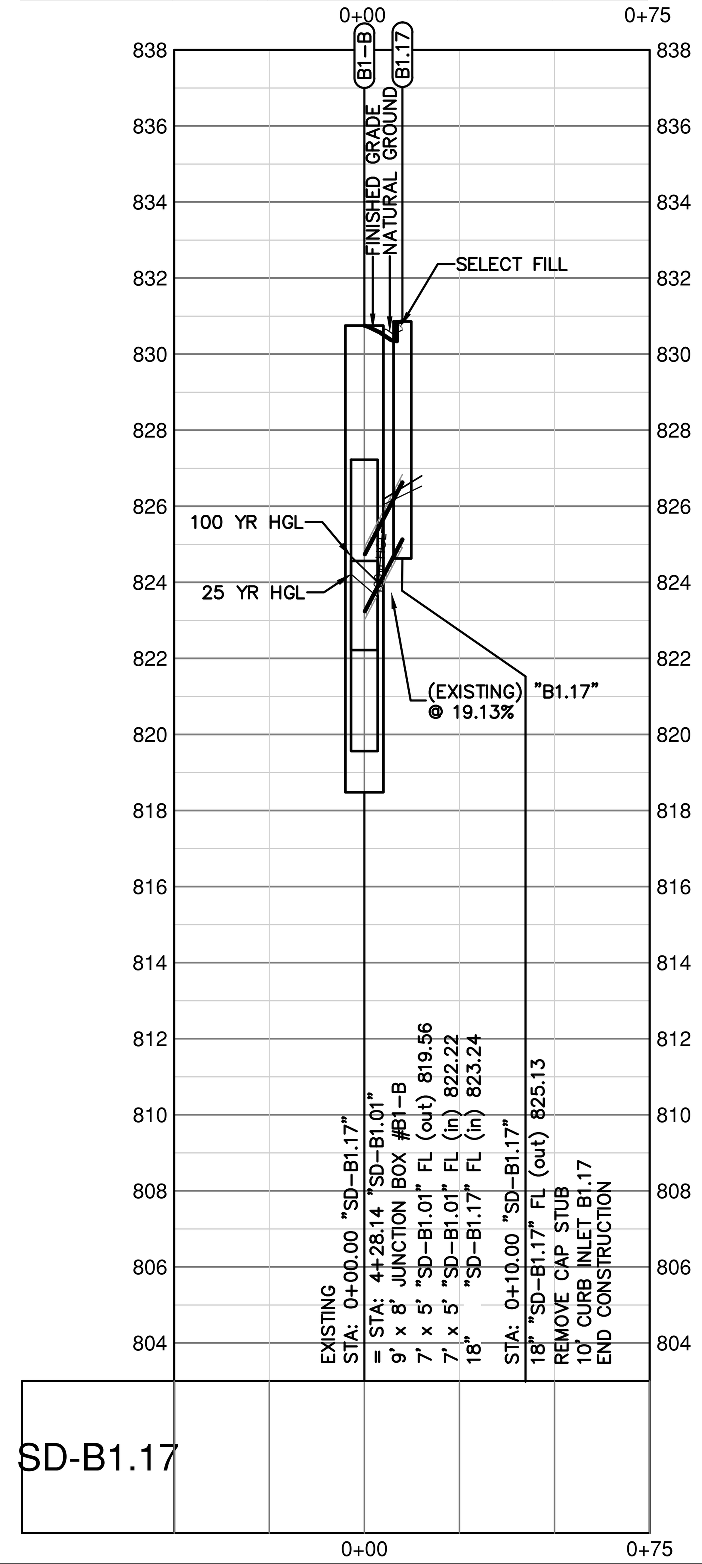

SD-B1.17

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.16	6.71	24.54	1.58	835.09	830.24
B1.17	5.66	18.58	0.98	826.05	824.22
B6.10	12.17	6.89	1.32	819.58	819.33
B6.11	4.14	13.16	1.23	819.51	818.67
B6.12	6.04	17.6	1.36	820.16	818.41
B6.13	3.68	12.54	1.25	820.16	818.1

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B1.16	8.91	26.64	1.86	835.24	830.52
B1.17	7.5	20.16	1.45	826.19	824.68
B6.10	16.15	9.14	2.44	820.73	820.45
B6.11	5.49	14.28	2.31	819.63	819.75
B6.12	8.01	19.08	2.18	820.31	819.23
B6.13	4.88	13.61	1.93	820.27	818.79

NOTES:

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2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. THE HYDRAULIC GRADE LINE (HGL) OF THE 25 YEAR EVENT IS DEFINED BY THE NORMAL DEPTH CALCULATION UNLESS SHOWN OTHERWISE.
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5. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
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LEGEND

- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE & MH
- CURB INLET
- SINGLE WATER SERVICE
- DOUBLE WATER SERVICE
- SINGLE WW SERVICE
- DOUBLE WW SERVICE
- GATE VALVE
- FIRE HYDRANT
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

NATURAL GROUND
FINISHED GRADE
SUBGRADE
PROPOSED STORM DRAIN
25-YR HGL
100-YR HGL

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN
SD-B6.01 LATERALS B6.10-B6.13 & B1.16-B1.17

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 66 of 83

Date: Apr 09, 2025, 4:08pm User ID: dyusef
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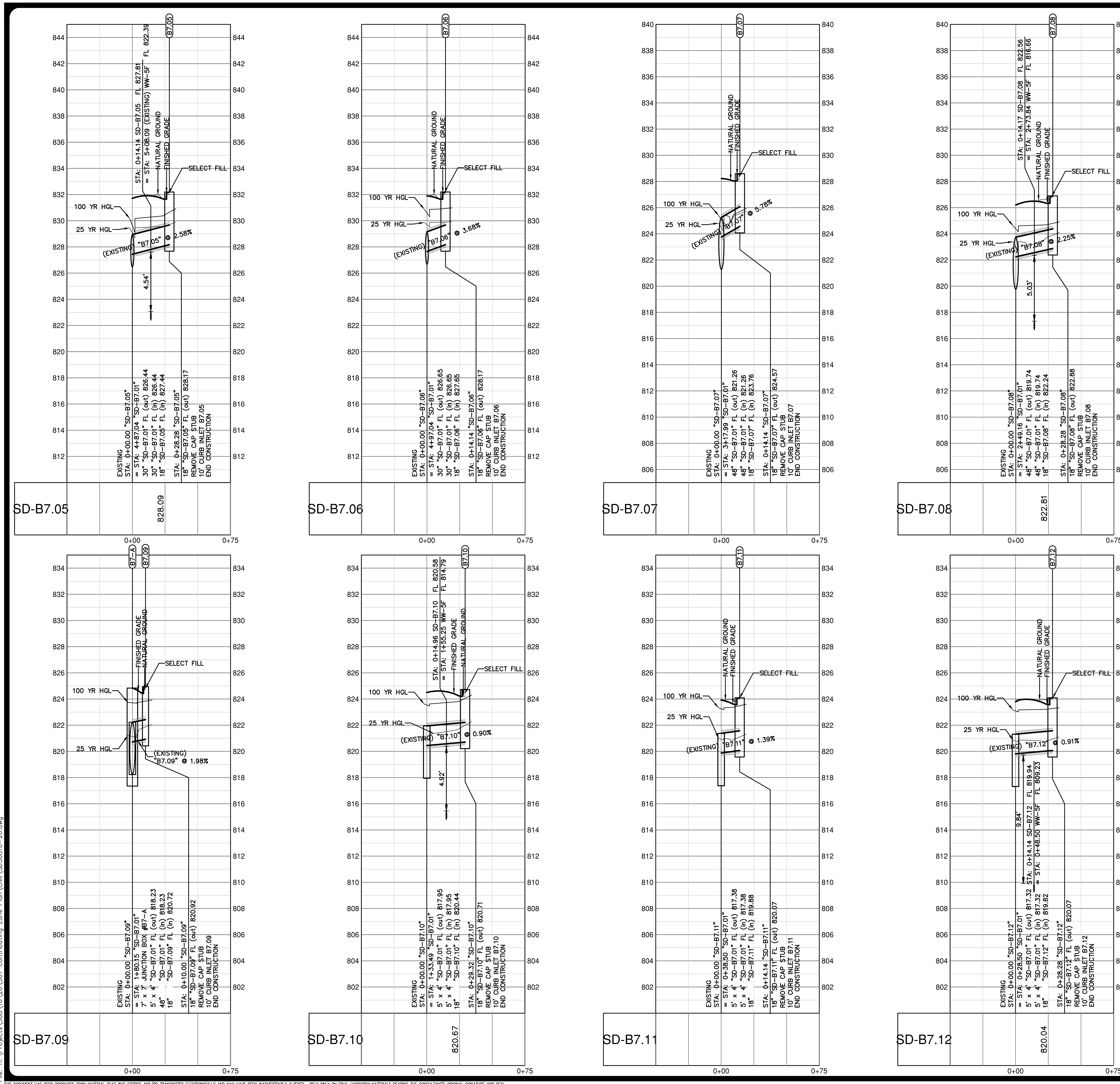

25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7.05	7.17	9.72	2.01	829.54	829.45
B7.06	3.01	1.7	2.21	829.87	829.86
B7.07	4.08	11.11	1.06	825.35	824.82
B7.08	4.53	8.16	1.16	823.7	823.41
B7.09	3.92	7.49	0.59	821.68	821.31
B7.10	6.77	6.46	0.88	821.72	821.32
B7.11	4.62	6.89	1.11	820.9	820.99
B7.12	3.37	5.41	1.05	820.77	820.86

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B7.05	9.51	5.38	2.73	830.37	830.17
B7.06	3.99	2.26	3.22	830.89	830.87
B7.07	5.41	12.04	1.62	825.47	825.38
B7.08	6	3.4	2.37	824.69	824.61
B7.09	5.2	2.94	3.01	823.76	823.74
B7.10	8.98	5.08	3.18	823.8	823.62
B7.11	6.13	3.47	3.45	823.37	823.33
B7.12	4.47	2.53	3.35	823.21	823.17

NOTES:

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- SINGLE WW SERVICE
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- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- #01 INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS
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LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN
SD-B7.01 LATERALS B7.05-B7.12

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL
SHEET 67 of 83

Date: Apr 09, 2025, 4:08pm User ID: dyosief
File: H:\Projects\508\16\26\307 Contributing Zone Plan\Civil\SD50816-26.dwg

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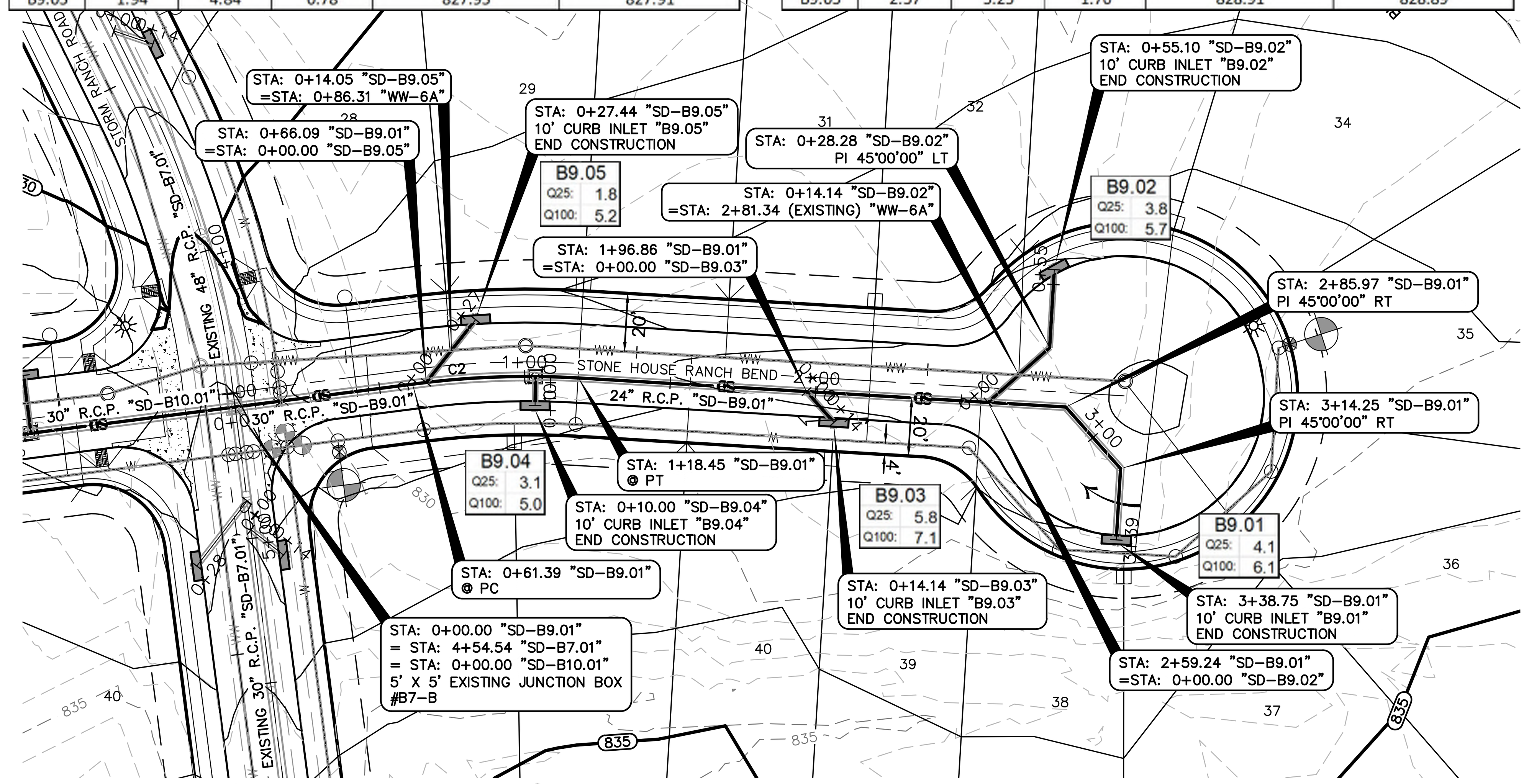
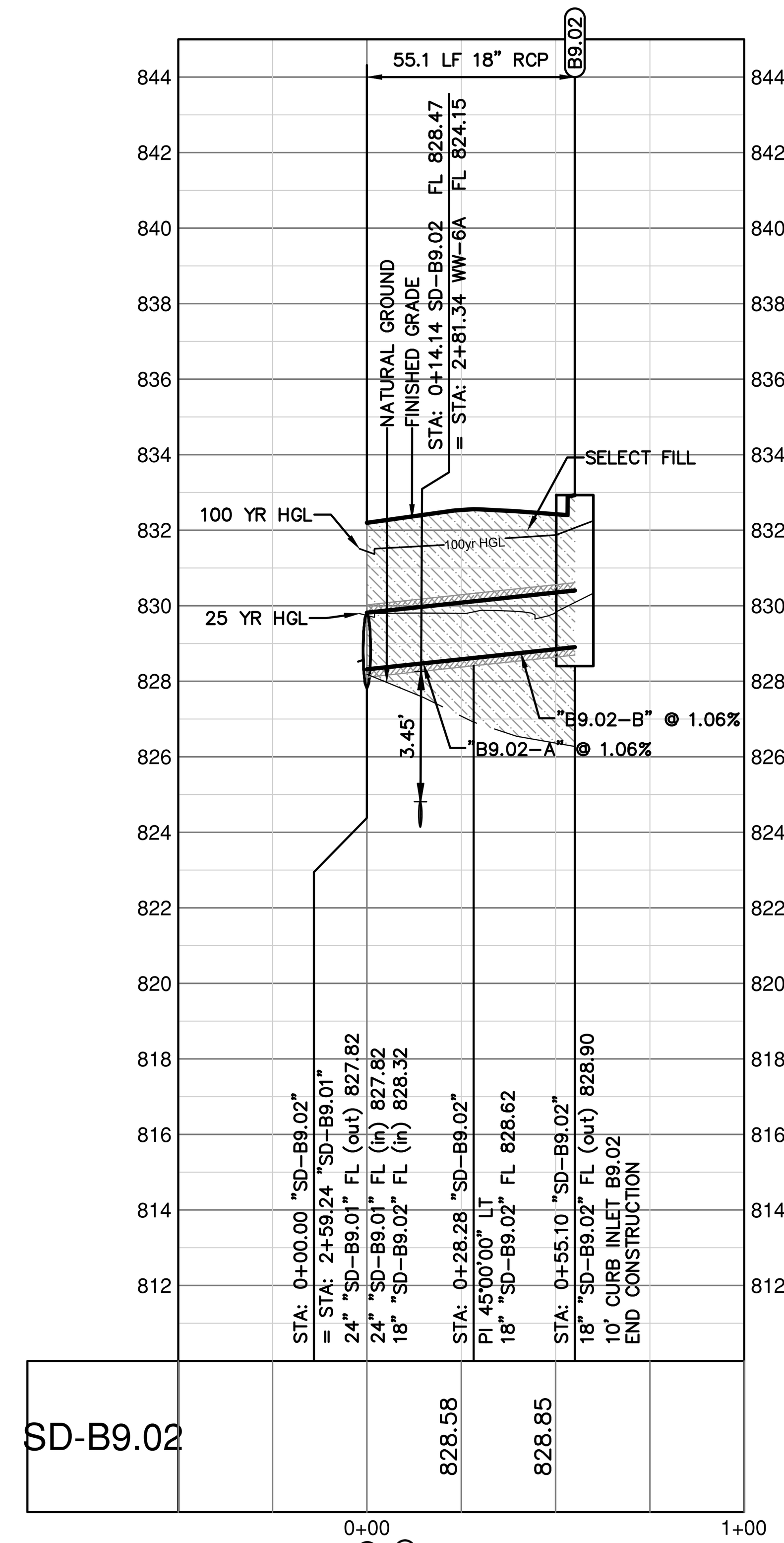
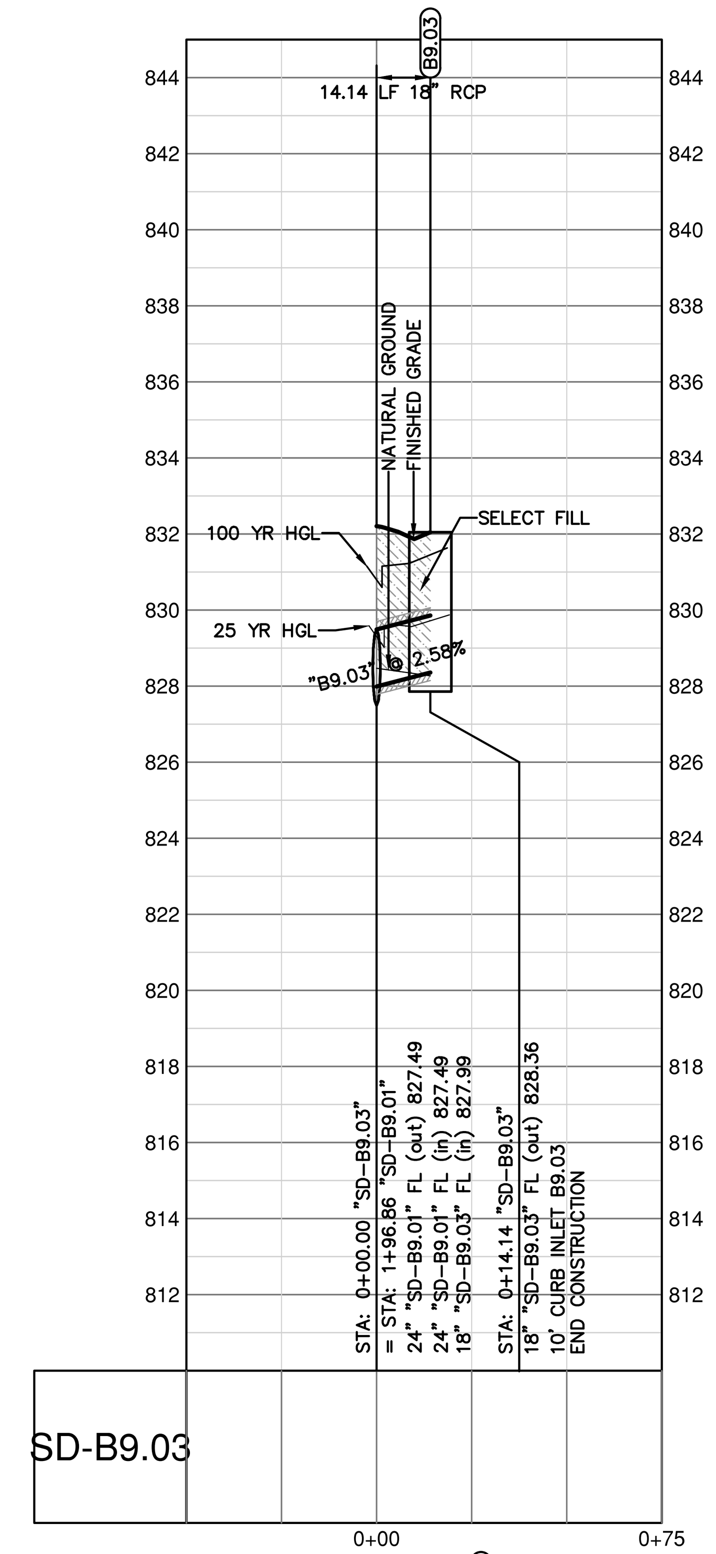
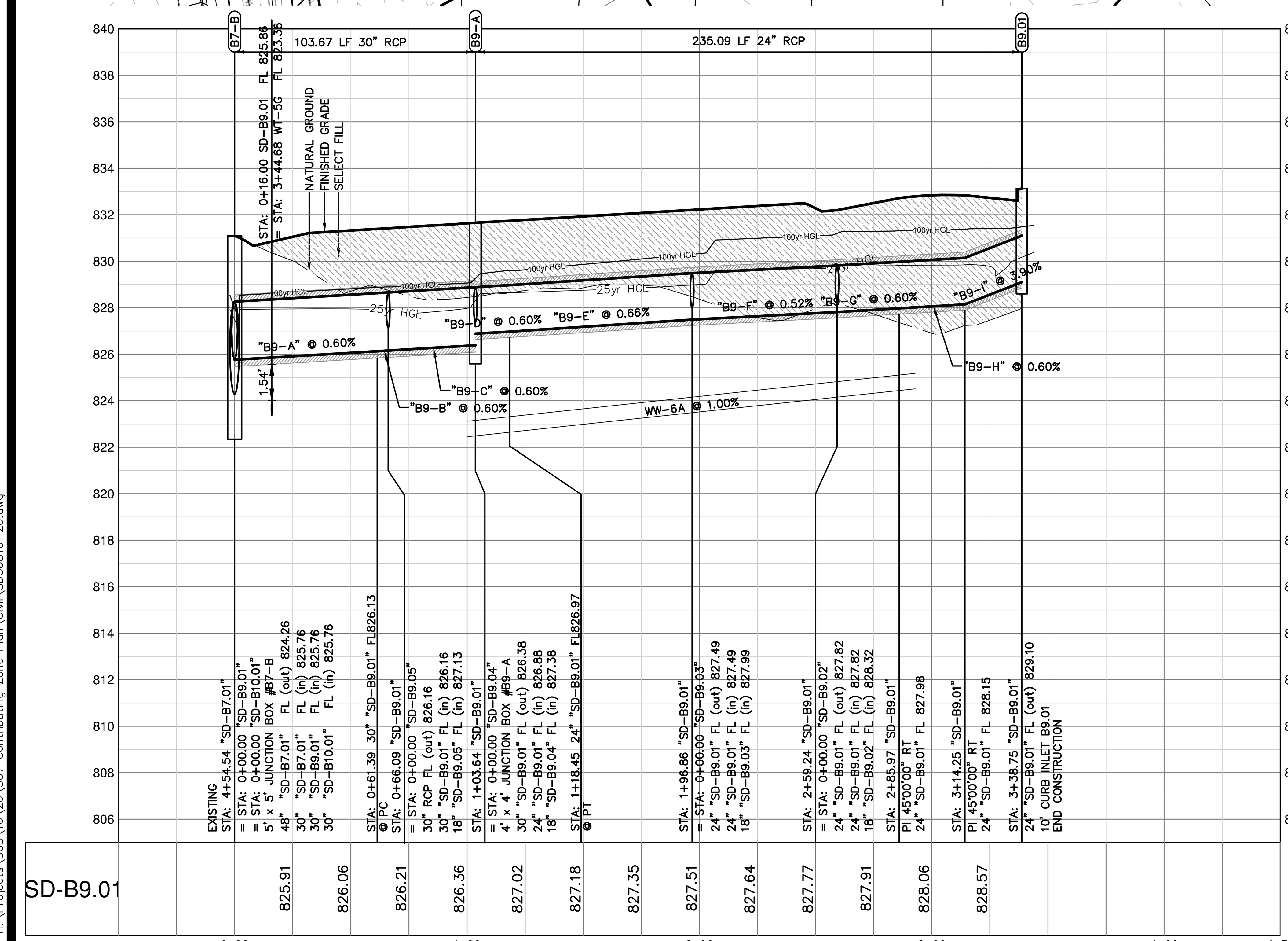
25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B9-A	25.09	7.66	2.17	827.93	827.93
B9-B	25.10	7.63	1.80	827.91	827.93
B9-C	23.32	7.54	1.75	828.03	827.91
B9-D	17.50	6.86	1.72	828.65	828.61
B9-E	17.68	6.86	1.68	829.02	828.65
B9-F	11.74	6.36	2.10	829.7	829.59
B9-G	5.93	5.34	1.98	829.81	829.8
B9-H	5.96	5.35	1.85	829.83	829.83
B9-I	5.97	10.47	1.71	829.97	829.86
B9.02-A	5.87	6.64	1.48	829.8	829.8
B9.02-B	5.89	6.65	1.27	829.84	829.88
B9.03	6.09	9.31	1.6	829.56	829.59
B9.04	6.03	8.24	1.22	828.52	828.61
B9.05	1.94	4.84	0.78	827.95	827.91

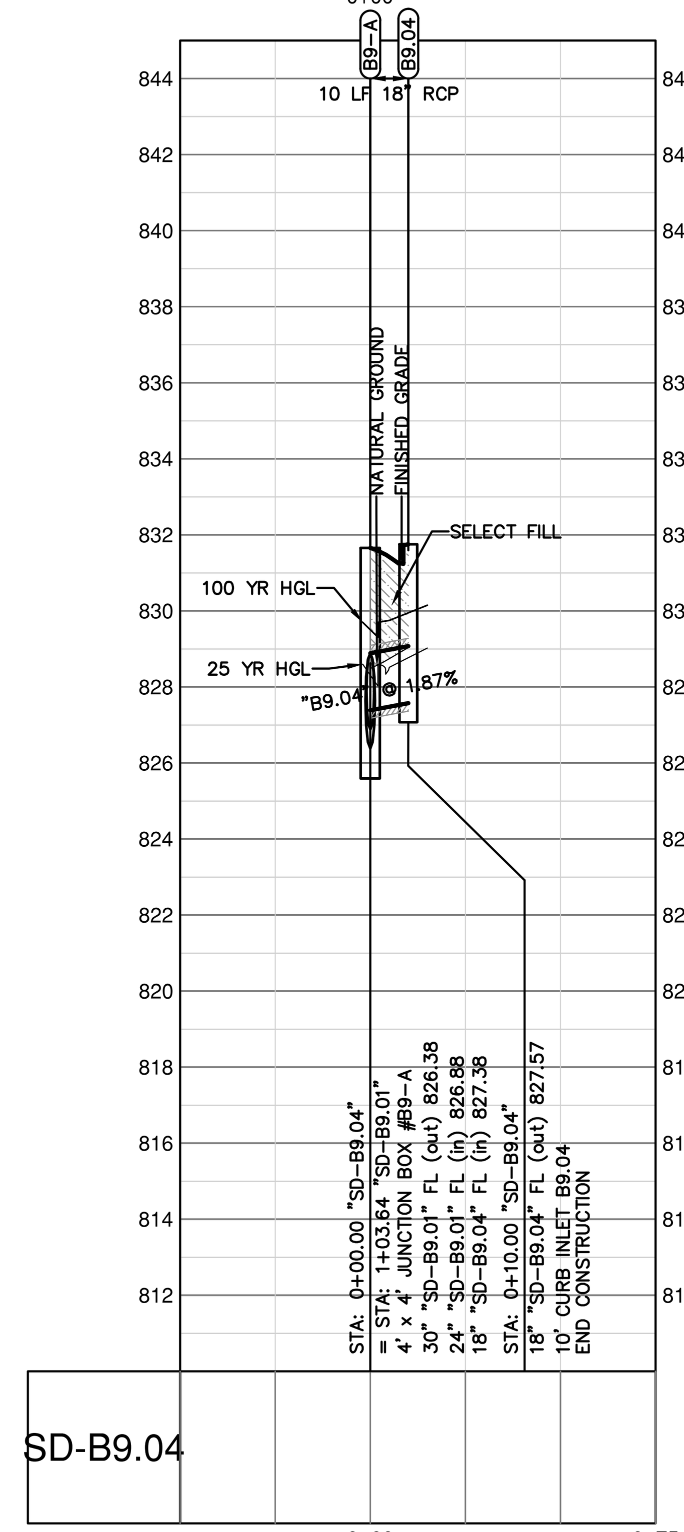
100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B9-A	32.7	6.66	2.78	828.87	828.54
B9-B	32.72	6.67	2.74	828.89	828.87
B9-C	30.43	6.2	2.74	829.07	828.89
B9-D	22.83	7.27	2.58	829.59	829.46
B9-E	23.04	7.33	2.62	830.35	829.59
B9-F	15.33	4.88	3.42	831.13	830.91
B9-G	7.78	2.48	3.45	831.3	831.27
B9-H	7.86	2.5	3.35	831.36	831.33
B9-I	7.92	2.52	3.25	831.42	831.39
B9.02-A	7.78	4.4	2.95	831.4	831.27
B9.02-B	7.82	4.42	2.89	831.63	831.51
B9.03	8.08	4.58	2.92	830.98	830.91
B9.04	8.00	4.53	2.08	829.51	829.46
B9.05	2.57	5.25	1.76	828.91	828.89

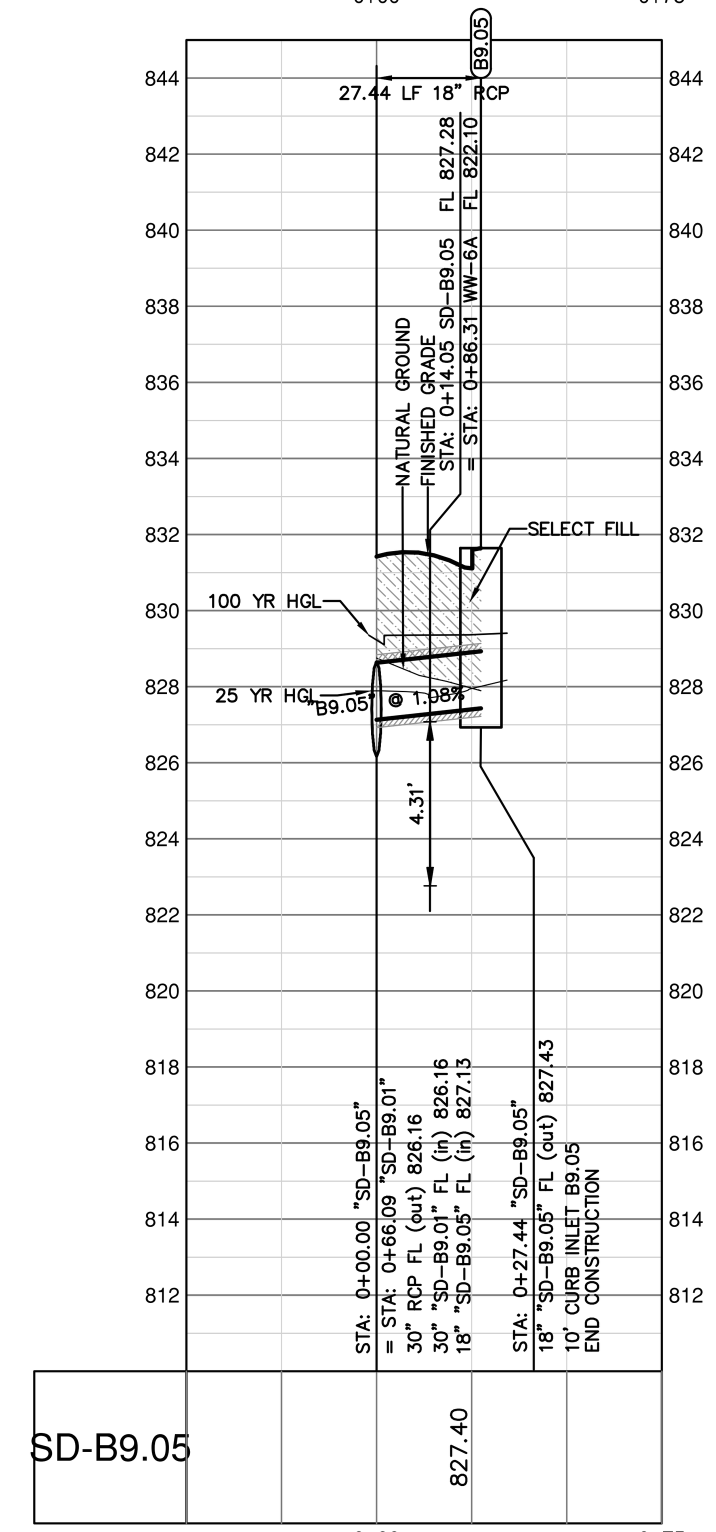












SCALE: 1"= 40'

NOTES:

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- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE

#01 Q25 Q100 — INLET # / CAPTURE Q= 25/100 YEAR

PROFILE SCALES:

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

PROFILE LEGEND:

- NATURAL GROUND
- FINISHED GRADE
- SUBGRADE
- PROPOSED STORM DRAIN
- 25-YR HGL
- 100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C2	295.00'	010°44'09"	N72°00'31"E	55.19'	55.28'

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
04/11/2025

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
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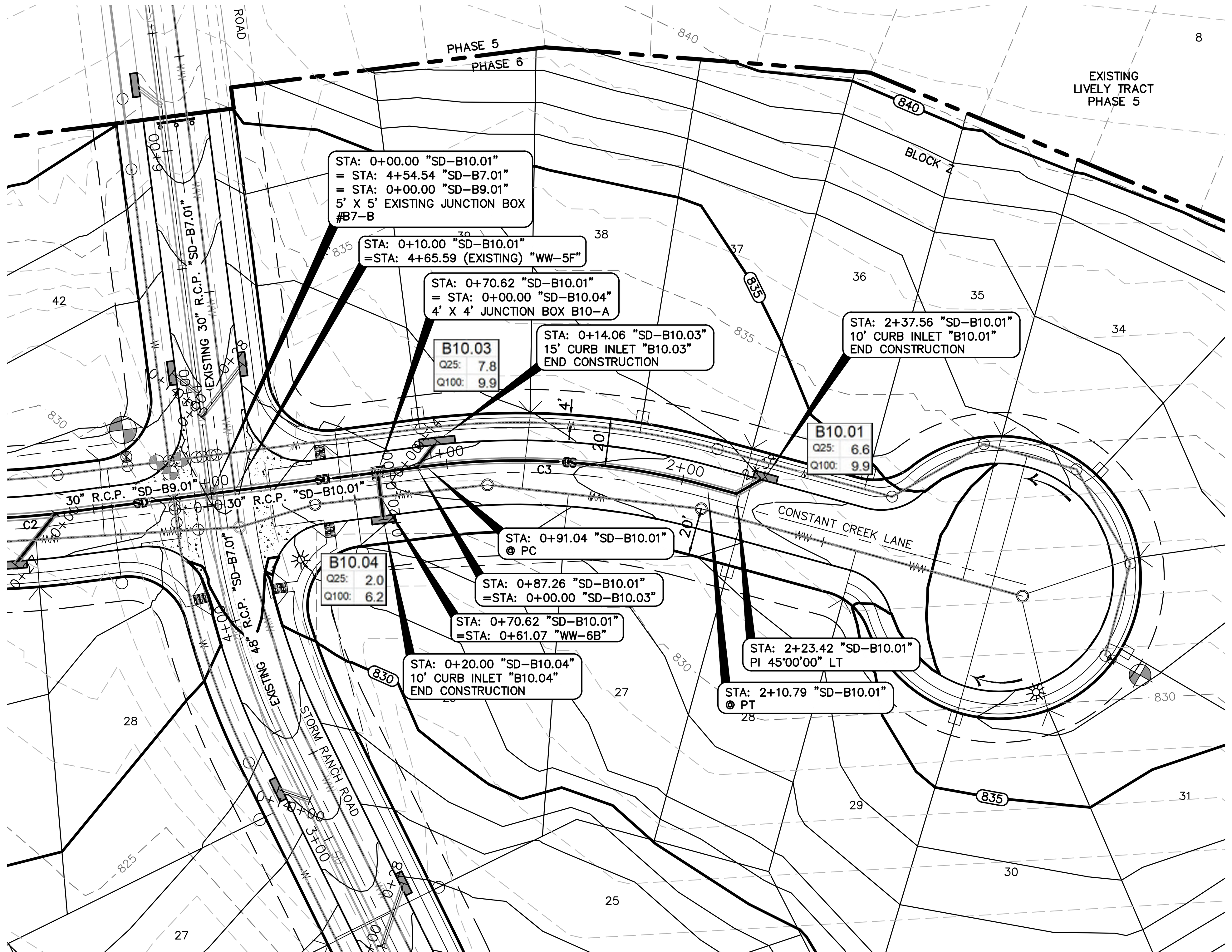
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN
SD-B9.01 & LATERALS B9.02-B9.05

CITY JOB No. _______
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL



25 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B10-A	15.6	6.84	2.16	827.93	827.93
B10-B	13.59	9.97	1.45	828.43	828.07
B10-C	9.71	9.11	1.79	828.89	828.89
B10-D	9.74	9.12	1.71	829.02	828.89
B10-E	9.81	9.13	1.35	830.45	829.25
B10-F	9.82	9.14	0.89	830.68	830.22
B10-G	9.83	10.19	1.28	831.02	830.84
B10.03	4.13	7.6	1.29	828.82	828.89
B10.04	2.21	5.08	0.95	828.03	828.07

100 yr Storm Event					
Label	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
B10-A	20.7	4.22	2.77	828.67	828.54
B10-B	18.03	10.71	2.19	828.89	828.82
B10-C	12.89	4.1	2.17	829.28	829.27
B10-D	12.93	9.84	2.11	829.19	829.28
B10-E	13.01	9.85	1.58	830.63	829.48
B10-F	13.02	9.86	1.05	830.85	830.38
B10-G	13.03	11	1.5	831.2	831.05
B10.03	5.48	8.21	1.67	829.29	829.27
B10.04	2.93	5.51	1.69	828.83	828.82

SCALE: 1"= 40'

0' 40' 80' 120'

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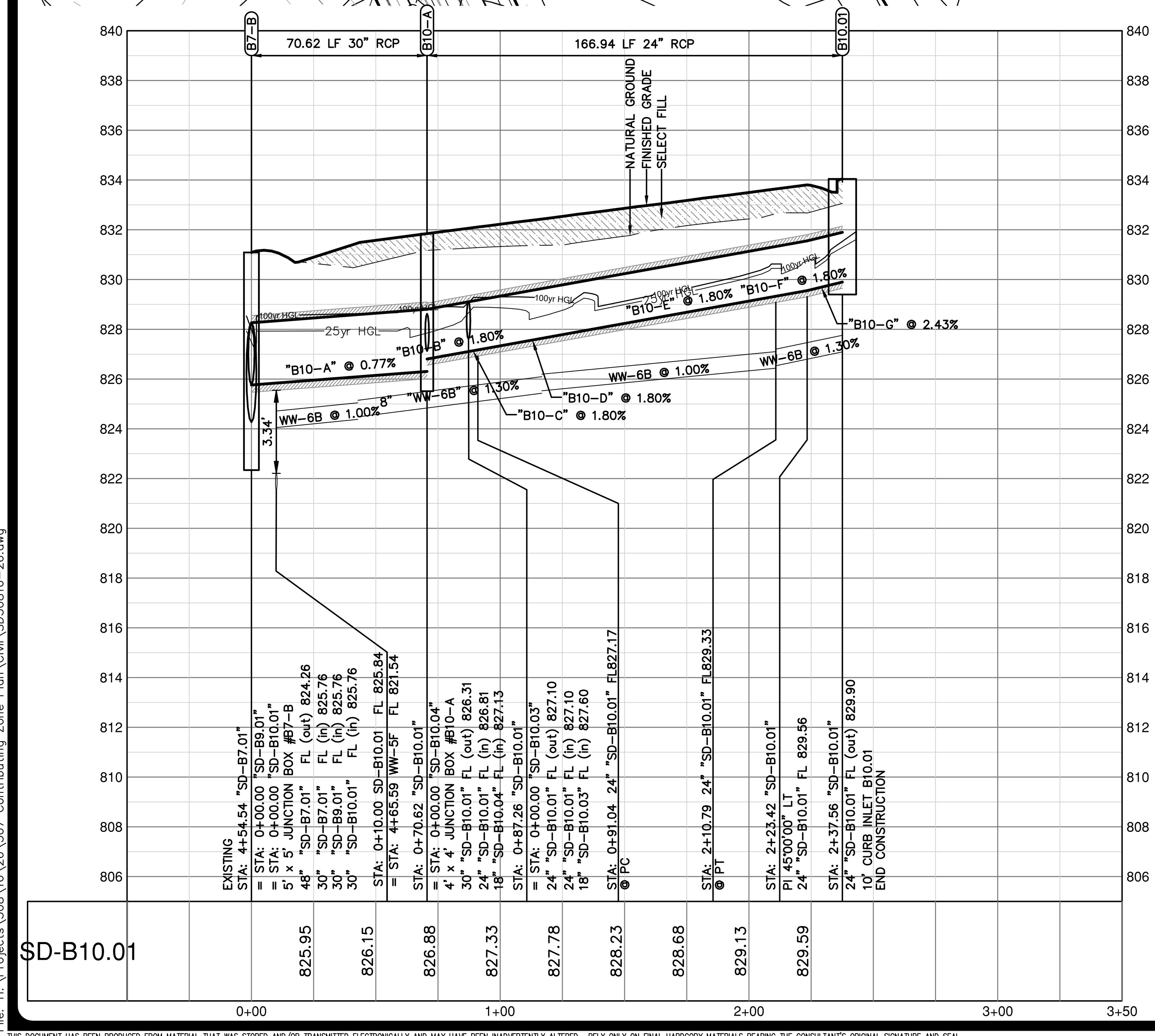

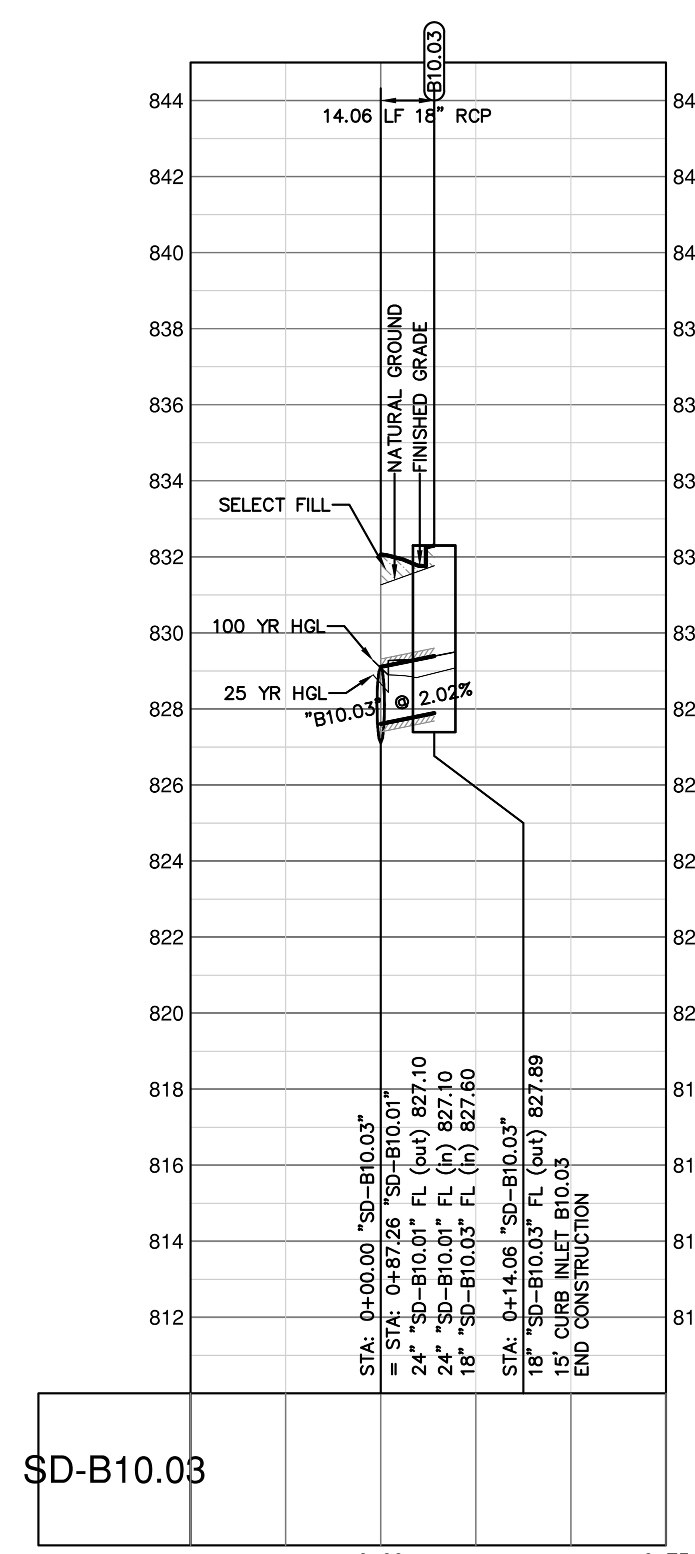

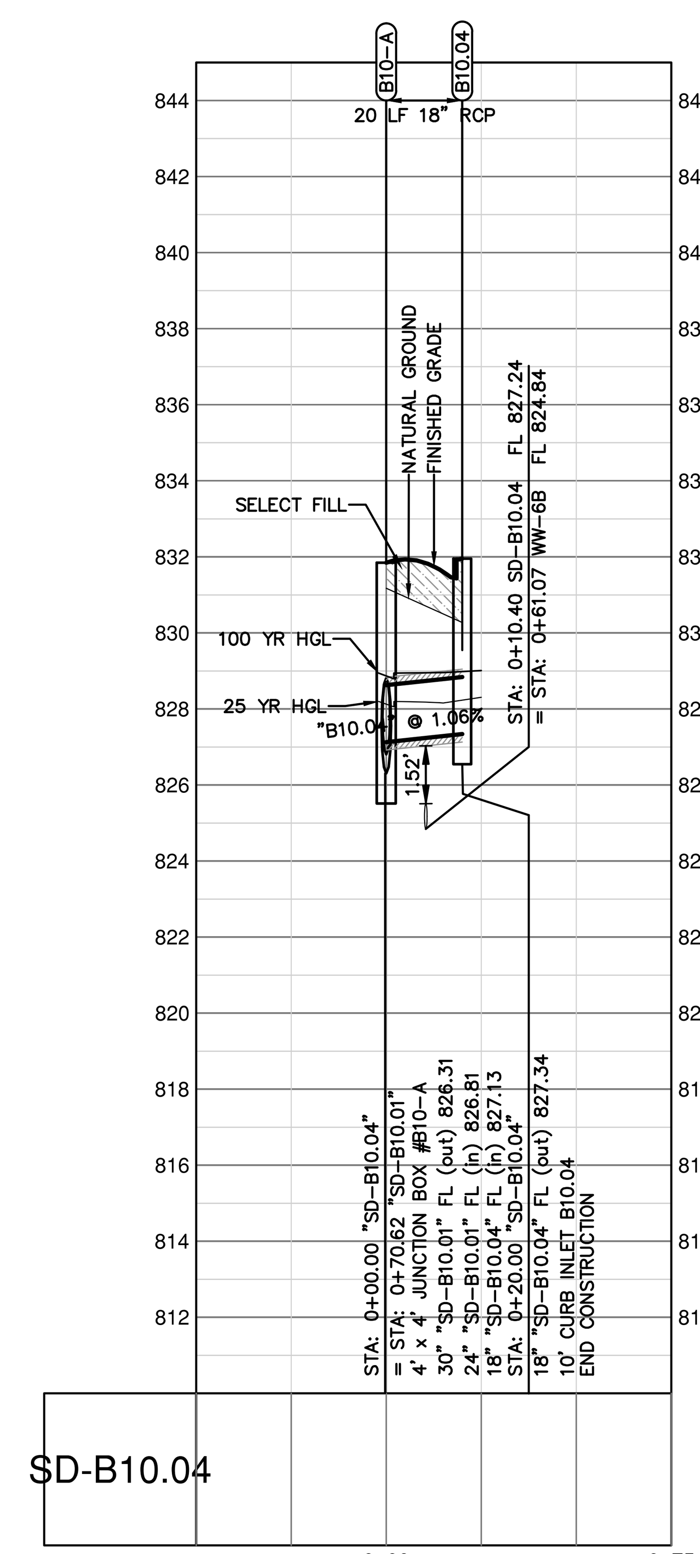

PROFILE SCALES:

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PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

SUBGRADE

PROPOSED STORM DRAIN

25-YR HGL

100-YR HGL

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C3	305.00'	022°29'47"	N77°53'20"E	118.99'	119.75'

CITY OF LEANDER APPROVAL

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

PHASE 6 STORM DRAIN
SD 10.01 & LATERALS B10.03-B10.04

PAPE-DAWSON ENGINEERS

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STATE OF TEXAS
DUSTIN J. GOSS
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LICENSED PROFESSIONAL ENGINEER
04/11/2025

NO.	REVISION	DATE

CITY JOB No. -------
JOB NO. 50816-26
DATE APRIL 2025
DESIGNER RBB
CHECKED TCK DRAWN DY/SL

Date: Apr 09, 2025, 4:09pm User ID: dyoder
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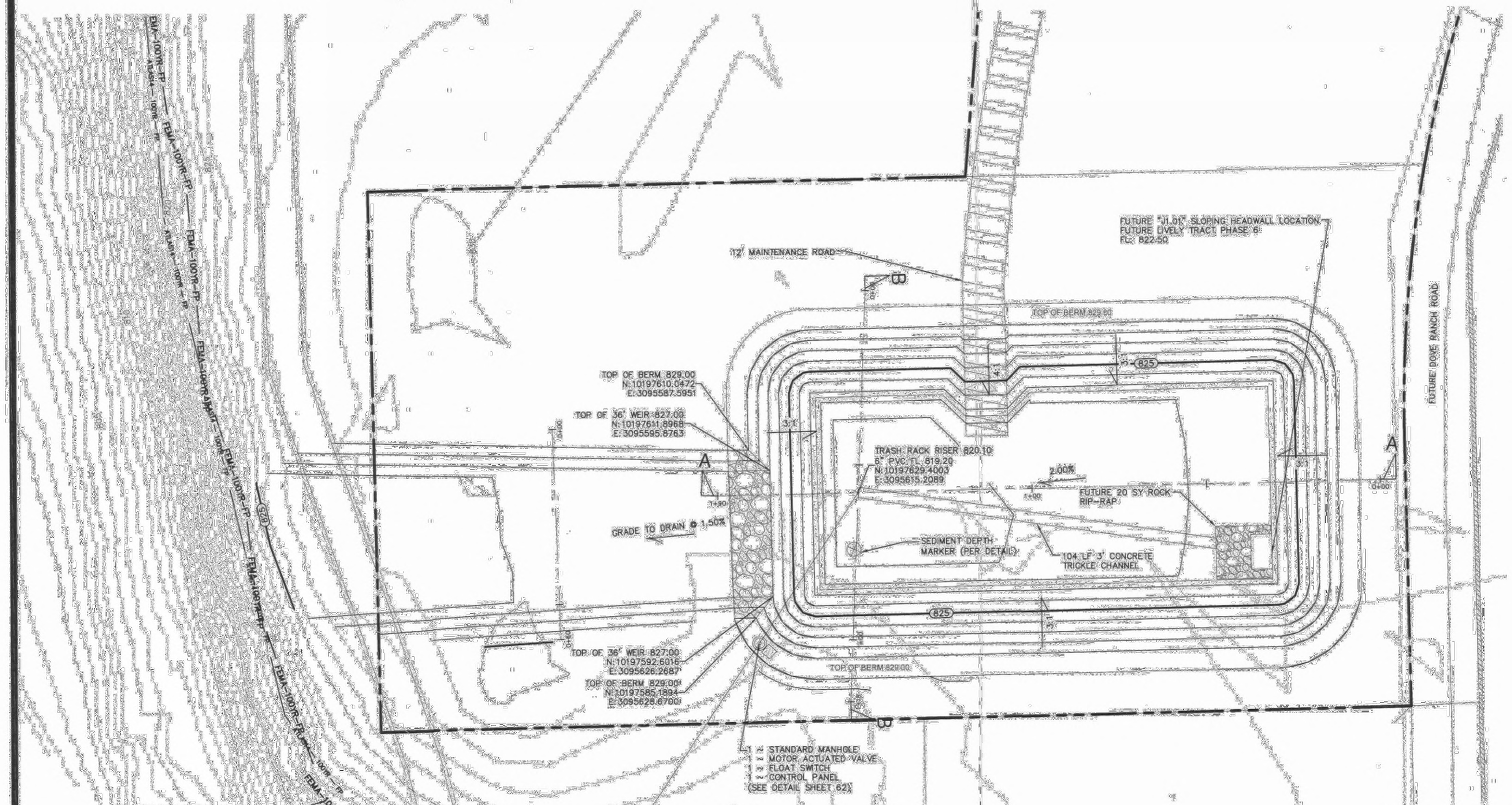
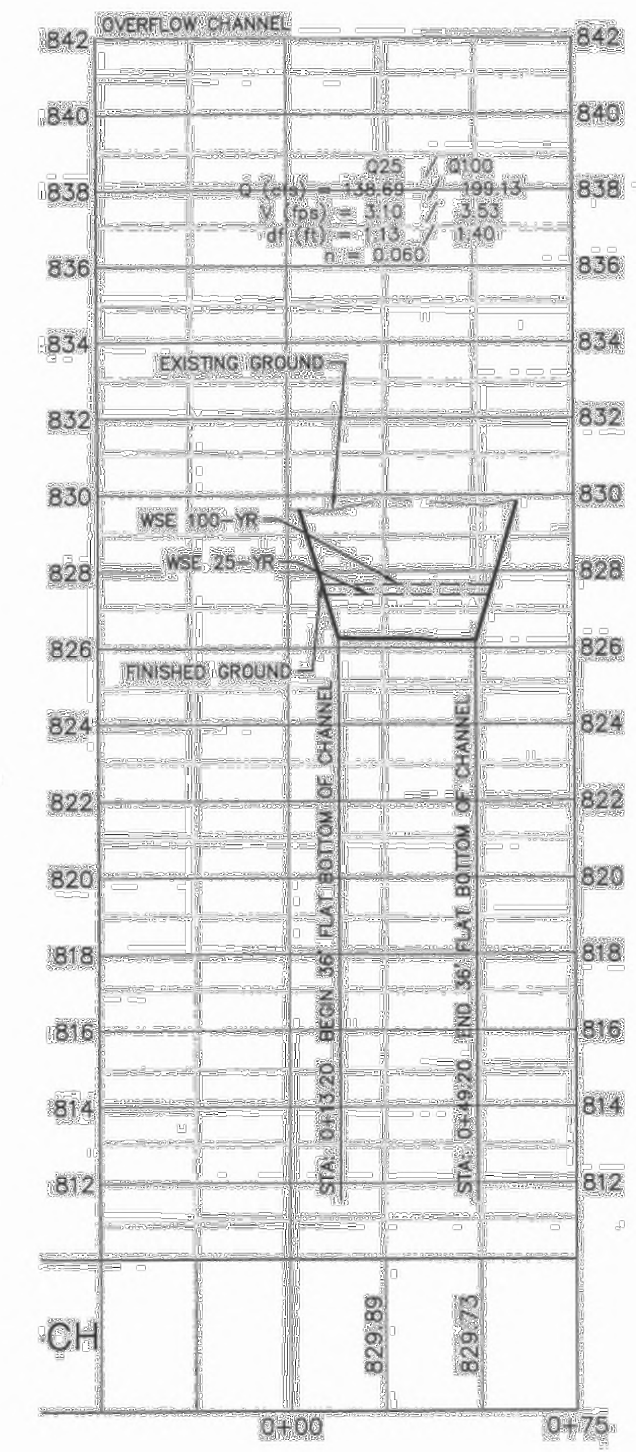
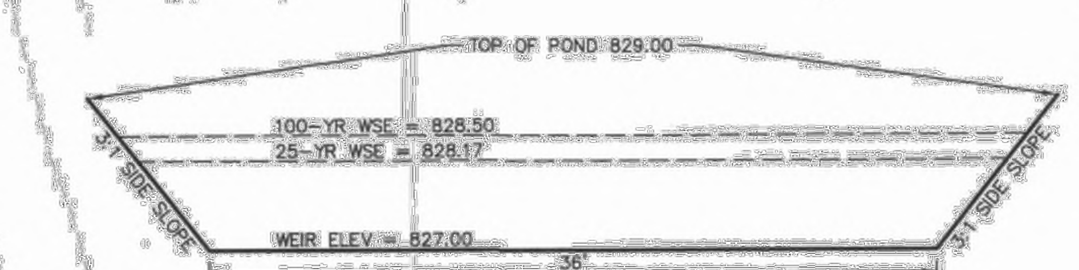
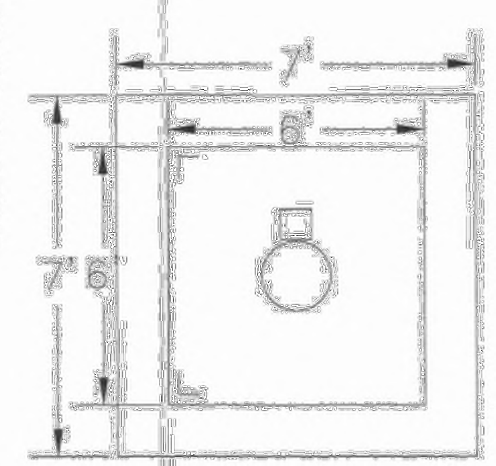






OVERFLOW WEIR SECTION VIEW DETAIL

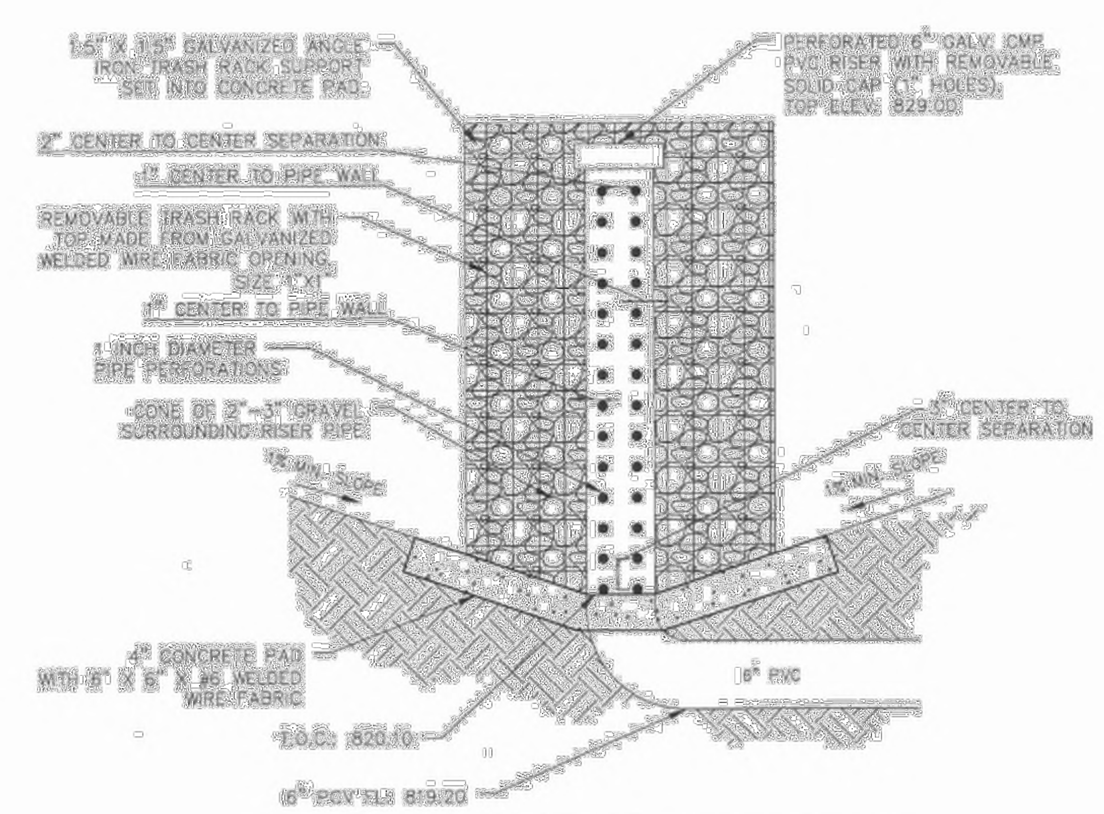
NTS



INTAKE RISER PLAN VIEW DETAIL

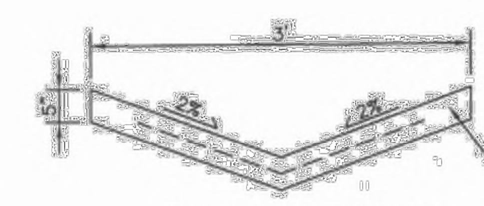
NTS

NOTE:
INTAKE RISER TO BE USED AS TEMPORARY SEDIMENT BASIN DEWATERING OUTLET DURING INTERIM CONSTRUCTION ACTIVITIES.



INTAKE RISER SECTION VIEW DETAIL

NTS



CONCRETE TRICKLE CHANNEL DETAIL

N.T.S.

CLASS "A" CONCRETE W/ 6X6X#6 W.W.F. PROVIDE TOOLED JOINTS @ 10' O.C. WITH DOWELS AND EXPANSION JOINTS @ 40' O.C.

NOTE: CONCRETE TRICKLE CHANNEL IS NOT SUBJECT TO DECORATIVE REQUIREMENTS FOR EXPOSED CONCRETE.

SCALE: 1"=20'

0' 20' 40' 60'

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL RCP IS CLASS III UNLESS OTHERWISE NOTED.
3. EXISTING CONTOUR INFORMATION SHOWN HERE ON THIS PLAN SHEET ARE SHOWN AT ONE (1) FOOT INTERVALS. THEY ARE COMPUTER GENERATED USING CITY OF LEANDER DATA.
4. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALATION.
5. EXPOSED CONCRETE THAT IS VISIBLE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE INCLUDING BUT NOT LIMITED TO LEDGESTONE, FIELDSTONE, CAST STONE, OR OTHER DECORATIVE MATERIALS SUCH AS STAMPED AND TINTED CONCRETE THAT RESEMBLES STONE OR BRICK. THE CONCRETE TRICKLE CHANNEL IS NOT SUBJECT TO THIS REQUIREMENT.

FEMA-100YR-FP — FEMA 100-YR FLOODPLAIN

ATLAS-14 100-YR FLOODPLAIN

PROFILE SCALES:

1" = 40' HORIZONTAL

1" = 4' VERTICAL

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

SUBGRADE

PROPOSED STORM DRAIN

25-YR HGL

100-YR HGL

Drawdown Time	
Water Quality Volume (ft^3) =	58,222
Outlet Pipe Diameter (in) =	6.00
Outlet Pipe Diameter (ft) =	0.50
Outlet Pipe Area (ft^2) =	0.20
Average Head (ft) =	1.20
Coefficient =	0.60
Q_{outlet} (cfs) =	1.04
Maximum Required Drawdown Time (hr) =	48.00
Drawdown Time (hr) =	15.58

Trapezoidal Weir Spillway	
Elevation (ft) =	827.00
Length (ft) =	36.00
Coefficient =	3.00

Overflow By WSE		
WSE (ft)	Flow (cfs)	Notes
827.00	0.00	
827.10	3.42	
827.60	50.19	
828.10	124.6	
828.17	138.69	25-yr Overflow
828.50	199.13	100-yr Overflow
828.60	218.58	
829.0	305.47	

Lively Tract, Phase 4 - Pond J Batch					
Elevation	Area (ft^2)	Area (ac)	Incremental Volume (ft^3)	Cumulative Volume (ft^3)	Notes
820.1	0.00	0.000000	-	-	
821.1	2,589.33	0.059443	1,295	1,295	
822.1	5,747.80	0.131951	5,748	7,042	
822.5	7,150.00	0.164141	6,818	13,860	
823	7,714.00	0.177089	3,716	17,576	
824	8,888.27	0.204047	8,301	25,877	
825	10,119.10	0.232303	9,504	35,381	
826	11,406.47	0.261857	10,763	46,144	
827	12,750.39	0.292709	12,078	58,222	Water Quality Volume
828	14,150.86	0.324859	36,405	94,627	
829	15,607.88	0.358308	14,879	109,506	Top of Pond

APPROVED

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

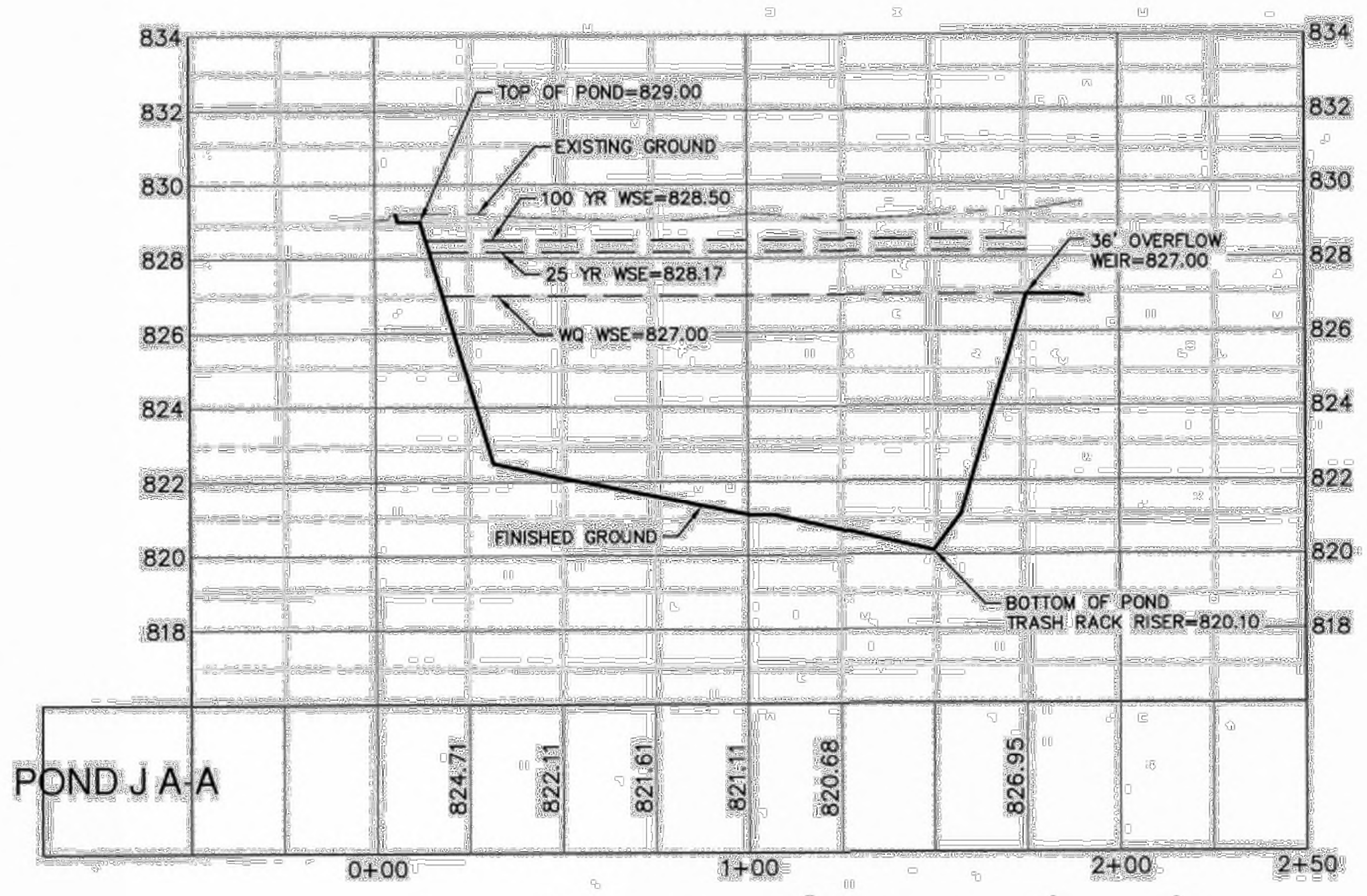
LIVELY TRACT, PHASE 4

CITY OF LEANDER, TEXAS

WATER QUALITY POND J PLAN

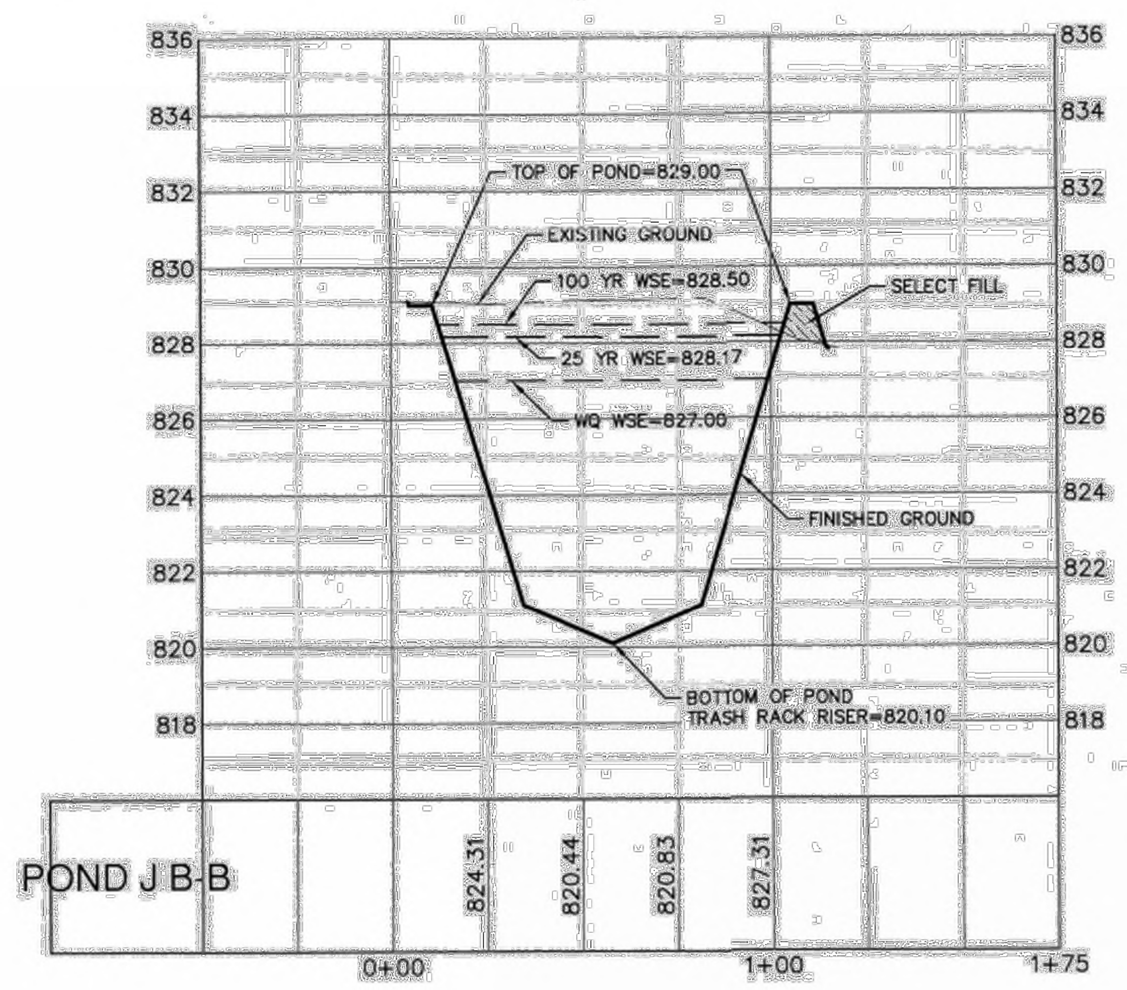
CITY JOB NO.	21-PICP-027
JOB NO.	50816-23
DATE	MAY 2022
DESIGNER	RBB
CHECKED PS	DRAWN RBB
SHEET	70 of 83

21-PICP-027



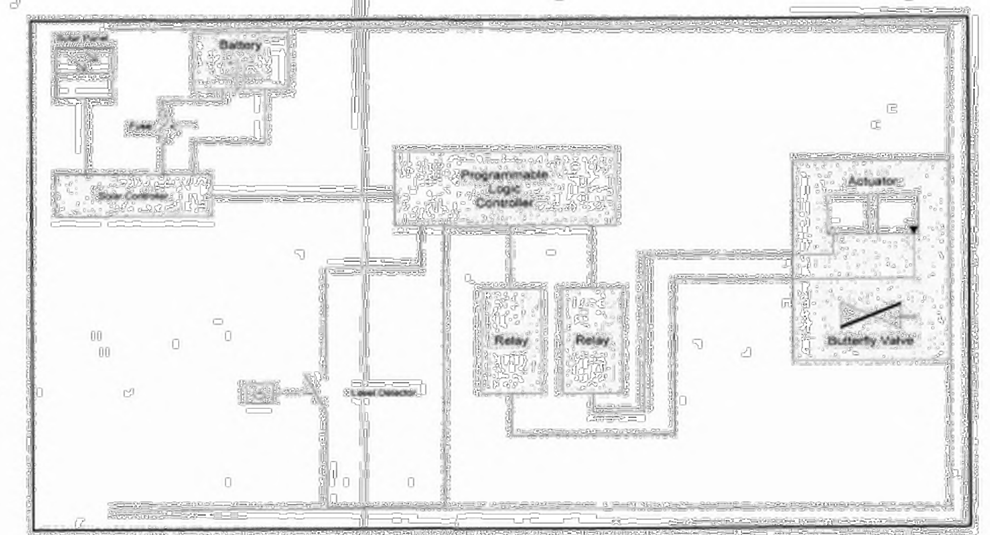
POND J SECTION A–A

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



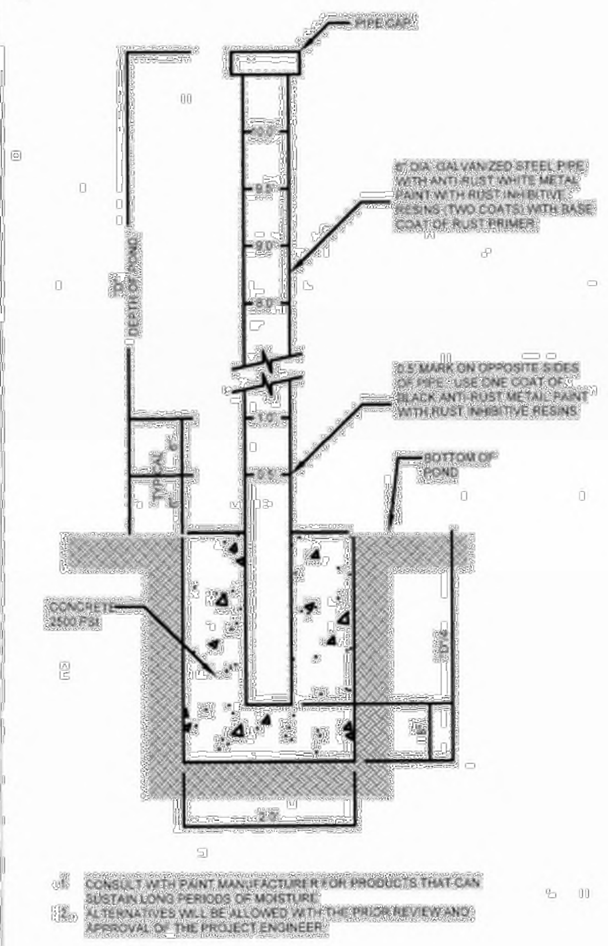
POND J SECTION B–B

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



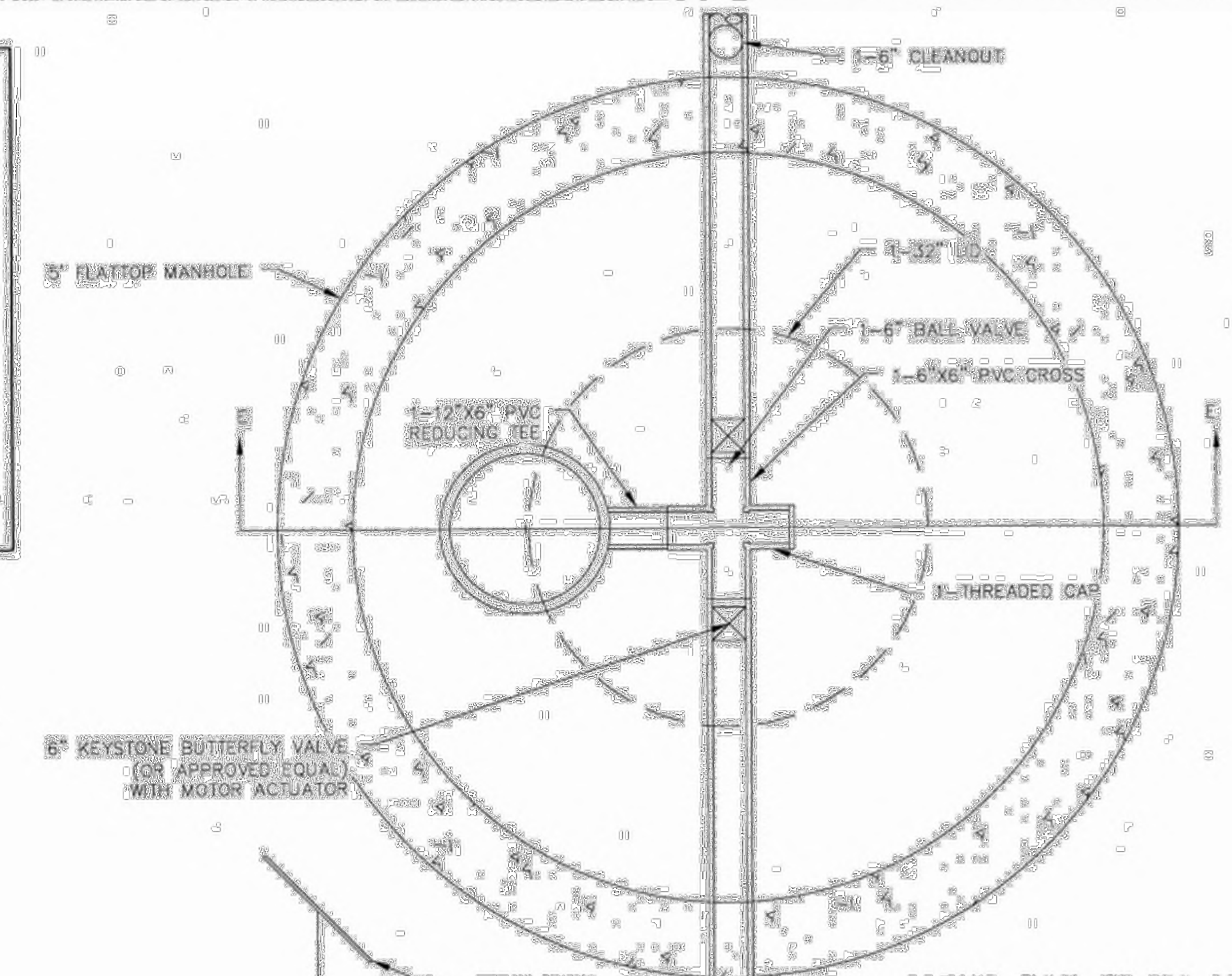
CONTROLLER CIRCUIT DIAGRAM

CONTROLLER NOTES:
1. CLEARLY VISIBLE ALARM SYSTEM TO BE PROVIDED TO INDICATE SYSTEM MALFUNCTION.
2. SIGN TO BE POSTED WITH PHONE NUMBERS OF THE OWNER AND APPROPRIATE TCEQ REGIONAL OFFICE.



POND DEPTH MARKER

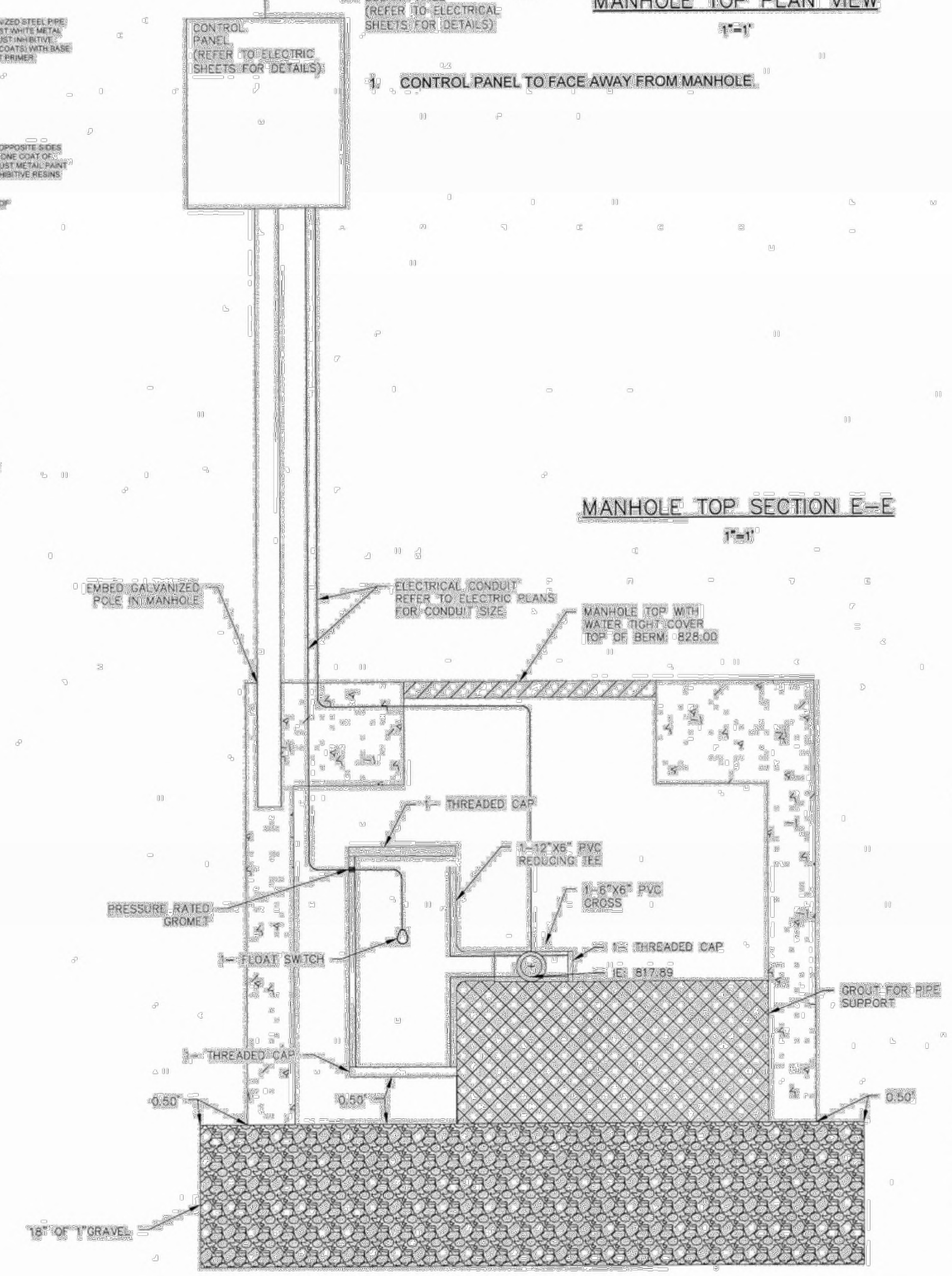
1"=1'



MANHOLE TOP PLAN VIEW

1"=1'

1. CONTROL PANEL TO FACE AWAY FROM MANHOLE.



MANHOLE TOP SECTION E–E

1"=1'

Batch Detention Pond Controller Information		
Component	Description	Voltage
Power System	Solar Charged 12 VDC Battery (Model MK Powered 8GU1) (Or approved equal)	
Logic Controller	IDEC FL1C-H12RCE (Or approved equal)	12
Parts Enclosure	Southwest Photovoltaic Model BBG-1 (15.75" wide x 9.75" deep x 11.75" tall) (Or approved equal)	
Nature of Event Sensing	Anchor Scientific Float Switch(Or approved equal)	
Valve Type	Keystone 6" Butterfly Valve with over torque sensors and mechanical hand crank for physical override if necessary. Able to withstand 100 psi minimum. (Or approved equal)	
Actuator	EPI-6 12 VDC. Able to withstand 100 psi minimum. (Or approved equal)	12
Power Consumption (actuator, controller, relay, PLC)	242.58 W, 46.5 W-hours	

CITY OF LEANDER APPROVAL

NO. | REVISION | DATE

DUSTIN J. GOSS 05/09/2022

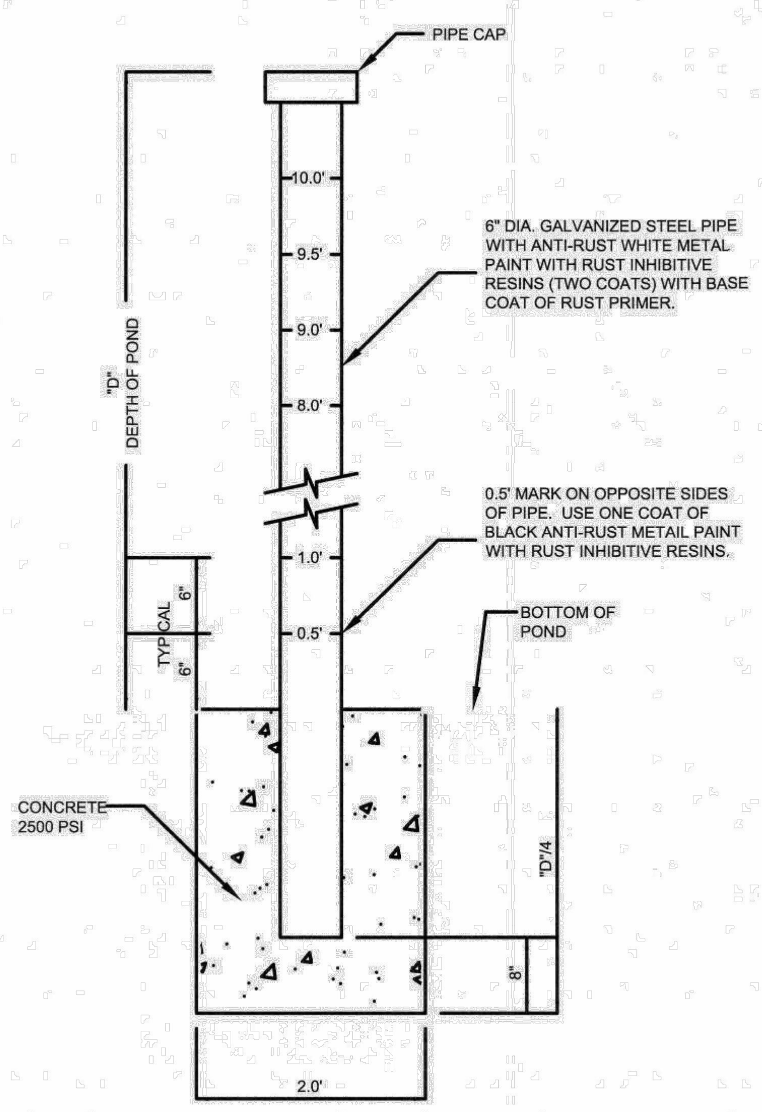
PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

LIVELY TRACT, PHASE 4
CITY OF LEANDER, TEXAS

WATER QUALITY
POND J DETAILS

CITY JOB No. 21-PICP-027
JOB NO. 50816-23
DATE MAY 2022
DESIGNER RBB
CHECKED PS DRAWN RBB
SHEET 71 of 83



1. CONSULT WITH PAINT MANUFACTURER FOR PRODUCTS THAT CAN SUSTAIN LONG PERIODS OF MOISTURE.
2. ALTERNATIVES WILL BE ALLOWED WITH THE PRIOR REVIEW AND APPROVAL OF THE PROJECT ENGINEER.

POND DEPTH MARKER

1" : 1'

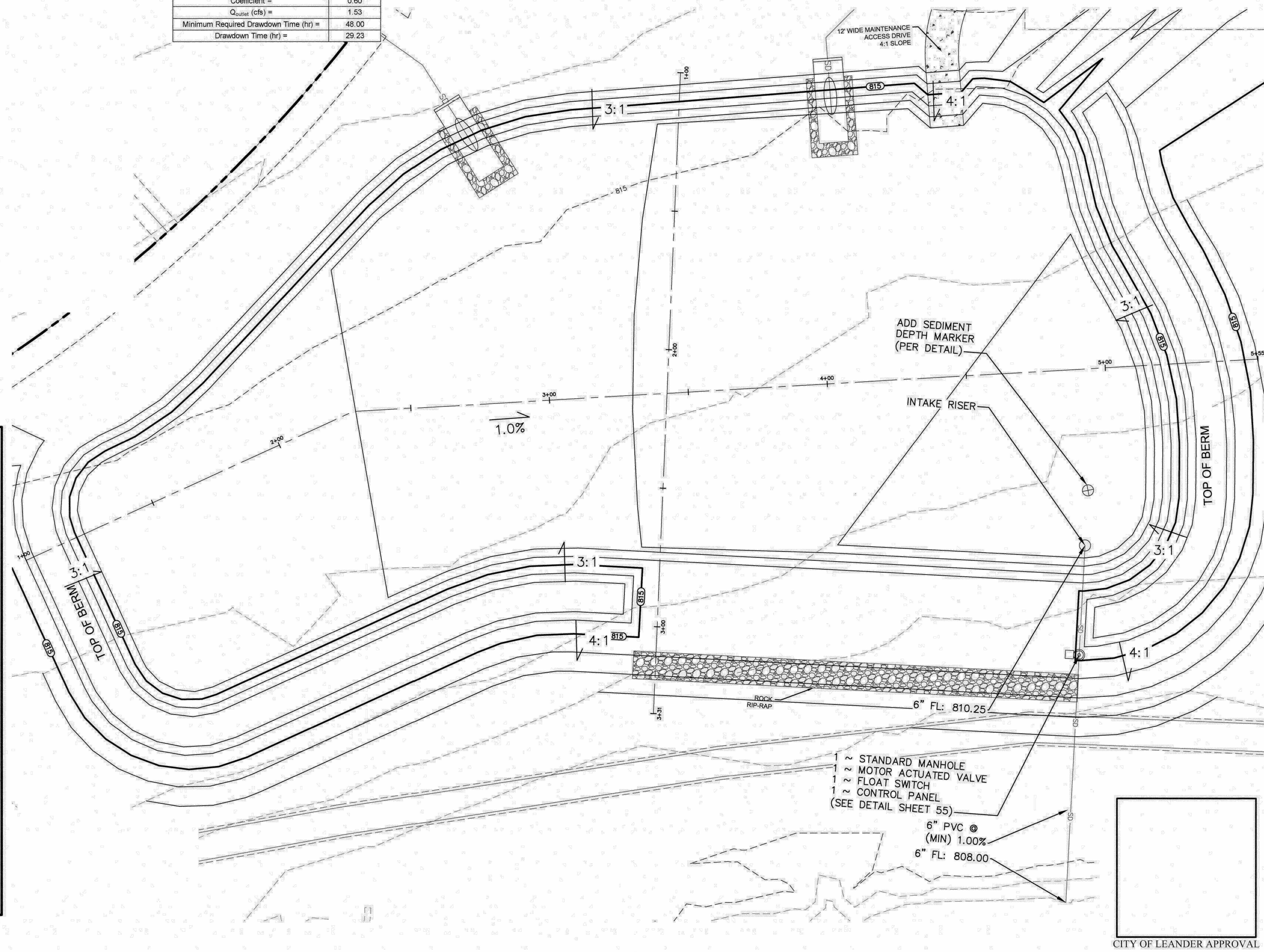
Spillway	
Elevation (ft) =	815.00
Length (ft) =	160.00
Coefficient =	3.00

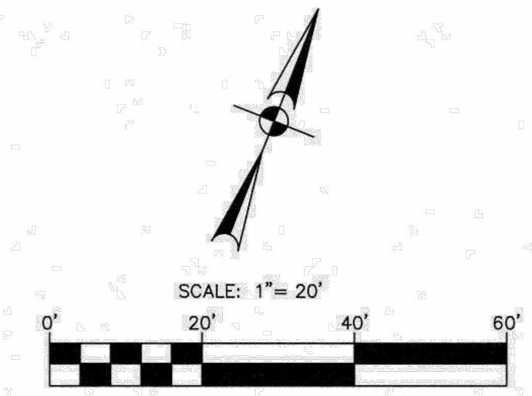
Drawdown Time	
Water Quality Volume (ft^3) =	161,181
Outlet Pipe Diameter (in) =	6.00
Outlet Pipe Diameter (ft) =	0.50
Outlet Pipe Area (ft^2) =	0.20
Average Head (ft) =	2.63
Coefficient =	0.60
Q_{outlet} (cfs) =	1.53
Minimum Required Drawdown Time (hr) =	48.00
Drawdown Time (hr) =	29.23

Lively Tract, Phase 2-Pond H-Batch

Elevation	Area (ft^2)	Area (ac)	Incremental Volume (ft^3)	Cumulative Volume (ft^3)	Notes
810.5	705.36	0.016193	-	-	
811	7,187.74	0.165008	1,973	1,973	
812	27,125.12	0.622707	17,156	19,130	
813	43,391.36	0.996129	35,258	54,388	
814	55,695.29	1.278588	49,543	103,931	
815	58,803.52	1.349943	57,249	161,181	Water Quality Volume
816	61,958.81	1.422379	60,381	221,562	
817	65,150.47	1.495649	63,555	285,116	
817.5	75,676.50	1.737293	35,207	320,323	Top of Pond

SCALE: 1"= 20'





Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009
Ultimate Buildout

Project Name: Lively Tract, Phase 2 Modified CZP
Date Prepared: 3/26/2025

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

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project
County = Williamson
Total project area included in plan * = 120.60 acres
Predevelopment impervious area within the limits of the plan * = 0.00 acres
Total post-development impervious area within the limits of the plan * = 63.15 acres
Total post-development impervious cover fraction * = 0.52
P = 32 inches

$L_{M\ TOTAL\ PROJECT}$ = 54,966 lbs.
* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = H Ultimate Condition

Total drainage basin/outfall area = 81.10 acres
Predevelopment impervious area within drainage basin/outfall area = 0.00 acres
Post-development impervious area within drainage basin/outfall area = 43.35 acres
Post-development impervious fraction within drainage basin/outfall area = 0.53
$L_{M\ THIS\ BASIN}$ = 37,732 lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention Pond
Removal efficiency = 91 percent MANUALLY ADJUSTED

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

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

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

A_C = 81.10 acres
A_I = 43.35 acres
A_P = 37.75 acres
L_R = 44,271 lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 37,732 lbs.

F = 0.85

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

Rainfall Depth = 1.32 inches
Post Development Runoff Coefficient = 0.38
On-site Water Quality Volume = 146613 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 = 29323
Total Capture Volume (required water quality volume(s) x 1.20) = 175936 cubic feet

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
4/8/25

NO. | REVISION | DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
3/8/19

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

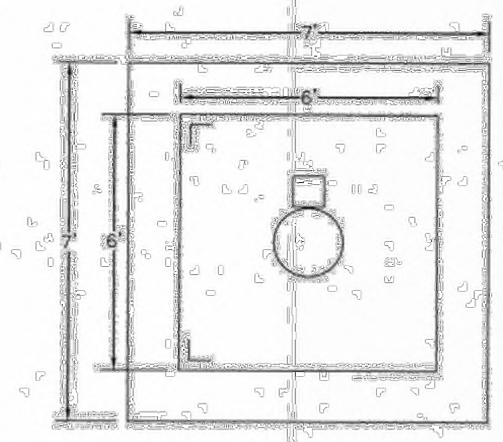
LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

WATER QUALITY POND H PLAN

CITY OF LEANDER APPROVAL

CITY JOB No. -
JOB NO. 50816-21
DATE MARCH 2019
DESIGNER RBB
CHECKED ___ DRAWN TK

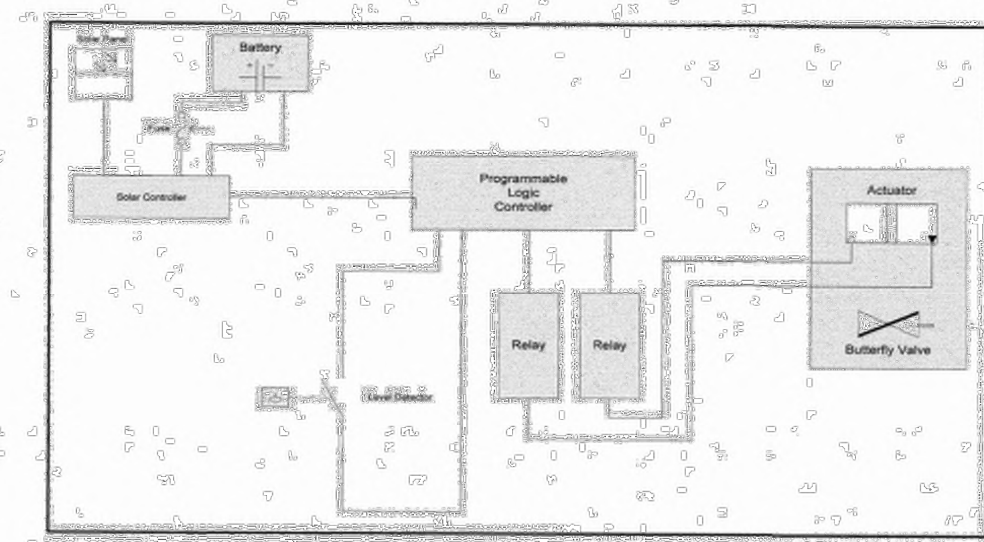
Date: Mar 06, 2019, 8:36am User ID: JAlfonso
File: C:\Users\JAlfonso\appdata\local\temp\AcPublish_2868\PD50816-21.dwg



INTAKE RISER PLAN VIEW DETAIL

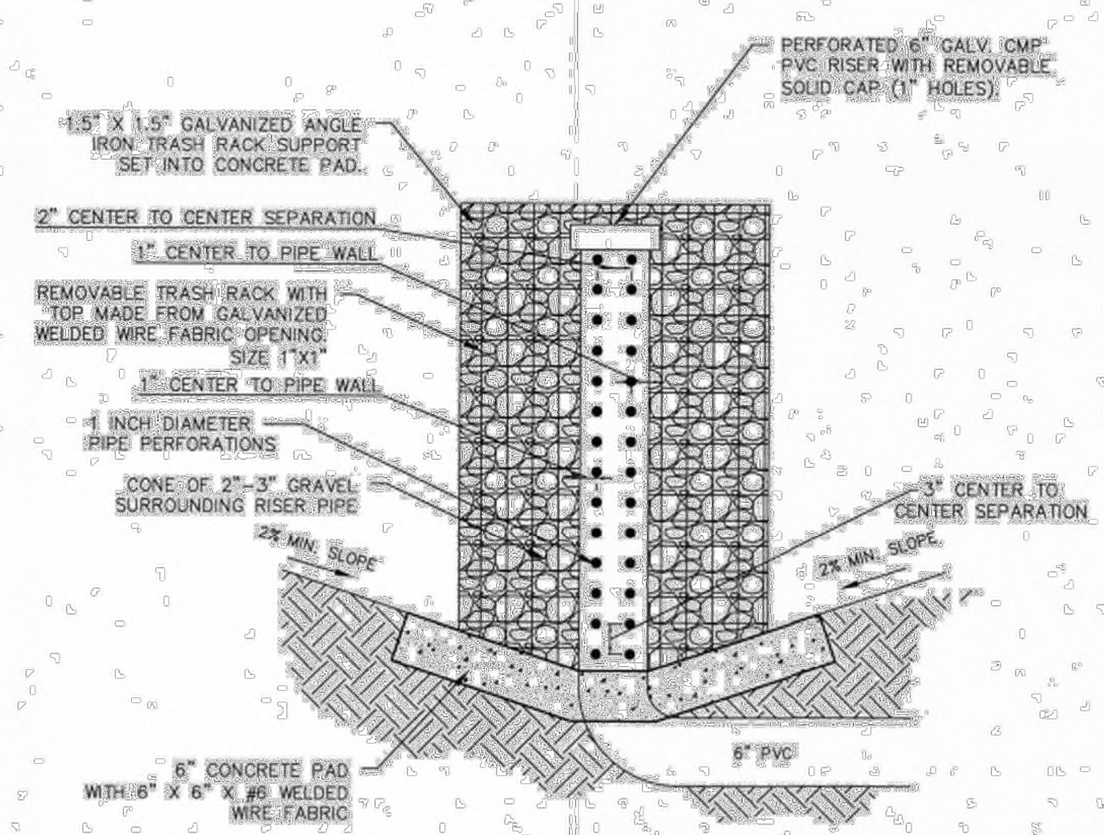
NTS

NOTE:
INTAKE RISER TO BE USED AS TEMPORARY SEDIMENT BASIN DEWATERING OUTLET DURING INTERIM CONSTRUCTION ACTIVITIES.



CONTROLLER CIRCUIT DIAGRAM

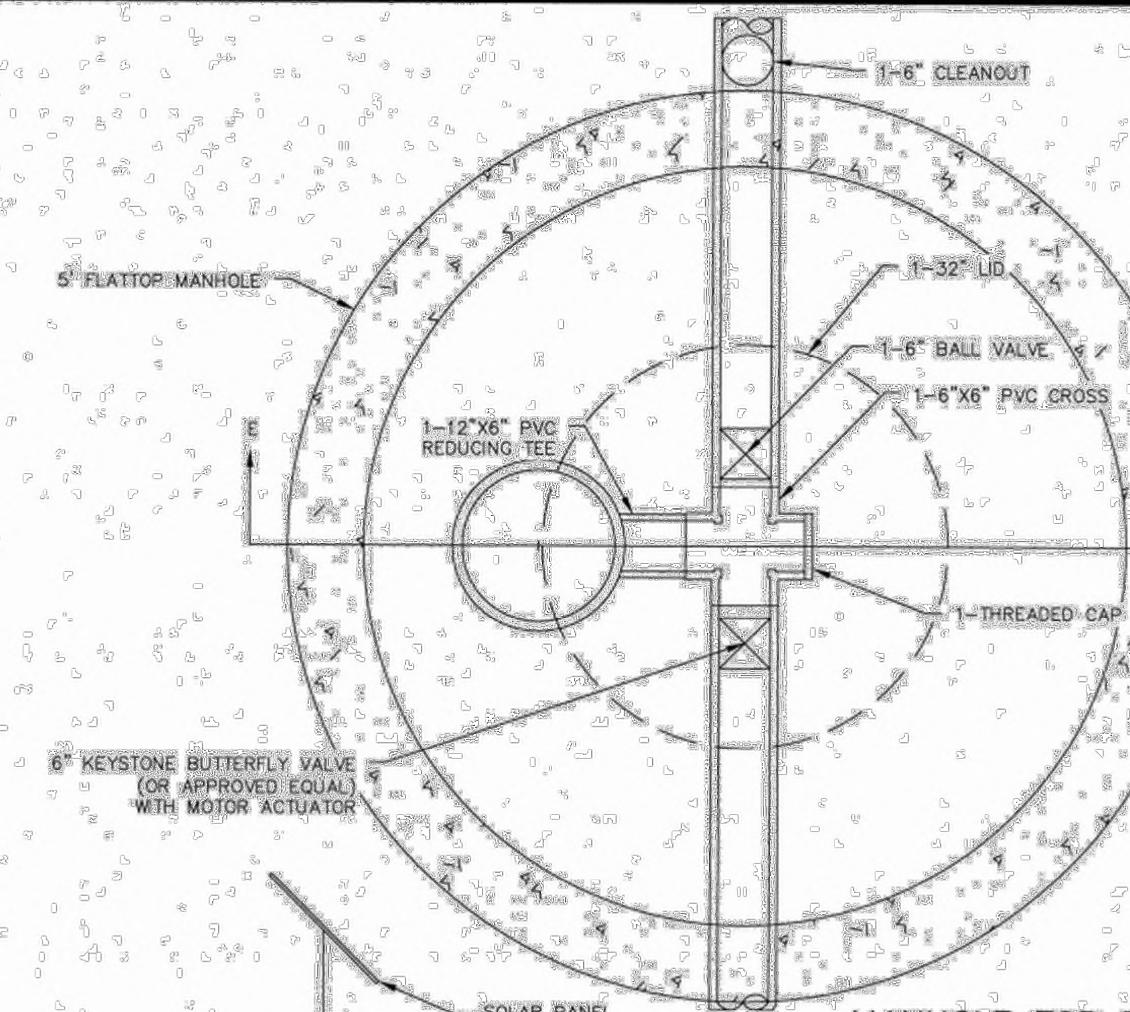
CONTROLLER NOTES:
1. REFER TO THE WATER POLLUTION ABATEMENT PLAN FOR LOGIC CONTROLLER CYCLE OVERVIEW.
2. CLEARLY VISIBLE ALARM SYSTEM TO BE PROVIDED TO INDICATE SYSTEM MALFUNCTION.
3. SIGN TO BE POSTED WITH PHONE NUMBERS OF THE OWNER AND APPROPRIATE TCEQ REGIONAL OFFICE.



INTAKE RISER SECTION VIEW DETAIL

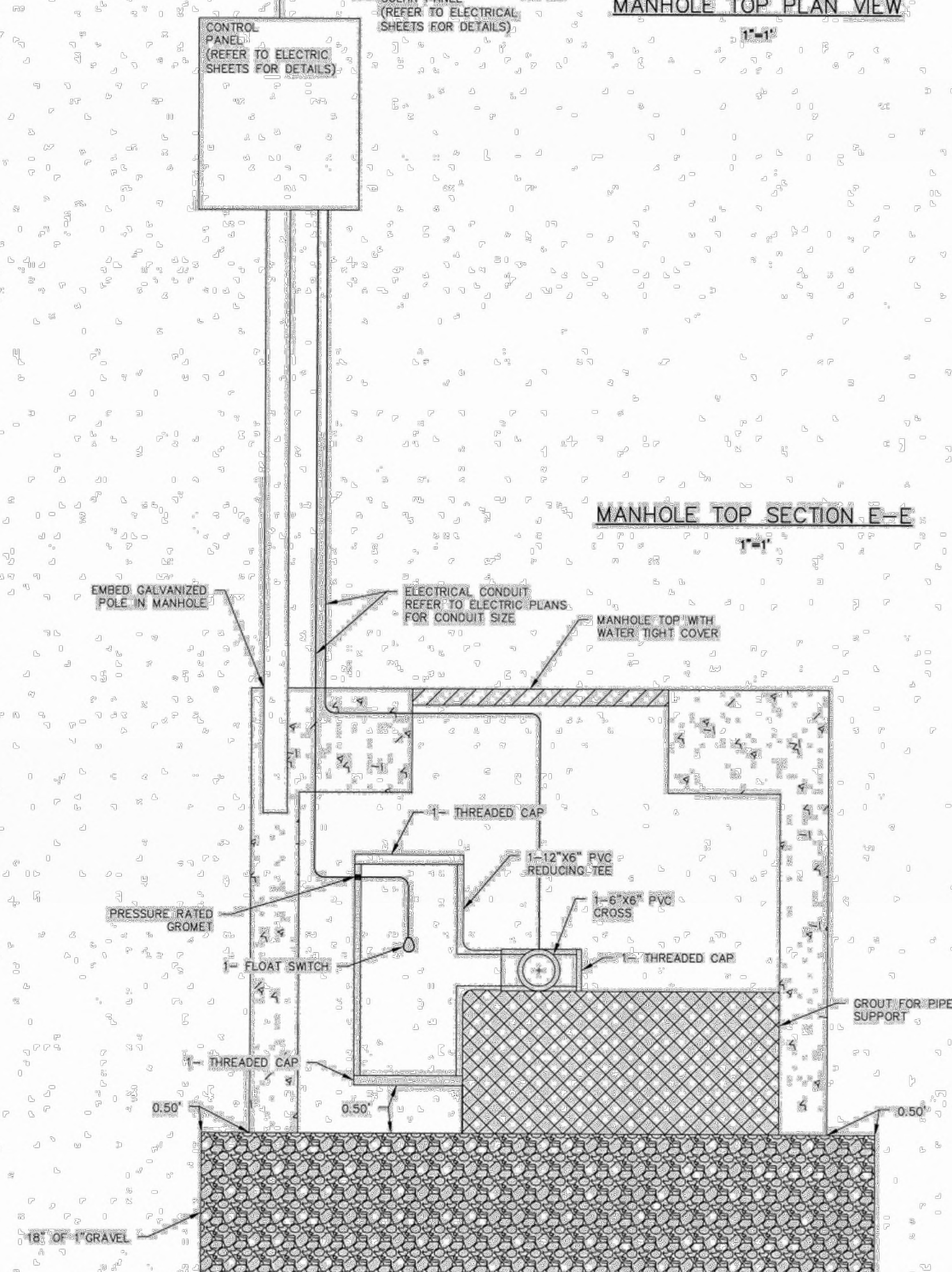
NTS

Batch Detention Pond Controller Information		
Component	**Description**	**Voltage**
Power System	Solar Charged 12 VDC Battery (Model MK Powered 8GU1) (Or approved equal)	
Logic Controller	IDEC FL1C-H12RCE (Or approved equal)	12
Parts Enclosure	Southwest Photovoltaic Model BBG-1 (15.75" wide x 9.75" deep x 11.75" tall) (Or approved equal)	
Nature of Event Sensing	Anchor Scientific Float Switch(Or approved equal)	
Valve Type	Keystone 4" Butterfly Valve with over torque sensors and mechanical hand crank for physical override if necessary. Able to withstand 100 psi minimum. (Or approved equal)	
Actuator	EPI-6 12 VDC. Able to withstand 100 psi minimum. (Or approved equal)	12
Power Consumption (actuator, controller, relay, PLC)	242.58 W, 46.5 W-hours	



MANHOLE TOP PLAN VIEW

1"=1'



MANHOLE TOP SECTION E-E

1"=1'

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED
PROFESSIONAL ENGINEER
3/2/19

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2

CITY OF LEANDER, TEXAS

WATER QUALITY
POND H DETAILS (1 OF 2)

CITY JOB No. -
JOB NO. 50816-21
DATE MARCH 2019
DESIGNER RBB
CHECKED DRAWN TK

Date: Mar 06, 2019, 8:36am User ID: jalfonso
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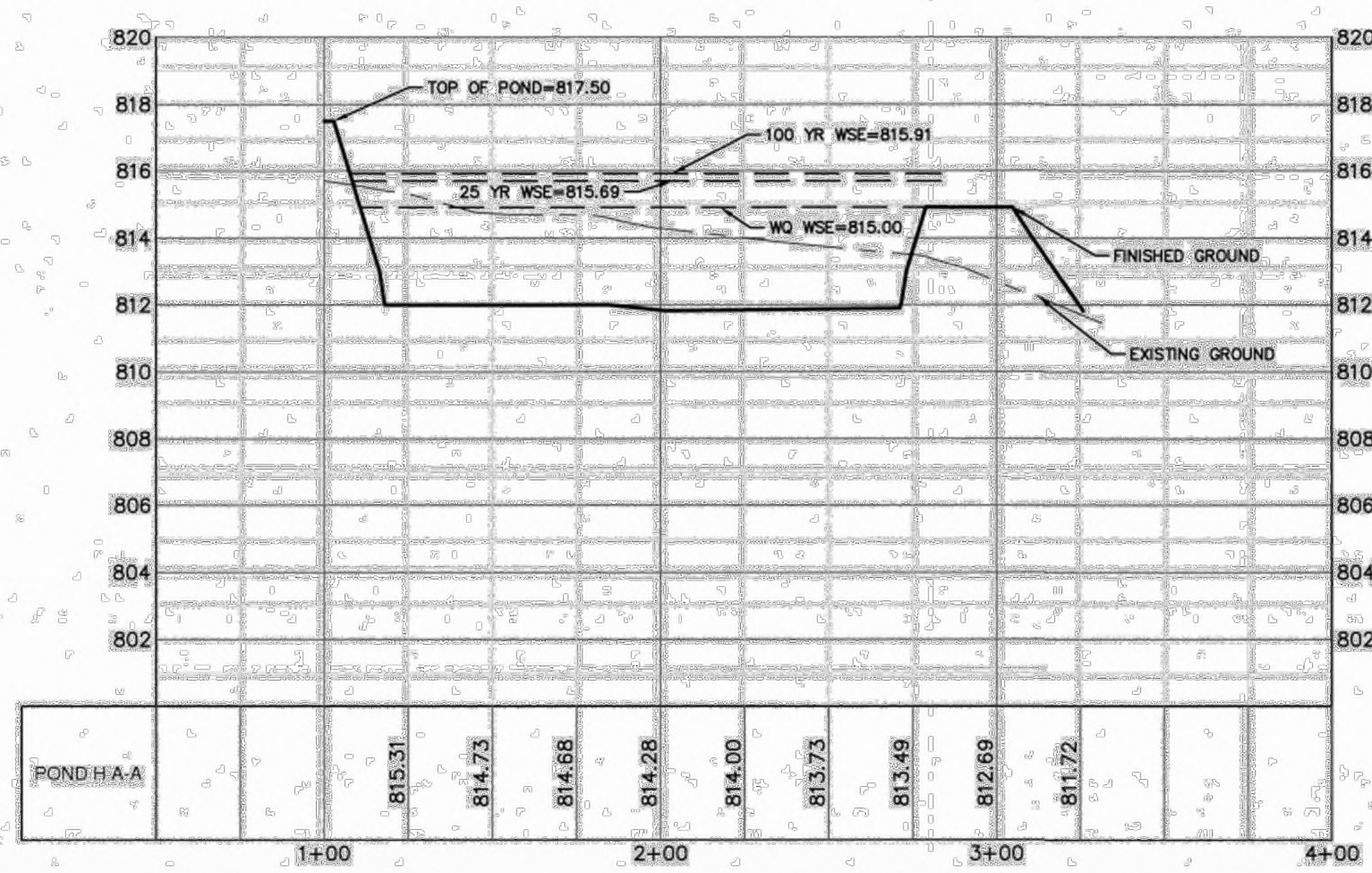
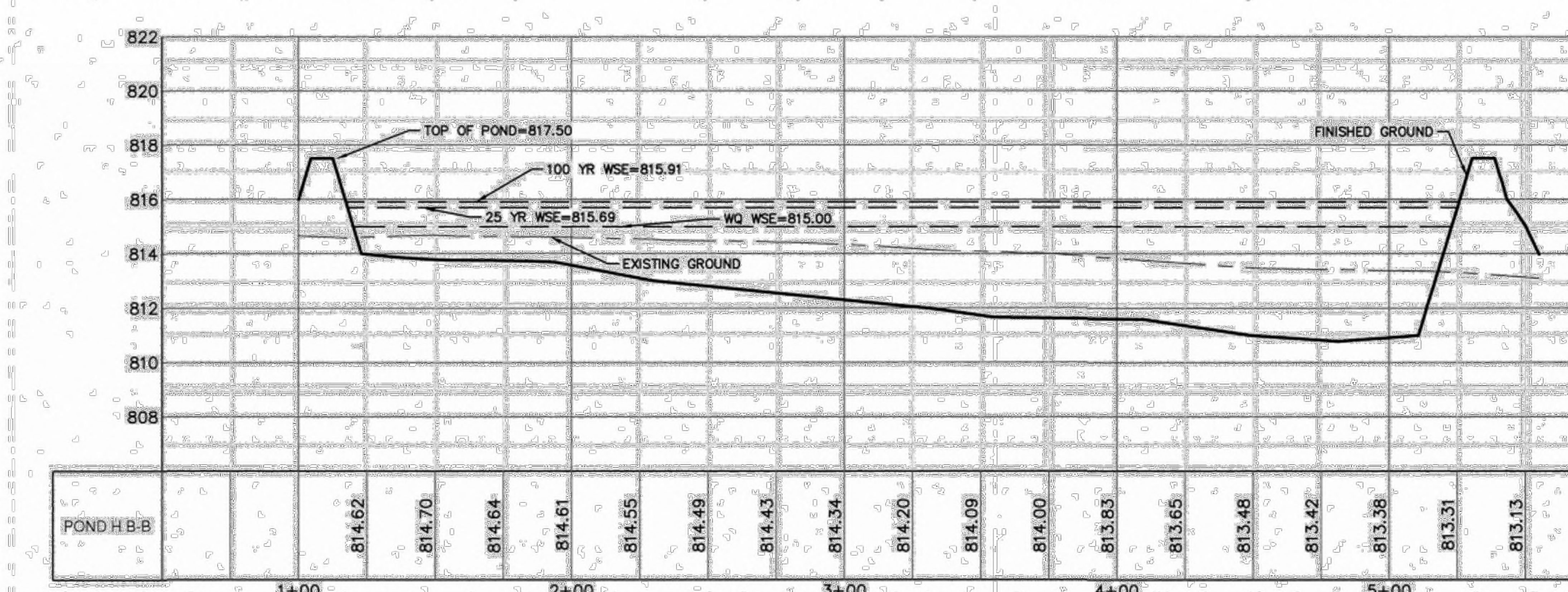


POND H SECTION A–A

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



POND H SECTION B–B

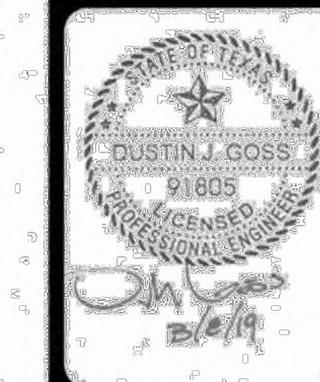
1"=40' HORIZONTAL
1"=4' VERTICAL

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

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

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2
CITY OF LEANDER, TEXAS

WATER QUALITY
POND H DETAILS (2 OF 2)

CITY JOB No. -
JOB NO. 50816-21
DATE MARCH 2019
DESIGNER RBB
CHECKED ____ DRAWN TK

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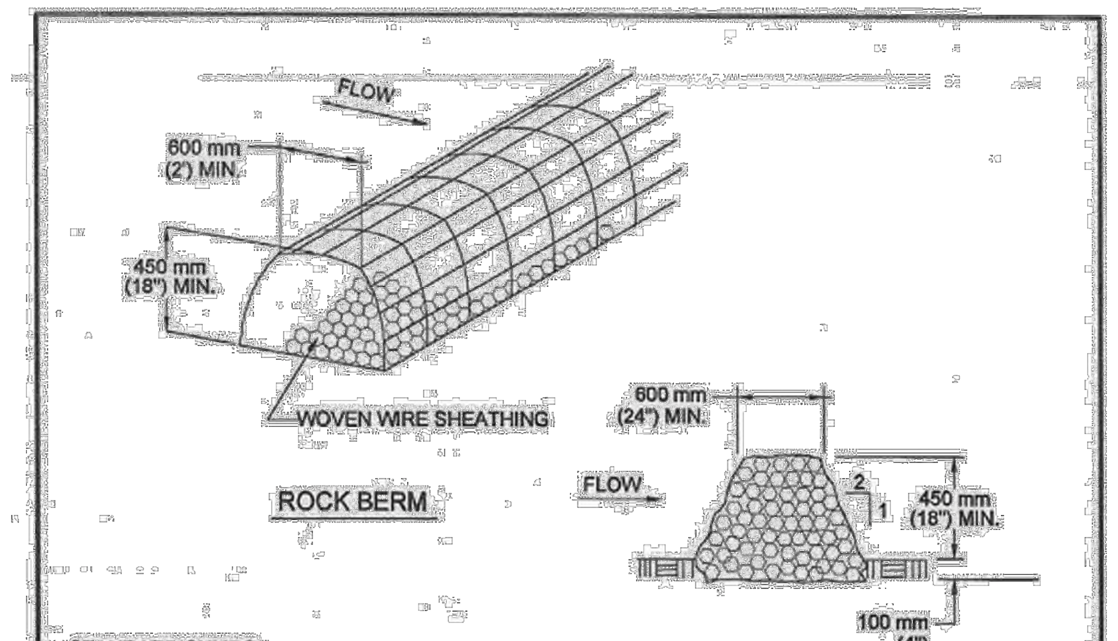


STANDARD SYMBOL FOR ROCK BERM (RB)

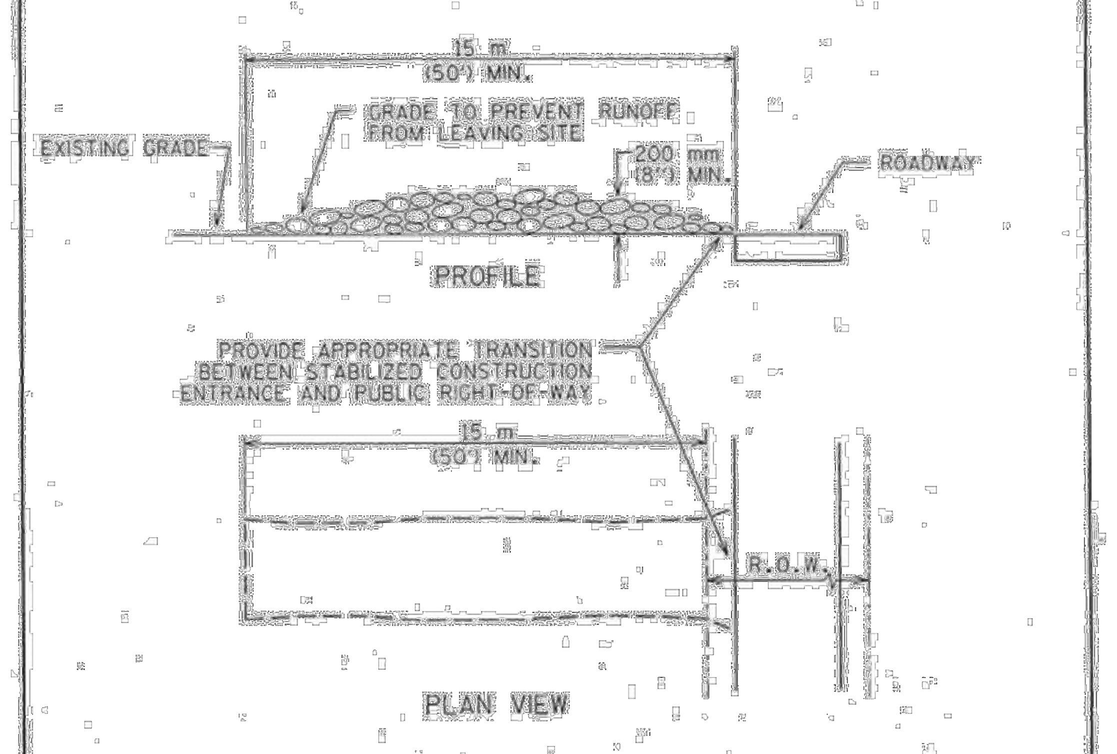
RB

CROSS SECTION

NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS. THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

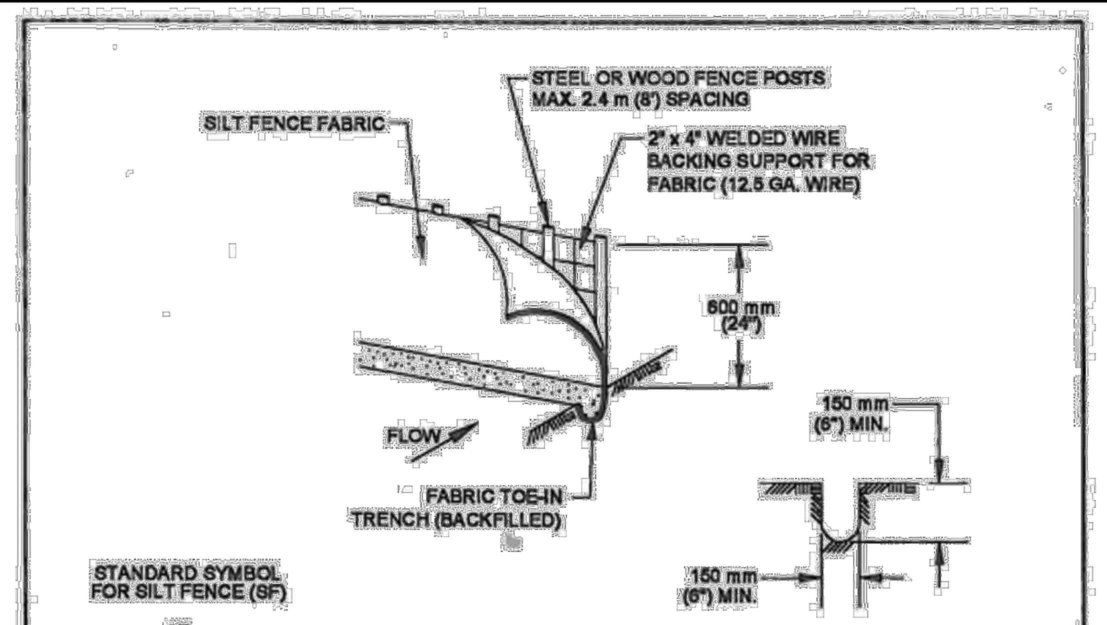
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



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	
5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



STANDARD SYMBOL FOR SILT FENCE (SF)

SF
L=

TRENCH CROSS SECTION

1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 Inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 Inches) DEEP AND 150 mm (6 Inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

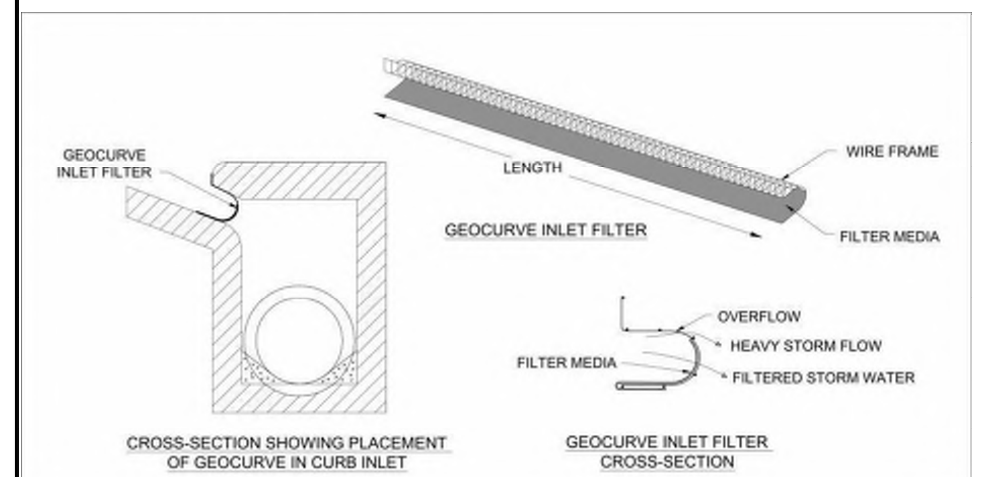
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 Inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

GeoSolutions, Inc. Product Data Sheet
GeoCurve Inlet Filter

The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 12 gauge welded wire frame (2" x 4" openings) with an upper retention flange. The device effectively filters stormwater, can easily be removed for maintenance and cleaning and incorporates an overflow window for heavy storm events.



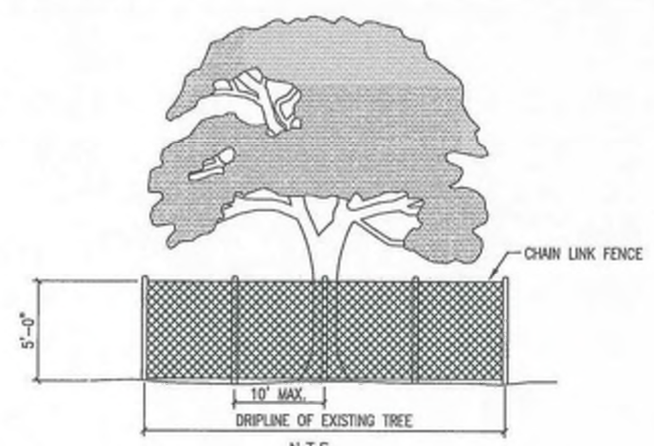
CROSS-SECTION SHOWING PLACEMENT OF GEOCURVE IN CURB INLET

GEOCURVE INLET FILTER CROSS-SECTION

FILTER MEDIA PROPERTIES: Mono-filament Woven Filter Fabric

PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	----
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
UV Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf

GeoSolutions, Inc. 4417 Burleson Road Austin, Texas 78744 512-330-0796



N.T.S.

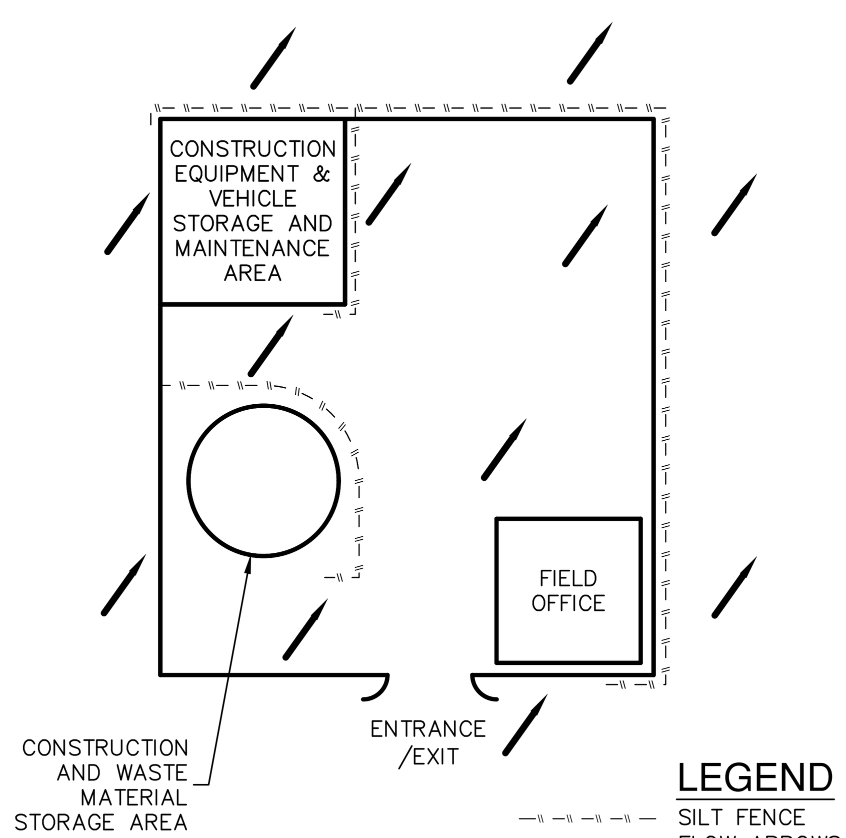
1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6")) CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.
4. CRITICAL ROOT ZONE REQUIREMENTS
   A. NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PRESERVED INCLUDING SIGNIFICANT TREES, HERITAGE TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE CREDITED. THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
   B. THIS DEFINED AREA SHALL BE FLAGGED AND ENCIRCLED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE PLANNING DIRECTOR MAY APPROVE CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (½) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND UNIQUENESS OF THE SITUATION.
   C. CUT OR FILL THAT IS GREATER THAN FOUR (4) INCHES IN DEPTH AND THE SEVERING OF MAJOR ROOTS SHALL BE CONSIDERED DISTURBANCE FOR THE PURPOSES OF THIS ORDINANCE.
   D. WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY FLATWORK, DECKING, OR SIMILAR CONSTRUCTION, MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
   E. IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS SECTION, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

STATE OF TEXAS
WAYNE S. WATTS
86134
LICENSED PROFESSIONAL ENGINEER

08/21/15

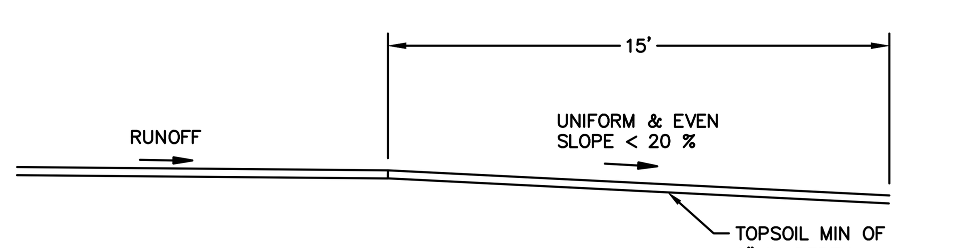
City Of Leander, Texas

303-2
TREE PROTECTION



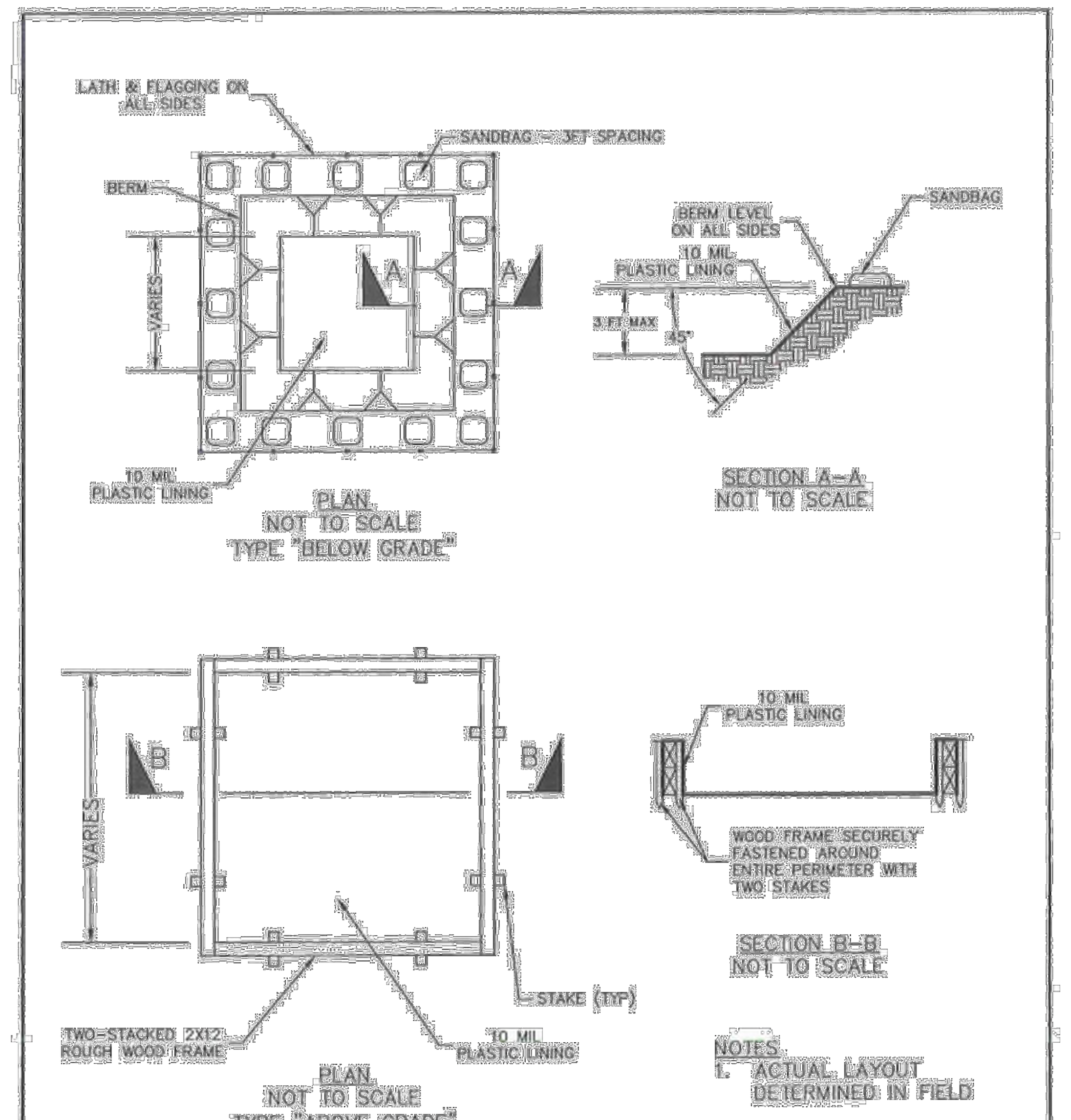
CONSTRUCTION STAGING AREA

NOT-TO-SCALE



ENGINEERED VEGETATIVE FILTER STRIP

N.T.S



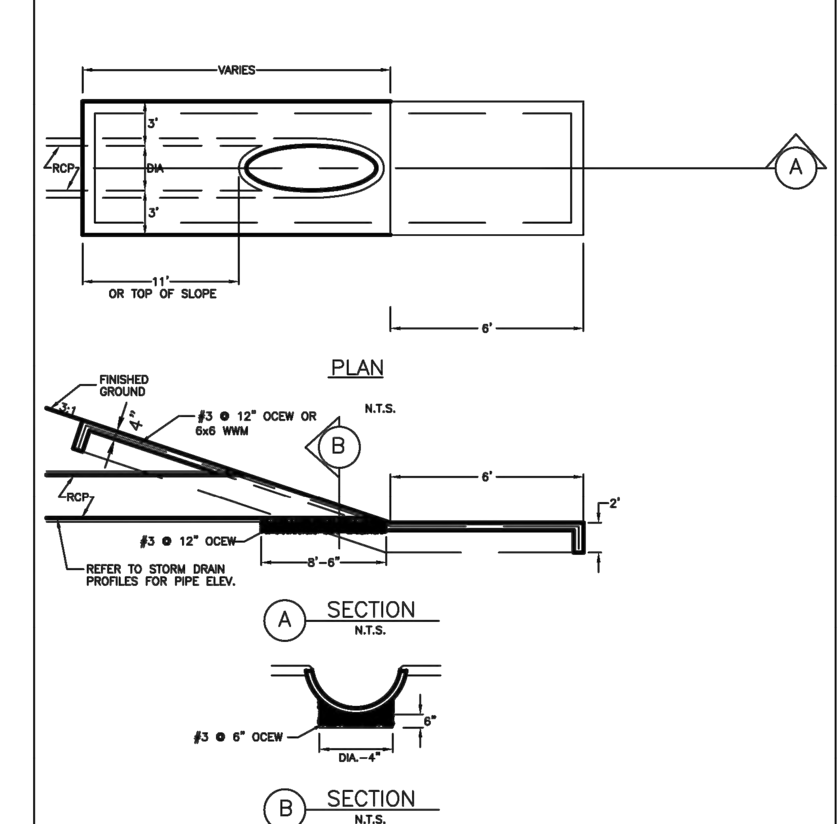
STATE OF TEXAS
WAYNE S. WATTS
86134
LICENSED PROFESSIONAL ENGINEER

01/30/15

City Of Leander, Texas

303-1
CONCRETE WASHOUT

*DISSIPATERS PER DETAIL 508S-13 ON SHEET 98



SLOPING HEADWALL DETAIL

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

STATE OF TEXAS
DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
08/12/2021

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 2 MODIFIED CZP
CITY OF LEANDER, TEXAS

EROSION & SEDIMENTATION CONTROL

CITY NO. -
JOB NO. ----
DATE AUGUST 2021
DESIGNER RBB
CHECKED PS DRAWN ADS

SHEET 82 of 83

Date: Jul 26, 2021, 9:24am User ID: Trouse
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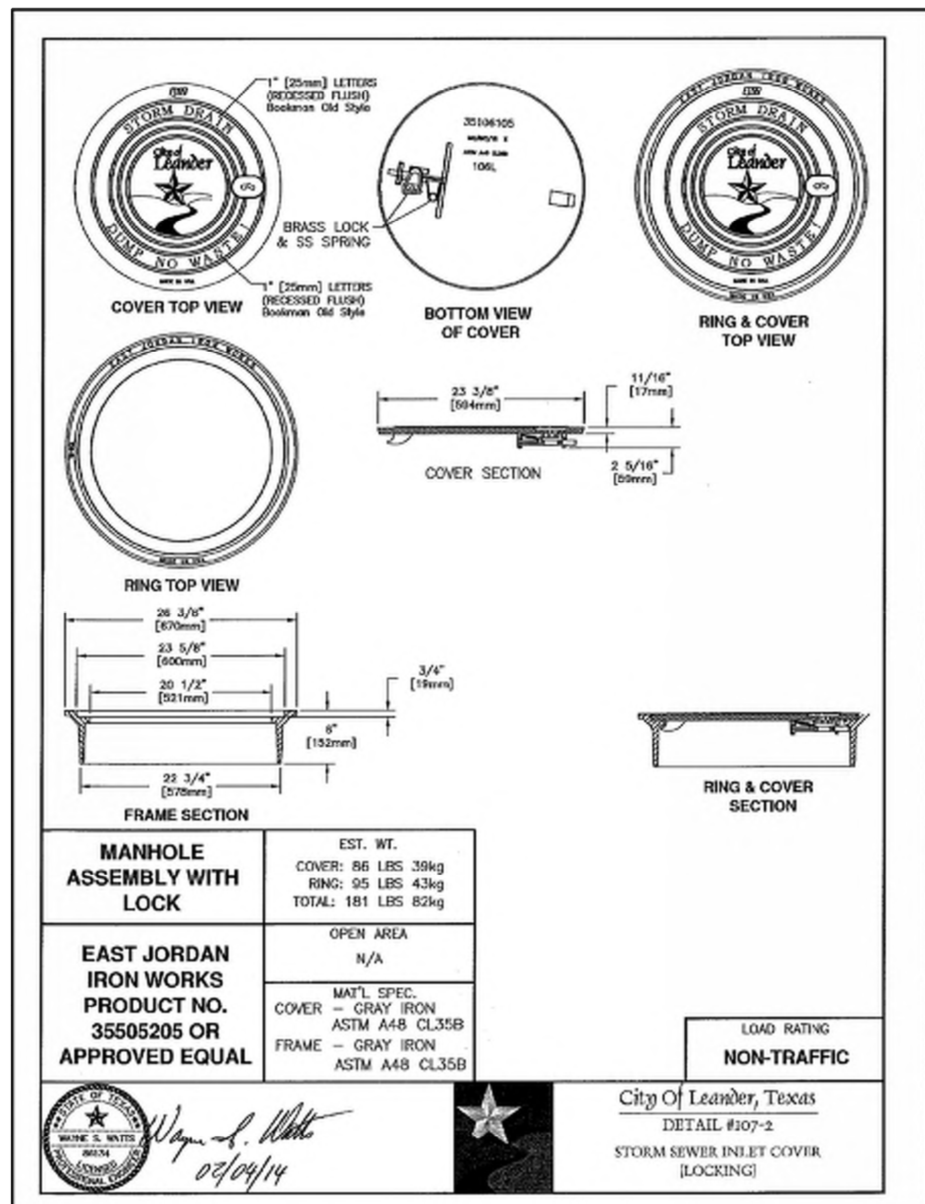
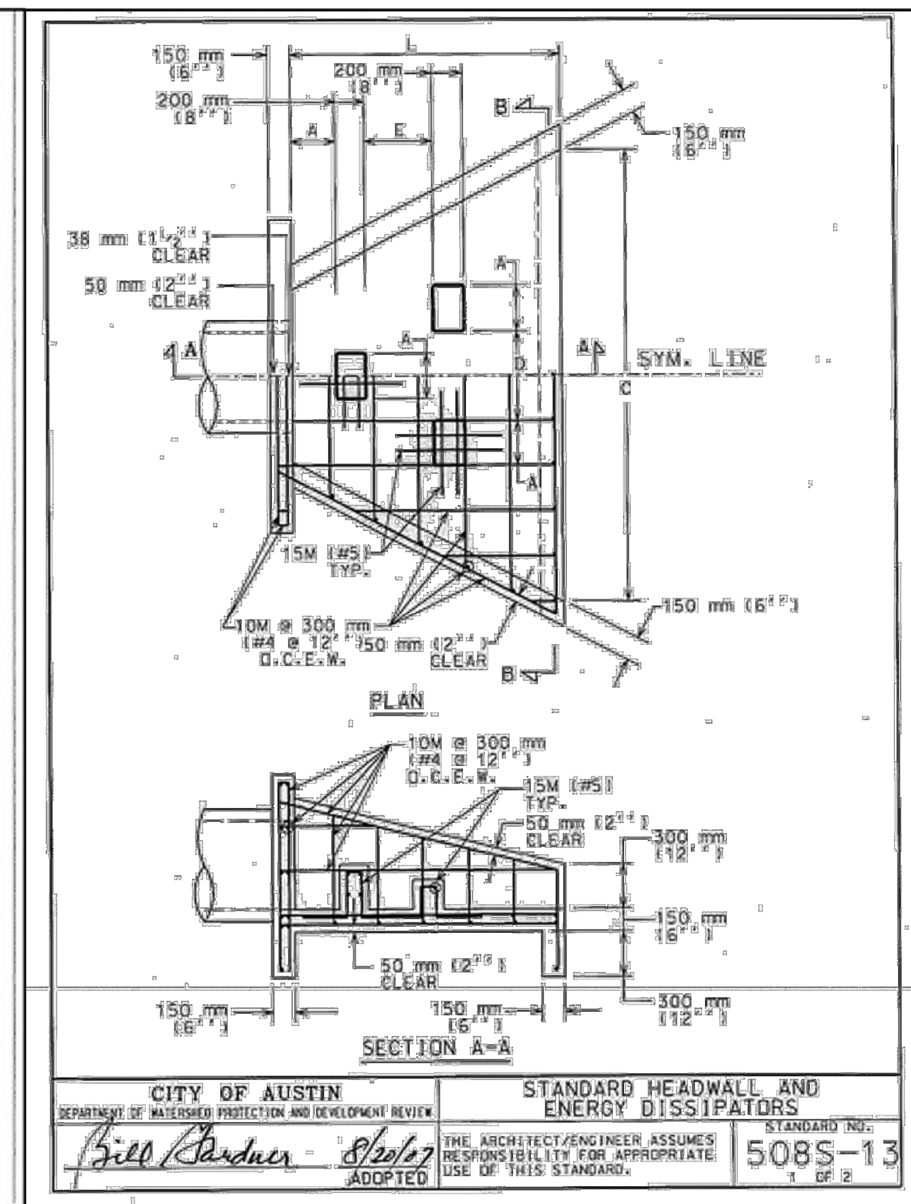
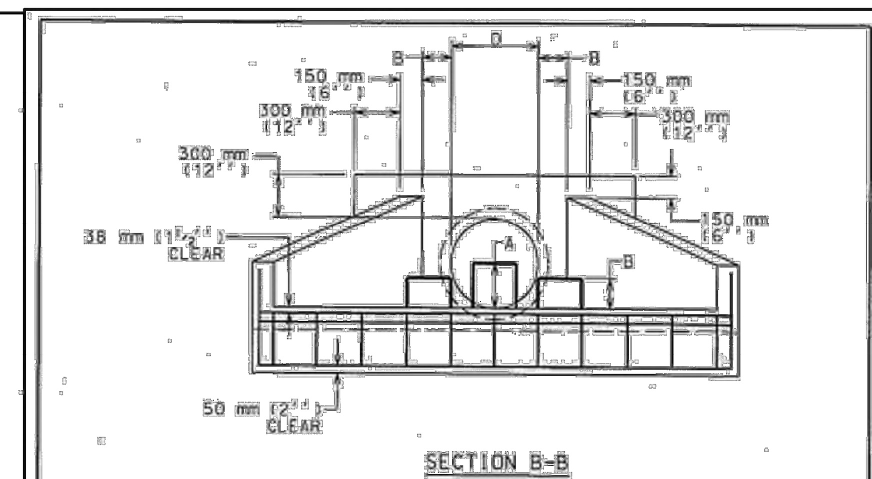




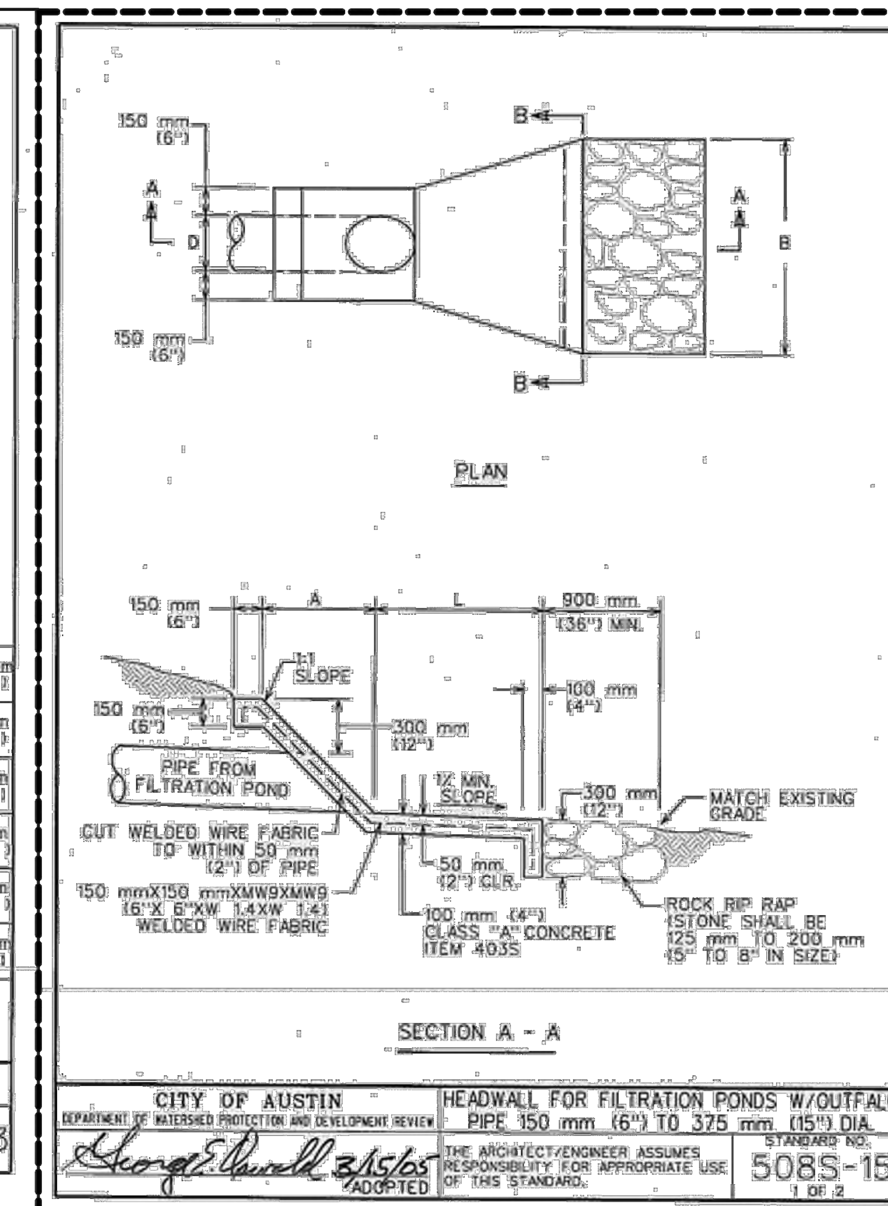


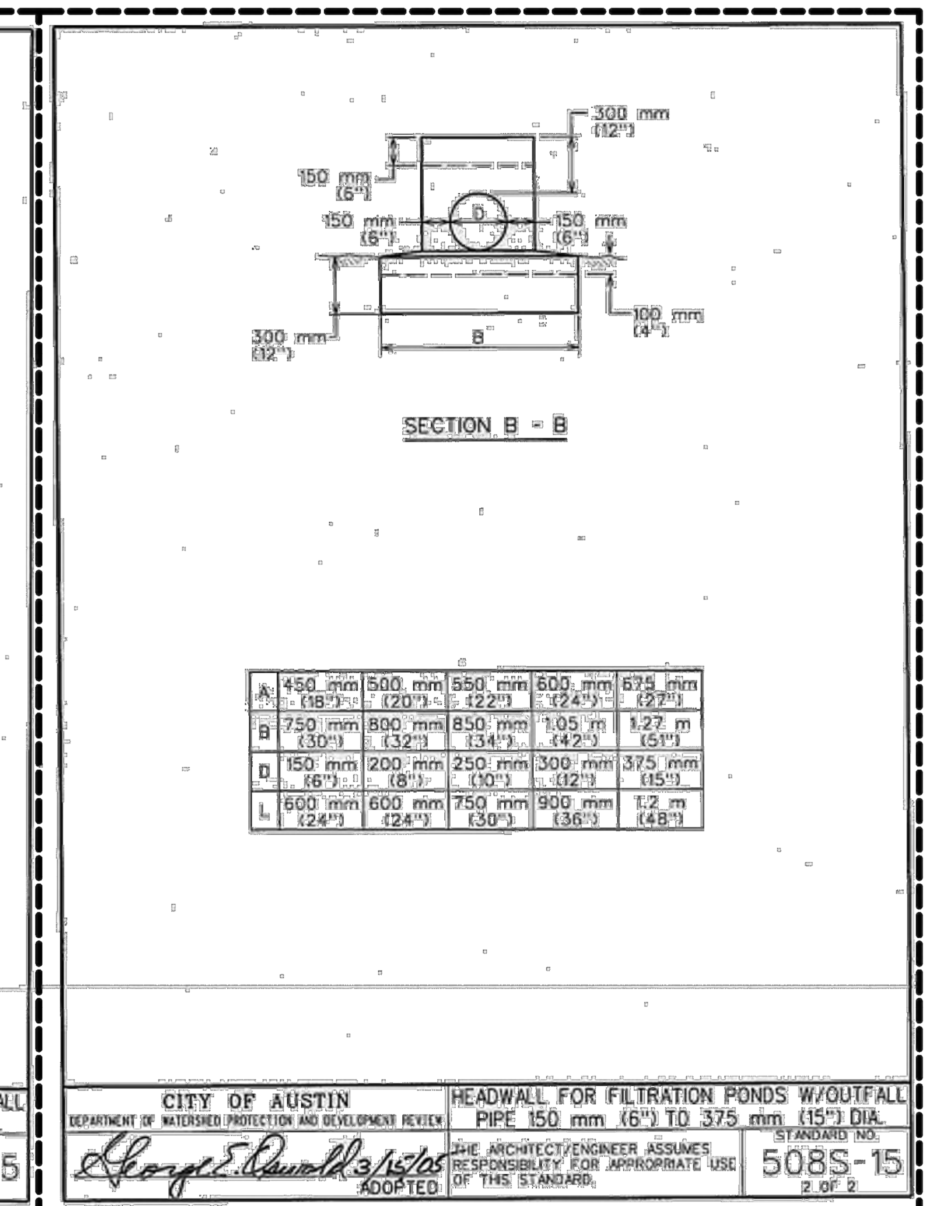
NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S. CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	3.43 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")

DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).
DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

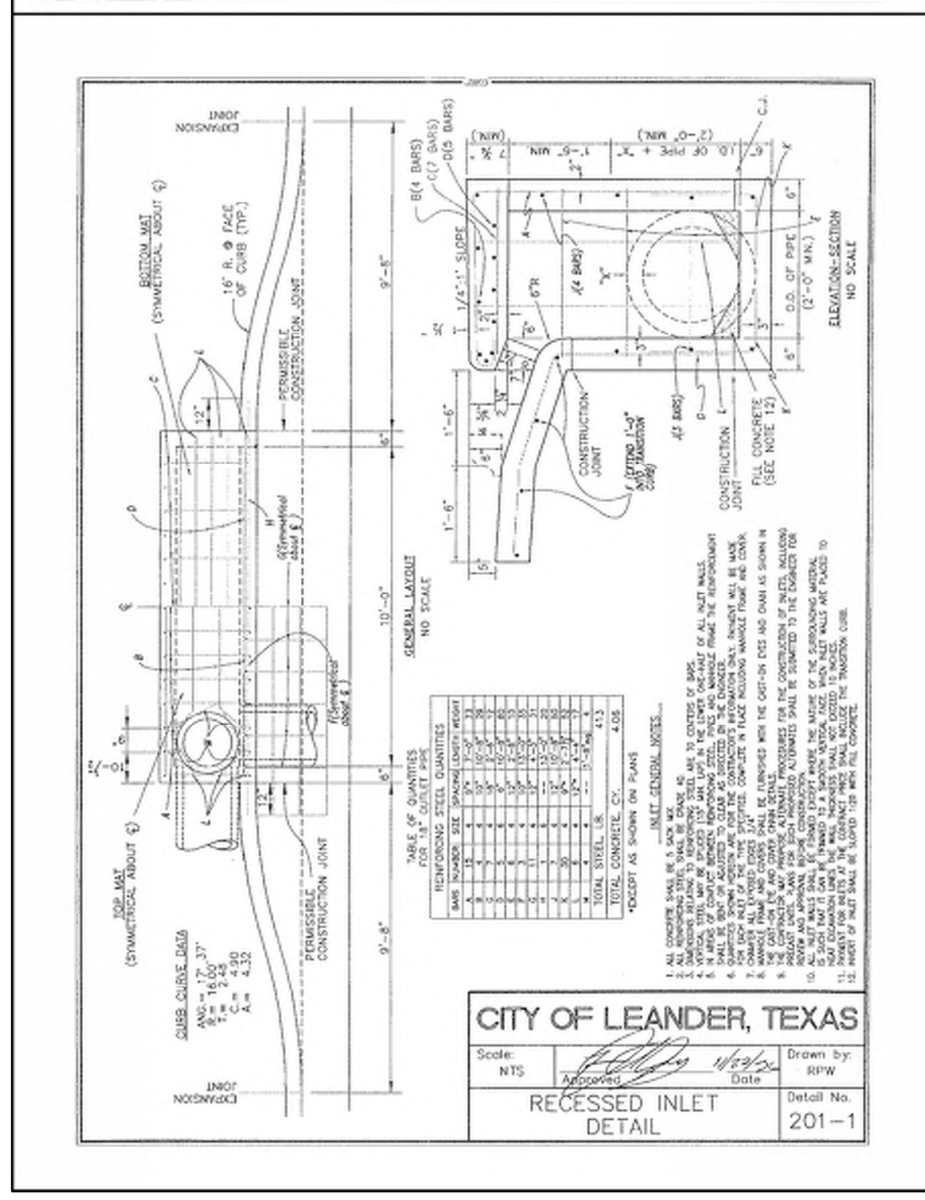
CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STANDARD HEADWALL AND ENERGY DISSIPATORS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
ADOPTED 8/20/07
STANDARD NO. 508S-13
2 OF 2

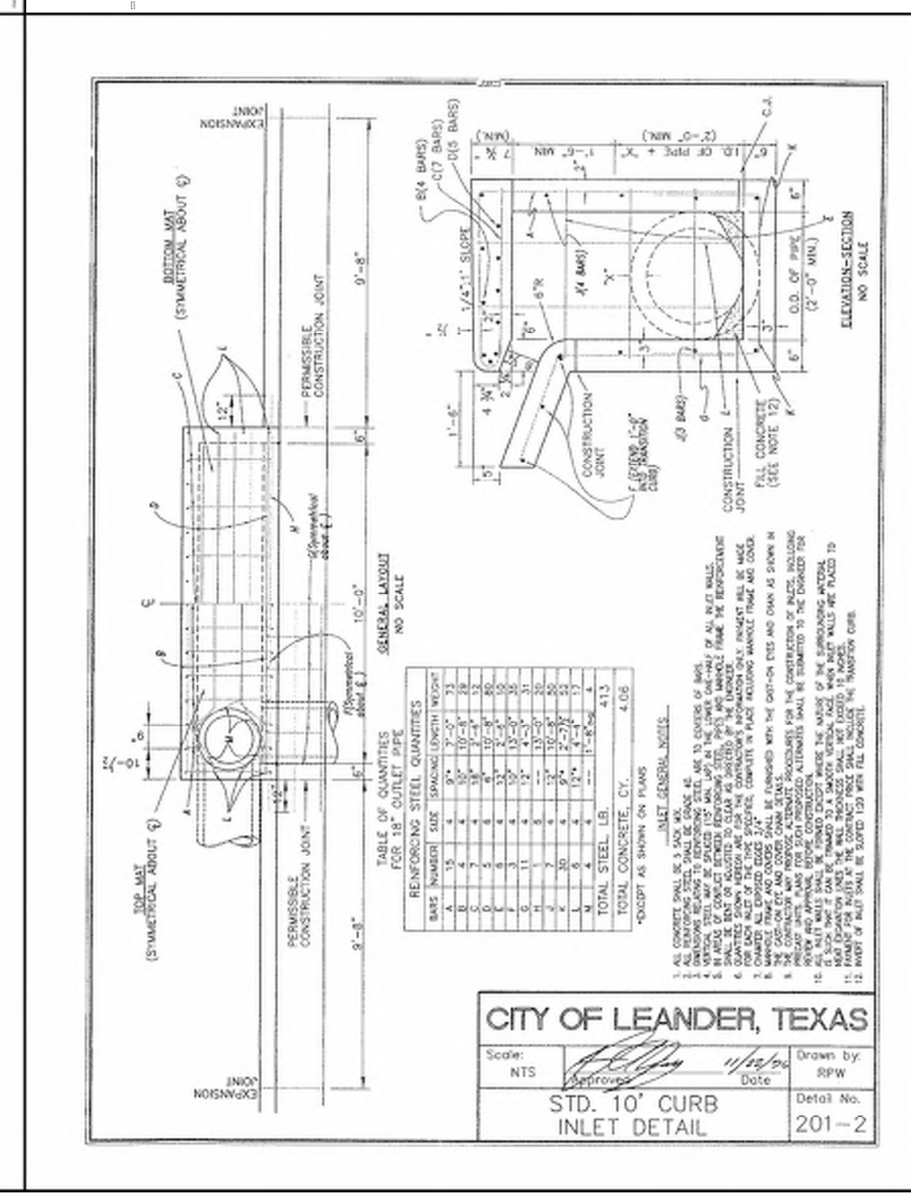


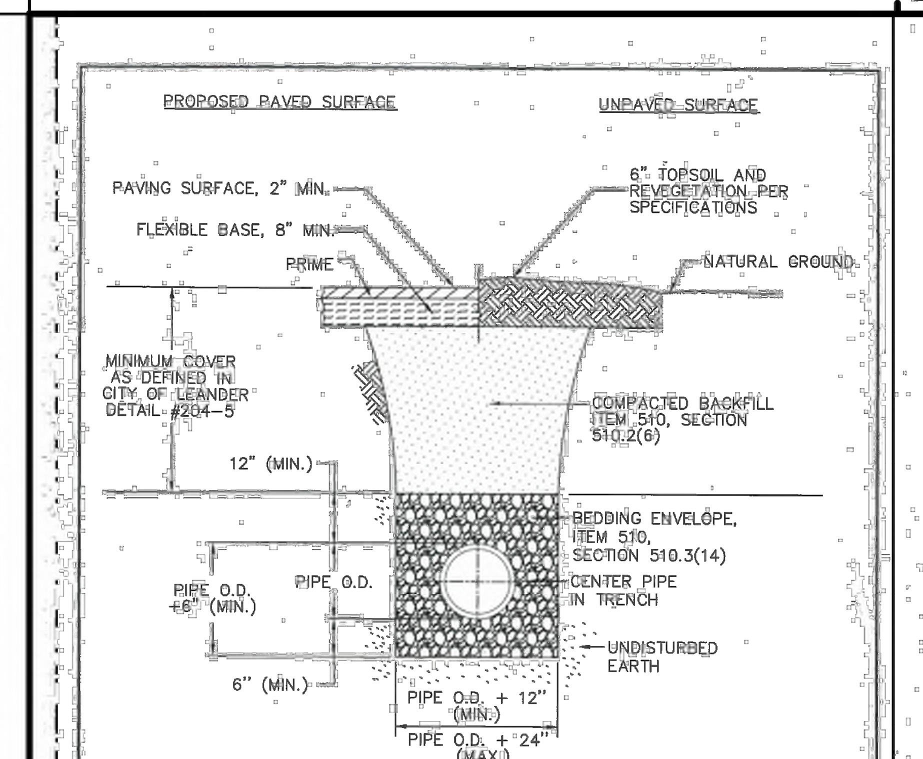


A	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	675 mm (27")
B	750 mm (30")	800 mm (32")	850 mm (34")	1.05 m (42")	1.27 m (51")
D	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	375 mm (15")
L	600 mm (24")	600 mm (24")	750 mm (30")	900 mm (36")	1.2 m (48")

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
HEADWALL FOR FILTRATION PONDS W/OUTFALL PIPE 150 mm (6") TO 375 mm (15") DIA.
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
ADOPTED
STANDARD NO. 508S-15
2 OF 2



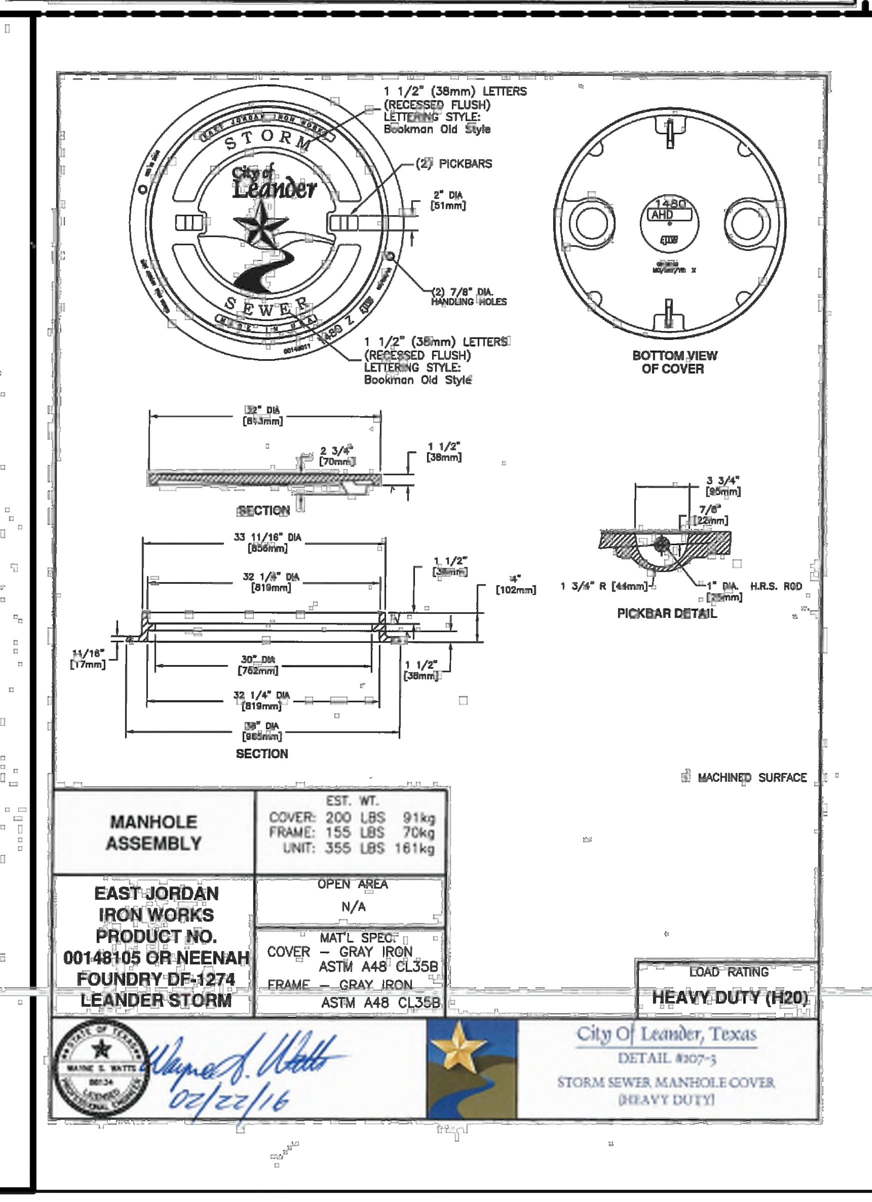


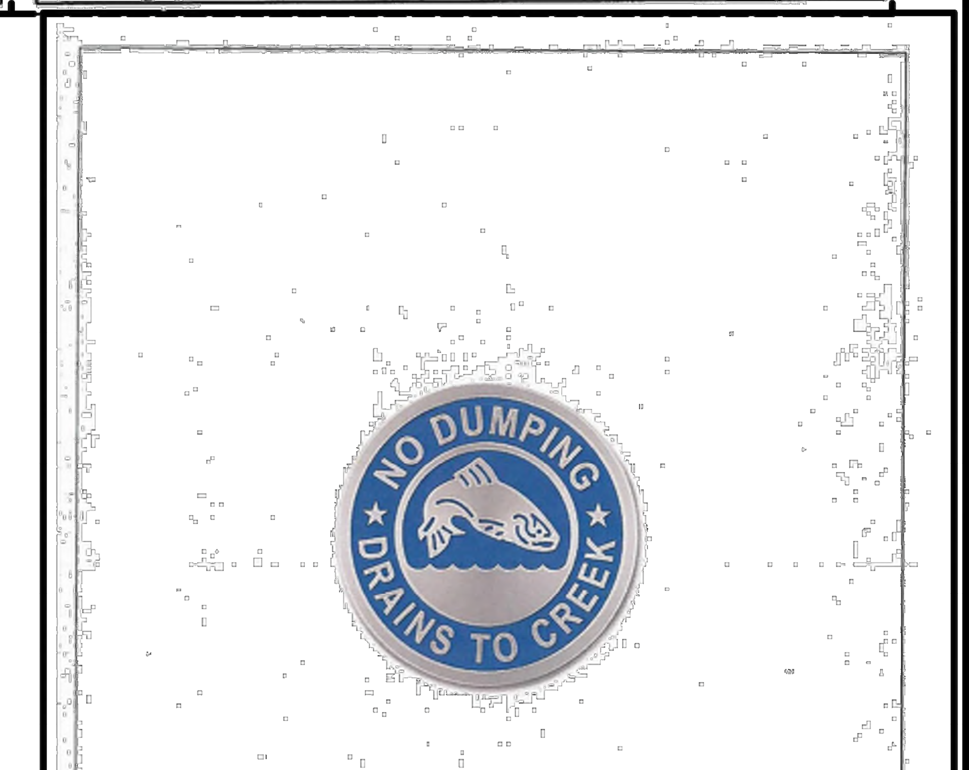


NOTES:
1. SEE CITY OF LEANDER DETAIL #104-2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

REFERENCES:
1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

2019-05-23
City Of Leander, Texas
DETAIL #104-1
TYPICAL PIPE TRENCH AND EMBEDMENT





NOTES:
1. INSTALL 4" DIAMETER STAINLESS STEEL "NO DUMPING – DRAINS TO CREEK" MARKER, FACTORY PAINTED BLUE AS SHOWN, 2" ABOVE VERTICAL FACE OF INLET AT MIDPOINT OF ALL INLETS.
2. MARKER SHALL BE AFFIXED TO SURFACE WITH ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS.
3. MARKER SHALL BE MANUFACTURED BY ALMATEK INDUSTRIES OR APPROVED EQUAL:
ALMATEK INDUSTRIES, INC.
2 JOY DRIVE
HACKETTSTOWN, NJ 07840
(800) 248-2080
WWW.ALMATEK.COM

06/20/18
City Of Leander, Texas
DETAIL #503-3
STORM DRAIN MARKERS

CITY OF LEANDER APPROVAL

NO.	REVISION	DATE

DUSTIN J. GOSS
91805
LICENSED PROFESSIONAL ENGINEER
02/25/2024

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

LIVELY TRACT, PHASE 5
FEBRUARY 2024

CONSTRUCTION DETAILS DRAINAGE

CITY NO. –
JOB NO. 50816-25
DATE FEBRUARY 2024
DESIGNER RBB
CHECKED DRAWN ADS

Date: Feb 22, 2024, 8:28am User ID: dlopez
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