Liberty Hill Bypass:
From RM 1869 to CR 279

Williamson County, Texas

CONTRIBUTING ZONE PLAN

ROADWAY APPLICATION

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

10/19/2023

Prepared for:

Williamson County

Prepared by:

LJA Engineering, Inc.

LJA Engineering, Inc.
2700 La Frontera, Suite 150
Round Rock, Texas 78681

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: Liberty Hill Bypass					**2. Regulated Entity No.:**			
3. Customer Name: Williamson County					**4. Customer No.: 600897888**			
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):**		61.81 acres
9. Application Fee:	$8,000		**10. Permanent BMP(s):**			Yes, Vegetative Filter Strips		
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**					
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.)	__	__	_1_
Region (1 req.)	__	__	_1_
County(ies)	__	__	_1_
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 _1_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. Riley Sladek
Print Name of Customer/Authorized Agent
7/11/2023
Signature of Customer/Authorized Agent Date

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

Edwards Aquifer Protection Program Roadway Checklist

- **Edwards Aquifer Application Cover Page (TCEQ-20705)**
- **Edwards Aquifer Protection Program Roadway Application (TCEQ-20872)**

  Attachment A - Road Map
  Attachment B - USGS Quadrangle
  Attachment C - Project Description
  Attachment D - Factors Affecting Surface Water Quality
  Attachment E - BMPs for Upgradient (Offsite) Stormwater
  Attachment F - BMPs for On-site Stormwater
  Attachment G - Construction Plans
  Attachment H - Inspection, Maintenance, Repair and Retrofit Plan
  Attachment I - Pilot-Scale Field Testing Plan
  Attachment J - Measures for Minimizing Surface Stream Contamination
  Attachment K - Volume and Character of Stormwater

- **Geologic Assessment Form (TCEQ-0585)**
  - *Required for site over the Recharge zone*

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

- **Temporary Stormwater Section (TCEQ-0602)**
  - *Review Item 37 on Roadway Application for applicability*

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

- **Agent Authorization Form (TCEQ-0599)**
  - *Only if application is submitted by an authorized agent*
- **Application Fee Form (TCEQ-0574)**
  - *Do <u>not</u> submit for TxDOT roadways*
- **Core Data Form (TCEQ-10400)**

Edwards Aquifer Protection Program Roadway Application

Texas Commission on Environmental Quality

This application is intended only for projects which a major roadway is designed for construction, such as State highways, County roads, and City thoroughfares.

Designed for Regulated Activities on the Contributing Zone to the Edwards Aquifer in relation to 30 TAC §213.24, Regulated Activities on the Edwards Aquifer Recharge Zone, in relation to 30 TAC §213.5(b), Effective June 1, 1999.

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

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

Signature

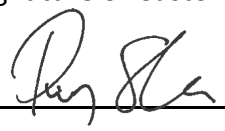
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer.

The application was prepared by:

Print Name of Customer/Agent: Riley Sladek, PE

Date: 7/12/2023

Signature of Customer/Agent:



Project Information

1. Regulated Entity (Project) Name: Liberty Hill Bypass (RM 1869 to CR 279)
2. County: Williamson County
3. Stream Basin(s): South Fork San Gabriel
4. Groundwater Conservation District (if applicable): Edwards Aquifer
5. Customer (Applicant):

   Contact Person: J. Terron Evertson, PE
   Entity: Williamson County
   Mailing Address: 3151 S.E. Inner Loop
   City, State: Georgetown,TX Zip: 78626
   Telephone: 512-943-3330
   Email Address: tevertson@wilco.org

6. Agent (Representative):

Contact Person: Riley Sladek, PE
Entity: LJA Engineering
Mailing Address: 2700 La Frontera, Suite 150
City, State: Round Rock, TX Zip: 78681
Telephone: 512-439-4738
Email Address: rsladek@lja.com

7. Landowner of R.O.W. (Right of Way)
Person or entity responsible for maintenance of water quality Best Management Practices (BMPs), if not applicant.

Contact Person: J. Terron Evertson, PE
Entity: Williamson County
Mailing Address: 3151 S.E. Inner Loop
City, State: Georgetown, TX Zip: 78626
Telephone: 512-943-3330
Email Address: tevertson@wilco.org

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

   ☒ Survey marking will be completed by this date: 10/27/23

9. ☒ **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.

10. ☒ **Attachment B - USGS Quadrangle**. 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)
    ☒ All drainage paths from site to surface waters

11. ☒ **This project extends into (Check all that apply):**

    ☐ Recharge Zone (RZ)
    ☒ Contributing Zone (CZ)
    ☐ Transition Zone (TZ)
    ☐ Contributing Zone within Transition Zone (CZ/TZ)
    ☐ Zone not regulated by EAPP

12. ☒ **Attachment C - Project Description**. 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:

- ☒ Complete site area [Acres]
- ☒ Offsite upgradient stormwater areas to be captured
- ☒ Impervious area [Acres]
- ☒ Permanent BMP(s)
- ☒ Proposed site use
- ☒ Existing roadway (paved and/or unpaved)
- ☐ Structures to be demolished [Include demo phase]
- ☐ Major interim phases

13. Existing project site conditions are noted below:

- ☒ Existing paved and/or unpaved roads
- ☐ Undeveloped (Cleared)
- ☒ Undeveloped (Undisturbed/Not cleared)
- ☐ Existing commercial site
- ☐ Existing industrial site
- ☐ Existing residential site
- ☐ Other: _____

14. ☒ **Attachment D - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water quality is attached.

15. ☒ Only inert materials as defined by 30 TAC §330.3 will be used as fill material.

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

- ☐ Concrete
- ☒ Asphaltic concrete pavement
- ☐ Permeable Friction Course (PFC)
- ☐ Other: _____

17. Right of Way (R.O.W.) and Pavement Area:

R.O.W. for project: 61.81 (ac.)
Length: 12,000 ft.
Width: varies from 100 ft. to 300 ft.
Impervious cover (IC): 12.64 (ac.)
Total of Pavement area 12.64 (ac.) ÷ R.O.W. area 61.81 (ac.) x 100 = 20.4% IC.

- ☒ CAD program was used to determine areas.
- ☒ Number of travel lanes: proposed: 2, existing: _____
- ☒ Typical widths of lanes: 12 (ft.)
- ☒ Are intersections also being improved? (Y/N) Y

Site Plan Requirements

Items 18 - 28 must be included on the Site Plan.

18. ☒ The Site Plan must have a minimum scale of 1" = 400'.
    Site Plan Scale: 1" = 100'

19. 100-year floodplain boundaries:

    ☒ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled. The 100-year floodplain boundaries are based on the following specific (including date of material) source(s): FEMA NFHL 2020.

    ☐ No part of the project site is located within the 100-year floodplain.

20. ☒ A layout of the development with existing and finished contours at appropriate, but not greater than ten-foot contour intervals is shown. Sensitive features, lots, wells, buildings, roads, culverts, etc. are shown on the site plan.

21. ☒ A figure (map) indicating all paths of drainage from the site to surface waters.

    ☒ Name all stream crossings: South Fork San Gabriel River
    ☐ Drainage patterns and approximate slopes.
    ☐ There will be no discharge to surface waters.

22. ☒ Distinguish between areas of soil disturbance and areas which will not be disturbed.

23. ☒ Show locations of major structural and nonstructural controls. These are the temporary and permanent best management practices. Include the following:

    ☐ Show design and location of any hazardous materials traps.
    ☐ Show design at outfalls of major control structures and conveyances.
    ☒ A description of the BMPs and measures that prevent pollutants from entering surface streams.

24. Show locations of staging areas or project specific locations (PSL). Are they:

    ☐ Onsite, within project R.O.W.
    ☐ Offsite.
    ☒ Not yet determined. (Requires future authorization)

25. ☒ Show locations where soil stabilization practices are expected to occur.

26. ☒ Show surface waters (including wetlands).

27. Temporary aboveground storage tank facilities:

    ☐ Temporary aboveground storage tank facilities will be located on this site. Show on site plan.
    ☒ Temporary aboveground storage tank facilities will not be located on this site.

28. ☒ Plan(s) also include:

    ☒ Sidewalks
    ☒ Related turn lanes
    ☒ Demolition plans
    ☐ Shared-use paths
    ☐ Off-site improvements and staging areas
    ☐ Utility relocations
    ☐ Other improved areas: _____

Permanent Best Management Practices (BMPs)

Description of practices and measures that will be used after construction is completed.

29. ☒ Permanent BMPs and measures have been designed, and will be constructed, operated, and maintained to ensure 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 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: _____

30. ☒ **Attachment E - BMPs for Upgradient (Offsite) 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.

31. ☒ **Attachment F - 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.

32. ☒ **Attachment G - 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 all proposed structural plans and specifications, and appropriate details.

    ☒ Major bridge cross-sections, and roadway plan and profiles

    ☒ BMP plans and details

    ☒ Design calculations

    ☒ Erosion control

    ☒ TCEQ Construction Notes

    ☒ SW3P

    ☒ EPIC, as necessary

33. ☒ **Attachment H - 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 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 recordkeeping procedures.

34. ☐ **Attachment I - 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

35. ☒ **Attachment J - 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 effects caused by the regulated activity which increase erosion or may result in water quality degradation.

    ☒ Include permanent spill measures used to contain hydrocarbons or hazardous substances by way of traps, or response contingencies.

36. 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.

    If the applicant intends to transfer responsibility, check the box below.

    ☐ Yes

    A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days.

Stormwater to be generated by the Proposed Project

Description of practices and measures that will be used during construction.

37. ☒ The site description, controls, maintenance, and inspection requirements for the Storm Water Pollution Prevention Plan (SWPPP or SW3P) developed under the Texas Pollutant Discharge Elimination System (TPDES) general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) & §213.5(b) of the technical report.

    ☐ The Temporary Stormwater Section (TCEQ-0602) is included with the application.
    ☒ The SWPPP (SW3P) will serve as the Temporary Stormwater Section (TCEQ-0602).

38. ☒ **Attachment K - Volume and Character of Stormwater**. A detailed description of the volume (quantity) and character (quality) of the stormwater runoff 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 pre-construction runoff coefficient.
    ☒ Include the post-construction runoff coefficient.

Administrative Information

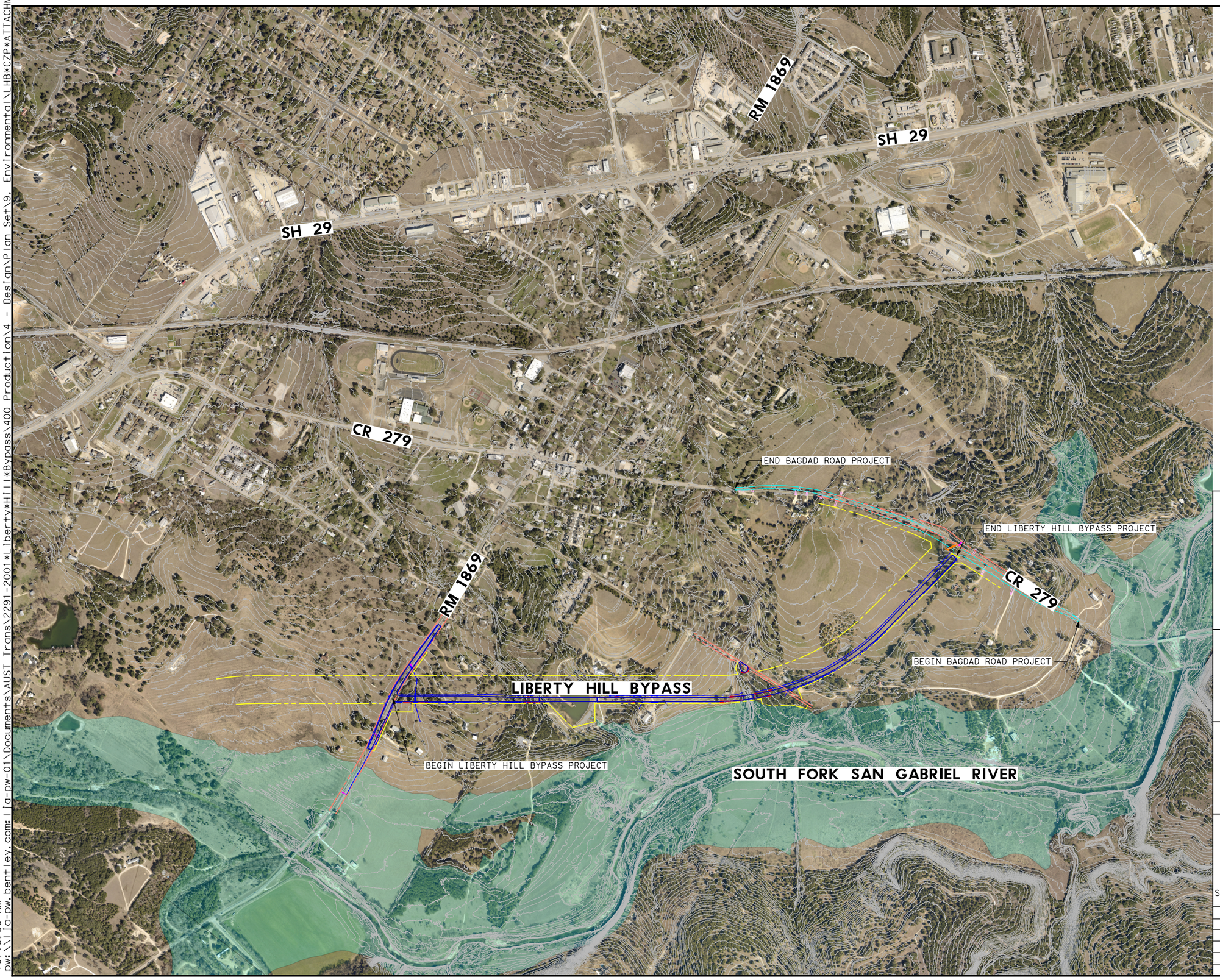
39. ☒ Submit one (1) original and one (1) copy of the application, plus one electronic copy as needed, for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ is required to distribute the additional copies to these jurisdictions.

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

    ☒ The total R.O.W. (as in Item 17).

    ☐ TxDOT roadway project.

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION – TCEQ-20872
ATTACHMENT A – ROAD MAP



LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

N

0' 250' 500' 1000'
SCALE: 1"=1000'

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW ONLY UNDER THE AUTHORITY OF:
RILEY W. SLADEK
TEXAS REGISTRATION 108887
DATE: 5/25/2021

IT IS NOT TO BE USED FOR BIDDING, CONSTRUCTION, OR PERMIT PURPOSES.

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
ATTACHMENT A
ROAD MAP

CONTRIBUTING ZONE PLAN

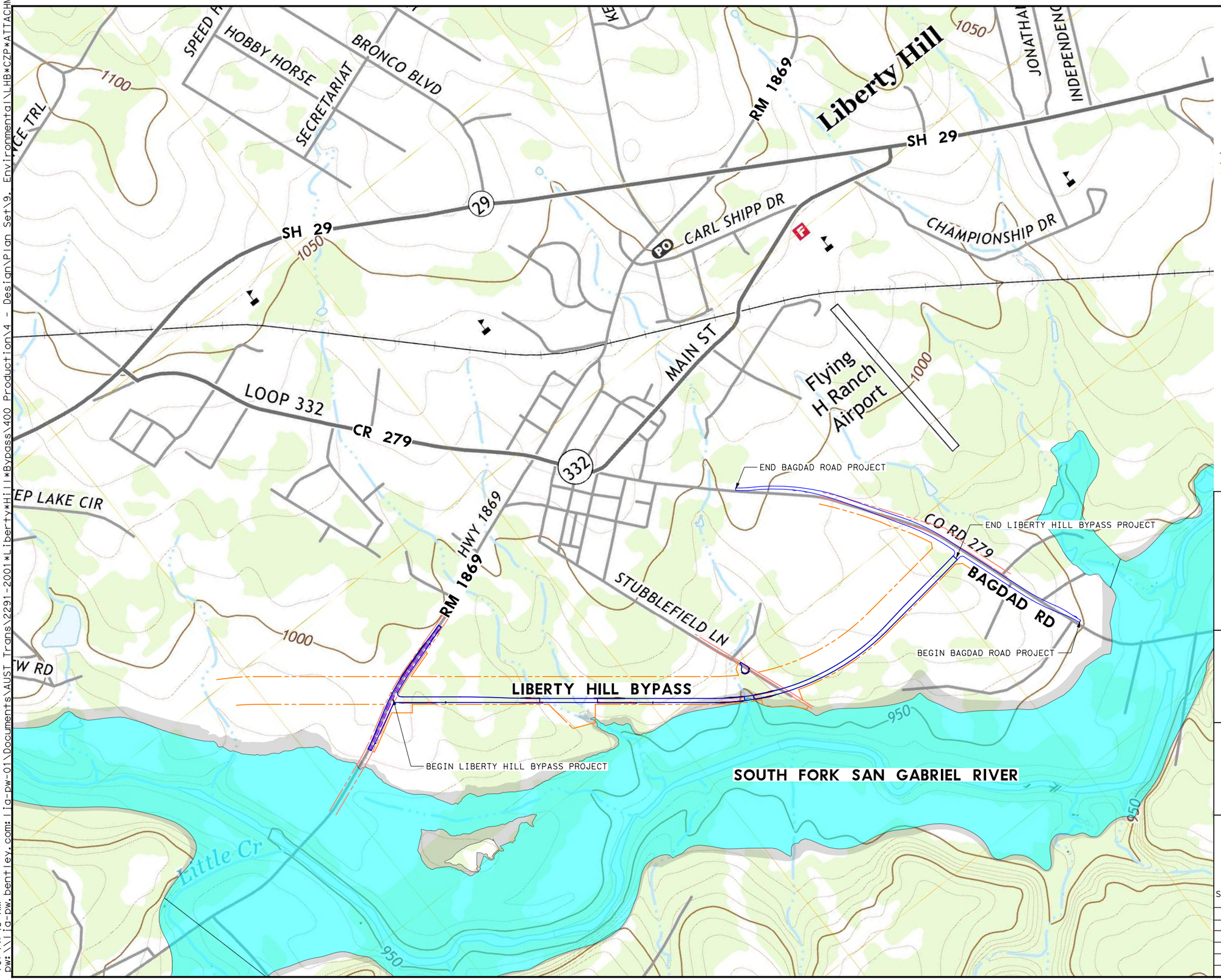
SCALE HORIZONTAL: 1"=1000'
VERTICAL:

SHEET 1 OF 1

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			0
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS		
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB				LHB

5/25/2021
10:13:59 AM
pw:\\lja-pw.bentley.com:lja-pw-01\Documents\AUST Trans\2291-2001*Liberty*Hill*Bypass\400 Production\4 - Design\Plan Set\9. Environmental\LHB*CZP*ATTACHMENT

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION – TCEQ-20872
ATTACHMENT B – USGS QUADRANGLE MAP



LEGEND

EXISTING R.O.W.
PROPOSED R.O.W.
PROPOSED CONSTRUCTION EASEMENT

LIBERTY HILL USGS QUADRANGLE

N

0' 250' 500' 1000'
SCALE: 1"=1000'

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW ONLY UNDER THE AUTHORITY OF:
RILEY W. SLADEK
TEXAS REGISTRATION 108887
DATE: 5/25/2021

IT IS NOT TO BE USED FOR BIDDING, CONSTRUCTION, OR PERMIT PURPOSES.

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
ATTACHMENT B
USGS MAP
CONTRIBUTING ZONE PLAN

SCALE HORIZONTAL: 1"=1000'
VERTICAL:

SHEET 1 OF 1

DESIGN	FED. RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			0
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS		
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB				LHB

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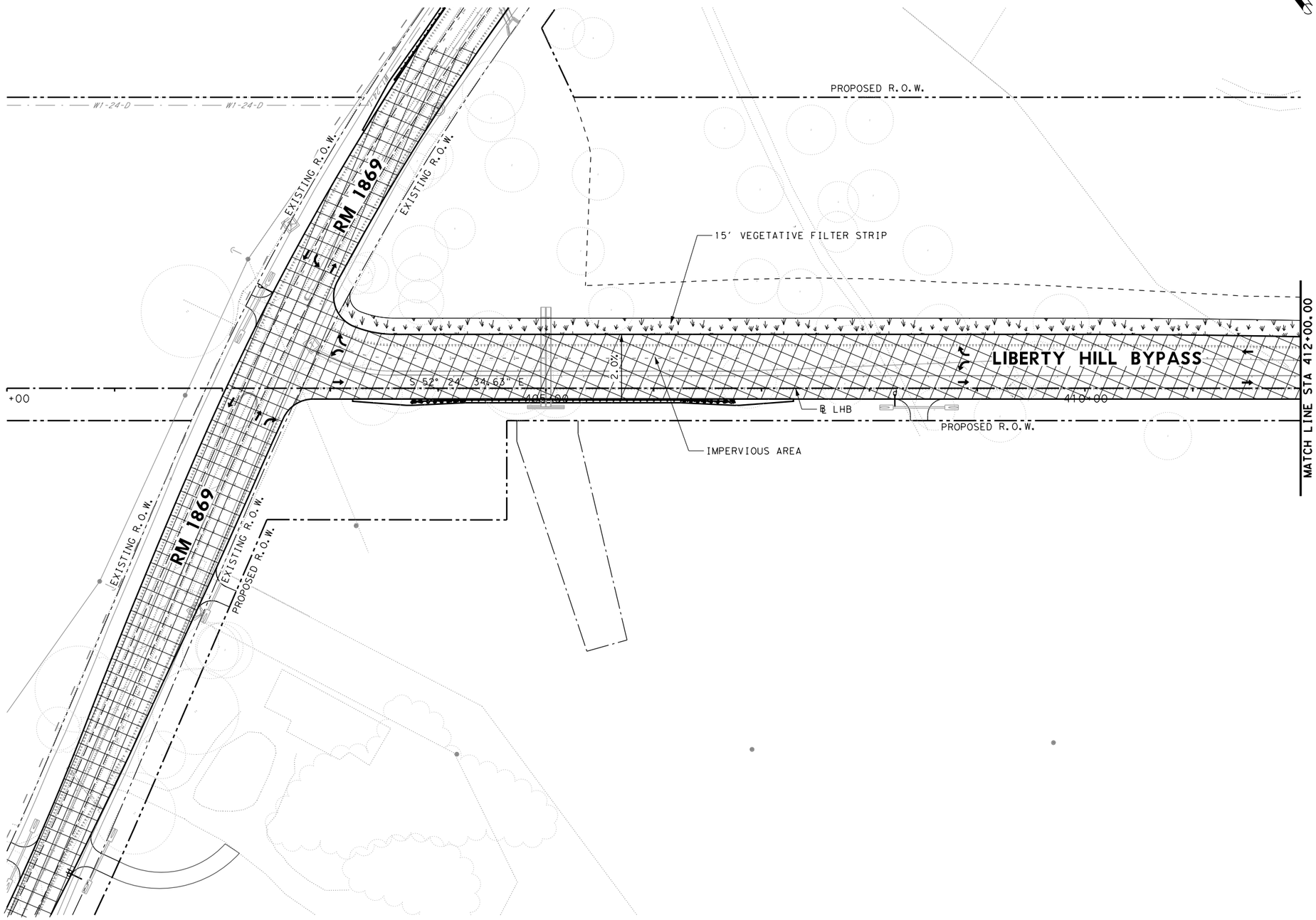
EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT C – PROJECT DESCRIPTION

Williamson County has commissioned the construction of Liberty Hill Bypass from RM 1869 to CR 279 as well as improvements along RM 1869 & CR 279 (Bagdad Road). The project is located in the Edwards Aquifer Contributing Zone. The construction involves widening existing portions of RM 1869 roadway and new location construction of Liberty Hill Bypass and Bagdad Road. The 2 lane facility will include turn lanes and roadside ditches throughout the project. The ROW area for the project in the Contributing Zone is 61.81 acres with proposed impervious cover in the Contributing Zone ROW equal to 12.64 acres, including existing and proposed pavement. Vegetative filter strips will be installed to mitigate the increase in pavement. This results in the following removal summary.

LIBERTY HILL BYPASS - TSS REMOVAL SUMMARY					
BASIN	TOTAL AREA	EXISTING IMPERVIOUS AREA	PROPOSED IMPERVIOUS AREA	Lm (80% Required Removal)	TSS REMOVAL
	AC	AC	AC	LBS	LBS
12	6.55	0.50	1.95	1262	1101
13_14	11.62	0.14	1.82	1462	1167
15	24.63	0.34	4.11	3281	3586
Bagdad	19.01	2.44	4.76	2019	2778
TOTAL	**61.81**	**3.42**	**12.64**	**8025**	**8632**



LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

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RILEY W. SLADEK
TEXAS REGISTRATION 108887
DATE: 7/11/2023

IT IS NOT TO BE USED FOR BIDDING, CONSTRUCTION, OR PERMIT PURPOSES.

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
SITE PLAN

BEGIN TO STA 412+00

SCALE: HORIZONTAL: 1" = 100'
VERTICAL: 1" = 10'

SHEET 1 OF 6

DESIGN	FED. RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			67
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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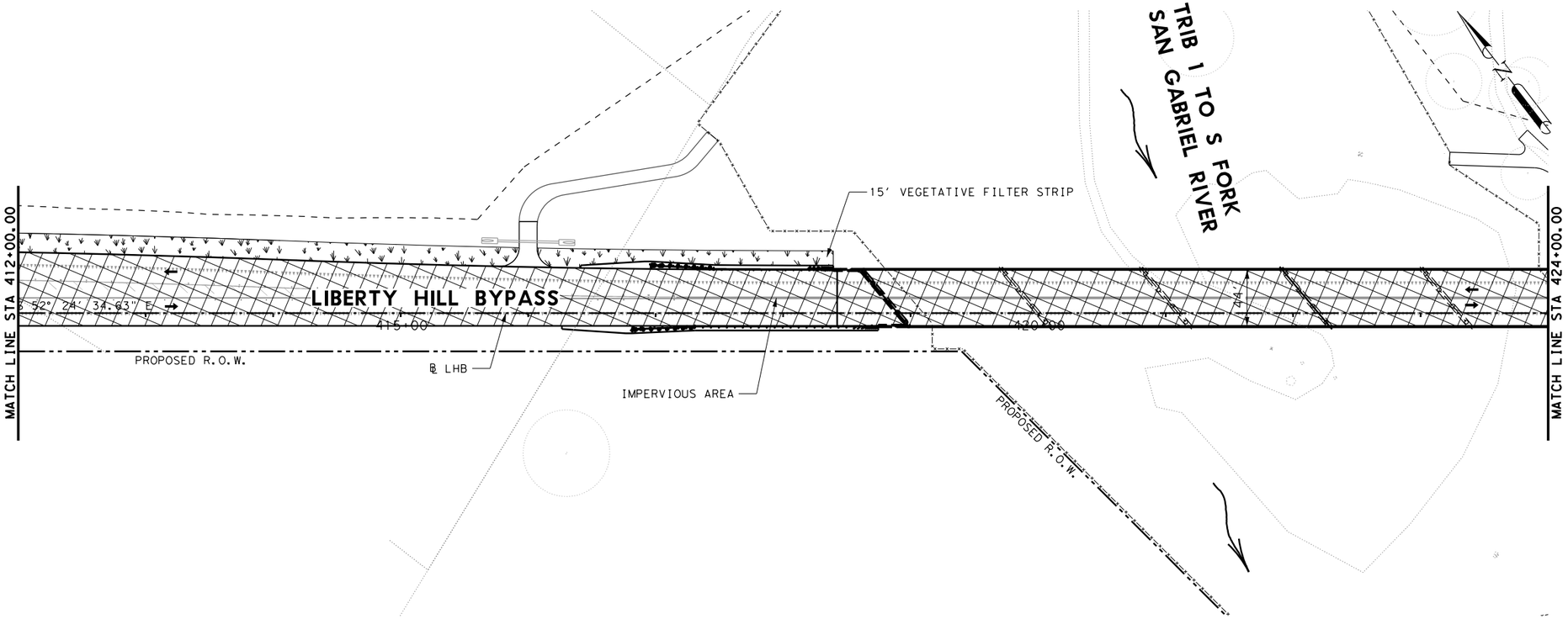

LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

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WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

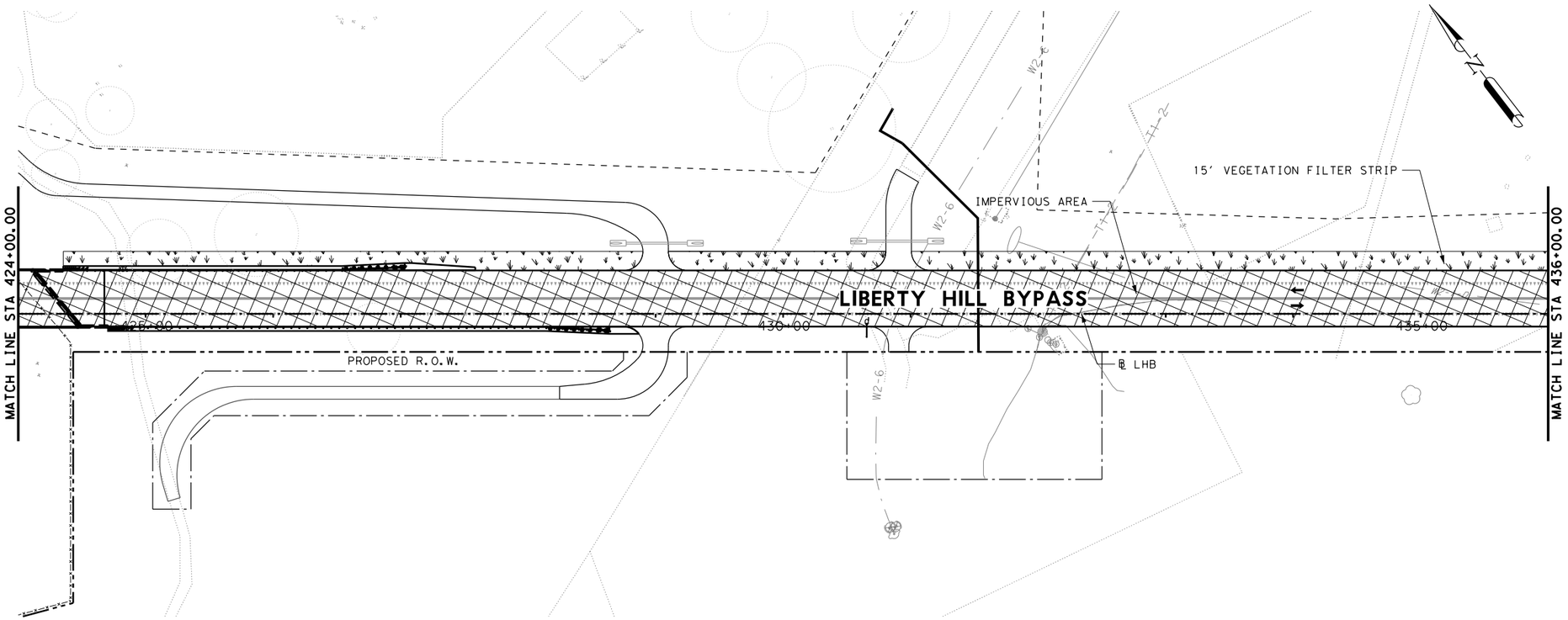
LIBERTY HILL BYPASS
SITE PLAN

STA 412+00 TO STA 424+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 2 OF 6

DESIGN	FED. RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			68
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB



LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

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WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
SITE PLAN

STA 424+00 TO STA 436+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 3 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			69
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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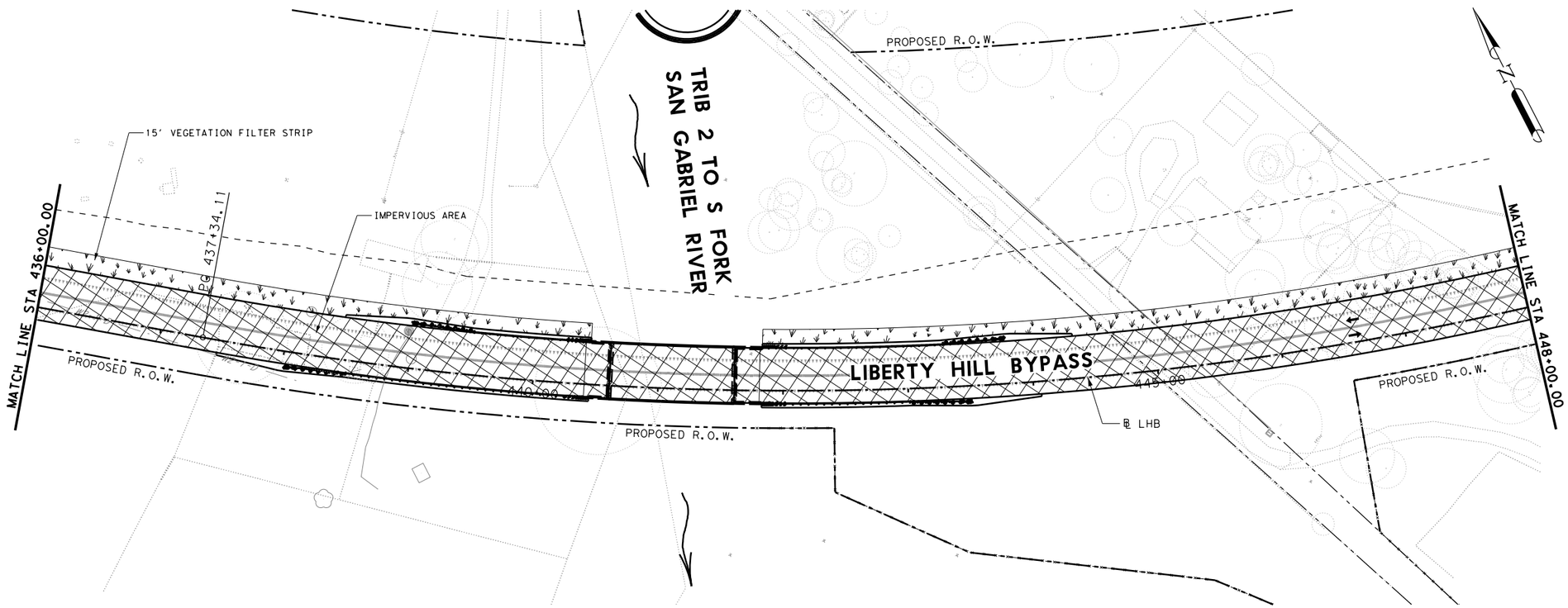

LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

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TEXAS REGISTRATION 108887
DATE: 7/11/2023

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WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
SITE PLAN

STA 436+00 TO STA 448+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 4 OF 6

DESIGN	FED. RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			70
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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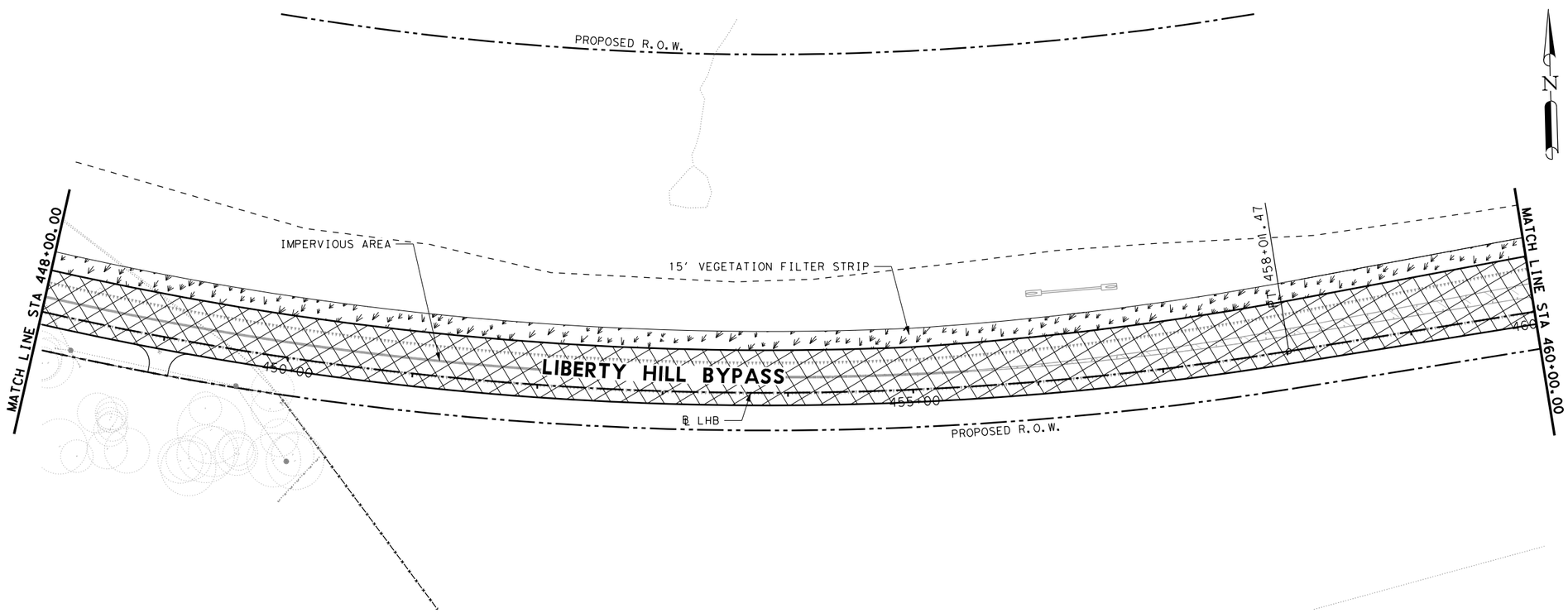

LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

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DATE: 7/11/2023

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WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
SITE PLAN

STA 448+00 TO STA 460+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 5 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			71
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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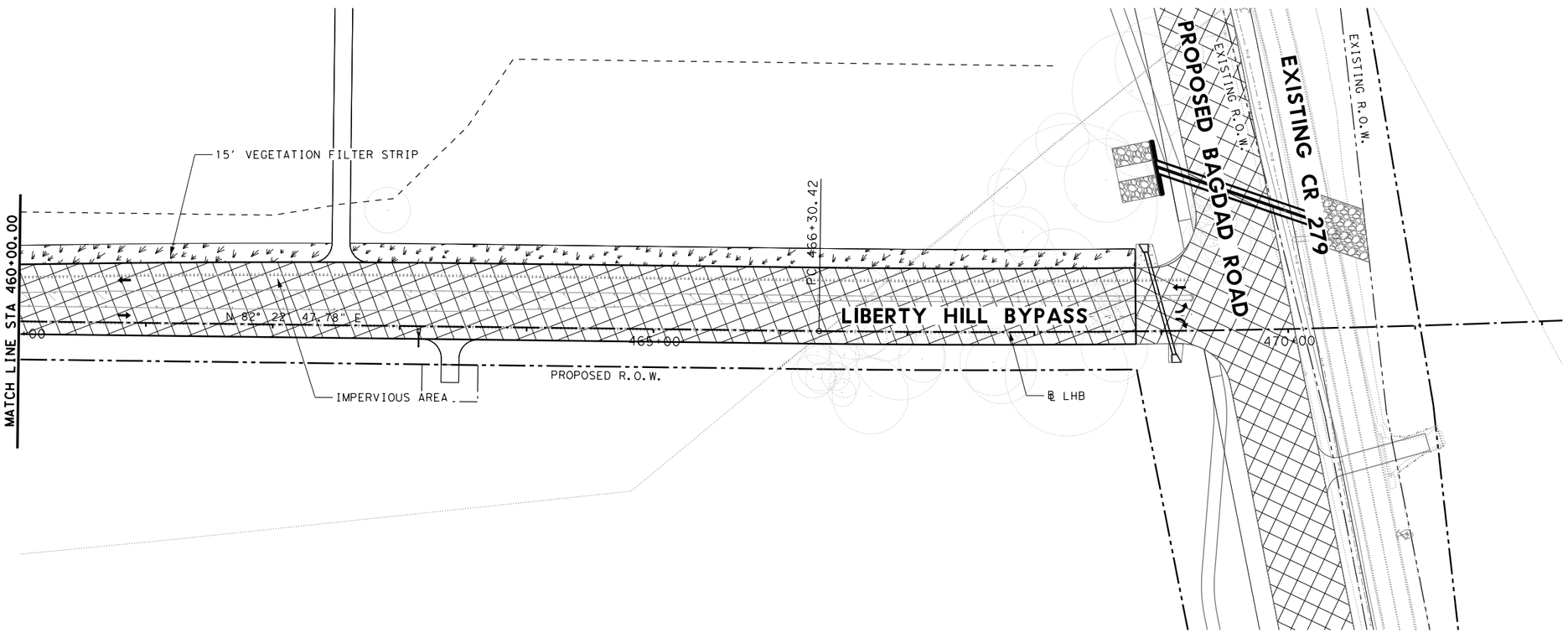

LEGEND

- EXISTING ROW
- PROPOSED ROW
- FLOW DIRECTION ARROW
- IMPERVIOUS AREA
- 15' VEGETATION FILTER STRIP

N

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WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
SITE PLAN

STA 460+00 TO END

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 6 OF 6

DESIGN	FED. RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			72
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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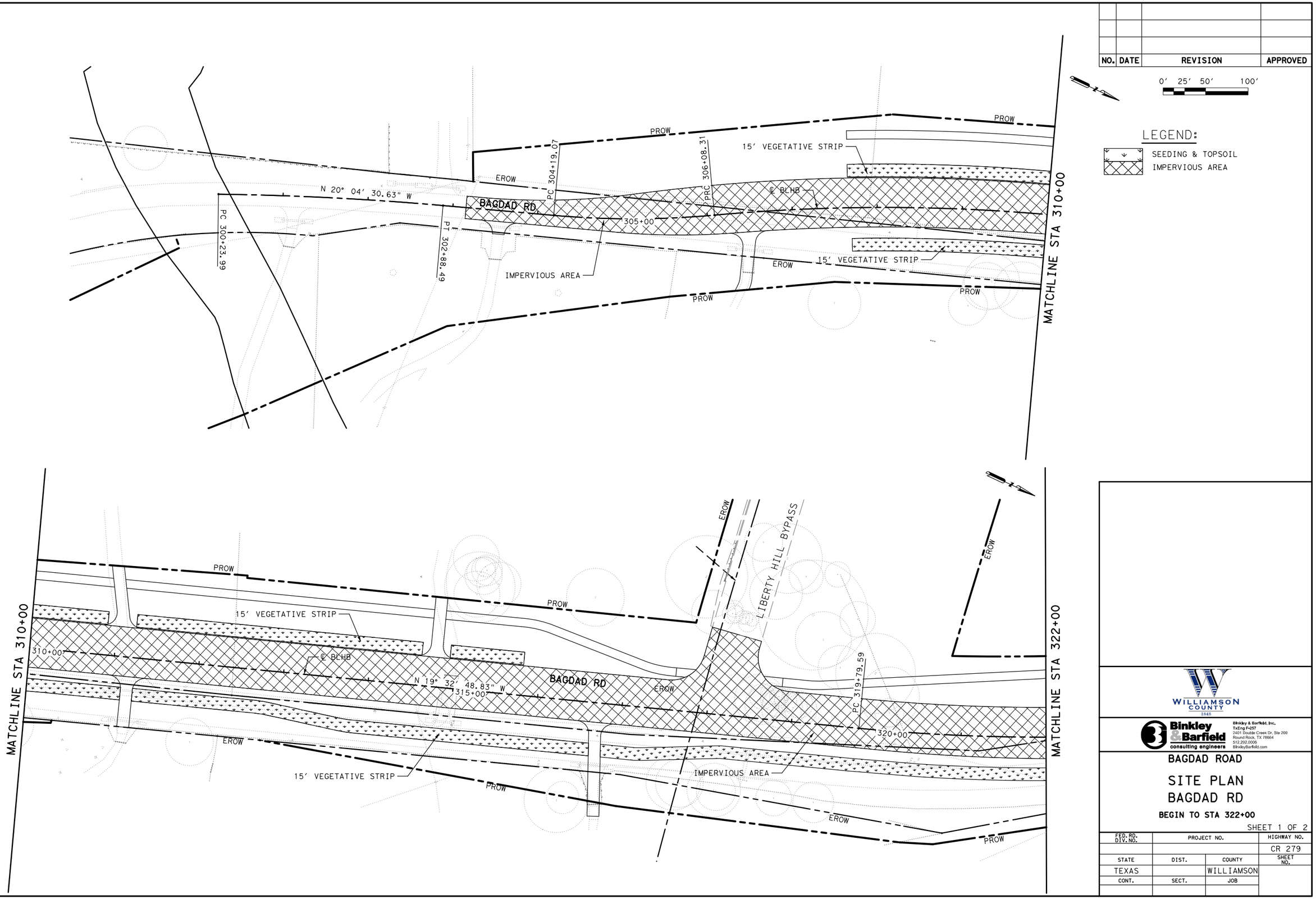

NO.	DATE	REVISION	APPROVED

0' 25' 50' 100'

LEGEND:

SEEDING & TOPSOIL

IMPERVIOUS AREA

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers

Binkley & Barfield, Inc.
TxEng F-257
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

SITE PLAN
BAGDAD RD

BEGIN TO STA 322+00

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	
CONT.	SECT.	JOB	

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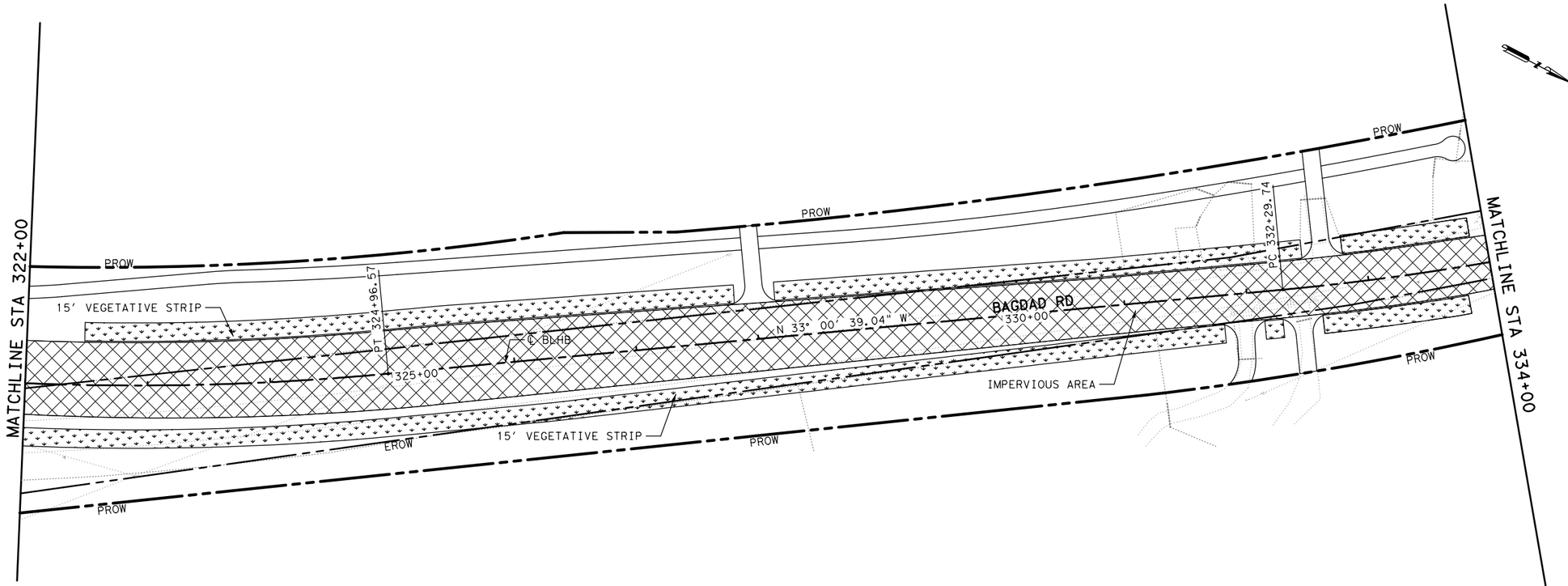
NO.	DATE	REVISION	APPROVED

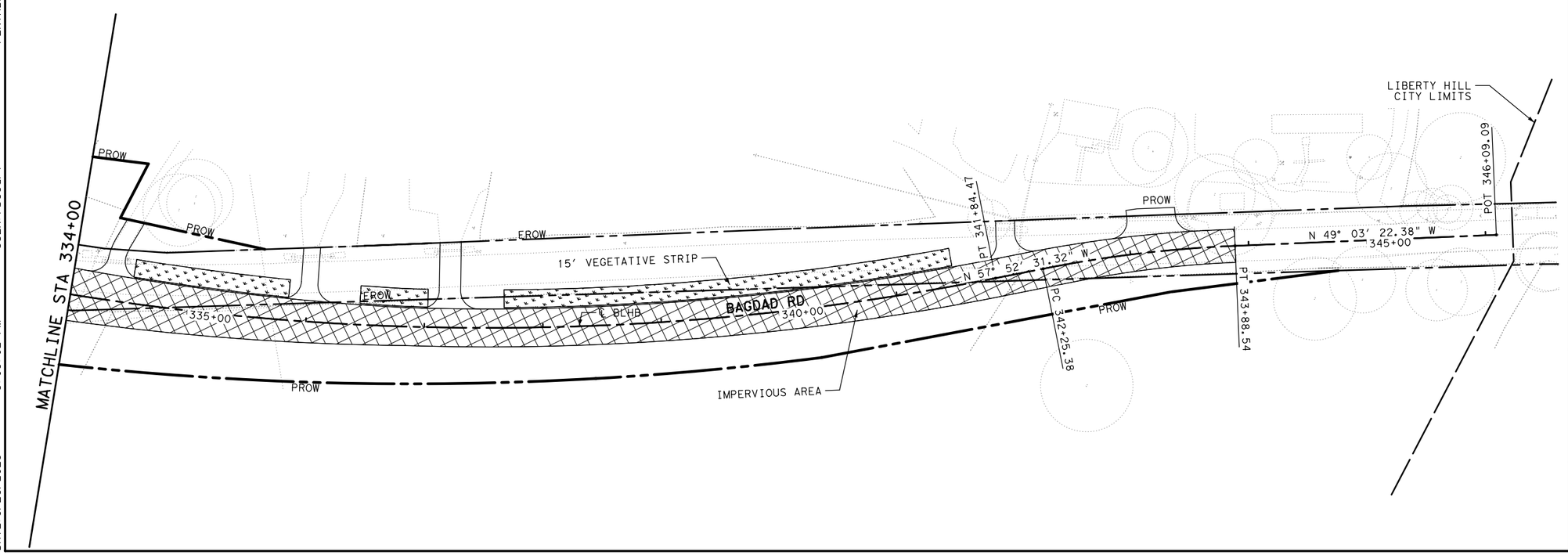
0' 25' 50' 100'

LEGEND:

SEEDING & TOPSOIL

IMPERVIOUS AREA





WILLIAMSON COUNTY 1848

Binkley & Barfield

DCCM

Binkley & Barfield, Inc.
TxEng F-457
2401 Double Creek Dr. Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

SITE PLAN

BAGDAD RD

STA 322+00 TO END

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	
CONT.	SECT.	JOB	

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EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT E – BMPs FOR UPGRADIENT (OFFSITE) STORMWATER

All upgradient stormwater is collected in roadside ditches diverted around the proposed impervious cover. In the permanent condition, all upgradient flow patterns will remain unchanged and TSS loading will not be increased. All on-site runoff affected by increased impervious cover will be treated fully before converging with upgradient stormwater.

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT F – BMP'S FOR ON-SITE STORMWATER

The proposed site development is required to remove at least 80% of the increase in total suspended solids (TSS) caused by the net increase in impervious cover on the project site. In order to accomplish this on-site stormwater will be treated by vegetative filter strips.

As shown in Attachment A of this section, the Liberty Hill Bypass project falls completely in the Edward's Aquifer Contributing Zone. The proposed BMP's will combine to remove 80% of the total increase in suspended solids caused by the project.

Vegetative filter strips are detailed in Section 3.4.6 of the Edwards Aquifer Technical Guidance Manual.

The TCEQ water quality removal calculation worksheet is included in this attachment.

LIBERTY HILL BYPASS - TSS REMOVAL SUMMARY					
BASIN	**TOTAL AREA**	**EXISTING IMPERVIOUS AREA**	**PROPOSED IMPERVIOUS AREA**	**Lm (80% Required Removal)**	**TSS REMOVAL**
	AC	**AC**	**AC**	**LBS**	**LBS**
12	6.55	0.50	1.95	1262	1101
13_14	11.62	0.14	1.82	1462	1167
15	24.63	0.34	4.11	3281	3586
Bagdad	19.01	2.44	4.76	2019	2778
TOTAL	**61.81**	**3.42**	**12.64**	**8025**	**8632**

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Liberty Hill Bypass**
Date Prepared: **7/12/2023**

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 * =	**61.81**	acres
Predevelopment impervious area within the limits of the plan * =	**3.42**	acres
Total post-development impervious area within the limits of the plan* =	**12.64**	acres
Total post-development impervious cover fraction * =	**0.20**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8025**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **12**

Total drainage basin/outfall area =	**6.55**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.50**	acres
Post-development impervious area within drainage basin/outfall area =	**1.95**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.30**	
$L_{M\ THIS\ BASIN}$ =	**1262**	lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (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 =	**1.17**	acres
A_I =	**1.17**	acres
A_P =	**0.00**	acres
L_R =	**1101**	lbs

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Liberty Hill Bypass**
Date Prepared: **7/12/2023**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
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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 * =	**61.81**	acres
Predevelopment impervious area within the limits of the plan * =	**3.42**	acres
Total post-development impervious area within the limits of the plan* =	**12.64**	acres
Total post-development impervious cover fraction * =	**0.20**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8025**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **13_14**

Total drainage basin/outfall area =	**11.62**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.14**	acres
Post-development impervious area within drainage basin/outfall area =	**1.82**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.16**	
$L_{M\ THIS\ BASIN}$ =	**1462**	lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

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

where:

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

A_C =	**1.24**	acres
A_I =	**1.24**	acres
A_P =	**0.00**	acres
L_R =	**1167**	lbs

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Liberty Hill Bypass**
Date Prepared: **7/12/2023**

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 * =	**61.81**	acres
Predevelopment impervious area within the limits of the plan * =	**3.42**	acres
Total post-development impervious area within the limits of the plan* =	**12.64**	acres
Total post-development impervious cover fraction * =	**0.20**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8025**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **15**

Total drainage basin/outfall area =	**24.63**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.34**	acres
Post-development impervious area within drainage basin/outfall area =	**4.11**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.17**	
$L_{M\ THIS\ BASIN}$ =	**3281**	lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (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 =	**3.81**	acres
A_I =	**3.81**	acres
A_P =	**0.00**	acres
L_R =	**3586**	lbs

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bagdad Road
Date Prepared: 7/12/2023

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 * =	61.81	acres
Predevelopment impervious area within the limits of the plan * =	3.42	acres
Total post-development impervious area within the limits of the plan* =	12.64	acres
Total post-development impervious cover fraction * =	0.20	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	8025	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	19.01	acres
Predevelopment impervious area within drainage basin/outfall area =	2.44	acres
Post-development impervious area within drainage basin/outfall area =	4.76	acres
Post-development impervious fraction within drainage basin/outfall area =	0.25	
$L_{M\ THIS\ BASIN}$ =	2019	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

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

where:

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

A_C =	2.95	acres
A_I =	2.95	acres
A_P =	0.00	acres
L_R =	2778	lbs

LJA Engineering, Inc.

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT G – CONSTRUCTION PLANS

WILLIAMSON COUNTY

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS

LIBERTY HILL BYPASS
PRECINCT NUMBER 2

Williamson County Project No. IFB XXXX-XXX
CSJ 1755-01-020

NET LENGTH OF ROADWAY (LHB)= 5960.38 FT (1.129 MILES)
NET LENGTH OF ROADWAY (RM1869)= 1545.04 FT (0.293 MILES)
NET LENGTH OF BRIDGE = 650.00 FT (0.123 MILES)
NET LENGTH OF PROJECT = 8155.42 FT (1.545 MILES)

LIMITS: FROM RM 1869 TO CR 279

FOR THE CONSTRUCTION OF NEW ROADWAY CONSISTING OF GRADING, BASE, PAVING, BRIDGE STRUCTURES, DRAINAGE STRUCTURES, DITCHES, WATER QUALITY BMPS, SIGNING, AND PAVEMENT MARKINGS

ROADWAY	CLASSIFICATION	DESIGN SPEED
LHB	MINOR ARTERIAL	60 MPH
RM 1869	MINOR COLLECTOR	45 MPH

ROADWAY	ADT (2022)	ADT (2042)
LHB	4,600	9,200
RM 1869	6,400	12,900

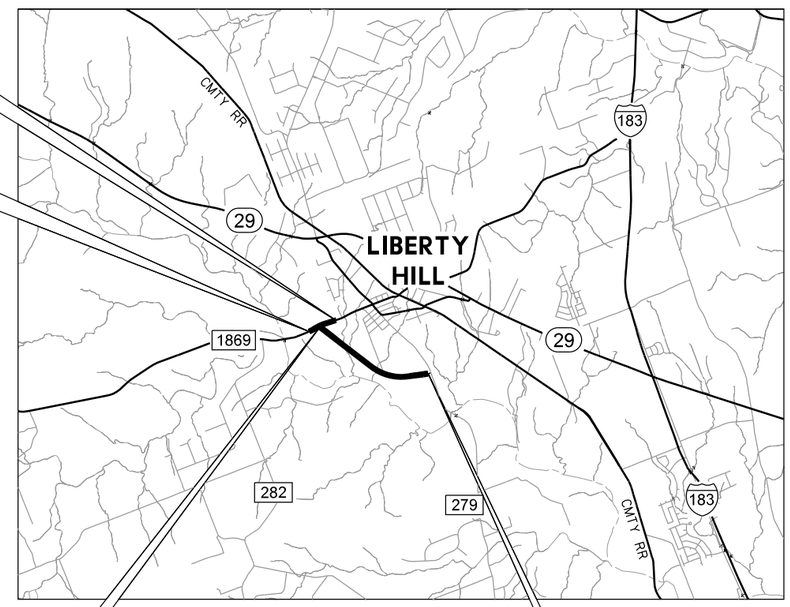
ROADWAY	DHV (2022)	DHV (2042)
LHB	132	1,104
RM 1869	768	1,548

ROADWAY	DIRECTIONAL DISTRIBUTION (D)	PERCENT TRUCKS (T)
LHB	45%(EB)/55%(WB)	3.0%
RM 1869	47%(NB)/53%(SB)	9.8%

100%
SUBMITTAL

END CONSTRUCTION
RM 1869
STA. 38+52.93 (RM1869)
CSJ: 1755-01-020

BEGIN CONSTRUCTION
RM 1869
STA. 23+07.89 (RM1869)
CSJ: 1755-01-020



BEGIN CONSTRUCTION
LIBERTY HILL BYPASS
STA. 402+69.62 (LHB)

END CONSTRUCTION
LIBERTY HILL BYPASS
STA. 468+80.00 (LHB)

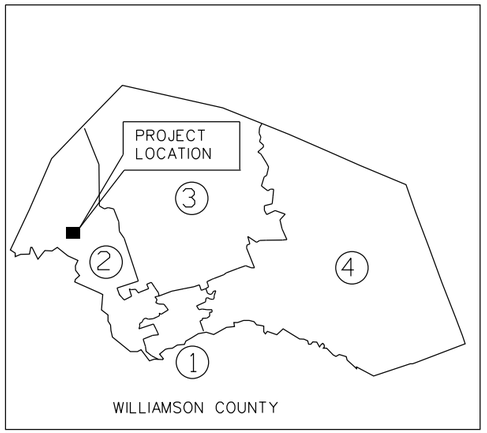
VICINITY MAP
N.T.S.

EXCEPTIONS: N/A
EQUATIONS: N/A
RAILROAD CROSSINGS: N/A
WATERSHED: SOUTH FORK SAN GABRIEL RIVER
AREA OF DISTURBANCE: 22.6 ACRES

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION NOT REQUIRED

CROSSINGS 13/14 AND 15 ARE CONSIDERED EXEMPT FROM DETENTION DUE TO LESS THAN 20% IMPERVIOUS COVER IN PROPOSED RIGHT-OF-WAY (WILLIAMSON COUNTY SUBDIVISION REGULATIONS B11.1.3)

REQUIRED SIGNS SHALL BE PLACED IN ACCORDANCE WITH STANDARD SHEETS BC(1)-21 THRU BC(12)-21 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.:



TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES ADOPTED ON NOVEMBER 1, 2014 AND ALL APPLICABLE SPECIAL PROVISIONS AND SPECIAL SPECIFICATIONS AS INDICATED IN THE BID DOCUMENTS SHALL GOVERN ON THIS PROJECT.

LJA Engineering, Inc.
FRN-F-1386

PREPARED BY:
LJA ENGINEERING

DEREK BOHLS, PE
PROJECT MANAGER

8/29/2023
DATE

STATE OF TEXAS
DEREK T. BOHLS
103424
LICENSED
PROFESSIONAL ENGINEER

WILCO TEXAS

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APPROVED BY:
WILLIAMSON COUNTY

BILL GRAVELL, JR.
WILLIAMSON COUNTY JUDGE

DATE

RECOMMENDED BY:
TXDOT

JOHN PETERS, PE
AREA ENGINEER

DATE

APPROVED BY:
WILLIAMSON COUNTY

CYNTHIA LONG
WILLIAMSON COUNTY COMMISSIONER, PRECINCT 2

DATE

RECOMMENDED BY:
TXDOT

DISTRICT DESIGN ENGINEER

DATE

APPROVED BY:
HNTB CORPORATION

RICHARD L RIDINGS, PE
ROAD BOND MANAGEMENT TEAM

DATE

APPROVED BY:
TXDOT

HEATHER ASHLEY-NGUYEN, PE
DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

DATE

100% SUBMITTAL

GENERAL

1		TITLE SHEET
2	- 3	INDEX OF SHEETS
4	- 6	PROJECT LAYOUT
7	- 8	LIBERTY HILL BYPASS TYPICAL SECTIONS
9	- 10	RM 1869 TYPICAL SECTIONS
11		TCP SUMMARY
12		ROADWAY SUMMARY
13		DRAINAGE SUMMARY
14		BRIDGE SUMMARY
15		PAVEMENT MARKING SUMMARY
16		SW3P SUMMARY
17	- 19	SUMMARY OF SMALL SIGNS

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28		TCP NARRATIVE
29	- 30	TCP PHASE 1 & 2 - TYPICAL SECTIONS
31	- 33	TCP LAYOUT PHASE 2-1
34	- 36	TCP LAYOUT PHASE 2-2
37	- 39	TCP LAYOUT PHASE 2-3

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40		FLEXPAVE(2)-22 (AUS)
41	- 52	#BC(1-12)-21
53		#TCP(2-1)-18
54		#TCP(2-2)-18
55		#TCP(2-3)-18
56		#TCP(3-1)-13
57		#TCP(3-3)-14
58		#TCP(7-1)-13
59		#WZ-ITS(3)-19
60		#WZ(BRK)-13
61		#WZ(RS)-22
62		#WZ(STPM)-13
63		#TREATMENT FOR VARIOUS EDGE CONDITIONS

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65		HORIZONTAL ALIGNMENT DATA
66	- 71	LIBERTY HILL BYPASS - ROADWAY PLAN & PROFILE
72	- 73	RM 1869 - ROADWAY PLAN AND PROFILE
74		STUBBLEFIELD LN CULDESAC
75		INTERSECTION DETAILS
76	- 77	FENCE LAYOUT
78		DRIVEWAY DETAILS

ROADWAY STANDARDS

79		*TE(HMAC)-11
80		*GF(31)-19
81		*GF(31)MS-19
82	- 83	*GF(31)TRTL3-20
84		*BED-14
85		*SGT(10S)31-16
86		*SGT(11S)31-18
87		*SGT(12S)31-18
88		*SGT(15)31-20
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93		*CFL-10
94	- 95	*CITY OF ROUND ROCK WATER DETAILS

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97	- 100	DITCH DRAINAGE AREA MAP
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105	- 106	BRIDGE HYDRAULIC DATA SHEETS
107	- 112	LIBERTY HILL BYPASS - DRAINAGE PLAN & PROFILE
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116		POND DETAILS
117	- 123	DITCH DATA
124		DRIVEWAY CULVERT SUMMARY

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126		*SCP-3
127		*SCP-4
128		*PW
129	- 130	*SETB-CD
131		*FW-S
132		*SETP-PD
133		*ECD

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140		ESTIMATED QUANTITIES & BEARING SEAT ELEVATIONS
141	- 142	ABUTMENT NO. 1 OR 6
143		INTERIOR BENT NOS 2-5
144		FRAMING PLAN (SPANS 1-3)
145		330.00' PRESTRESSED CONCRETE GIRDER UNIT 1
146		FRAMING PLAN (SPANS 4-5)
147		220.00' PRESTRESSED CONCRETE GIRDER UNIT 2
148		IGND

LIBERTY HILL BYPASS BRIDGE AT TRIBUTARY 2 OF SOUTH FORK SAN GABRIEL RIVER

149		BRIDGE LAYOUT
150		ESTIMATED QUANTITIES & BEARING SEAT ELEVATIONS
151	- 152	ABUTMENT NO. 1 OR 2
153		FRAMING PLAN (SPAN 1)
154		100.00' PRESTRESSED CONCRETE GIRDER SPAN
155		IGND

BRIDGE STANDARDS

156	- 158	~C221 (MOD)
159		~BAS-A
160		~CRR
161	- 162	~CSAB
163	- 164	~FD
165	- 166	~IGD
167	- 169	~IGEB
170	- 171	~IGMS
172		~IGSK
173		~IGTS
174	- 175	~MEBR(C)
176	- 177	~PBC-RC
178	- 181	~PCP
182		~PCP-FAB
183	- 184	~PMDF
185		~SEJ-M

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RILEY SLADEK, P.E. — DATE 8/29/2023

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PAUL HAHN, P.E. — DATE 8/29/2023

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VASILEIOS SAMARAS, P.E. — DATE 8/29/2023

STATE OF TEXAS
DEREK T. BOHLS
103424
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
INDEX OF SHEETS

SHEET 1 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			2
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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TRAFFIC DETAILS

186 - 188 LIBERTY HILL BYPASS SIGNING AND PAVEMENT MARKINGS
189 RM 1869 SIGNING AND PAVEMENT MARKINGS
190 LHB SIGN DETAILS

TRAFFIC STANDARDS

191 +D&OM(1)-20
192 +D&OM(2)-20
193 +D&OM(3)-20
194 +D&OM(4)-20
195 +D&OM(5)-20
196 +D&OM(6)-20
197 +D&OM(VIA)-20
198 +PM1-20
199 +PM2-20
200 +PM3-20
201 +SMD(GEN)-08
202 +SMD(SLIP-1)-08
203 +SMD(SLIP-2)-08
204 +SMD(SLIP-3)-08

EROSION CONTROL DETAILS

205 - 206 SWP3
207 - 212 LIBERTY HILL BYPASS - EROSION CONTROL LAYOUT
213 - 215 RM 1869 - EROSION CONTROL LAYOUT

EROSION CONTROL STANDARDS

216 #EC(1)-16
217 #EC(2)-16
218 #EC(3)-16
219 - 220 #CORR STANDARDS

CROSS SECTIONS

221 - 251 LIBERTY HILL BYPASS CROSS SECTIONS
252 - 260 RM 1869 CROSS SECTIONS

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RILEY SLADEK, P.E. — 8/29/2023 DATE

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PAUL HAHN, P.E. — 8/29/2023 DATE

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CHAD WOOD, P.E. — 8/29/2023 DATE

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103424
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
INDEX OF SHEETS

SHEET 2 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			3
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
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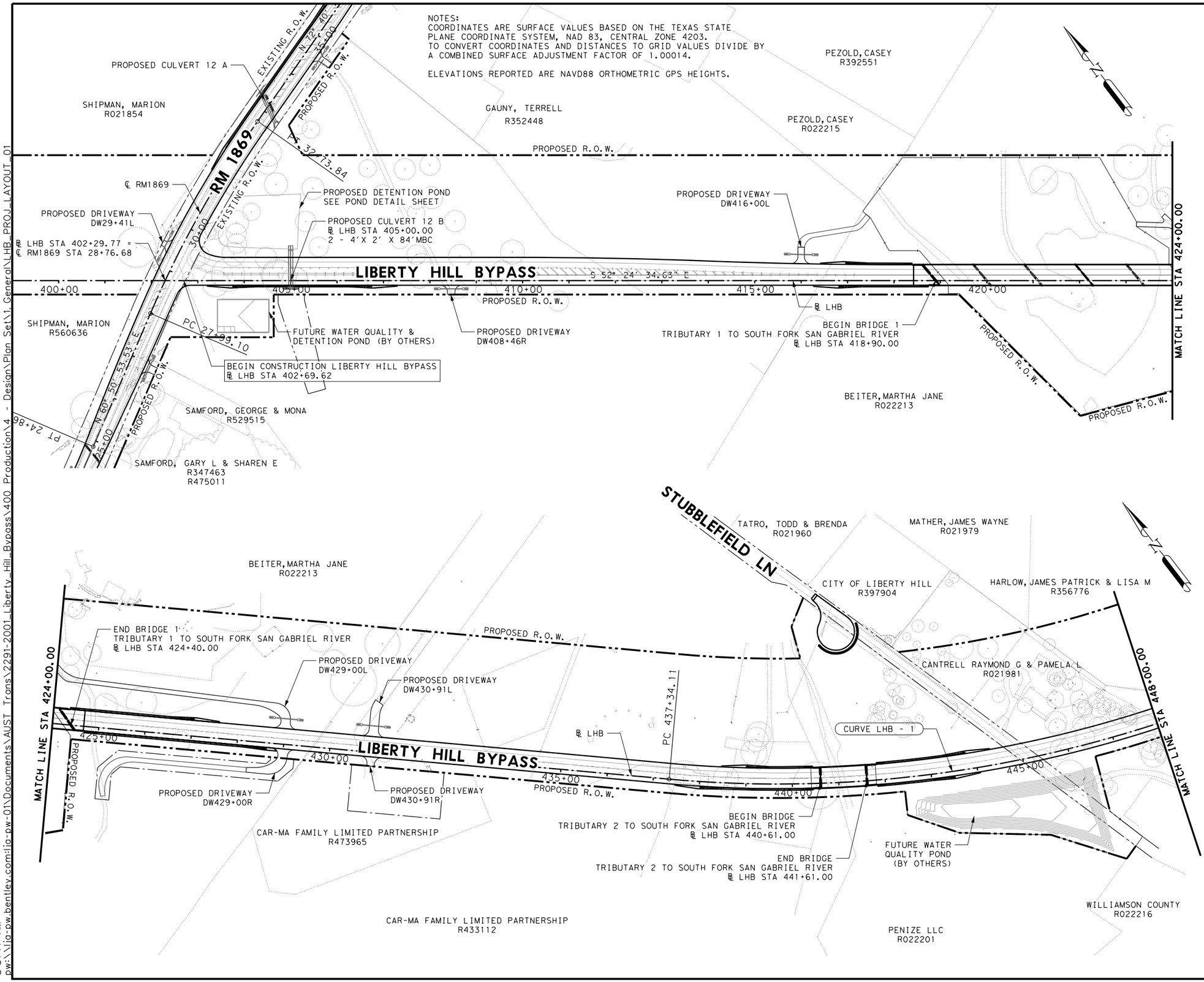
TO CONVERT COORDINATES AND DISTANCES TO GRID VALUES DIVIDE BY A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00014.

ELEVATIONS REPORTED ARE NAVD88 ORTHOMETRIC GPS HEIGHTS.

SCALE: 1" = 200'
200 100 0 200

LEGEND
- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROPOSED DRNG EASEMENT
- PROPOSED CONST EASEMENT
- PARCEL LINE



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103424
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
PROJECT LAYOUT

BEGIN TO STA 448+00
SCALE HORIZONTAL: 1"=200'

SHEET 1 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			4
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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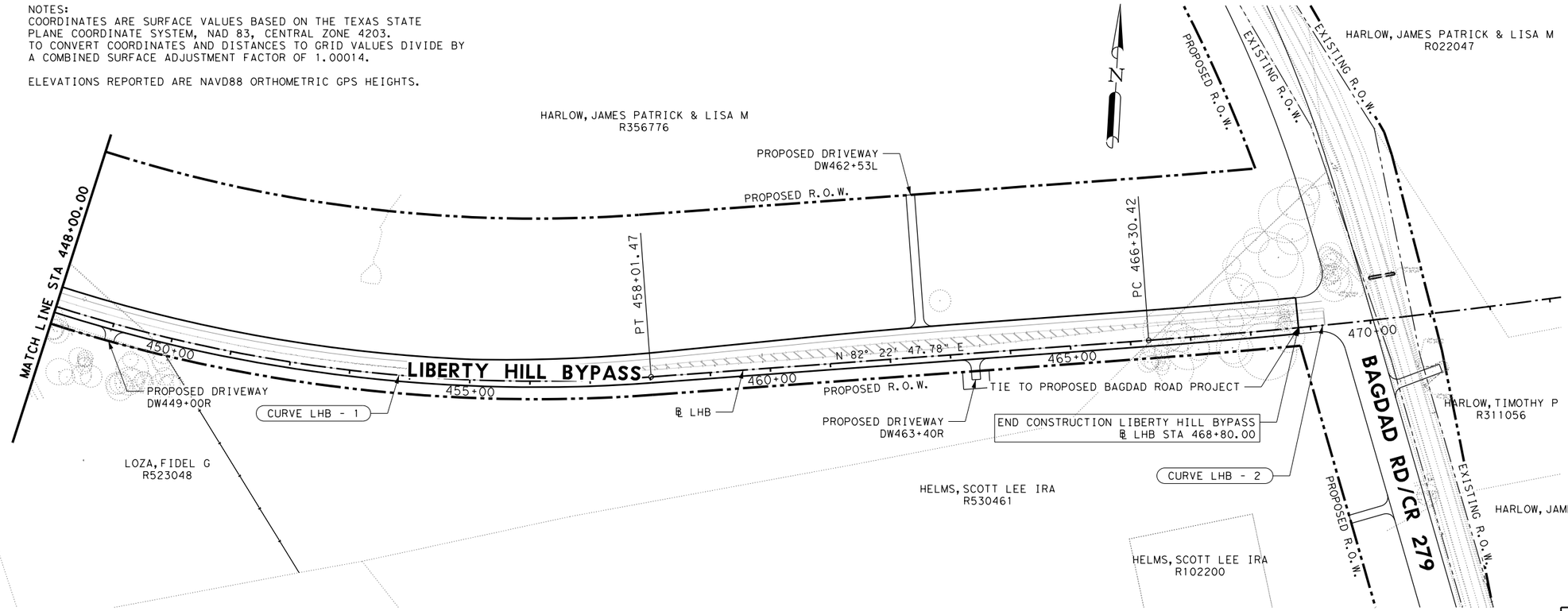
ELEVATIONS REPORTED ARE NAVD88 ORTHOMETRIC GPS HEIGHTS.



LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROPOSED DRNG EASEMENT
- PROPOSED CONST EASEMENT
- PARCEL LINE

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DEREK T. BOHLS
103424
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
PROJECT LAYOUT

STA 448+00 TO END
SCALE HORIZONTAL: 1"=200'

SHEET 2 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			5
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
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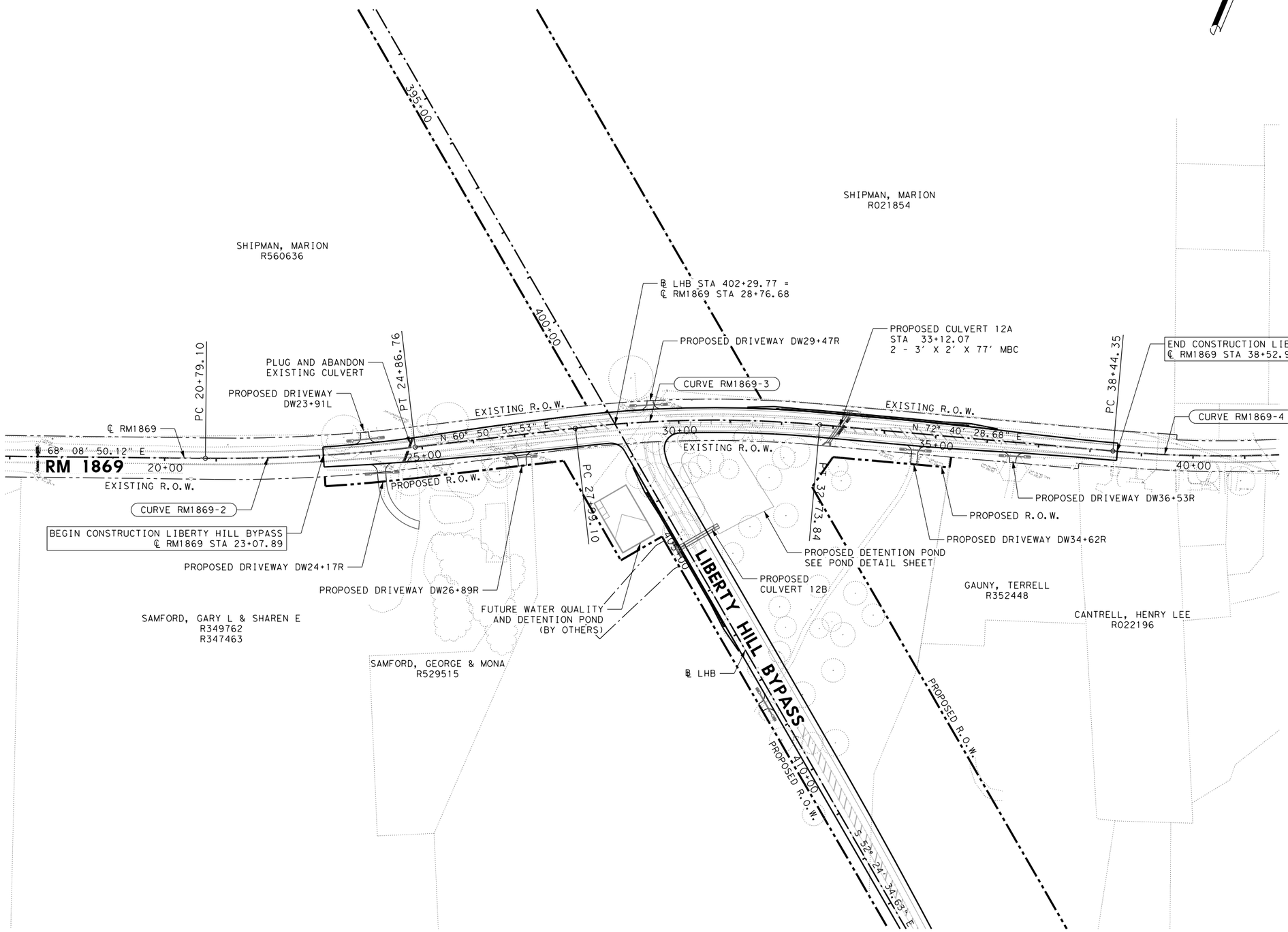
TO CONVERT COORDINATES AND DISTANCES TO GRID VALUES DIVIDE BY A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00014.

ELEVATIONS REPORTED ARE NAVD88 ORTHOMETRIC GPS HEIGHTS.

SCALE: 1" = 200'
200 100 0 200

LEGEND
- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROPOSED DRNG EASEMENT
- PROPOSED CONST EASEMENT
- PARCEL LINE



STATE OF TEXAS
DEREK T. BOHLS
103424
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
PROJECT LAYOUT
RM 1869

SCALE HORIZONTAL: 1"=200'

SHEET 3 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			6
DRAWN	STATE	DIST. NO.	COUNTY	
CM		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
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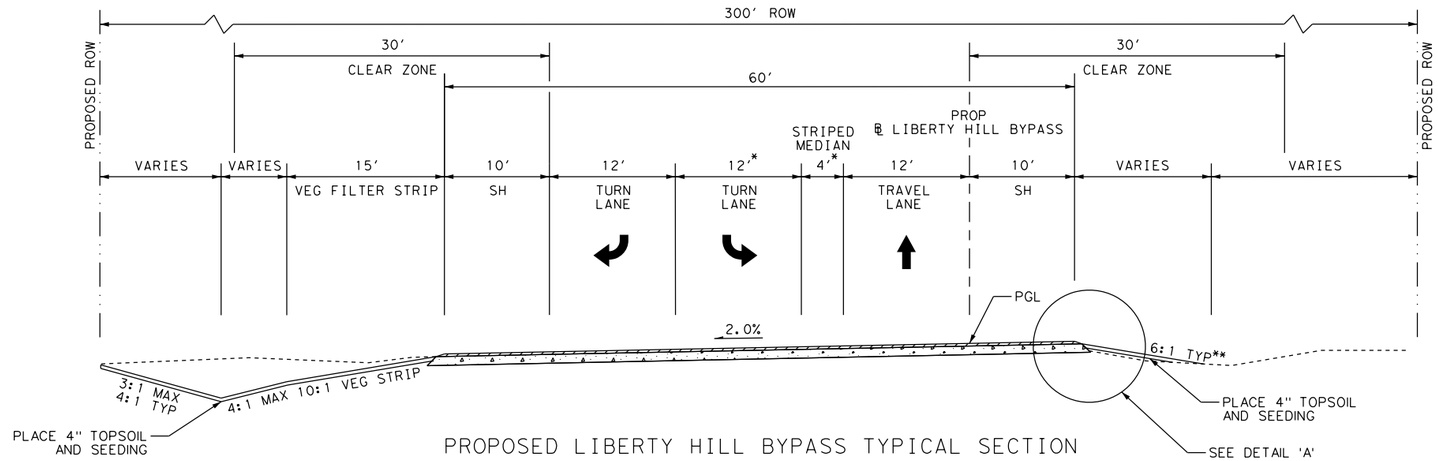
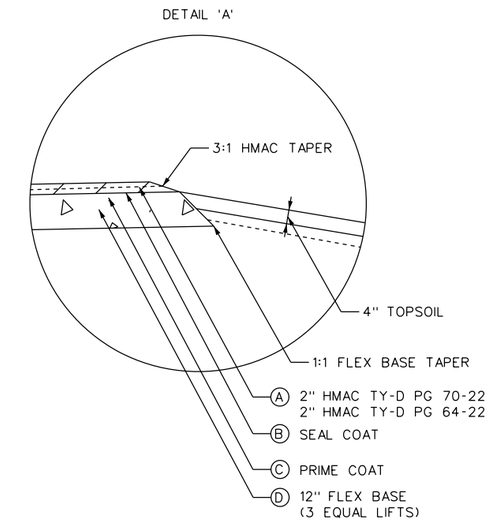
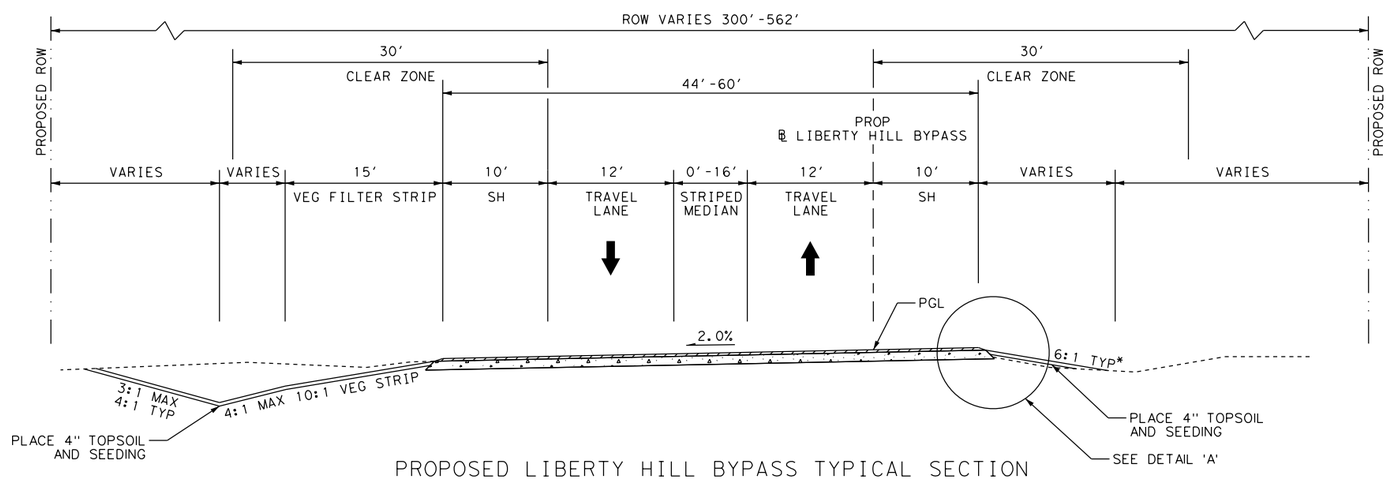


PROPOSED LIBERTY HILL BYPASS TYPICAL SECTION

LIBERTY HILL BYPASS STA 402+91.09 TO STA 406+83.00
*LIBERTY HILL BYPASS STA 406+83.00 TO STA 409+83.00 (0'-12', 4'-16' STRIPED MEDIAN)
**SEE CROSS SECTIONS FOR DITCH LOCATIONS





PROPOSED LIBERTY HILL BYPASS TYPICAL SECTION

LIBERTY HILL BYPASS STA 409+83.00 TO STA 417+15.00 (0'-16' STRIPED MEDIAN)
LIBERTY HILL BYPASS STA 417+15.00 TO STA 418+90.00 (NO STRIPED MEDIAN)
LIBERTY HILL BYPASS STA 424+40.00 TO STA 440+61.00 (NO STRIPED MEDIAN)
LIBERTY HILL BYPASS STA 441+61.00 TO STA 455+01.41 (NO STRIPED MEDIAN)
LIBERTY HILL BYPASS STA 455+01.41 TO STA 463+44.00 (0'-16' STRIPED MEDIAN)
*SEE CROSS SECTIONS FOR DITCH LOCATIONS

NOTE: SEE BRIDGE TYPICAL SECTIONS FOR BRIDGE LOCATIONS

STATE OF TEXAS
CHAD WOOD
92822
LICENSED PROFESSIONAL ENGINEER
11/19/2021

WILLIAMSON COUNTY 1848

ATG ALLIANCE TRANSPORTATION GROUP
TBPE Firm Registration No. F-812

LJA Engineering, Inc.
FRN-F-1386

LIBERTY HILL BYPASS
TYPICAL SECTIONS
LIBERTY HILL BYPASS

SCALE HORIZONTAL: NTS
VERTICAL: NTS
SHEET 1 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ATG	6			7
DRAWN	STATE	DIST. NO.	COUNTY	
BD	TX		WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
TH				LHB

11/19/2021
$TIME$
$FILEL$

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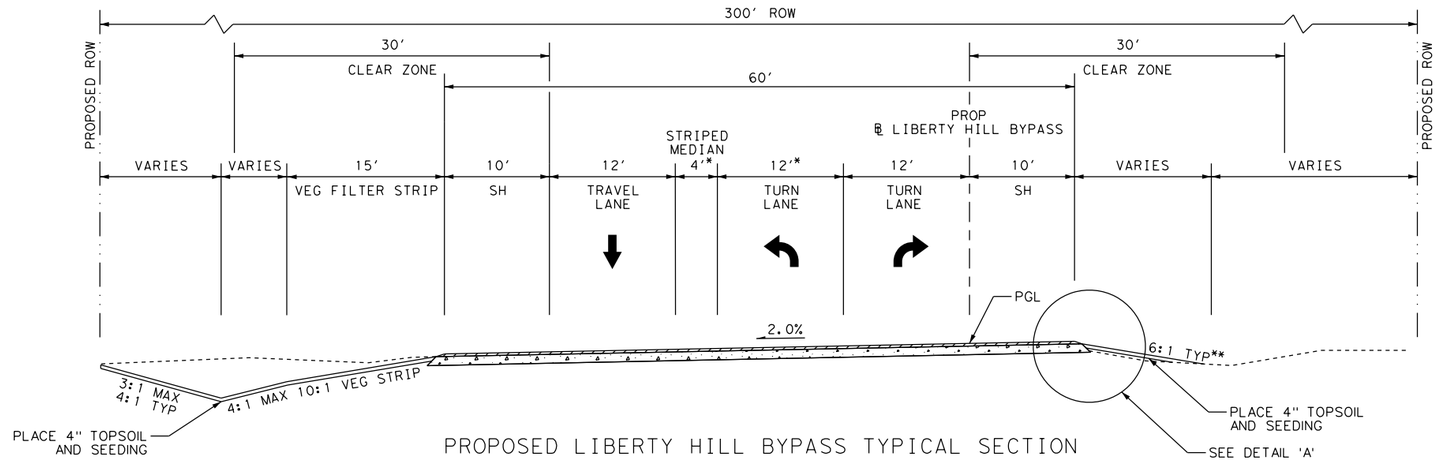
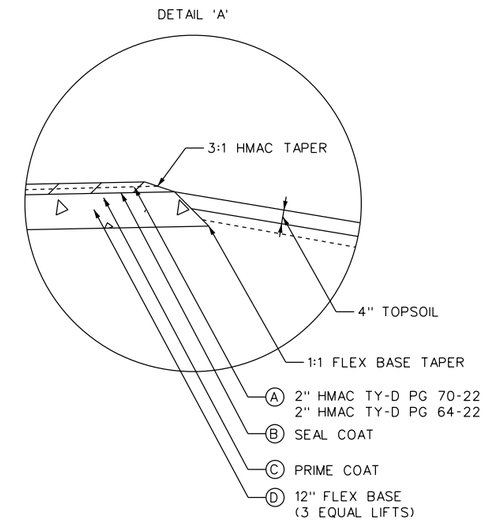


PROPOSED LIBERTY HILL BYPASS TYPICAL SECTION

LIBERTY HILL BYPASS STA 466+44.00 TO STA 469+24.00

*LIBERTY HILL BYPASS STA 463+44.00 TO STA 466+44.00 (0'-12', 4'-16'STRIPED MEDIAN)

**SEE CROSS SECTIONS FOR DITCH LOCATIONS



STATE OF TEXAS
CHAD WOOD
92822
LICENSED PROFESSIONAL ENGINEER
11/19/2021

WILLIAMSON COUNTY 1848

ATG ALLIANCE TRANSPORTATION GROUP
TBPE Firm Registration No. F-812

LJA Engineering, Inc.
FRN-F-1386

LIBERTY HILL BYPASS
TYPICAL SECTIONS
LIBERTY HILL BYPASS

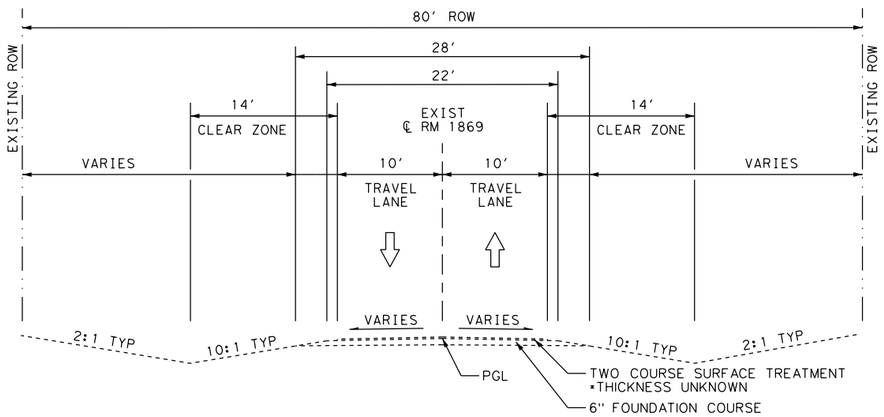
SCALE HORIZONTAL: NTS
VERTICAL: NTS

SHEET 2 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ATG	6			8
DRAWN	STATE	DIST. NO.	COUNTY	
BD	TX		WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
TH				LHB

11/19/2021
$TIME$
$FILEL$

100% SUBMITTAL



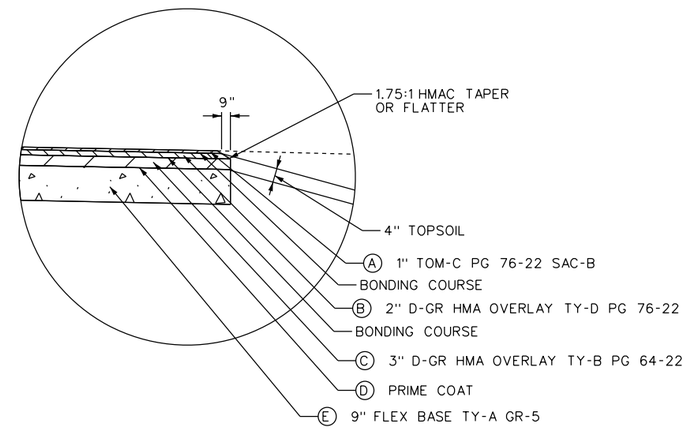
EXISTING RM 1869 TYPICAL SECTION

RM 1869 STA 23+07.89 TO STA 38+52.93

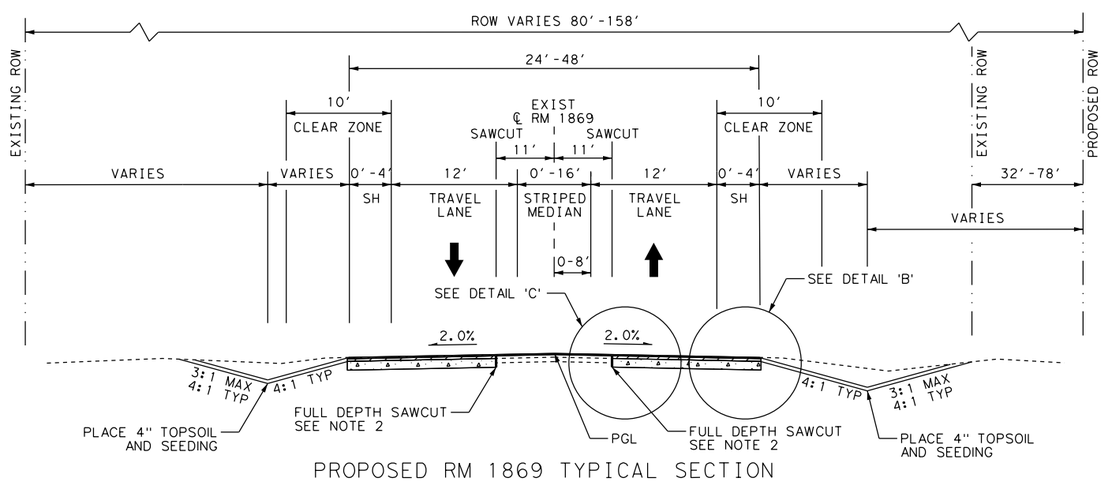
NOTE:

PRIOR TO CONSTRUCTION THE CONTRACTOR IS TO SURVEY RM 1869 CENTERLINE ALIGNMENT AND LEFT AND RIGHT EDGE OF PAVEMENT EVERY 50 FT & PROVIDE THE EXISTING GROUND ELEVATION INFORMATION TO THE OBSERVER FOR VERIFICATION. ELEVATIONS WILL BE VERIFIED WITHIN 10 WORKING DAYS AND COMMENTS PROVIDED TO CONTRACTOR WITH ANY NESSESARY ADJUSTMENTS.

DETAIL 'B'



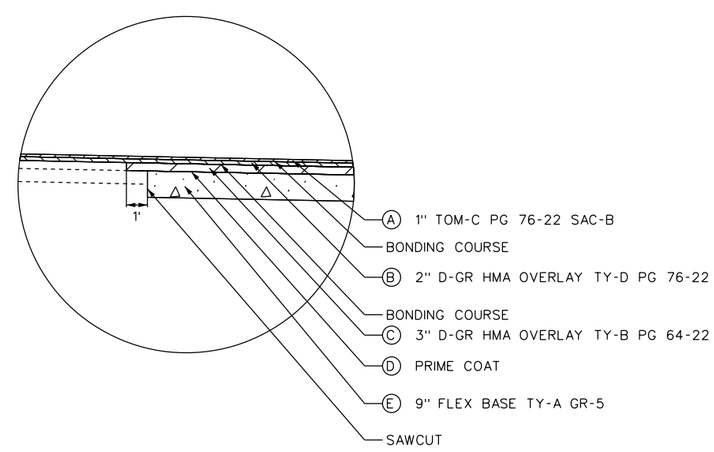
NOTES:
1. CONSTRUCTION SEQUENCE FOR PAVEMENT BETWEEN WIDENING SHALL CONSIST OF:
   A) REPAIR EXISTING PAVEMENT. LIMITS OF REPAIRS MUST BE DETERMINED BY THE OBSERVER.
   B) LEVEL-UP TO ACHIEVE UNIFORM CROSS SLOPE
   C) NO MORE THAN A 2" DROP OFF
   D) MAINTAIN 3:1 SLOPES
   E) MAINTAIN 1.5" MIN LEVEL UP
2. FULL PAVEMENT WIDTH OVERLAY TO INCLUDE TOM-C AND TY-D HMA
3. TY-B HMA OFFSET 1' FROM FULL DEPTH SAWCUT



PROPOSED RM 1869 TYPICAL SECTION

RM 1869 STA 23+07.89 TO STA 24+17.99 (NO STRIPED MEDIAN, 4' SH)
RM 1869 STA 34+19.05 TO STA 38+24.30 (0'-16' STRIPED MEDIAN, 4' SH)
RM 1869 STA 38+24.30 TO STA 38+52.93 (NO STRIPED MEDIAN, 0'-4' SH)

DETAIL 'C'



STATE OF TEXAS
CHAD WOOD
92822
LICENSED PROFESSIONAL ENGINEER
7/28/2023

WILLIAMSON COUNTY 1848

ATG ALLIANCE TRANSPORTATION GROUP
TBPE Firm Registration No. F-812

LJA Engineering, Inc.
FRN-F-1386

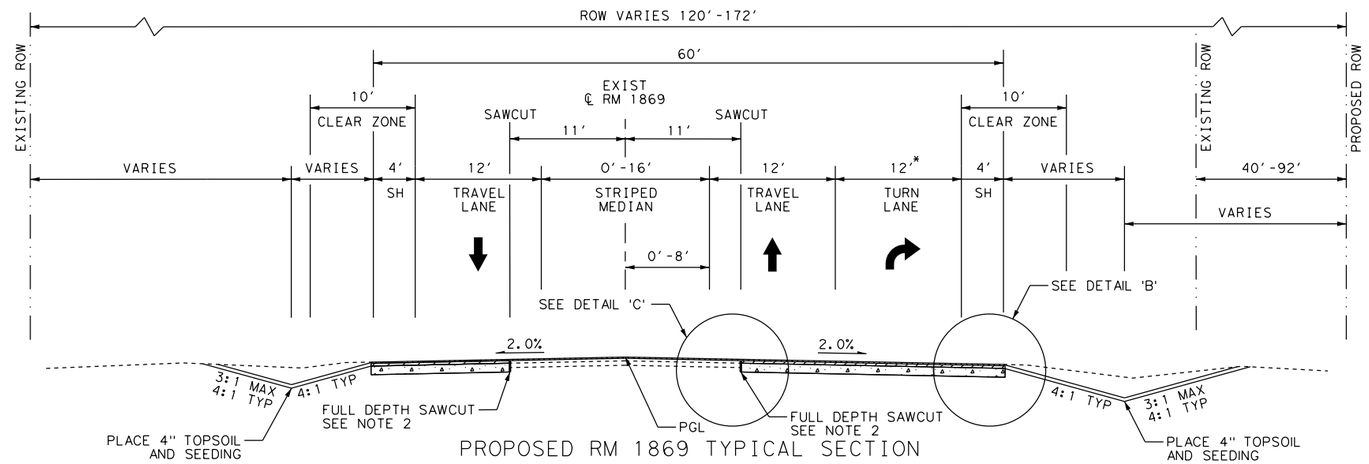
LIBERTY HILL BYPASS
TYPICAL SECTIONS
RM 1869

SCALE HORIZONTAL: NTS
VERTICAL: NTS
SHEET 1 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ATG	6			9
DRAWN	STATE	DIST. NO.	COUNTY	
BD	TX		WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
TH				LHB

7/28/2023
$TIME$
$FILEL$

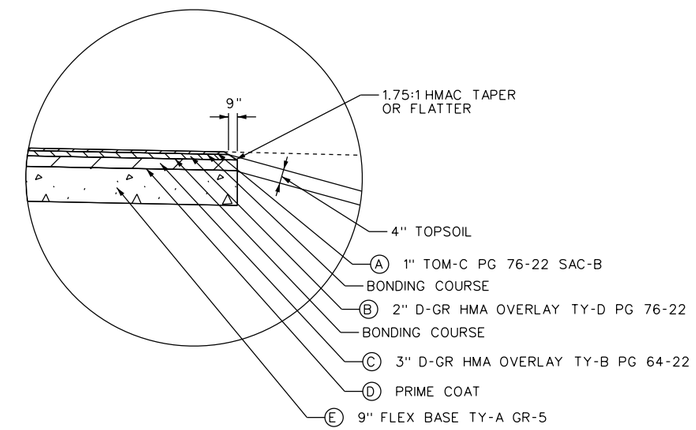
100% SUBMITTAL



PROPOSED RM 1869 TYPICAL SECTION

RM 1869 STA 25+17.94 TO STA 29+74.05
*RM 1869 STA 24+17.94 TO STA 25+17.94 (0'-12')

DETAIL 'B'

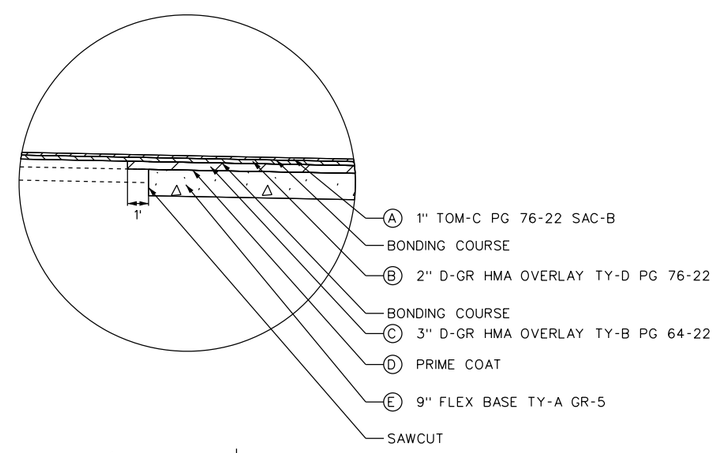


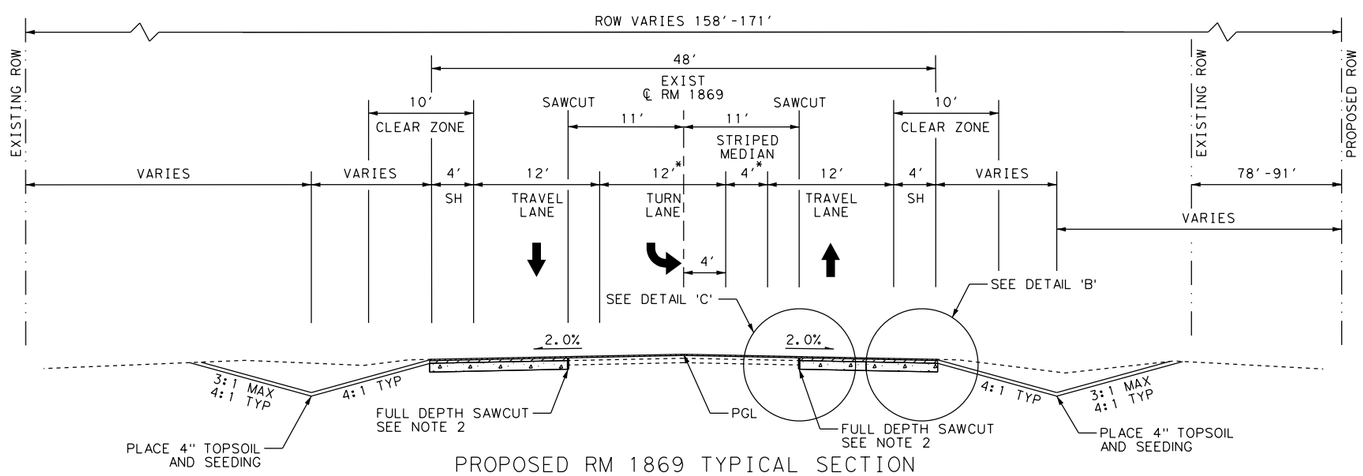
NOTES:
1. CONSTRUCTION SEQUENCE FOR PAVEMENT BETWEEN WIDENING SHALL CONSIST OF:
   A) REPAIR EXISTING PAVEMENT. LIMITS OF REPAIRS MUST BE DETERMINED BY THE OBSERVER.
   B) LEVEL-UP TO ACHIEVE UNIFORM CROSS SLOPE
   C) NO MORE THAN A 2" DROP OFF
   D) MAINTAIN 3:1 SLOPES
   E) MAINTAIN 1.5" MIN LEVEL UP
2. FULL PAVEMENT WIDTH OVERLAY TO INCLUDE TOM-C AND TY-D HMA
3. TY-B HMA OFFSET 1' FROM FULL DEPTH SAWCUT

NOTE:

PRIOR TO CONSTRUCTION THE CONTRACTOR IS TO SURVEY RM 1869 CENTERLINE ALIGNMENT AND LEFT AND RIGHT EDGE OF PAVEMENT EVERY 50 FT & PROVIDE THE EXISTING GROUND ELEVATION INFORMATION TO THE OBSERVER FOR VERIFICATION. ELEVATIONS WILL BE VERIFIED WITHIN 10 WORKING DAYS AND COMMENTS PROVIDED TO CONTRACTOR WITH ANY NESSESARY ADJUSTMENTS.

DETAIL 'C'





PROPOSED RM 1869 TYPICAL SECTION

RM 1869 STA 29+74.05 TO STA 33+19.05
*RM 1869 STA 33+19.05 TO STA 34+19.05 (0'-12', 4'-16' STRIPED MEDIAN)

STATE OF TEXAS
CHAD WOOD
92822
LICENSED
PROFESSIONAL ENGINEER
7/28/2023

WILLIAMSON COUNTY 1848

ATG ALLIANCE TRANSPORTATION GROUP
TBPE Firm Registration No. F-812

LJA Engineering, Inc.
FRN-F-1386

LIBERTY HILL BYPASS
TYPICAL SECTIONS
RM 1869

SCALE HORIZONTAL: NTS
VERTICAL: NTS
SHEET 2 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ATG	6			10
DRAWN	STATE	DIST. NO.	COUNTY	
BD	TX		WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
TH				LHB

7/28/2023
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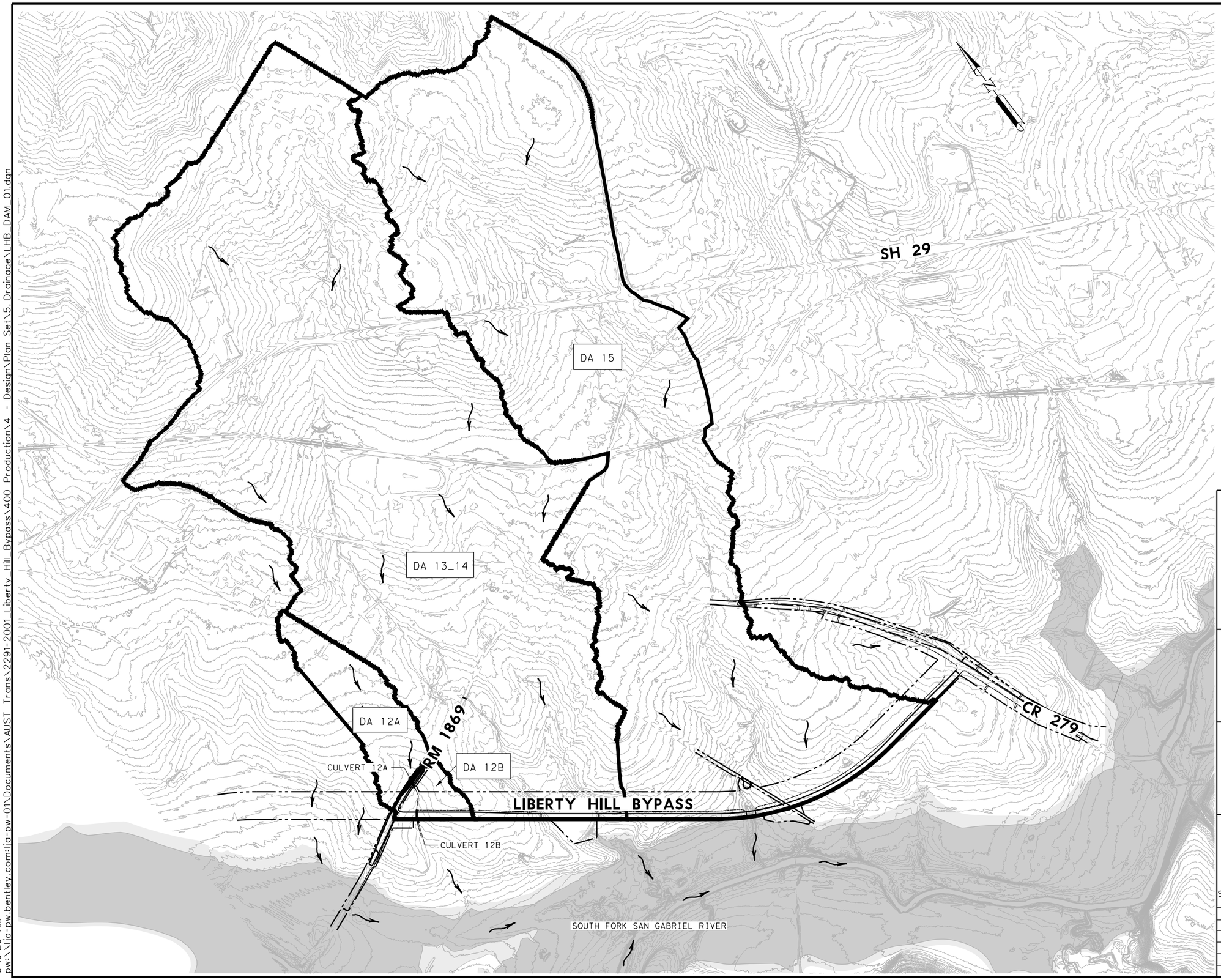
$FILEL$

100% SUBMITTAL



LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

NOTES:
1. SEE HYDRAULIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.
2. SEE H&H REPORT FOR THIS PROJECT TITLED "LIBERTY HILL BYPASS H&H REPORT", DATED SEPTEMBER 2020.
3. HYDROLOGY FOR DA 13,14 & DA 15 PERFORMED IN HEC-HMS VERSION 4.6 APPLYING THE SCS CURVE NUMBER LOSS METHOD.
4. ALL OTHER HYDROLOGY PERFORMED IN GEOPAK DRAINAGE USING THE RATIONAL METHOD.
5. ATLAS 14 24-HOUR RAINFALL DEPTHS WERE USED IN ANALYSIS.
6. HYDROLOGY BASED ON NRCS RATIONAL METHODOLOGY DESCRIBED IN THE TXDOT HYDRAULIC MANUAL, SEPTEMBER 2019, SECTIONS 12 AND 13, CHAPTER 4.

0' 250' 500' 1000'
SCALE: 1"=1000'

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CULVERT DRAINAGE AREA MAP

SCALE HORIZONTAL: 1"=1000'
VERTICAL:
SHEET 1 OF 1

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			96
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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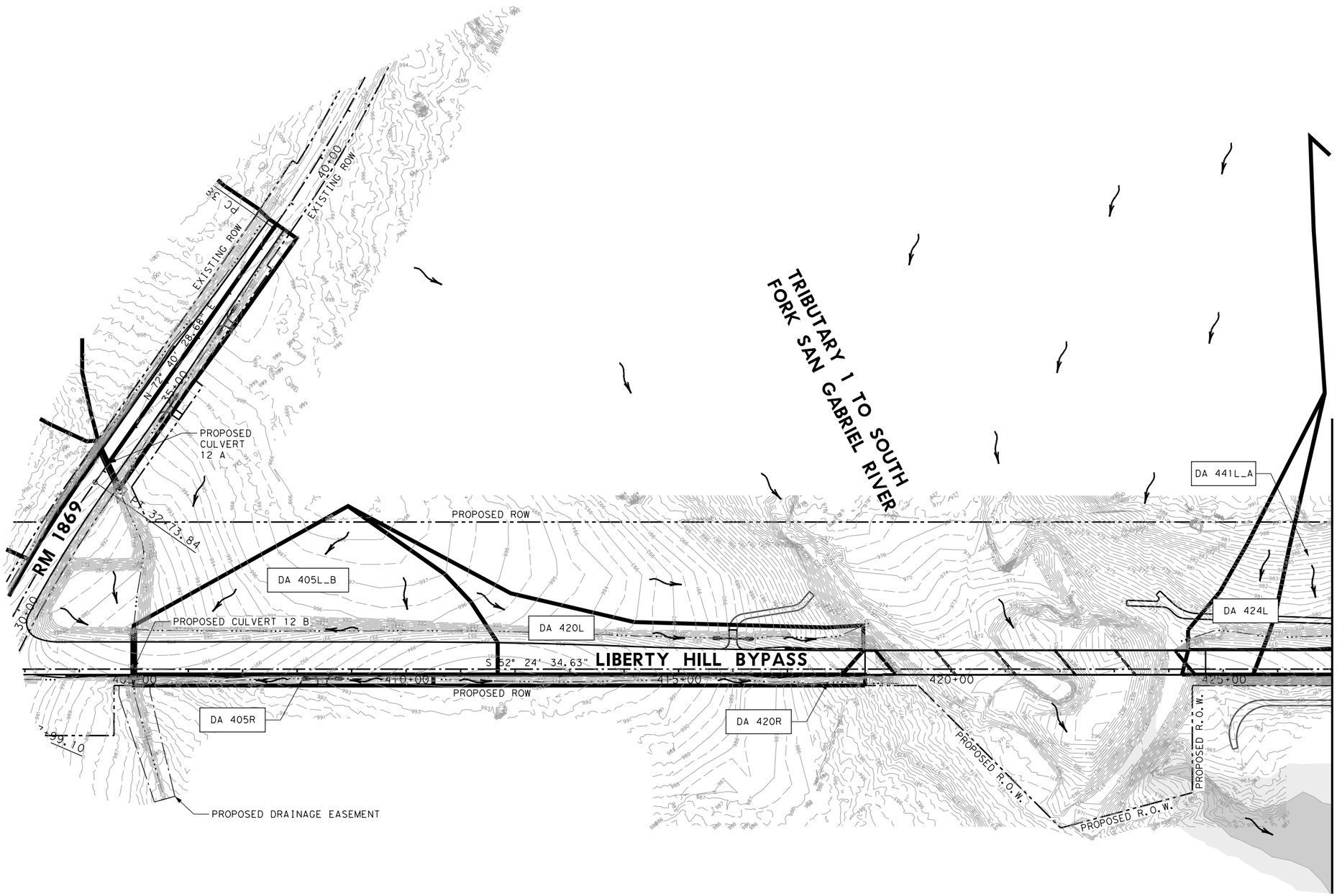

LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

NOTES:
1. SEE HYDROLOGIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.

0' 50' 100' 200'
SCALE: 1"=200'

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DITCH DRAINAGE AREA MAP

BEGIN TO STA 427+00

SCALE HORIZONTAL: 1"=200'
VERTICAL:

SHEET 1 OF 4

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
DJ	6			97
DRAWN	STATE	DIST. NO.	COUNTY	
DJ		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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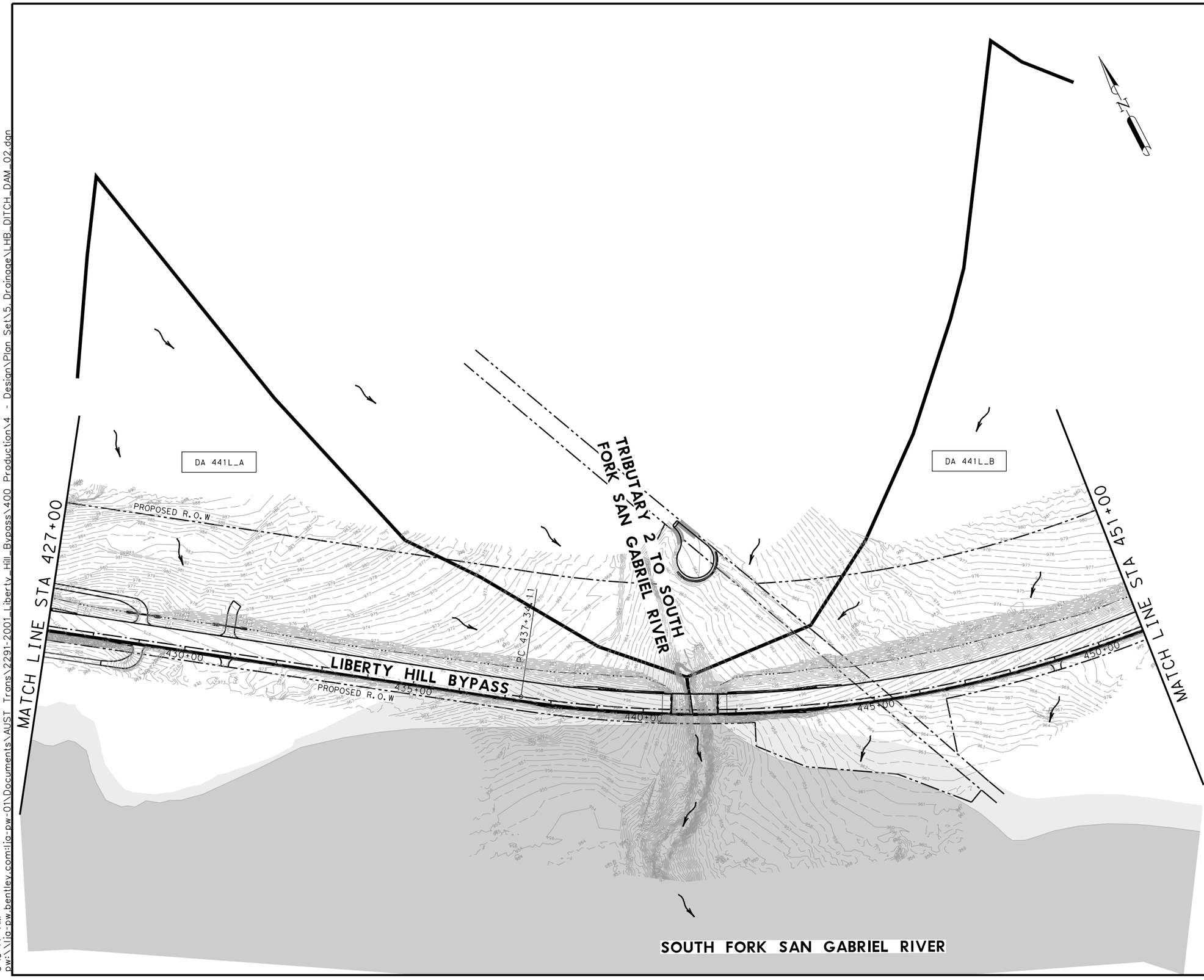

LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

NOTES:
1. SEE HYDROLOGIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.

0' 50' 100' 200'
SCALE: 1"=200'

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DITCH DRAINAGE AREA MAP

STA 427+00 TO STA 451+00

SCALE HORIZONTAL: 1"=200'
VERTICAL:

SHEET 2 OF 4

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
DJ	6			98
DRAWN	STATE	DIST. NO.	COUNTY	
DJ		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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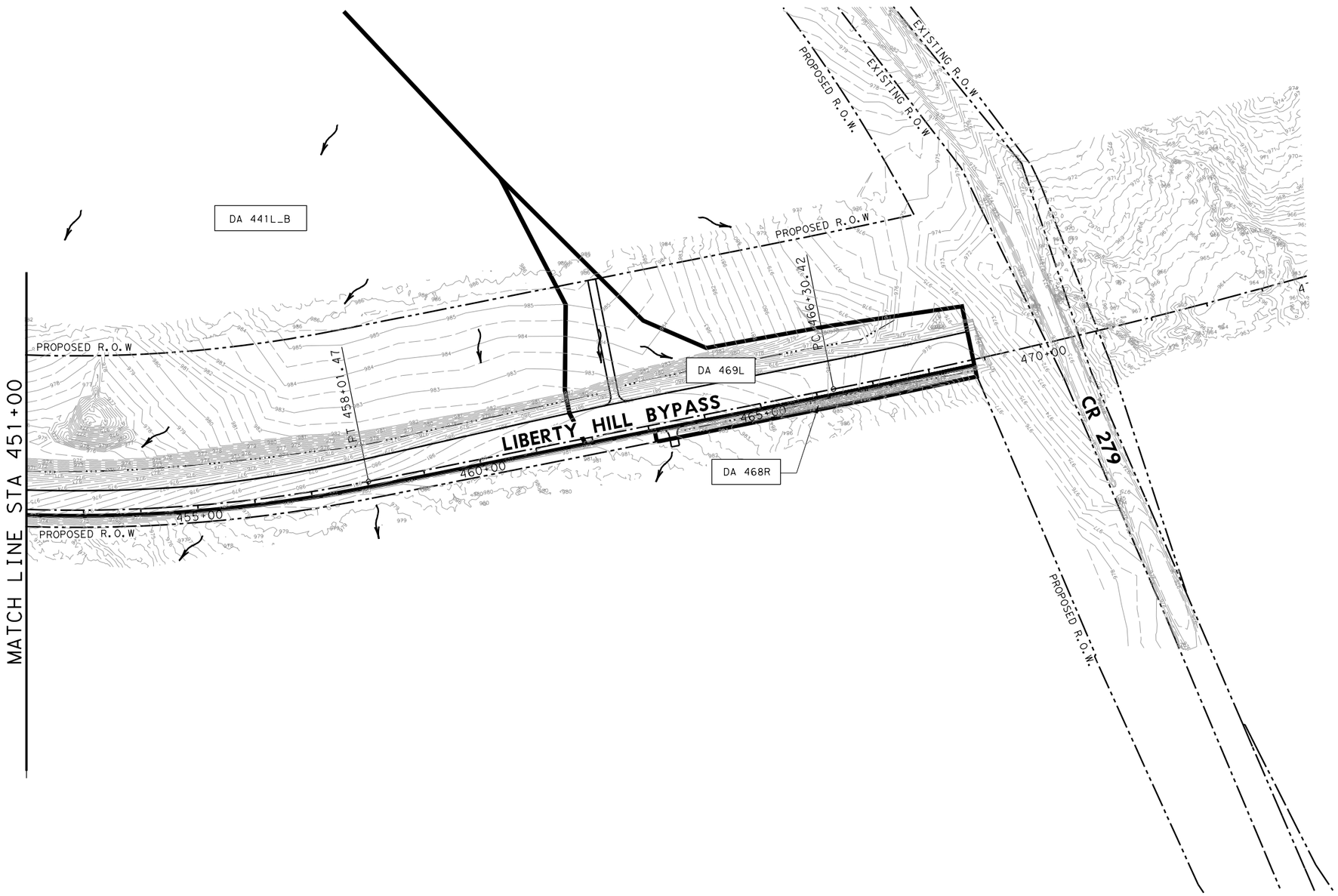

LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

NOTES:
1. SEE HYDROLOGIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.

0' 50' 100' 200'
SCALE: 1"=200'

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DITCH DRAINAGE AREA MAP

STA 451+00 TO END

SCALE HORIZONTAL: 1"=200'
VERTICAL:

SHEET 3 OF 4

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
DJ	6			99
DRAWN	STATE	DIST. NO.	COUNTY	
DJ		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
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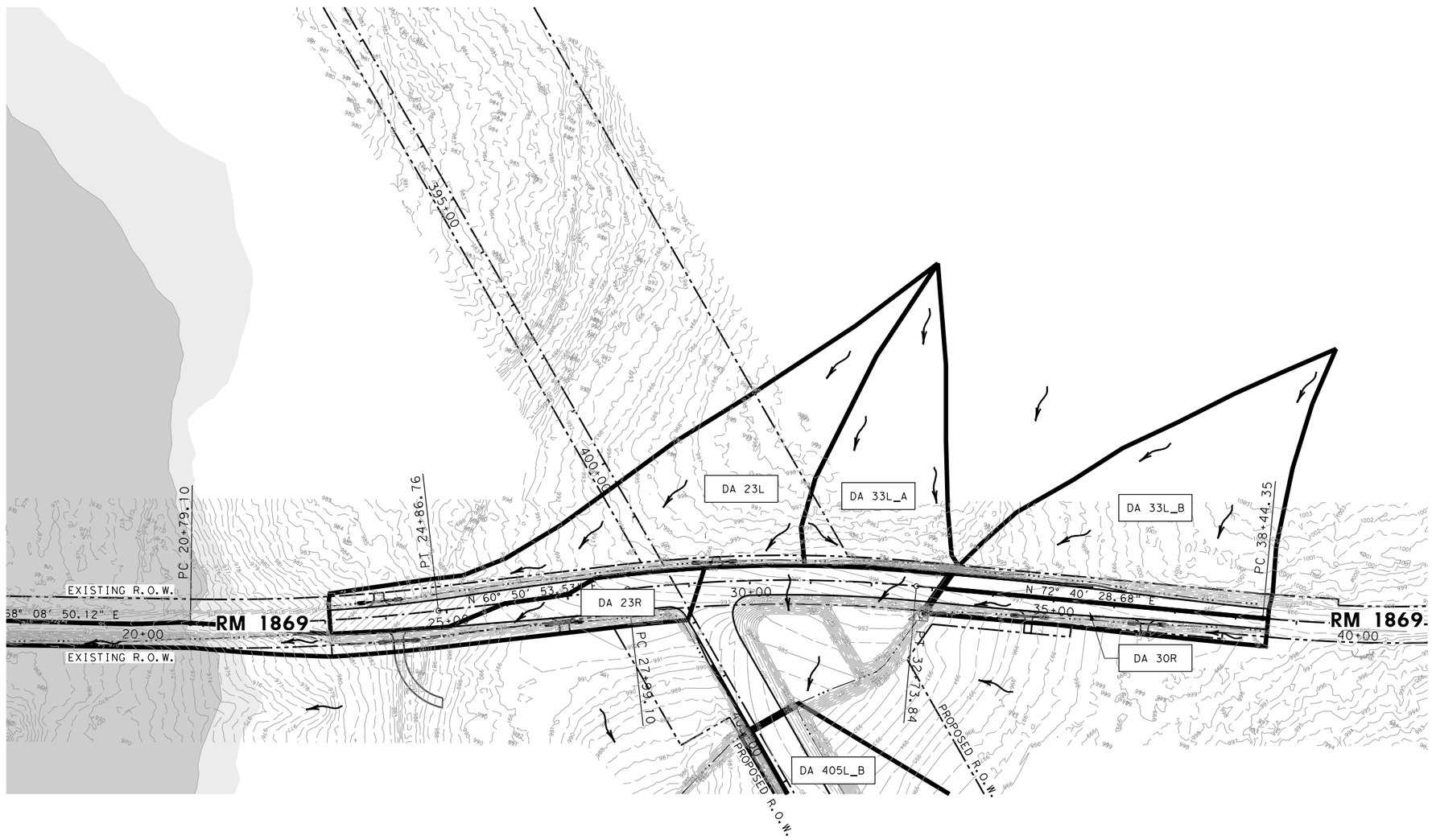

LEGEND

XX	DRAINAGE AREA ID
	EXISTING ROW
	PROPOSED ROW
	DRAINAGE AREA BOUNDARY
	FLOW DIRECTION ARROW
	DRAINAGE MITIGATION AREA
	100 YR FLOODPLAIN
	500 YR FLOODPLAIN

NOTES:
1. SEE HYDROLOGIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.

0' 50' 100' 200'
SCALE: 1"=200'

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DTICH DRAINAGE AREA MAP

SCALE HORIZONTAL: 1"=200'
VERTICAL:
SHEET 4 OF 4

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
DESIGN	6			100
DRAWN	STATE	DIST. NO.	COUNTY	
DRAWN		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
CHECK	1755	01	020	LHB

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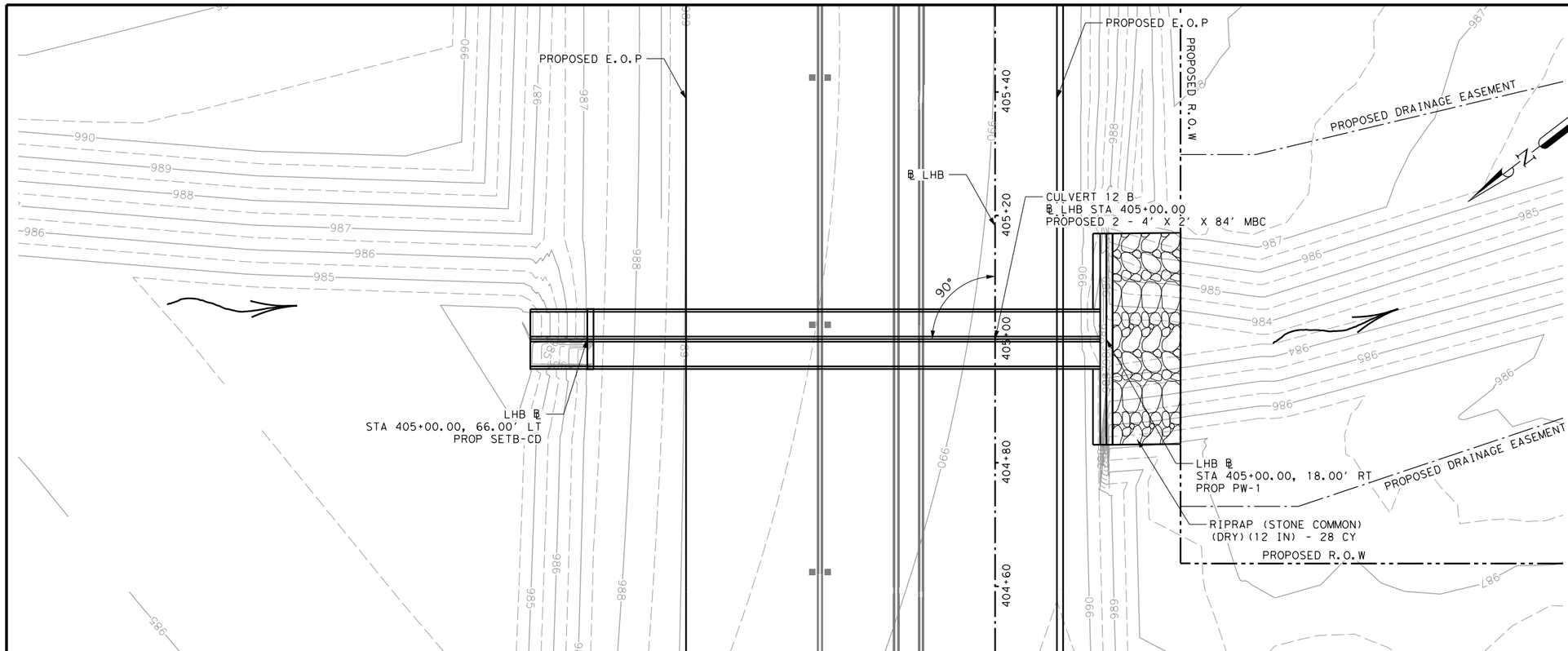
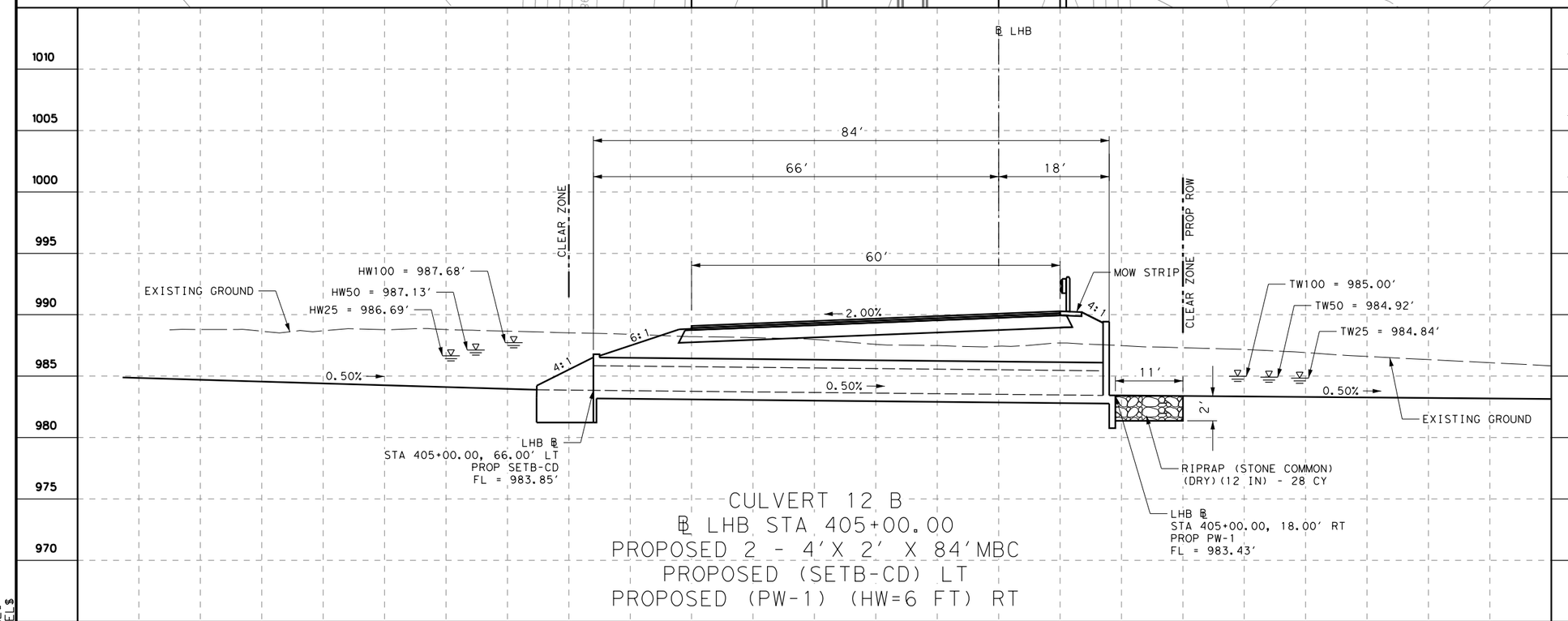


HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROPOSED CONSTRUCTION EASEMENT

NOTES:
1. ANALYSIS PERFORMED USING HY-8 HYDRAULIC ANALYSIS PROGRAM VERSION 7.6 FOR CULVERT.
2. TW ELEVATION ESTABLISHED USING OUTFALL CHANNEL GEOMETRY.
3. PROPOSED CONTOURS SHOWN.



CULVERT 12 B
℄ LHB STA 405+00.00
PROPOSED 2 - 4'X 2' X 84'MBC
PROPOSED (SETB-CD) LT
PROPOSED (PW-1) (HW=6 FT) RT

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
$DATE$

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CULVERT 12B
LAYOUT

1"=20'
1"=10'
SHEET 1 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			102
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
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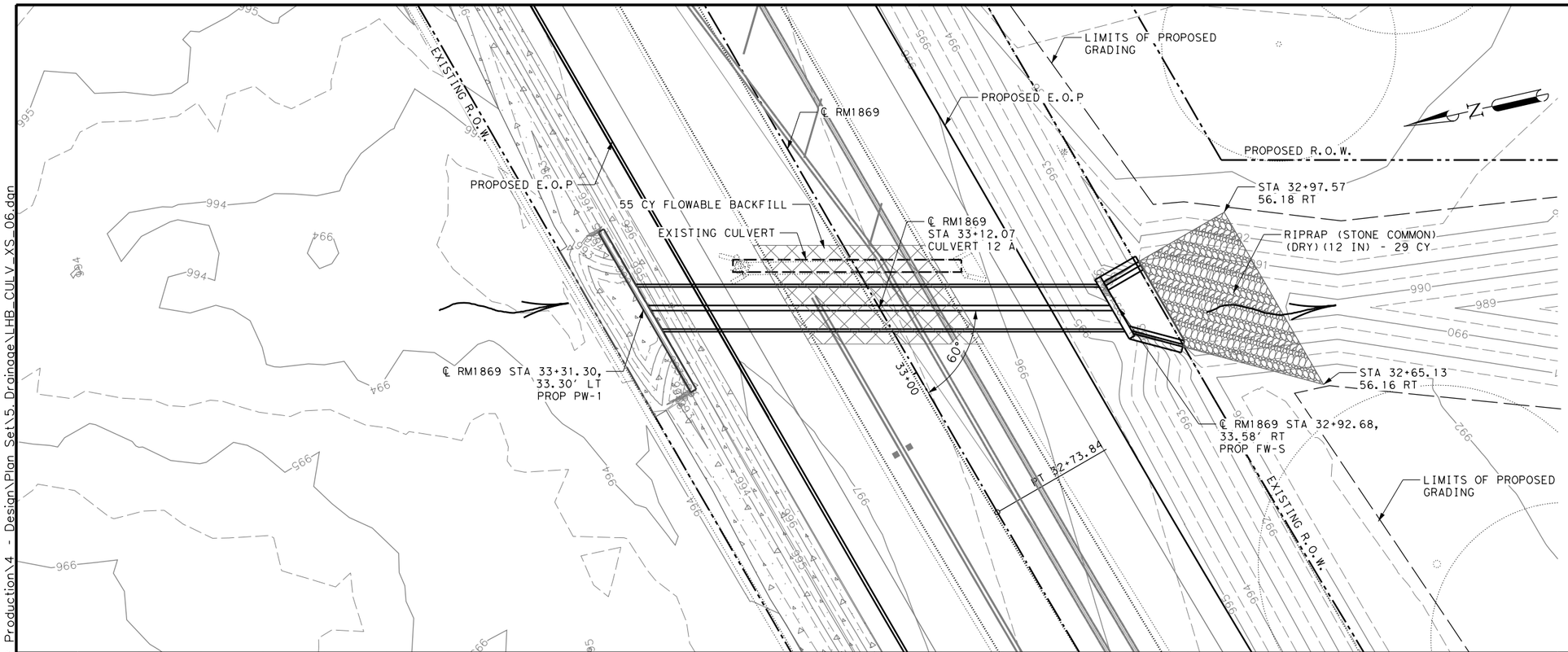
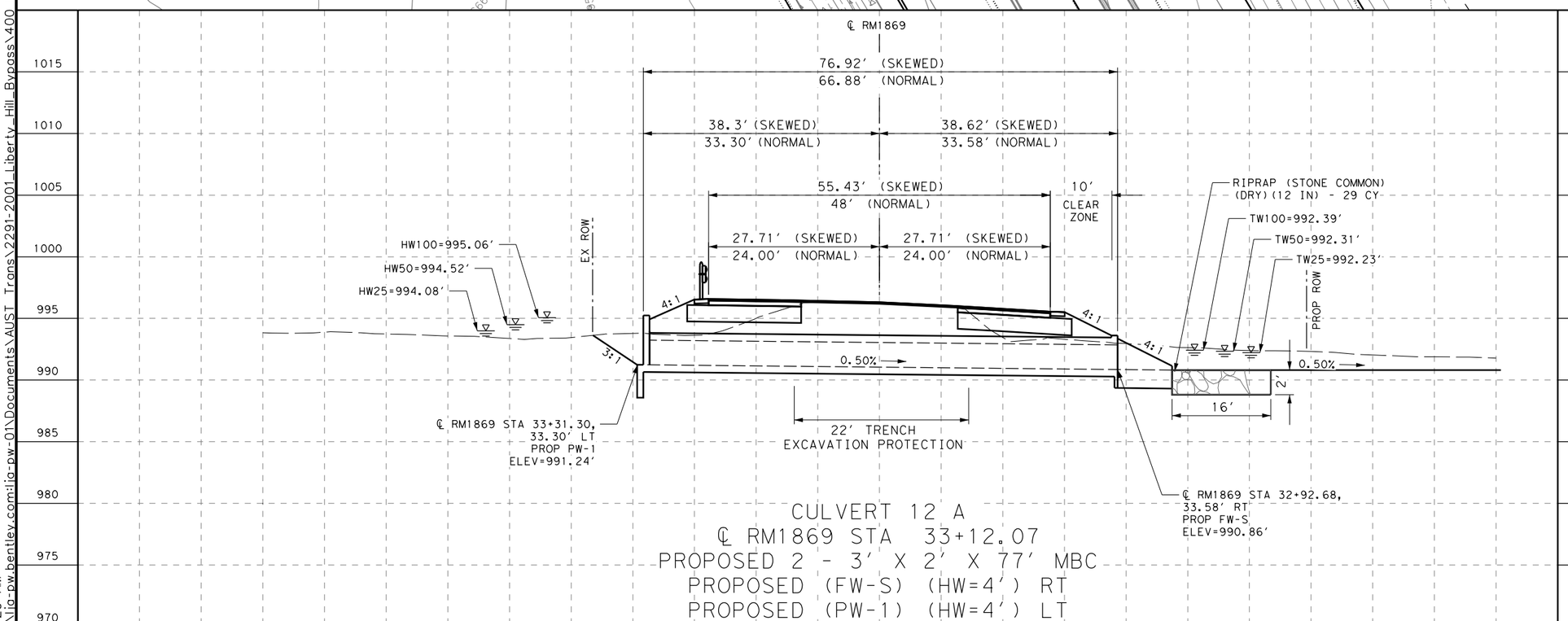


HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROPOSED CONSTRUCTION EASEMENT

NOTES:
1. ANALYSIS PERFORMED USING HY-8 HYDRAULIC ANALYSIS PROGRAM VERSION 7.6 FOR CULVERT.
2. TW ELEVATION ESTABLISHED USING OUTFALL CHANNEL GEOMETRY.
3. PROPOSED CONTOURS SHOWN.



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CULVERT 12A
LAYOUT

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'
SHEET 2 OF 2

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			103
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
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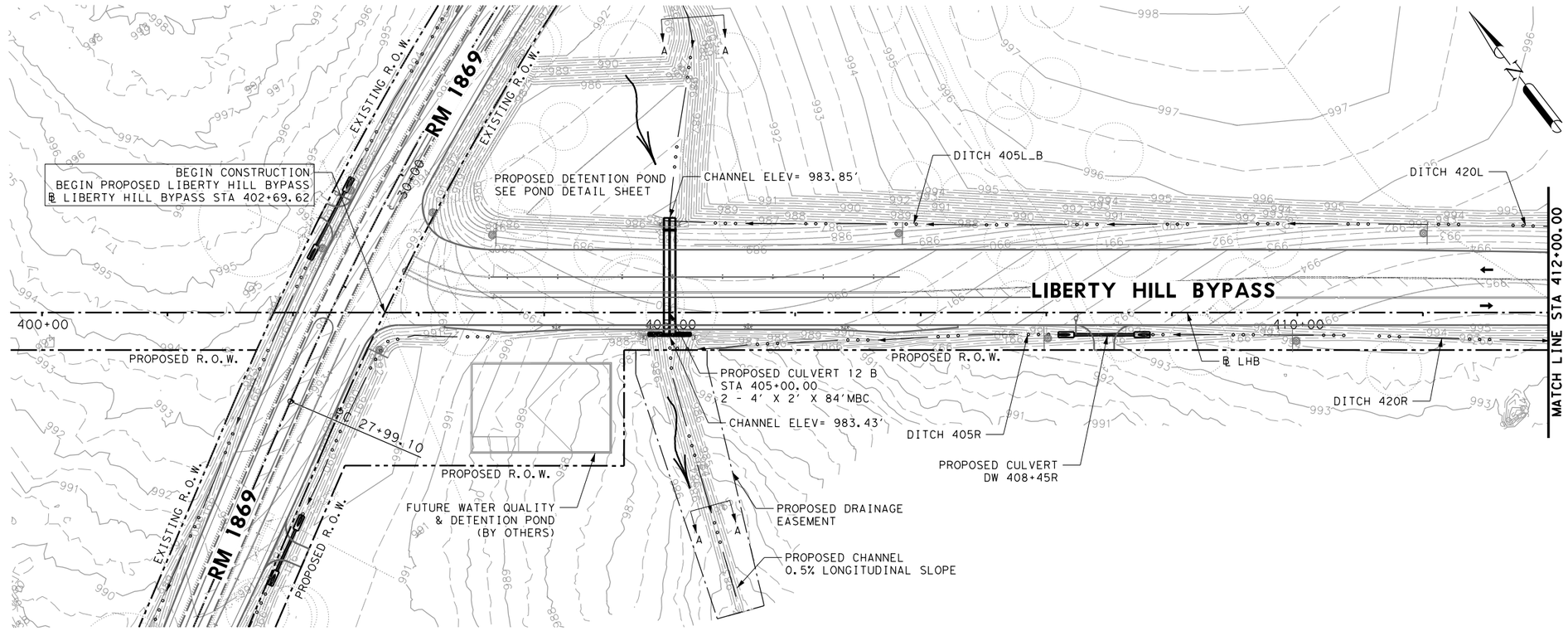
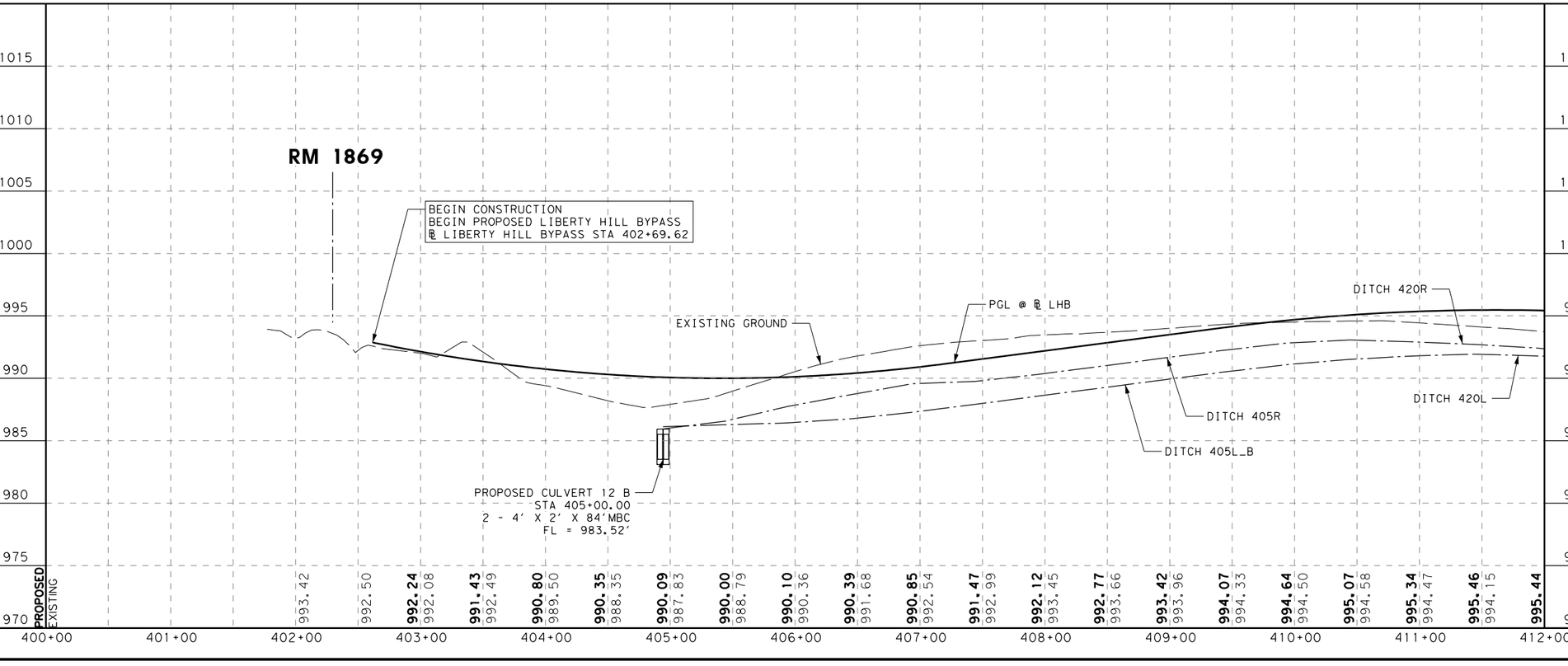


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP

SECTION A-A
NTS



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS
BEGIN TO STA 412+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 1 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			107
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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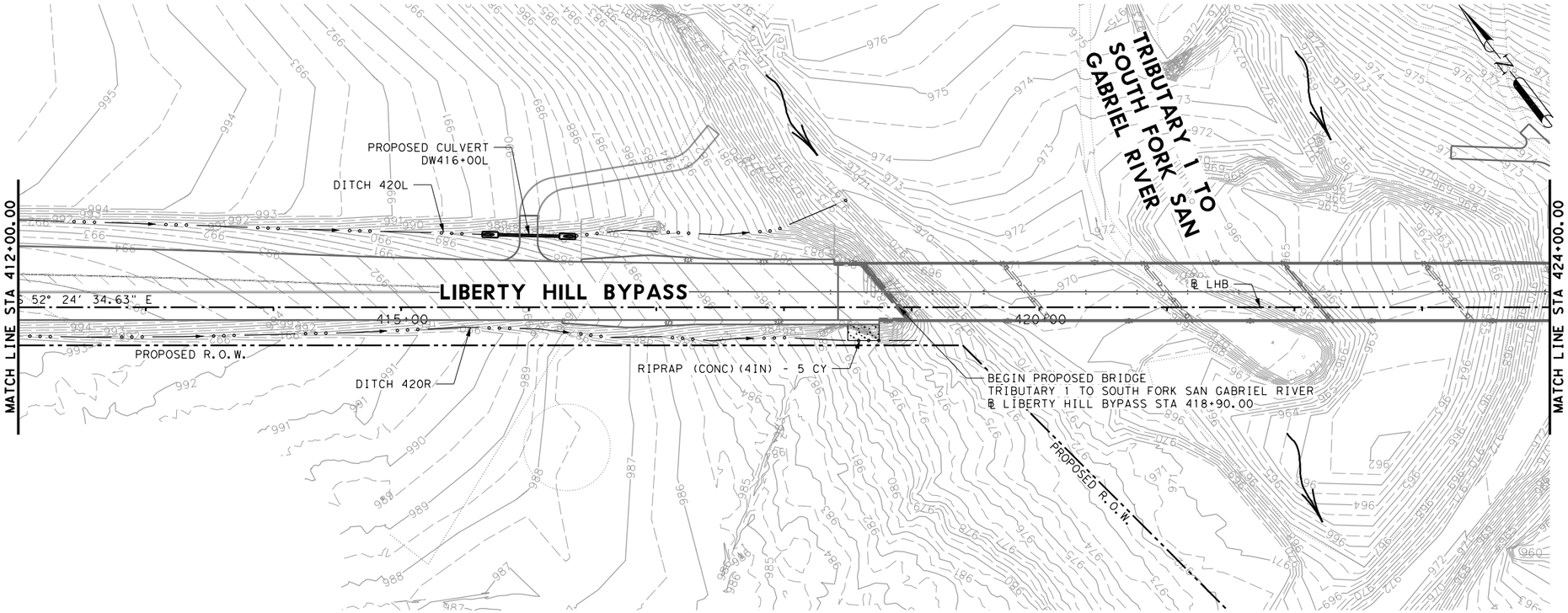
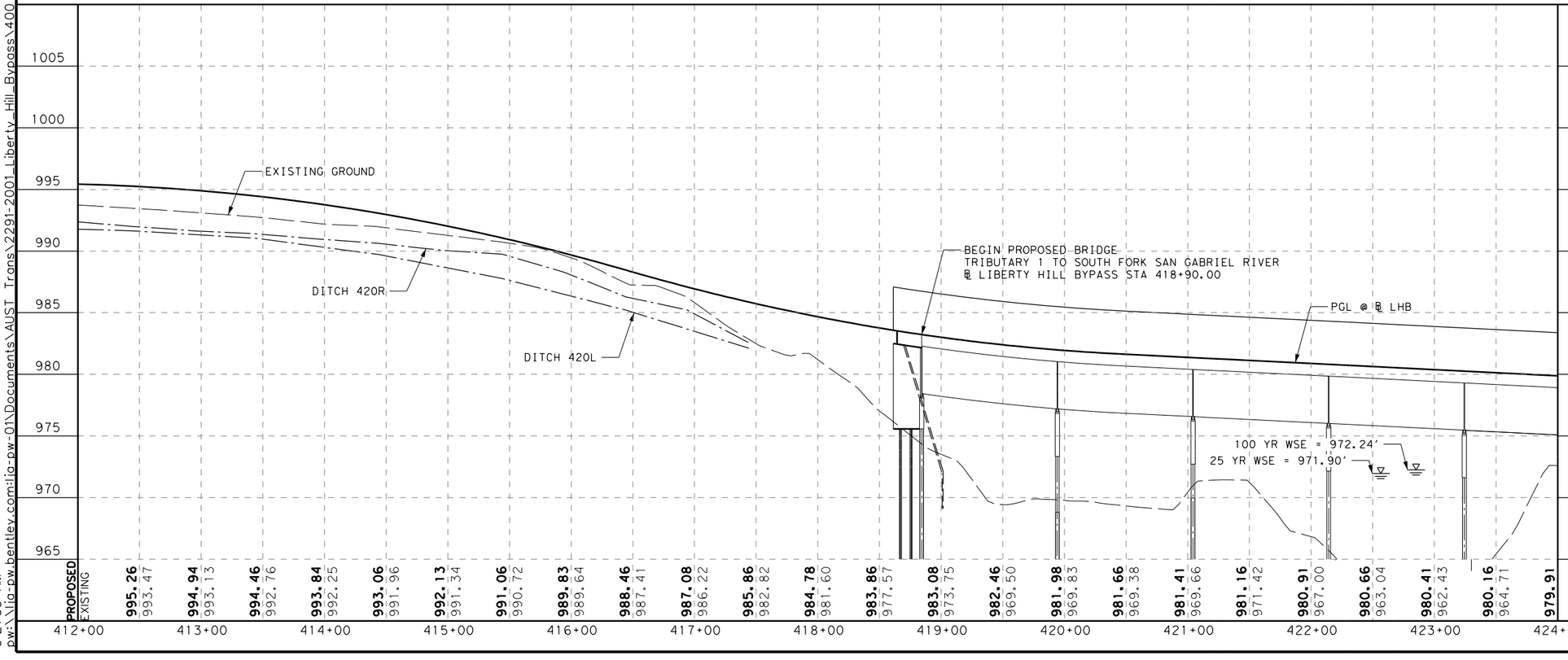


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS

STA 412+00 TO STA 424+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 2 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			108
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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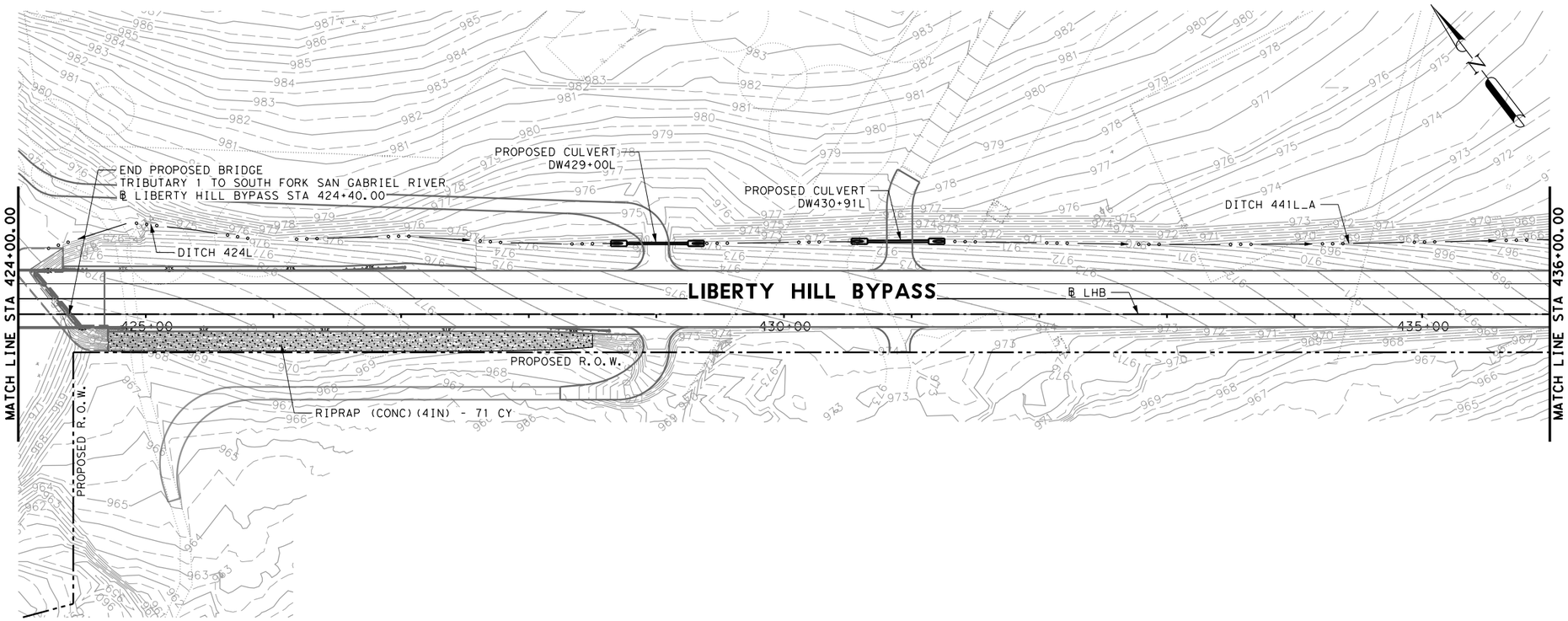
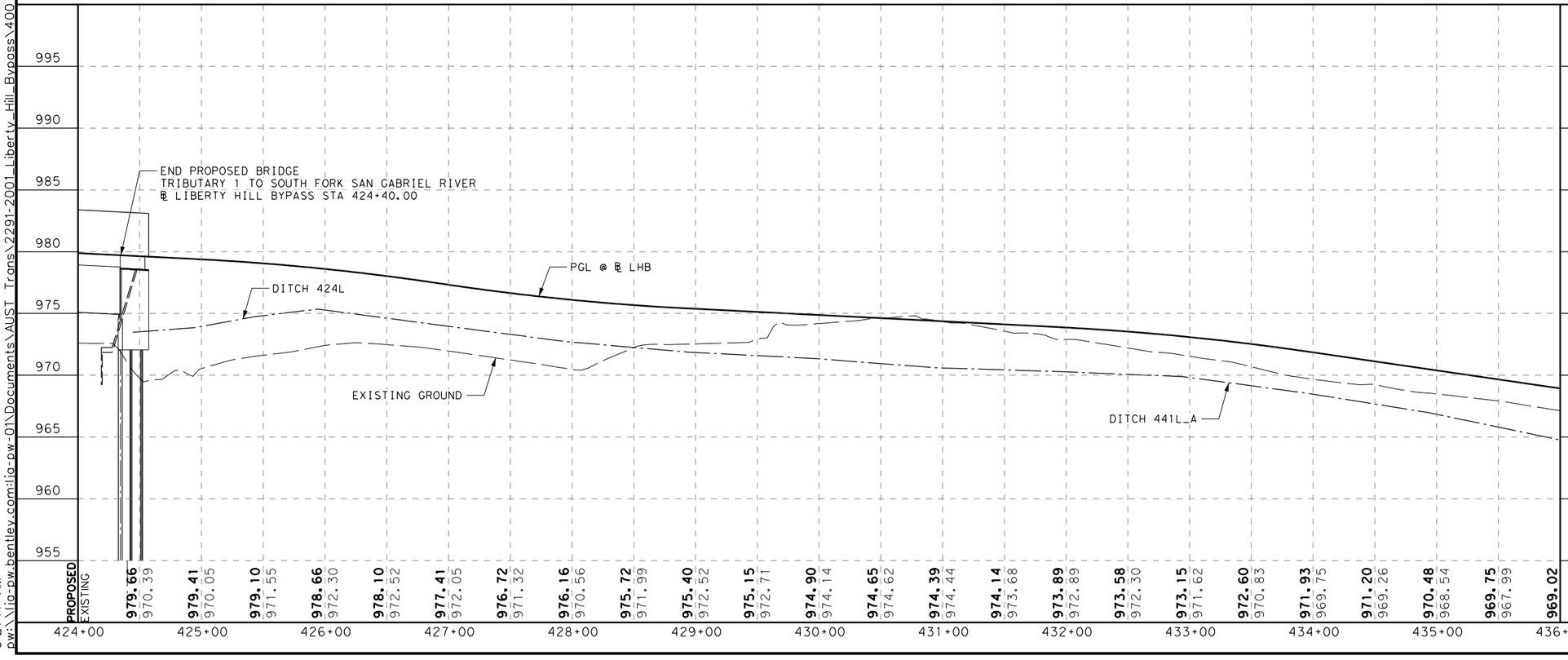


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
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LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS

STA 424+00 TO STA 436+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 3 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			109
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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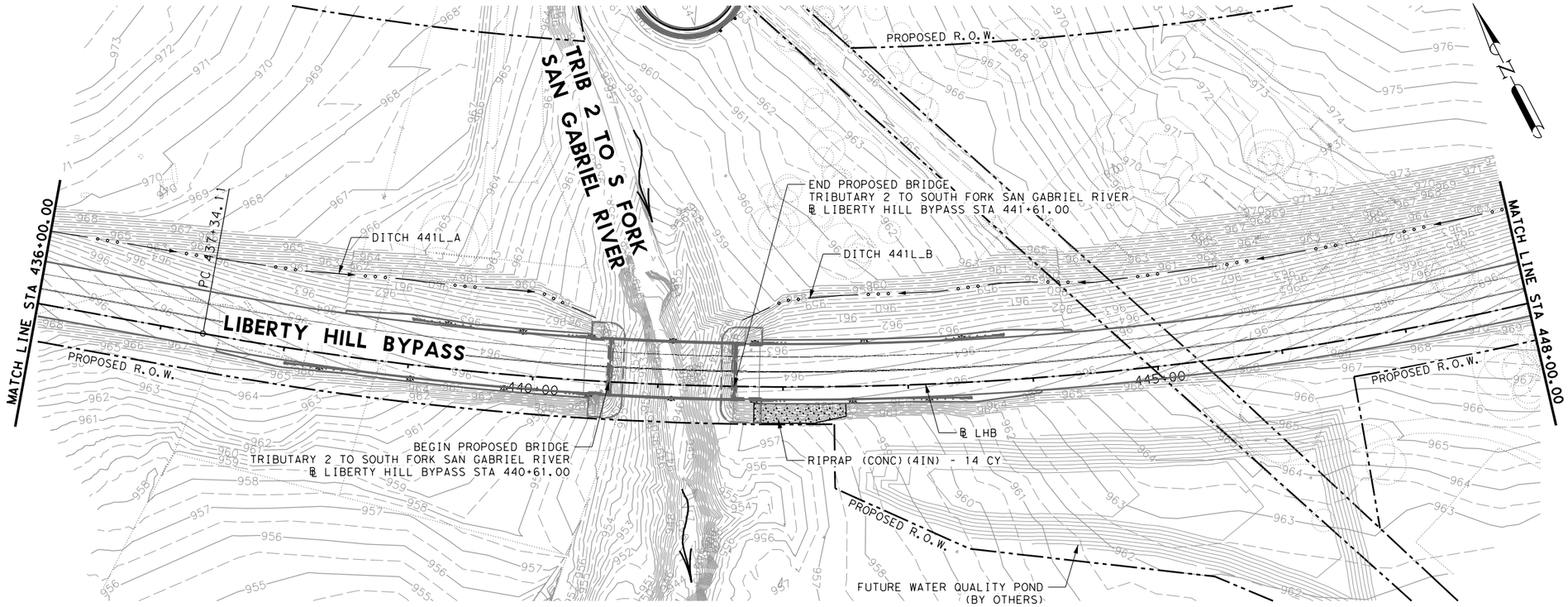
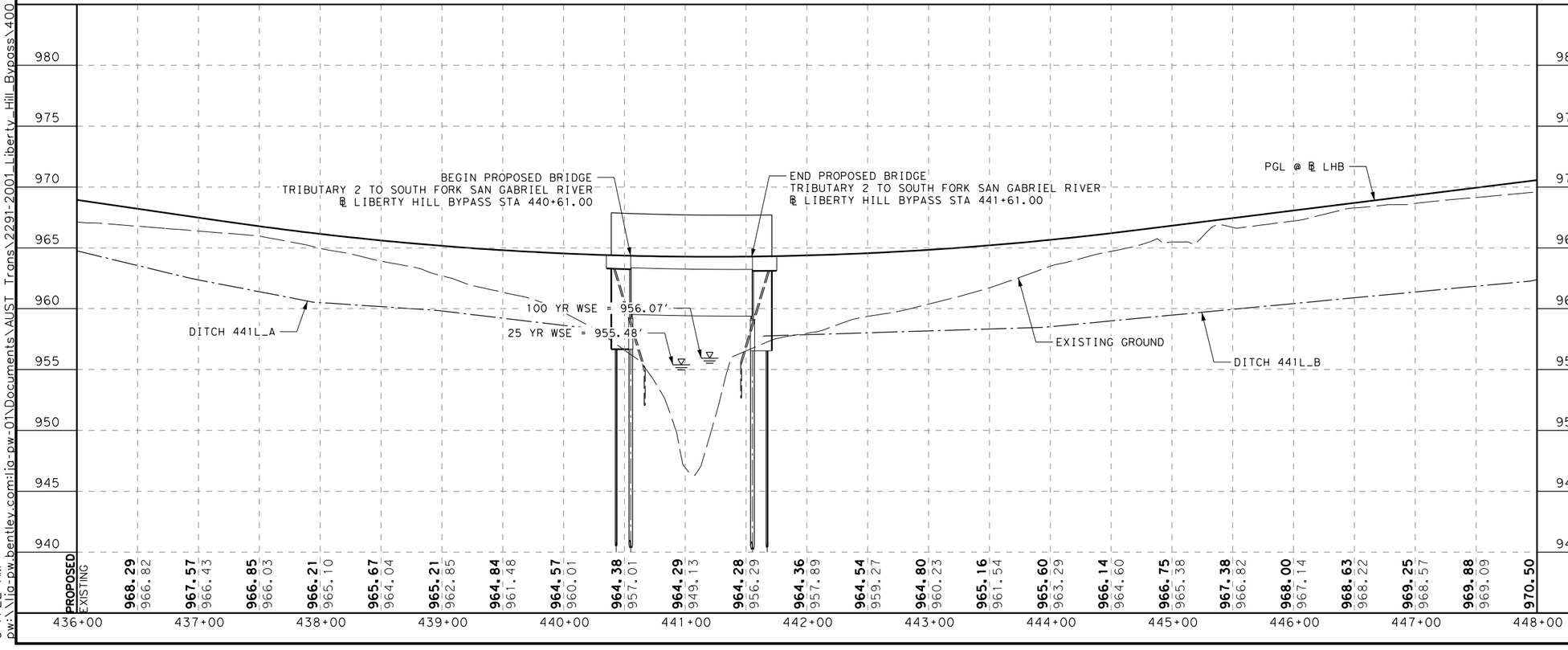


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
8/29/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS

STA 436+00 TO STA 448+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 4 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			110
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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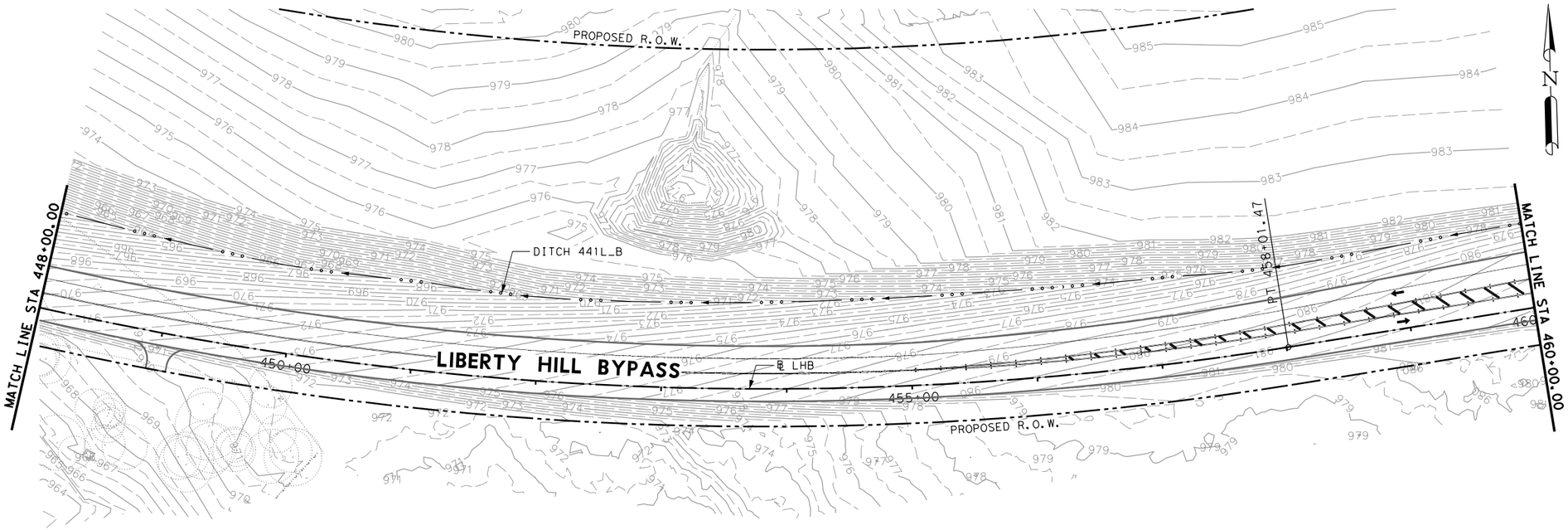
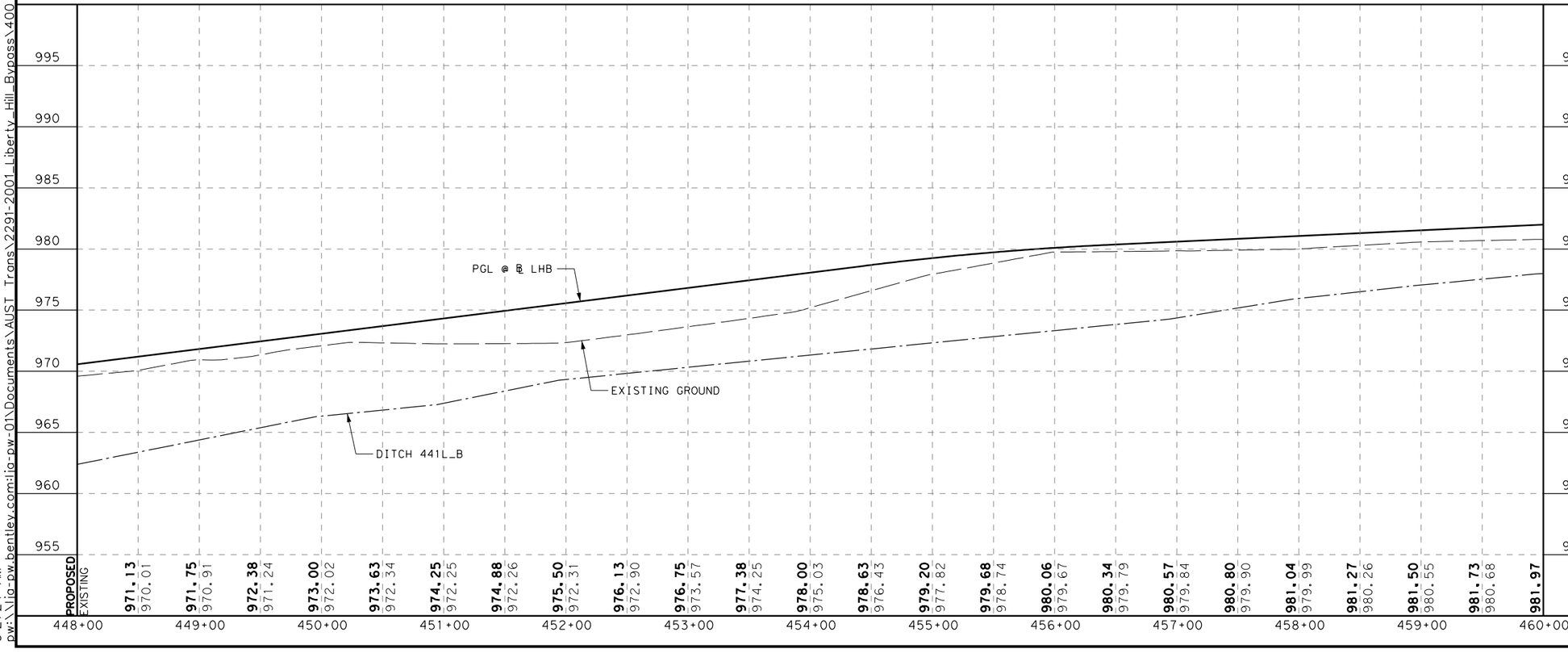


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS
STA 448+00 TO STA 460+00
SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'
SHEET 5 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			111
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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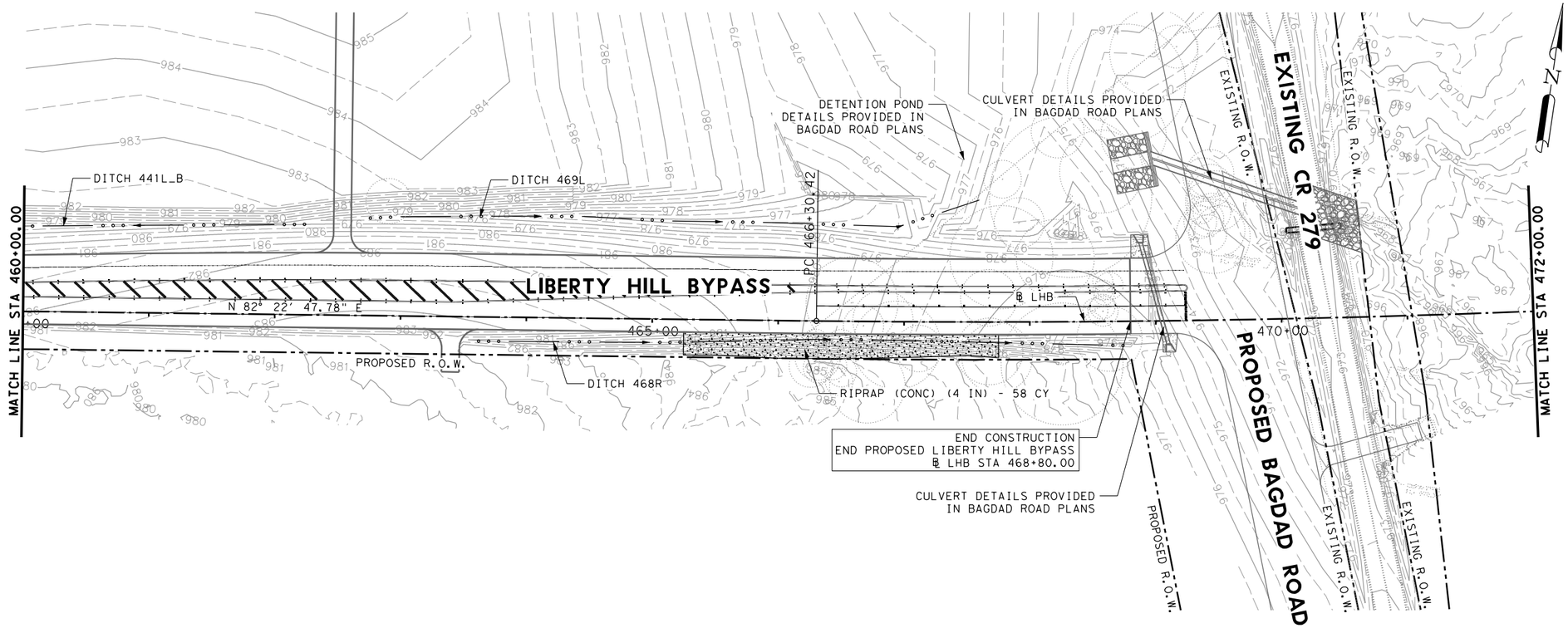

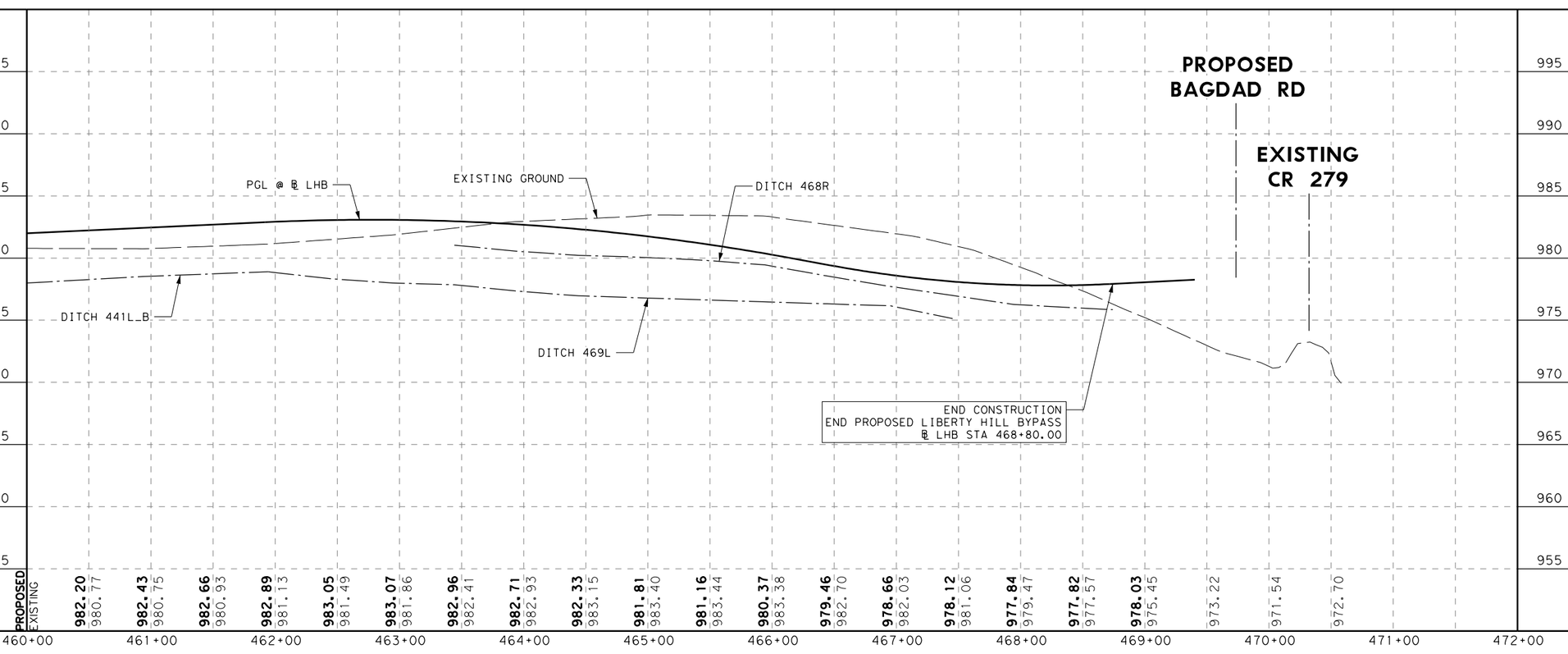

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
LIBERTY HILL BYPASS
STA 460+00 TO END
SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'
SHEET 6 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			112
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
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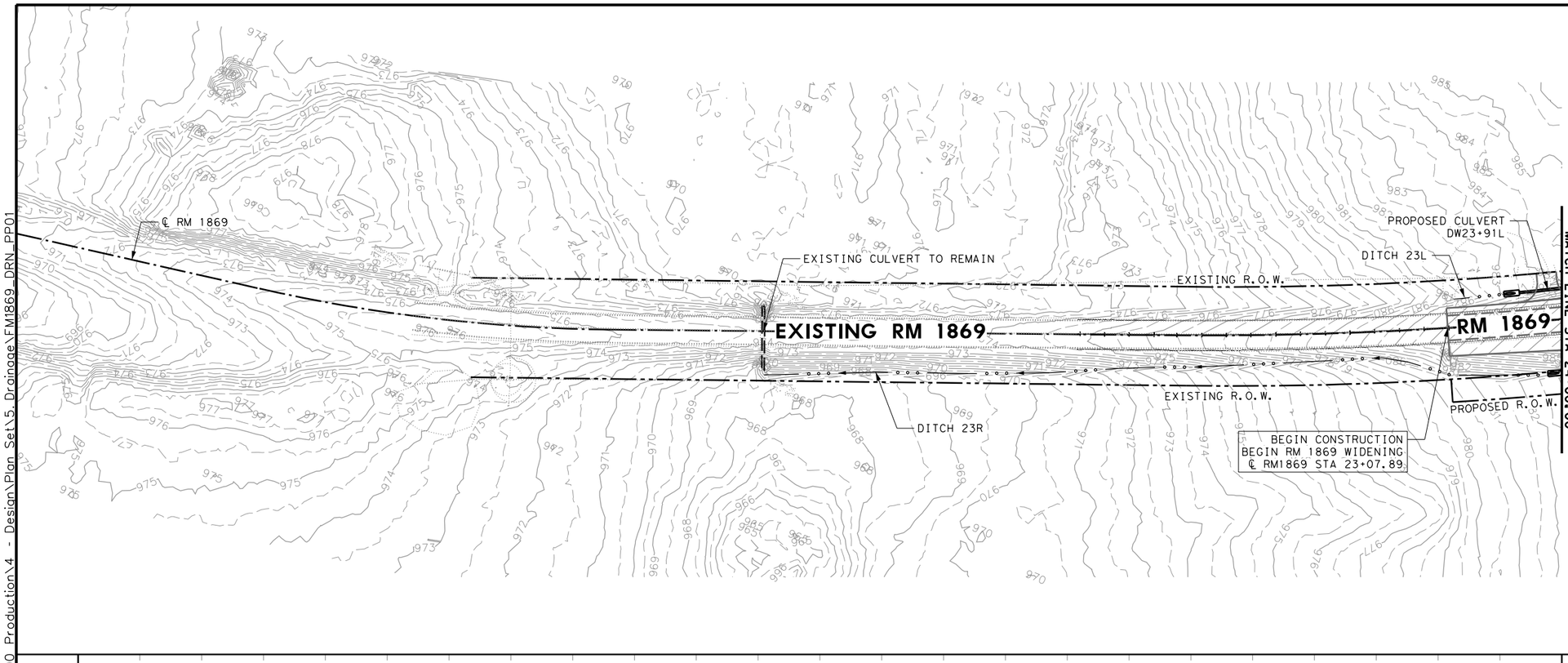
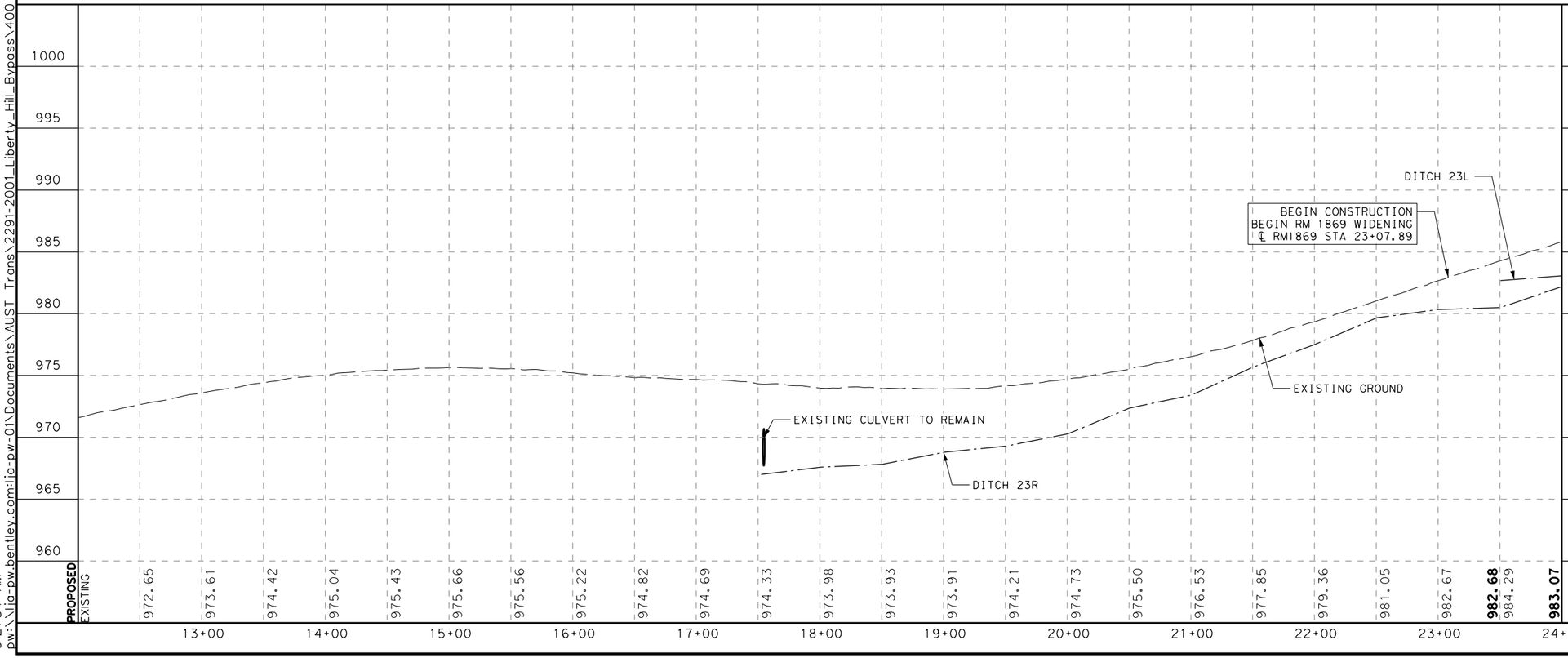


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
RM 1869

BEGIN TO STA 24+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'
SHEET 1 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			113
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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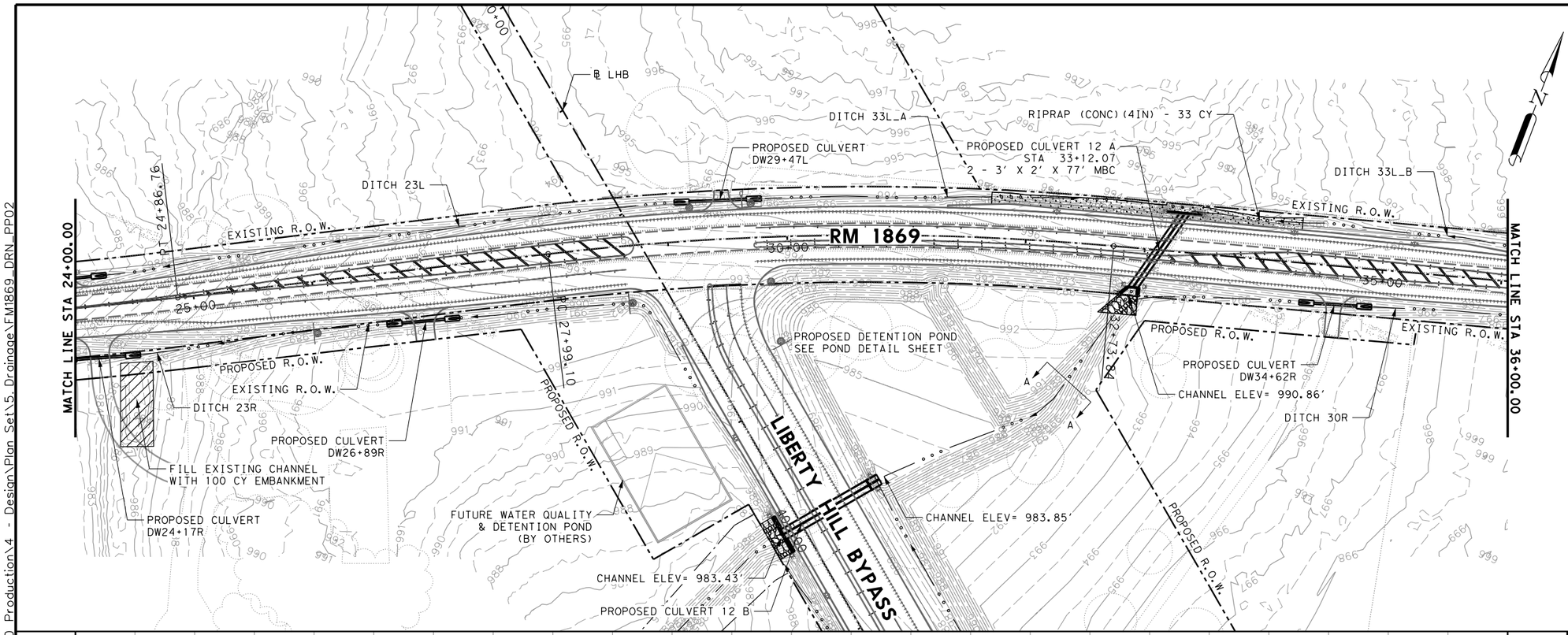
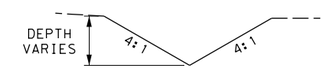
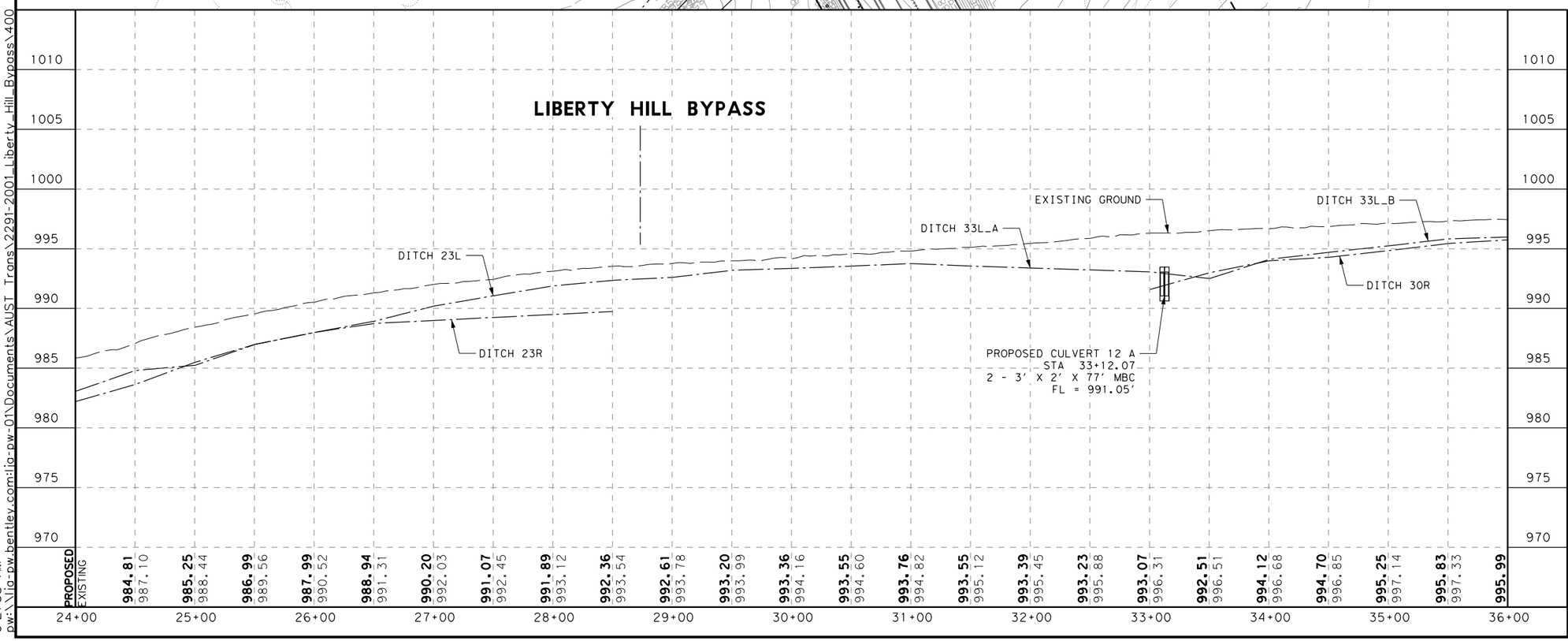


LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



SECTION A-A
NTS



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

STA 24+00 TO STA 36+00

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
RM 1869

STA 24+00 TO STA 36+00

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=10'

SHEET 2 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			114
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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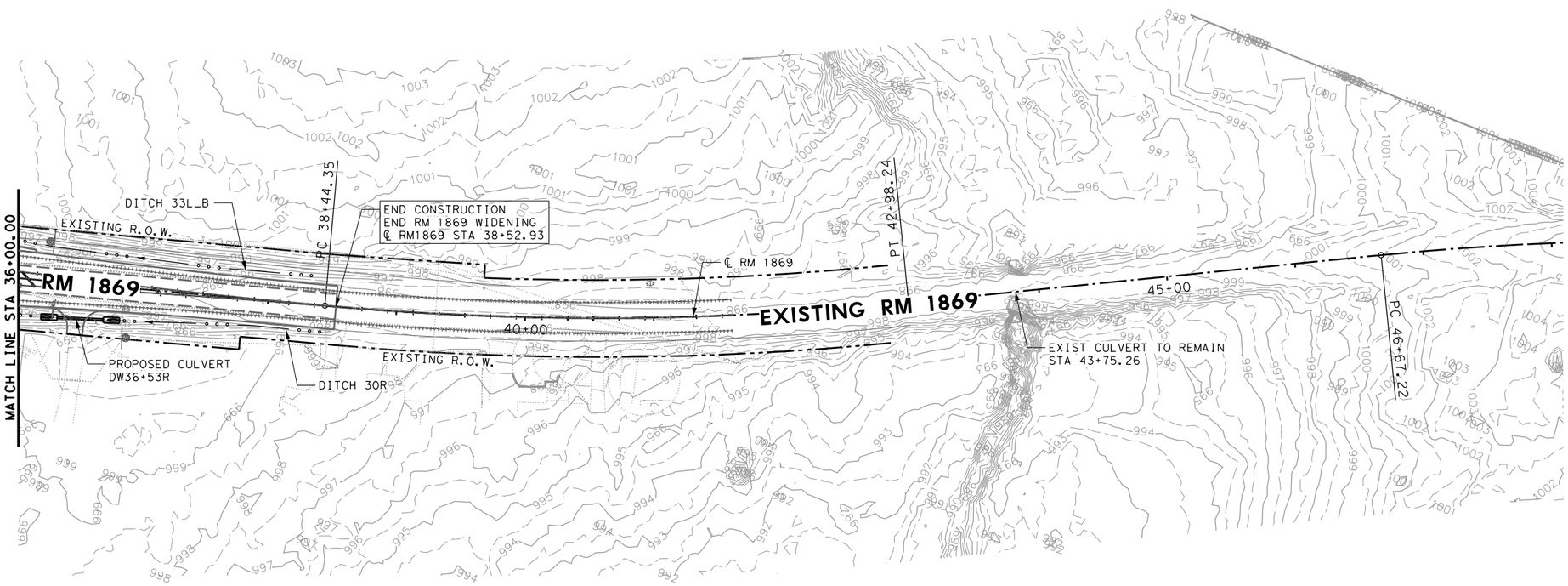
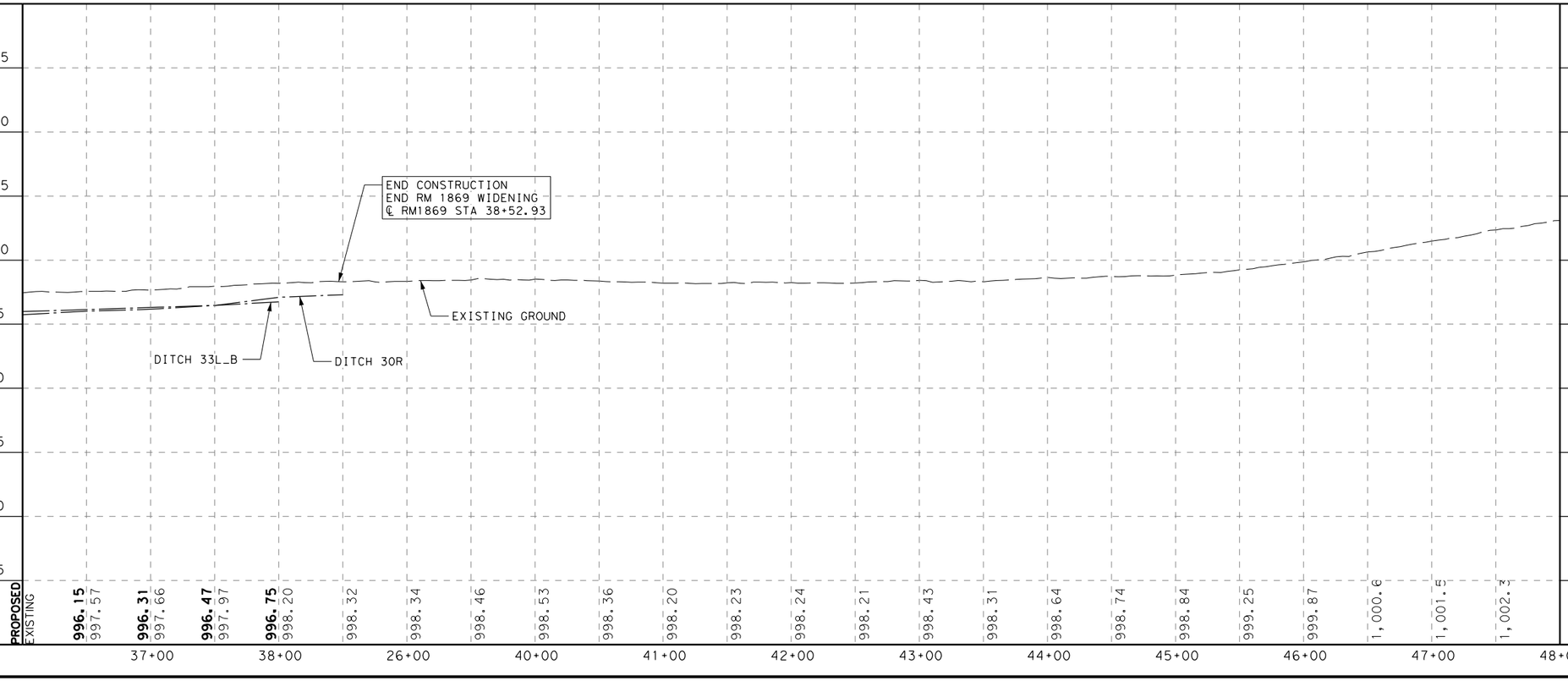


HORZ 0' 50' 100'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
DRAINAGE PLAN & PROFILE
RM 1869

STA 36+00 TO END

SCALE HORIZONTAL: 1"=100'
VERTICAL: 1"=100'

SHEET 3 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			115
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	LHB

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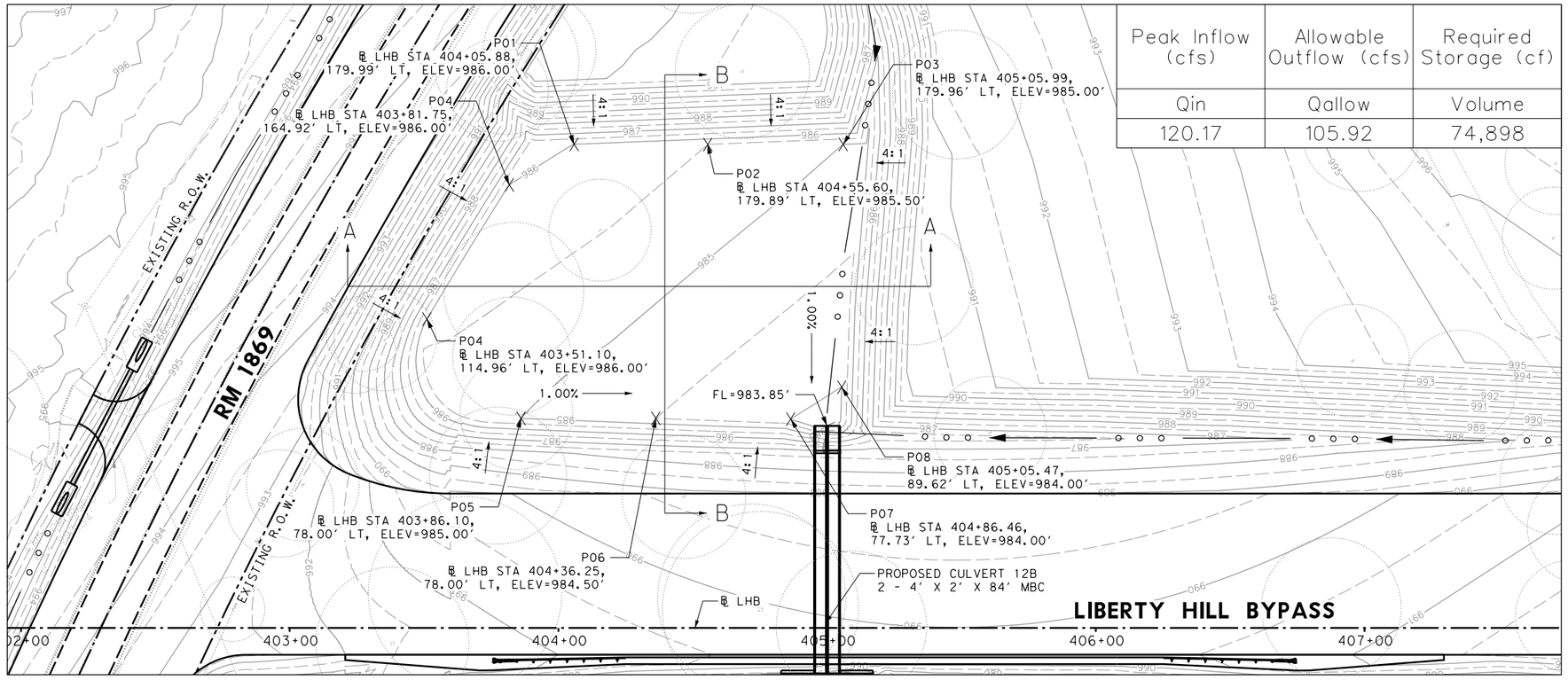
100% SUBMITTAL

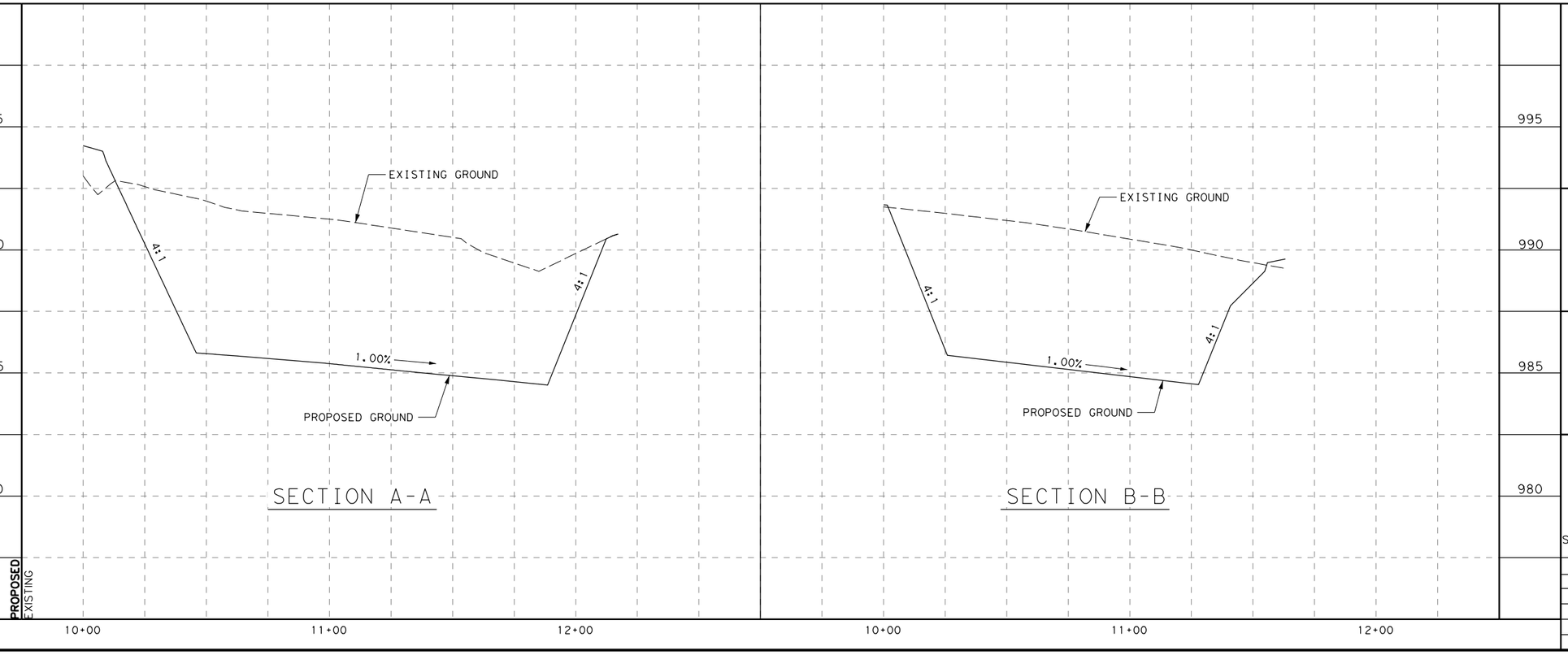
Peak Inflow (cfs)	Allowable Outflow (cfs)	Required Storage (cf)
Qin	Qallow	Volume
120.17	105.92	74,898



HORZ 0' 25' 50'
VERT 0' 5' 10'
SCALE IN FEET

LEGEND

- EXISTING R.O.W.
- PROPOSED R.O.W.
- EX DRAINAGE EASEMENT
- EXISTING DRAINAGE EASEMENT
- EXISTING UTILITY
- EXISTING PLANIMETRICS
- DITCH FLOWLINE
- PROPOSED DRAINAGE
- CONCRETE RIPRAP



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER
7/31/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
POND
DETAIL

SCALE HORIZONTAL: 1"=50'
VERTICAL: 1"=10'
SHEET 1 OF 1

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
DW	6			116
DRAWN	STATE	DIST. NO.	COUNTY	
DW		AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
RS	1755	01	020	LHB

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STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept in the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

For the construction of new roadway consisting of grading, base, paving, drainage structures, ditches, water quality bmps, signing, and pavement markings.

1.1 PROJECT CONTROL SECTION JOB (CSJ):

CSJ 1755-01-020

1.2 PROJECT LIMITS:

From: RM 1869

To: CR 279

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 30.6657054° (N) ,(Long) -097.9303558° (W)

END: (Lat) 30.6585216° (N) ,(Long) -097.9122129° (W)

1.4 TOTAL PROJECT AREA (Acres): 54.3

1.5 TOTAL AREA TO BE DISTURBED (Acres): 24.0

1.6 NATURE OF CONSTRUCTION ACTIVITY:

For the construction of new roadway consisting of grading, base, paving, drainage structures, ditches, water quality bmps, signing, and pavement markings.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Hydrologic soil type D	has low permeability and high runoff potential

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- ☐ PSLs determined during preconstruction meeting
- X PSLs determined during construction
- ☐ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- X Mobilization
- X Install sediment and erosion controls
- X Blade existing topsoil into windrows, prep ROW, clear and grub
- X Remove existing pavement
- X Grading operations, excavation, and embankment
- X Excavate and prepare subgrade for proposed pavement widening
- X Remove existing culverts, safety end treatments (SETs)
- ☐ Remove existing metal beam guard fence (MBGF), bridge rail
- X Install proposed pavement per plans
- X Install culverts, culvert extensions, SETs
- X Install mow strip, MBGF, bridge rail
- X Place flex base
- X Rework slopes, grade ditches
- ☐ Blade windrowed material back across slopes
- X Revegetation of unpaved areas
- X Achieve site stabilization and remove sediment and erosion control measures
- X Other: Drilled shaft and foundation for bridges
- ☐ Other: _____
- ☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- X Sediment laden stormwater from stormwater conveyance over disturbed area
- X Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- X Solvents, paints, adhesives, etc. from various construction activities
- X Transported soils from offsite vehicle tracking
- X Construction debris and waste from various construction activities
- X Contaminated water from excavation or dewatering pump-out water
- X Sanitary waste from onsite restroom facilities
- X Trash from various construction activities/receptacles
- X Long-term stockpiles of material and waste
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
South Fork San Gabriel River	Segment ID: 1250

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- X Development of plans and specifications
- X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- X Post Construction Site Notice
- ☐ Submit NOI/CSN to local MS4
- X Perform SWP3 inspections
- X Maintain SWP3 records and update to reflect daily operations
- X Complete and submit Notice of Termination to TCEQ
- X Maintain SWP3 records for 3 years
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- X Day To Day Operational Control
- X Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- X Post Construction Site Notice
- ☐ Submit NOI/CSN to local MS4
- X Maintain schedule of major construction activities
- X Install, maintain and modify BMPs
- X Complete and submit Notice of Termination to TCEQ
- X Maintain SWP3 records for 3 years
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity

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STORMWATER POLLUTION PREVENTION PLAN (SWP3)

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Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
			205
STATE	STATE DIST.	COUNTY	
TEXAS	AUS	WILLIAMSON	
CONT.	SECT.	JOB	HIGHWAY NO.
1755	01	020	LHB

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- X ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- X ☐ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- X ☐ Temporary Seeding
- X ☐ Permanent Planting, Sodding or Seeding
- X ☐ Biodegradable Erosion Control Logs
- X ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ X Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- X ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- X ☐ Inlet Protection
- X ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- X ☐ Sediment Control Fence
- X ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T / P

- ☐ ☐ Sediment Trap
  - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
  - ☐ 3,600 cubic feet of storage per acre drained
- ☐ ☐ Sedimentation Basin
  - ☐ Not required (<10 acres disturbed)
  - ☐ Required (>10 acres) and implemented.
    - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
    - ☐ 3,600 cubic feet of storage per acre drained
  - X Required (>10 acres), but not feasible due to:
    - X Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☐ Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To
Riprap at culverts	at Culverts 12A and 12B	
Riprap on sideslopes	425+00	428+00
Riprap on sideslopes	441+50	442+50
Riprap on sideslopes	465+00	469+00
Riprap on sideslopes	32+00	34+00

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- X Excess dirt/mud on road removed daily
- X Haul roads dampened for dust control
- X Loaded haul trucks to be covered with tarpaulin
- X Stabilized construction exit
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☐ Chemical Management
- ☐ Concrete and Materials Waste Management
- ☐ Debris and Trash Management
- ☐ Dust Control
- ☐ Sanitary Facilities
- X Other: Avoid storing portable sanitary units, concrete washouts or chemicals within 50 feet upgradient of a receiving water or drainage conveyance without adequate pollution controls.
- X Other: Maintain paved surfaces and adjacent properties free of project sedimentation and loose materials.
- ☐ Other: _____
- ☐ Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- X Fire hydrant flushings
- X Irrigation drainage
- X Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- X Potable water sources
- X Springs
- X Uncontaminated groundwater
- X Water used to wash vehicles or control dust
- X Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3 .

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

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STORMWATER POLLUTION PREVENTION PLAN (SWP3)

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Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
			206
STATE	STATE DIST.	COUNTY	
TEXAS	AUS	WILLIAMSON	
CONT.	SECT.	JOB	HIGHWAY NO.
1755	01	020	LHB

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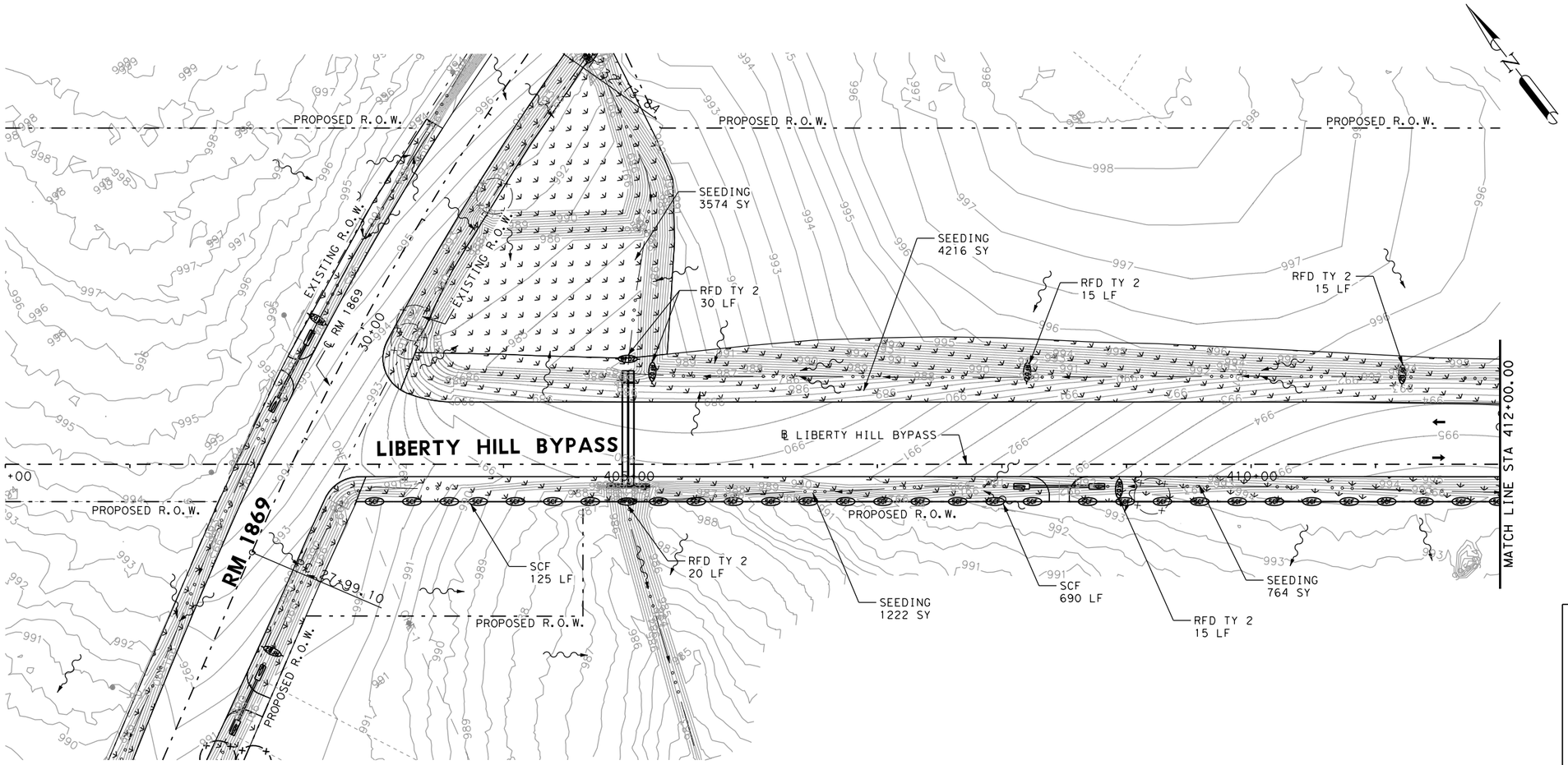

LEGEND

- EXISTING TRAFFIC DIRECTIONAL ARROW
- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

0' 50' 100'
SCALE IN FEET

NOTES:

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07/28/2023

WILLIAMSON COUNTY
1848

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

BEGIN TO STA 412+00
SCALE HORIZONTAL: 1"=100'

SHEET 1 OF 6

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			207
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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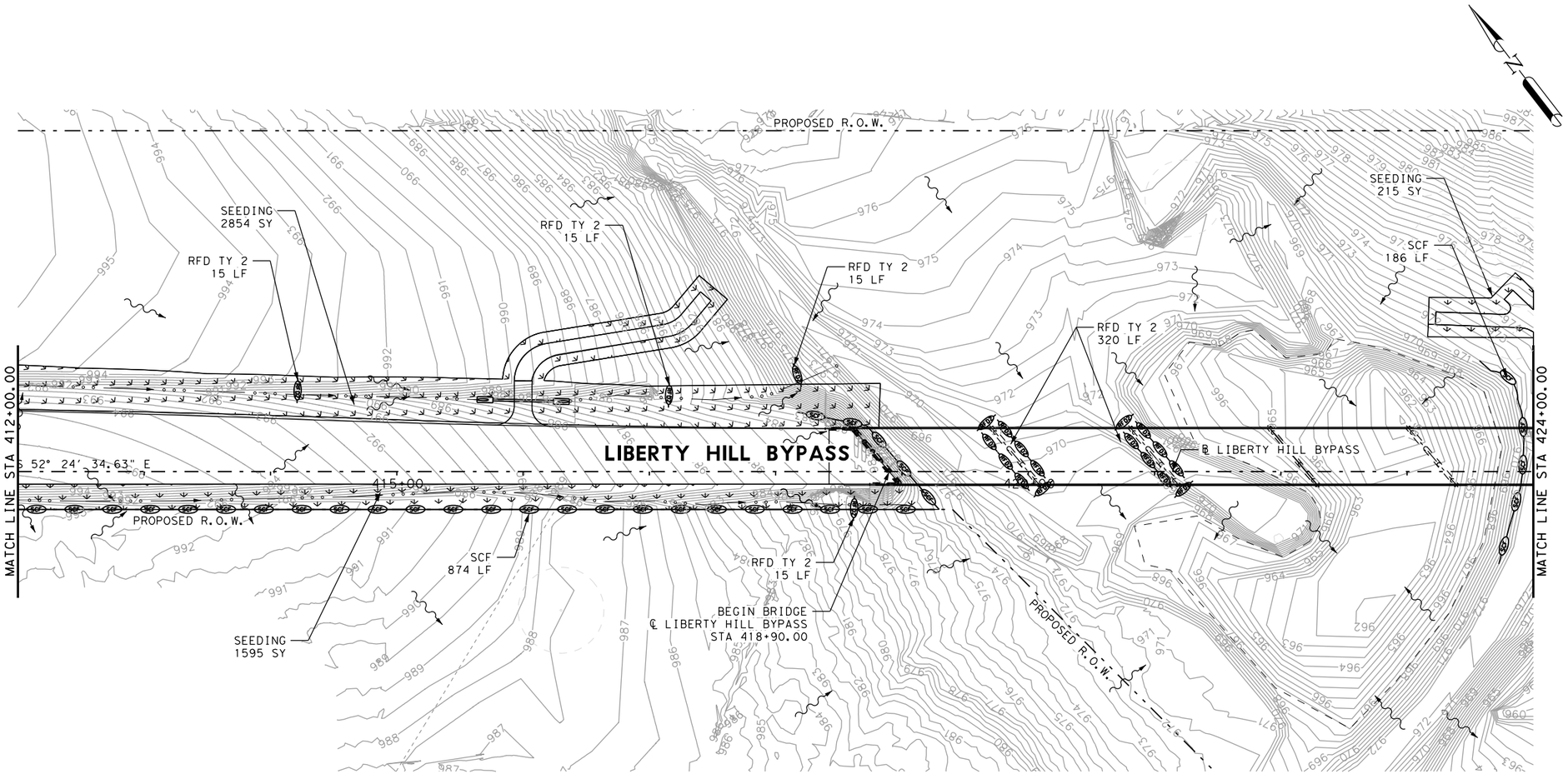

LEGEND

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- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

0' 50' 100'
SCALE IN FEET

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TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

STA 412+00 TO STA 424+00

SCALE HORIZONTAL: 1"=100'

SHEET 2 OF 6

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			208
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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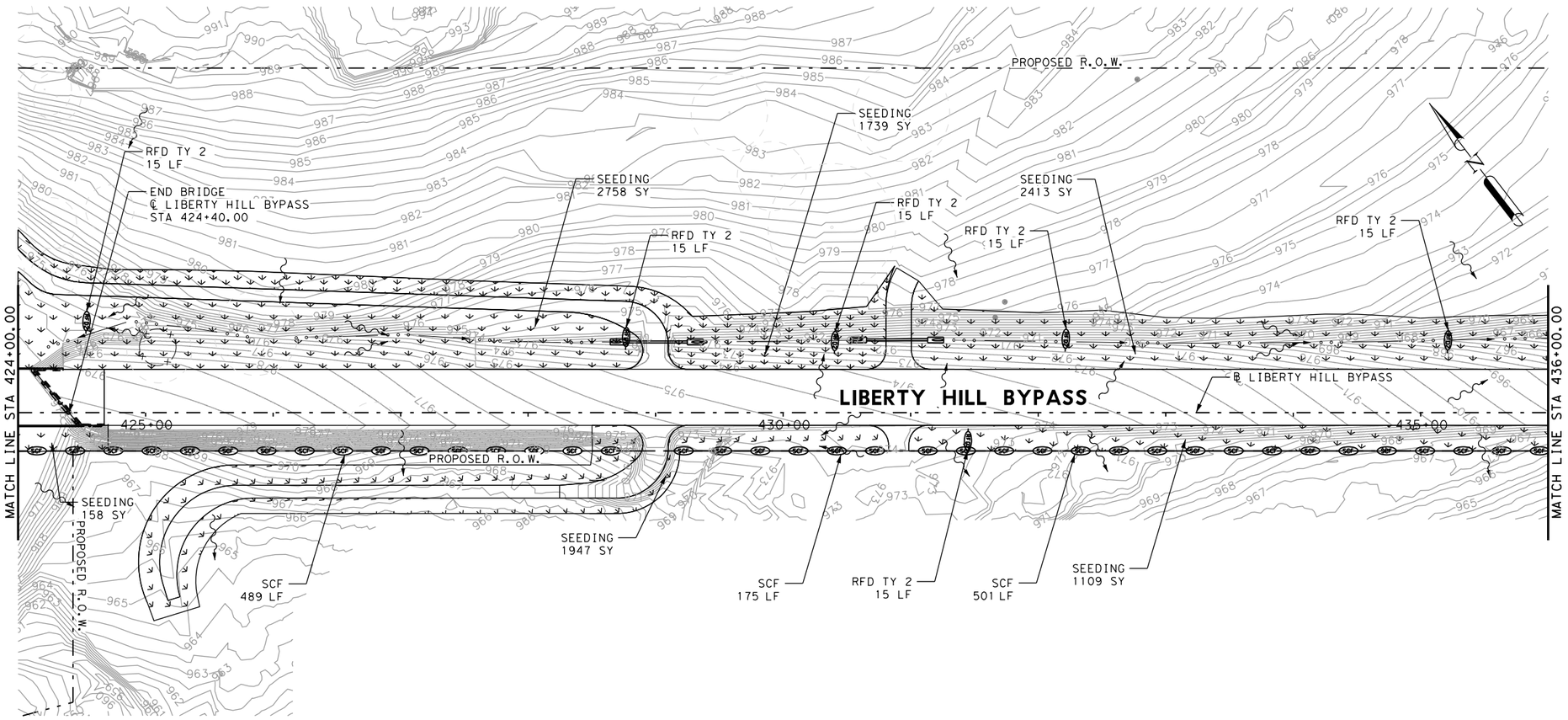

LEGEND

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- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

0' 50' 100'
SCALE IN FEET

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ENGINEERING INNOVATORS
TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

STA 424+00 TO STA 436+00
SCALE HORIZONTAL: 1"=100'

SHEET 3 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			209
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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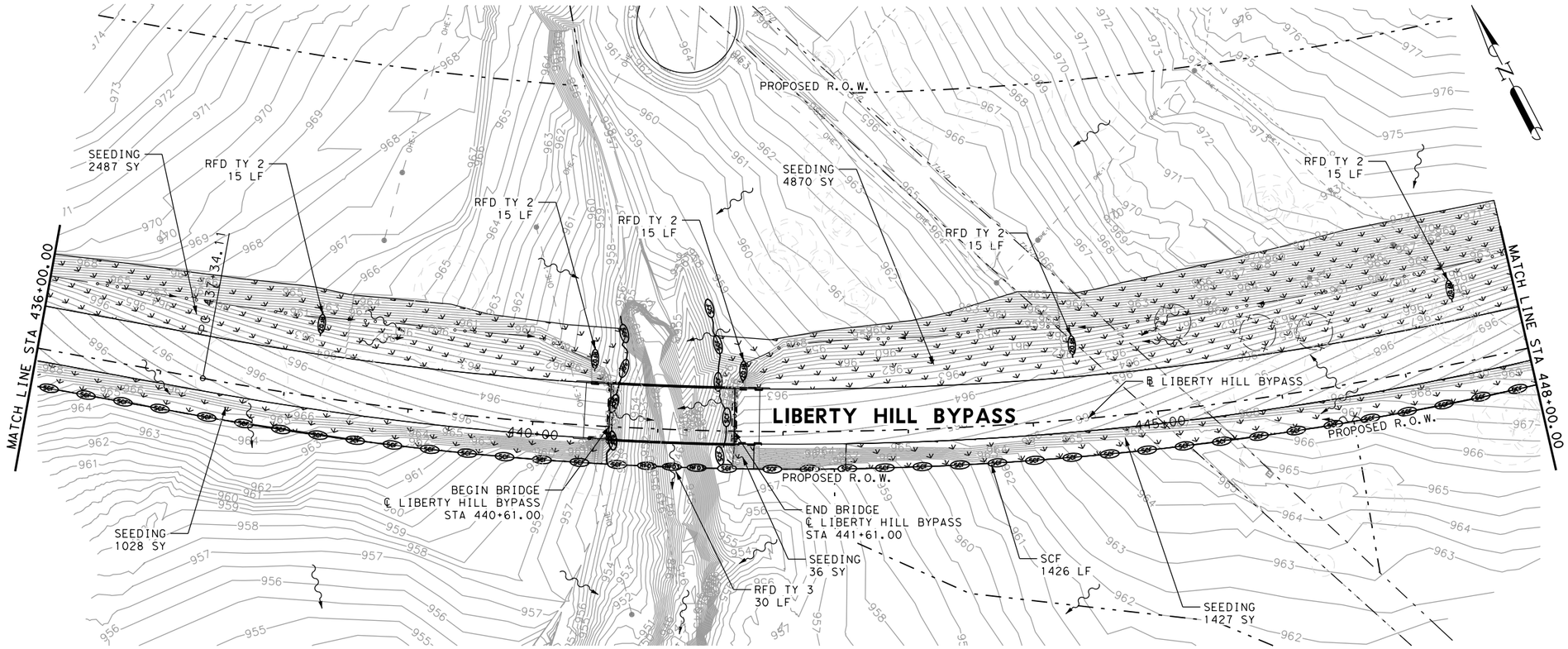

LEGEND

- EXISTING TRAFFIC DIRECTIONAL ARROW
- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

0' 50' 100'
SCALE IN FEET

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TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

STA 436+00 TO STA 448+00
SCALE HORIZONTAL: 1"=100'

SHEET 4 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			210
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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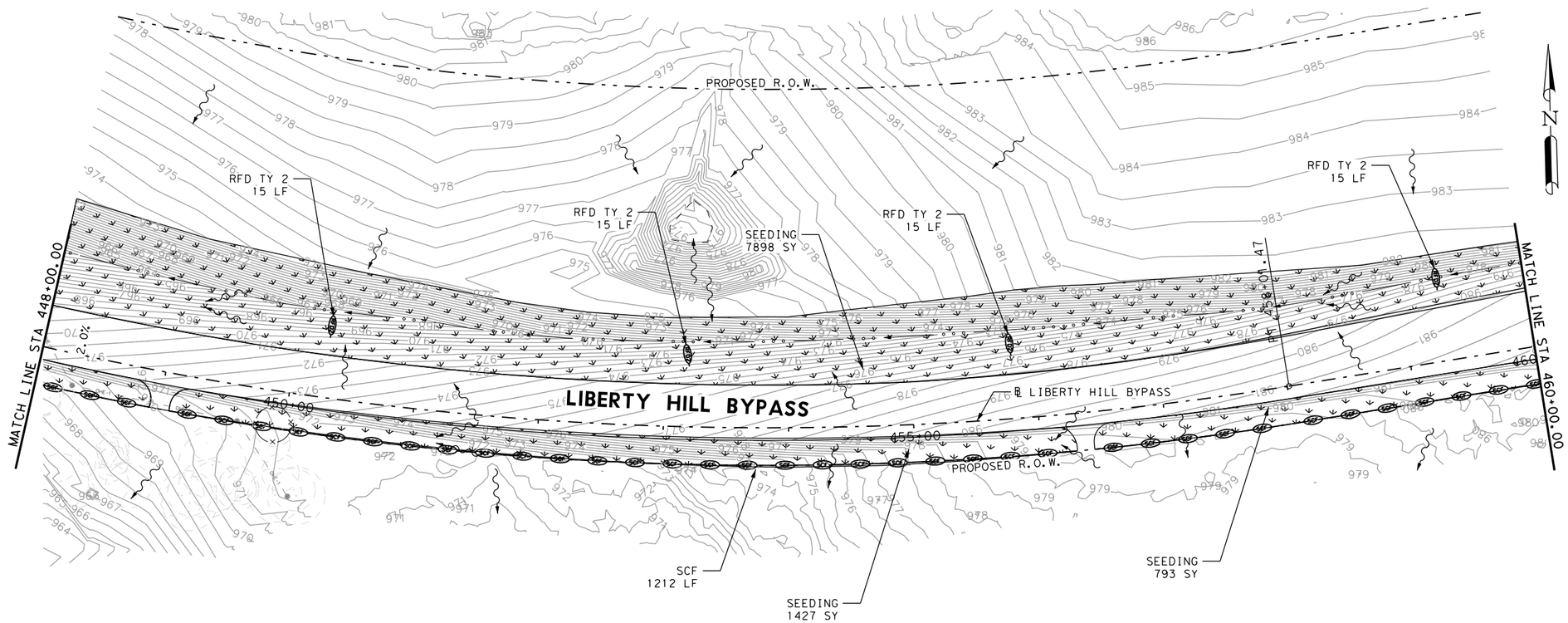

LEGEND

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- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
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0' 50' 100'
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TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

STA 448+00 TO STA 460+00

SCALE HORIZONTAL: 1"=100'

SHEET 5 OF 6

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			211
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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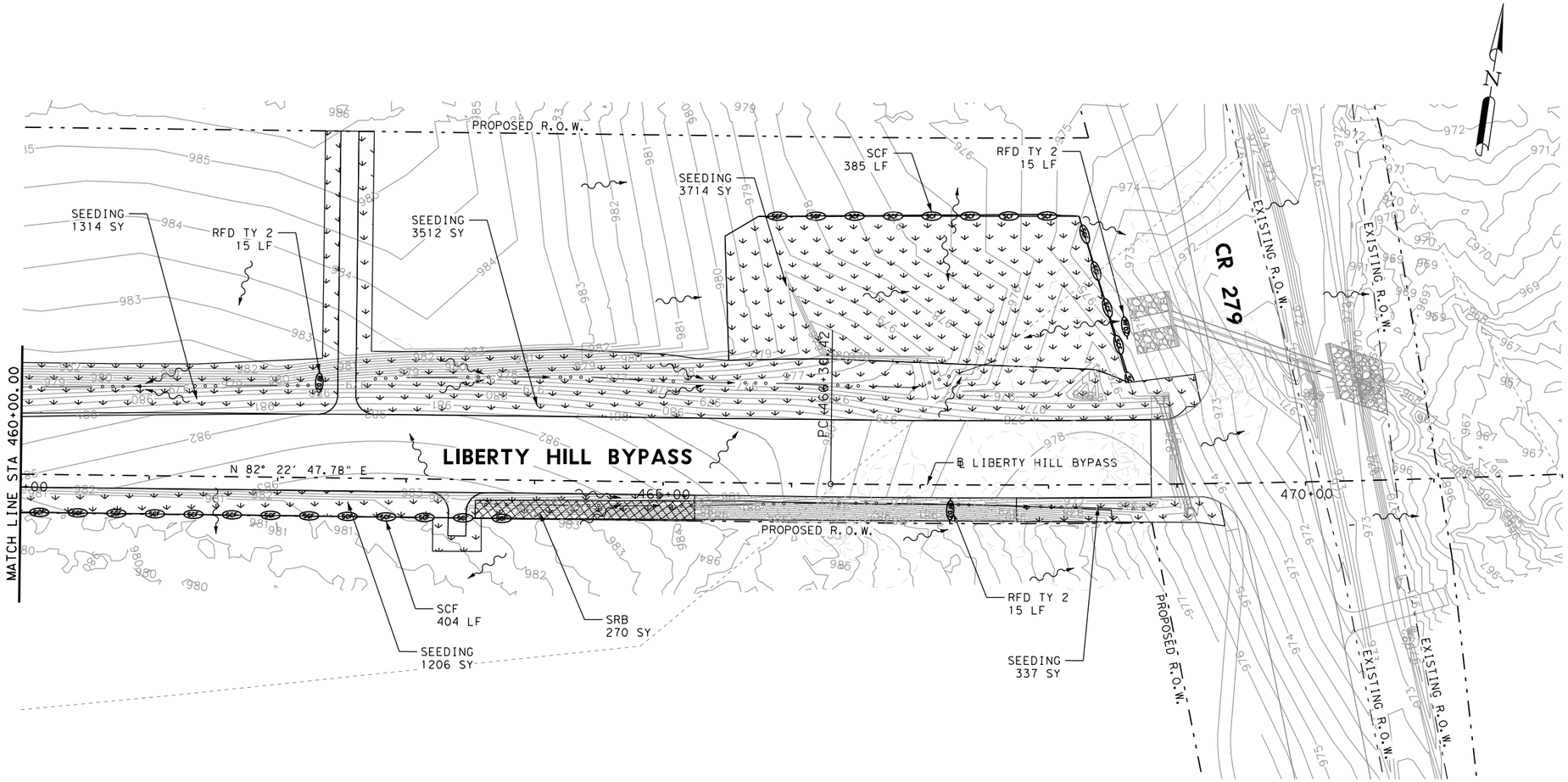

LEGEND

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- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
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- ROCK BERM TY 3
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LIBERTY HILL BYPASS EROSION CONTROL PLAN LHB

STA 460+00 TO END
SCALE HORIZONTAL: 1"=100'

SHEET 6 OF 6

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			212
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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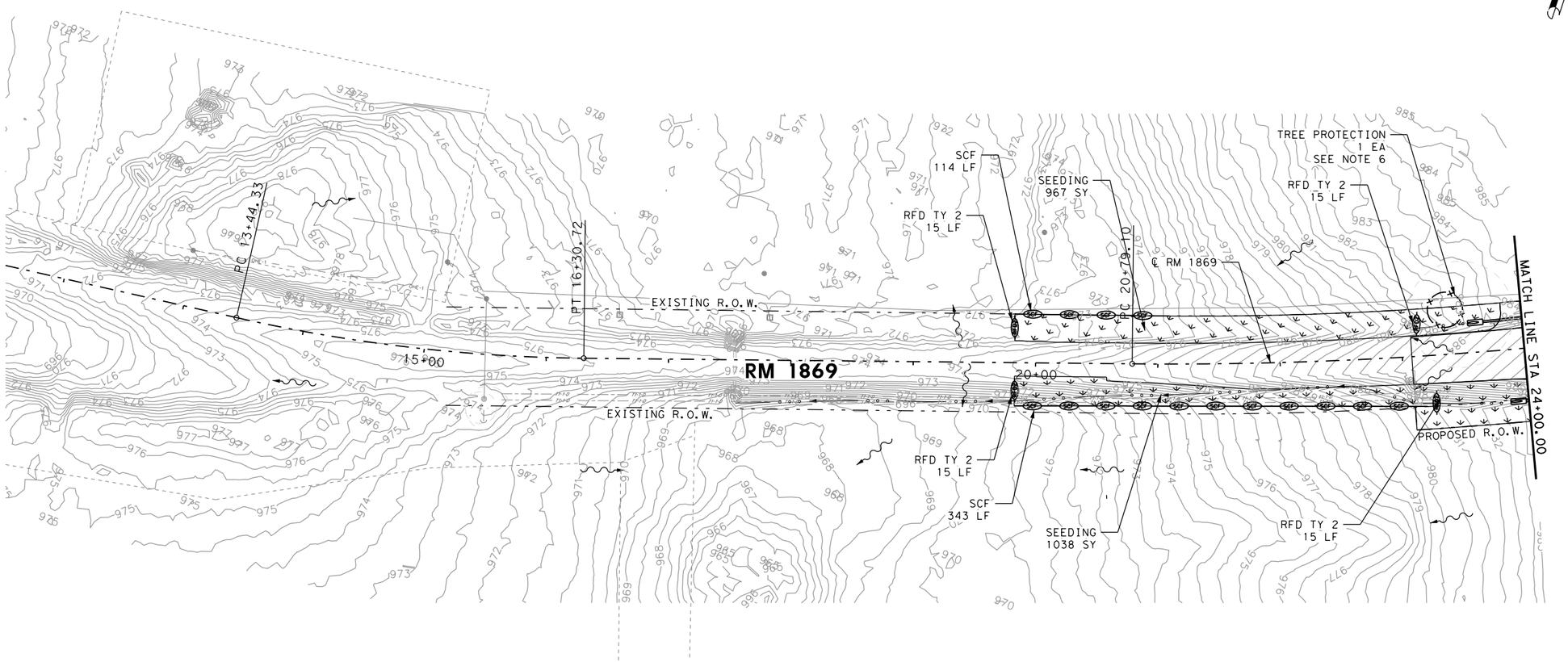

LEGEND

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- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

HORZ 0' 50' 100'

SCALE IN FEET

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AGUIRRE & FIELDS
ENGINEERING INNOVATORS
TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN RM 1869

SCALE HORIZONTAL: 1"=100'

SHEET 1 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			213
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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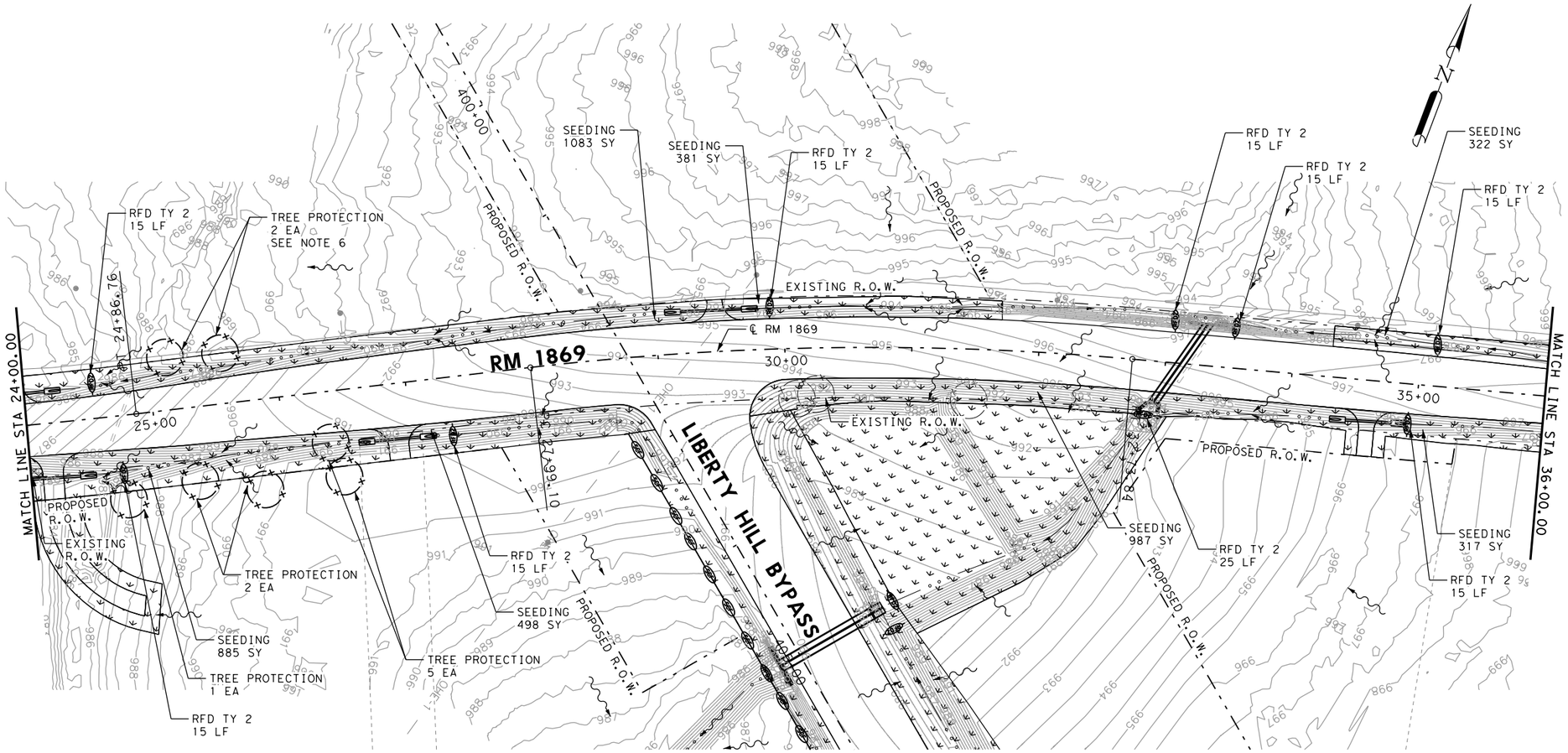

LEGEND

- EXISTING TRAFFIC DIRECTIONAL ARROW
- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

HORZ 0' 50' 100'

SCALE IN FEET

NOTES:

1. ALL EROSION CONTROL ELEMENTS SHALL BE IN PLACE PRIOR TO COMMENCING ANY SOIL DISTURBING ACTIVITIES. ALL EROSION CONTROL ELEMENTS TO BE PLACED AS SHOWN IN STANDARDS EXCEPT AS DIRECTED BY THE ENGINEER.
2. LOCATIONS OF CONSTRUCTION EXITS TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE CONSTRUCTION OBSERVER.
3. ALL PERIMETER SEDIMENT CONTROL FENCE TO REMAIN UNTIL END OF CONSTRUCTION. ALL INLETS WILL HAVE PROTECTION UNTIL END OF CONSTRUCTION.
4. THE QUANTITIES SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED TO MEET FIELD CONDITIONS.
5. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND REPAIRING ANY DAMAGE TO THE ISLANDS AND VEGETATION LOCATED WITHIN THE CREEK AND SHALL BE CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.
6. PER SPECIAL CONDITION, XXV, CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN WITHIN ROW AND TREES DIRECTLY OUTSIDE OF ROW FROM DAMAGE DURING CONSTRUCTION.

STATE OF TEXAS
PAUL R. HAHN
107365
LICENSED
PROFESSIONAL ENGINEER
07/28/2023

WILLIAMSON COUNTY
1848

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS
EROSION CONTROL PLAN
RM 1869

SCALE HORIZONTAL: 1"=100'

SHEET 2 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			214
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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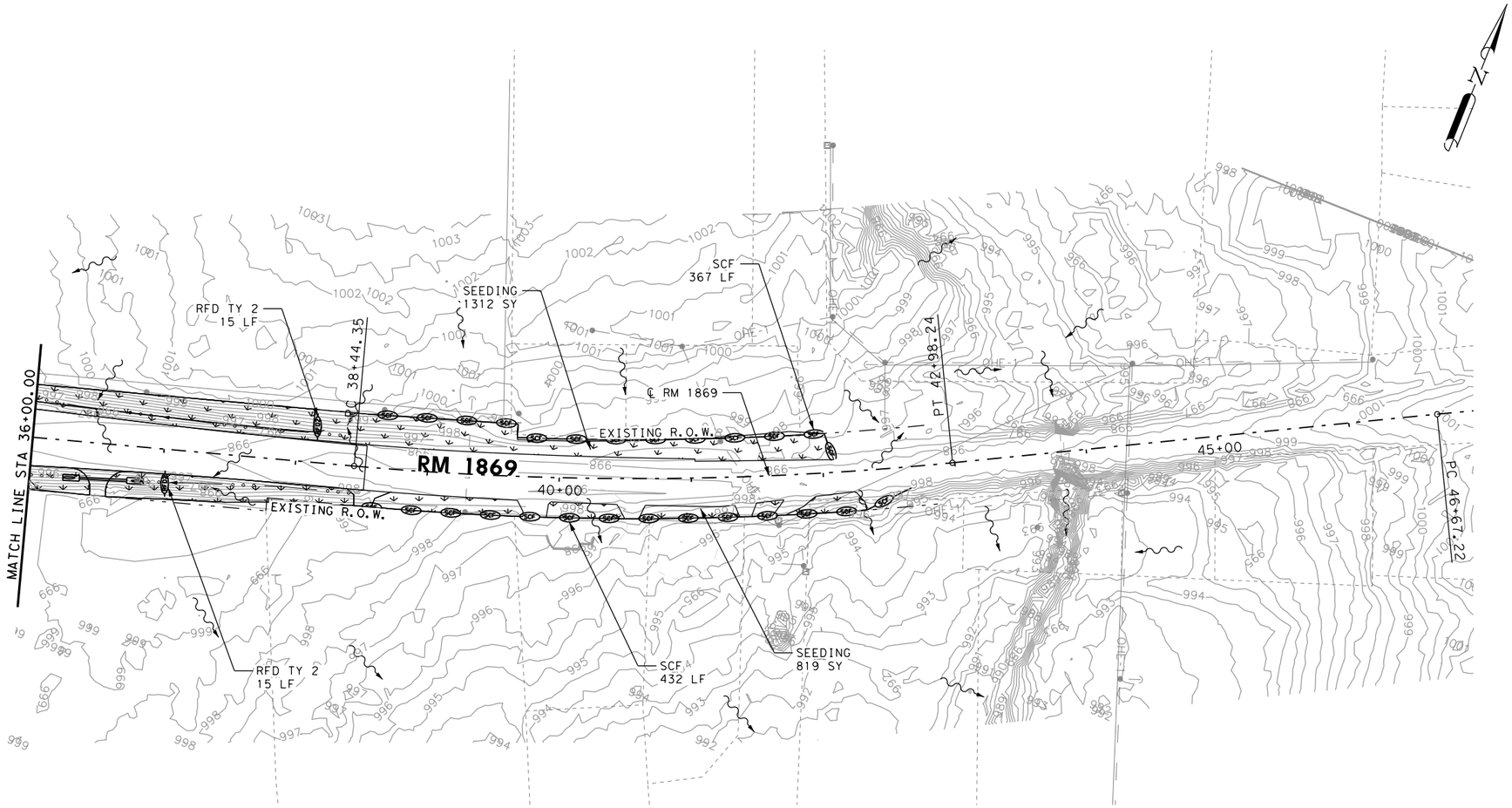

LEGEND

- EXISTING TRAFFIC DIRECTIONAL ARROW
- PROPOSED TRAFFIC DIRECTIONAL ARROW
- DIRECTION OF FLOW
- STAB CONSTRUCTION EXIT
- SEDIMENT CONTROL FENCE
- ROCK BERM TY 2
- ROCK BERM TY 3
- 4" TOPSOIL/SEEDING
- SOIL RETENTION BLANKET
- EXISTING TREES TO REMAIN W/TREE PROTECTION

HORZ 0' 50' 100'

SCALE IN FEET

NOTES:

1. ALL EROSION CONTROL ELEMENTS SHALL BE IN PLACE PRIOR TO COMMENCING ANY SOIL DISTURBING ACTIVITIES. ALL EROSION CONTROL ELEMENTS TO BE PLACED AS SHOWN IN STANDARDS EXCEPT AS DIRECTED BY THE ENGINEER.
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6. PER SPECIAL CONDITION, XXV, CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN WITHIN ROW AND TREES DIRECTLY OUTSIDE OF ROW FROM DAMAGE DURING CONSTRUCTION.

07/28/2023

STATE OF TEXAS
PAUL R. HAHN
107365
LICENSED
PROFESSIONAL ENGINEER

WILLIAMSON COUNTY
1848

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
TBPE FIRM REGISTRATION # 739

LIBERTY HILL BYPASS EROSION CONTROL PLAN RM 1869

SCALE HORIZONTAL: 1"=100'

SHEET 3 OF 3

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
ANS	6			215
DRAWN	STATE	DIST. NO.	COUNTY	
RJC	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
PRH	1755	01	020	LHB

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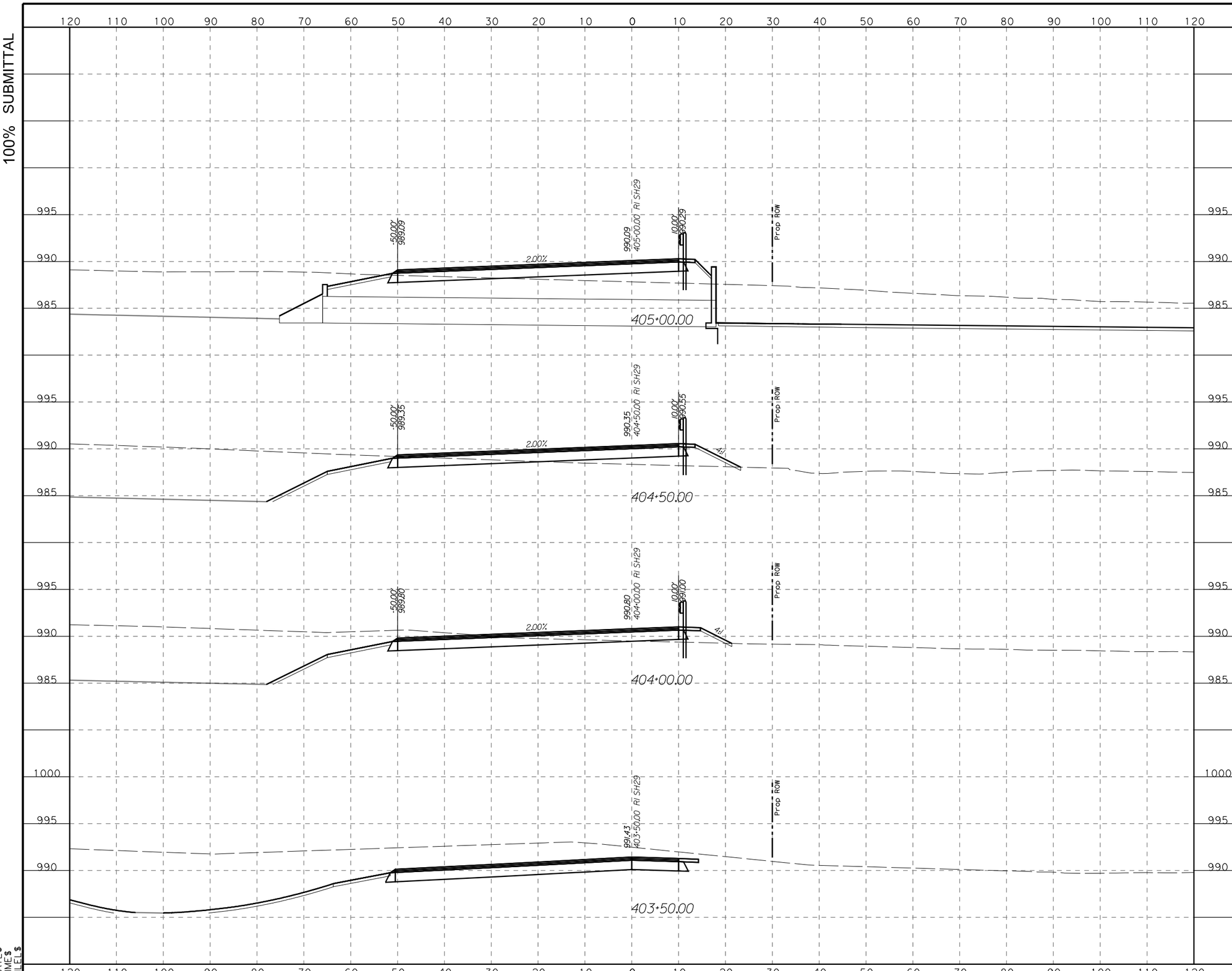

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 1 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			221
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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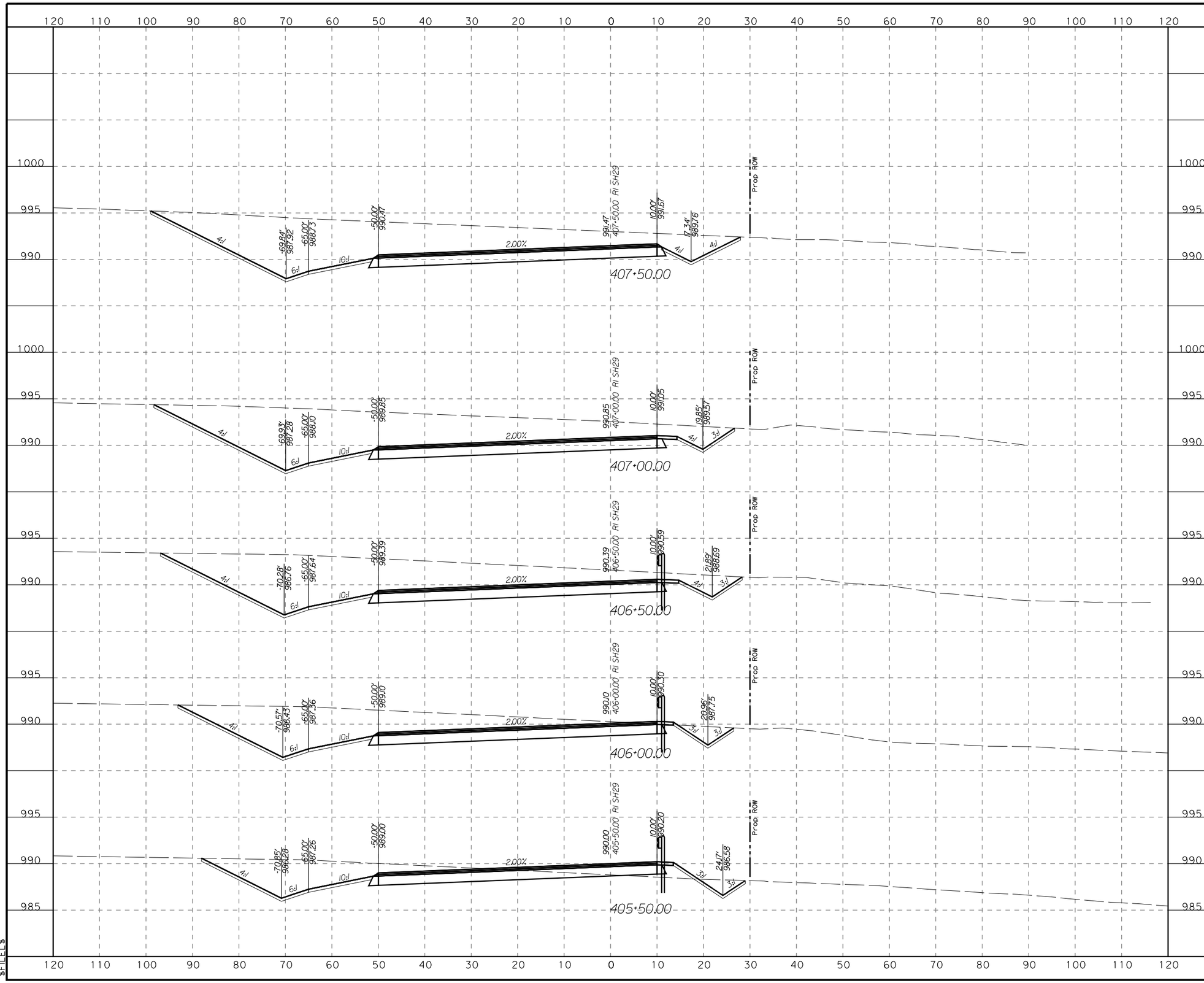

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 2 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			222
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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$TIME$
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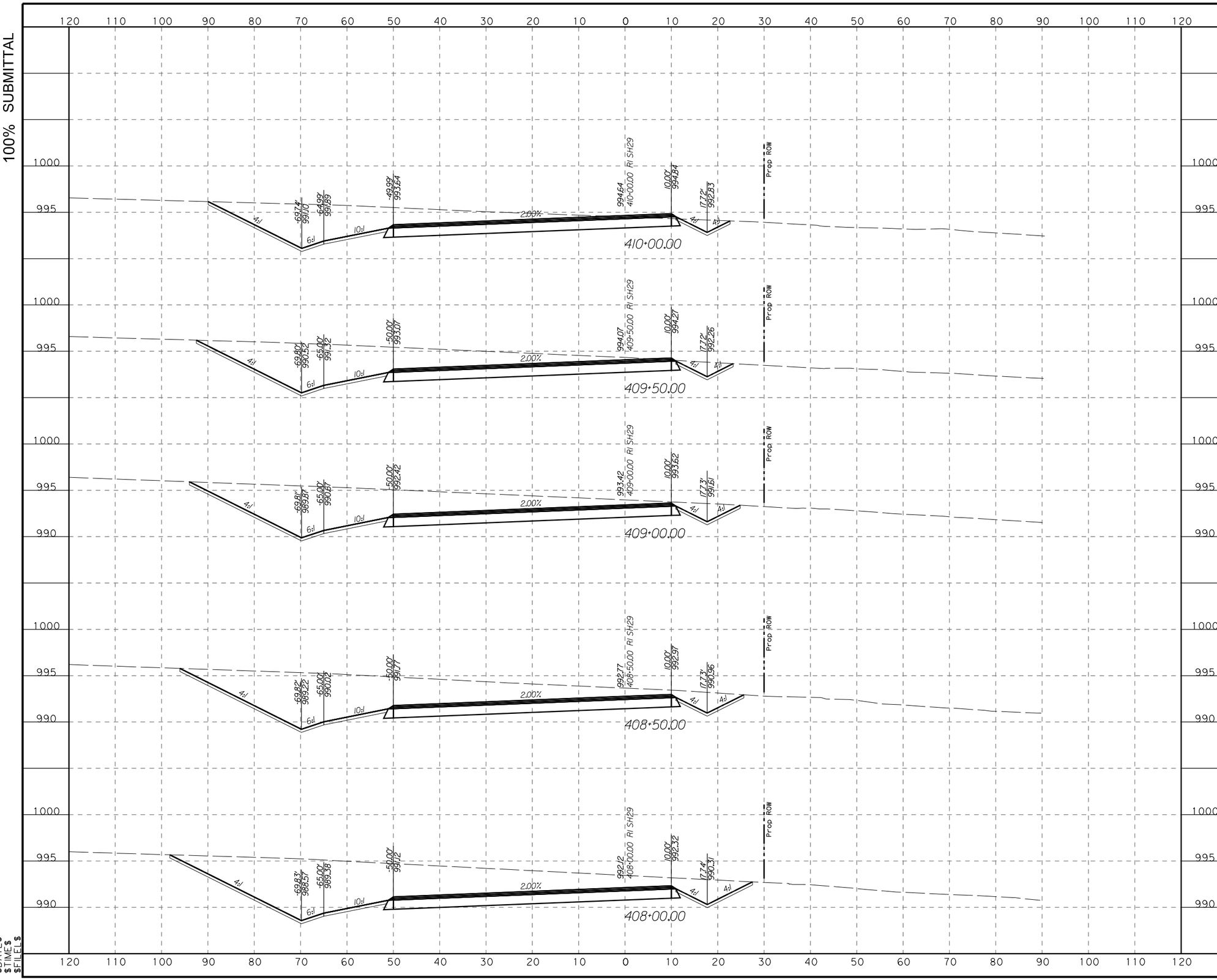

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 3 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			223
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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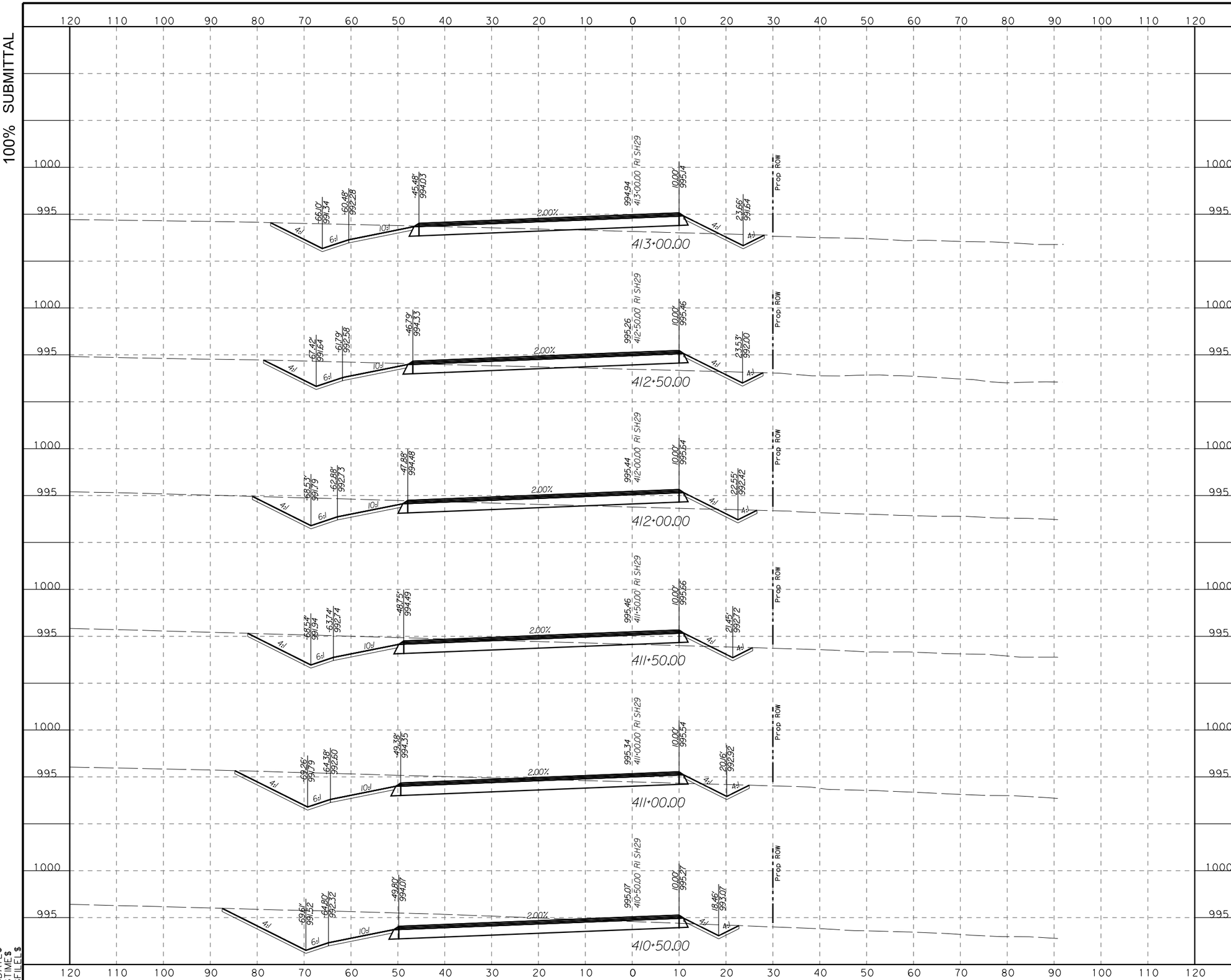

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 4 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			224
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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$TIME$
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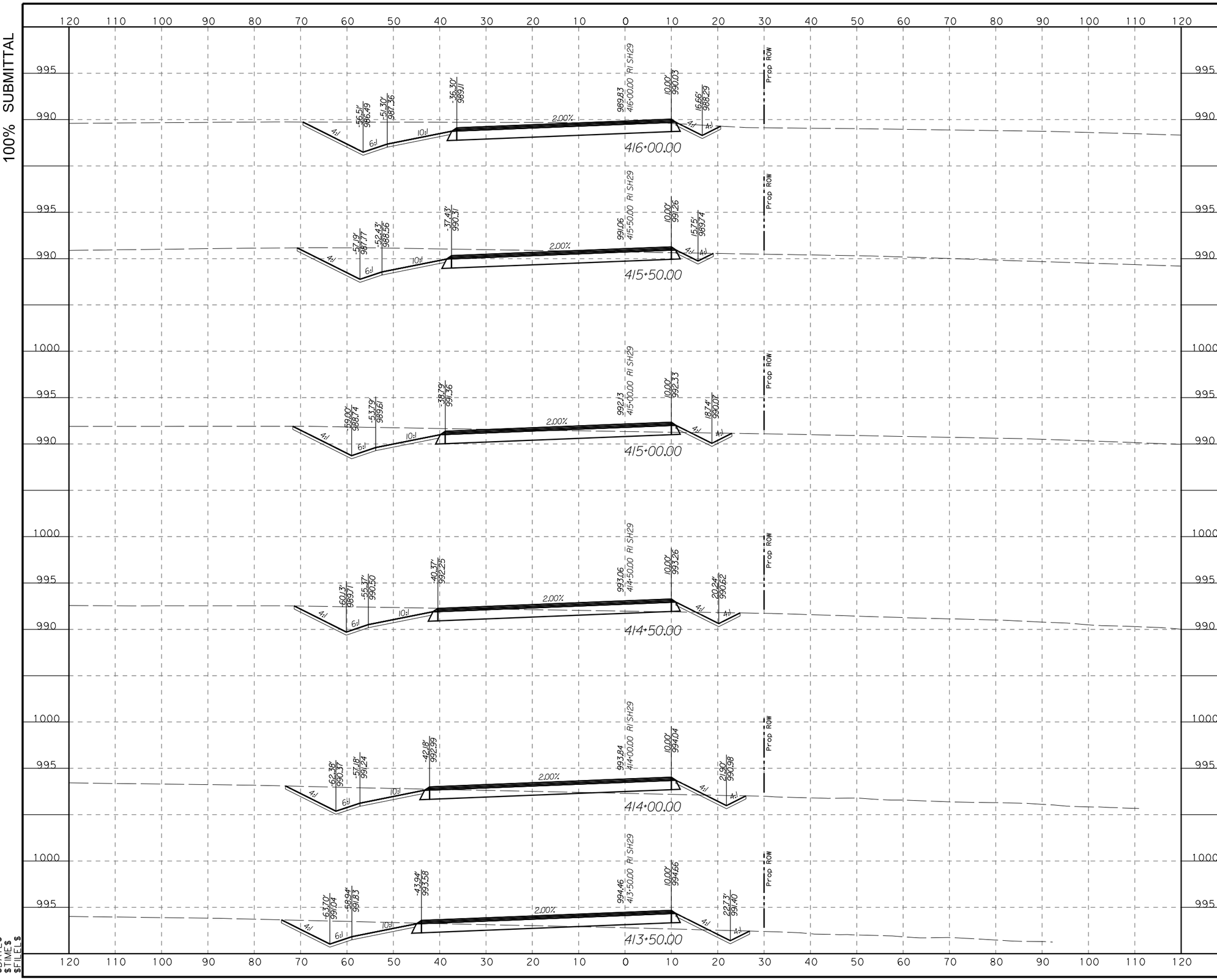

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 5 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			225
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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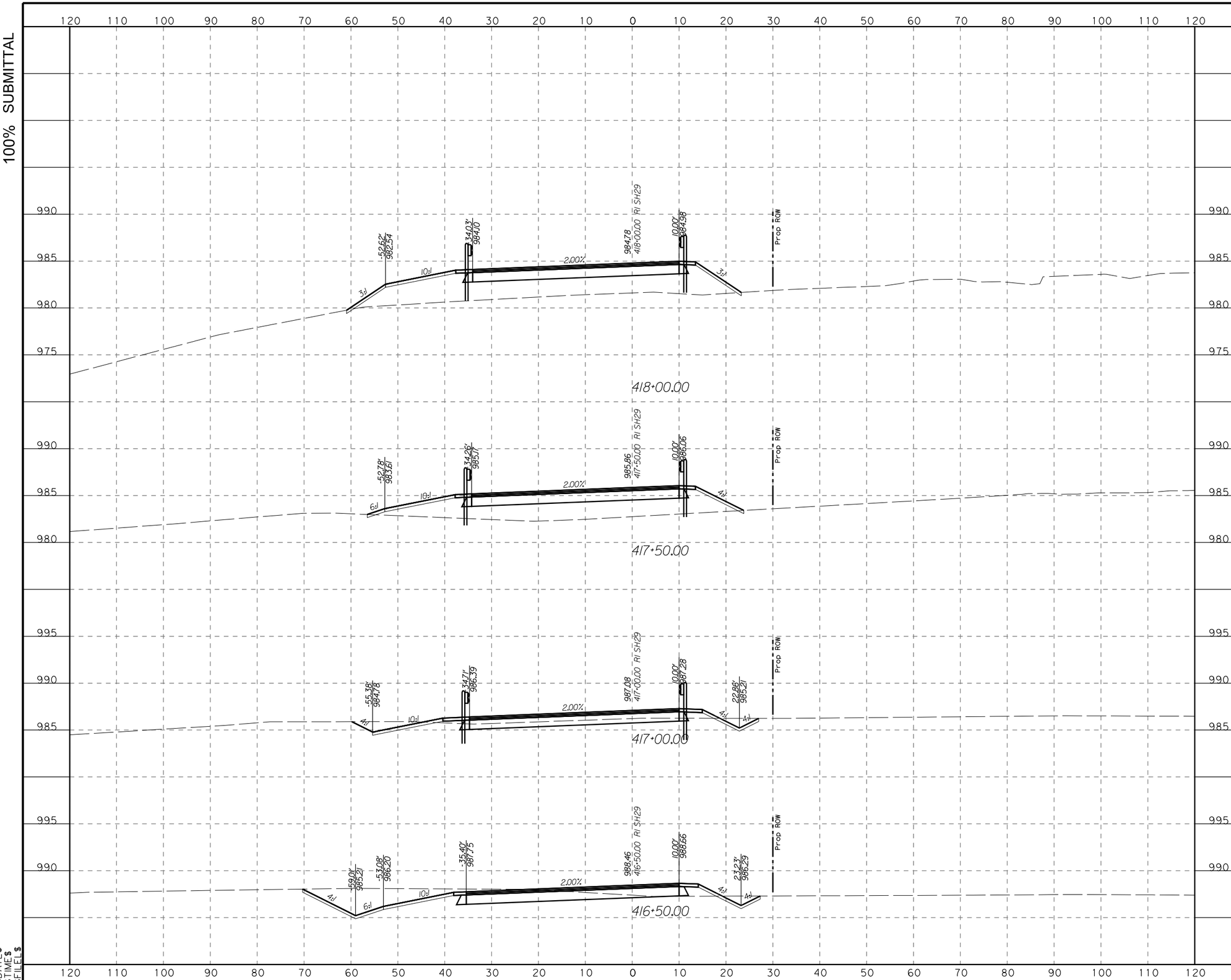

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 6 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			226
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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$TIME$
$FILEL$

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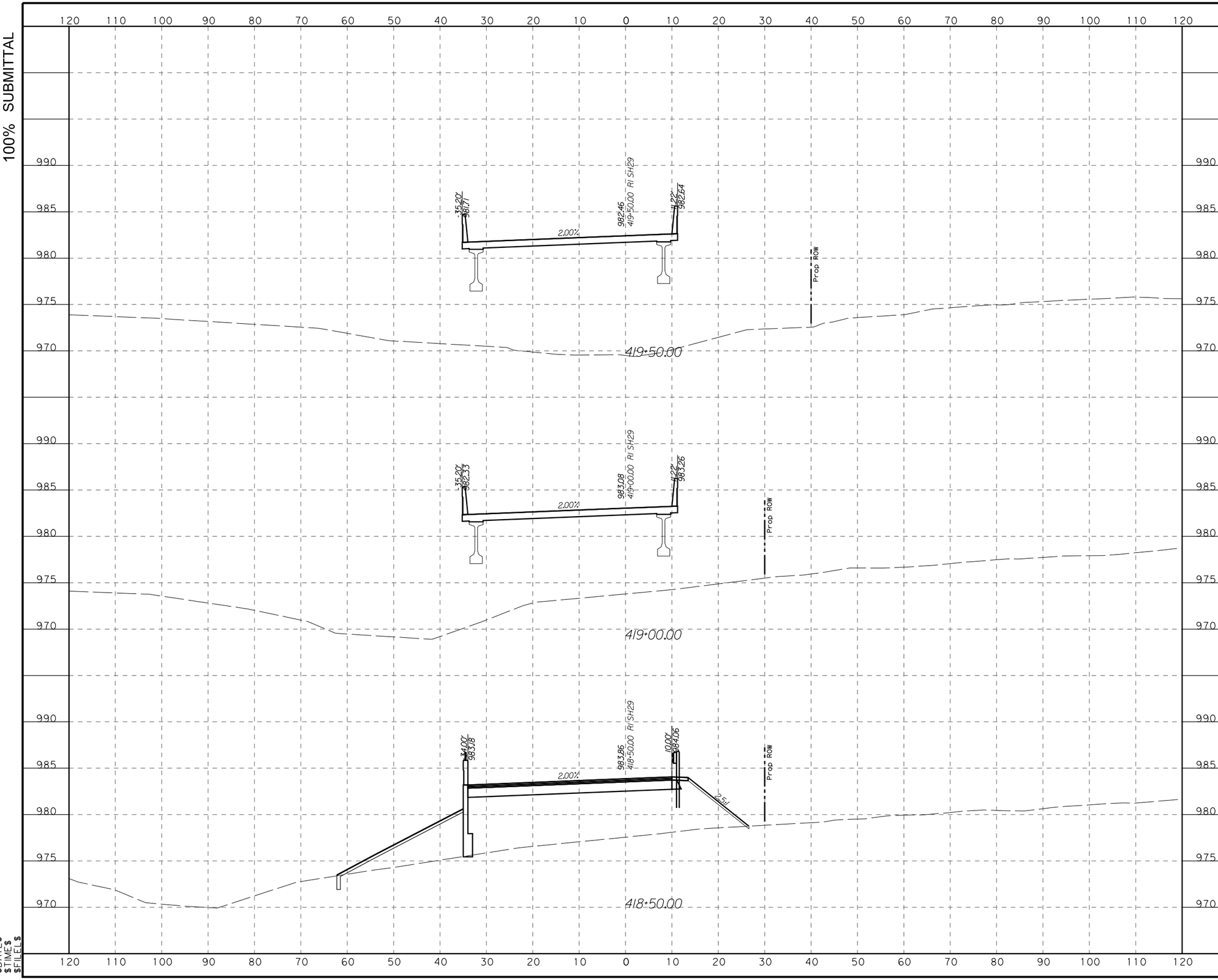

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 7 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			227
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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$TIME$
$FILEL$

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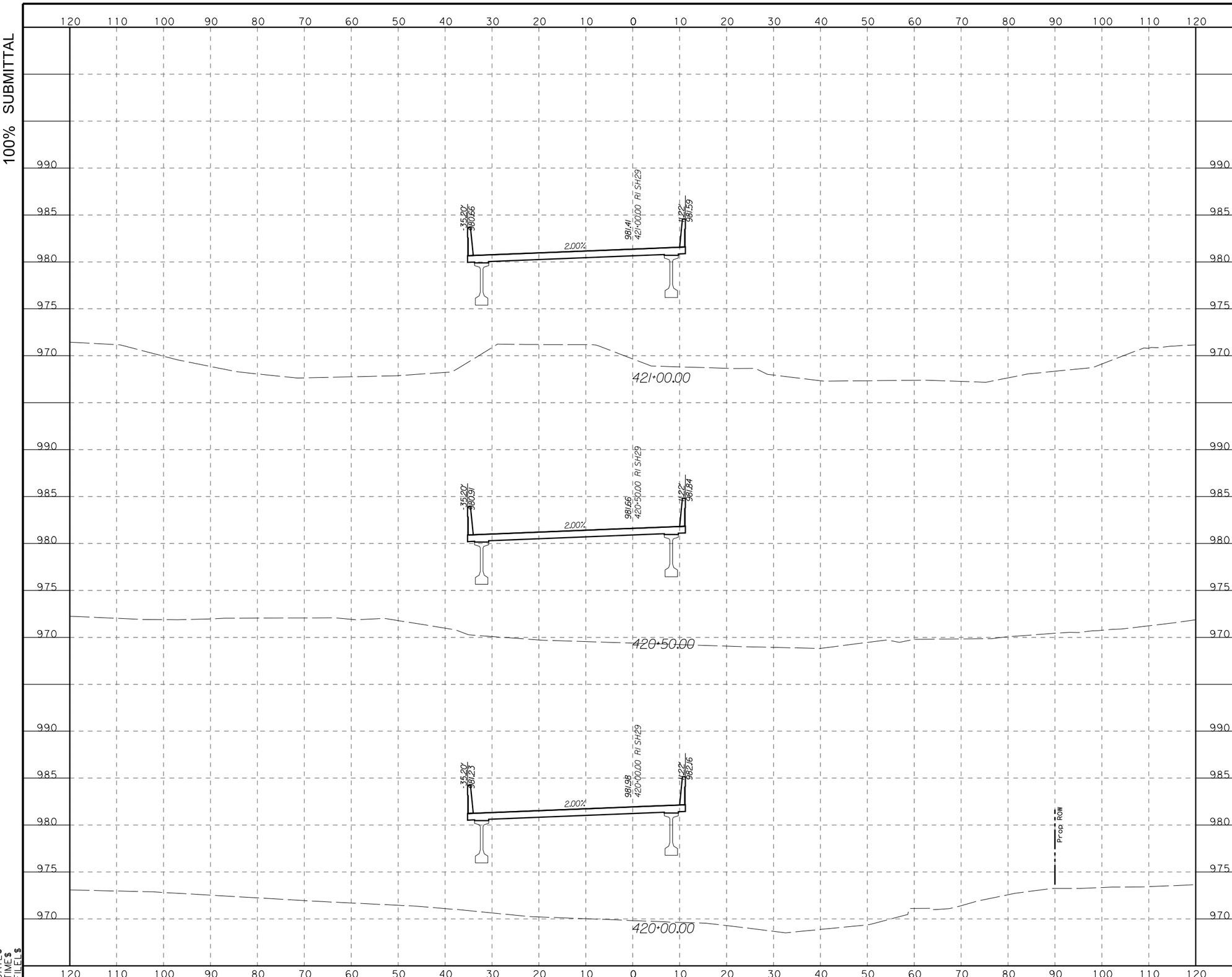

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 8 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			228
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

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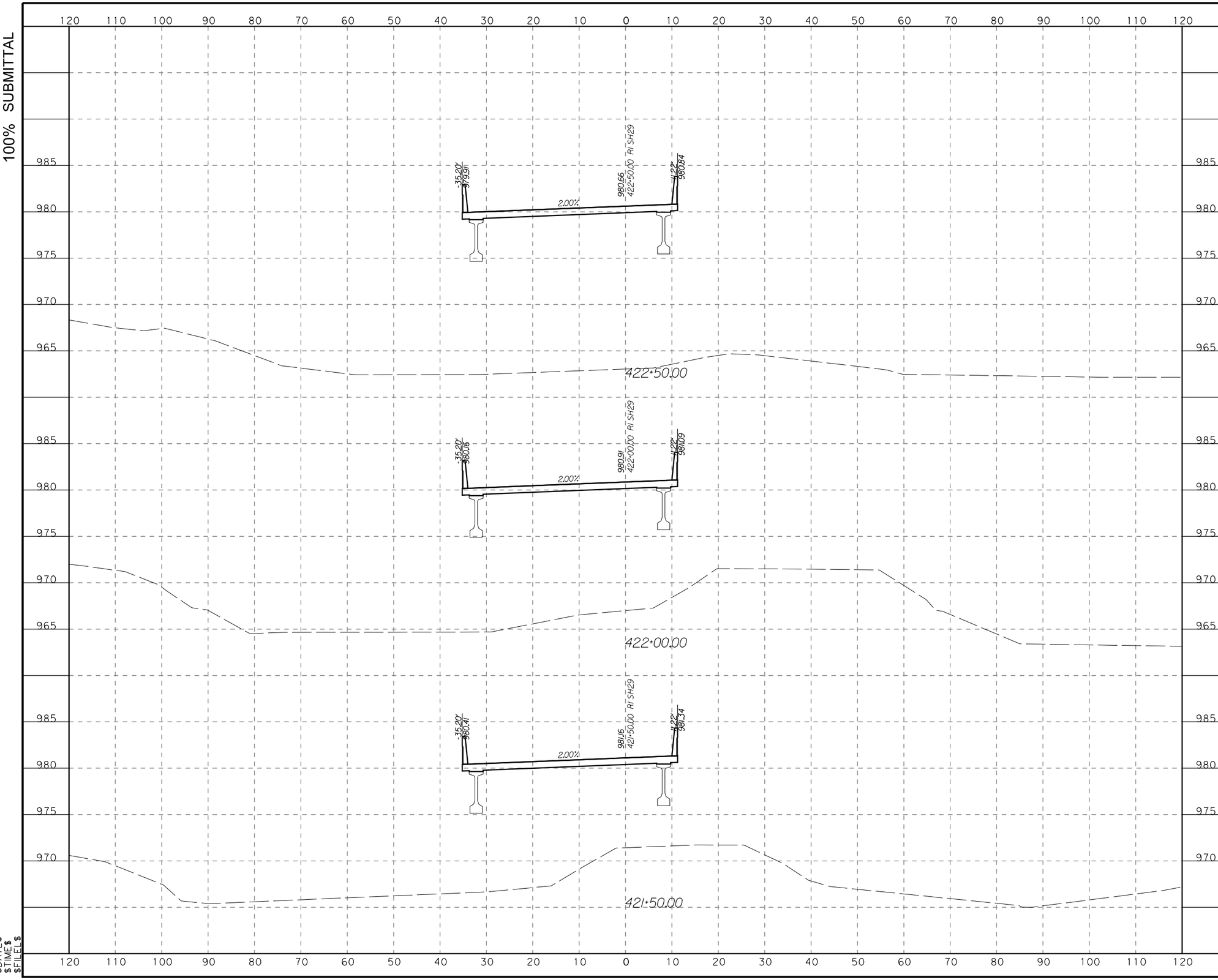

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 9 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			229
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
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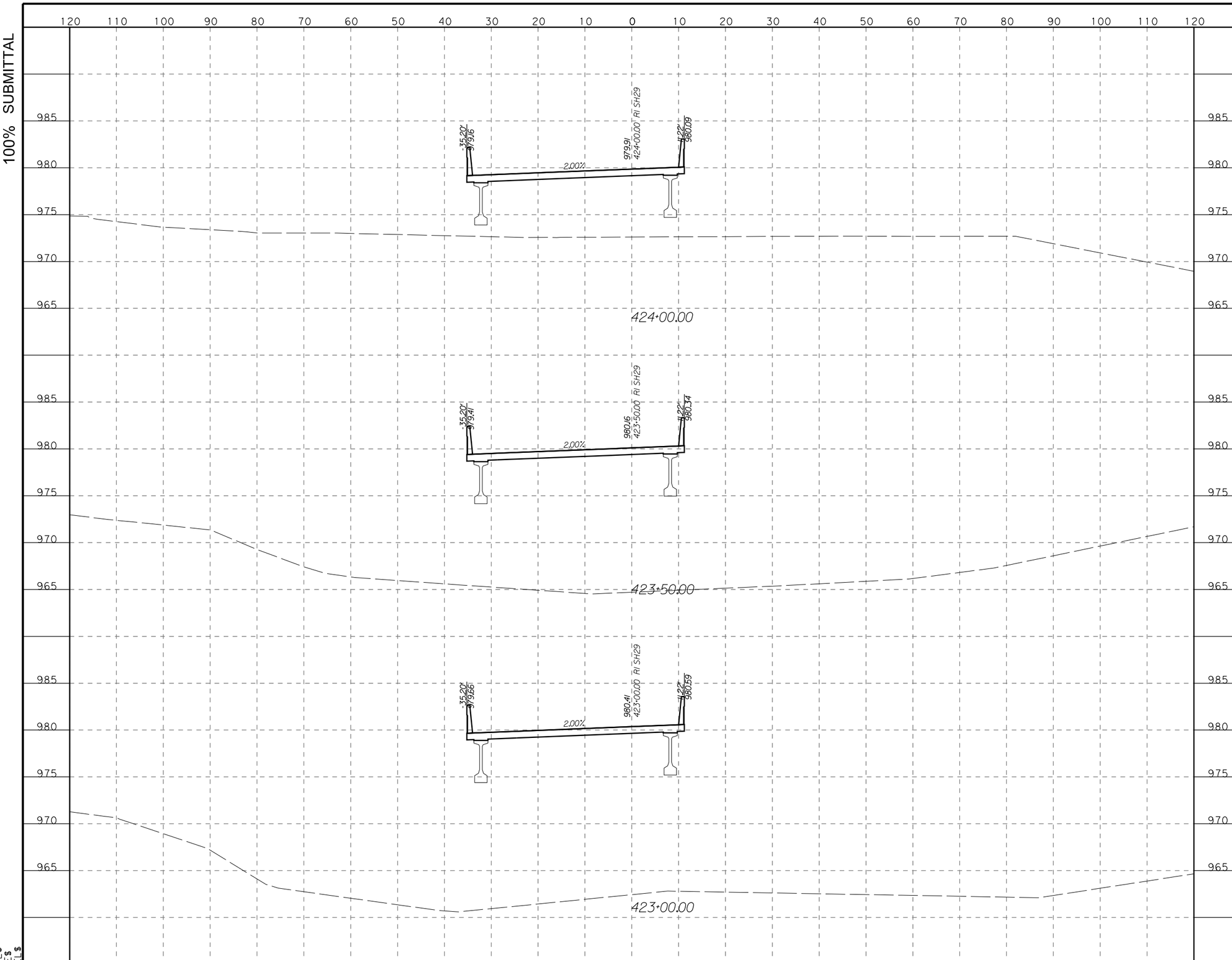

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 10 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			230
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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$TIME$
$FILEL$

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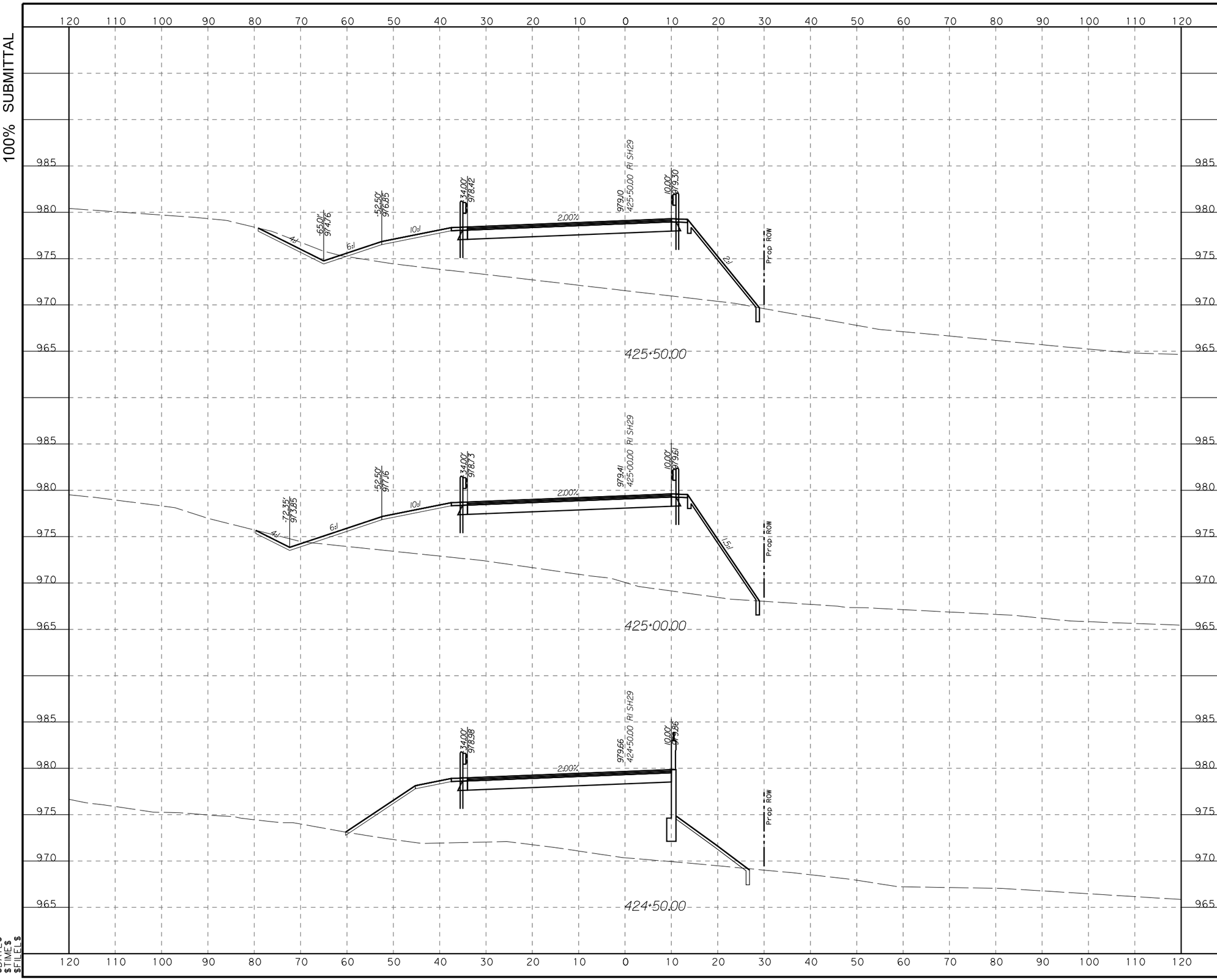

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 11 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			231
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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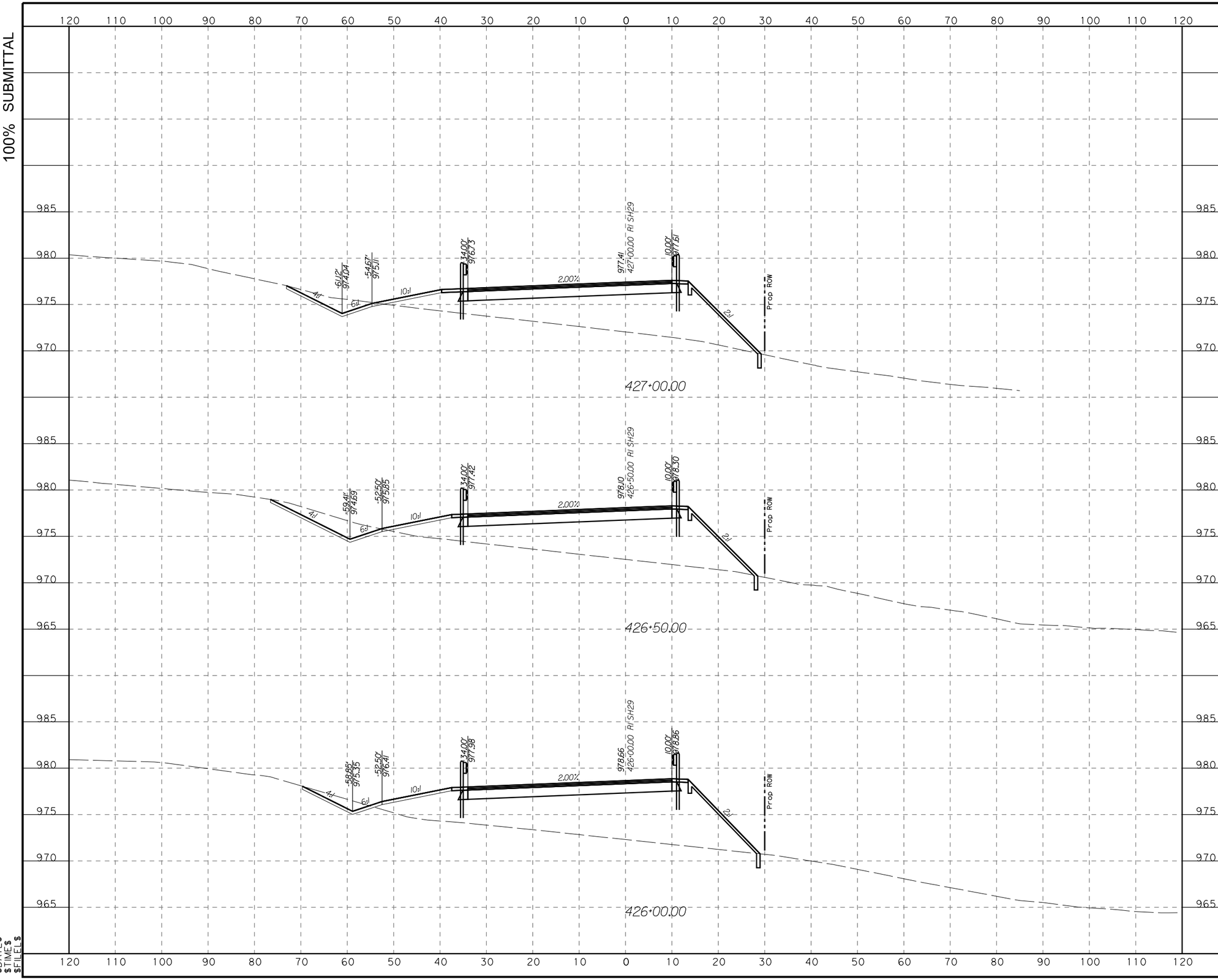


HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

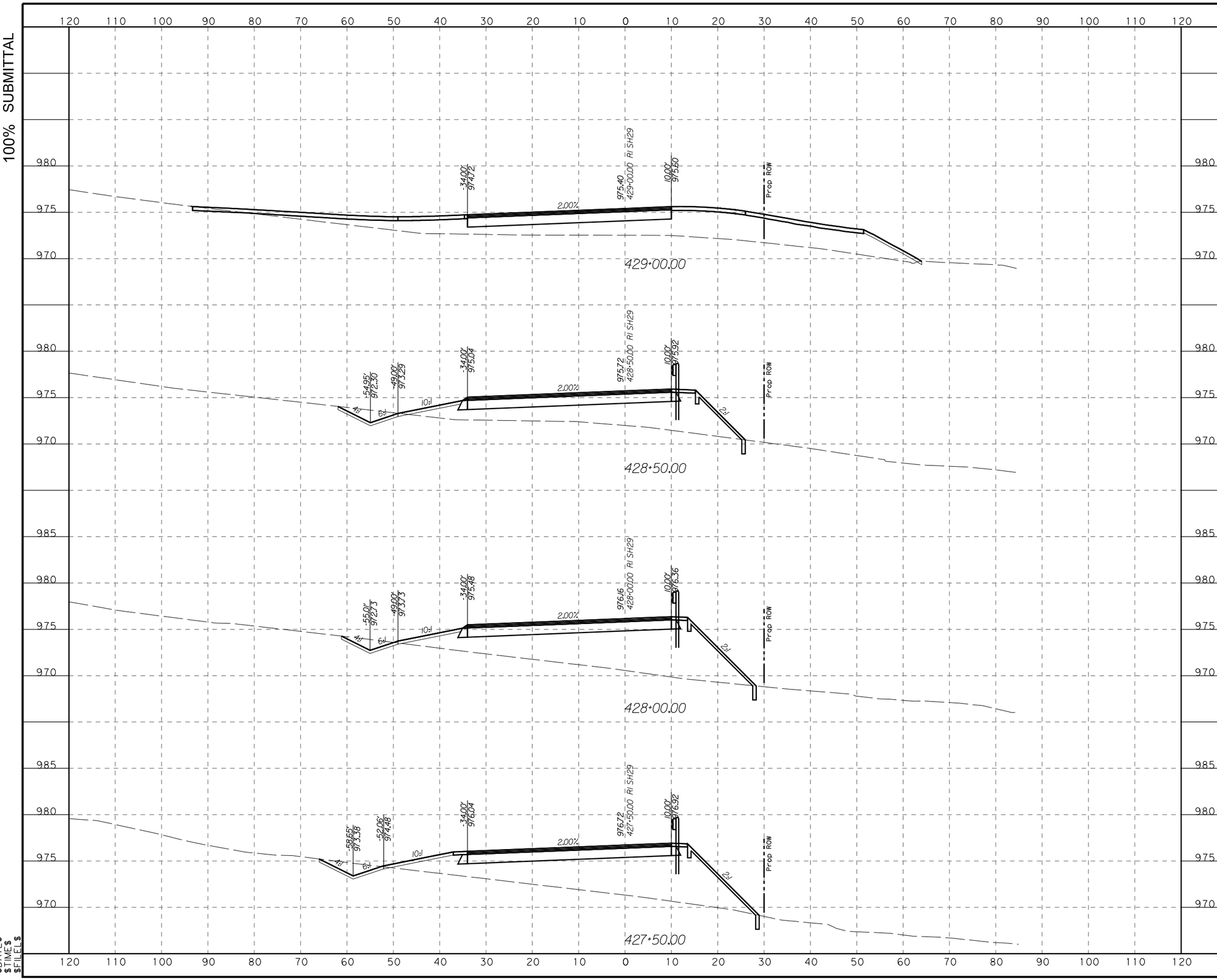
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 12 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			232
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 13 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			233
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

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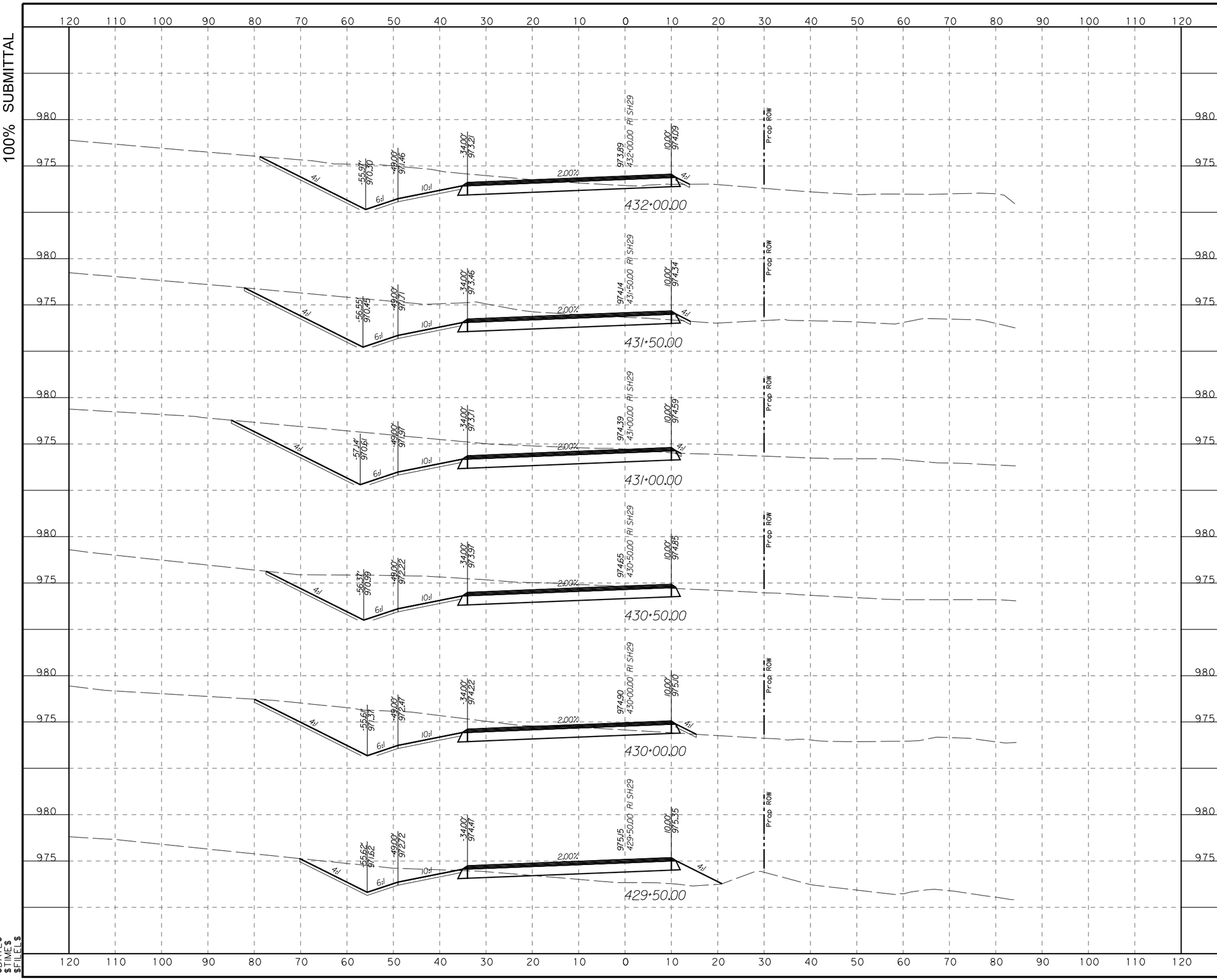


HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 14 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			234
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL

HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

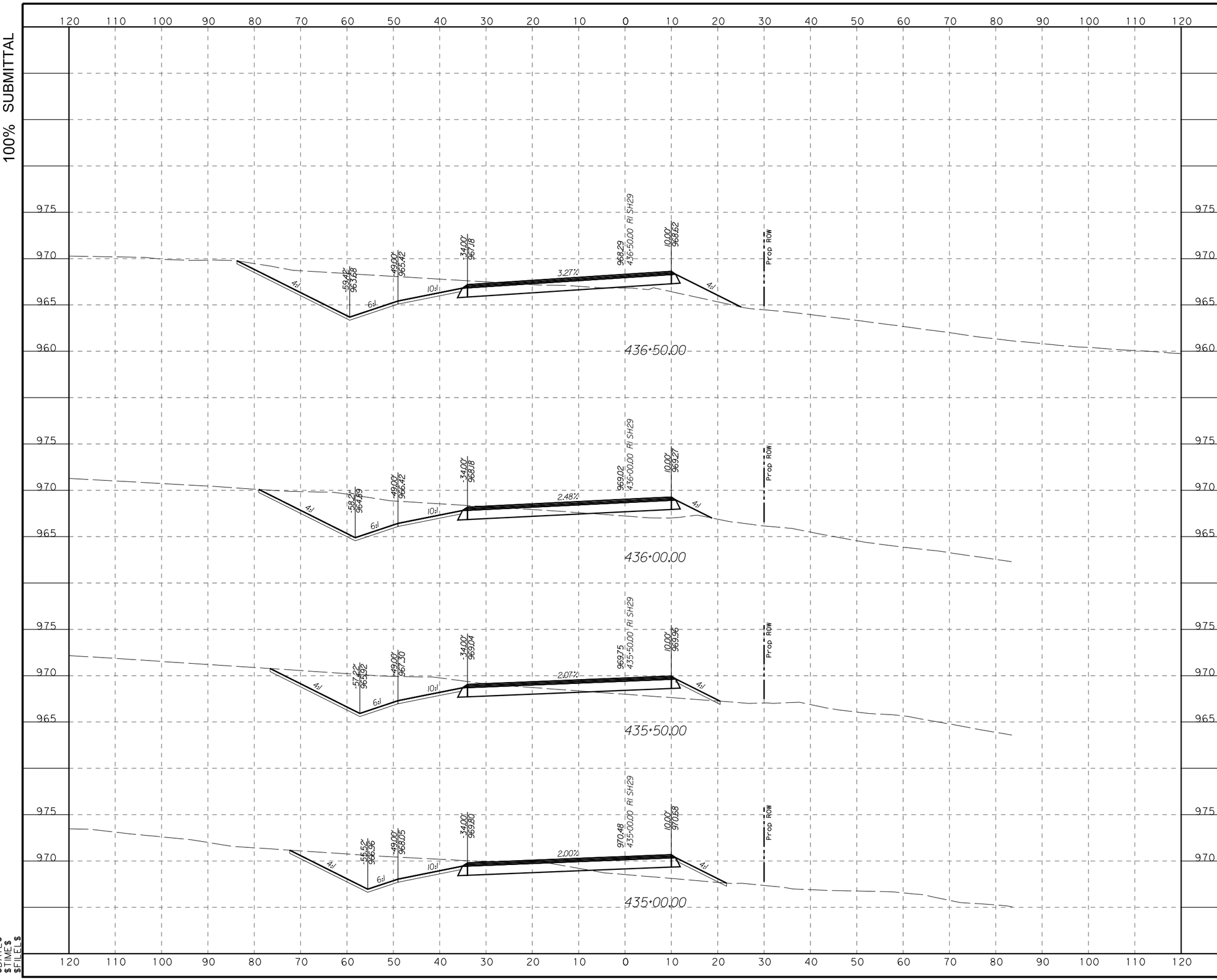
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 15 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			235
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILE$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

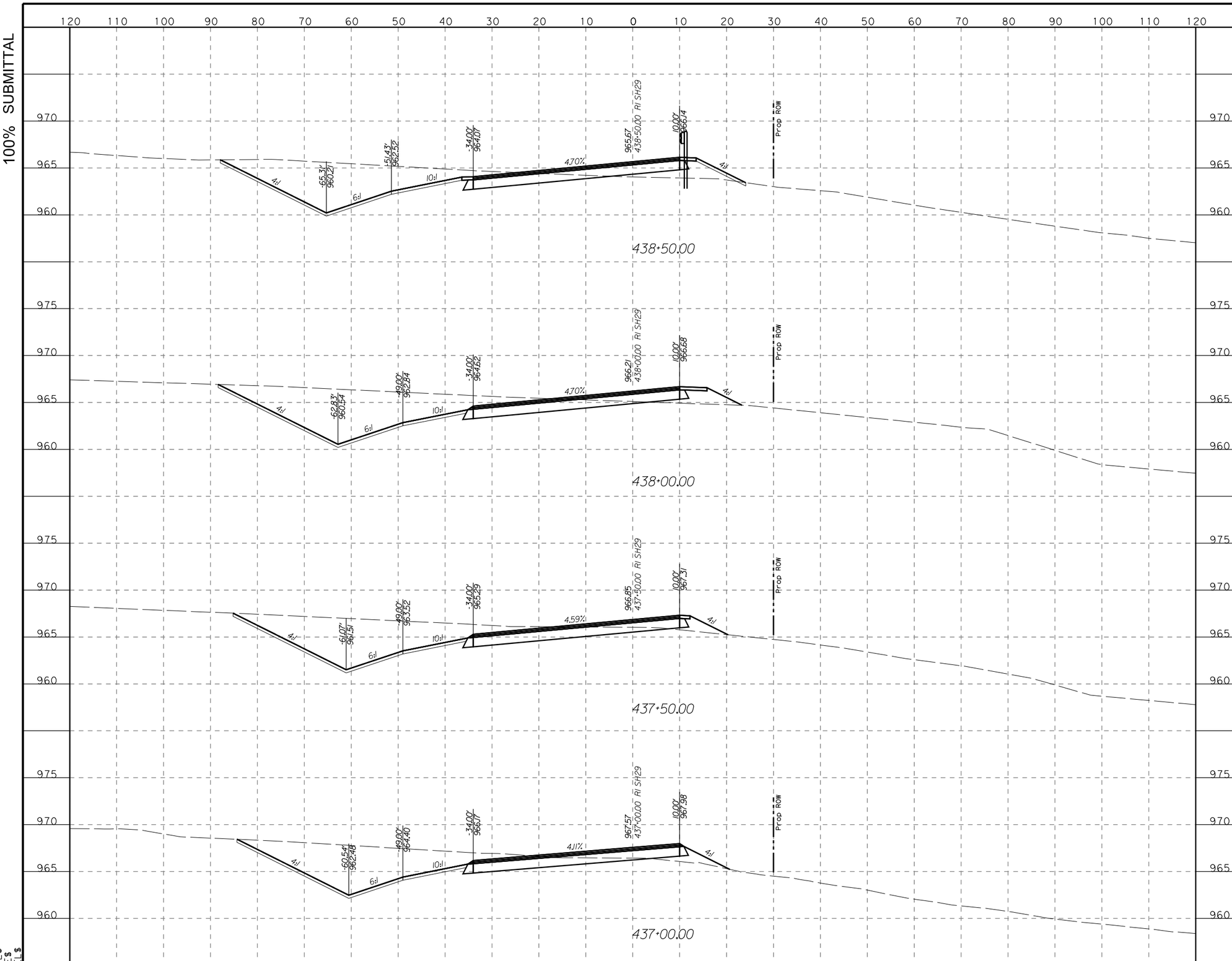
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 16 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			236
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILE$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

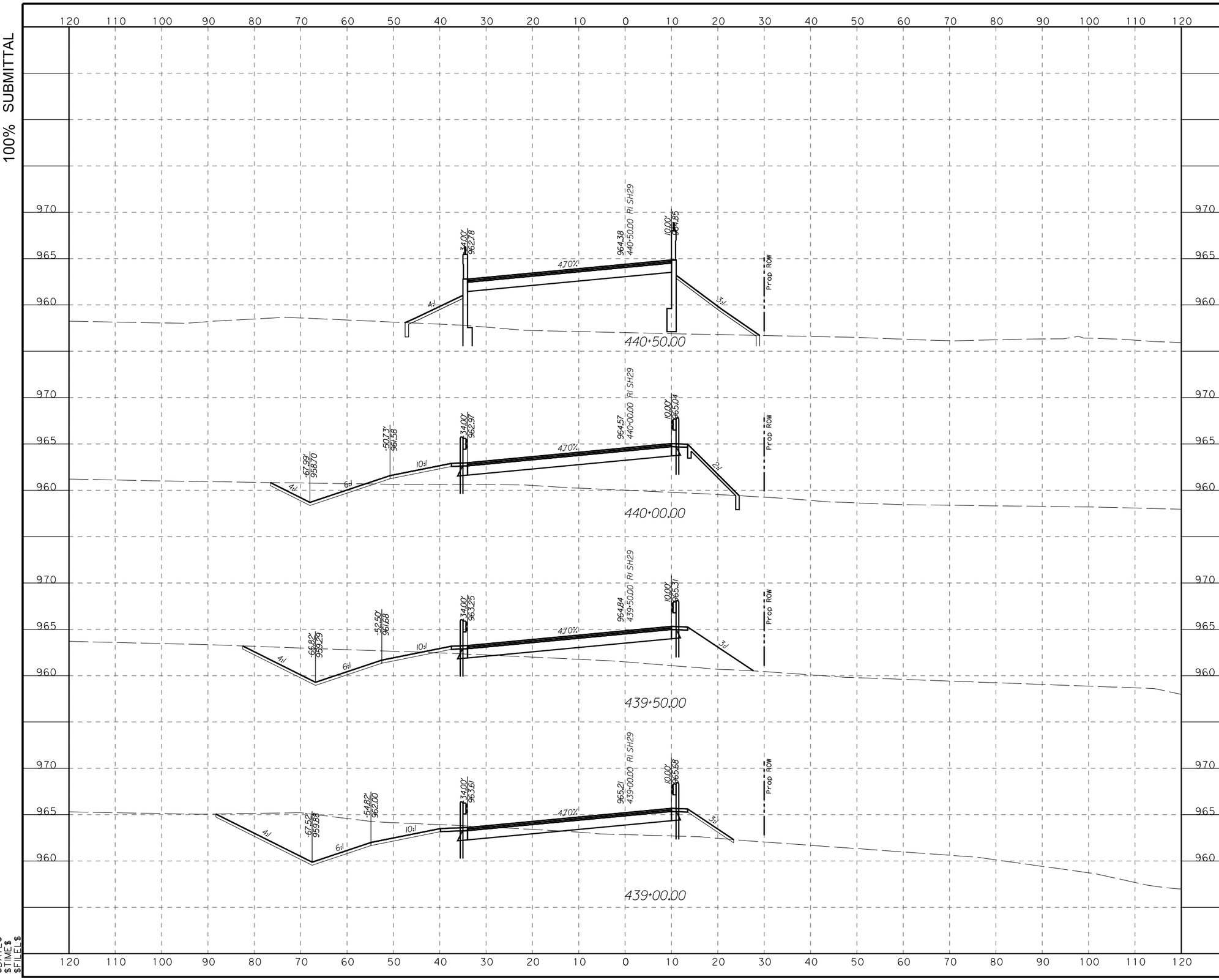
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 17 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			237
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

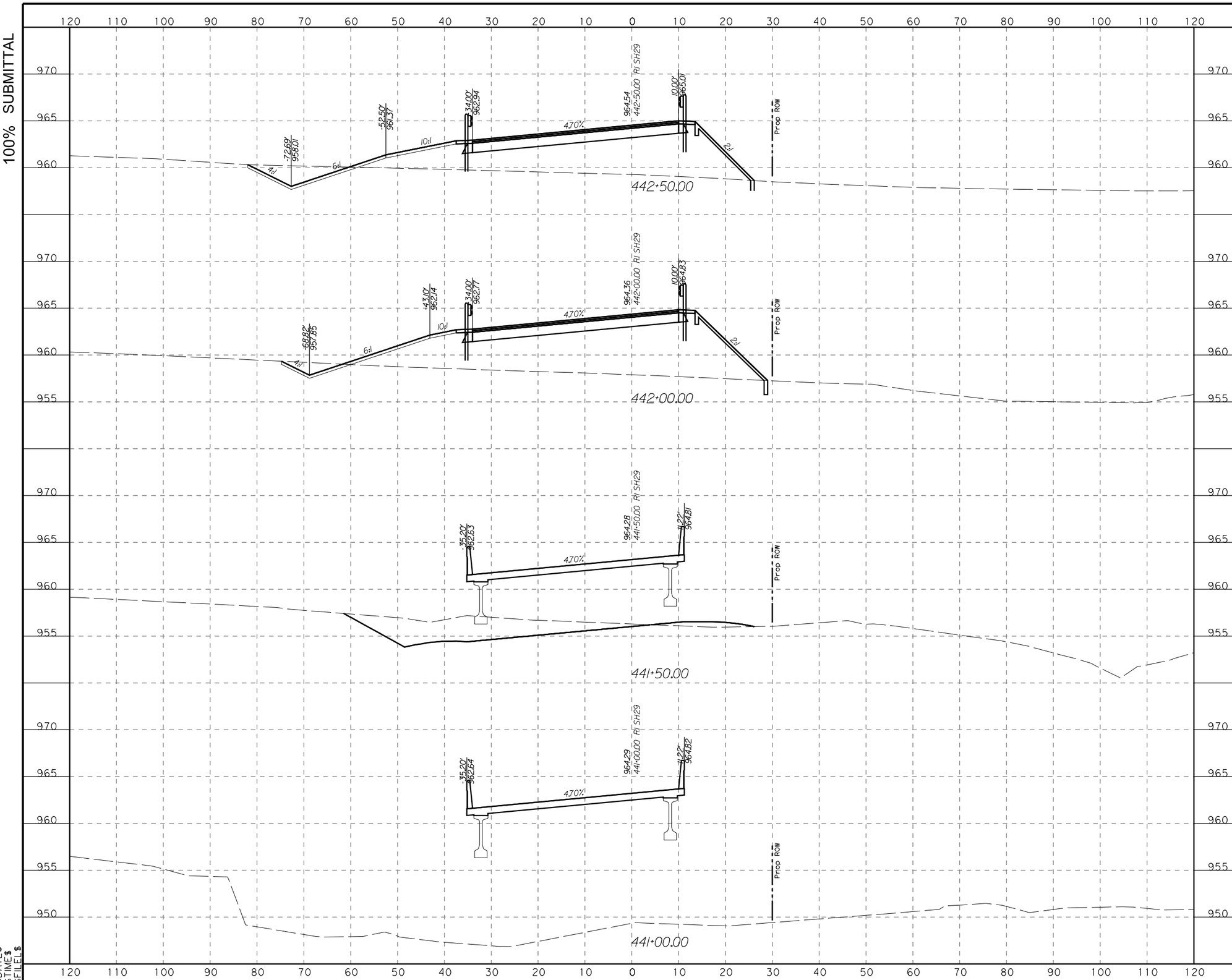
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 18 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			238
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILE$

100% SUBMITTAL



STATE OF TEXAS
RILEY W. SLADEK
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

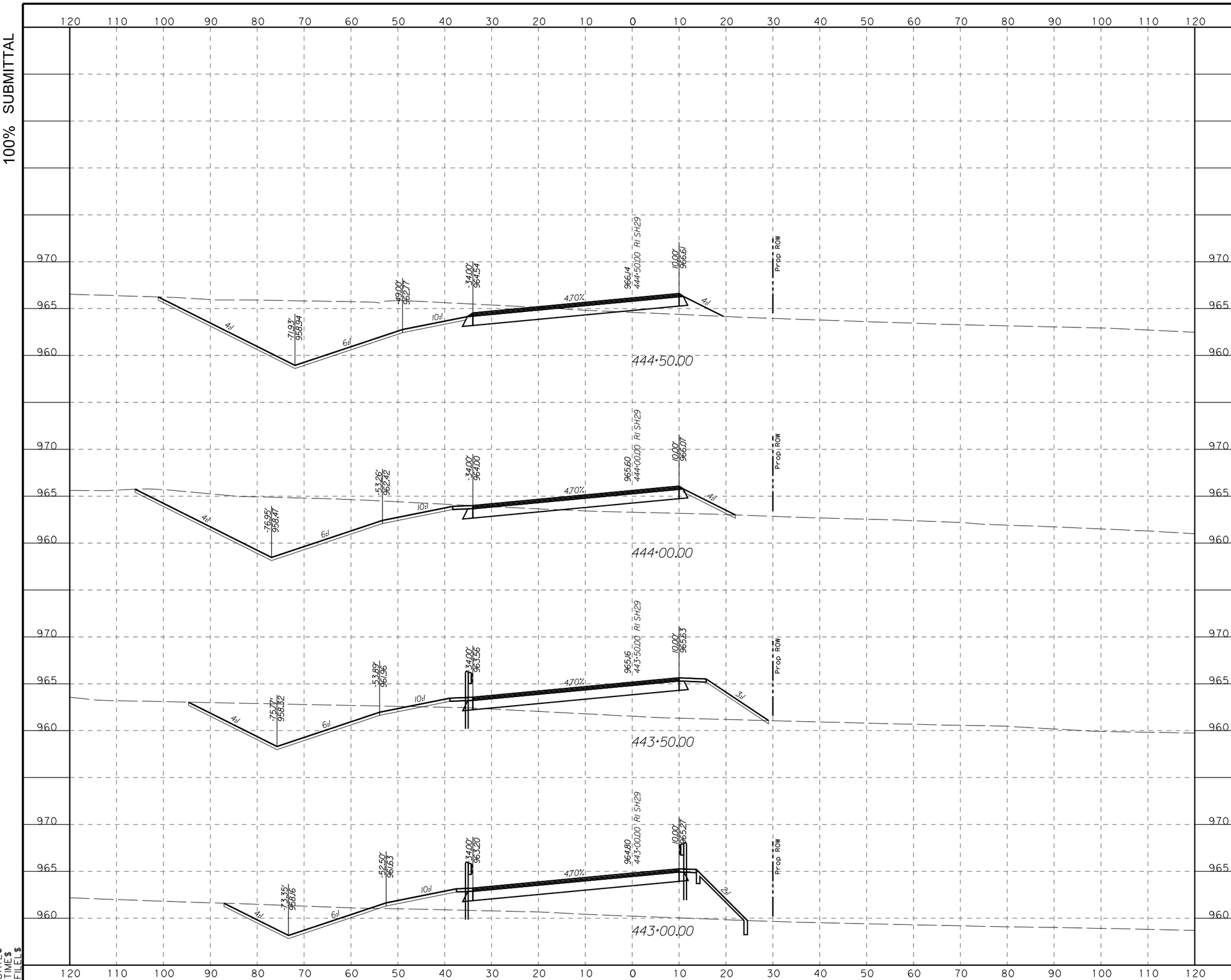
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 19 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			239
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

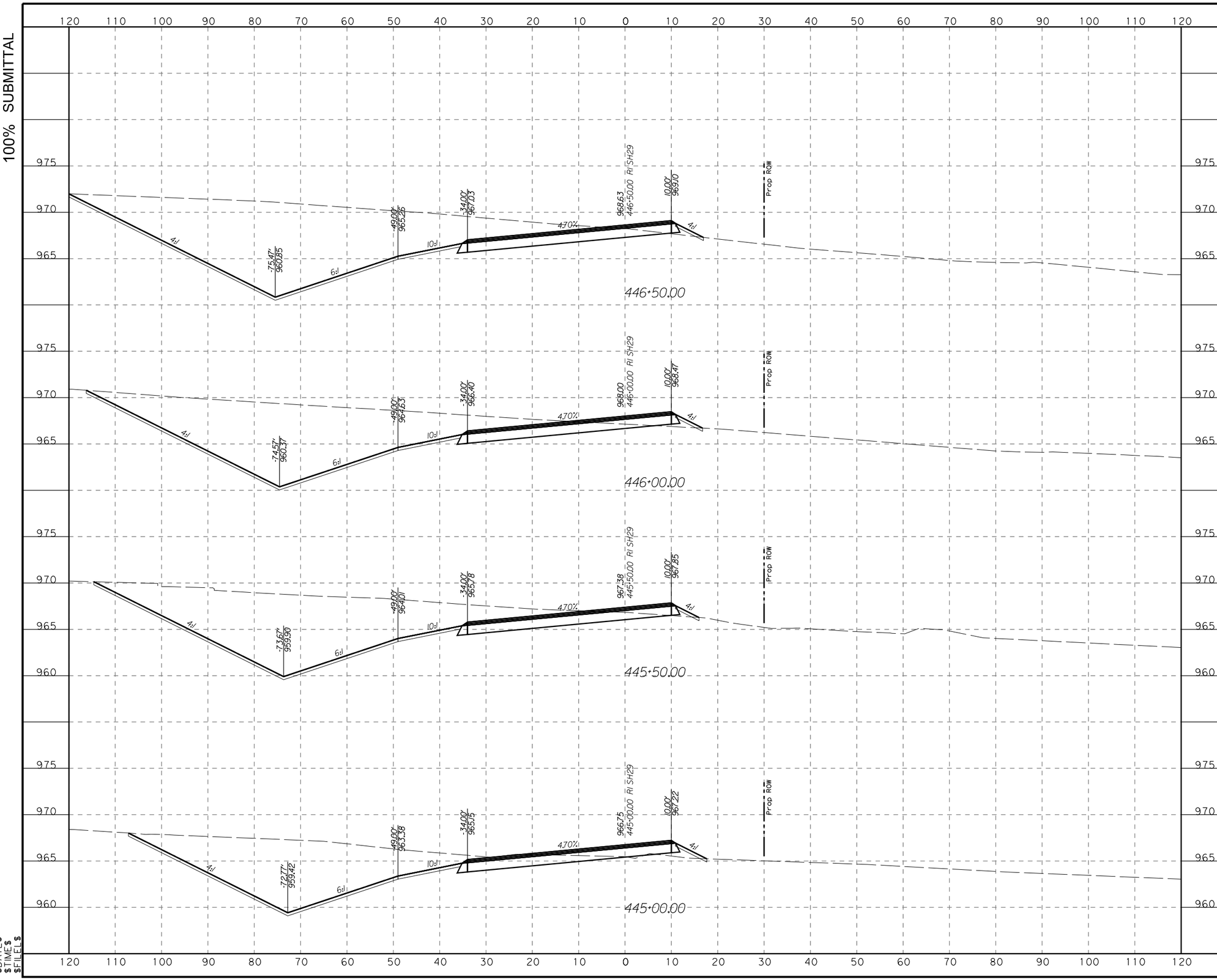
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 20 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			240
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
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7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

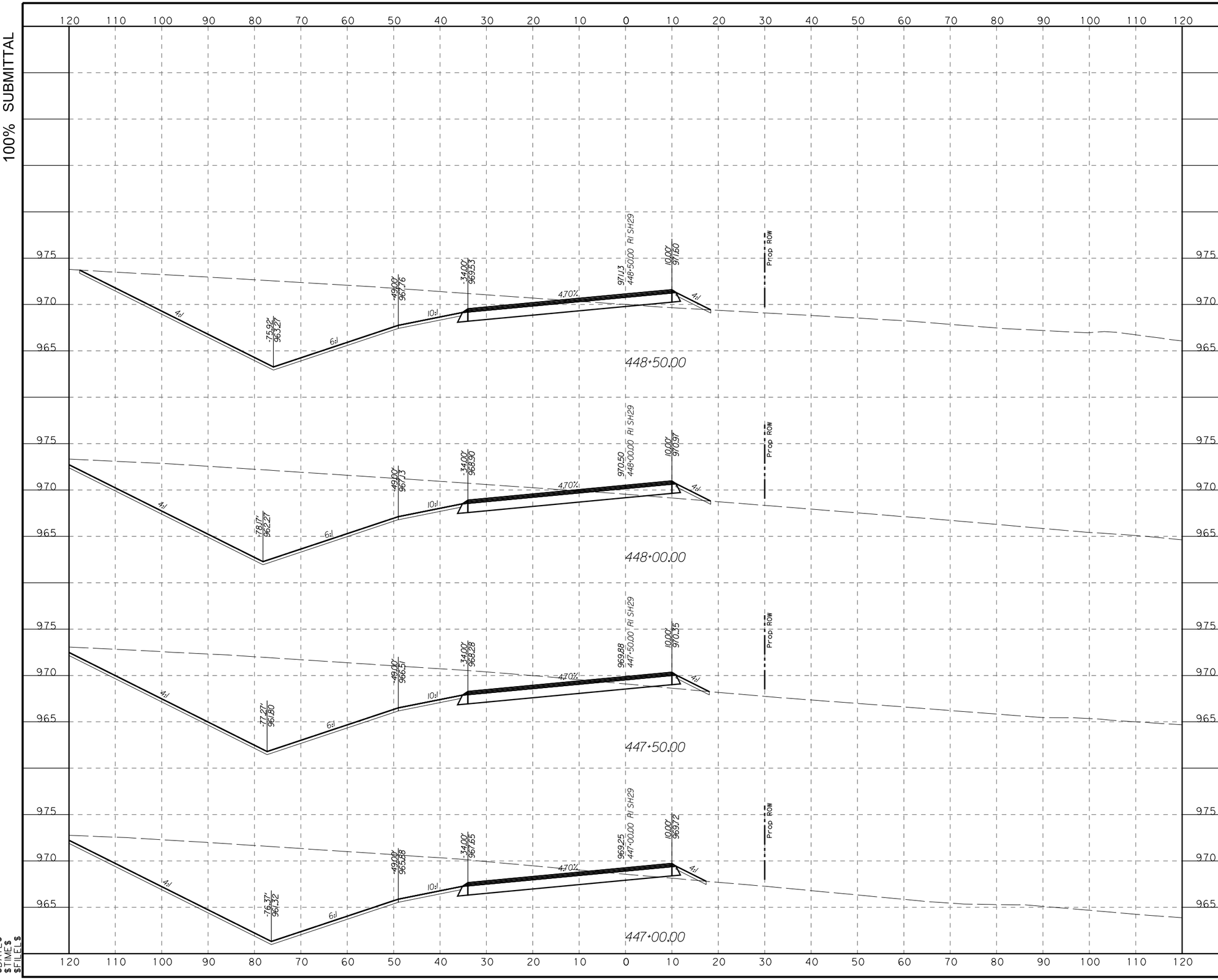
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 21 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			241
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

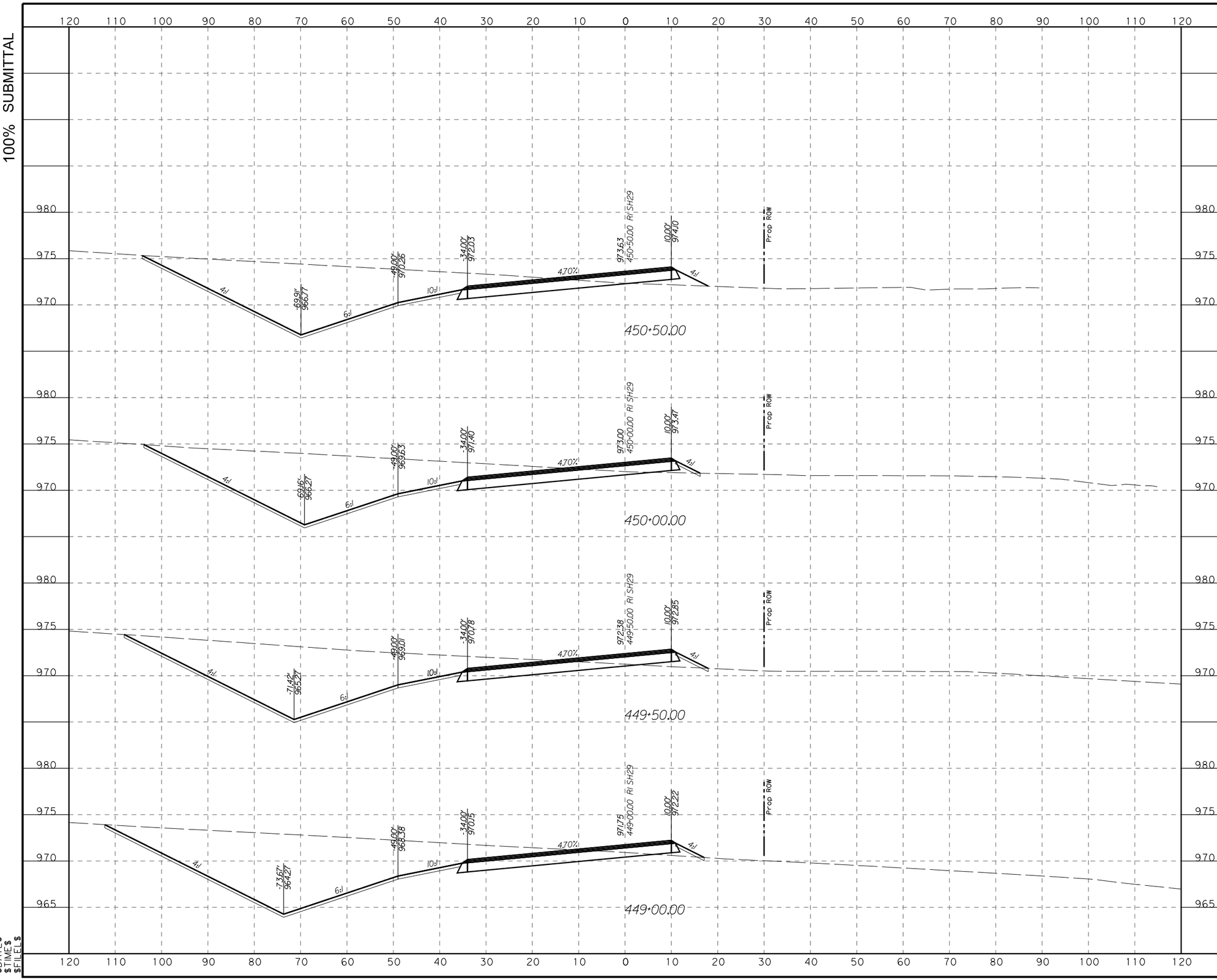
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 22 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			242
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

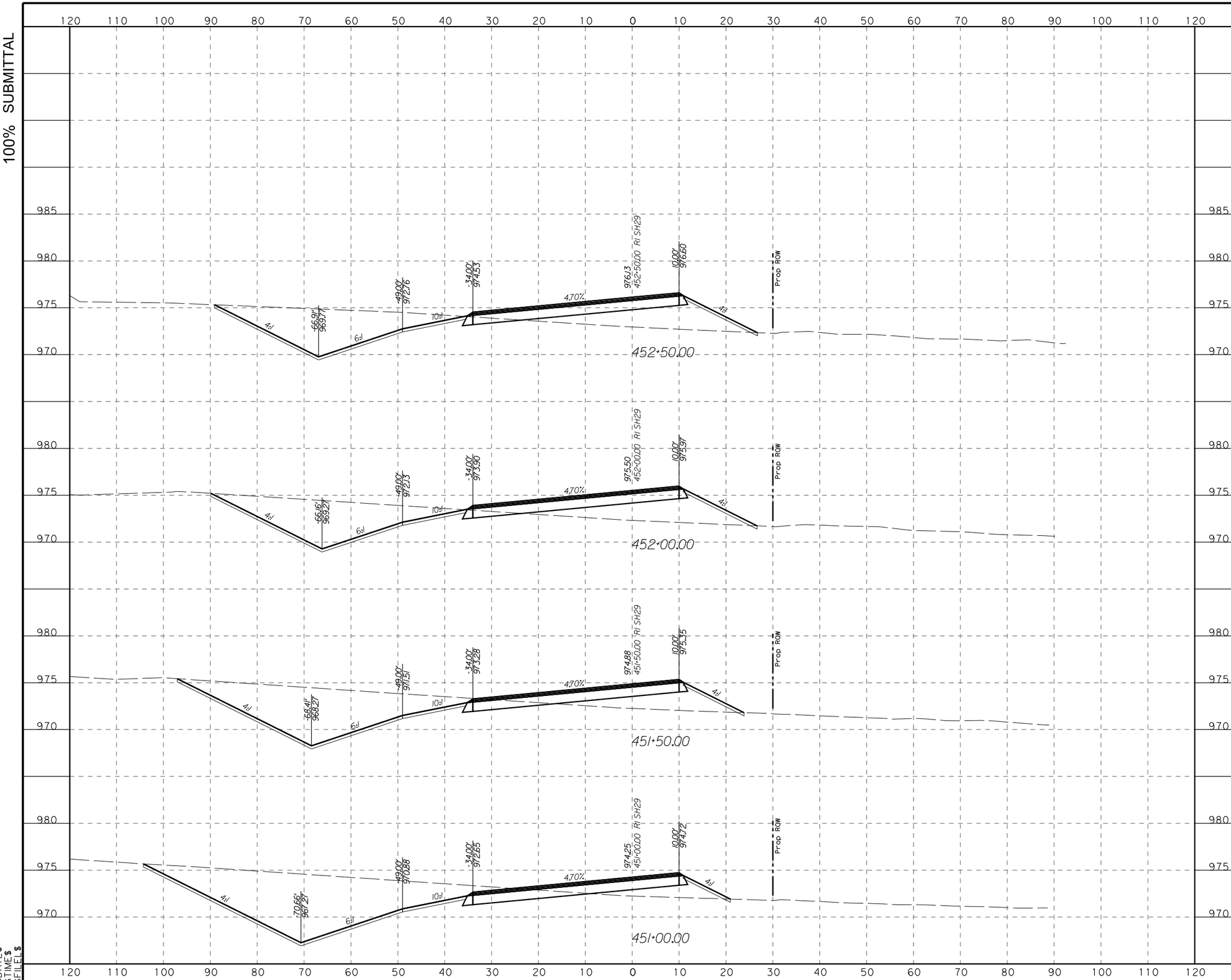
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 23 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			243
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

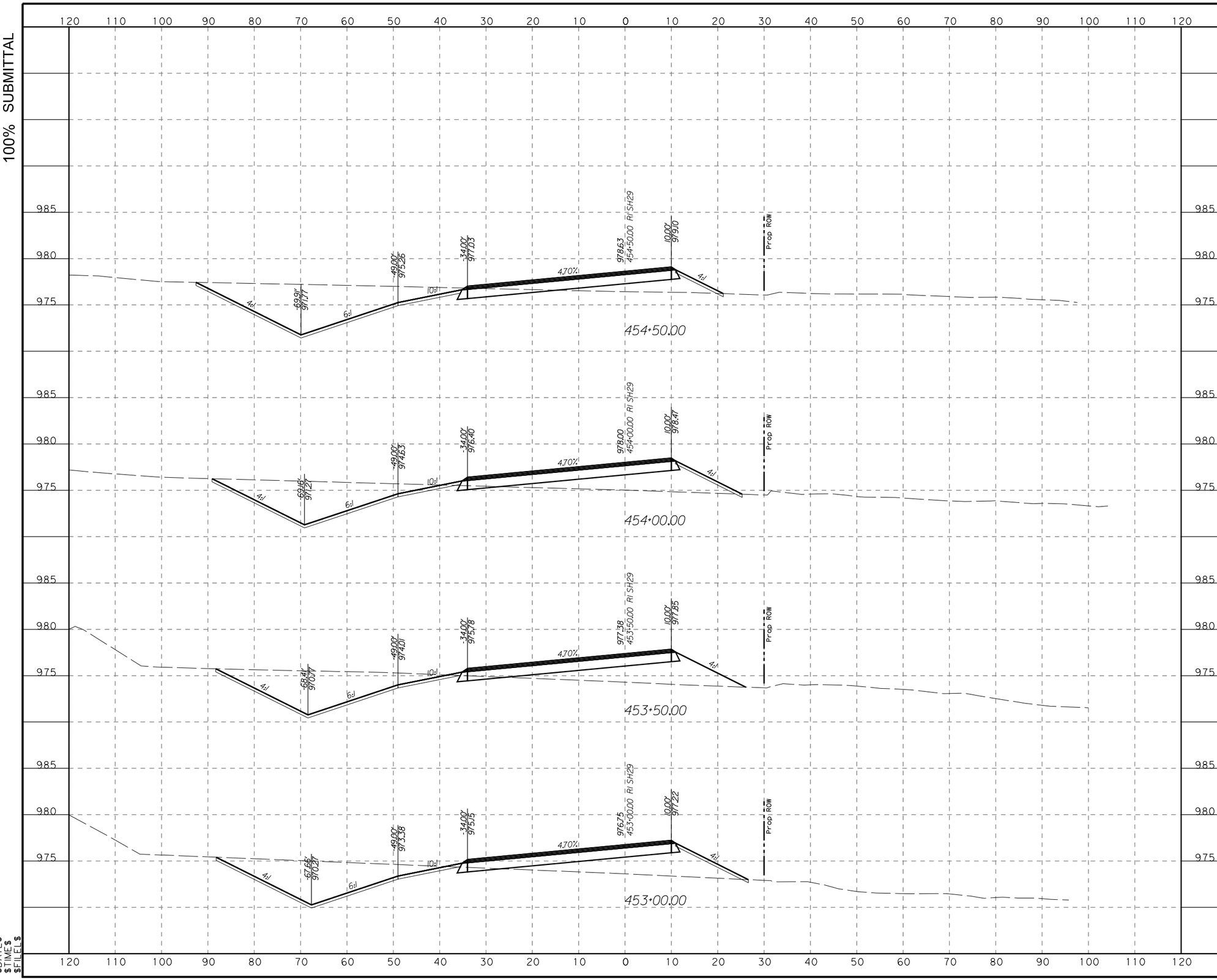
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 24 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			244
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

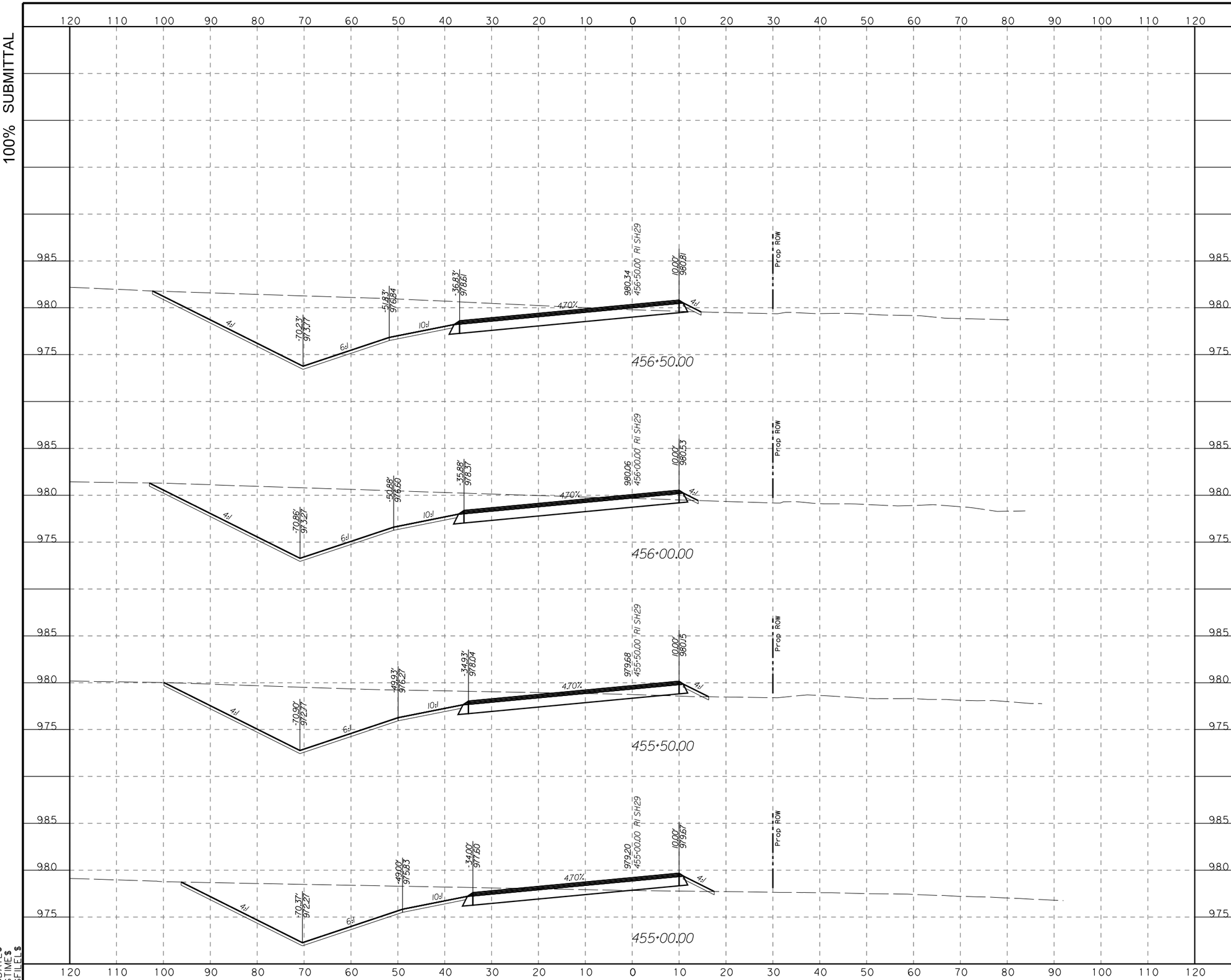
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 25 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			245
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

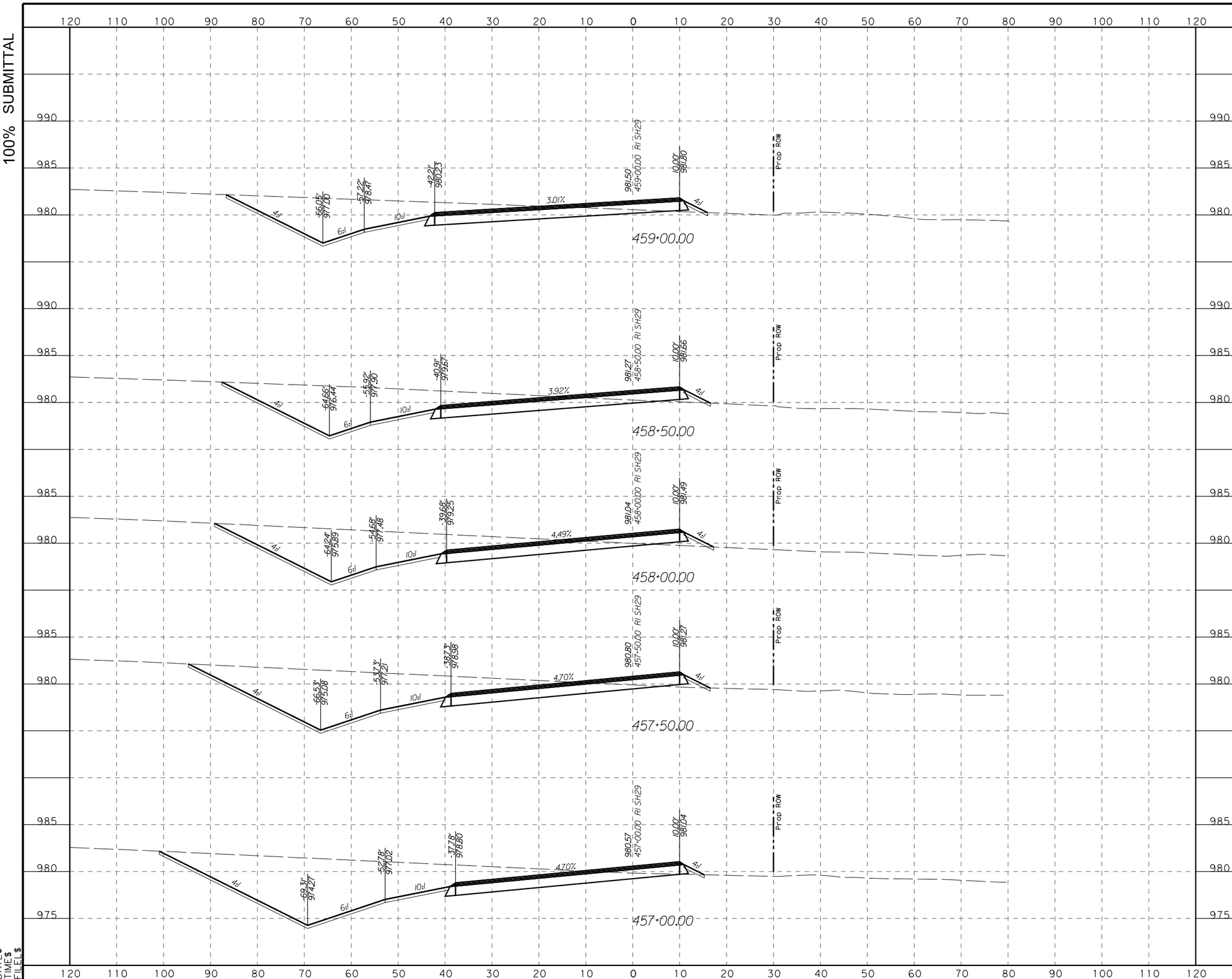
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 26 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			246
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILE$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

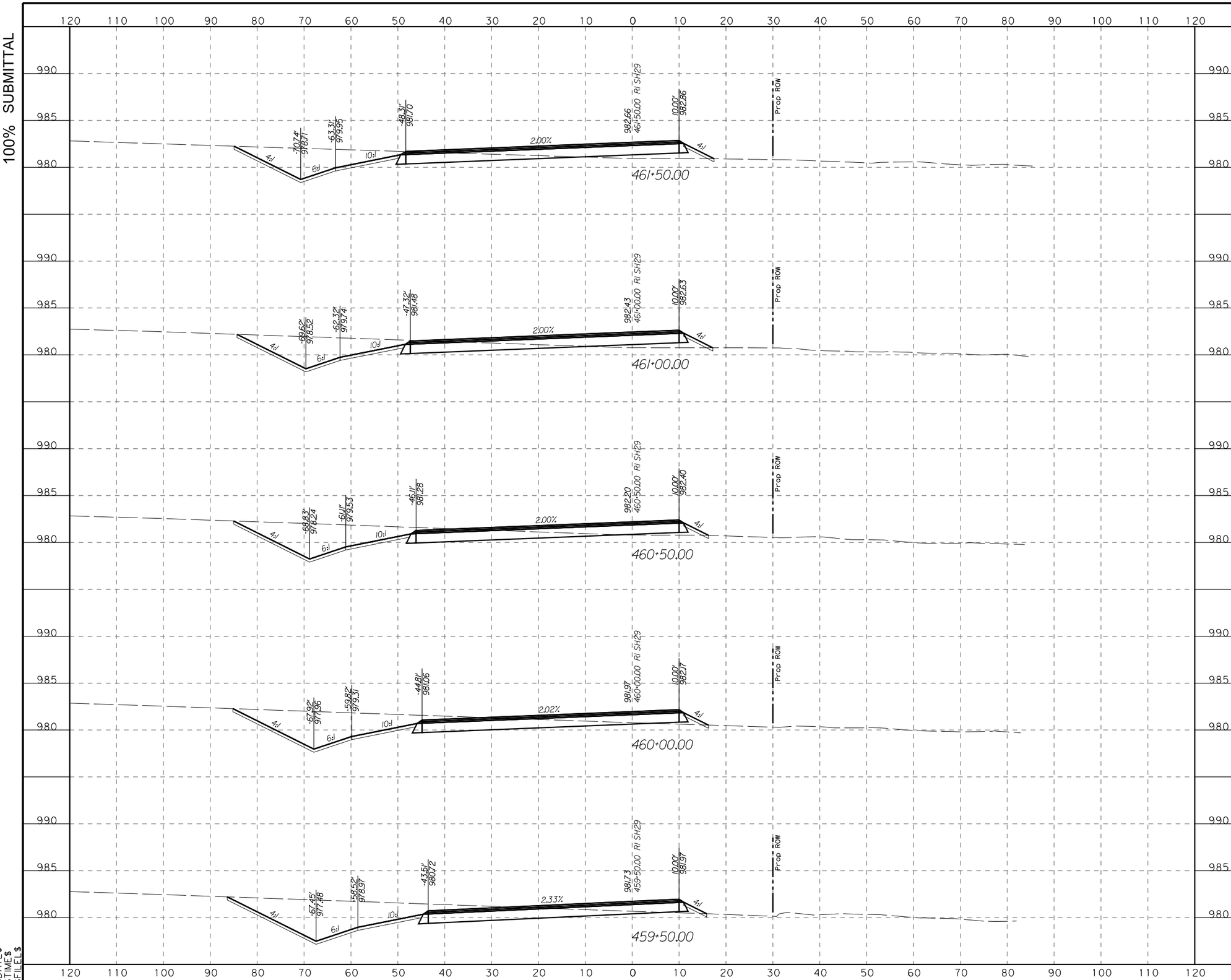
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 27 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			247
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

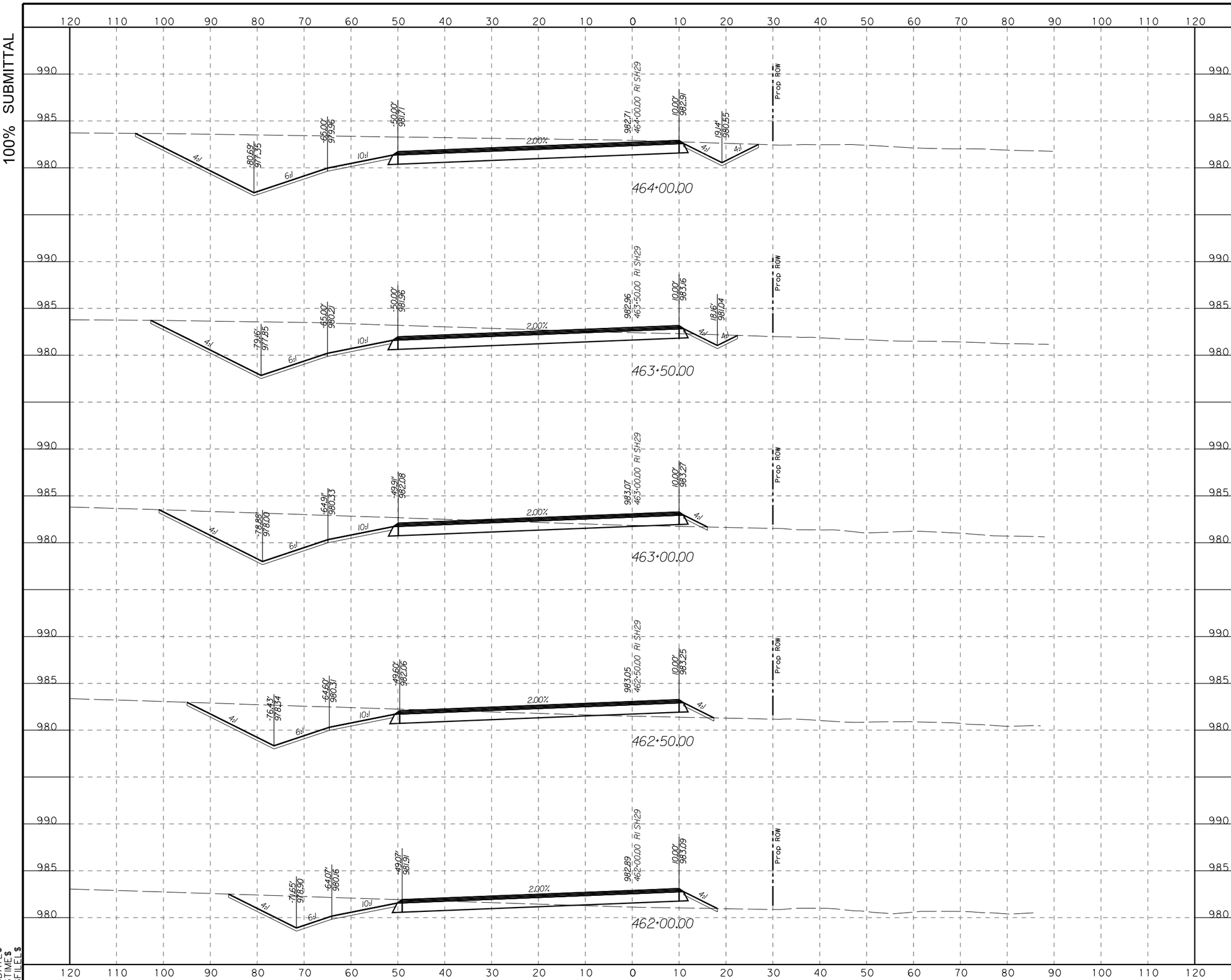
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 28 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			248
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

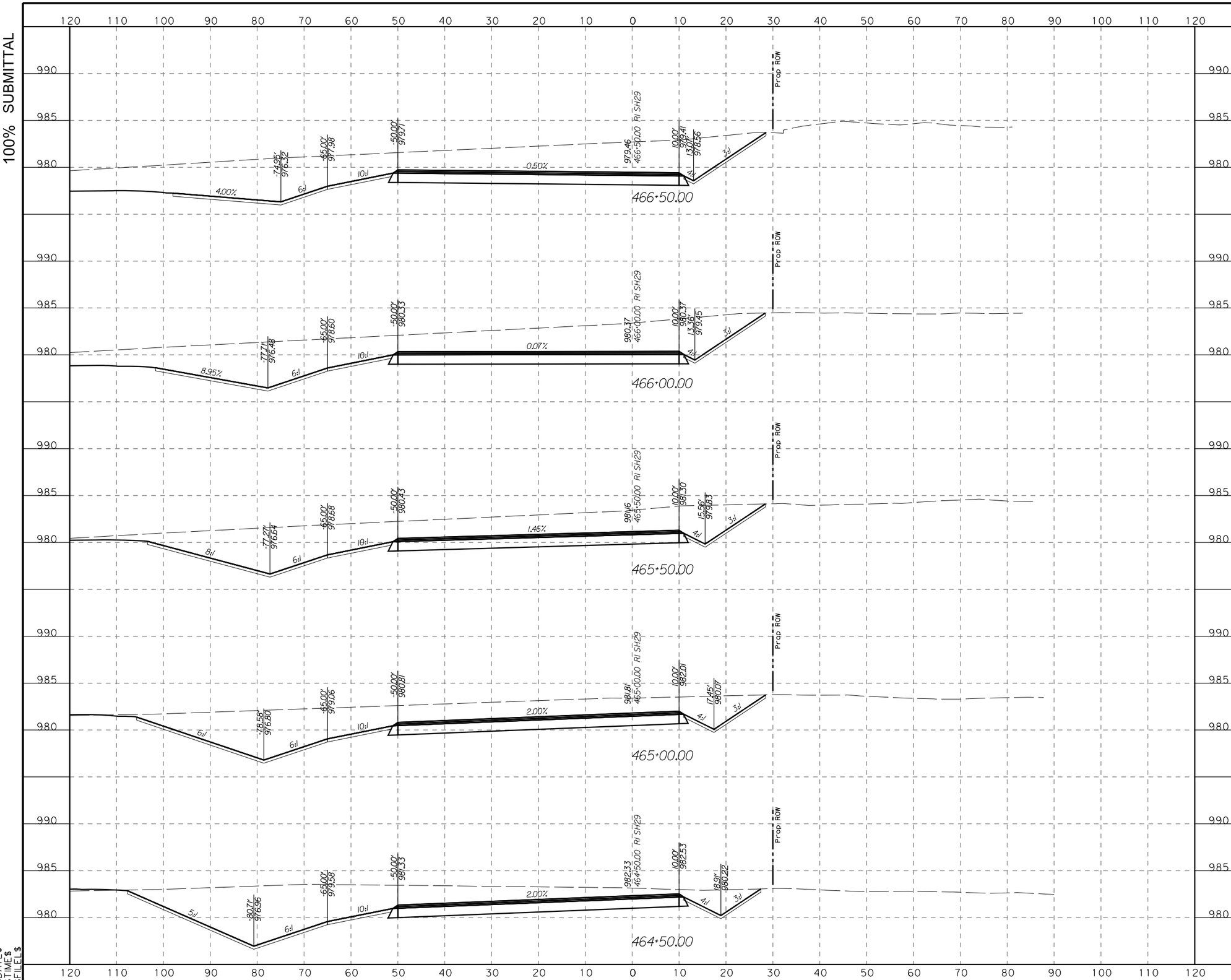
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 29 OF 31

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			249
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
RILEY W. SLADEK
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS
CROSS SECTIONS

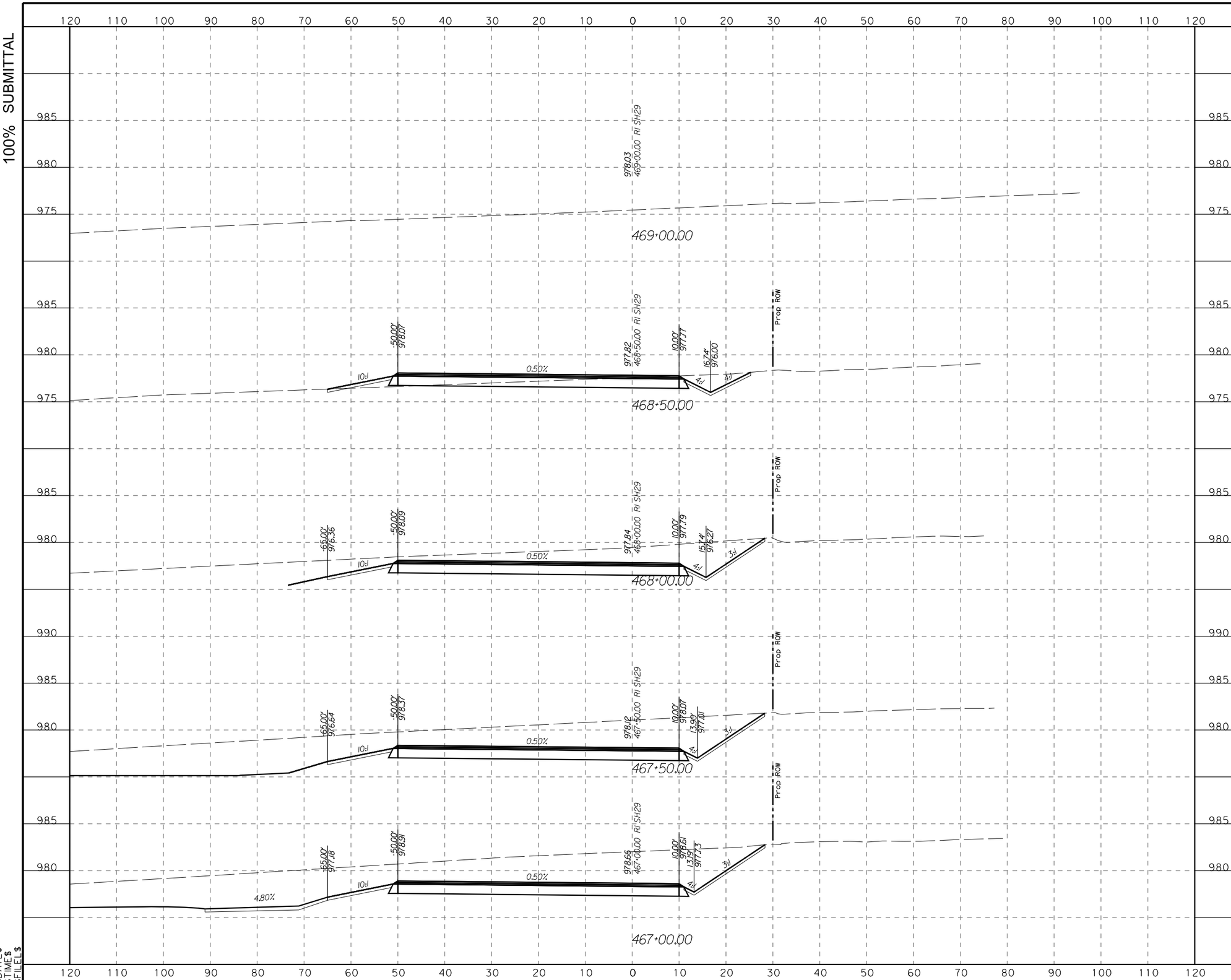
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 30 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			250
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
RILEY W. SLADEK
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7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

LIBERTY HILL BYPASS CROSS SECTIONS

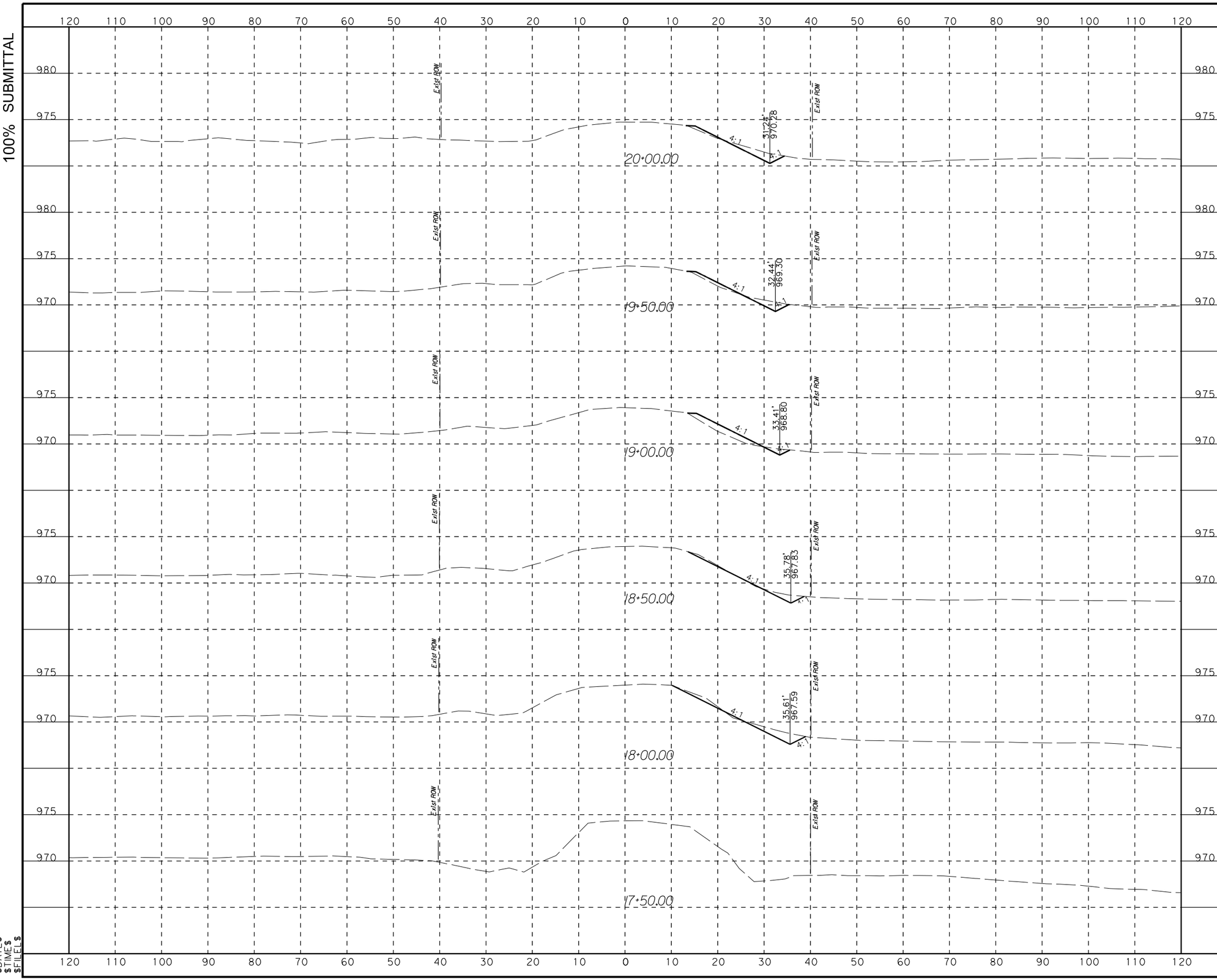
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 31 OF 31

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			251
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

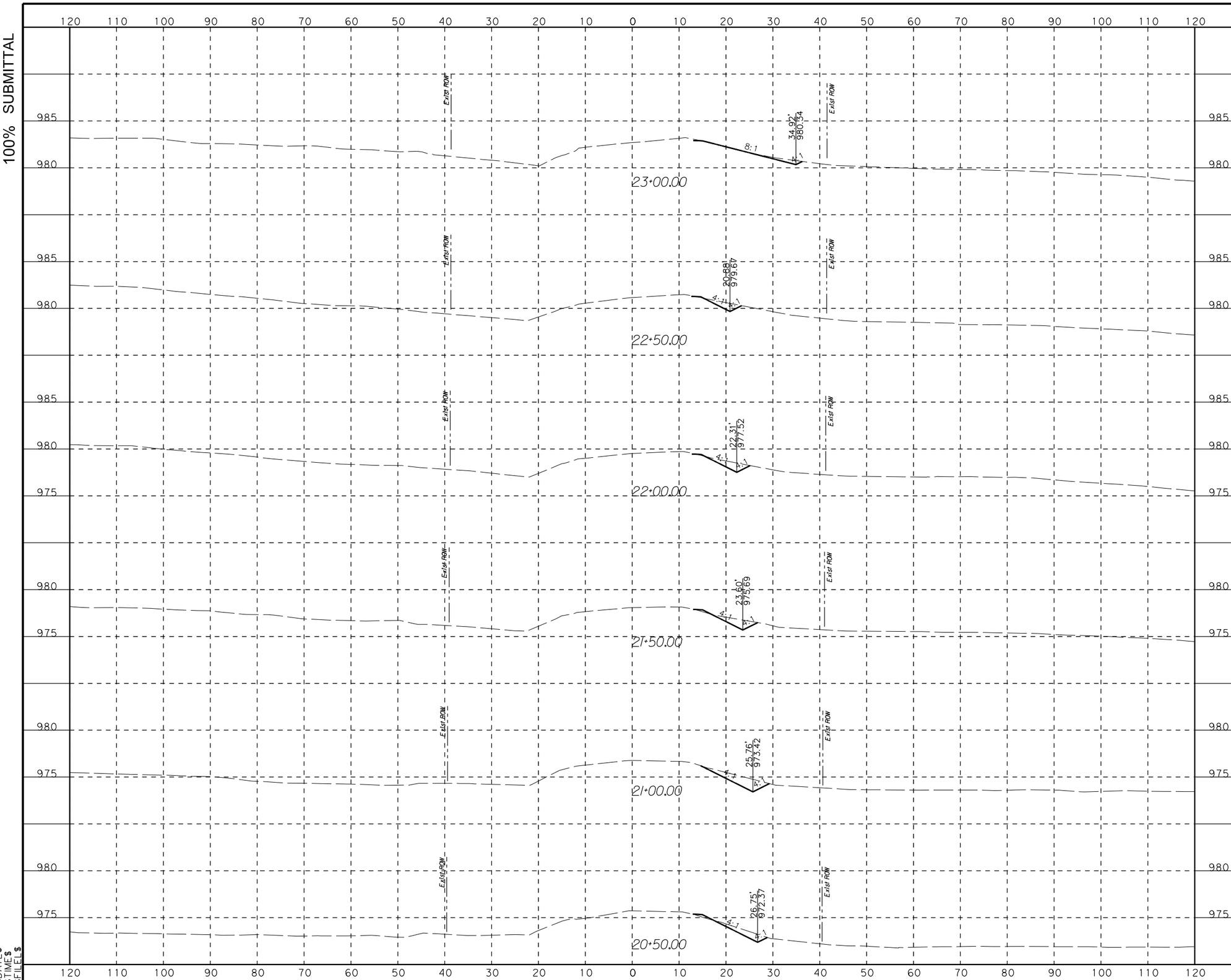
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 1 OF 9

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			252
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
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7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

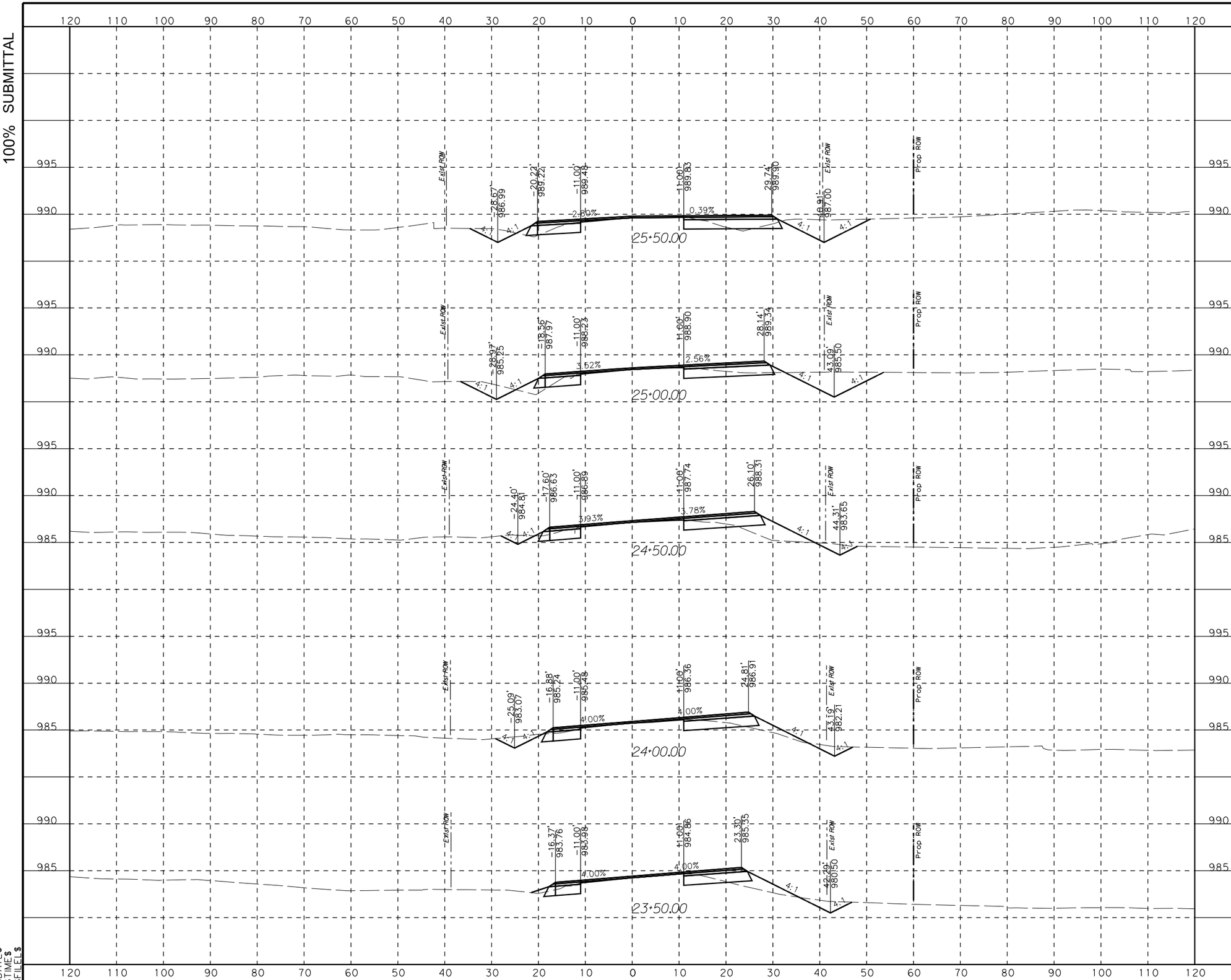
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 2 OF 9

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			253
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
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7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

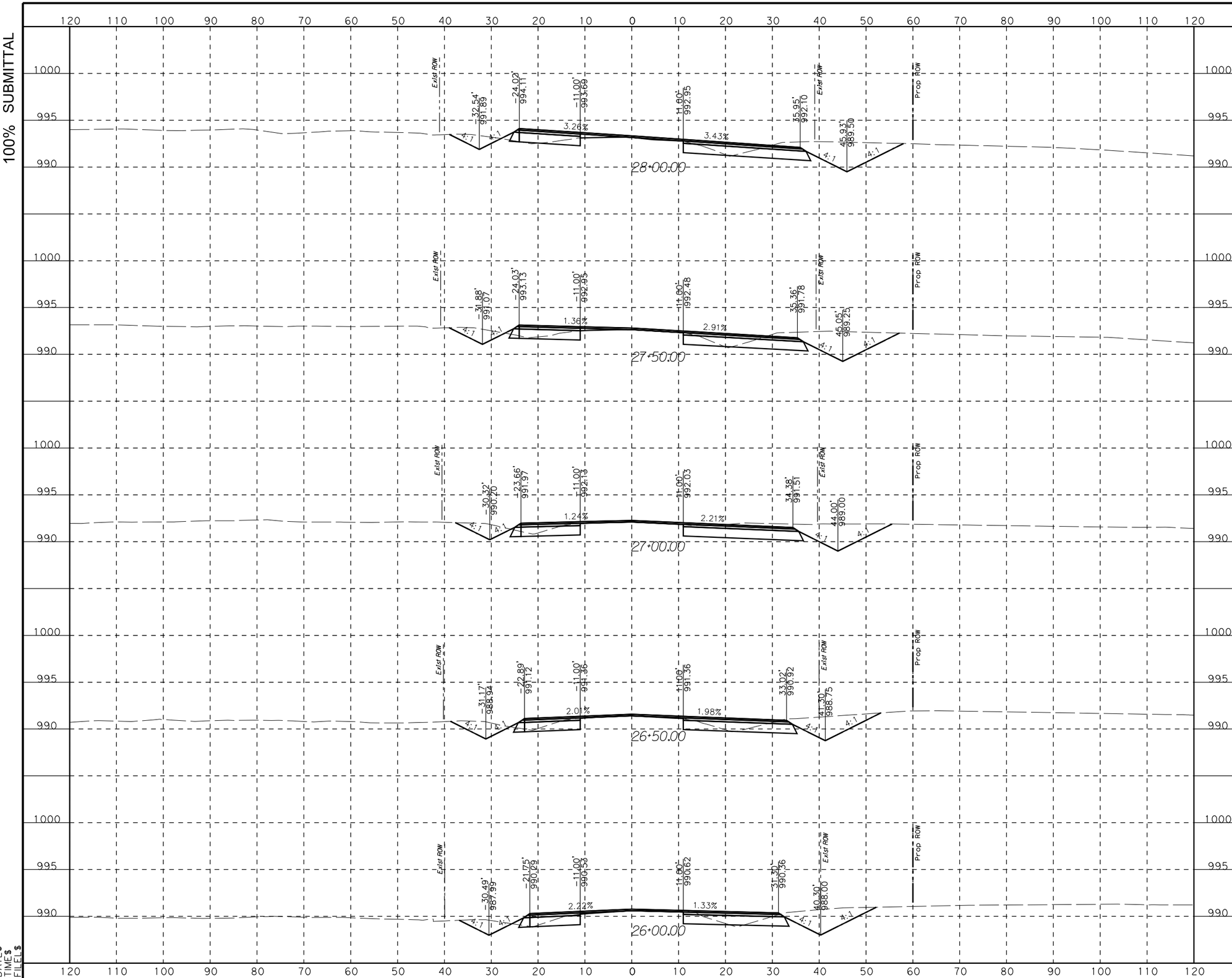
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 3 OF 9

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			254
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
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7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

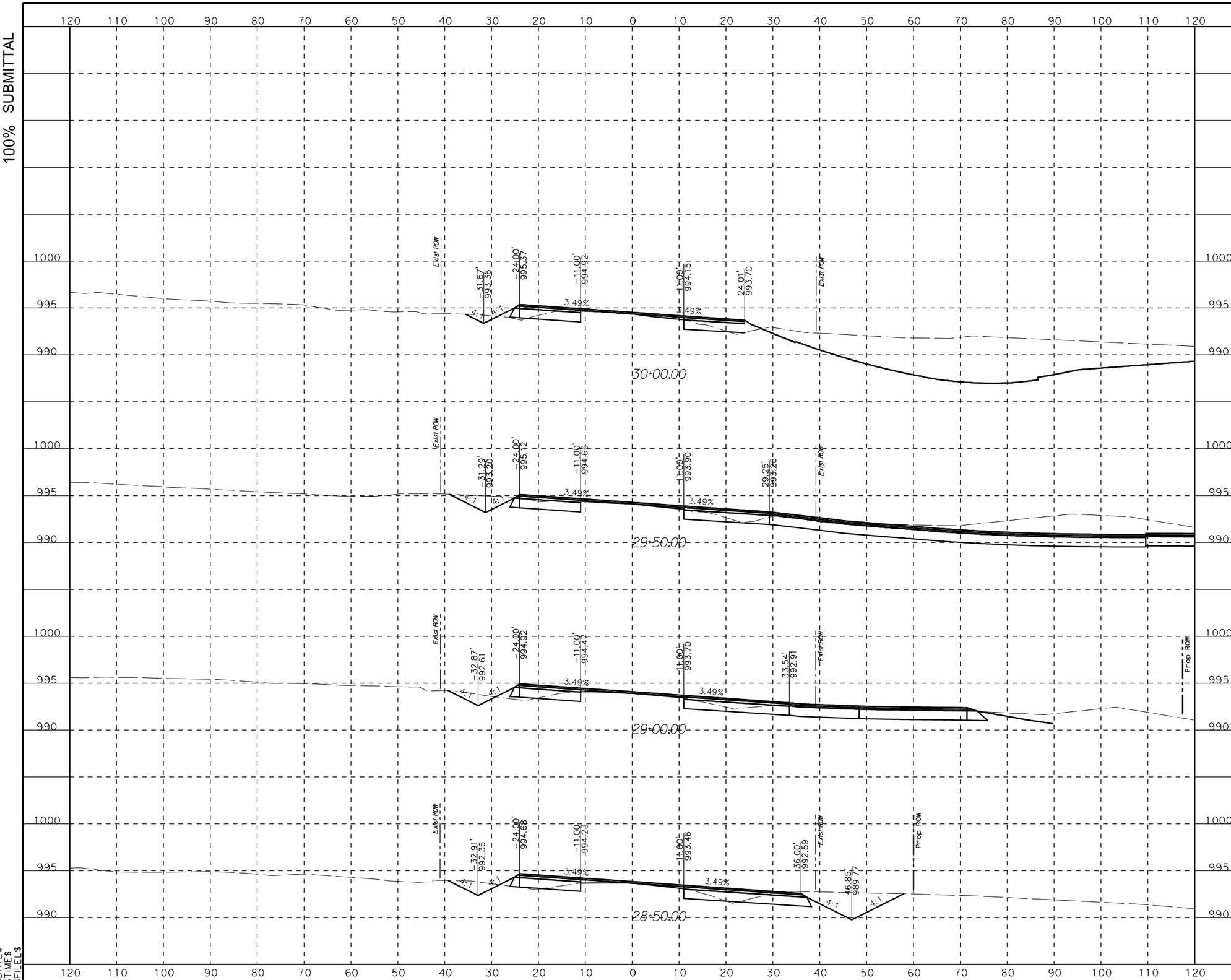
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 4 OF 9

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			255
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



STATE OF TEXAS
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PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY 1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

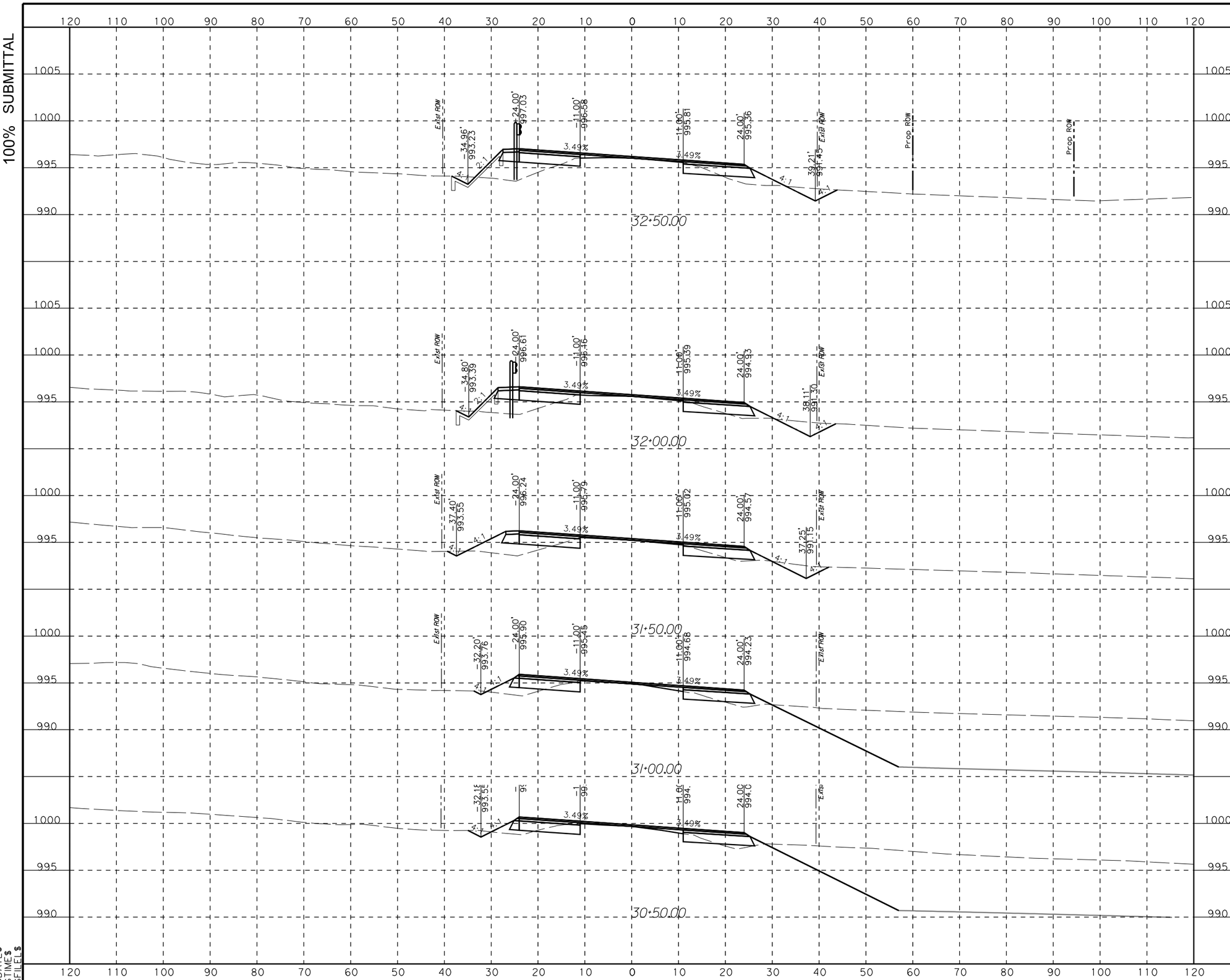
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 5 OF 9

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			256
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



HORZ 0' 10' 20'
VERT 0' 5' 10'
SCALE IN FEET

STATE OF TEXAS
RILEY W. SLADEK
108887
LICENSED
PROFESSIONAL ENGINEER

7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

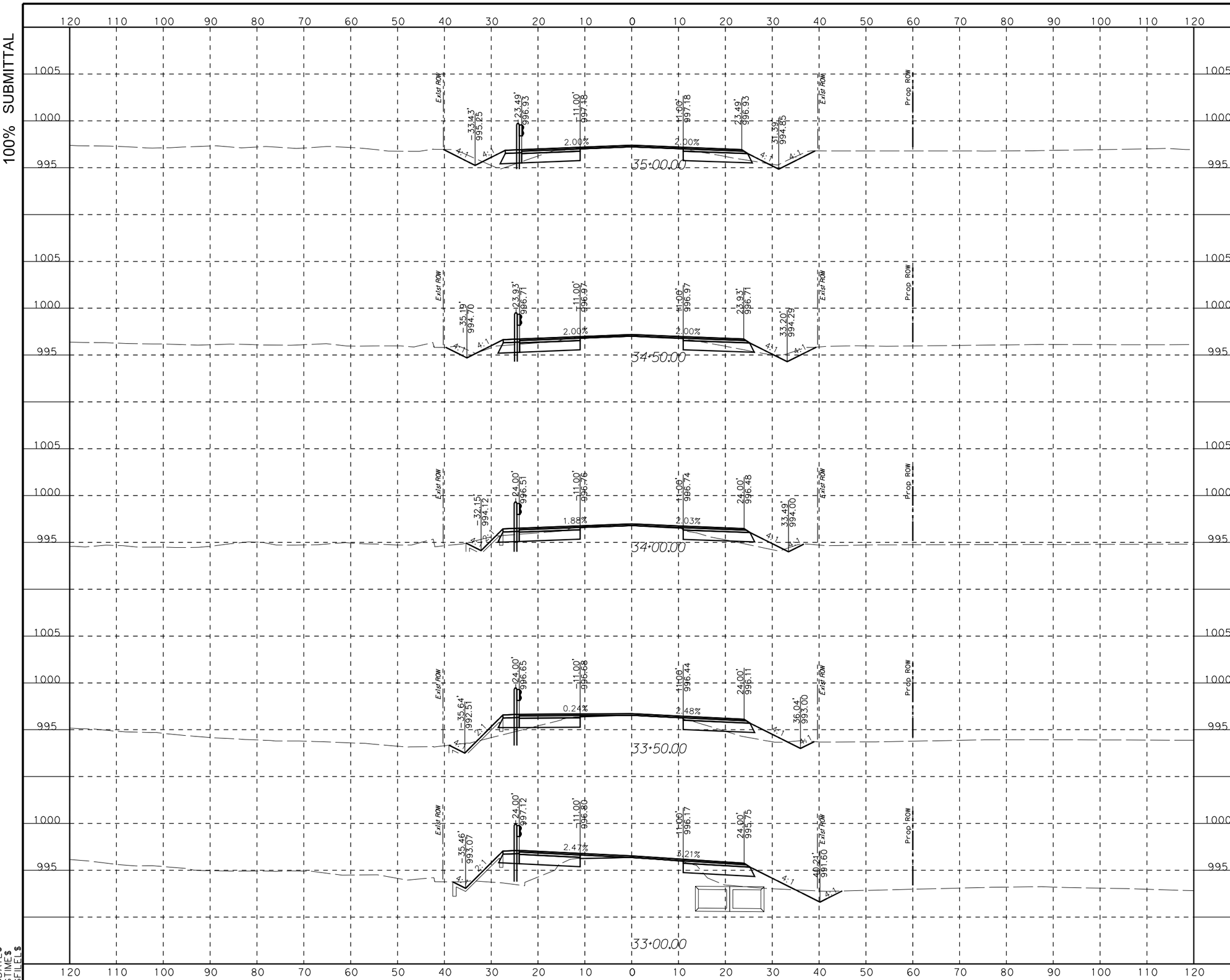
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

SHEET 6 OF 9

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			257
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



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RM 1869
CROSS SECTIONS

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SHEET 7 OF 9

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			258
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

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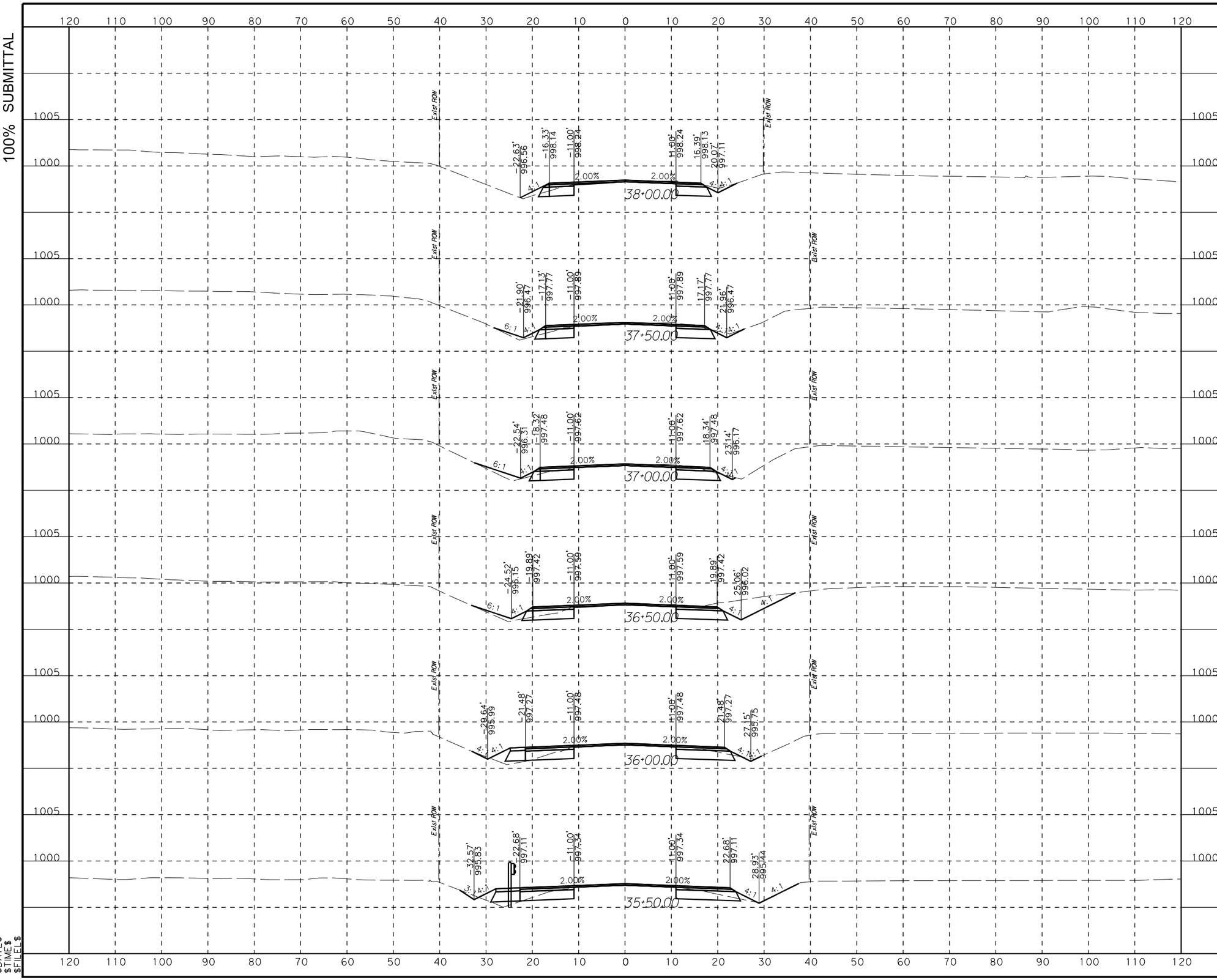

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CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
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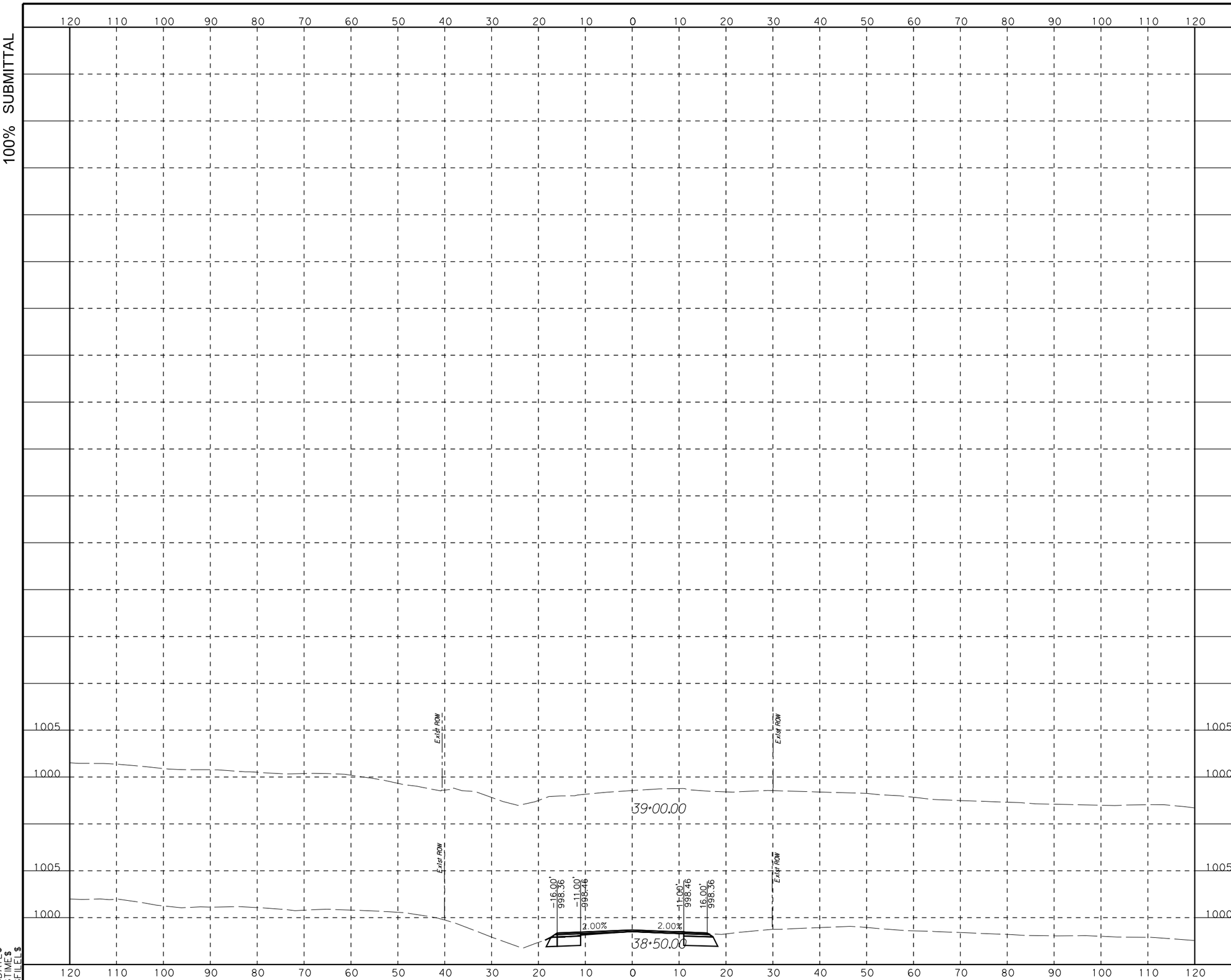
SHEET 8 OF 9

DESIGN	FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			259
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

100% SUBMITTAL



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STATE OF TEXAS
RILEY W. SLADEK
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7/12/2023

WILLIAMSON COUNTY
1848

LJA Engineering, Inc.
FRN - F-1386

RM 1869
CROSS SECTIONS

SCALE HORIZONTAL: 1"=20'
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SHEET 9 OF 9

DESIGN	FED.RD. DIV NO.	FEDERAL AID PROJECT NO.		SHEET NO.
CM	6			260
DRAWN	STATE	DIST. NO.	COUNTY	
CM	TX	AUS	WILLIAMSON	
CHECK	CONTROL	SECTION	JOB	HIGHWAY NO.
DB	1755	01	020	SH 29

$DATE$
$TIME$
$FILEL$

WILLIAMSON COUNTY

BAGDAD ROAD
PRECINCT NUMBER 2

Williamson County Project No. IFB XXXX-XXX

NET LENGTH OF ROADWAY = 4072.97 FT (0.771 MILES)
NET LENGTH OF PROJECT = 4072.97 FT (0.771 MILES)

LIMITS: FROM NORTH OF THE SAN GABRIEL RIVER
TO SOUTH OF THE LIBERTY HILL CITY LIMITS

FOR THE CONSTRUCTION OF NEW ROADWAY CONSISTING OF GRADING, BASE, ASPHALT PAVEMENT, CULVERTS, DITCHES, WATER QUALITY BMPS, SIGNING, AND PAVEMENT MARKINGS.

ROADWAY	CLASSIFICATION	DESIGN SPEED
BAGDAD ROAD	ARTERIAL	45 MPH
LIBERTY HILL BYPASS	MINOR ARTERIAL	60 MPH

HIGHWAY NUMBER: BAGDAD ROAD
LIMITS: FROM NORTH OF THE SAN GABRIEL RIVER TO SOUTH OF THE LIBERTY HILL CITY LIMITS
EXISTING ADT - 2,965 VPD (2022)
ADT (DESIGN YEAR) - 4,858 (2042)

HIGHWAY NUMBER: LIBERTY HILL BYPASS
LIMITS: FROM RM 1869 TO INTERSECTION WITH BAGDAD RD
EXISTING ADT - 1,100 (2022)
ADT (DESIGN YEAR) - 1,600 (2042)

DISTRIBUTION (D)

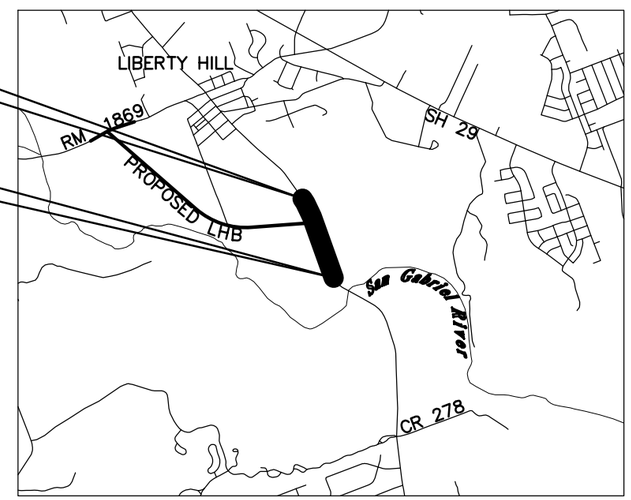
100%
SUBMITTAL

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS

END PROJECT
BAGDAD ROAD
STA. 343+88.54

BEGIN PROJECT
BAGDAD ROAD
STA. 303+15.57

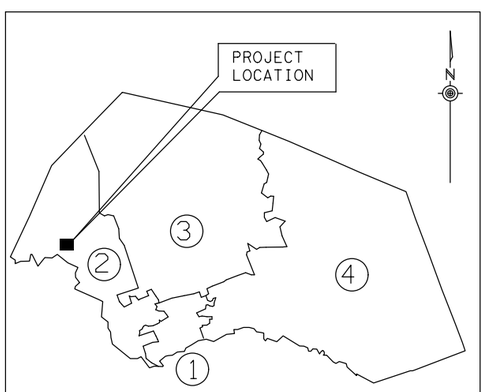


VICINITY MAP
N.T.S.

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED

REQUIRED SIGNS SHALL BE PLACED IN ACCORDANCE WITH STANDARD SHEETS BC(1)-14 THRU BC(12)-14 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." ALL SIGNS SHALL BE OF CONVENTIONAL SIZE.



WILLIAMSON COUNTY - N.T.S

TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES ADOPTED ON NOVEMBER 1, 2014 AND ALL APPLICABLE SPECIAL PROVISIONS AND SPECIAL SPECIFICATIONS AS INDICATED IN THE BID DOCUMENTS SHALL GOVERN ON THIS PROJECT.

WILCO TEXAS

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Binkley & Barfield
DCCM

Binkley & Barfield, Inc.
TxEng F-257
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

PREPARED BY:
BINKLEY & BARFIELD INC. (DESIGN CONSULTANT)

DAVID CALABUIG, P.E. 9/19/2023
PROJECT MANAGER

STATE OF TEXAS
DAVID F. J. CALABUIG
92786
LICENSED
PROFESSIONAL ENGINEER

APPROVED BY:
WILLIAMSON COUNTY

BILL GRAVELL, JR. DATE
WILLIAMSON COUNTY JUDGE

APPROVED BY:
WILLIAMSON COUNTY

CYNTHIA LONG DATE
WILLIAMSON COUNTY COMMISSIONER, PRECINCT 2

APPROVED BY:
HNTB CORPORATION

RICHARD L RIDINGS, PE DATE
ROAD BOND MANAGEMENT TEAM

VOLUME I

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8		SUMMARY OF SMALL SIGNS
9 -	10	PROJECT LAYOUT
11 -	12	TYPICAL SECTIONS

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26	***TCP(7-1)-13
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28	***WZ(UL)-13

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C-002		GENERAL NOTES
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C-503 -	C-504	METAL BEAM GUARD FENCE DETAILS

* THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT

AUTHORIIZED BY JOSHUA T. RICHTER, P.E. REG. NO. 141234 ON 12/22/2021.

JOSHUA T. RICHTER, P.E. — DATE

** THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT

Eleanor R. Rivera — 9/19/2023

ELEANOR R. RIVERA, P.E. — DATE

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Daniel A. Rogers — 9/19/2023

DANIEL A. ROGERS, P.E. — DATE

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9/19/2023

DAVID F.J. CALABUIG, P.E. — DATE

THE SEAL APPEARING ON THE ORIGINAL OF THIS DOCUMENT WAS AUTHORIZED BY JOSHUA T. RICHTER, P.E. REG. NO. 141234 ON 12/22/2021.

STATE OF TEXAS — JOSHUA T. RICHTER — 141234 — LICENSED — PROFESSIONAL ENGINEER

12-22-2021

STATE OF TEXAS — DAVID F.J. CALABUIG — 92786 — LICENSED — PROFESSIONAL ENGINEER

9/19/2023

WILLIAMSON COUNTY 1848

Binkley & Barfield — DECM

Binkley & Barfield, Inc.
TxEng F-257
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

INDEX OF SHEETS

SCALE = N.T.S. — SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	2
CONT.	SECT.	JOB	

NO.	DATE	REVISION	APPROVED
1	9/24/2023	STANDARD UPDATE	DC

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PENTABLE:BLHB.tbl
PLOTDRIVER:TxDOT_Waco_PDF_Gray.plt
100% Submittal

Project: BAGDAD RD		ITEM CODE			DESCRIPTION		BASE BID
CSJ:							TOTAL
Highway: BAGDAD RD							
County: WILLIAMSON							
EST.	FINAL	ITEM NO.	DESC NO.	SPEC NO.		UNIT	ESTIMATED QUANTITY
41.00		100	6002		PREPARING ROW	STA	41.00
78.00		104	6017		REMOVING CONC (DRIVEWAYS)	SY	78.00
12201.00		105	6014		REMOVING STAB BASE & ASPH PAV (7"-12")	SY	12201.00
23213.00		110	6001		EXCAVATION (ROADWAY)	CY	23213.00
1447.00		110	6002		EXCAVATION (CHANNEL)	CY	1447.00
18020.00		132	6003		EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	18020.00
472.00		132	6005		EMBANKMENT (FINAL)(ORD COMP)(TY C)	CY	472.00
43368.00		160	WC01		FURNISHING AND PLACING TOPSOIL (4")	SY	43368.00
168.00		161	WC01		EROSION CONTROL COMPOST (3")	SY	168.00
575.00		162	WC103		MULCH TOPDRESSING (5 IN)	SY	575.00
43368.00		164	WC04		SEEDING FOR EROSION CONTROL (TEMP) (COOL) (TY 4)	SY	43368.00
43368.00		164	WC07		SEEDING FOR EROSION CONTROL (TEMP & PERM) (TY 7)	SY	43368.00
2.70		166	6002		FERTILIZER	TON	2.70
867.00		168	WC01		VEGETATIVE WATERING	MG	867.00
8433.00		247	6044		FL BS (CMP IN PLC)(TY A GR 4)(FNAL POS)	CY	8433.00
4887.00		310	6001		PRIME COAT (MULTI OPTION)	GAL	4887.00
193.00		316	6193		AGGR(TY-D GR-5 SAC-B)	CY	193.00
8753.00		316	6413		ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	8753.00
96.00		402	6001		TRENCH EXCAVATION PROTECTION	LF	96.00
66.00		432	6001		RIPRAP (CONC)(4 IN)	CY	66.00
9.00		432	6002		RIPRAP (CONC)(5 IN)	CY	9.00
415.00		432	6024		RIPRAP (STONE COMMON)(DRY)(12 IN)	CY	415.00
272.00		462	6005		CONC BOX CULV (4 FT X 4 FT)	LF	272.00
254.00		464	6003		RC PIPE (CL III)(18 IN)	LF	254.00
439.00		464	6005		RC PIPE (CL III)(24 IN)	LF	439.00
129.00		464	6007		RC PIPE (CL III)(30 IN)	LF	129.00
1.00		465	6560		INL(CMP)(PAZD-CZ)(FG)(4FTx4FT-4FTx4FT)	EA	1.00
2.00		465	6922		HEADWALL (CH - FW - 45) (DIA= 30 IN)	EA	2.00
0.00		466	6050		HEADWALL (CH - FW - 45) (DIA= 24 IN)	EA	0.00
2.00		466	6180		WINGWALL (PW - 1) (HW=5 FT)	EA	2.00
18.00		467	6359		SET (TY II) (18 IN) (RCP) (4: 1) (P)	EA	18.00
8.00		467	6391		SET (TY II) (24 IN) (RCP) (4: 1) (P)	EA	8.00
4.00		467	6420		SET (TY II) (30 IN) (RCP) (4: 1) (P)	EA	4.00
10.00		481	6021		PIPE (PVC) (SCH 40) (24 IN)	LF	10.00
26.00		496	6004		REMOV STR (SET)	EA	26.00
2.00		496	6006		REMOV STR (HEADWALL)	EA	2.00
426.00		496	6007		REMOV STR (PIPE)	LF	426.00
7.00		502	WC01		BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	7.00
4.00		506	6006		ROCK FILTER DAMS (INSTALL) (TY 1)	CY	4.00
900.00		506	6002		ROCK FILTER DAMS (INSTALL) (TY 2)	LF	900.00
75.00		506	6003		ROCK FILTER DAMS (INSTALL) (TY 3)	LF	75.00
975.00		506	6011		ROCK FILTER DAMS (REMOVE)	LF	975.00
300.00		506	6020		CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	300.00
300.00		506	6024		CONSTRUCTION EXITS (REMOVE)	SY	300.00
4194.00		506	6038		TEMP SEDMT CONT FENCE (INSTALL)	LF	4194.00
4194.00		506	6039		TEMP SEDMT CONT FENCE (REMOVE)	LF	4194.00
183.00		530	6004		DRIVEWAYS (CONC)	SY	183.00
1398.00		530	6005		DRIVEWAYS (ACP)	SY	1398.00
44.00		530	6008		TURNOUTS (ACP)	SY	44.00
2482.00		531	6001		CONC SIDEWALKS (4")	SY	2482.00
2.00		531	6010		CURB RAMPS (TY 7)	EA	2.00
360.00		542	6001		REMOVE METAL BEAM GUARD FENCE	LF	360.00
2.00		542	6002		REMOVE TERMINAL ANCHOR SECTION	EA	2.00
2.00		544	6003		GUARDRAIL END TREATMENT (REMOVE)	EA	2.00
3.00		560	6007		MAILBOX INSTALL-S (WC-POST) TY 3	EA	3.00
1.00		560	6008		MAILBOX INSTALL-D (WC-POST) TY 3	EA	1.00
10.00		644	6001		IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	10.00
1.00		644	6076		REMOVE SM RD SN SUP&AM	EA	1.00
9302.00		662	6008		WK ZN PAV MRK NON-REMOV (W)6"(SLD)	LF	9302.00
9302.00		662	6037		WK ZN PAV MRK NON-REMOV (Y)6"(SLD)	LF	9302.00
12017.00		662	6067		WK ZN PAV MRK REMOV (W)6"(SLD)	LF	12017.00
12017.00		662	6098		WK ZN PAV MRK REMOV (Y)6"(SLD)	LF	12017.00
196.00		666	6036		REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	196.00
196.00		666	6048		REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	196.00
9.00		666	6054		REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	9.00
1.00		666	6078		REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	1.00
543.00		666	6147		REFL PAV MRK TY I (Y)24"(SLD)(100MIL)	LF	543.00
9054.00		666	6303		RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	9054.00
975.00		666	6312		RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	975.00
10399.00		666	6315		RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	10399.00
10.00		672	6007		REFL PAV MRKR TY I-C	EA	10.00
423.00		672	6009		REFL PAV MRKR TY II-A-A	EA	423.00
18604.00		677	6002		ELIM EXT PAV MRK & MRKS (6")	LF	18604.00
10291.00		3076	6001		D-GR HMA TY-B PG64-22	TON	10291.00
5299.00		3076	6042		D-GR HMA TY-D SAC-B PG70-22	TON	5299.00
56.00		6001	6001		PORTABLE CHANGEABLE MESSAGE SIGN	DAY	56.00
36.00		542	6002		MTL BM GD FEN (REMOVE & REINSTALL)	LF	36.00
1.00		544	6002		GUARRAIL END TREATMENT (MOVE & RESET)	EA	1.00

1

Project: BAGDAD RD		ITEM CODE			DESCRIPTION		BASE BID
CSJ:							TOTAL
Highway: BAGDAD RD							
County: WILLIAMSON							
EST.	FINAL	ITEM NO.	DESC NO.	SPEC NO.		UNIT	ESTIMATED QUANTITY
10.00		504-E			ADJUSTING WATER VALVE BOXES TO GRADE	EA	10.00
36.00		505-B-16"			ENCASEMENT PIPE, 16" DIA., STEEL	EA	36.00
78.00		509-A			TRENCH SAFETY SYSTEMS (ALL DEPTHS)	LF	78.00
78.00		510-A-6"			PIPE, 6" DIA. DI CL-350 (RESTRAINED), CMP IN PL INCLUDING EXCAVATION AND BACKFILL	LF	78.00
1.00		510-N-12"X6"			WET CONNECTIONS, 12"x6"	LF	1.00
0.20		510-0			DUCTILE IRON FITTINGS 4 INCH THROUGH 24 INCH	LF	0.20
1.00		511-A-6"			VALVES, GATE 6" DIA	EA	1.00
1.00		511-B			FIRE HYDRAUNT	EA	1.00
1.00		511-H-6"			REMOVAL OF EXISTING VALVE, 6" DIA AND INSTALLATION OF BLIND FLANGE	EA	1.00
1.00		511-J			PROTECT IN PLACE EXISTING WATER VAULT INCLUDING FURNISHING AND INSTALLATION OF CONCRETE BOLLARDS	EA	1.00
1.00		7000	WC01		MOBILIZATION	LS	1.00

NO.	DATE	REVISION	APPROVED

THE SEAL APPEARING ON THE ORIGINAL OF THIS DOCUMENT WAS AUTHORIZED BY JOSHUA T. RICHTER, P.E. REG. NO. 141234 ON 12/22/2021.

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12-22-2021

FOR REV 1 ONLY

STATE OF TEXAS
DAVID F.J. CALABUIG
92786
LICENSED
PROFESSIONAL ENGINEER

9/19/2023

WILLIAMSON COUNTY 1848

Binkley & Barfield
DCCM

Binkley & Barfield, Inc.
TxEng F-457
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

ESTIMATE AND QUANTITY SUMMARY

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	3A
CONT.	SECT.	JOB	

100% Submittal
PLOTDRIVER: TxDOT_Waco_PDF_Gray.plt
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USER: dhughes
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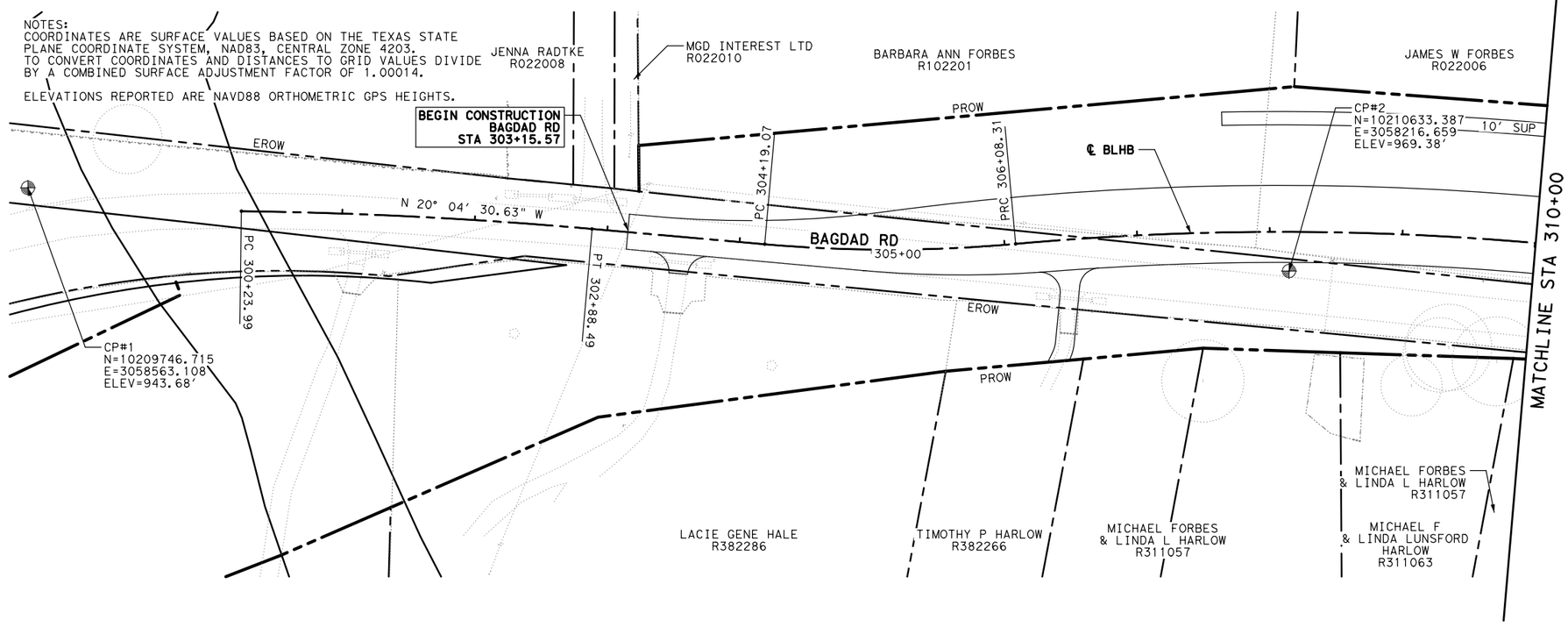
NO.	DATE	REVISION	APPROVED

NOTES:
COORDINATES ARE SURFACE VALUES BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, CENTRAL ZONE 4203. TO CONVERT COORDINATES AND DISTANCES TO GRID VALUES DIVIDE BY A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00014.

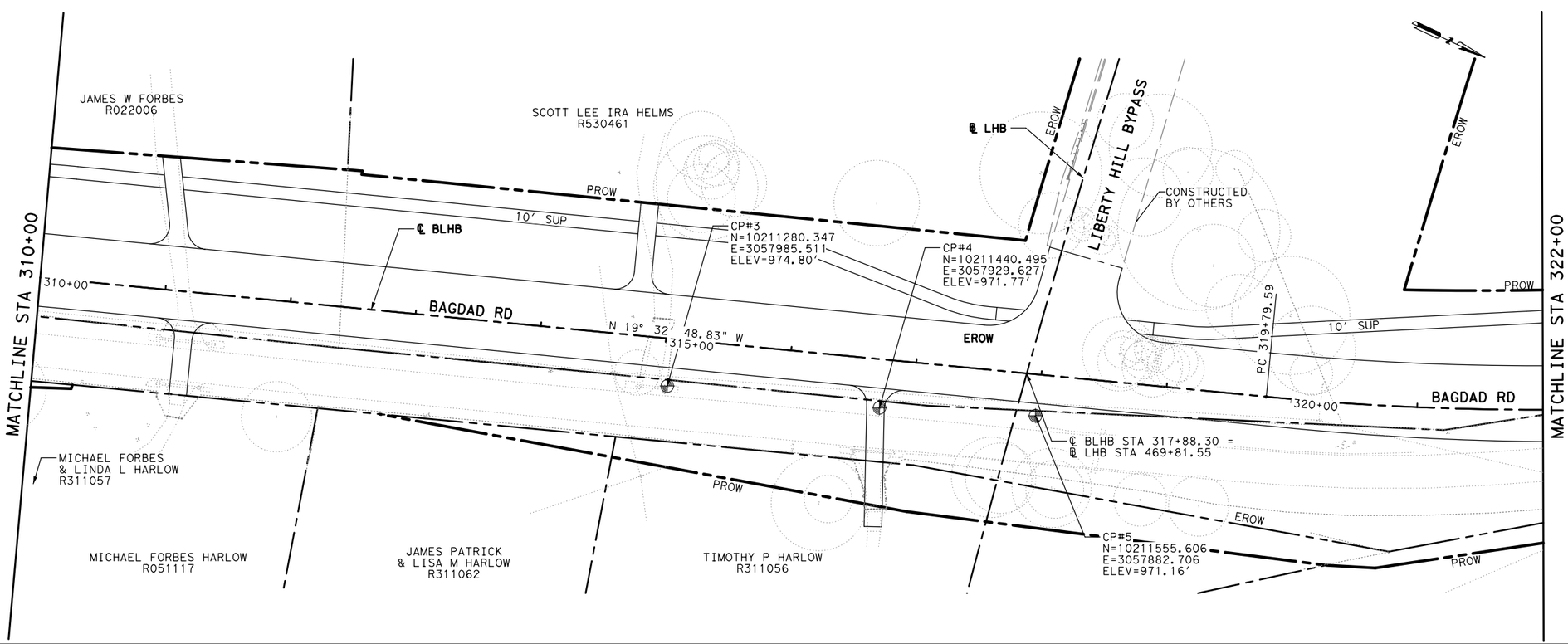
ELEVATIONS REPORTED ARE NAVD88 ORTHOMETRIC GPS HEIGHTS.



LEGEND:

⊕ CONTROL POINT

0' 25' 50' 100'



STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12/21/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers

Binkley & Barfield, Inc.
TxEng F-257
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

PROJECT LAYOUT

BEGIN TO STA 322+00

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	9
CONT.	SECT.	JOB	

100% Submittal

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USER: jrichter

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100% Submittal
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DATE:12/21/2021 11:24:31 AM

NO.	DATE	REVISION	APPROVED

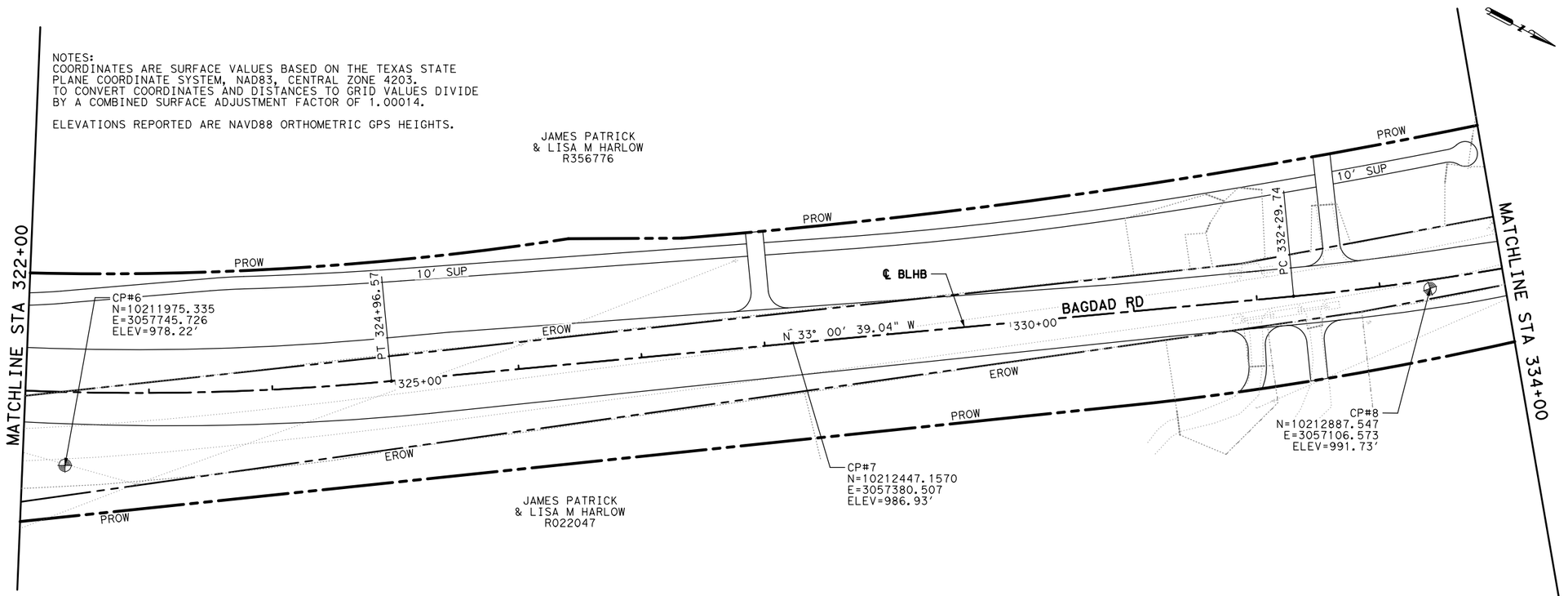
0' 25' 50' 100'

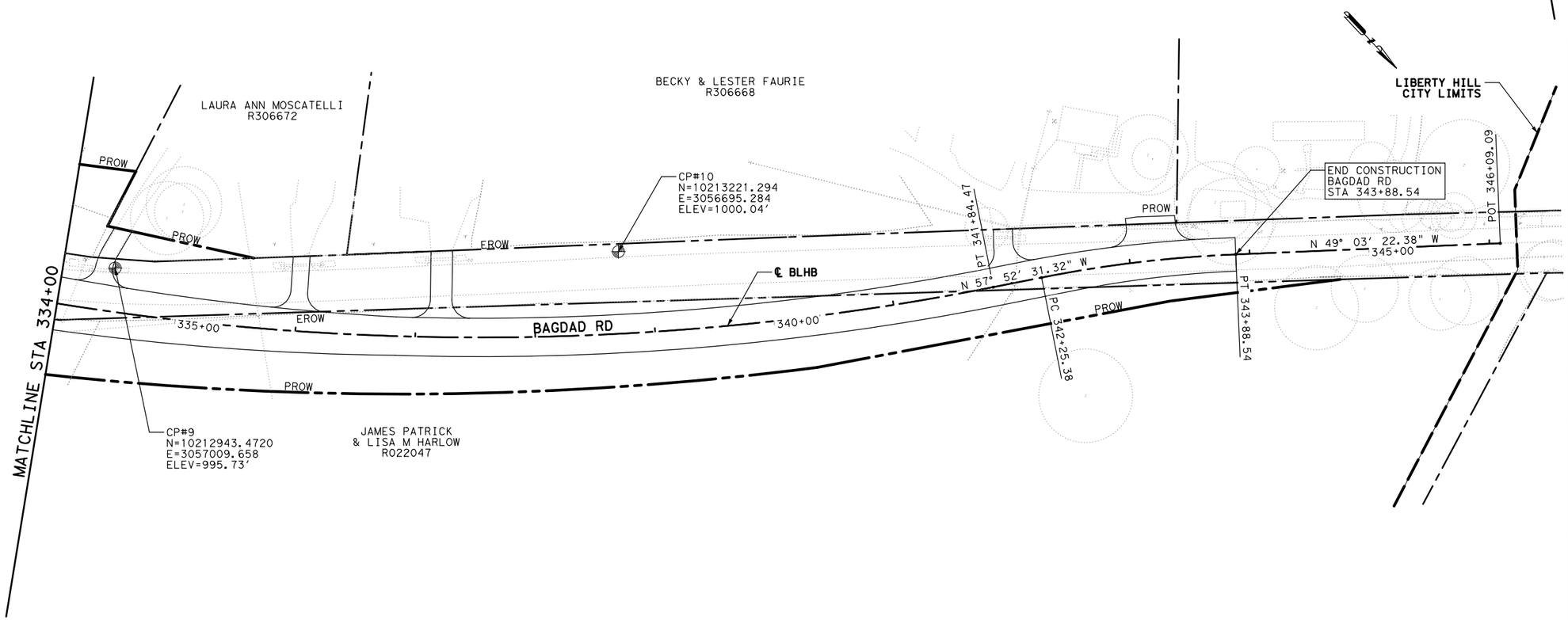
NOTES:
COORDINATES ARE SURFACE VALUES BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, CENTRAL ZONE 4203. TO CONVERT COORDINATES AND DISTANCES TO GRID VALUES DIVIDE BY A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00014.

ELEVATIONS REPORTED ARE NAVD88 ORTHOMETRIC GPS HEIGHTS.

LEGEND:

CONTROL POINT





STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12/21/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers
Binkley & Barfield, Inc.
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BAGDAD ROAD

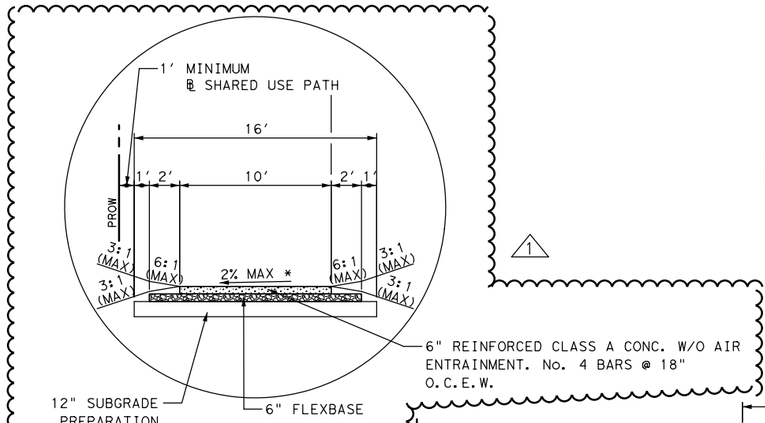
PROJECT LAYOUT

STA 322+00 TO END

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	10
CONT.	SECT.	JOB	

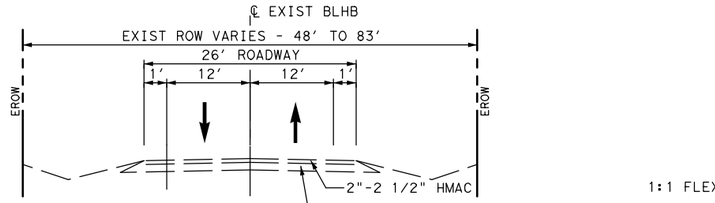
NO.	DATE	REVISION	APPROVED
1	9/24/2023	SUP DETAIL	DC



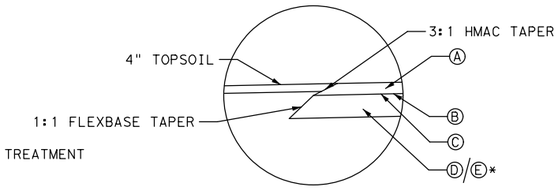
NOTES

*SLOPE DIRECTION VARIES. SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION.

DETAIL D



EXISTING ROADWAY SECTION



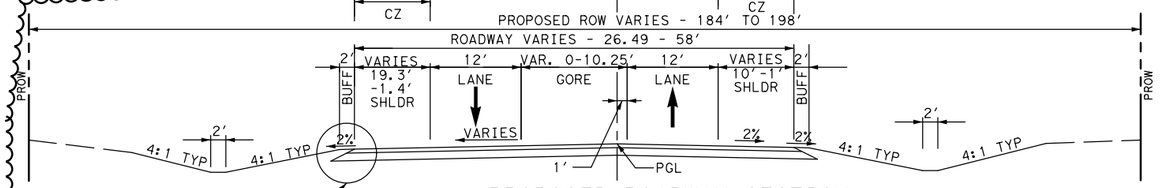
DETAIL A

* PLACE FOR LIMITS OF 1.5' OVEREXCAVATION
STA 303+00.00 - 306+00.00
STA 330+00.00 - 341+00.00

LEGEND:

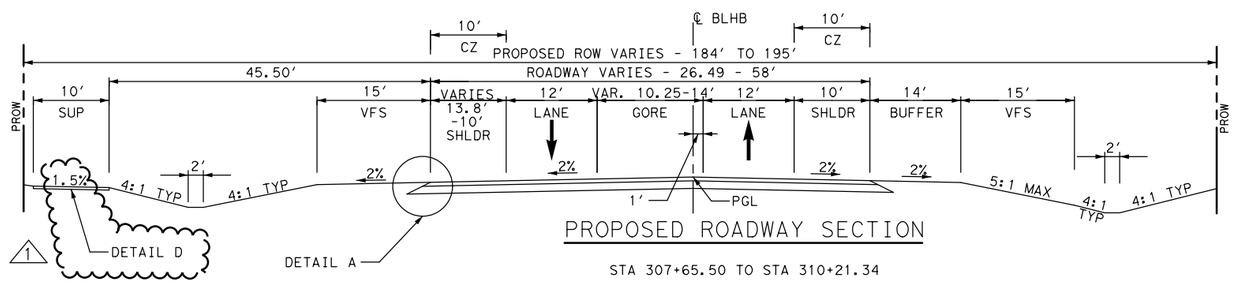
- (A) 2-2" LIFTS OF D-GR HMA TY-D SAC-B PG70-22
- (B) SEALCOAT
- (C) PRIME COAT (MULTI OPTION)
- (D) 12" FL BS (COMP IN PLC)(TY A GR 4) (FINAL POS)(3 EQUAL LIFTS)
- (E) 30" D-GR HMA TY-B PG64-22

VFS VEGETATIVE FILTER STRIP



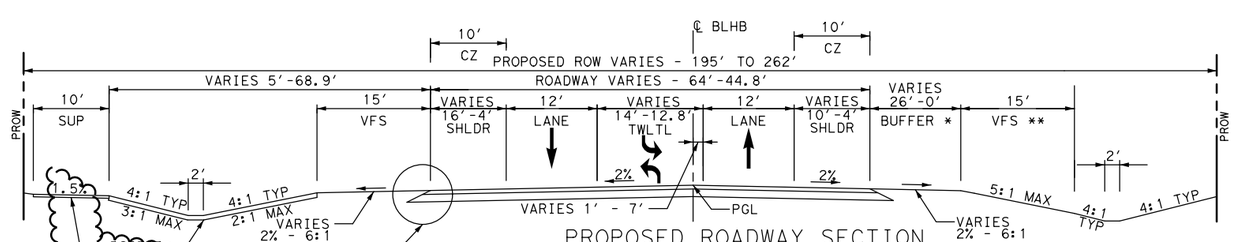
PROPOSED ROADWAY SECTION

STA 303+15.57 TO STA 307+65.50



PROPOSED ROADWAY SECTION

STA 307+65.50 TO STA 310+21.34



* STA 322+50 - STA 324+40

PROPOSED ROADWAY SECTION

STA 310+21.34 TO STA 333+96.04

* BUFFER
STA 307+65.50 - 331+66.98

** VFS
STA 307+67.50 - 333+78.96

THE SEAL APPEARING ON THE ORIGINAL OF THIS DOCUMENT WAS AUTHORIZED BY JOSHUA T. RICHTER, P.E. REG. NO. 141234 ON 12/21/2021.

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12-21-2021

FOR REV 1 ONLY

STATE OF TEXAS
DAVID F.J. CALABUIG
92786
LICENSED
PROFESSIONAL ENGINEER

9/19/2023

WILLIAMSON COUNTY 1848

Binkley & Barfield
DCCM

Binkley & Barfield, Inc.
TxEng F-257
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Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

TYPICAL SECTIONS
BAGDAD RD

SCALE = N.T.S. SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	11
CONT.	SECT.	JOB	

100% Submittal
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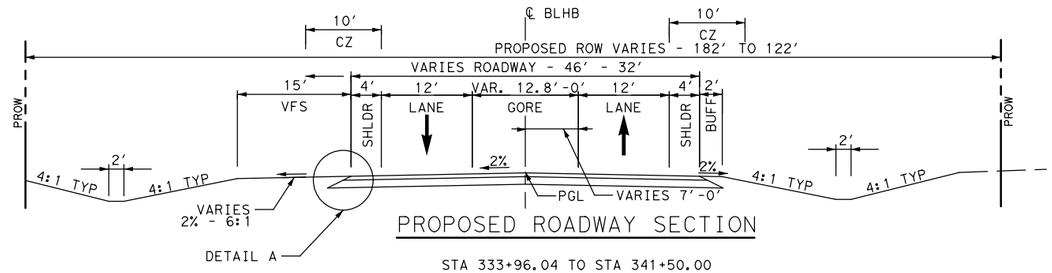
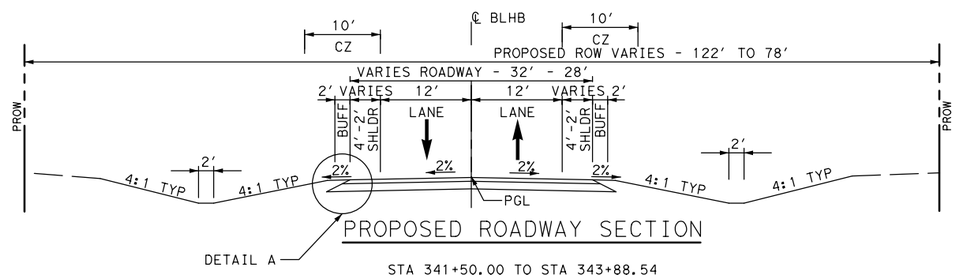
NO.	DATE	REVISION	APPROVED



PROPOSED ROADWAY SECTION

STA 333+96.04 TO STA 341+50.00



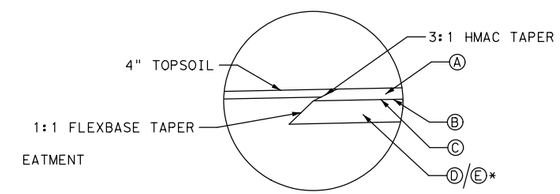
PROPOSED ROADWAY SECTION

STA 341+50.00 TO STA 343+88.54

LEGEND:

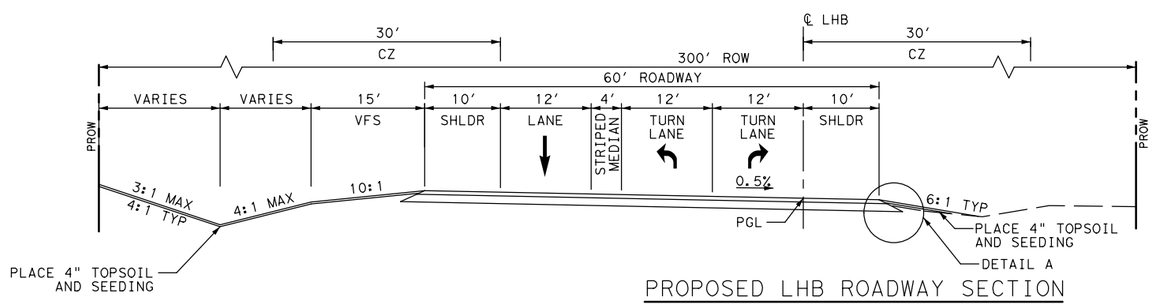
- (A) 2-2" LIFTS OF D-GR HMA TY-D SAC-B PG70-22
- (B) SEALCOAT
- (C) PRIME COAT (MULTI OPTION)
- (D) 12" FL BS (COMP IN PLC)(TY A GR 4) (FINAL POS)(3 EQUAL LIFTS)
- (E) 30" D-GR HMA TY-B PG64-22

VFS VEGETATIVE FILTER STRIP



DETAIL A

* PLACE FOR LIMITS OF 1.5′ OVEREXCAVATION STA 330+00.00 - 341+00.00



PROPOSED LHB ROADWAY SECTION

LHB STA 468+80.00 TO STA 469+45.99

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12/21/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers

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TxEng F-297
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Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

TYPICAL SECTIONS
BAGDAD RD/
LIBERTY HILL BYPASS

SCALE = N.T.S. SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	12
CONT.	SECT.	JOB	

100% Submittal
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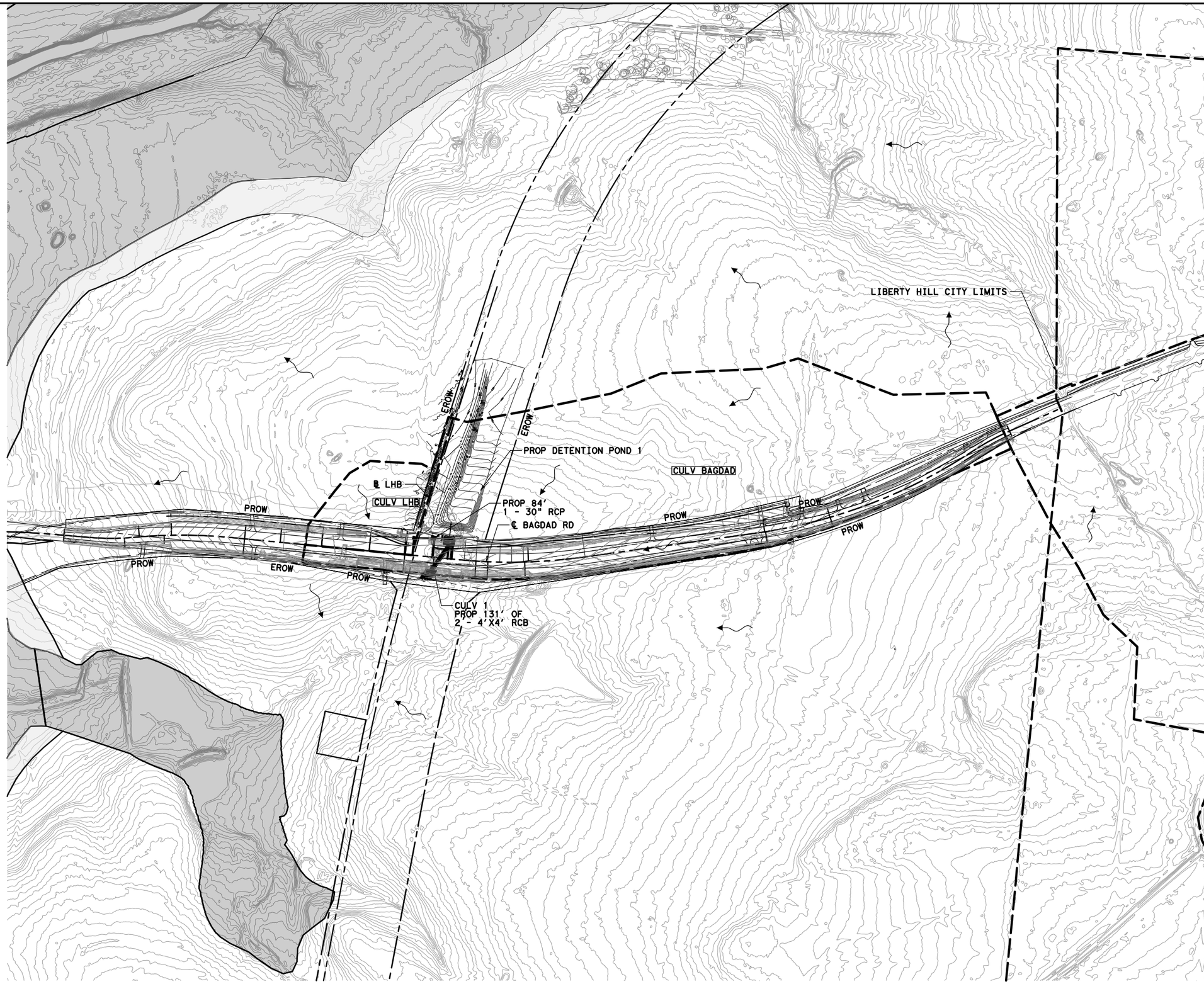

NO.	DATE	REVISION	APPROVED

0' 100' 200' 400'

LEGEND:

- [X] DRAINAGE AREA ID
- FLOW ARROW
- DRAINAGE AREA BOUNDARY
- PROPOSED DETENTION POND
- FEMA 100 YR FLOODPLAIN
- FEMA 500 YR FLOODPLAIN

NOTES:

1. SEE HYDROLOGIC & HYDRAULIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.
2. SEE DRAINAGE REPORT FOR THIS PROJECT TITLED "BAGDAD ROAD/CR 279 FROM LOOP 332 TO CR 281 DRAINAGE STUDY".
3. HYDROLOGY FOR CULV BAGDAD AND CULV LHB PERFORMED USING THE RATIONAL METHOD.
4. HYDROLOGY FOR DETENTION POND 1 PERFORMED USING HEC-HMS VERSION 4.5 USING THE SCS CURVE NUMBER LOSS METHOD.
5. ATLAS 14 24-HOUR RAINFALL DEPTHS WERE USED IN ANALYSIS.
6. HYDROLOGY BASED ON NRCS RATIONAL METHODOLOGY DESCRIBED IN THE TXDOT HYDRAULIC DESIGN MANUAL.

STATE OF TEXAS
ELEANOR R. RIVERA
87879
LICENSED
PROFESSIONAL ENGINEER

Eleanor R. Rivera

12/22/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers

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BAGDAD ROAD

CULVERT DRAINAGE AREA

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	49
CONT.	SECT.	JOB	

100% Submittal
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DATE: 12/22/2021 10:16:31 AM

100% Submittal
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DATE: 12/22/2021 10:16:39 AM

NO.	DATE	REVISION	APPROVED

0' 50' 100' 200'

LEGEND:

- DRAINAGE AREA ID
- FLOW ARROW
- DRAINAGE AREA BOUNDARY
- PROPOSED DETENTION POND
- FEMA 100 YR FLOODPLAIN
- FEMA 500 YR FLOODPLAIN

NOTES:

1. SEE HYDROLOGIC & HYDRAULIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.
2. SEE DRAINAGE REPORT FOR THIS PROJECT TITLED "BAGDAD ROAD/CR 279 FROM LOOP 332 TO CR 281 DRAINAGE STUDY".
3. HYDROLOGY FOR DITCHES PERFORMED USING THE RATIONAL METHOD.
4. HYDROLOGY FOR DETENTION POND 1 PERFORMED USING HEC-HMS VERSION 4.5 USING THE SCS CURVE NUMBER LOSS METHOD.
5. ATLAS 14 24-HOUR RAINFALL DEPTHS WERE USED IN ANALYSIS.
6. HYDROLOGY BASED ON NRCS RATIONAL METHODOLOGY DESCRIBED IN THE TXDOT HYDRAULIC DESIGN MANUAL.

STATE OF TEXAS
ELEANOR R. RIVERA
87879
LICENSED
PROFESSIONAL ENGINEER

Eleanor R. Rivera

12/22/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers
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512.292.0006
Binkley@barfield.com

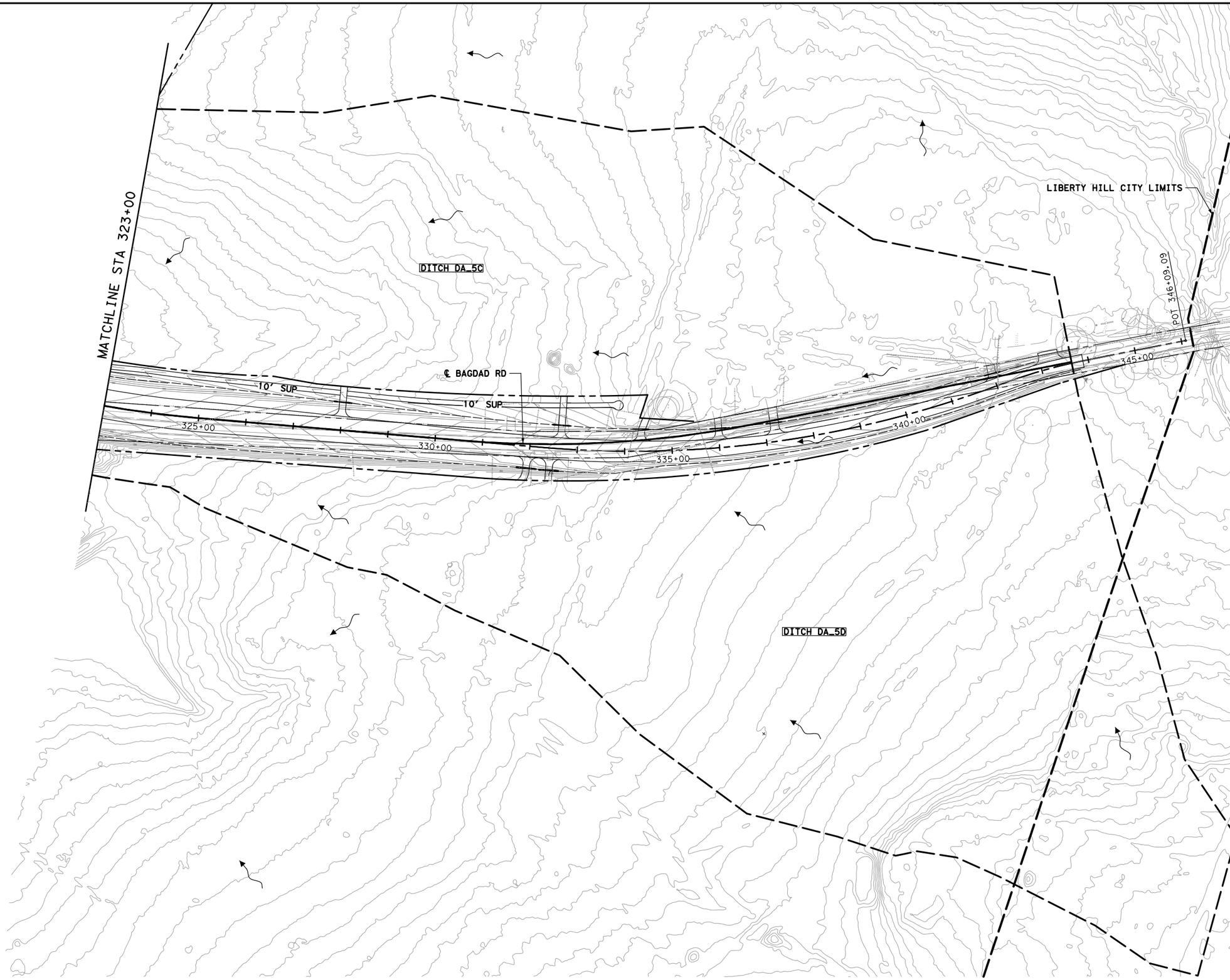
BAGDAD ROAD (CR 279)

DITCH DRAINAGE AREAS

BEGIN TO STA 323+00

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	50
CONT.	SECT.	JOB	



NO.	DATE	REVISION	APPROVED

0' 50' 100' 200'

LEGEND:

- [X] DRAINAGE AREA ID
- FLOW ARROW
- DRAINAGE AREA BOUNDARY
- PROPOSED DETENTION POND
- FEMA 100 YR FLOODPLAIN
- FEMA 500 YR FLOODPLAIN

NOTES:

1. SEE HYDROLOGIC & HYDRAULIC DATA SHEETS FOR DRAINAGE AREA CALCULATIONS.
2. SEE DRAINAGE REPORT FOR THIS PROJECT TITLED "BAGDAD ROAD/CR 279 FROM LOOP 332 TO CR 281 DRAINAGE STUDY".
3. HYDROLOGY FOR DITCHES PERFORMED USING THE RATIONAL METHOD.
4. HYDROLOGY FOR DETENTION POND 1 PERFORMED USING HEC-HMS VERSION 4.5 USING THE SCS CURVE NUMBER LOSS METHOD.
5. ATLAS 14 24-HOUR RAINFALL DEPTHS WERE USED IN ANALYSIS.
6. HYDROLOGY BASED ON NRCS RATIONAL METHODOLOGY DESCRIBED IN THE TXDOT HYDRAULIC DESIGN MANUAL.

STATE OF TEXAS
ELEANOR R. RIVERA
87879
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PROFESSIONAL ENGINEER

Eleanor R. Rivera

12/22/2021

WILLIAMSON COUNTY 1848

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Round Rock, TX 78664
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BinkleyBarfield.com

BAGDAD ROAD (CR 279)

DITCH DRAINAGE AREAS

STA 323+00 TO END

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	51
CONT.	SECT.	JOB	

100% Submittal
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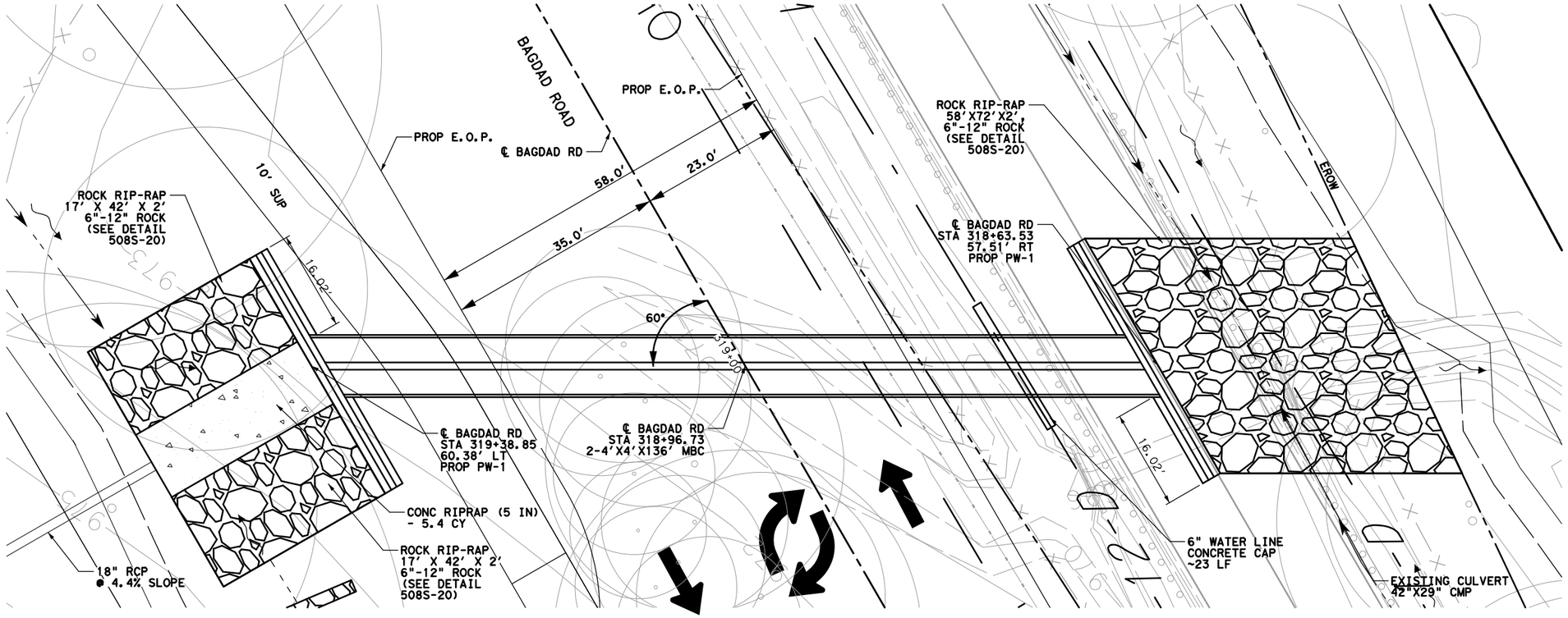
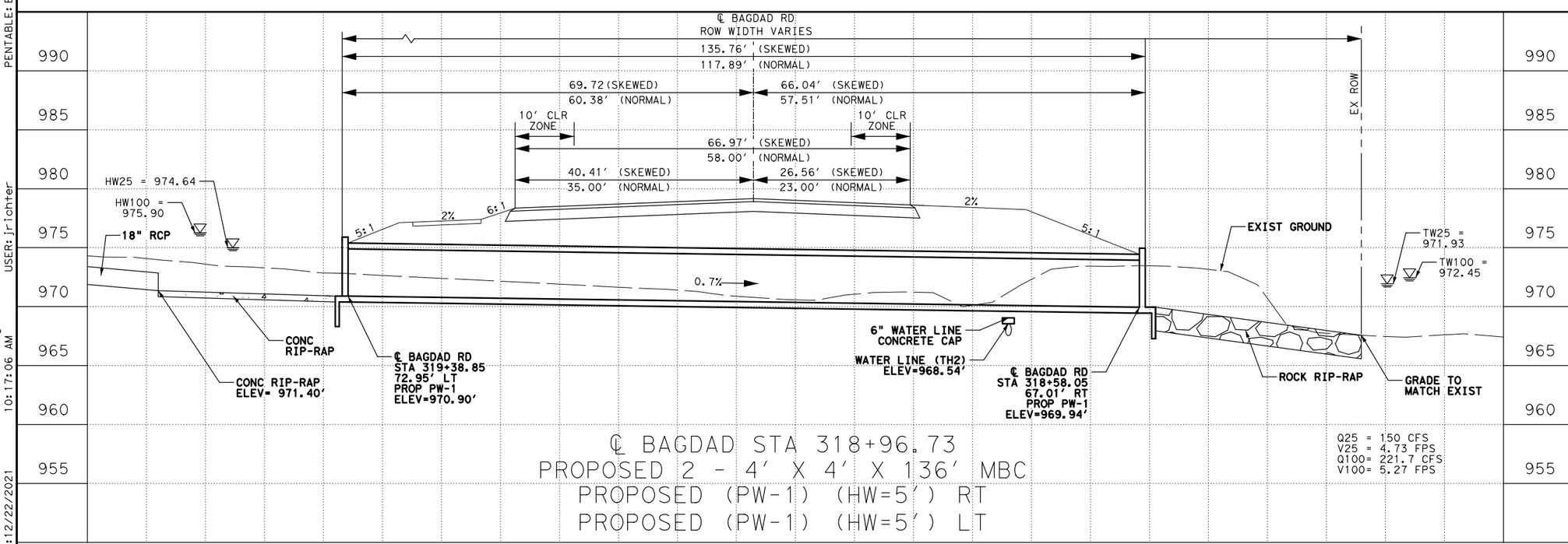
NO.	DATE	REVISION	APPROVED

HORZ 0' 5' 10' 20'
VERT 0' 5' 10'



NOTES:

1. ANALYSIS PERFORMED USING HY-8 HYDRAULIC ANALYSIS PROGRAM VERSION 7.5 FOR CULVERT.



STATE OF TEXAS
STEVEN F. ALBERT
107035
LICENSED
PROFESSIONAL ENGINEER

12/22/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers
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Round Rock, TX 78664
512.202.0006
BinkleyBarfield.com

BAGDAD ROAD

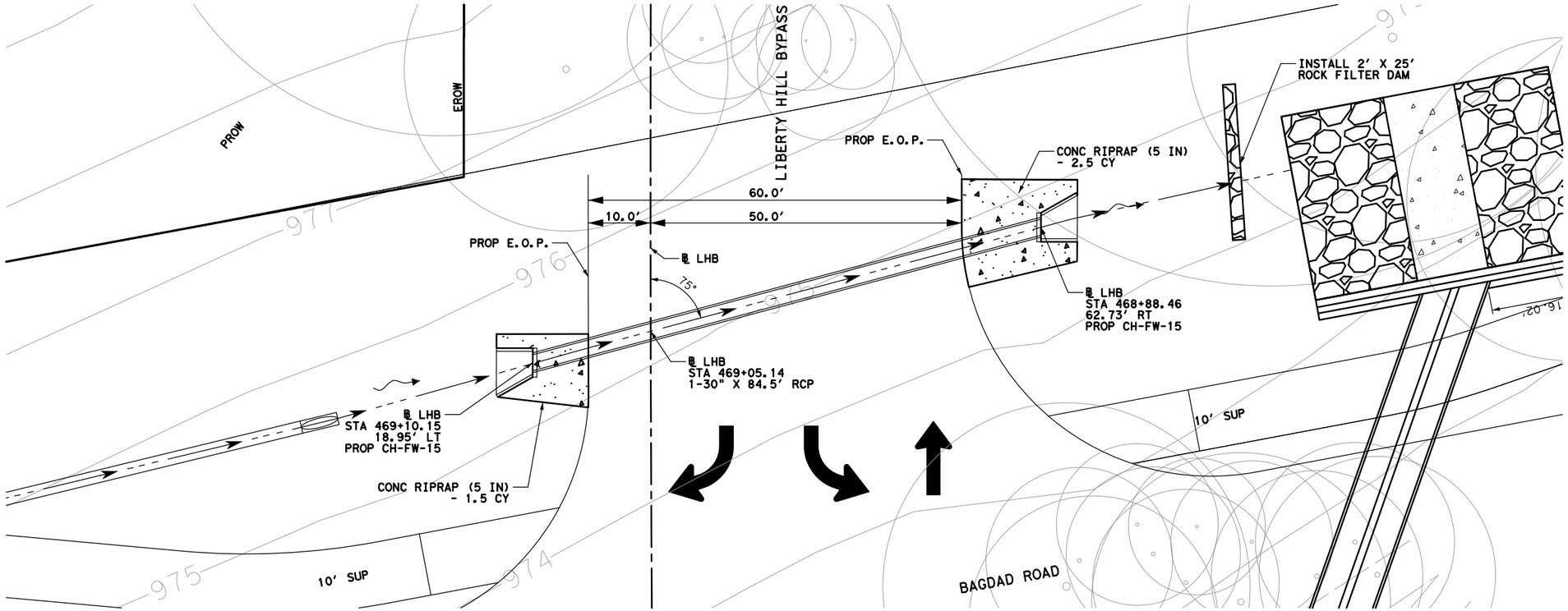
BAGDAD CULVERT LAYOUT

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	53
CONT.	SECT.	JOB	

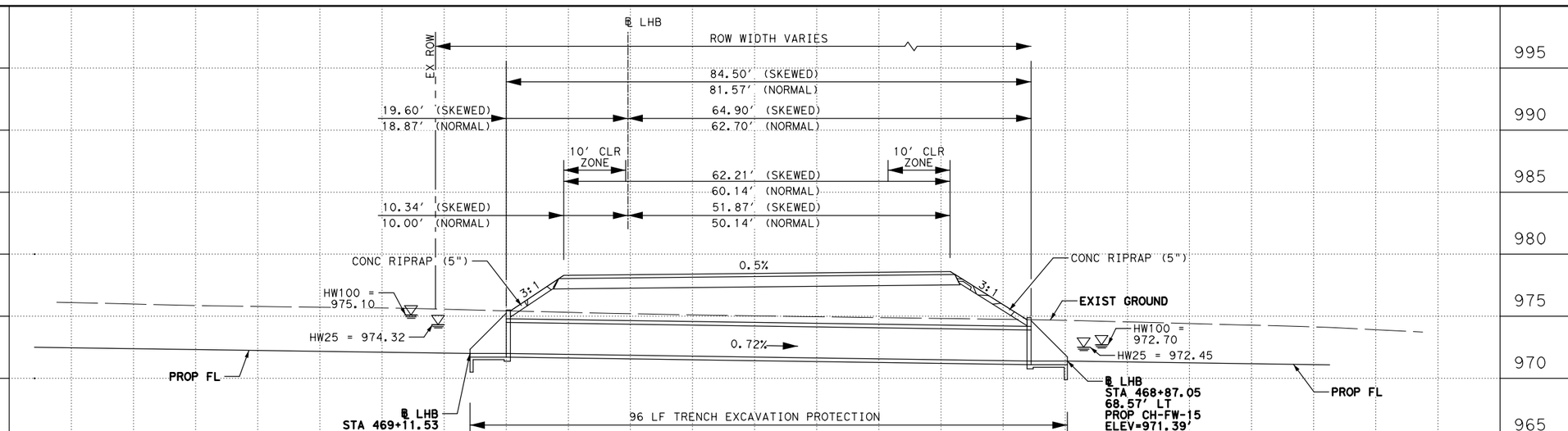
NO.	DATE	REVISION	APPROVED

HORZ 0' 5' 10' 20'
VERT 0' 5' 10'



NOTES:

1. ANALYSIS PERFORMED USING HY-8 HYDRAULIC ANALYSIS PROGRAM VERSION 7.5 FOR CULVERT.



℄ LHB STA 469+05.14
PROPOSED 1 - 30" X 84.5' RCP
PROPOSED (CH-FW-15) (HW=3.5') RT
PROPOSED (CH-FW-15) (HW=3.5') LT

Q25 = 20.03 CFS
V25 = 2.73 FPS
Q100= 29.41 CFS
V100= 3.09 FPS

STATE OF TEXAS
STEVEN F. ALBERT
107035
LICENSED
PROFESSIONAL ENGINEER

12/22/2021

WILLIAMSON COUNTY 1848

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TxEng F-257
2401 Double Creek Dr, Ste 200
Round Rock, TX 78664
512.292.0006
BinkleyBarfield.com

BAGDAD ROAD

LHB CULVERT LAYOUT

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	54
CONT.	SECT.	JOB	

100% Submittal
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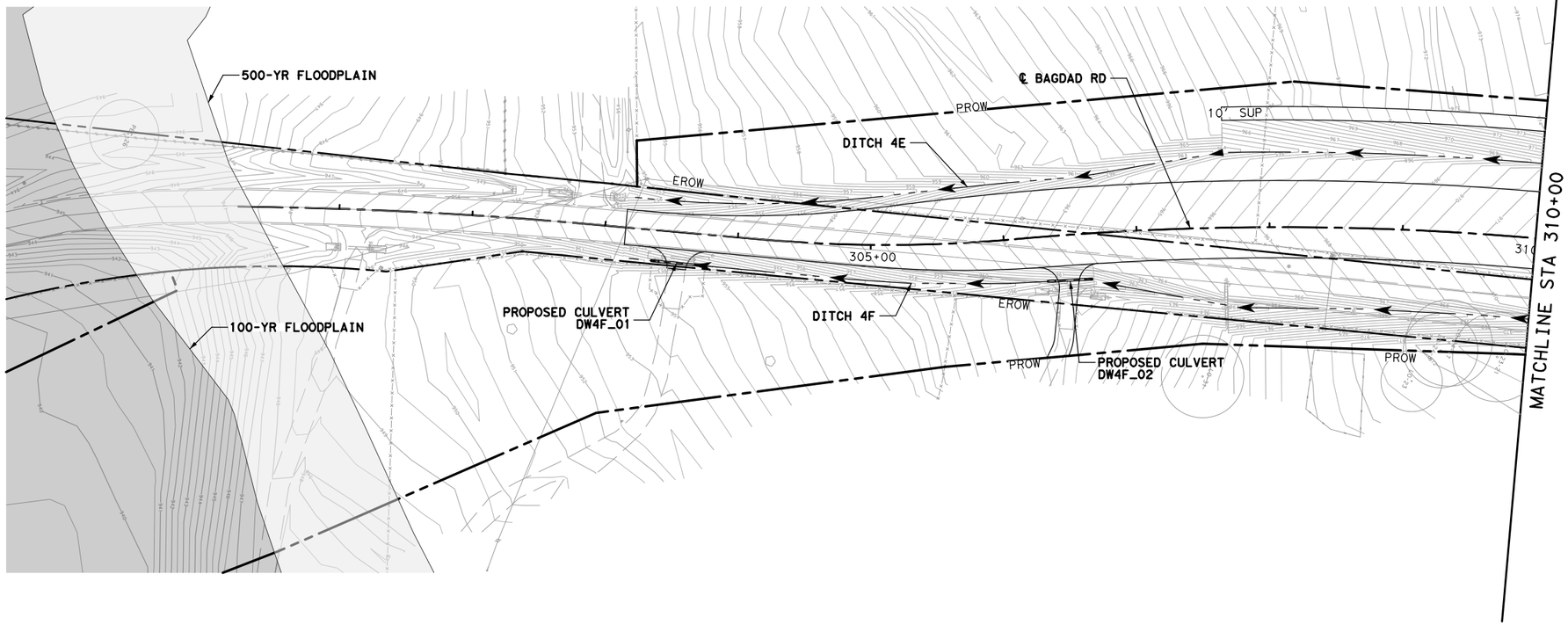
NO.	DATE	REVISION	APPROVED



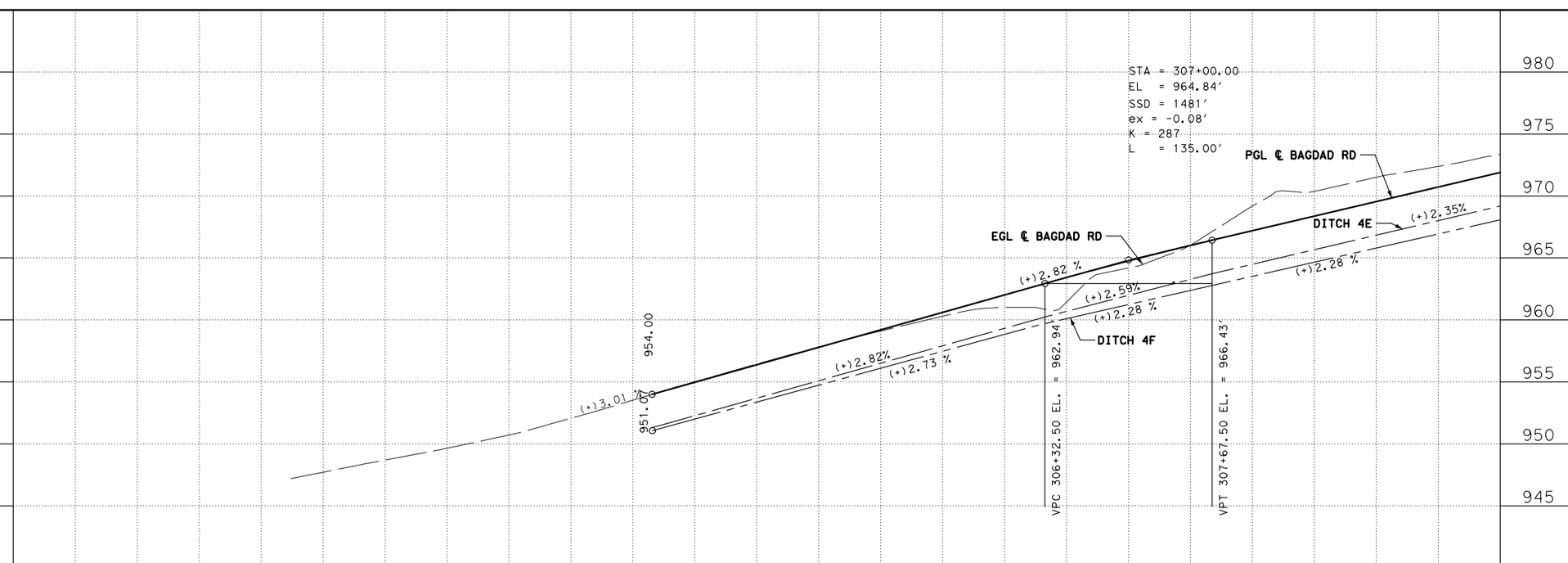
HORZ 0' 25' 50' 100'
VERT 0' 5' 10'

LEGEND:

- EXIST ROW
- PROP ROW
- DITCH FLOWLINE

NOTES:

1. REFER TO THE DITCH DRAINAGE CALCULATIONS SHEET FOR PROPOSED DITCH GEOMETRICS.
2. REFER TO DRIVEWAY CULVERT SUMMARY FOR PROPOSED DRIVEWAY CULVERT INFORMATION.



STATE OF TEXAS
ELEANOR R. RIVERA
87879
LICENSED
PROFESSIONAL ENGINEER

Eleanor R. Rivera

12/22/2021

WILLIAMSON COUNTY 1848

Binkley & Barfield consulting engineers
Binkley & Barfield, Inc.
TxEng F-257
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Round Rock, TX 78664
512.292.0006
Binkley@barfield.com

BAGDAD ROAD

DRAINAGE PLAN AND PROFILE
BAGDAD RD

BEGIN TO STA 310+00

SHEET 1 OF 4

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	56
CONT.	SECT.	JOB	

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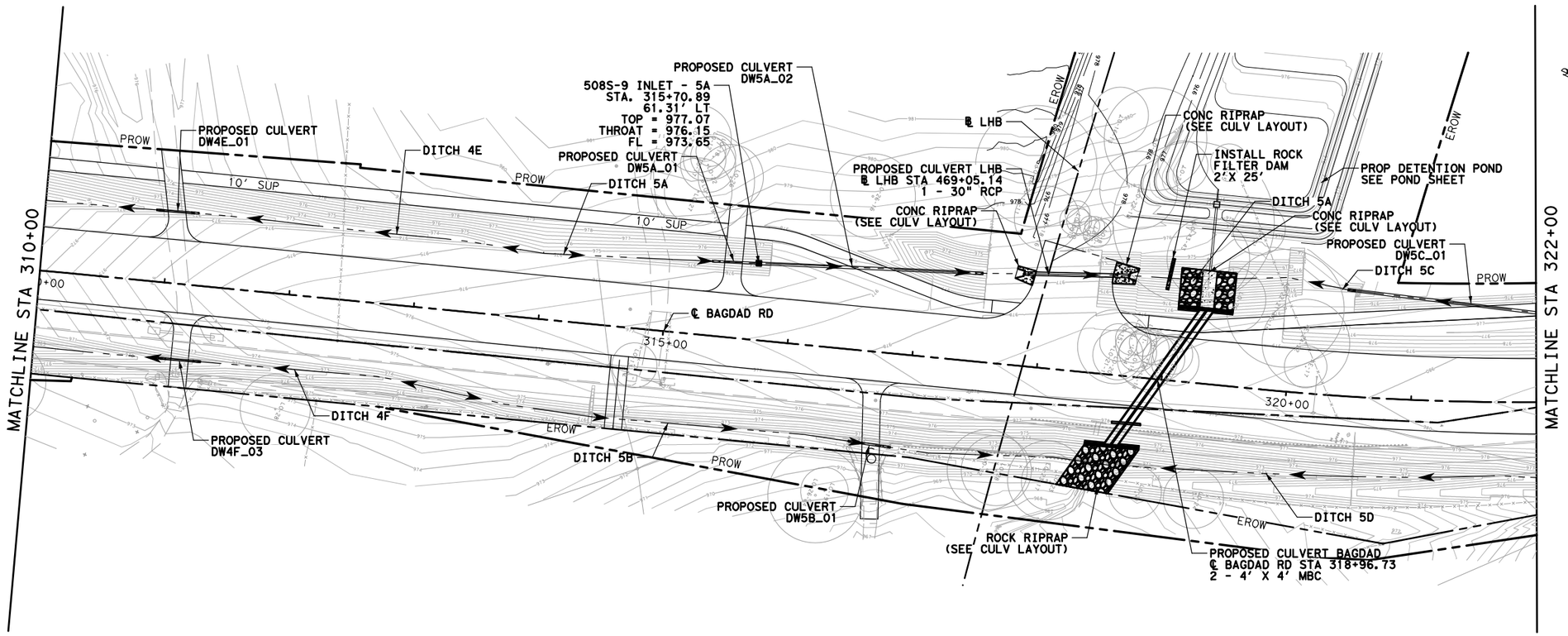

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VERT 0' 5' 10'

LEGEND:

- EXIST ROW
- PROP ROW
- DITCH FLOWLINE

NOTES:

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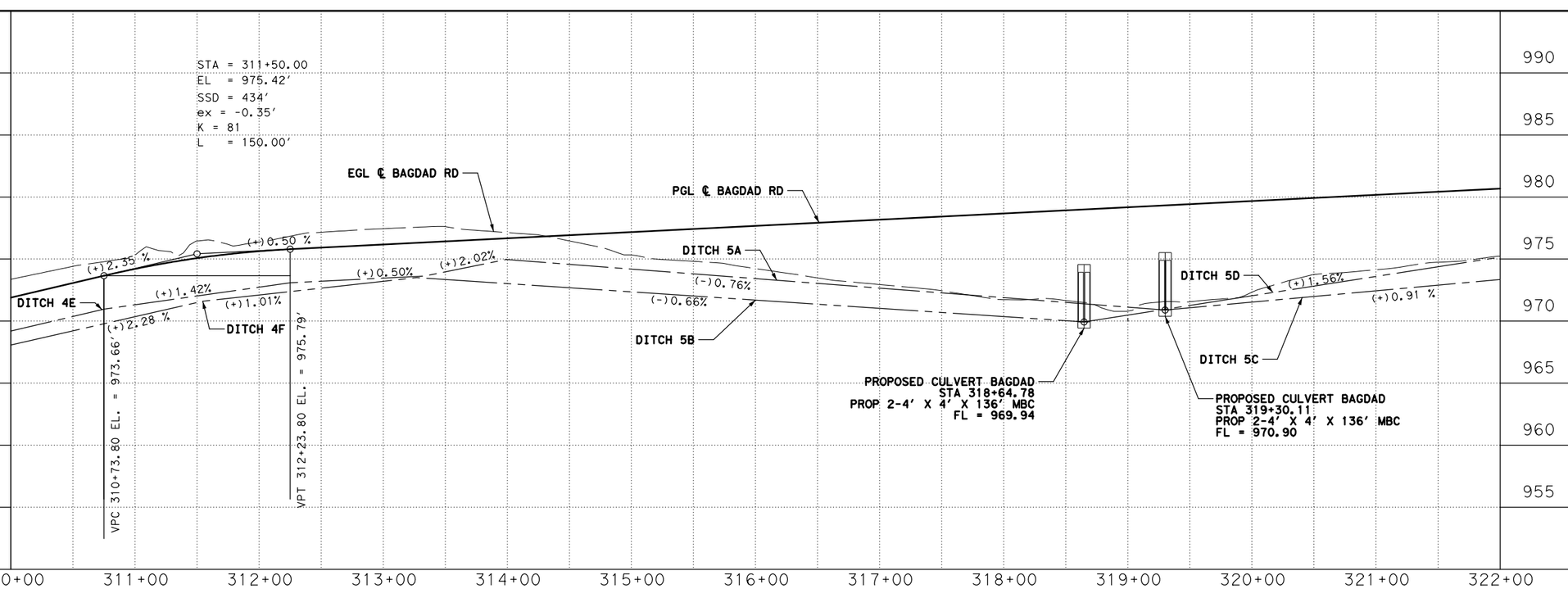

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WILLIAMSON COUNTY 1848

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DCCM

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BAGDAD ROAD

DRAINAGE PLAN AND PROFILE BAGDAD RD

STA 310+00 TO STA 322+00

SHEET 2 OF 4

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	57
CONT.	SECT.	JOB	

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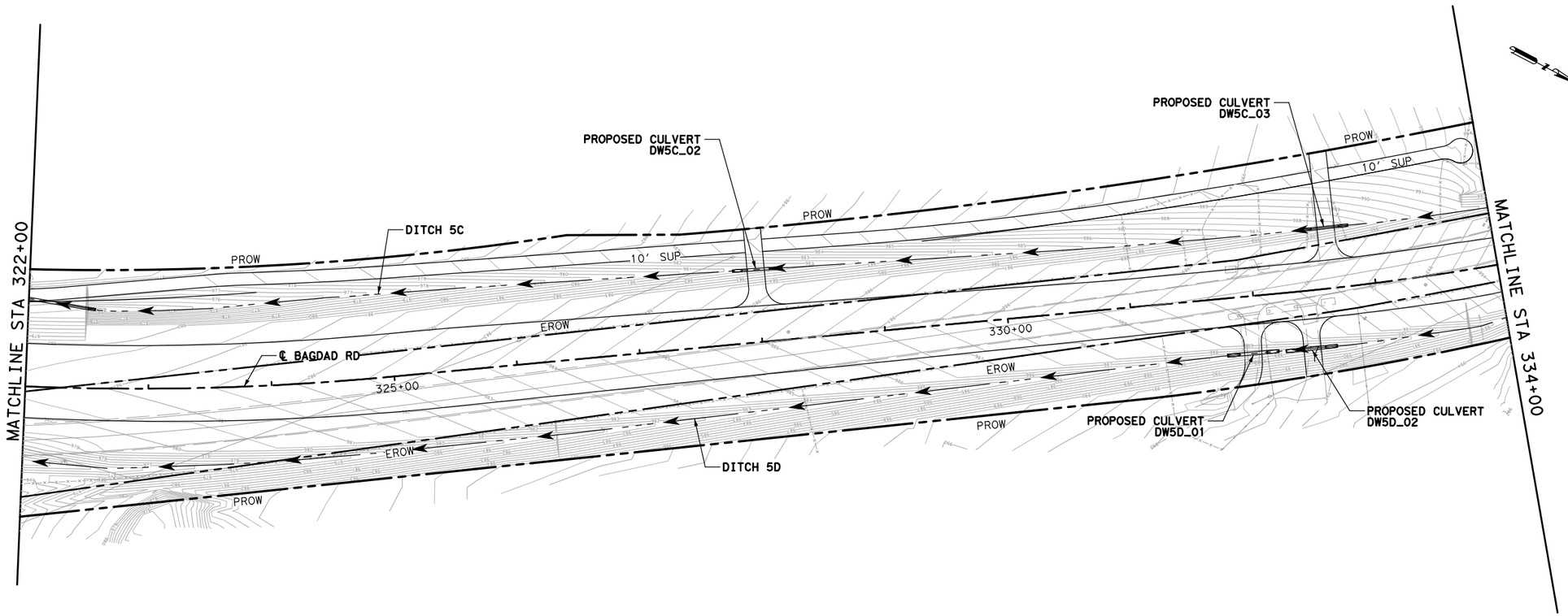

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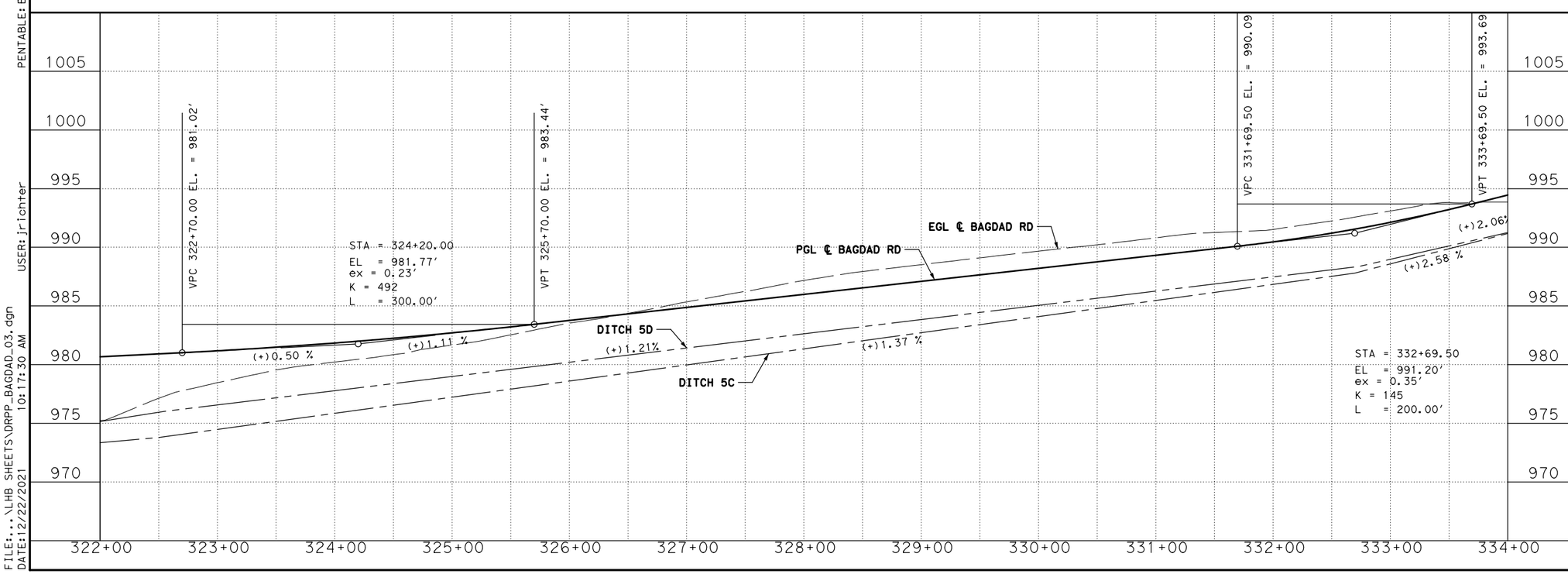

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BAGDAD ROAD

DRAINAGE PLAN AND PROFILE BAGDAD RD

STA 322+00 TO STA 334+00

SHEET 3 OF 4

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	58
CONT.	SECT.	JOB	

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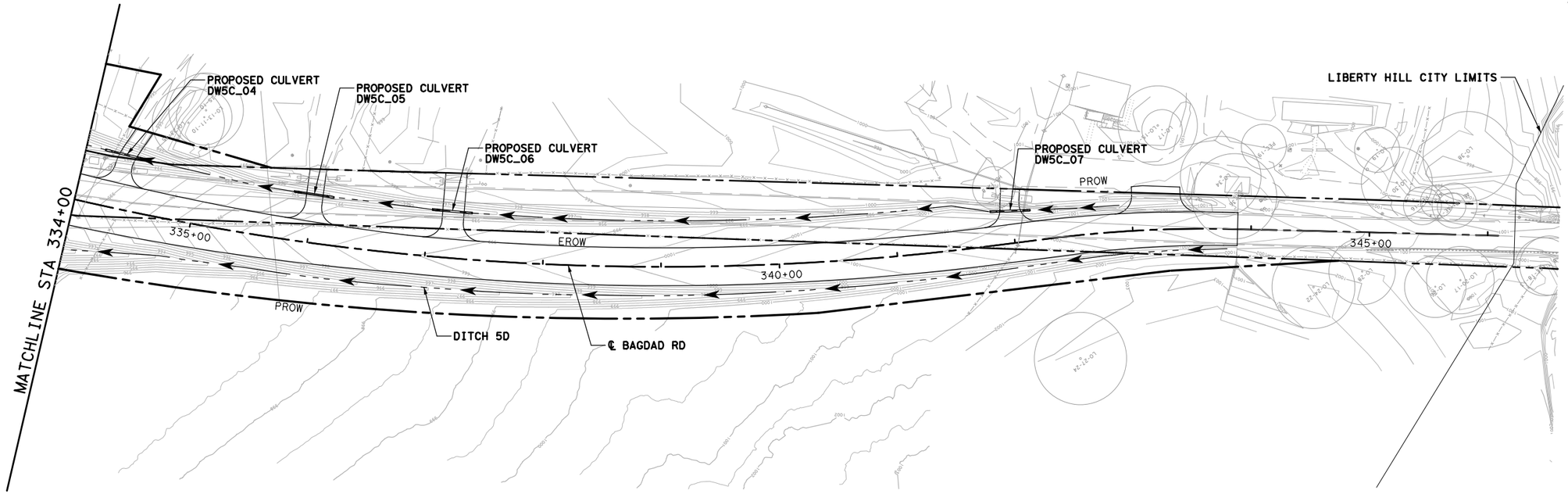
VERT 0' 5' 10'



LEGEND:

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- PROP ROW
- DITCH FLOWLINE

NOTES:

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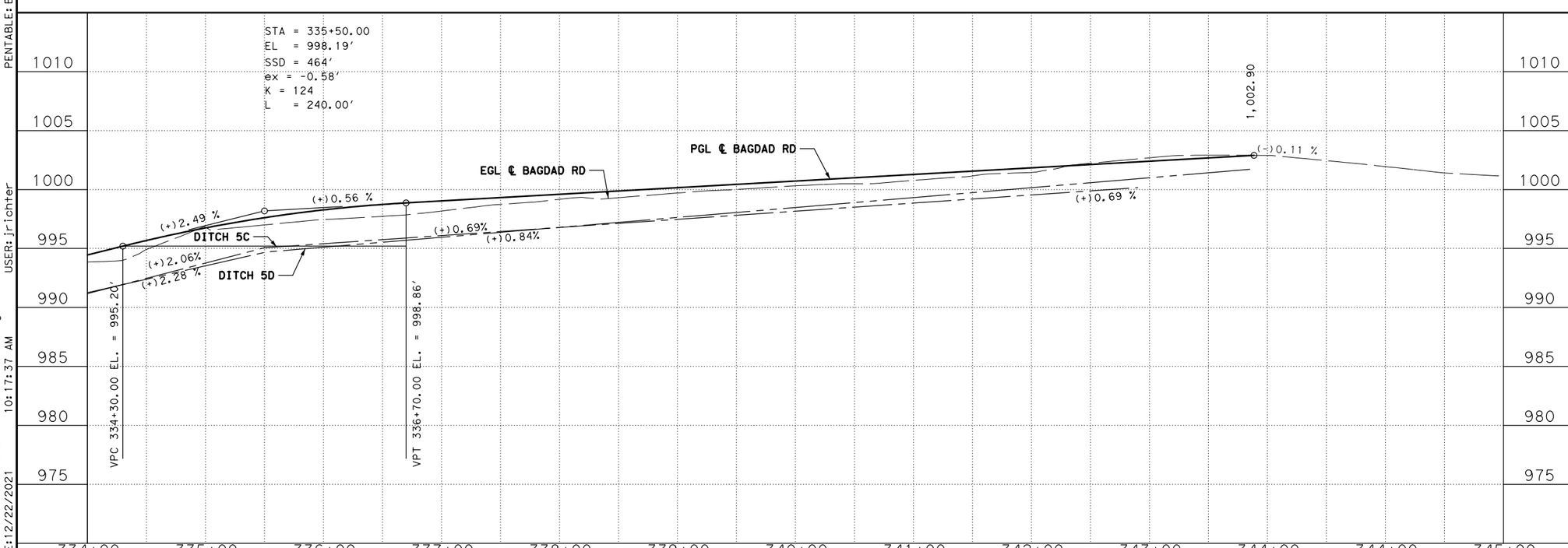

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BAGDAD ROAD

DRAINAGE PLAN AND PROFILE
BAGDAD RD

STA 334+00 TO END

SHEET 4 OF 4

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	59
CONT.	SECT.	JOB	

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A. GENERAL SITE DATA

1. PROJECT LIMITS: *FROM NORTH OF THE SAN GABRIEL RIVER TO NORTH OF THE LIBERTY HILL CITY LIMITS.*

2. PROJECT SITE MAPS:

- *Project Location Map: The Title Sheet*
- *Drainage Patterns: Drainage Area Maps (SHEETS 49-51)*
- *Slopes Anticipated After Major Gradings or Areas of Soil Disturbance: Typical Sections (SHEETS 11-12)*
- *Location of Erosion and Sediment Controls: SW3P Site Maps (SHEETS 74-75)*
- *Surface Waters and Discharge Locations: Drainage and Culvert Layouts (SHEETS 49-59)*
- *Project Specific Location(s) (PSL): To be determined by the project Construction Personnel. Location(s) shown on SW3P Site Map (if PSL location(s) is within one mile of project) and information located in project SW3P Binder (Reference Item #10 below).*

3. PROJECT DESCRIPTION:

FOR THE CONSTRUCTION OF NEW ROADWAY CONSISTING OF GRADING, BASE, ASPHALT PAVEMENT, CULVERTS, DITCHES, WATER QUALITY BMPS, SIGNING, AND PAVEMENT MARKINGS.

4. MAJOR SOIL DISTURBING ACTIVITIES:

SOIL DISTURBING ACTIVITIES ON THIS PROJECT WILL INCLUDE PREPARING THE ROW, GRADING, EXCAVATION AND EMBANKMENT FOR THE ROADWAY, CONSTRUCTION OF DRAINAGE STRUCTURES, EROSION AND SEDIMENT CONTROL, AND TOPSOIL WORK FOR FINAL PLANTING AND SEEDING.

5. EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

THE EXISTING SOIL IS PREDOMINANTLY SOIL GROUP D, WHICH HAS LOW PERMEABILITY AND HIGH RUNOFF POTENTIAL.THE VEGETATION IS ABOUT 50% OF AREA IN CULTIVATED CROPS, 90% WITH VARIOUS GRASSESWHICH ARE IN HEALTHY CONDITION. WILL CONFIRM WITH GEOTECH REPORT

6. TOTAL PROJECT AREA: *16.6* Acres

7. TOTAL AREA TO BE DISTURBED: *12.5* Acres (75 %)

8. WEIGHTED RUNOFF COEFFICIENT

BEFORE CONSTRUCTION: *0.41*
AFTER CONSTRUCTION: *0.50*

9. NAME OF RECEIVING WATERS:

SOUTH FORK SAN GABRIEL RIVER
SEGMENT ID:1250

10. PROJECT SW3P Binder:

A. For projects disturbing one to five acres, The Contractor will maintain a SW3P Binder at the project field office (if there is not a project field office, should be kept on the Job Site at all times) which contains the following: Index Sheet, TCEQ Signature Authority, TCEQ Small Construction Site Notice, Contractor Certification of Compliance, SW3P Inspector Qualification Statements, Inspection and Maintenance Reports (Form 2118), SW3P Sheet, Site Location Maps, Stored Material Lists specifying associated control measures and the Appendix which contains the TPDES Construction General Permit, MS4 Operator Notification(s) and the Construction PSL Permits per all applicable requirements.

B. For projects disturbing 5 acres or more, the Contractor will follow the actions listed in (10.A.) above with the addition of the following: Notice Of Intent (N.O.I.) and Fee Payment Form, TCEQ Large Construction Site Notice (to be used instead of Small Site Notice), and TPDES Permit Coverage Notice.

C. For projects disturbing less than one acre, actions described in (10.A.) and (10.B.) above are not required. Acreage is calculated by adding Total Area To Be Disturbed Acres on project (See #7 above) and the PSL(s) acreage located within one mile of project.

B. EROSION AND SEDIMENT CONTROLS

1. SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

T	TEMPORARY SEEDING		PRESERVATION OF NATURAL RESOURCES
T	MULCHING (Hay or Straw)		FLEXIBLE CHANNEL LINER
	BUFFER ZONES		RIGID CHANNEL LINER
	PLANTING	P	SOIL RETENTION BLANKET
P	SEEDING	T	COMPOST MANUFACTURED TOPSOIL
	SODDING		VERTICAL TRACKING
			OTHER:

2. STRUCTURAL PRACTICES:
(T = Temporary or P = Permanent)

T	SILT FENCES
	EROSION CONTROL LOGS
	EROSION CONTROL COMPOST BERMS (Low Velocity)
T	ROCK FILTER DAMS
	DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
	DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
	DIVERSION DIKE AND SWALE COMBINATIONS
	PIPE SLOPE DRAINS
	PAVED FLUMES
T	ROCK BEDDING AT CONSTRUCTION EXIT
	TIMBER MATTING AT CONSTRUCTION EXIT
	CHANNEL LINERS
	SEDIMENT TRAPS
	SEDIMENT BASINS
	STORM INLET SEDIMENT TRAP
	STONE OUTLET STRUCTURES
	CURBS AND GUTTERS
	STORM SEWERS
P	VELOCITY CONTROL DEVICES
	OTHER:

NOTE: TOP OF BMP'S SHOULD NOT BE HIGHER THAN ROADWAY ELEVATION AS NOT TO FLOOD ROADWAY UNLESS PRIOR APPROVAL FROM ENGINEER IS OBTAINED.

3. STORM WATER MANAGEMENT:

A. *STORM WATER DRAINAGE WILL BE PROVIDED BY DITCHES, WHICH CARRY DRAINAGE WITHIN THE R.O.W. TO THE LOWS WITHIN THE ROADWAY AND PROJECT SITE WHICH DRAINS TO NATURAL FACILITIES.*

B. *NON PAVED AREAS AND DITCHES SHALL BE STABILIZED WITH A PERMANENT VEGETATIVE COVER.*

C. *OTHER PERMANENT EROSION CONTROLS INCLUDE HYDRAULIC DESIGN TO LIMIT STRUCTURE OUTLET VELOCITIES AND GRADING DESIGN GENERALLY CONSISTING OF 4:1 OR FLATTER SLOPES WITH PERMANENT VEGETATIVE COVER.*

4. STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS

1. *INSTALL CONSTRUCTION EXITS AND PERIMETER CONTROLS AND STORMWATER CONTROLS IN DITCHES. REFER TO EROSION CONTROL SHEETS FOR LOCATIONS.*
2. *GRADE CONSTRUCTION AREA TO SUBGRADE AND EXCAVATE LOCATION OF DRAINAGE STRUCTURES. INSTALL ADDITIONAL EROSION CONTROL DEVICES AS SPECIFICED BY THE ENGINEER.*
3. *INSTALL DRAINAGE STRUCTURES.*
4. *CONSTRUCT PAVEMENT, BASE AND EMBANKMENT.*
5. *REPEAT FOR PHASE 2.*
6. *UPON COMPLETION OF ALL CONSTRUCTION ACTIVITY AND SITE STABILIZATION IS APPROVED BY THE ENGINEER. REMOVE ALL TEMPORARY STRUCTUREL CONTROLS AND RESEED ANY AREAS DISTURBED BY THEIR REMOVAL.*

5. NON-STORM WATER DISCHARGES:

Filter non-storm water discharges, or hold in retention basins, before being allowed to mix with storm water. These discharges consist of, but not limited to, non-polluted ground water, spring water, foundation or footing drain water, water used for dust control or pavement washing and vehicle washwater containing no detergents.

C. OTHER REQUIREMENTS & PRACTICES

1. MAINTENANCE:

Maintain all erosion and sediment controls in good working order. Perform any necessary cleaning/repairs/replacements at the earliest possible date prior to next rain event, but no later than 7 calendar days. Ensure the surrounding ground has dried sufficiently to prevent damage from equipment. "Too Wet" is the only reason for not adhering to time frames described. When construction activities permanently or temporarily cease and are not expected to resume for 14 or more days on a disturbed portion of the site, stabilization measures must be initiated immediately.

2. INSPECTION:

A Construction Observer will perform a regularly scheduled SW3P inspection every 7 calendar days. An Inspection and Maintenance Report, signed by the Construction Observer and the Contractor, will be filed for each inspection. Revise/clean/repair/replace each BMP control device in accordance with the current Field Inspection and Maintenance Report (Form 2118) and Item 1 (Maintenance) above.

3. WASTE MATERIALS:

On a daily basis, or as may be directed, collect all waste materials, trash and debris from the construction site and deposit into a metal dumpster having a secure cover and which meets all state and local city solid waste management requirements. Empty the dumpster as required by regulation, or as may be directed, at a local approved landfill site. Do not bury construction waste on the construction project site.

4. HAZARDOUS WASTE & SPILL REPORTING:

As a minimum, any products in the following categories are considered to be hazardous: Paints, Acids, Solvents, Fuels, Asphalt Products, Chemical Additives for Soil Stabilization, and Concrete Curing Compounds or Additives. When storing hazardous material on the project site, or at a Project Specific Location, take all practicable precaution to prevent and/or contain any spillage of these materials. In the event of a spill, contact the spill coordinator immediately.

5. SANITARY WASTE:

Use a licensed sanitary waste management contractor to collect all sanitary waste from portable units as may be required by local regulation, or as directed.

6. CONSTRUCTION VEHICLE TRACKING:

On a regular basis, or as may be directed, dampen haul roads for dust control and stabilize construction entrances/exits. Provide for a motorized broom or vacuum type sweeper to be available on a daily basis, or as may be directed, to remove sediment from paved roadways abutting or traversing the project site.

7. MANAGEMENT PRACTICES:

A. Construct disposal areas, stockpiles,haul roads and PSL's in a manner that will minimize and control the amount of sediment that may enter receiving waters. Do not locate disposal areas in any wetland, waterbody or streambed.

B. Locate construction staging areas, vehicle maintenance and PSL's areas in a manner to minimize the runoff of pollutants.

C. When working in or near a wetland, install and maintain operating soil erosion and sediment controls at all times during construction and isolate the work from the wetland.

D. Clear all waterways as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

E. Procedures and/or practices should be taken to control dust.

F. Sediment to be removed from roadways daily or when work begins after weather events if construction activities have ceased due to weather event.

G. The Contractor will be required to contain wash water from concrete trucks in a manner that will prevent same from entering any waterway.

H. The Contractor is responsible for insuring that all Subcontractors are aware and comply with all components of the Temporary Erosion Control Plans.

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12/21/2021

, P.E.
Signature of Registrant & Date

WILLIAMSON COUNTY

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

TEMPLATE REVISION DATE: 06/12/2015

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6			CR 279
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS		WILLIAMSON	75
CHECK	CONTROL	SECTION	JOB	

FILE NAME
DATE
DESIGNER

NO.	DATE	REVISION	APPROVED
1	9/24/2023	UPDATE SEEDING	DC

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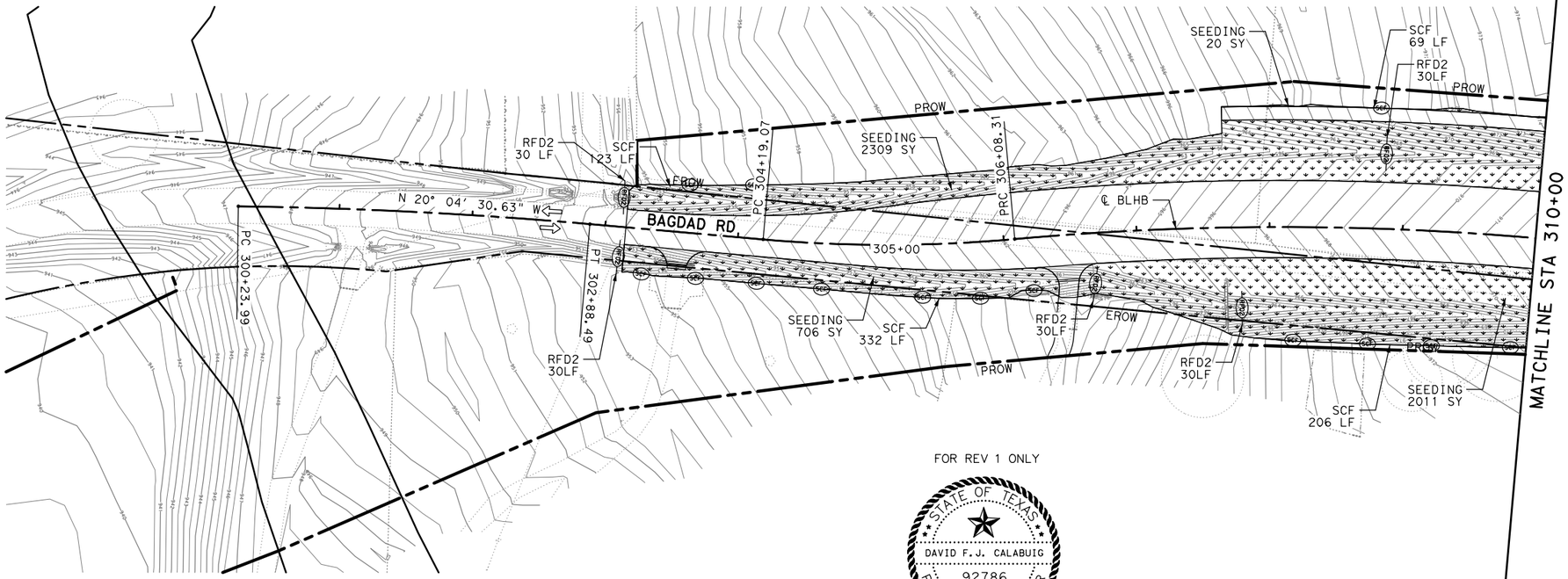
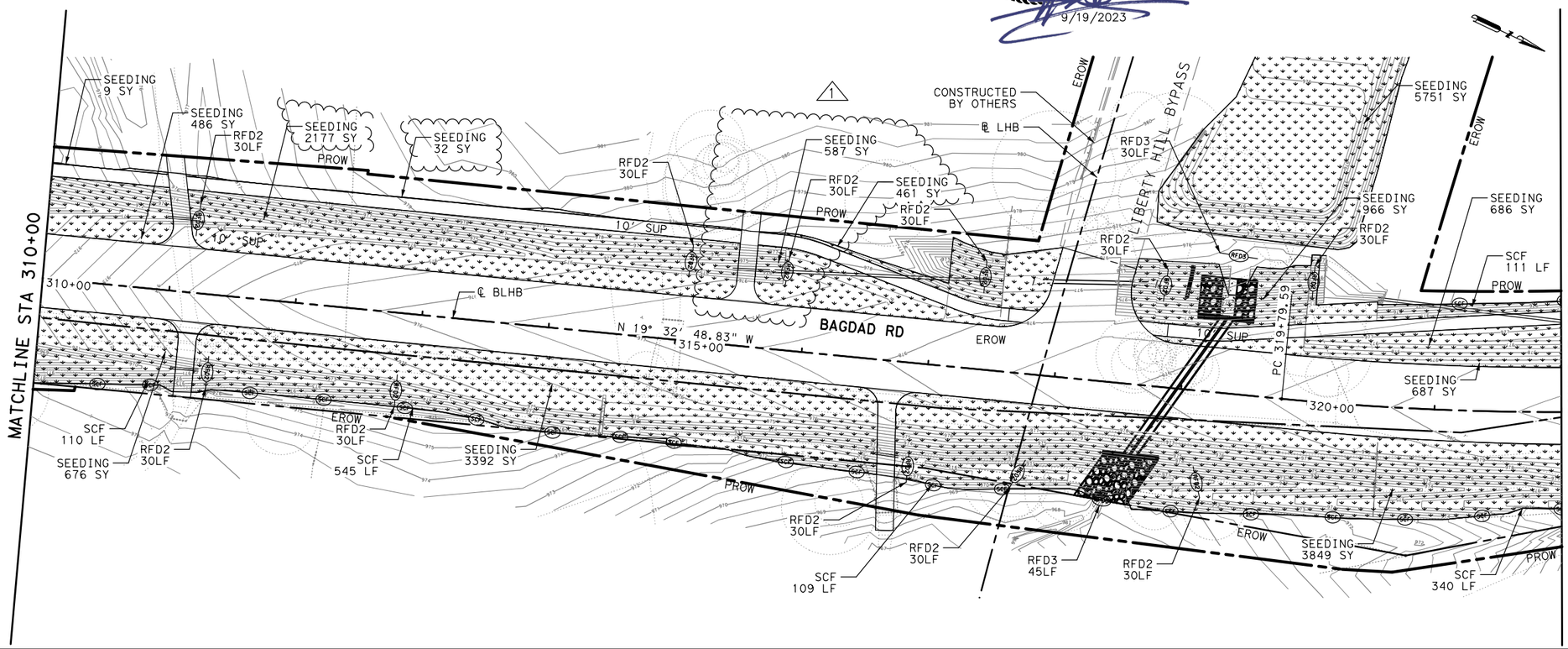


FOR REV 1 ONLY

STATE OF TEXAS
DAVID F.J. CALABUIG
92786
LICENSED
PROFESSIONAL ENGINEER
9/19/2023



LEGEND:

- SCF — SEDIMENT CONTROL FENCE (SCF)
- RFD2 — ROCK FILTER DAM TY II
- RFD3 — ROCK FILTER DAM TY III
- SEEDING & TOPSOIL
- SOIL RETENTION BLANKET (SRB)

NOTES:

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7. PER SPECIAL CONDITION, XXXV, CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN WITHIN ROW AND TREES DIRECTLY OUTSIDE ROW FROM DAMAGE DURING CONSTRUCTION. THIS WILL BE SUBSIDIARY TO PREP ROW, UNLESS OTHERWISE INDICATED.

THE SEAL APPEARING ON THE ORIGINAL OF THIS DOCUMENT WAS AUTHORIZED BY JOSHUA T. RICHTER, P.E. REG. NO. 141234 ON 12/21/2021.

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

12-21-2021

WILLIAMSON COUNTY 1848

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DCCM

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BAGDAD ROAD

EROSION CONTROL PLAN
BAGDAD RD

BEGIN TO STA 322+00

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
			CR 279
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	76
CONT.	SECT.	JOB	

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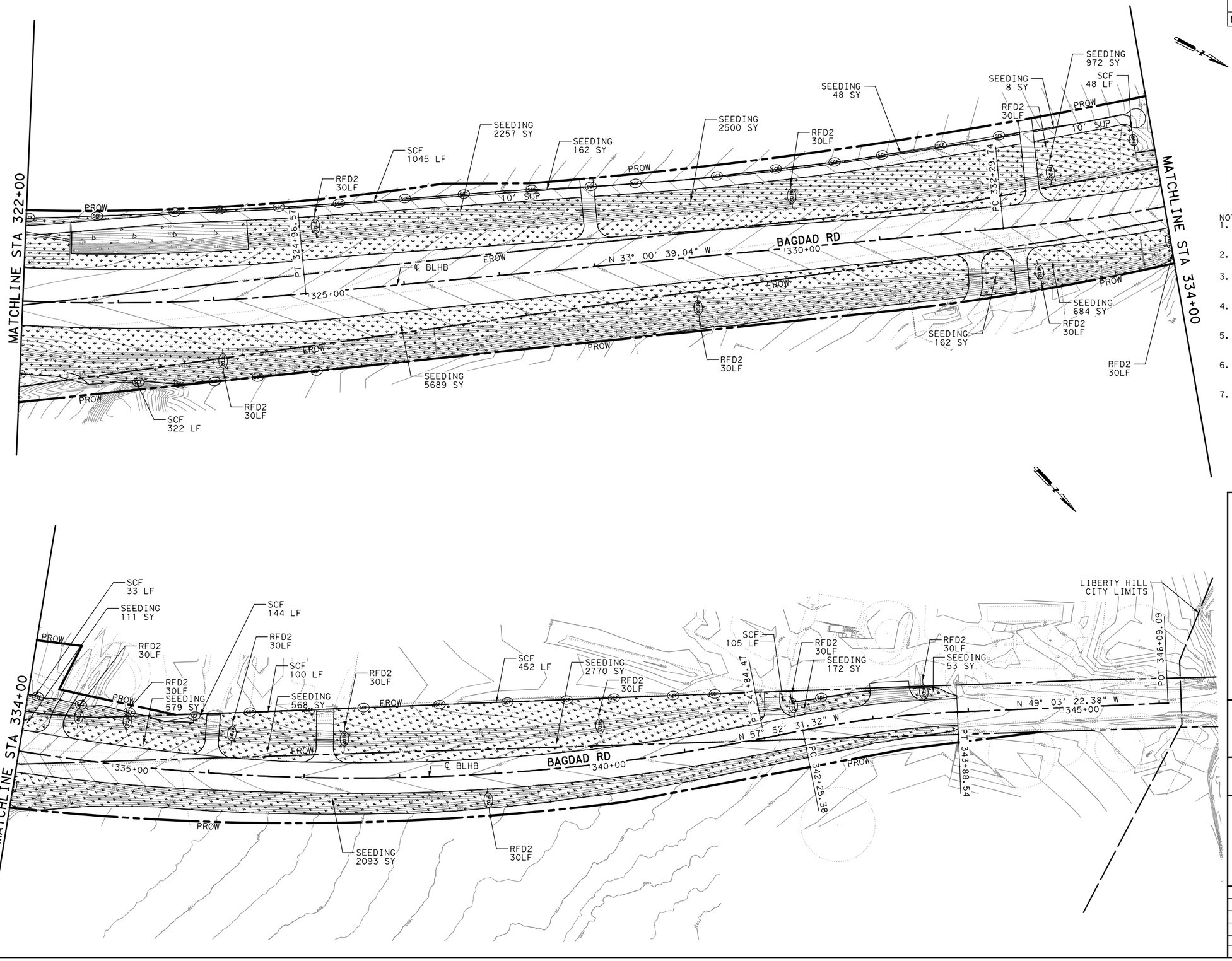

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BAGDAD ROAD
EROSION CONTROL PLAN
BAGDAD RD

STA 322+00 TO END

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
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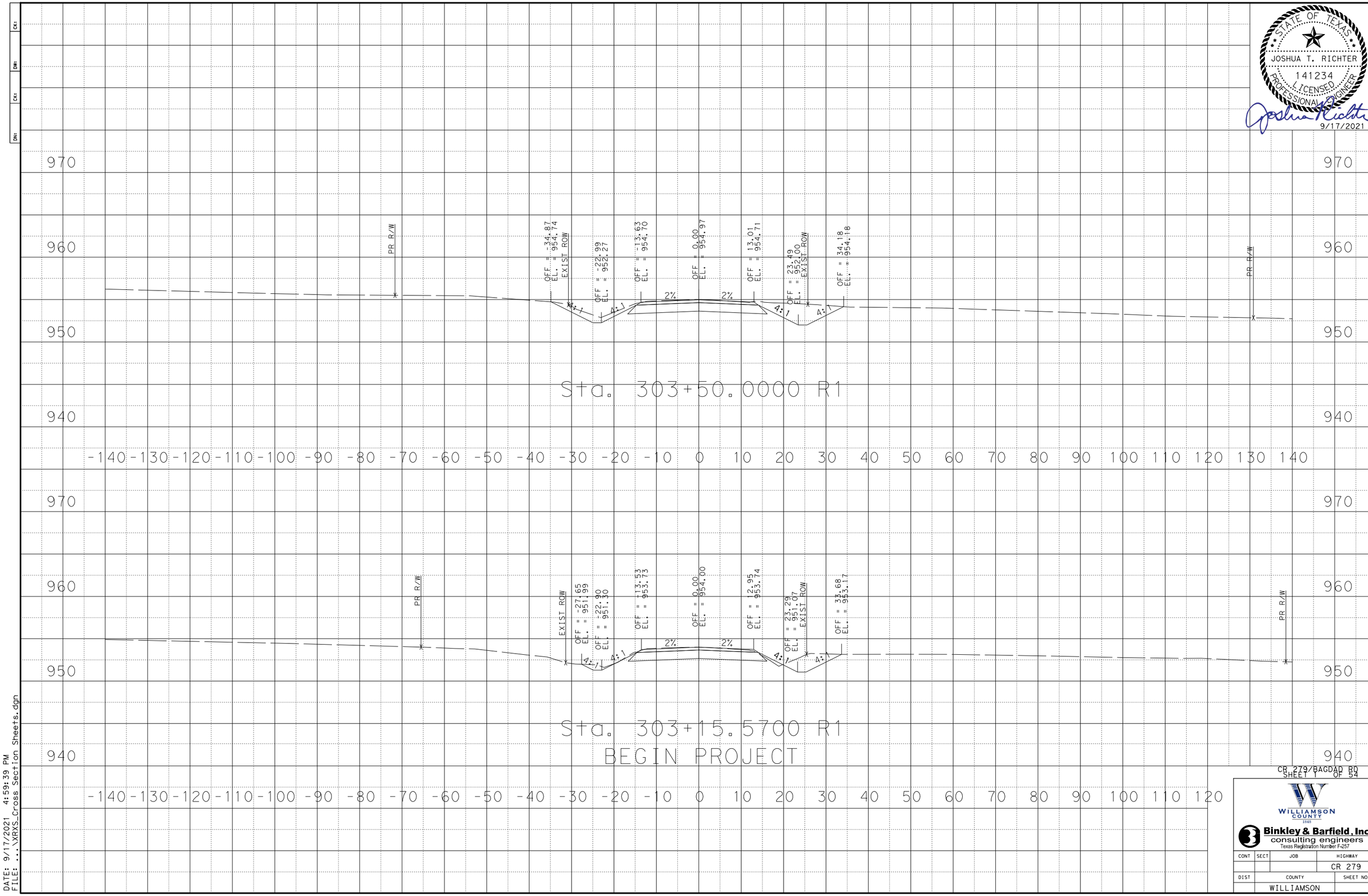
STATE	DIST.	COUNTY	SHEET NO.
TEXAS		WILLIAMSON	77
CONT.	SECT.	JOB	



CR 279/BAGDAD RD
SHEET 1 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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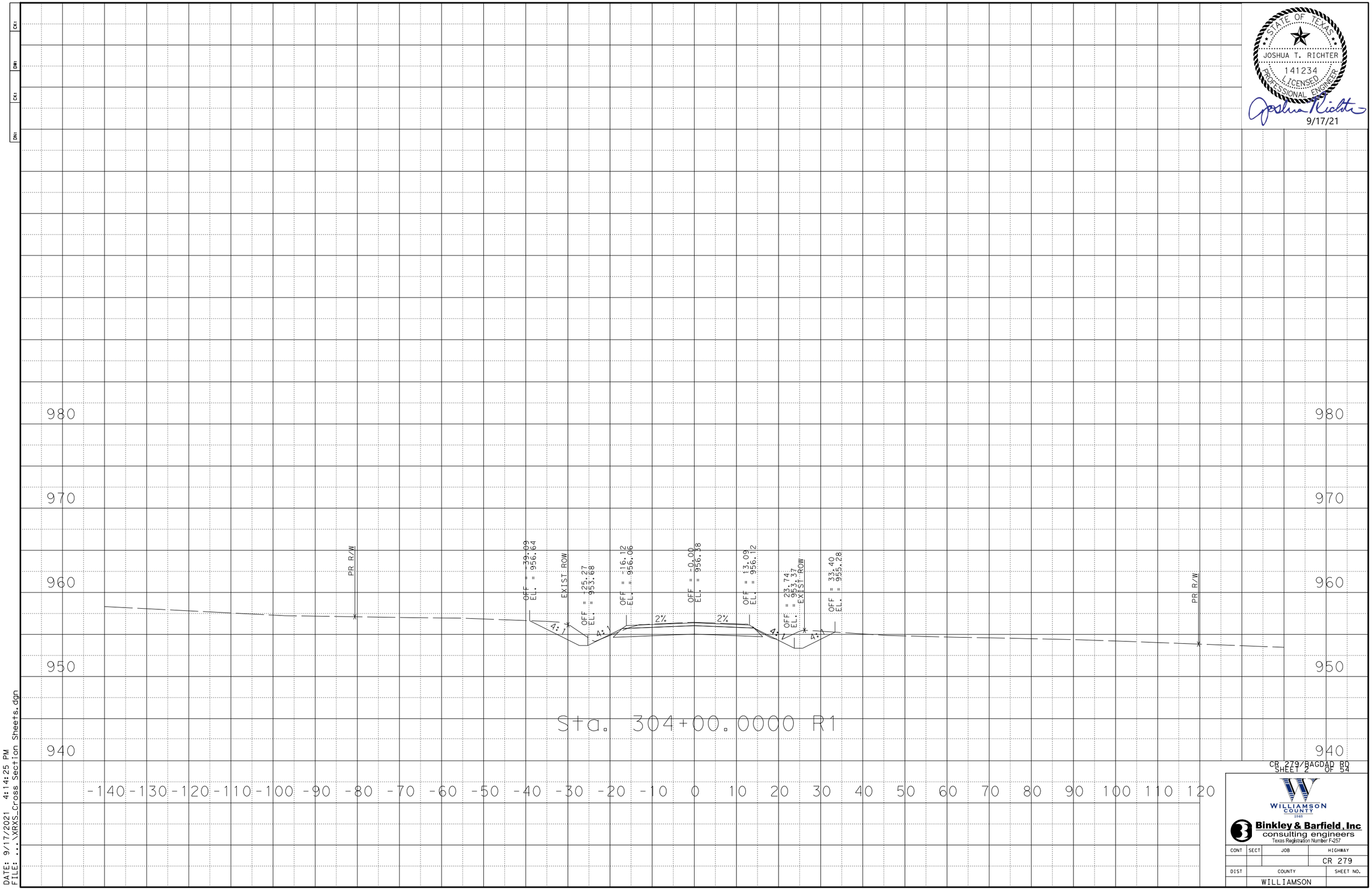

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CR 279/BAGDAD RD
SHEET 2 OF 54

WILLIAMSON COUNTY 1848

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CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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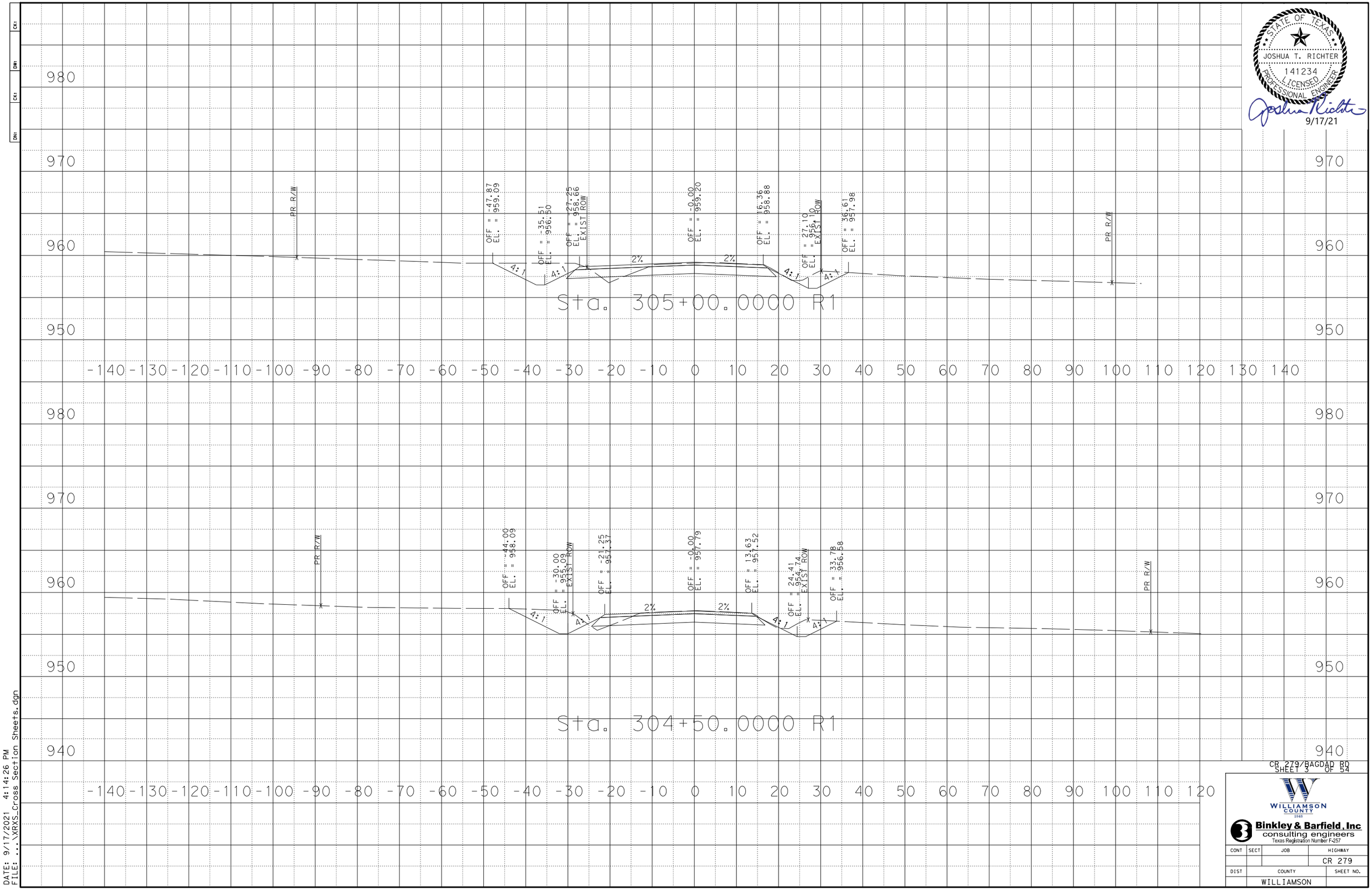

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 3 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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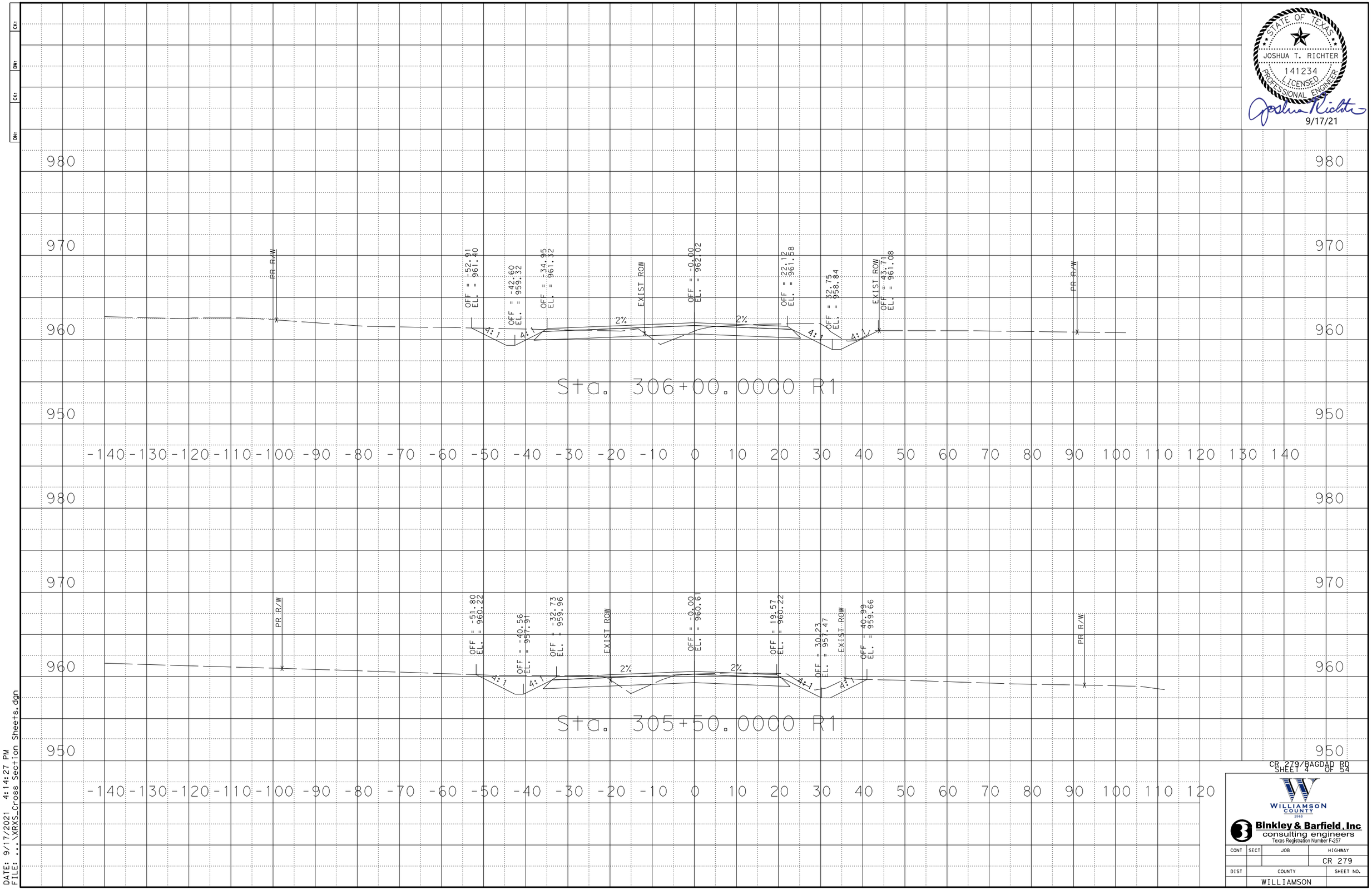

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
Joshua Richter
9/17/21

CR 279/BAGDAD RD
SHEET 4 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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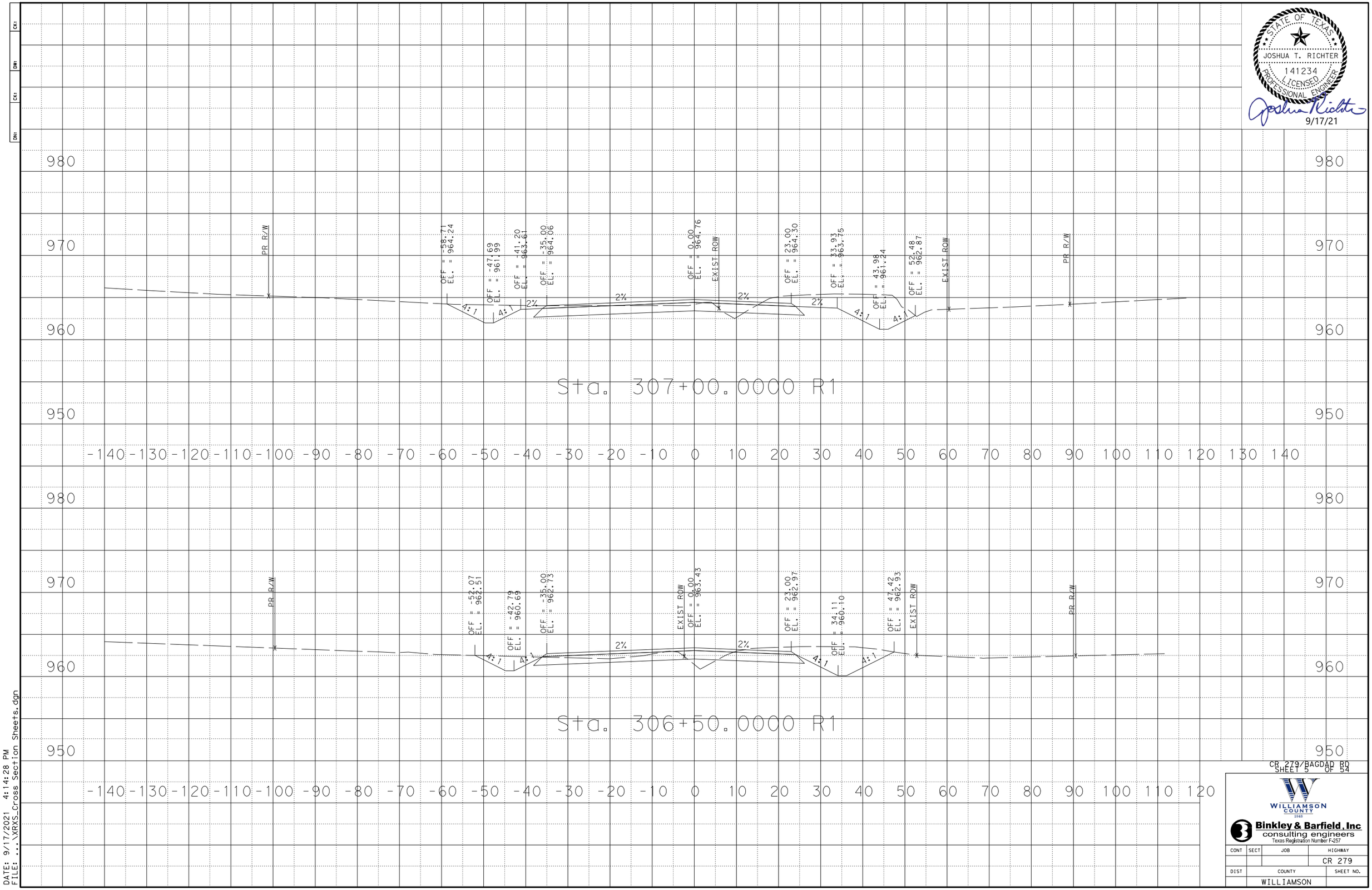

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 5 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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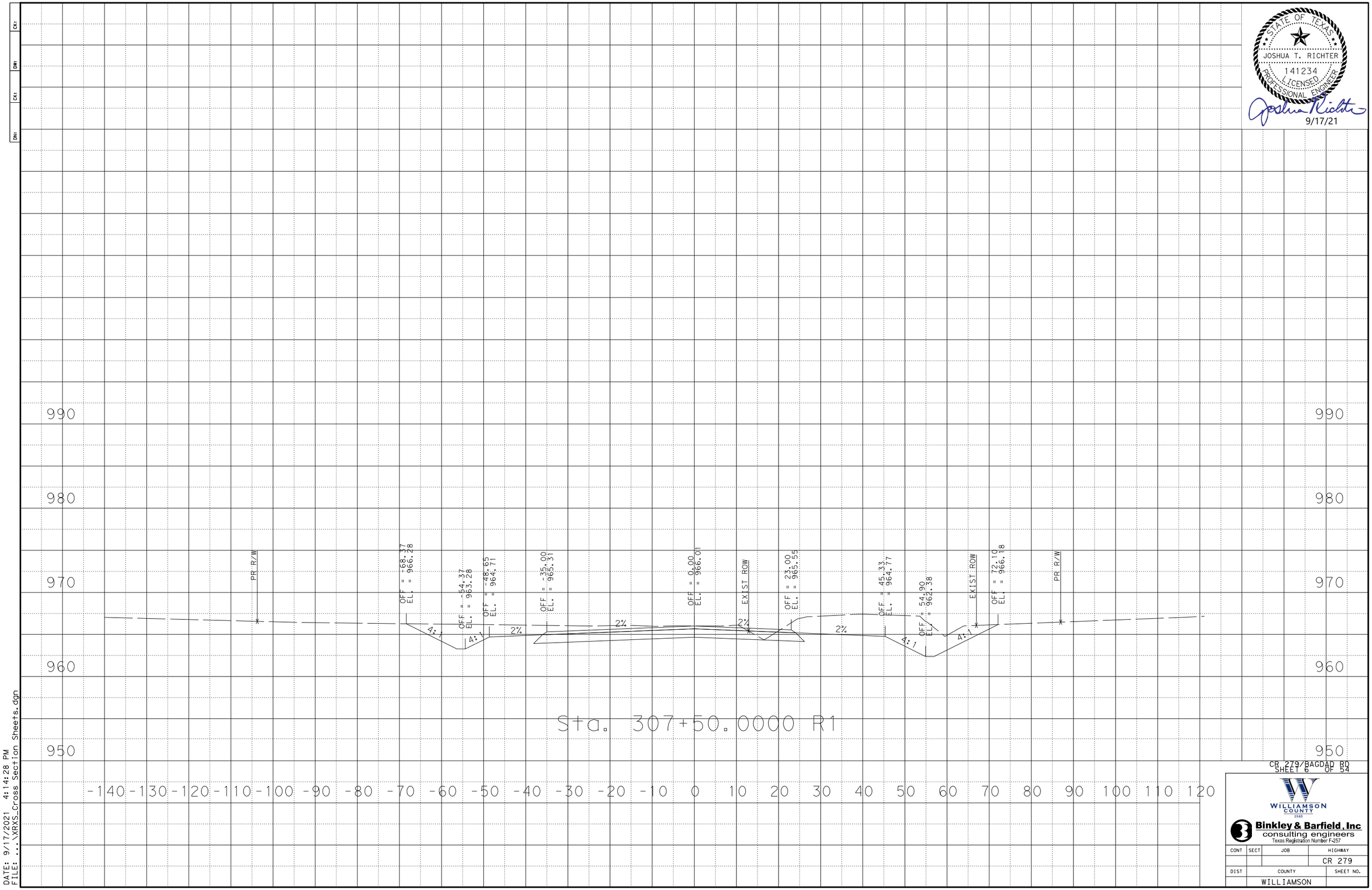

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 6 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
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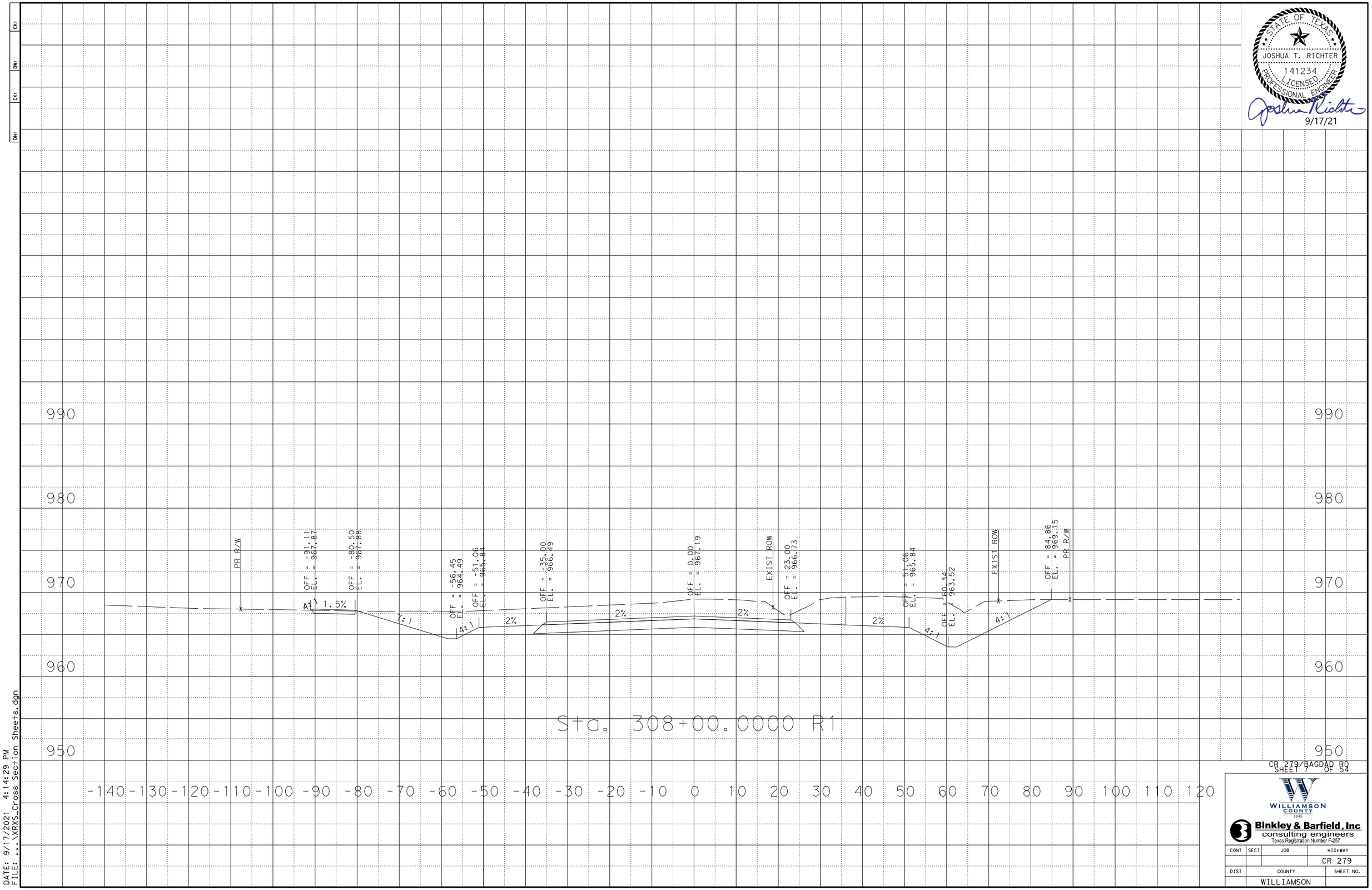

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 7 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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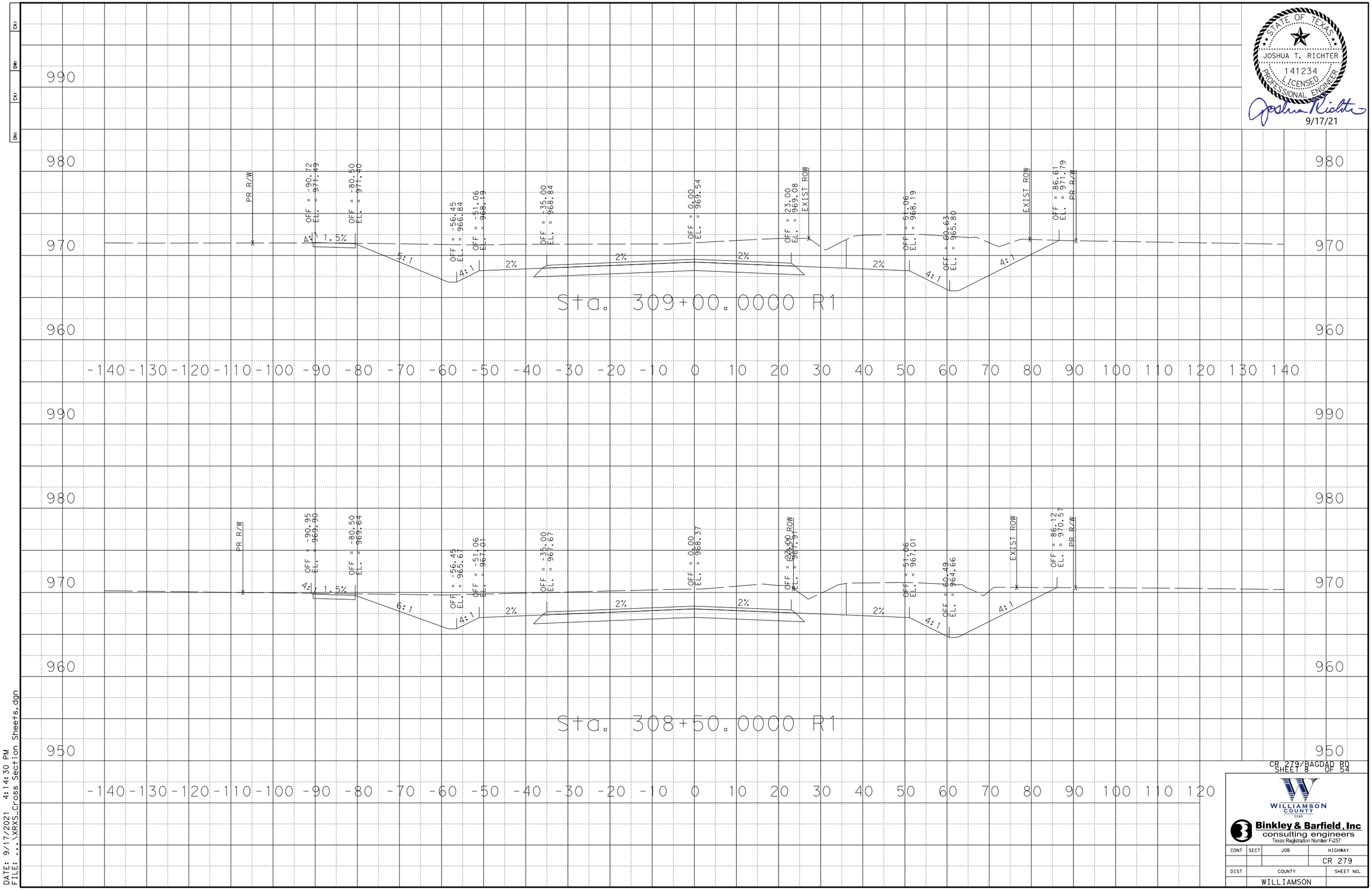

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 8 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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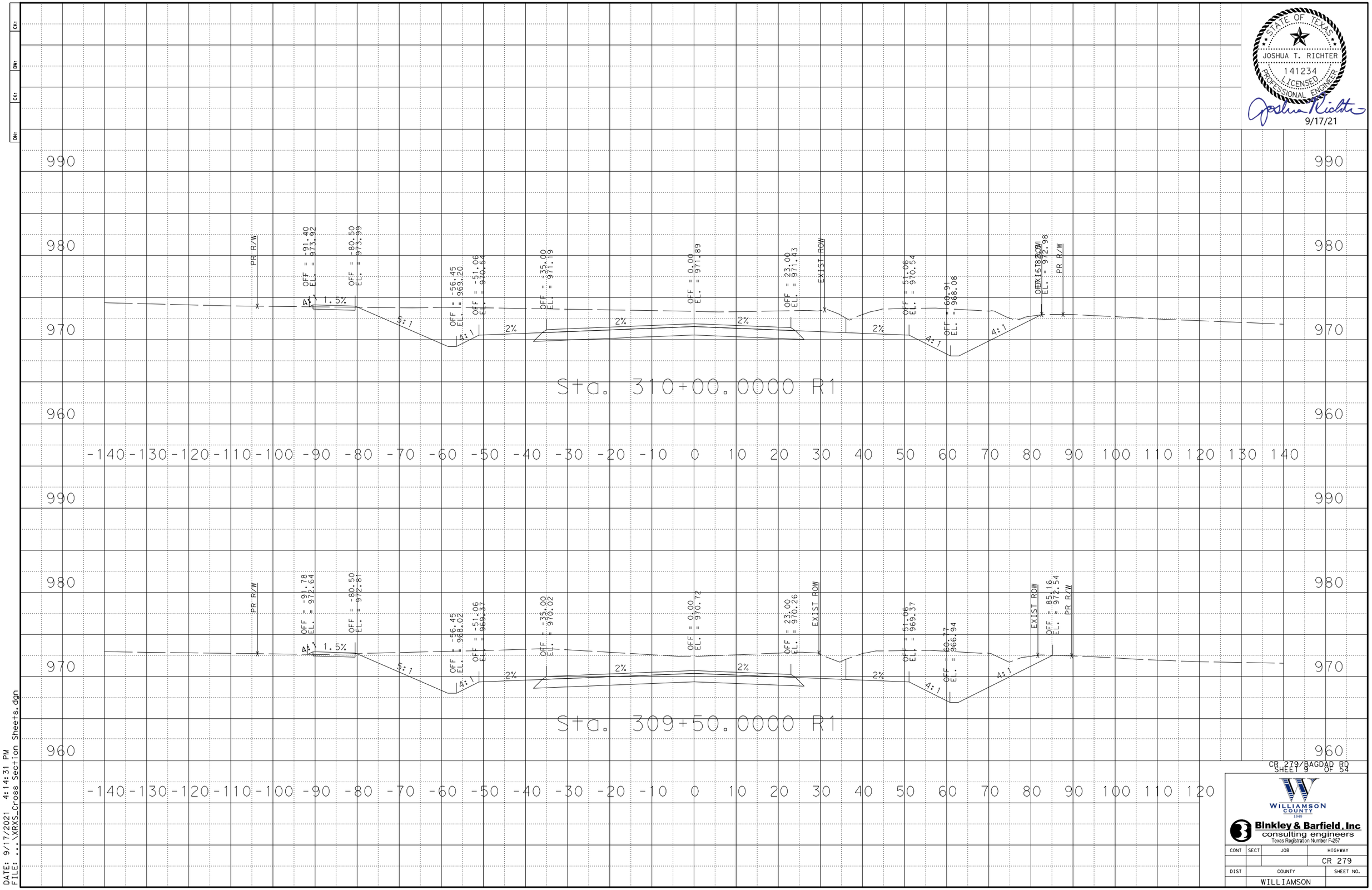

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 9 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
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DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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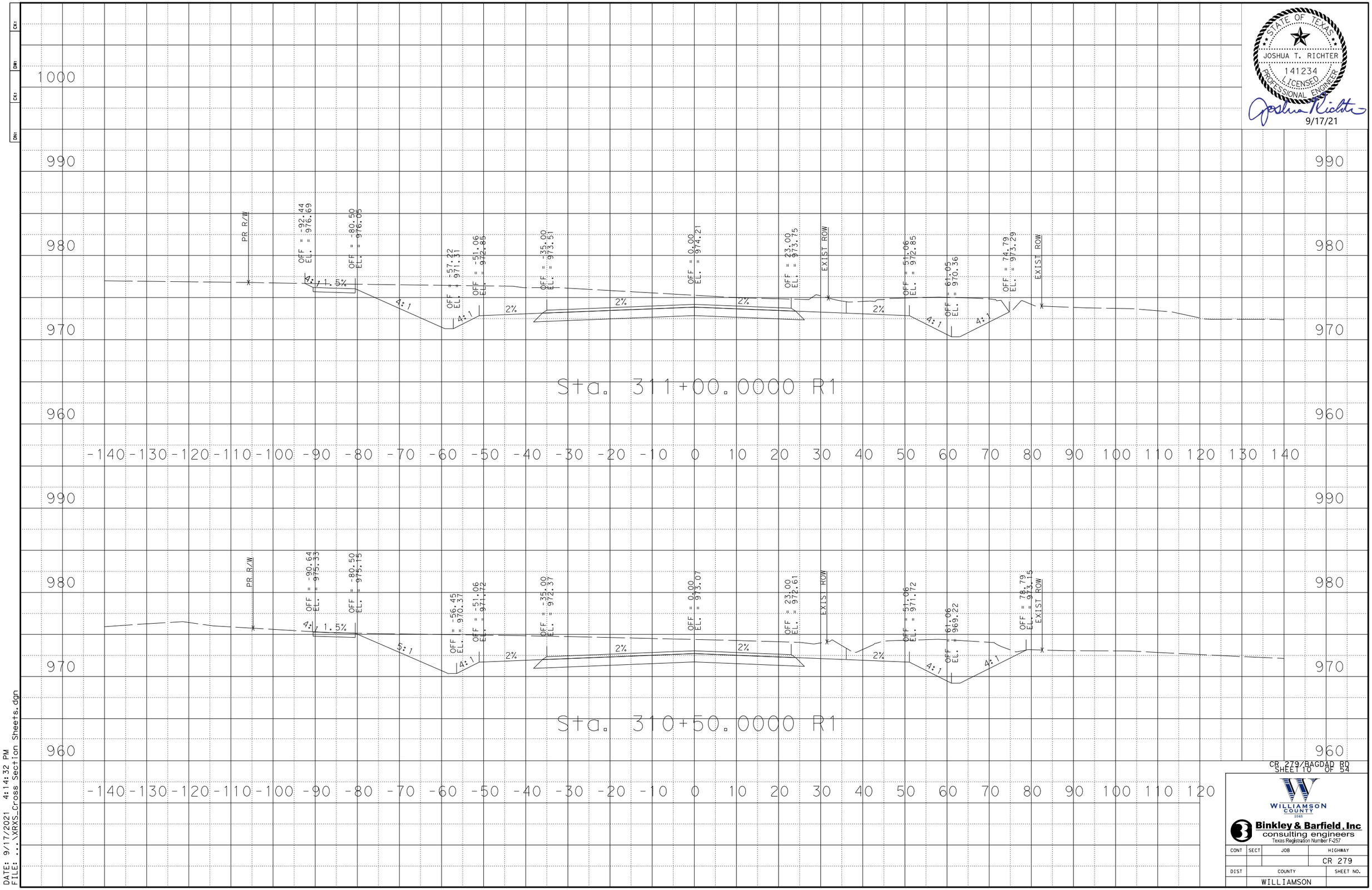

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 10 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
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DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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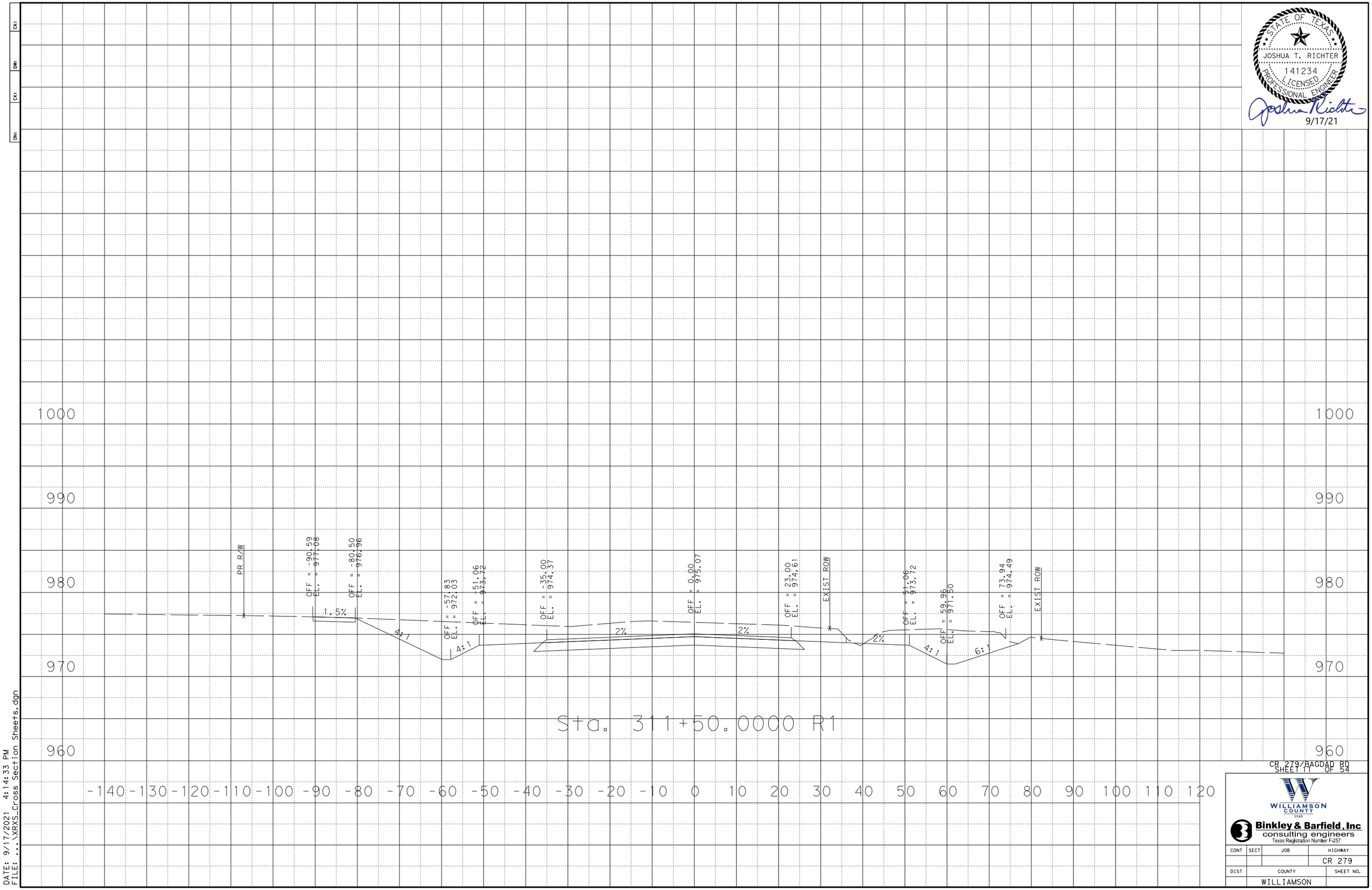

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 11 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
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DIST		COUNTY	SHEET NO.
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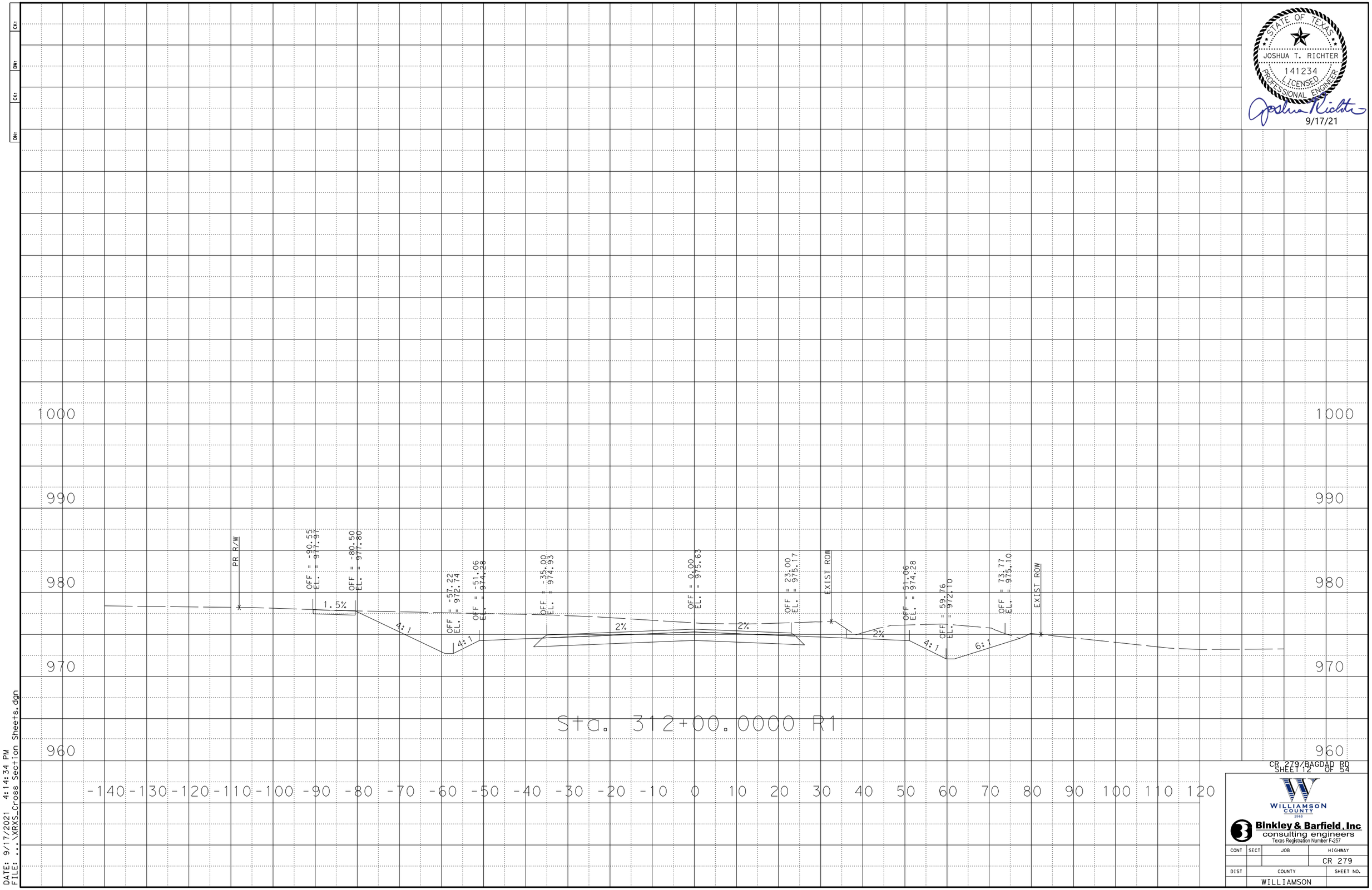

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 12 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
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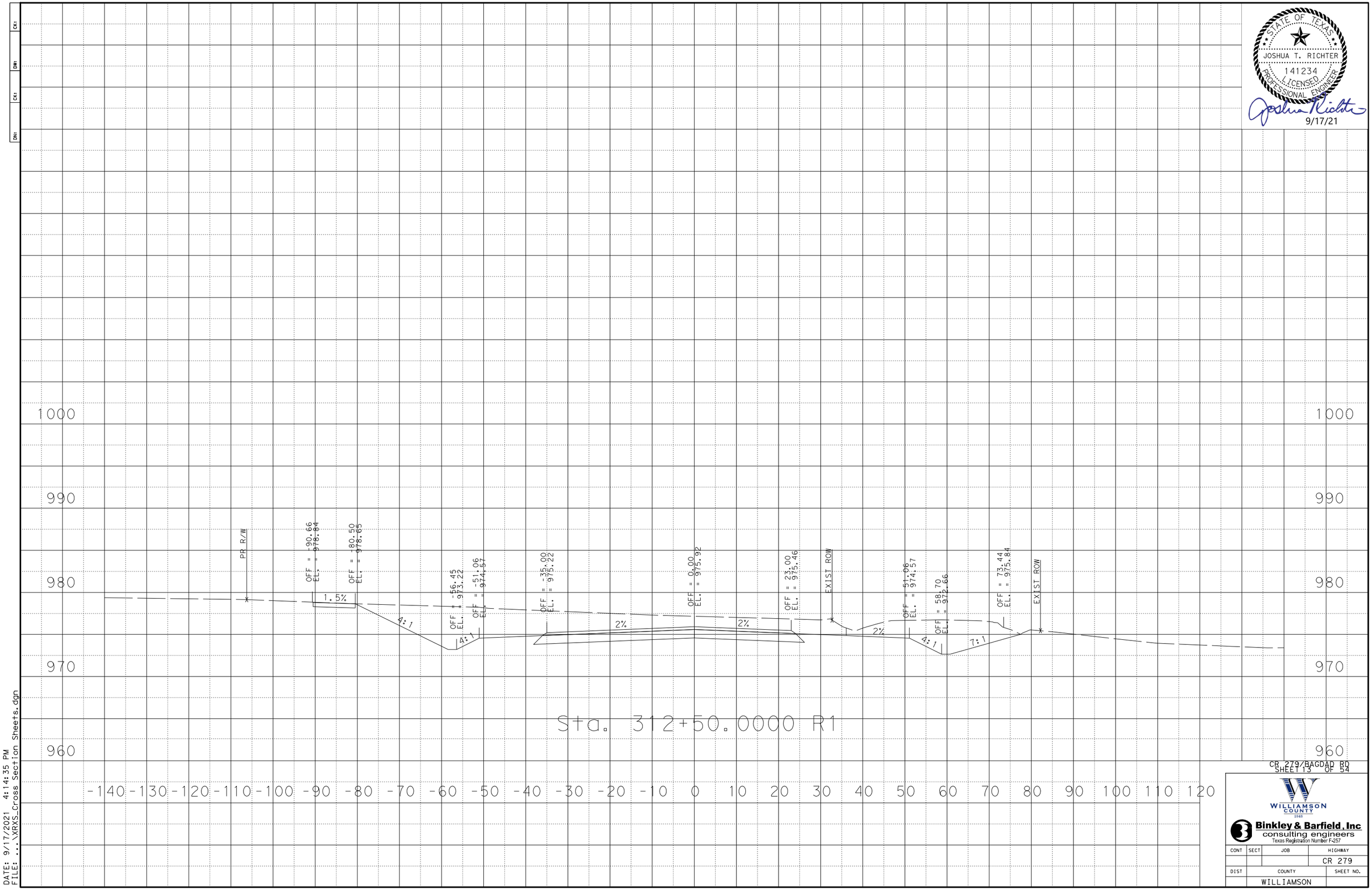

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 13 OF 54

WILLIAMSON COUNTY 1848

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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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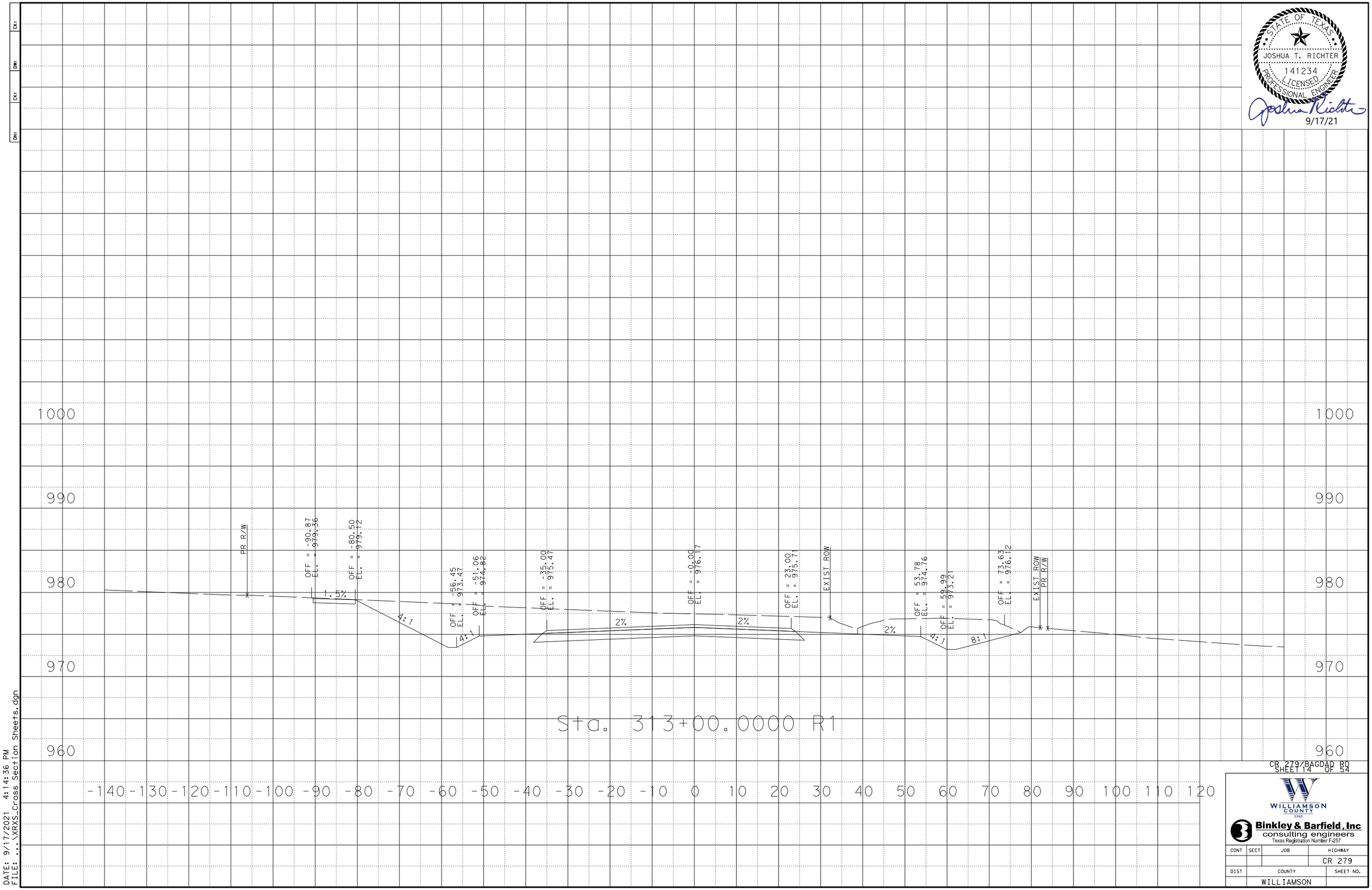

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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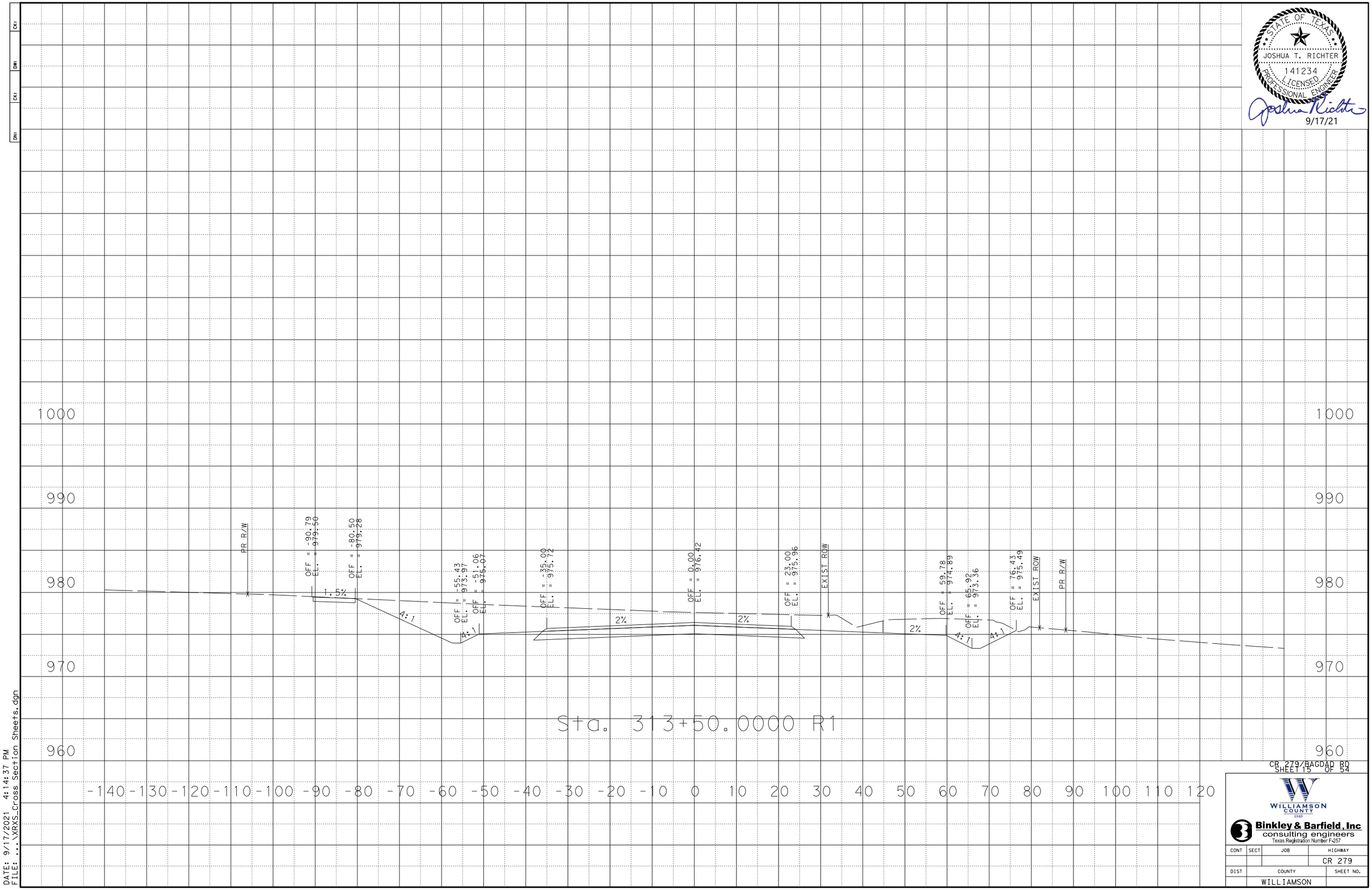

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 15 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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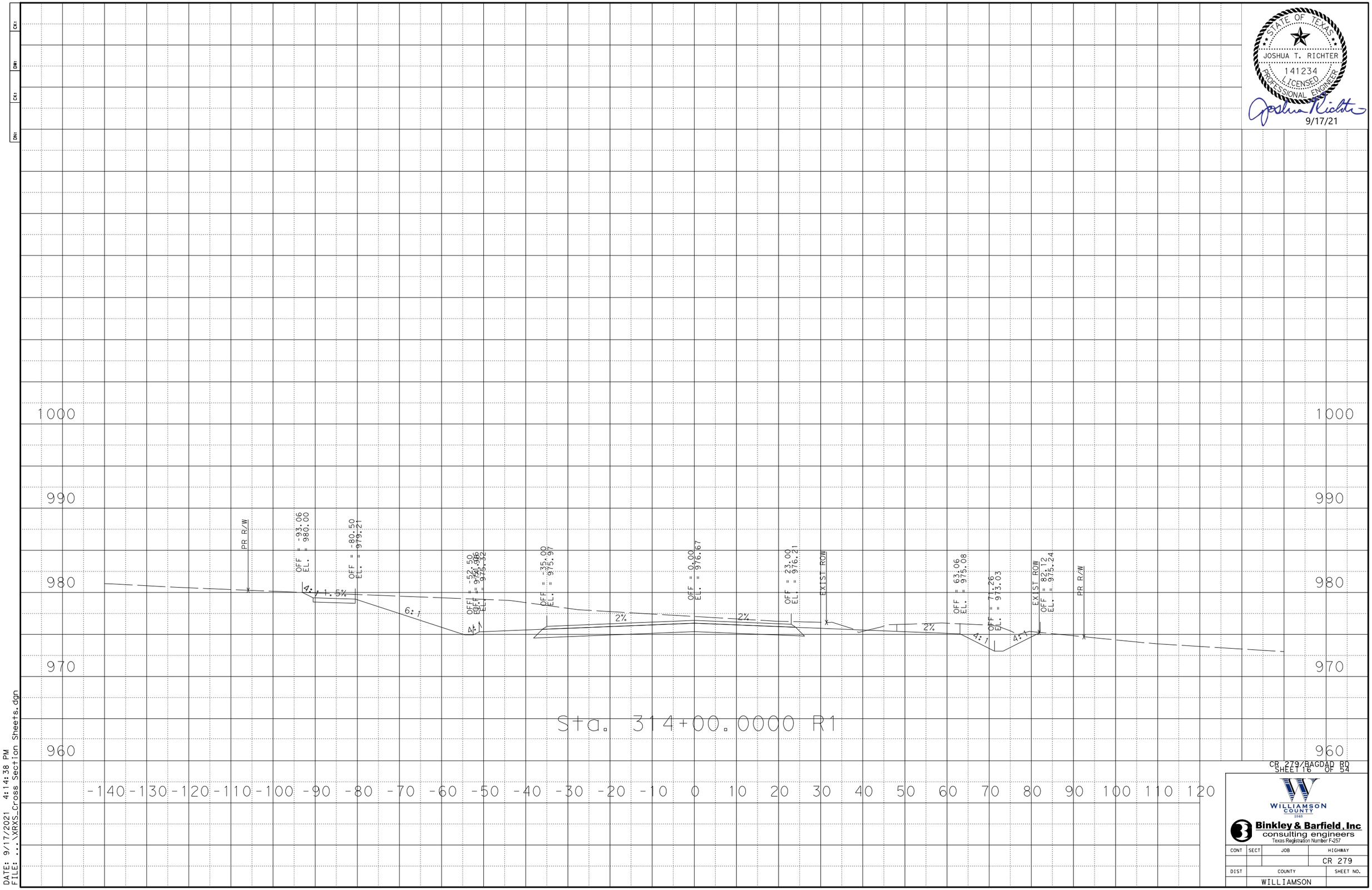

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 16 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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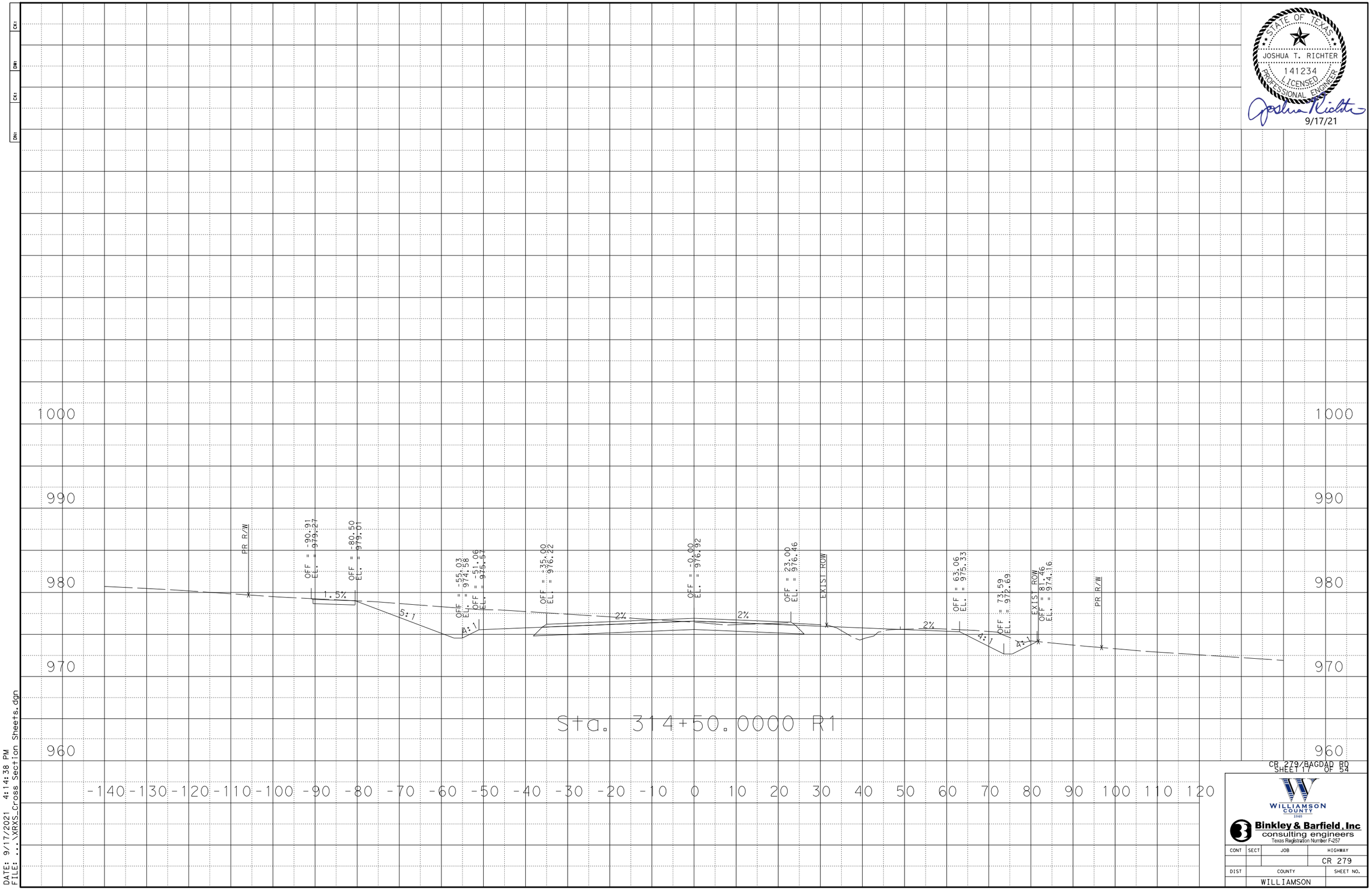

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 17 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 18 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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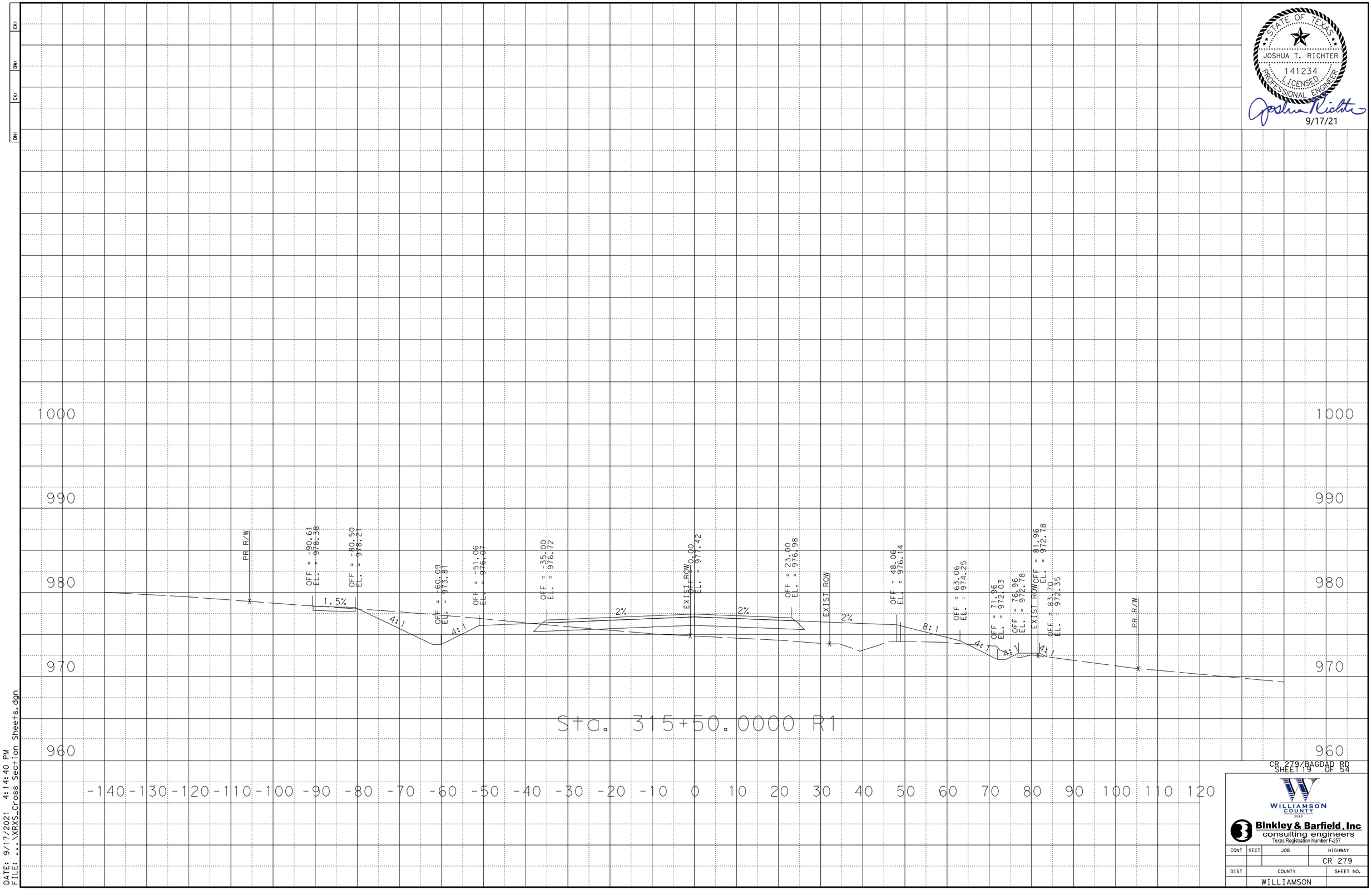

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 19 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

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DIST		COUNTY	SHEET NO.
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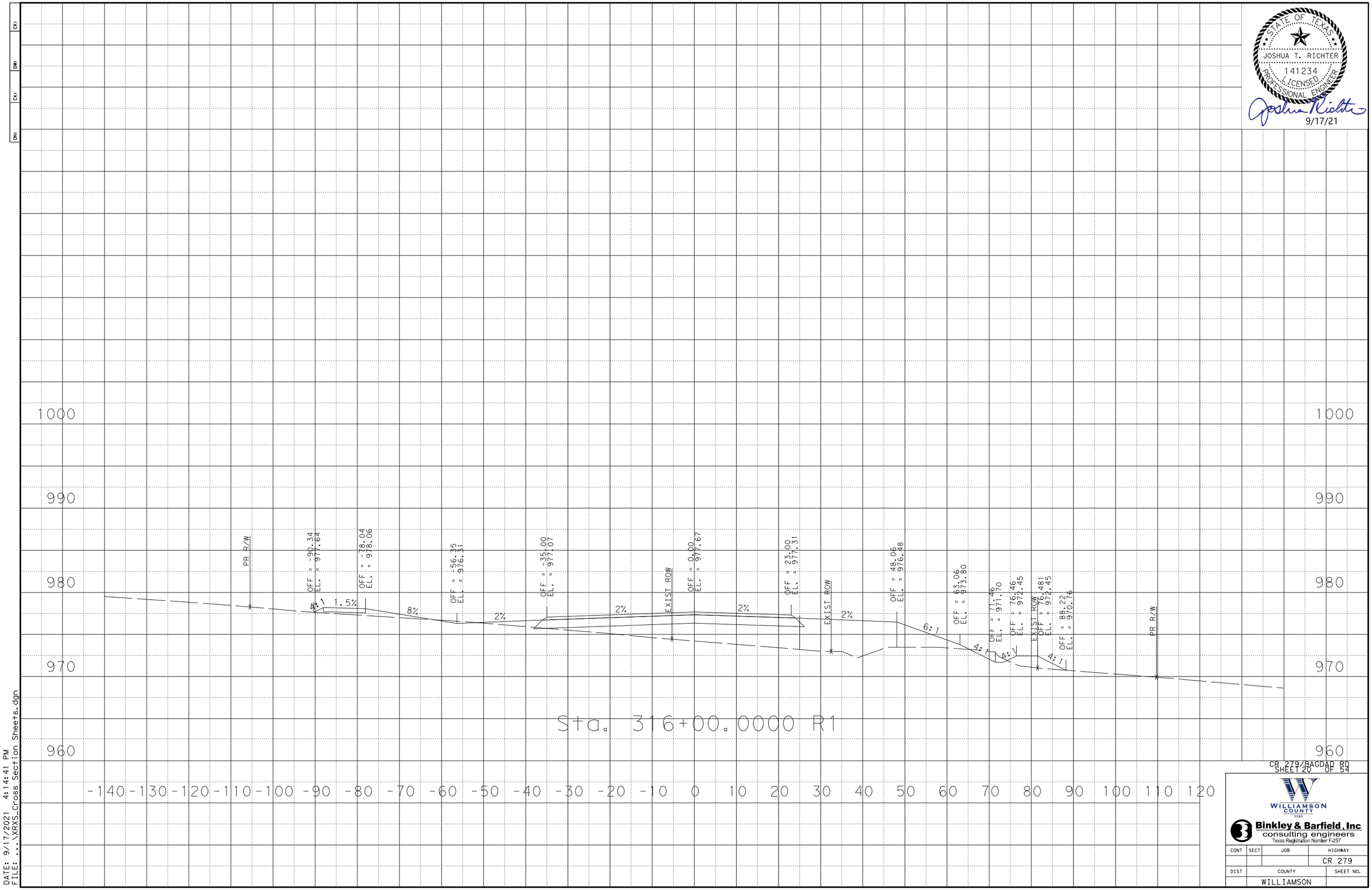

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
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DIST		COUNTY	SHEET NO.
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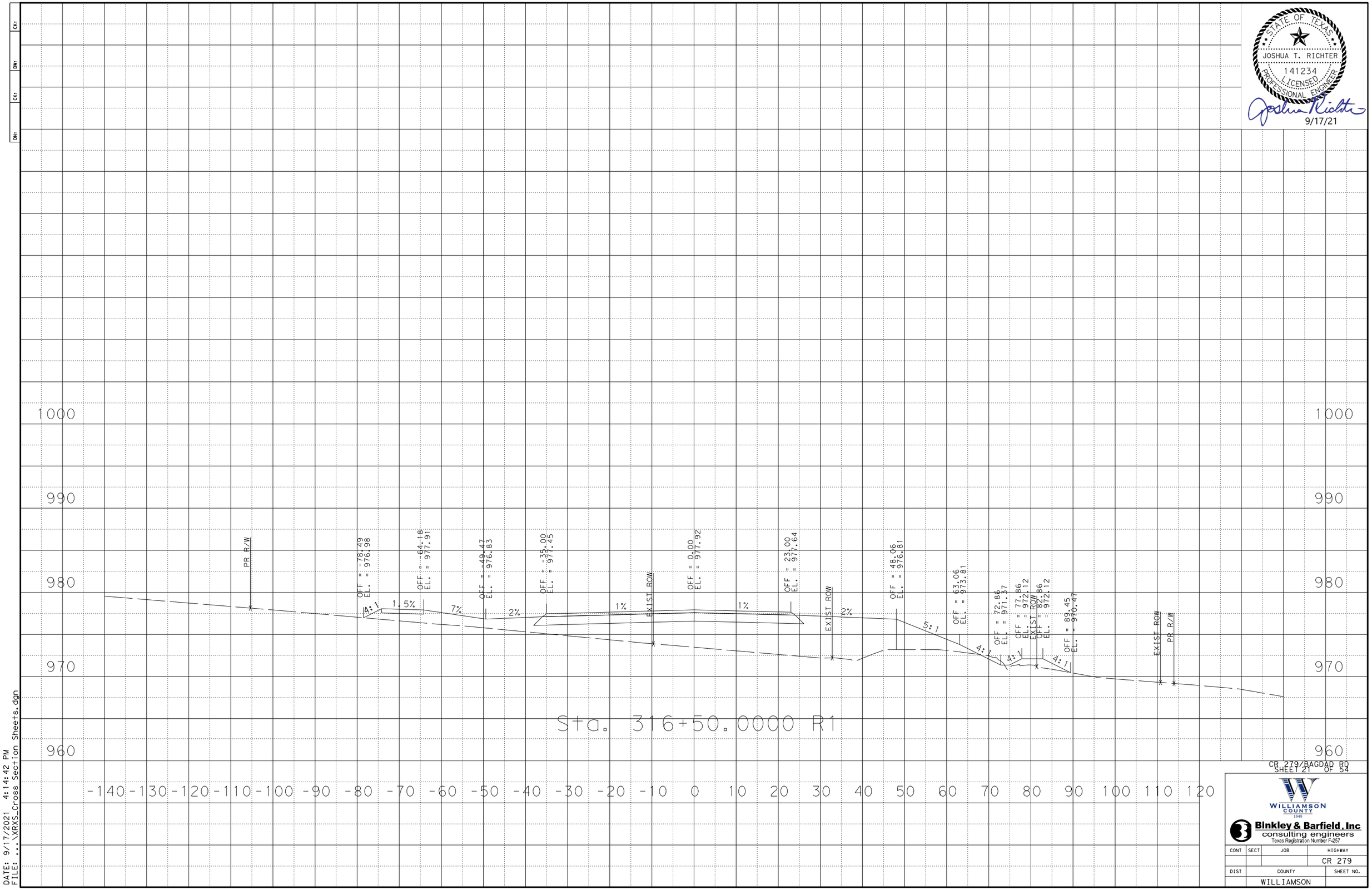

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 21 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
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DIST		COUNTY	SHEET NO.
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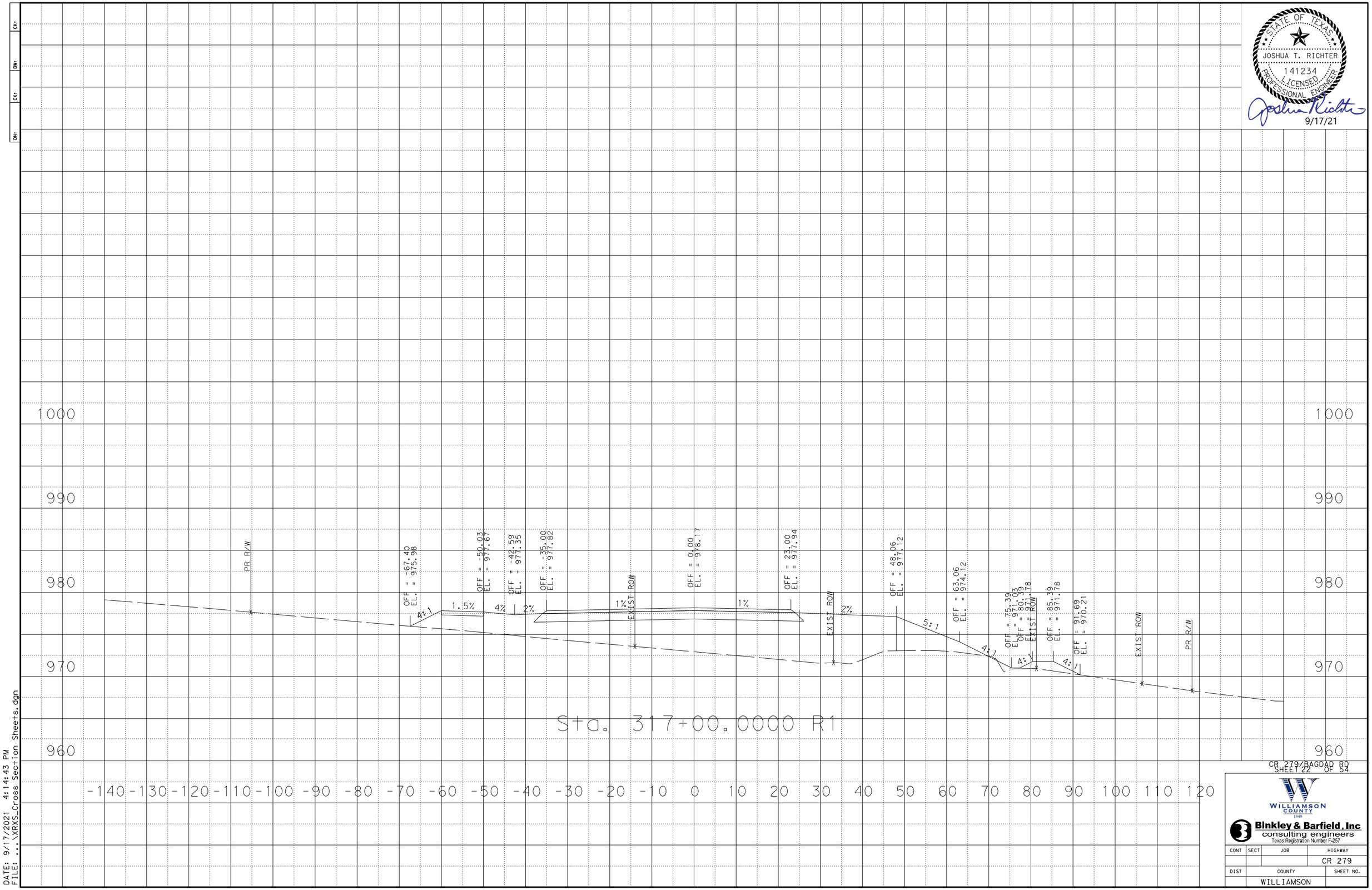
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STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21
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WILLIAMSON COUNTY 1848
Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257
CONT
SECT
JOB
HIGHWAY
CR 279
DIST
COUNTY
SHEET NO.
WILLIAMSON
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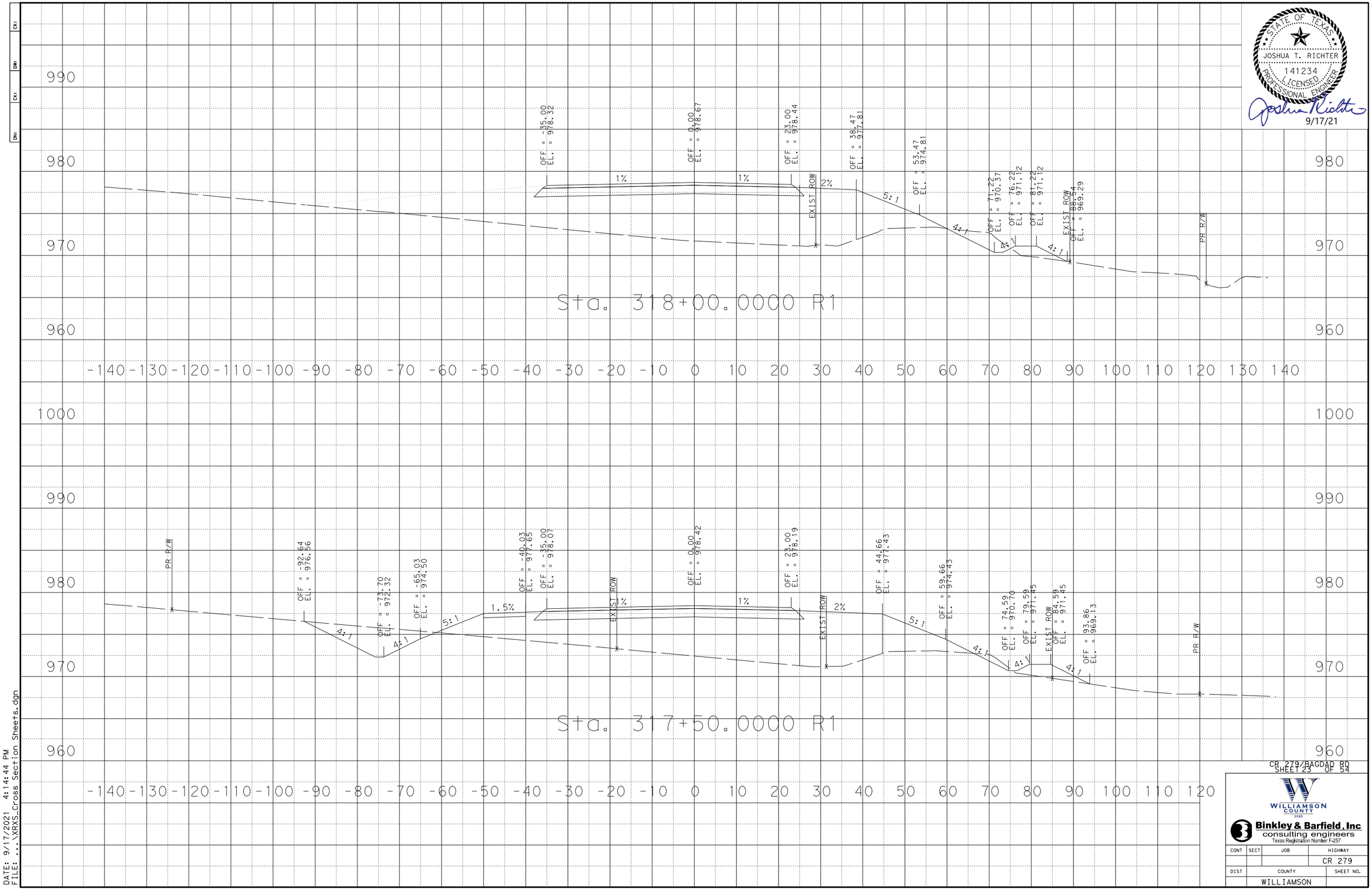

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 23 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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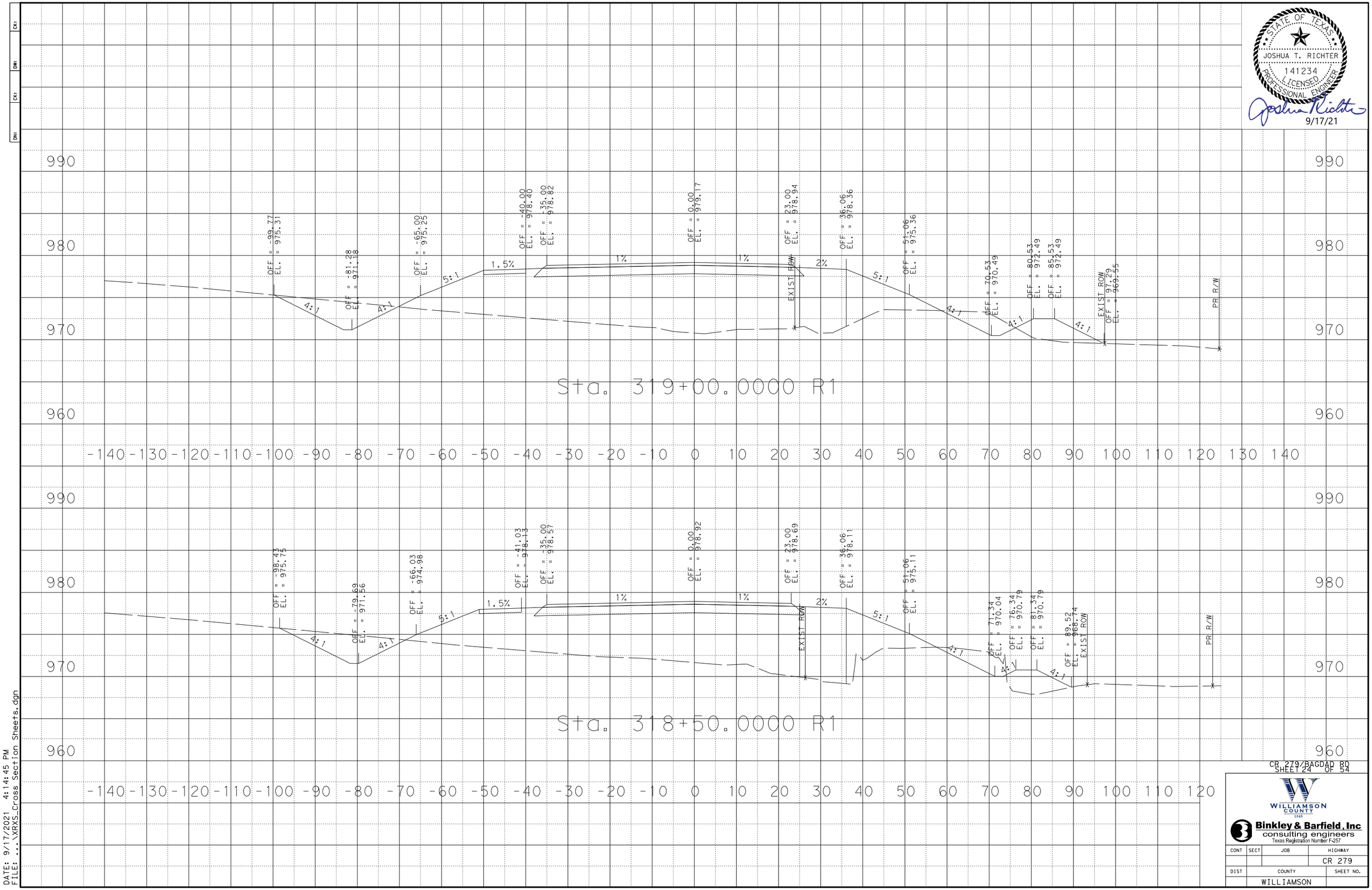

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
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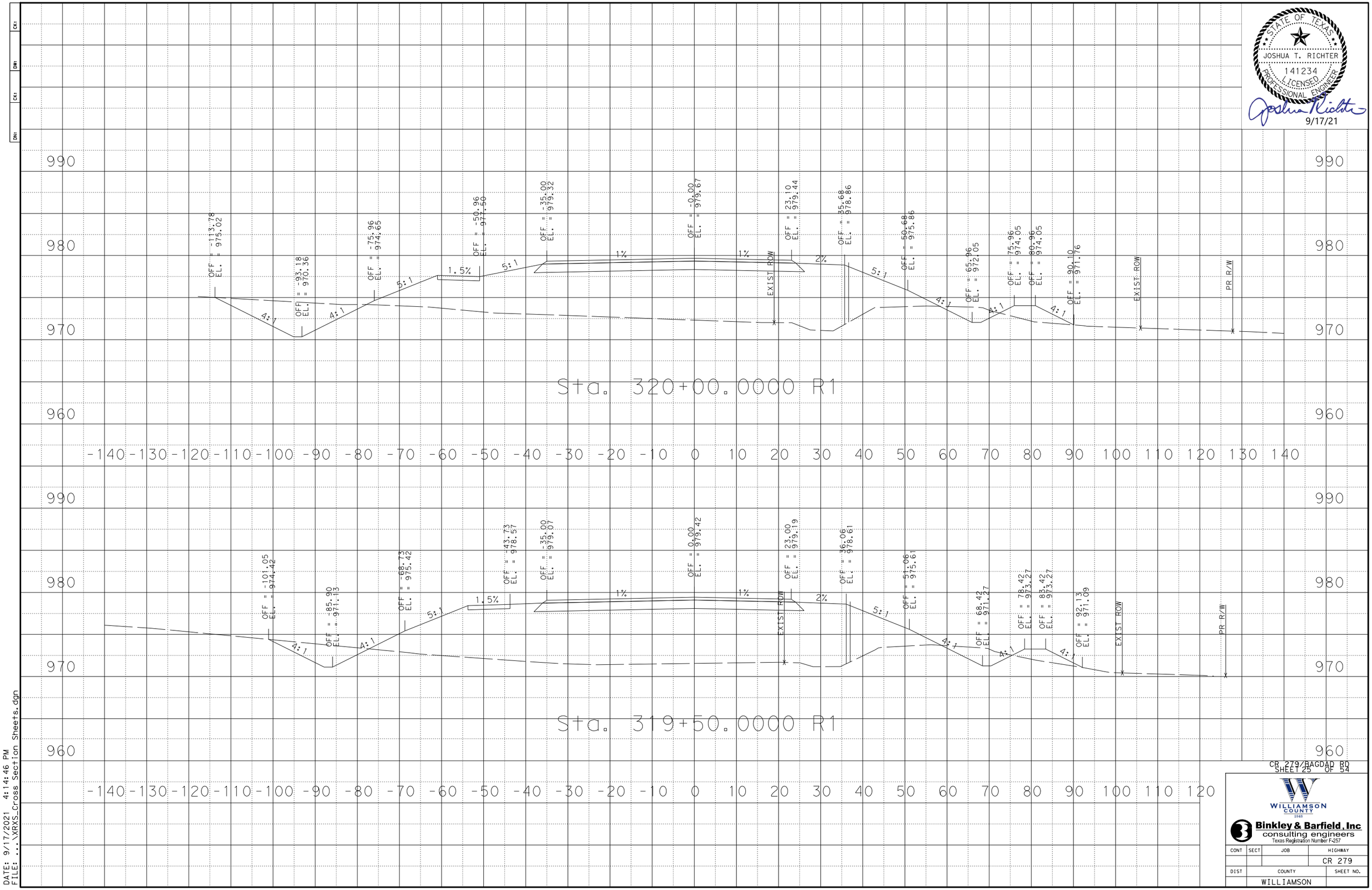

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

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SHEET 25 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
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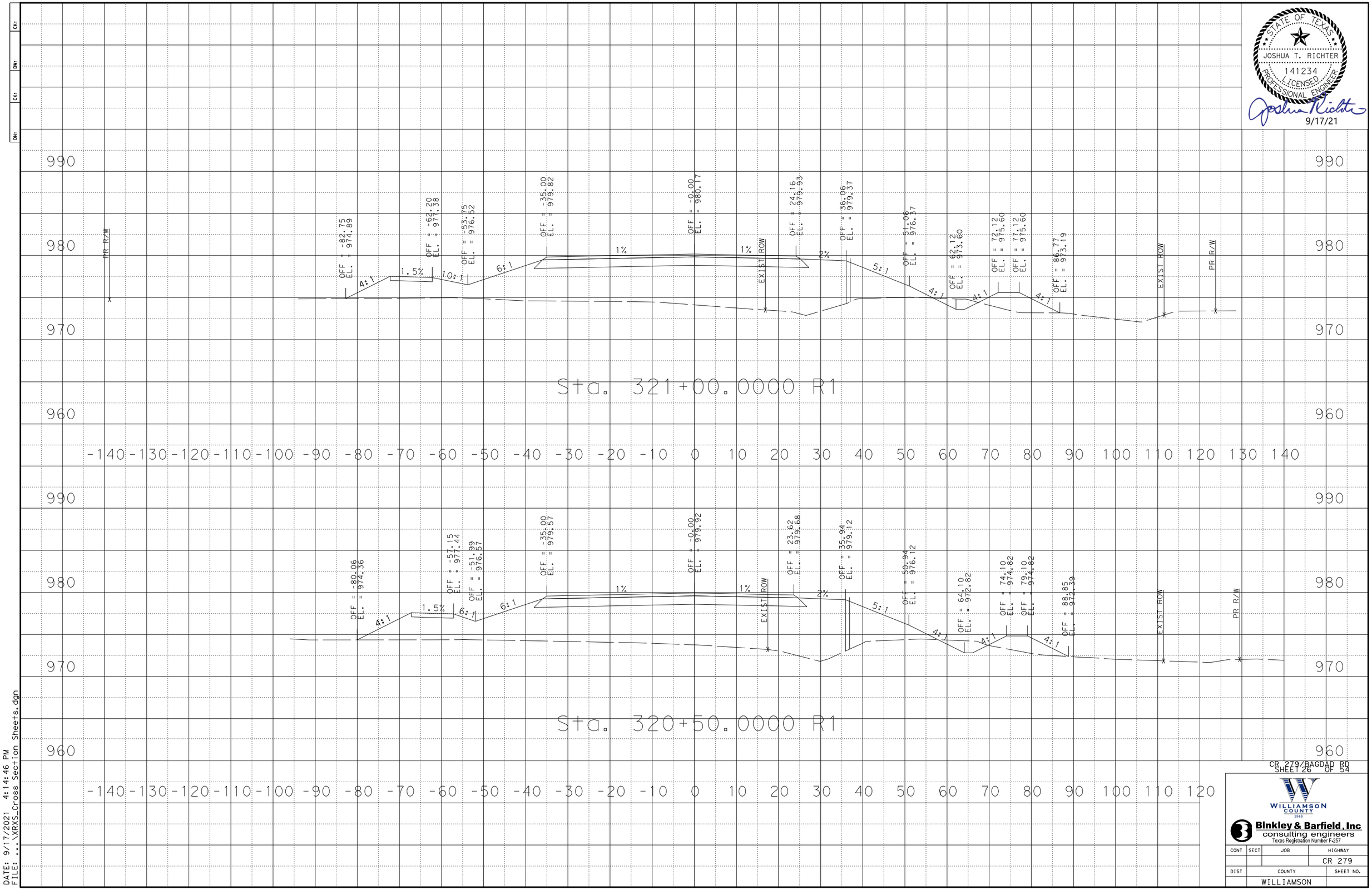

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
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Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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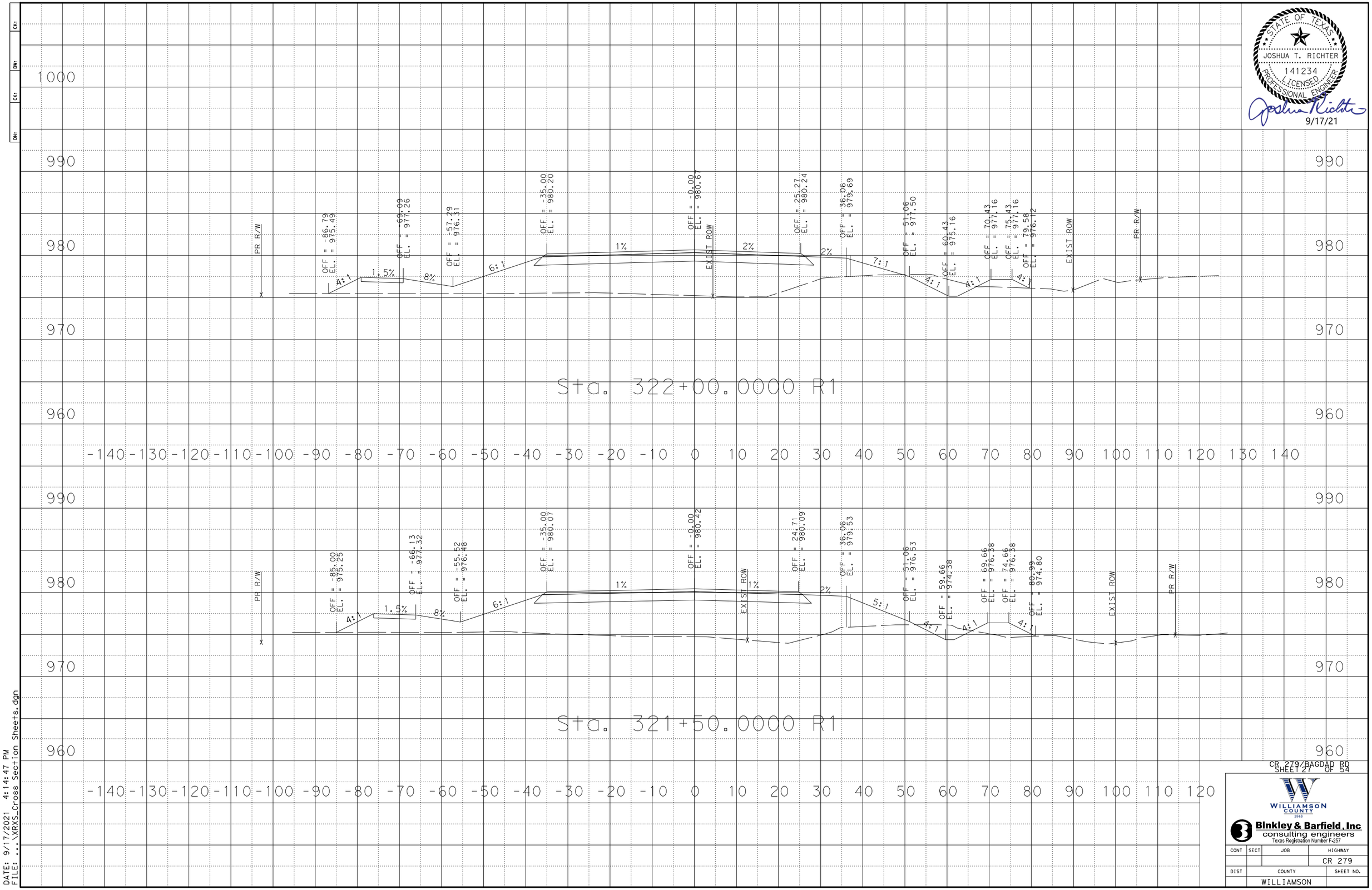

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 27 OF 54

WILLIAMSON COUNTY 1848

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CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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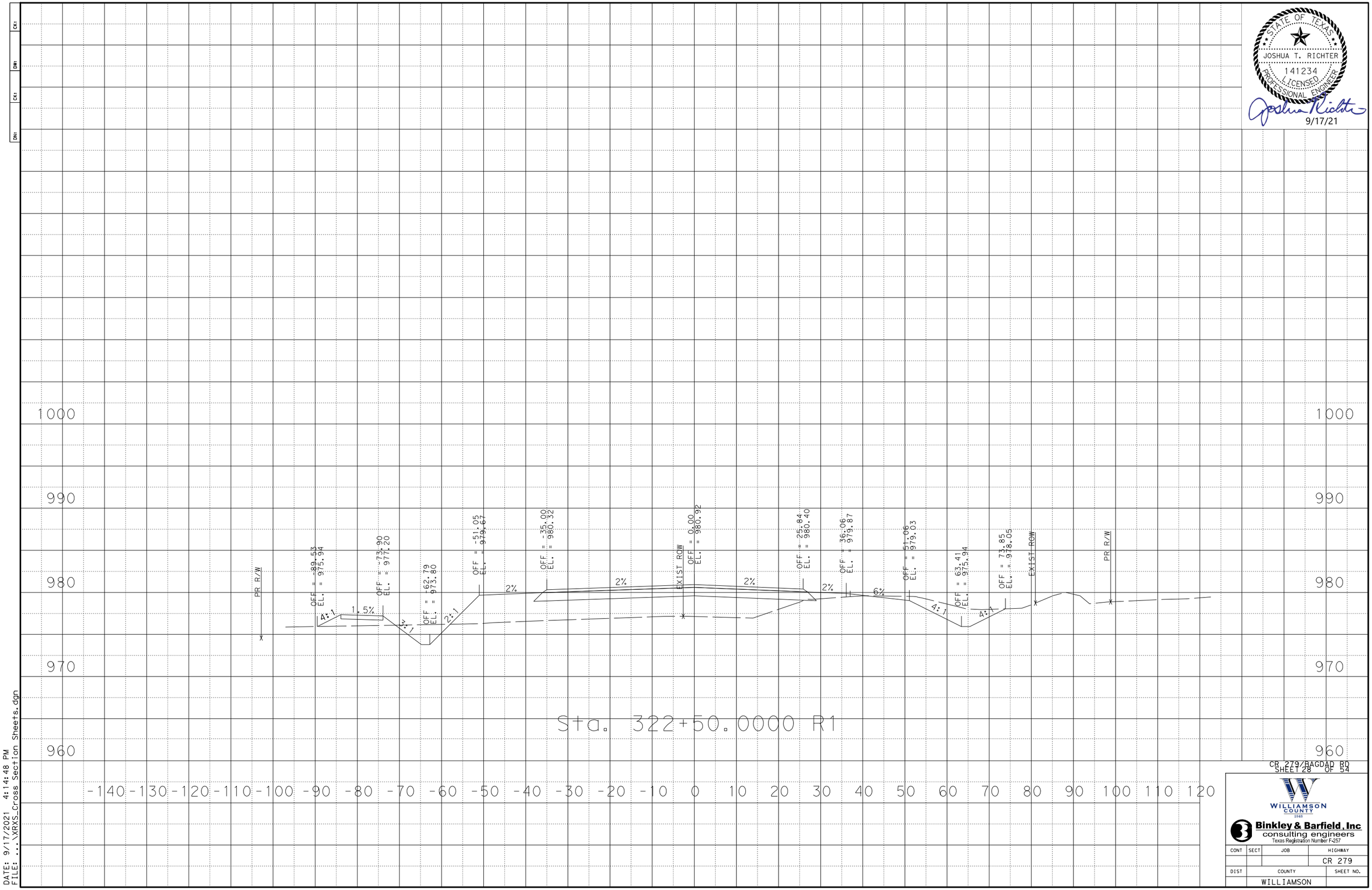

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 28 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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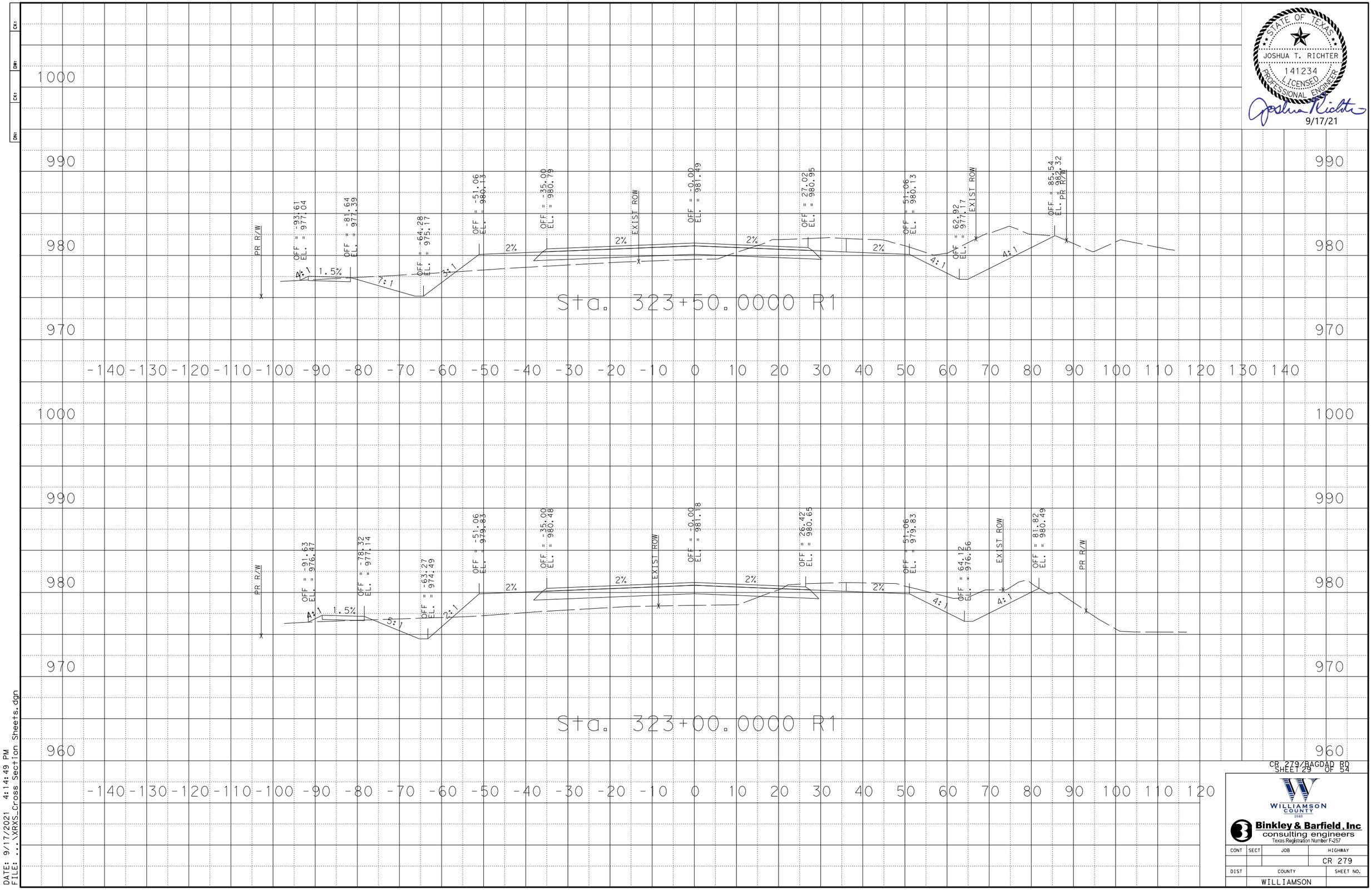

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 29 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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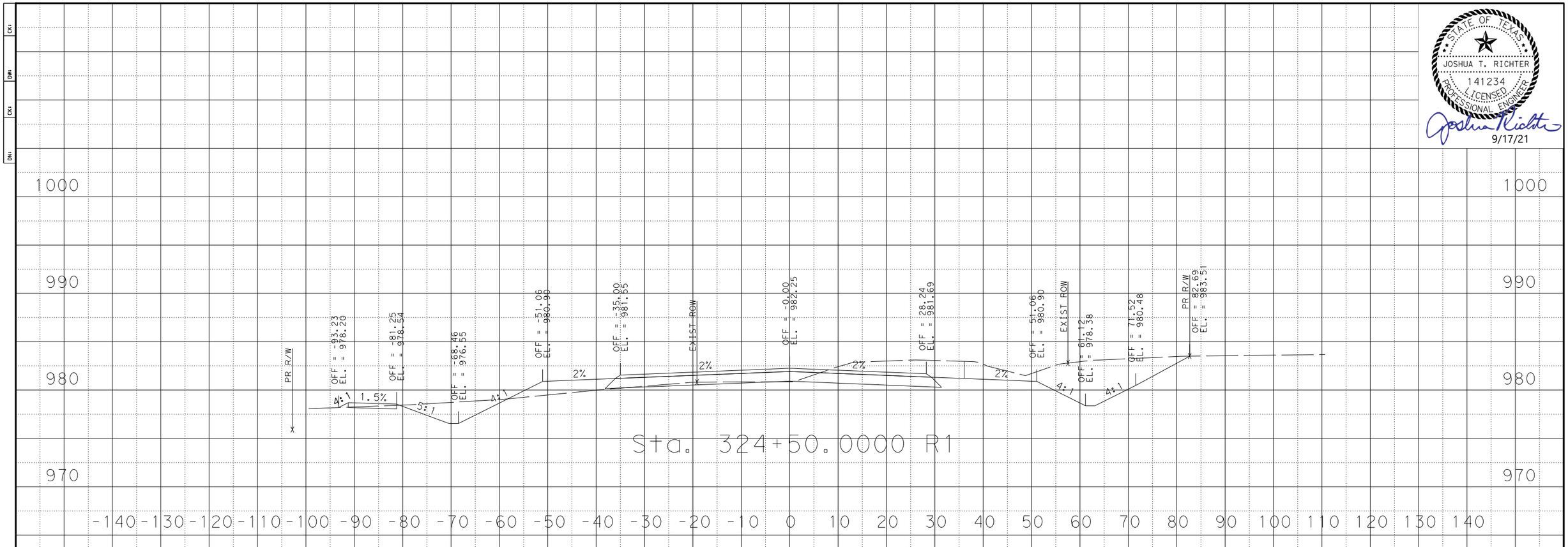

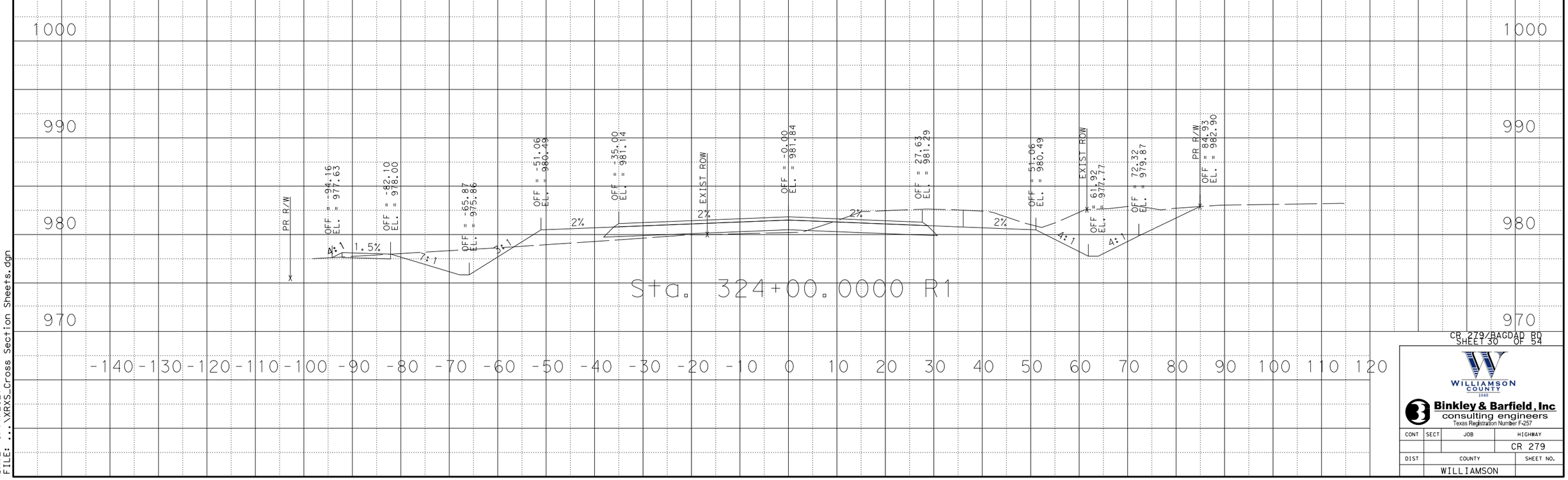

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 30 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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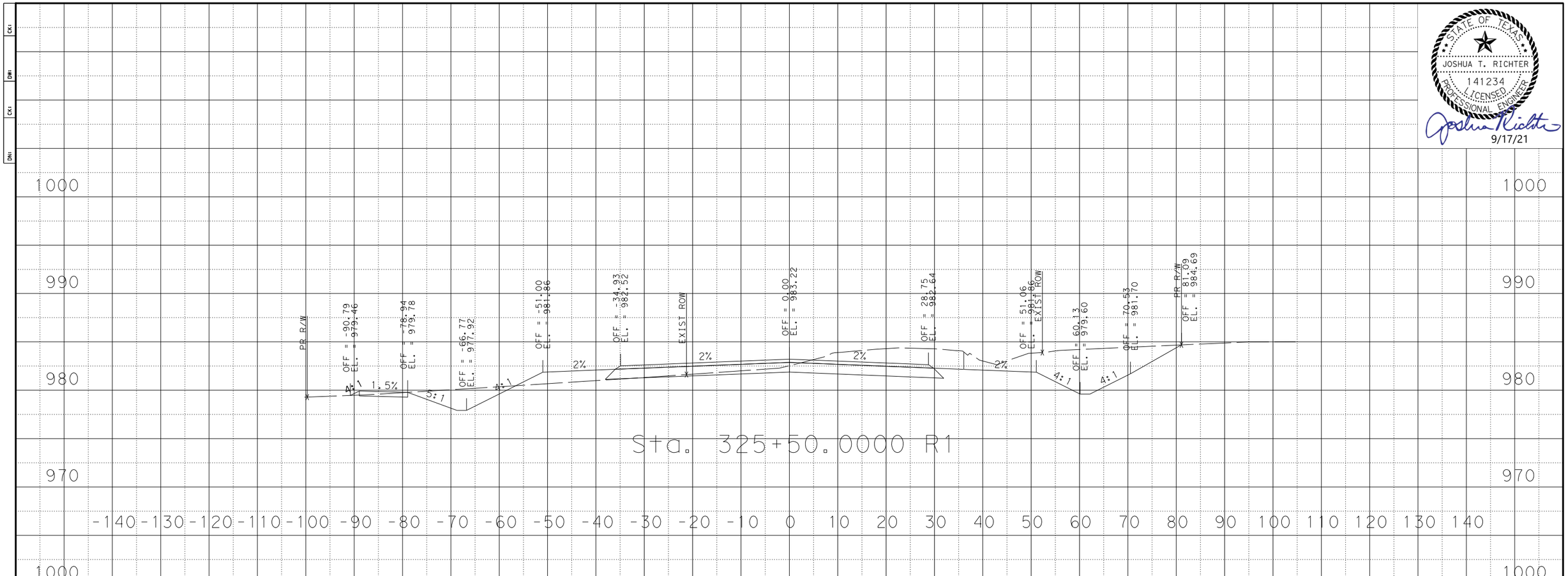

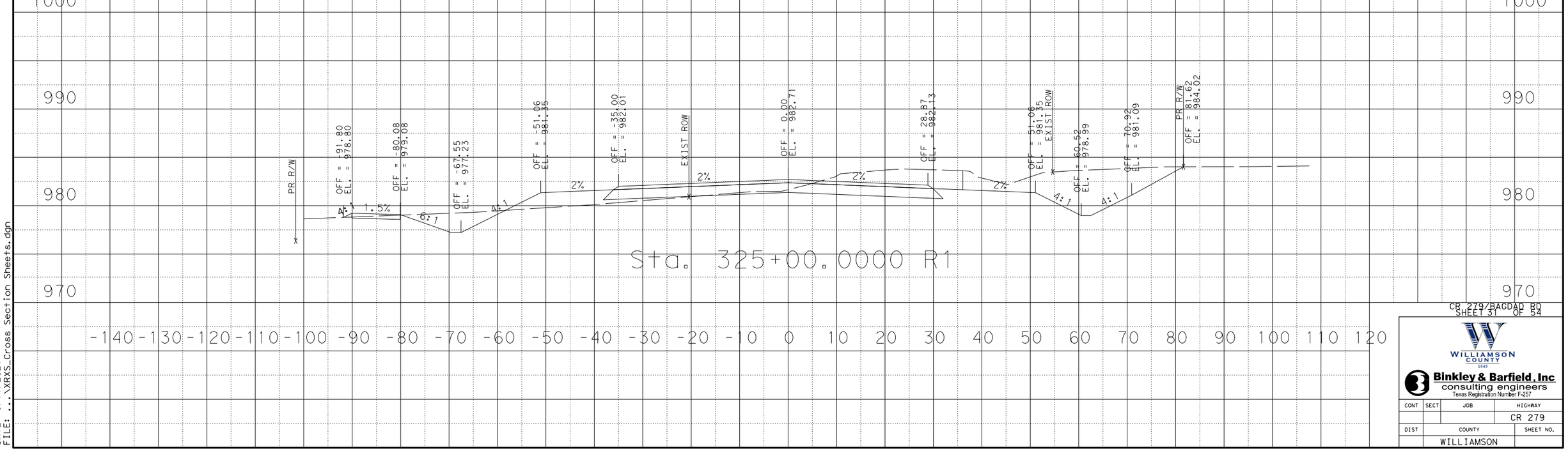

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 31 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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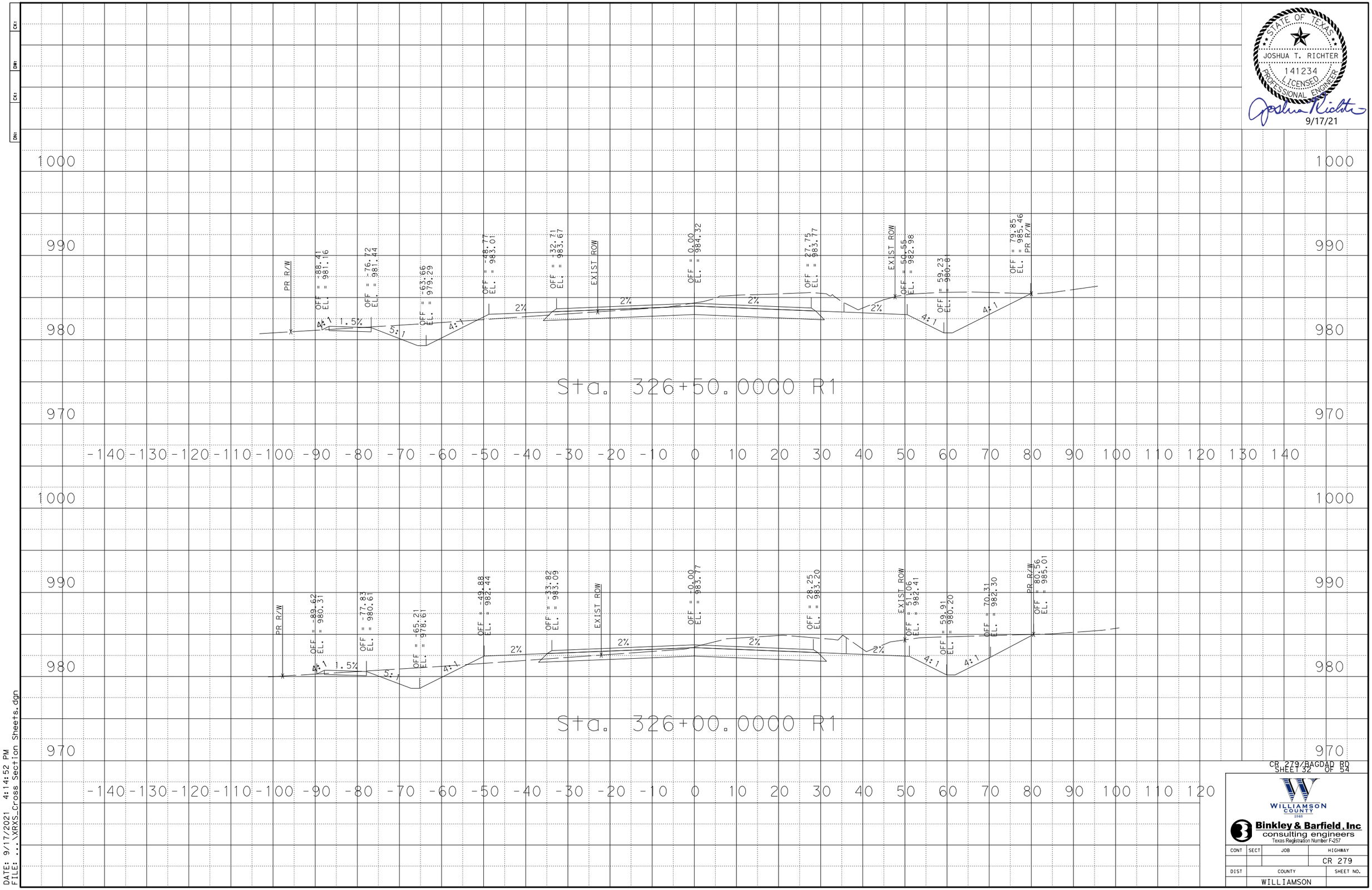

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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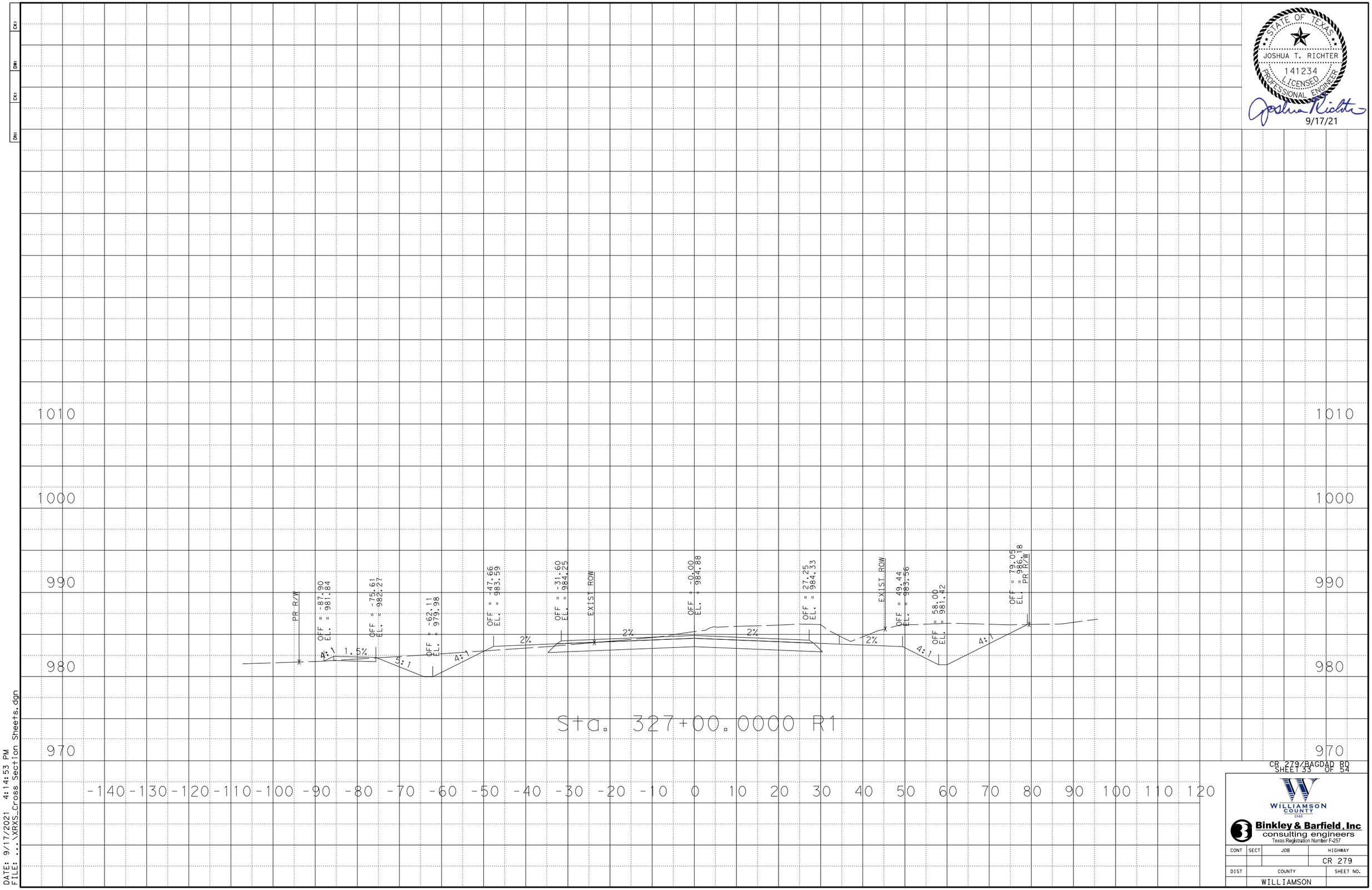

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 33 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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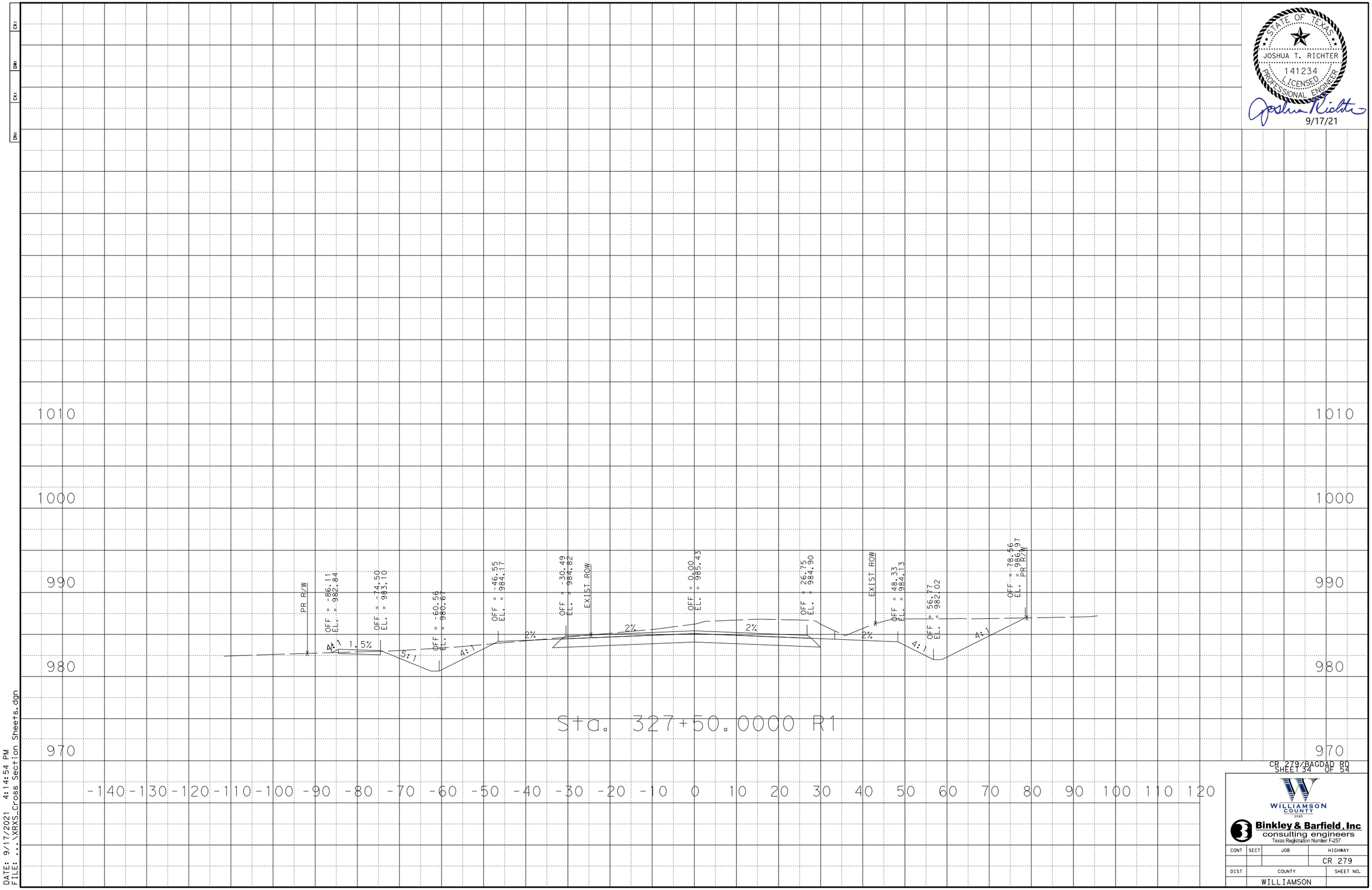

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 34 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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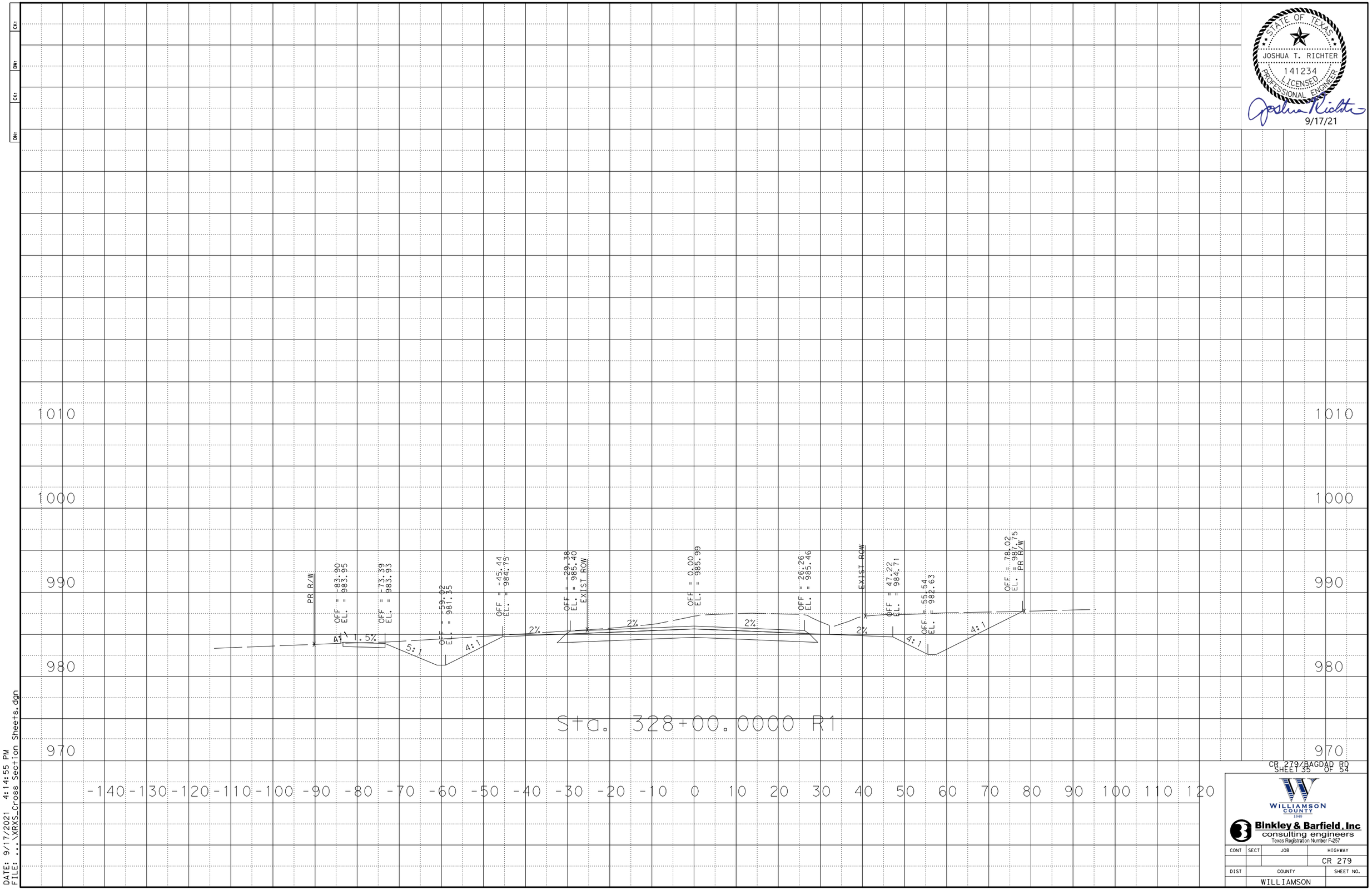

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 35 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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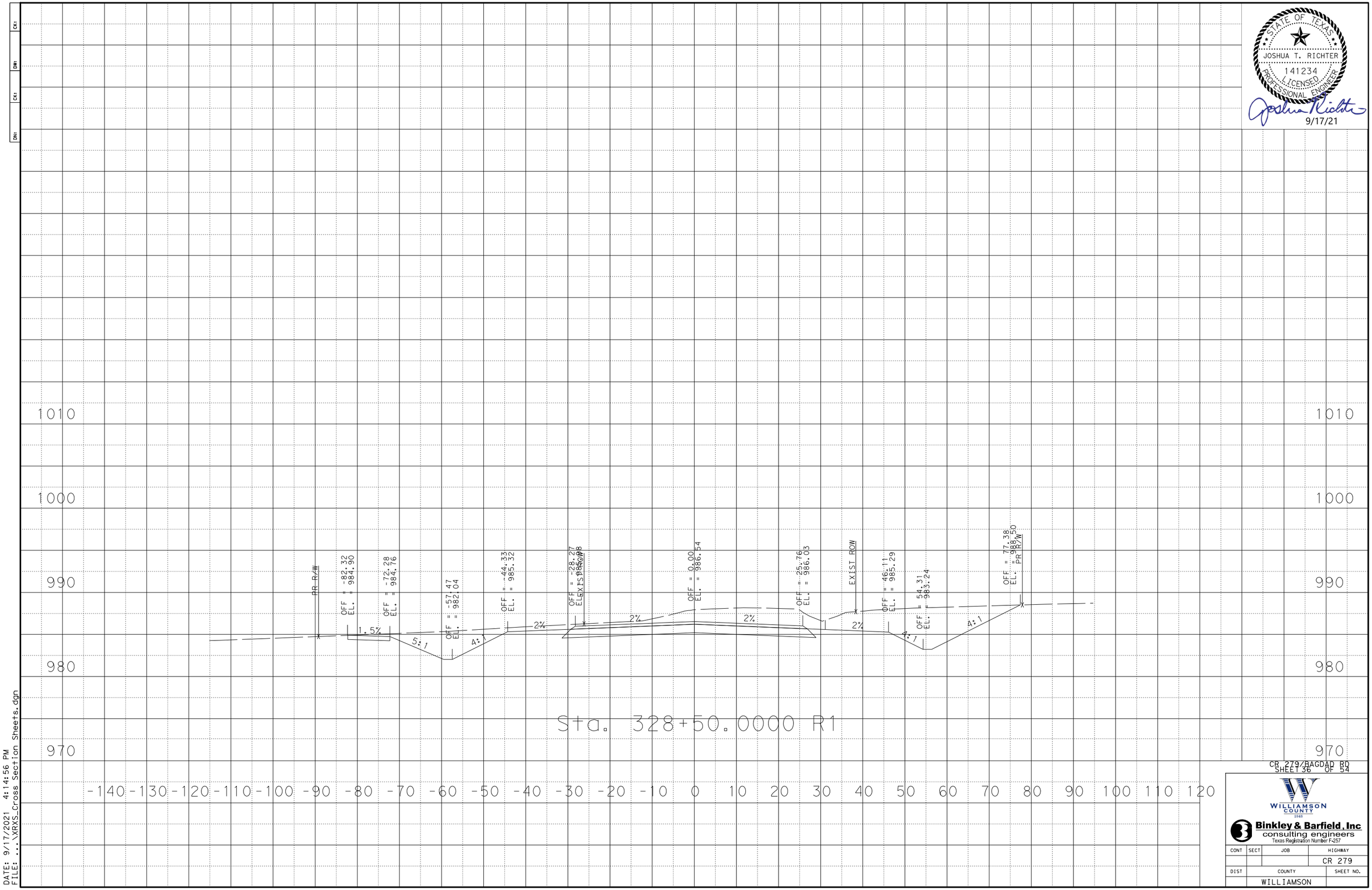

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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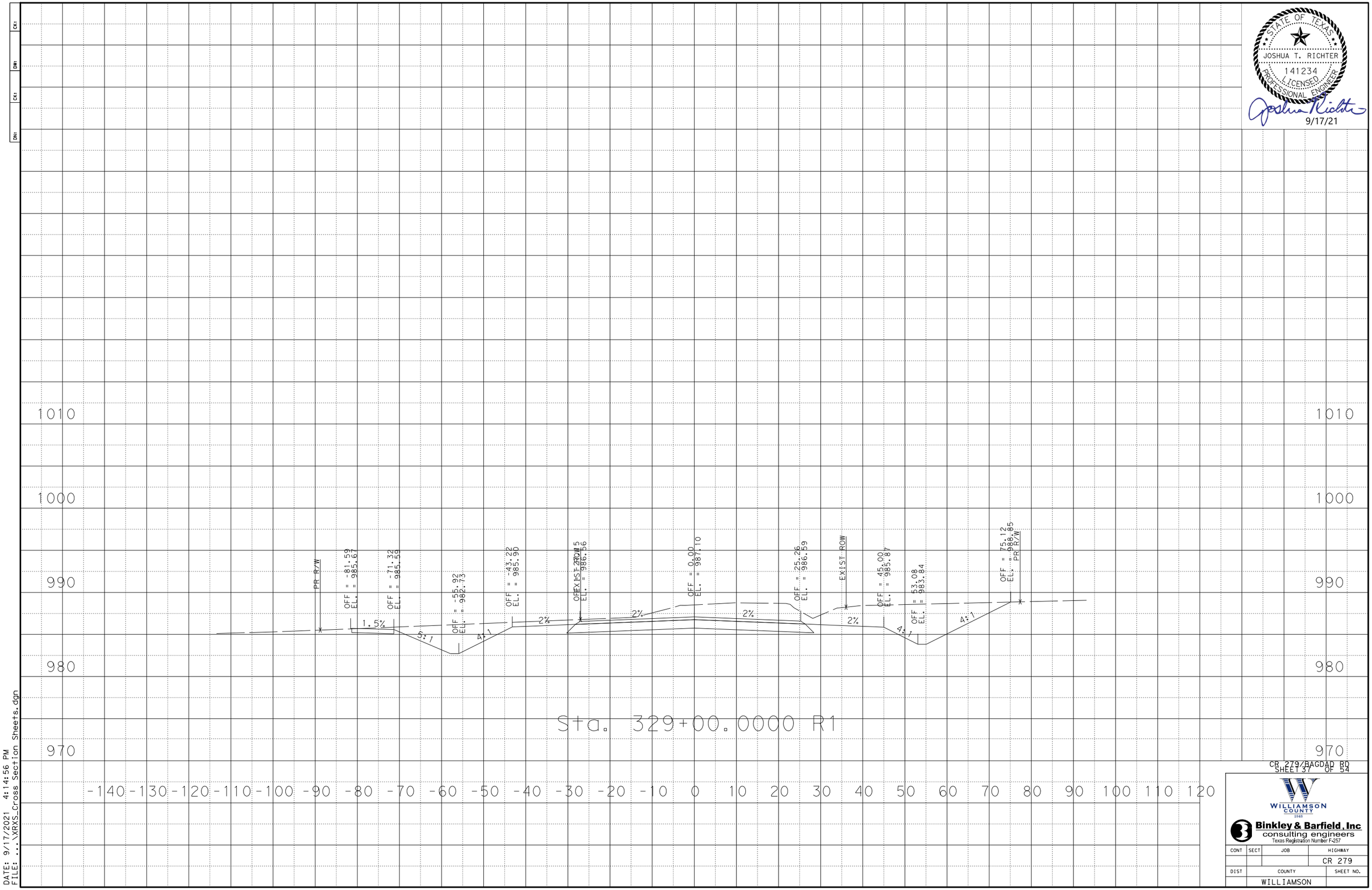

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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9/17/21

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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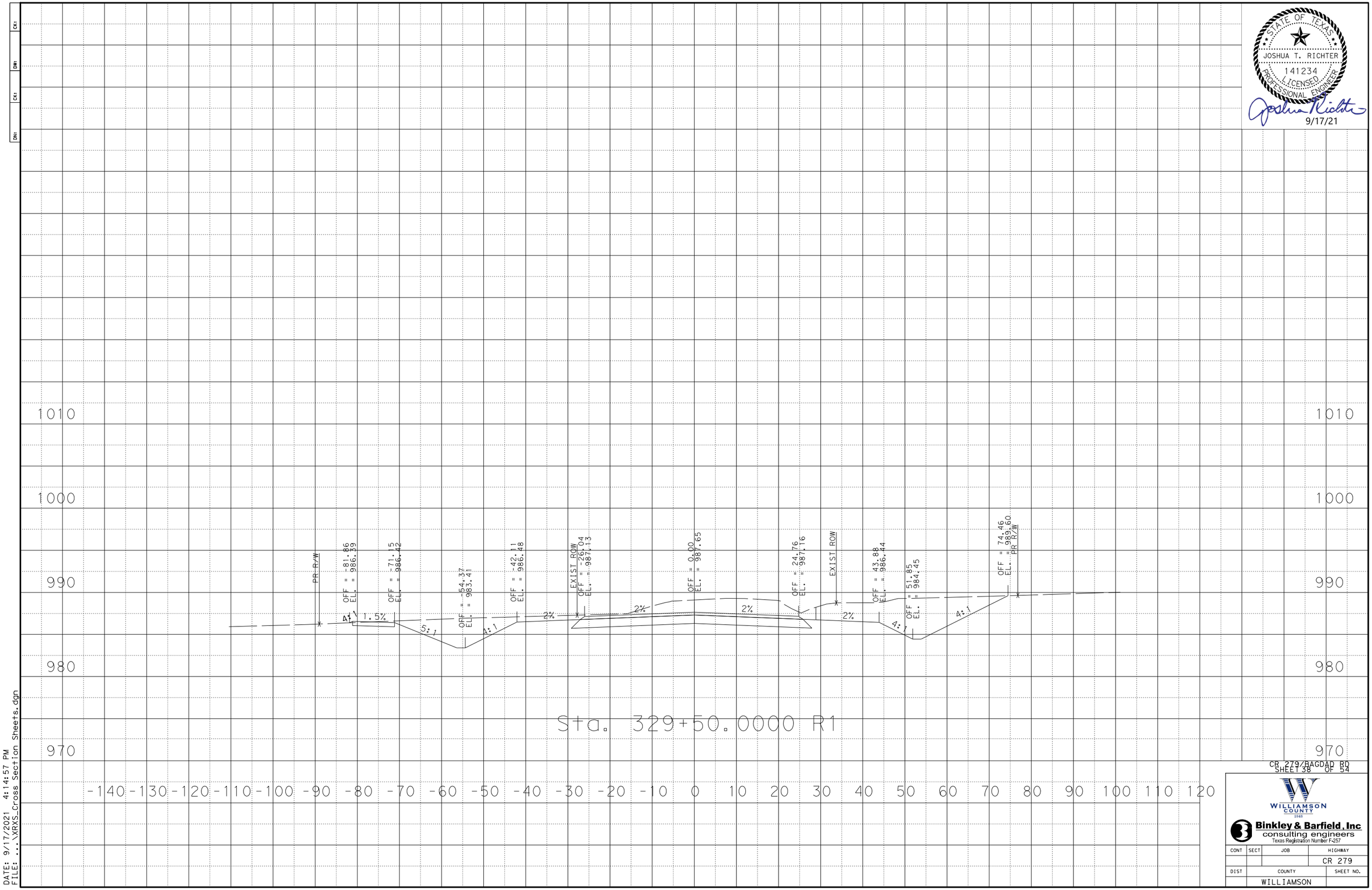

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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PROFESSIONAL ENGINEER
9/17/21

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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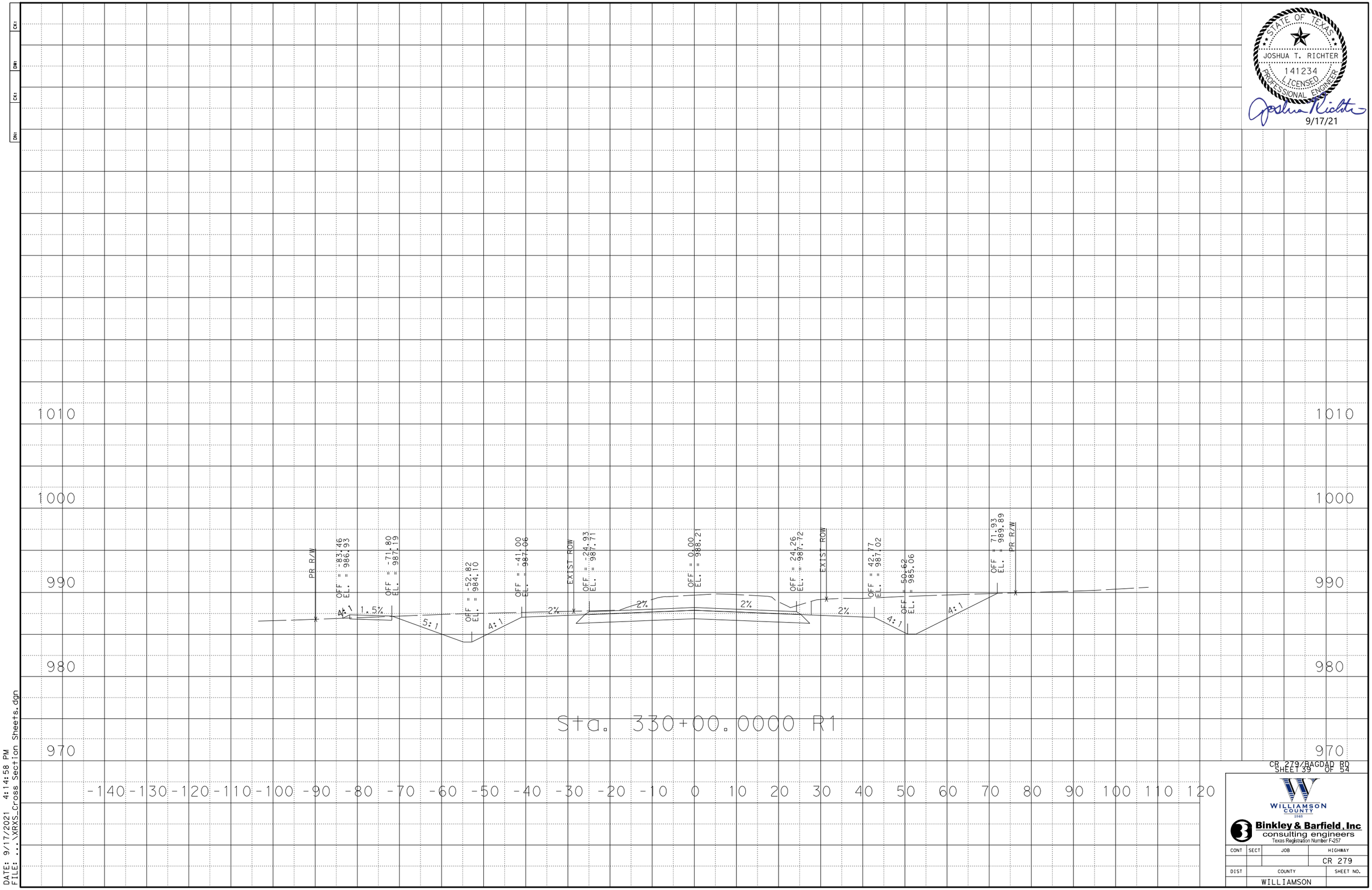

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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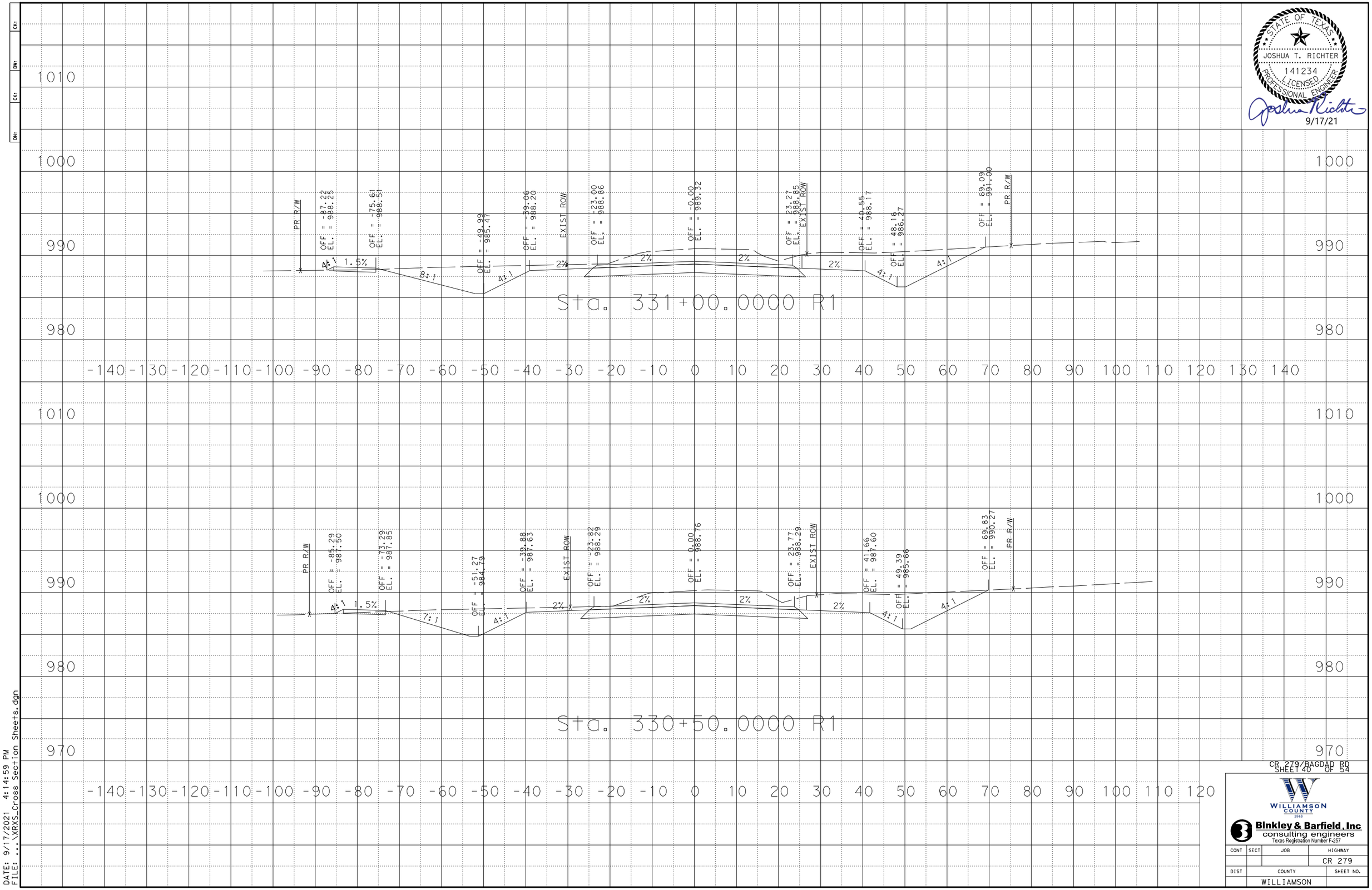

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 40 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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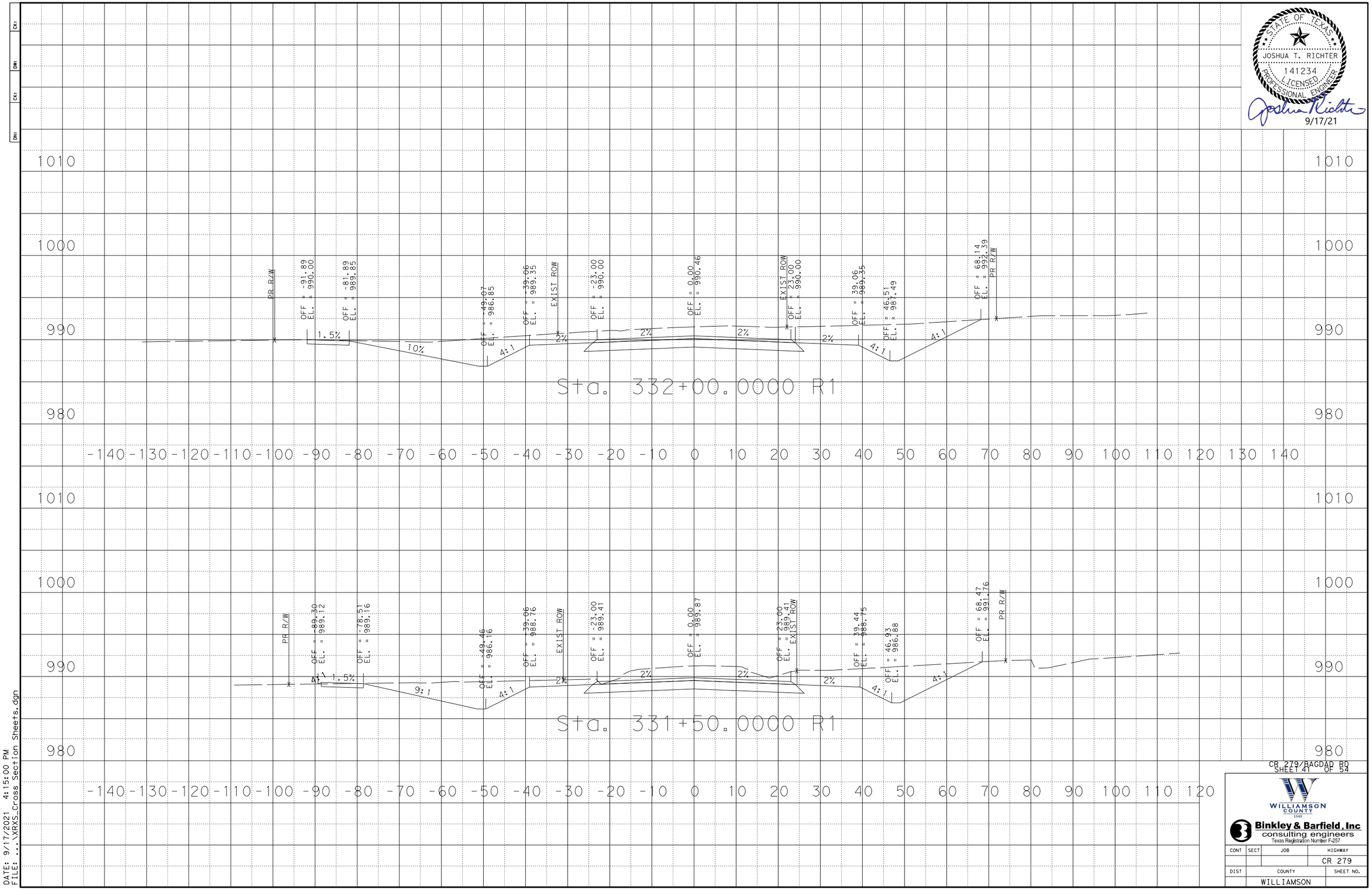

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 41 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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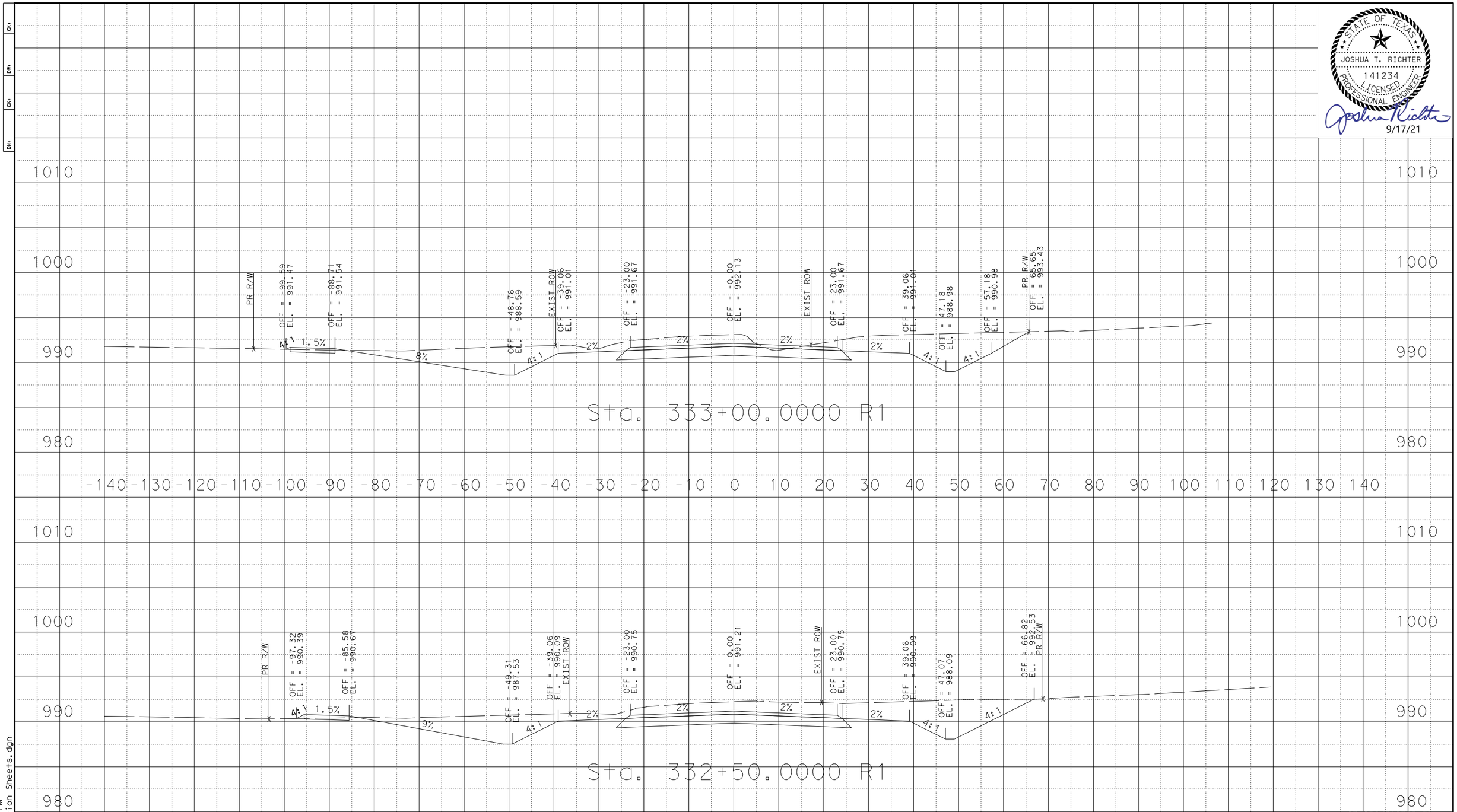

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 42 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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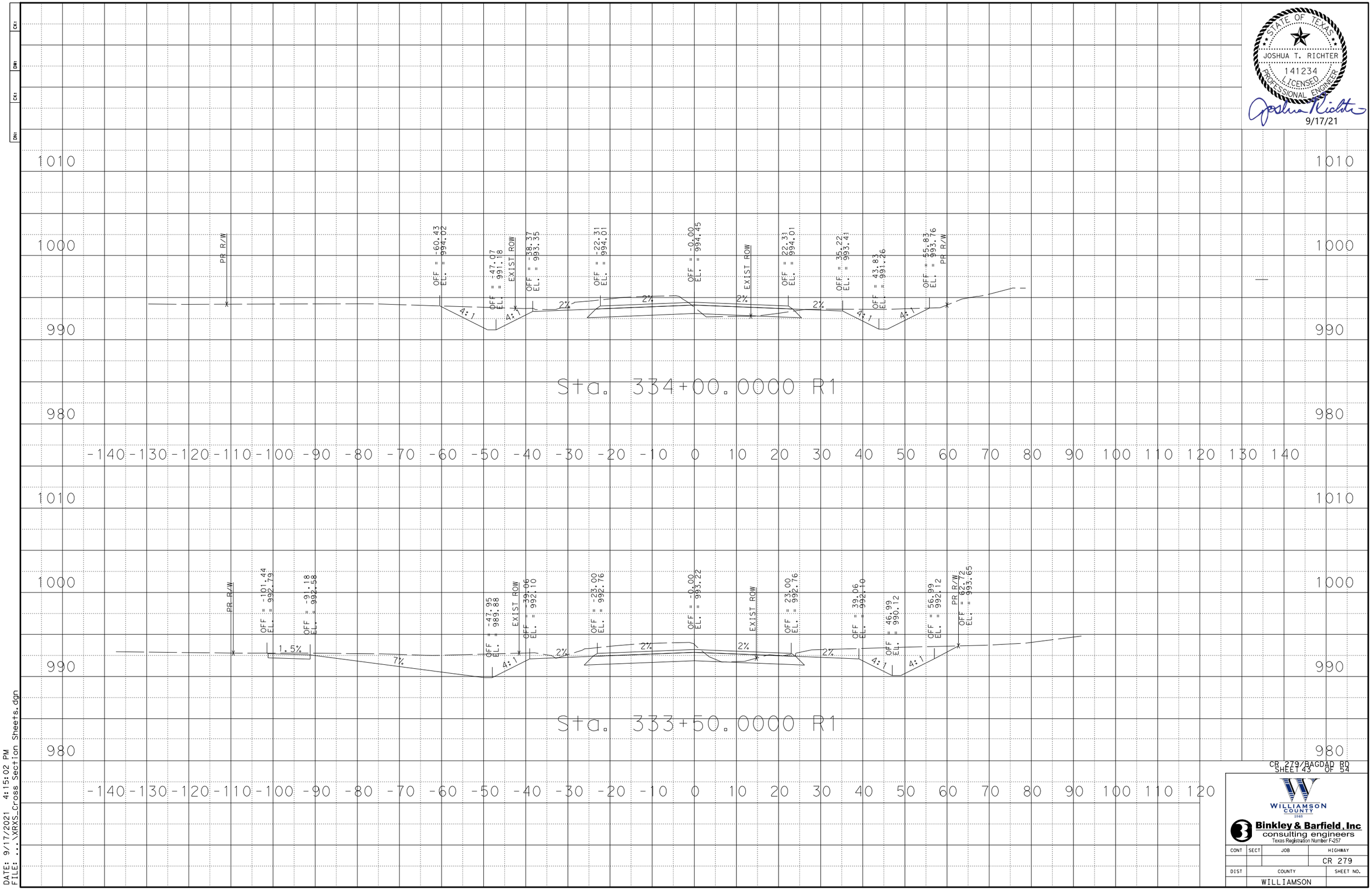

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 43 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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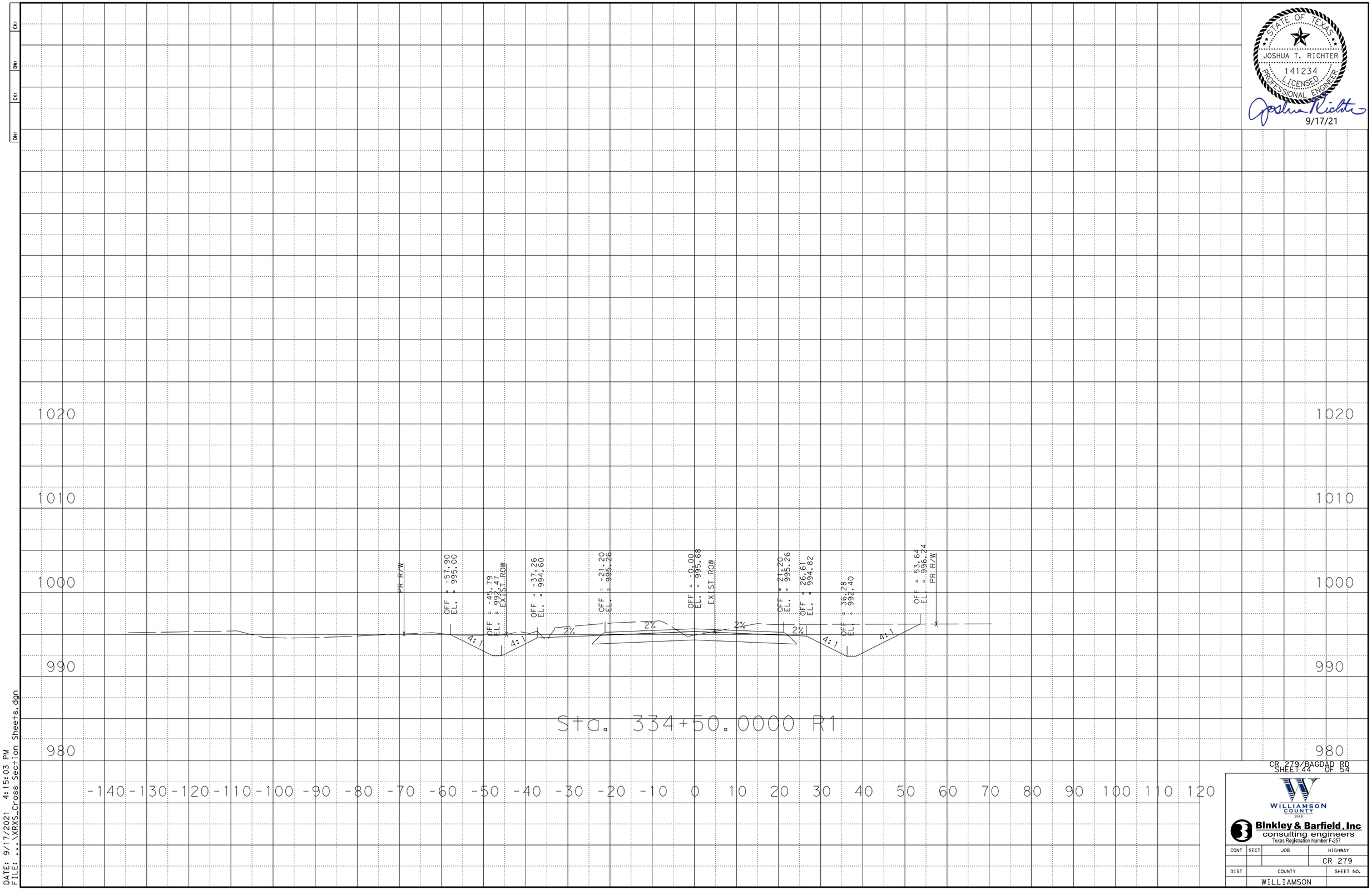

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 44 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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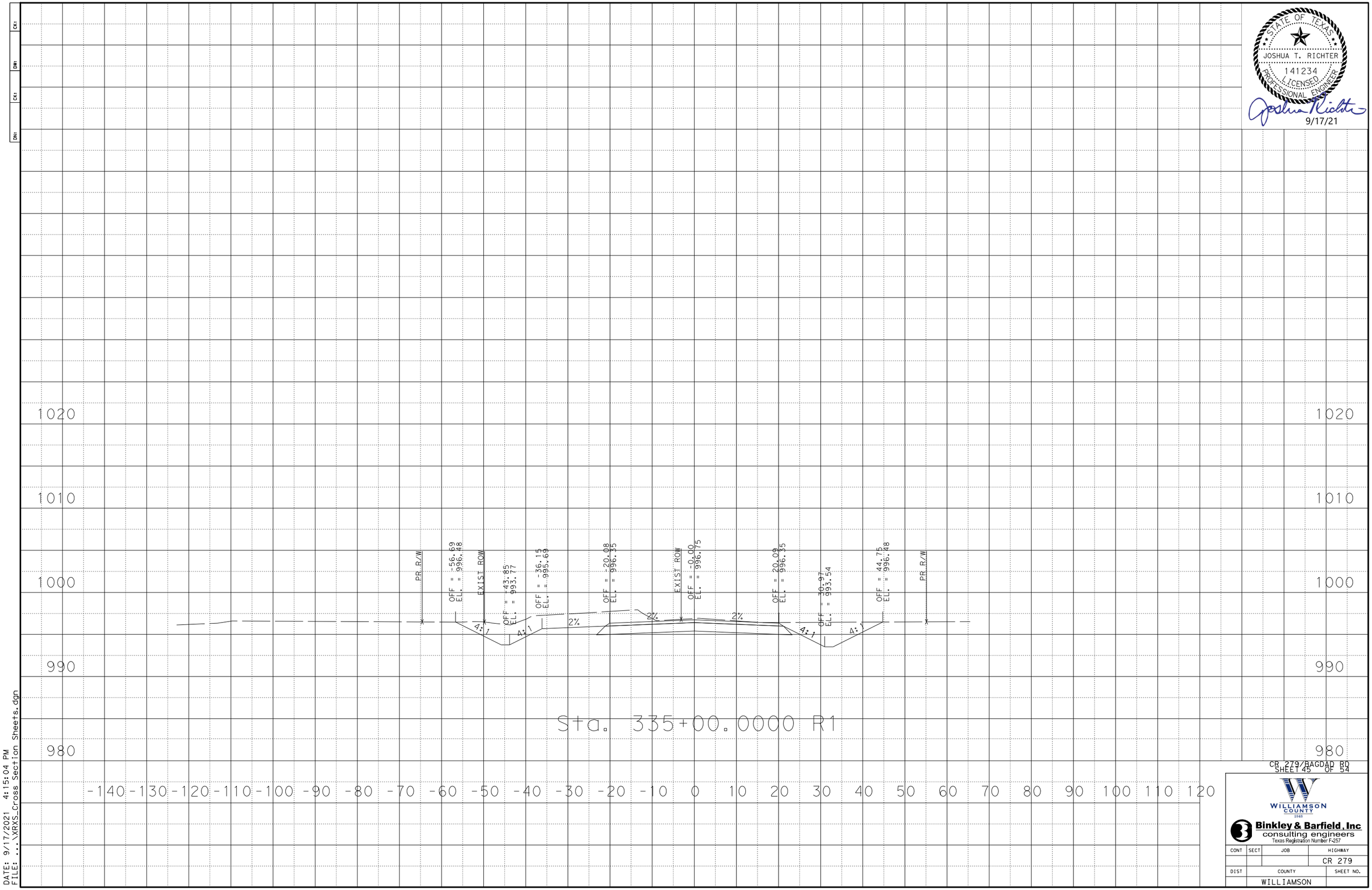

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 45 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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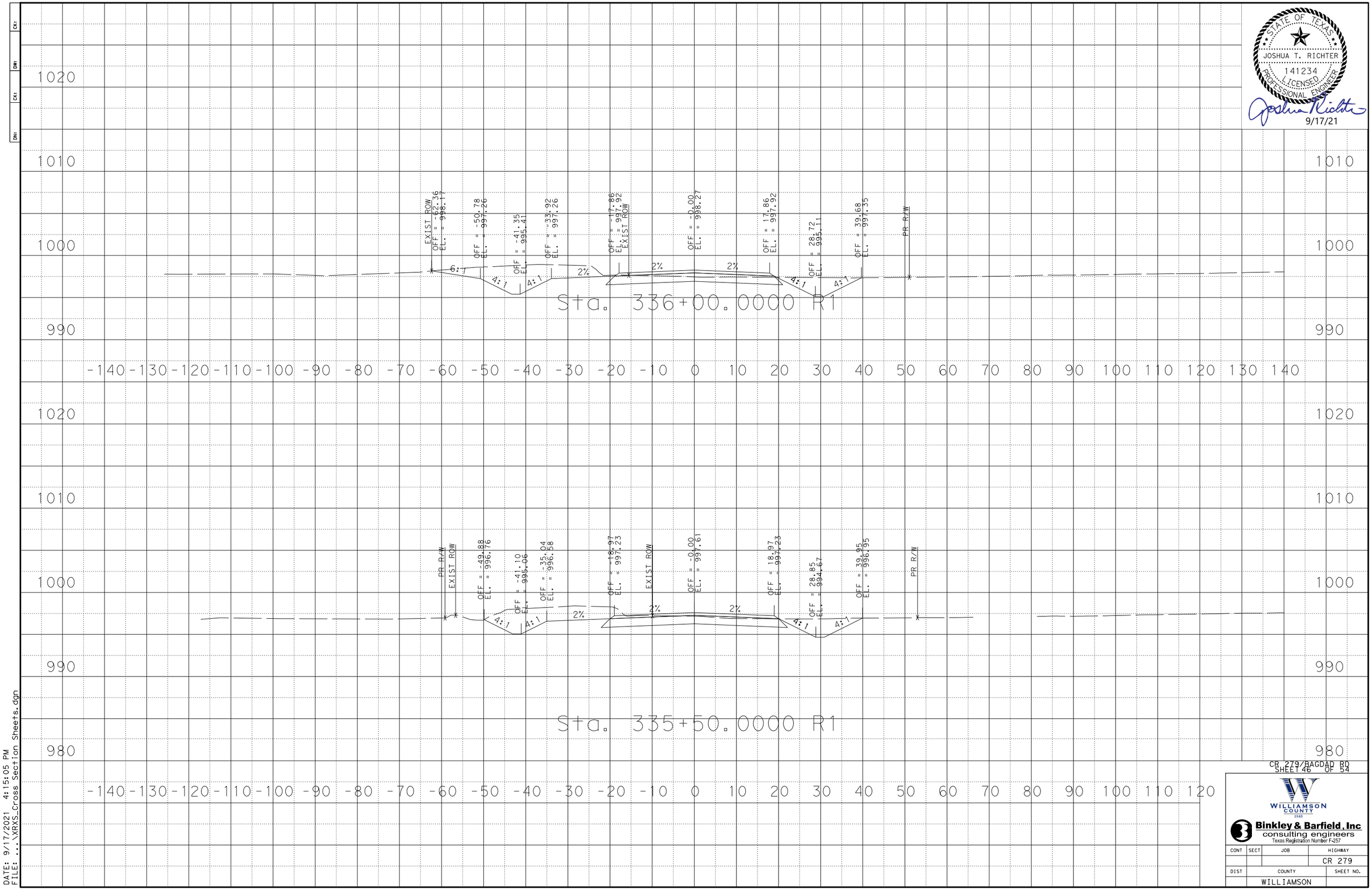

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 46 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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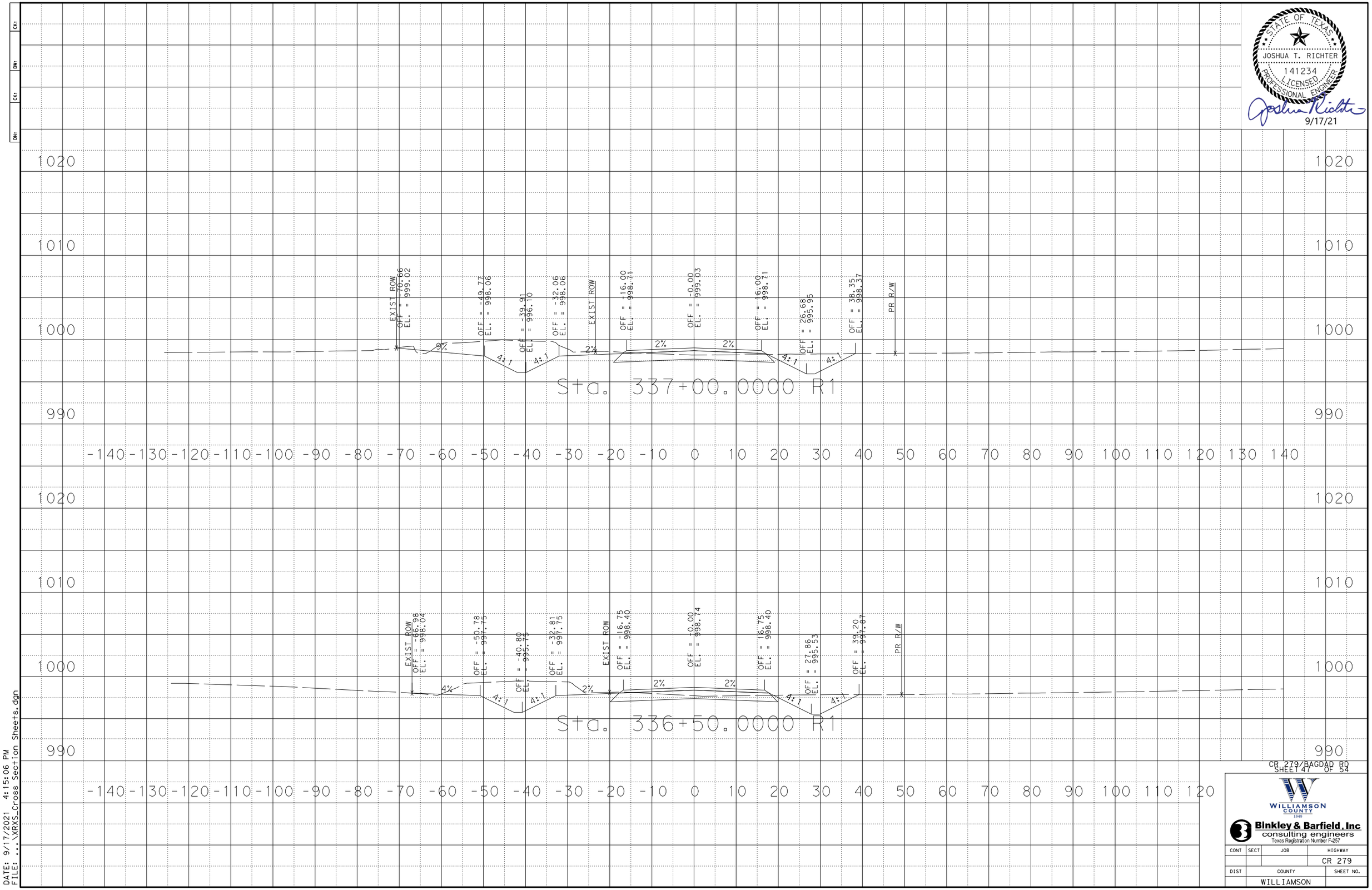

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 47 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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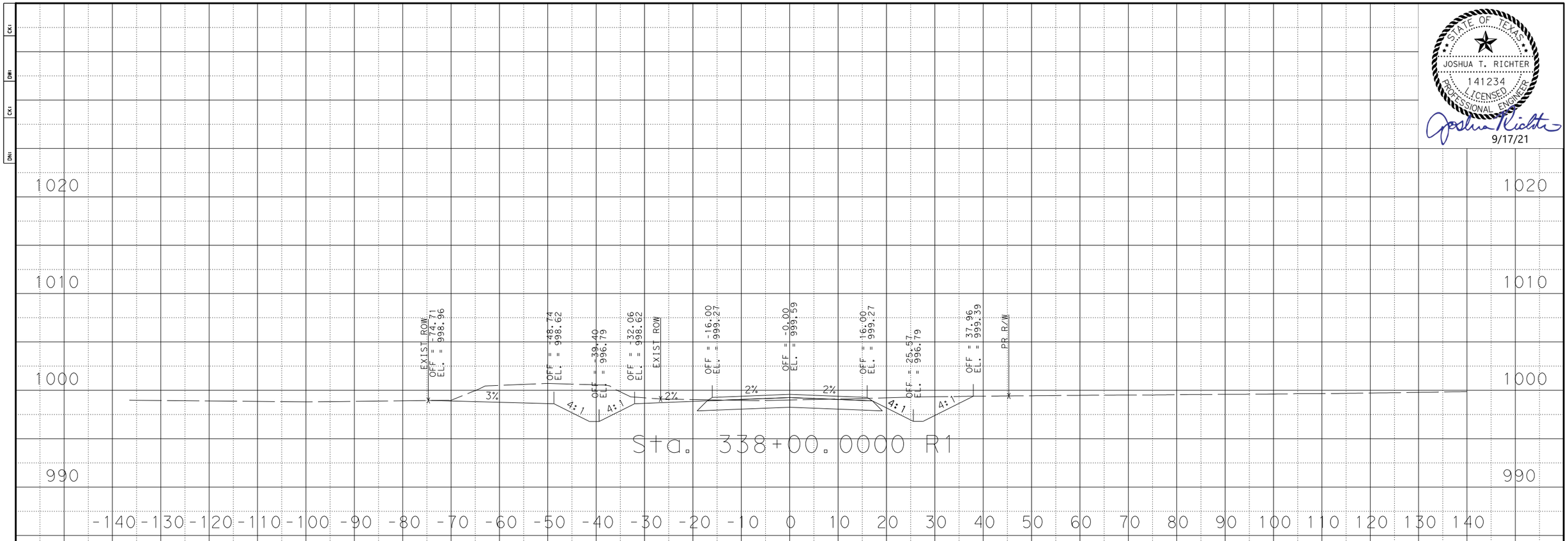

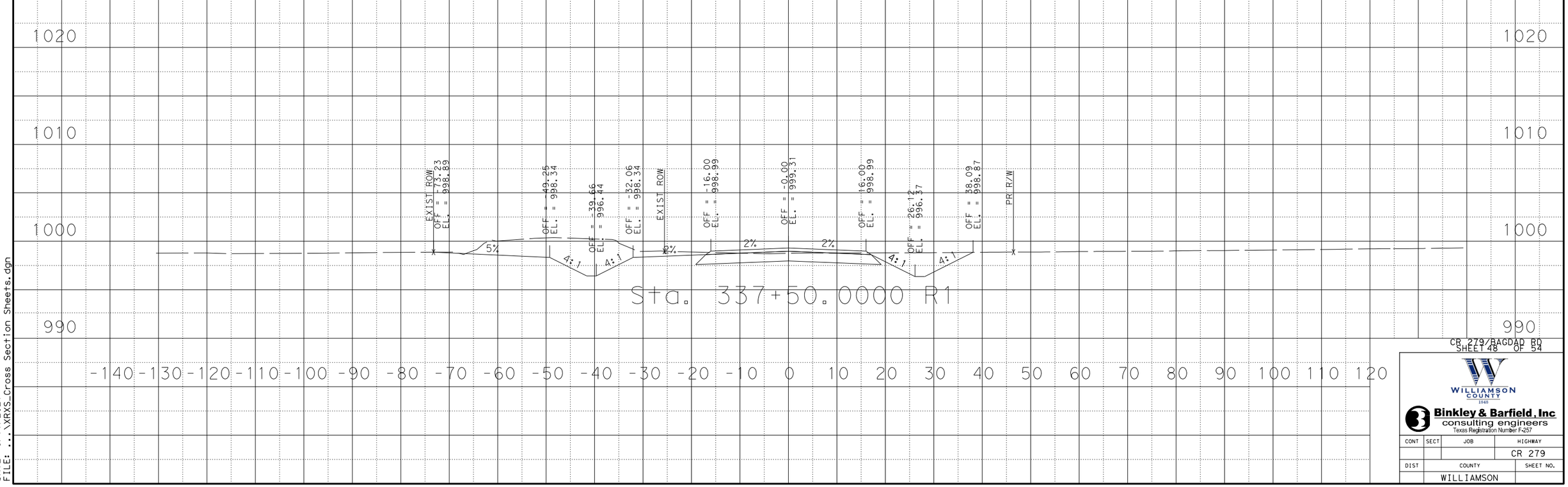

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 48 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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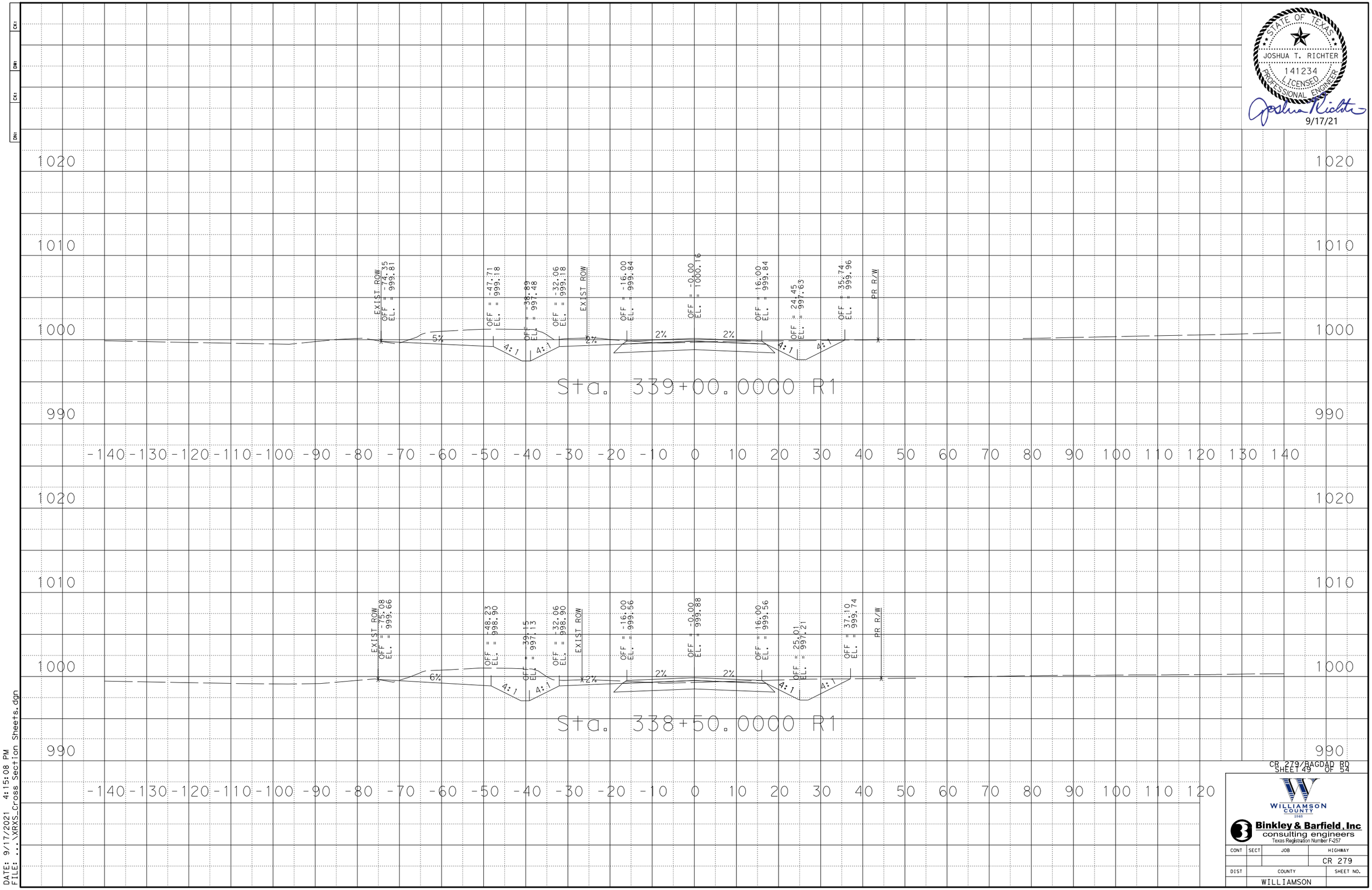

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

DATE: 9/17/2021 4:15:08 PM
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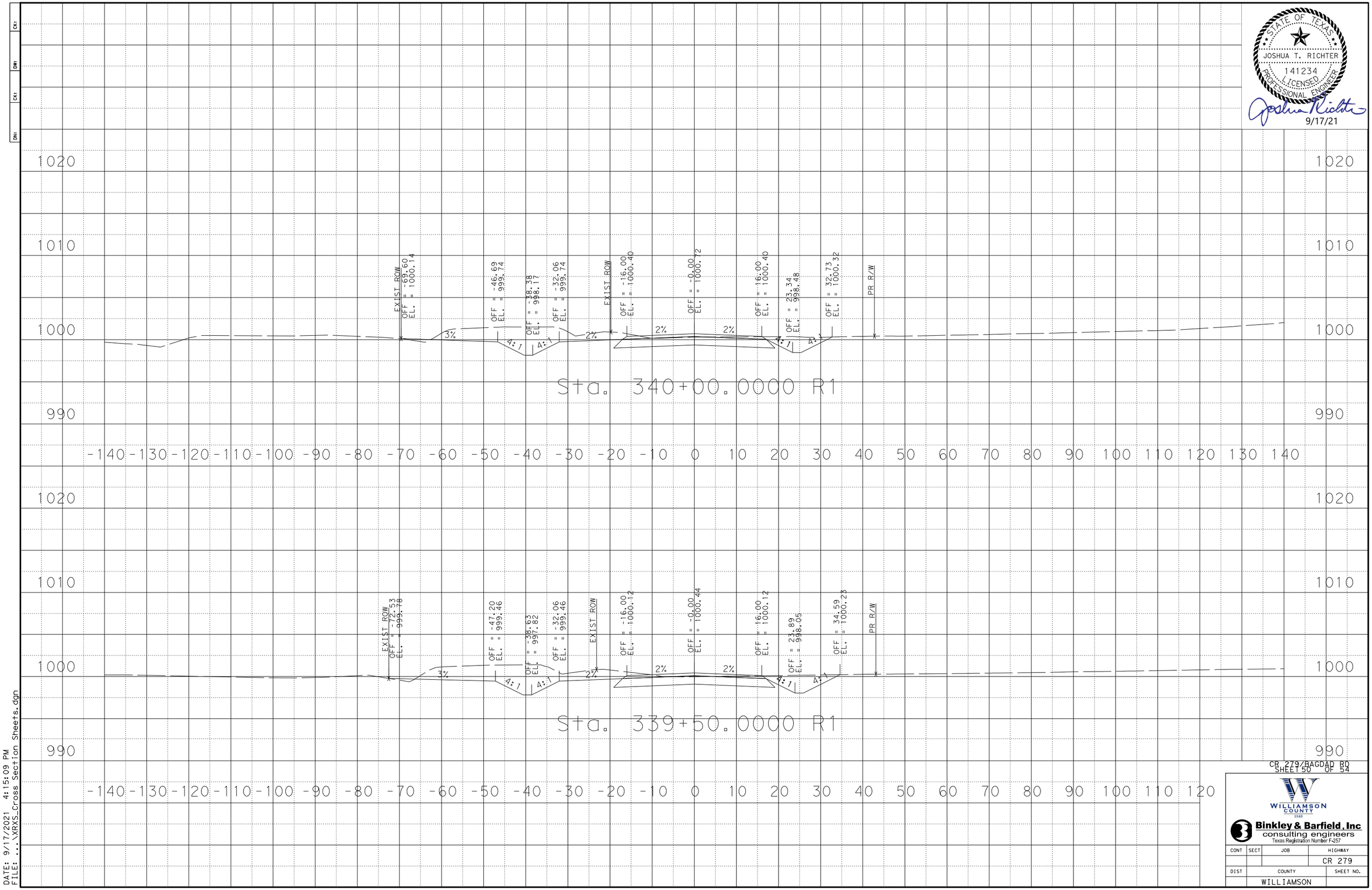

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SHEET 50 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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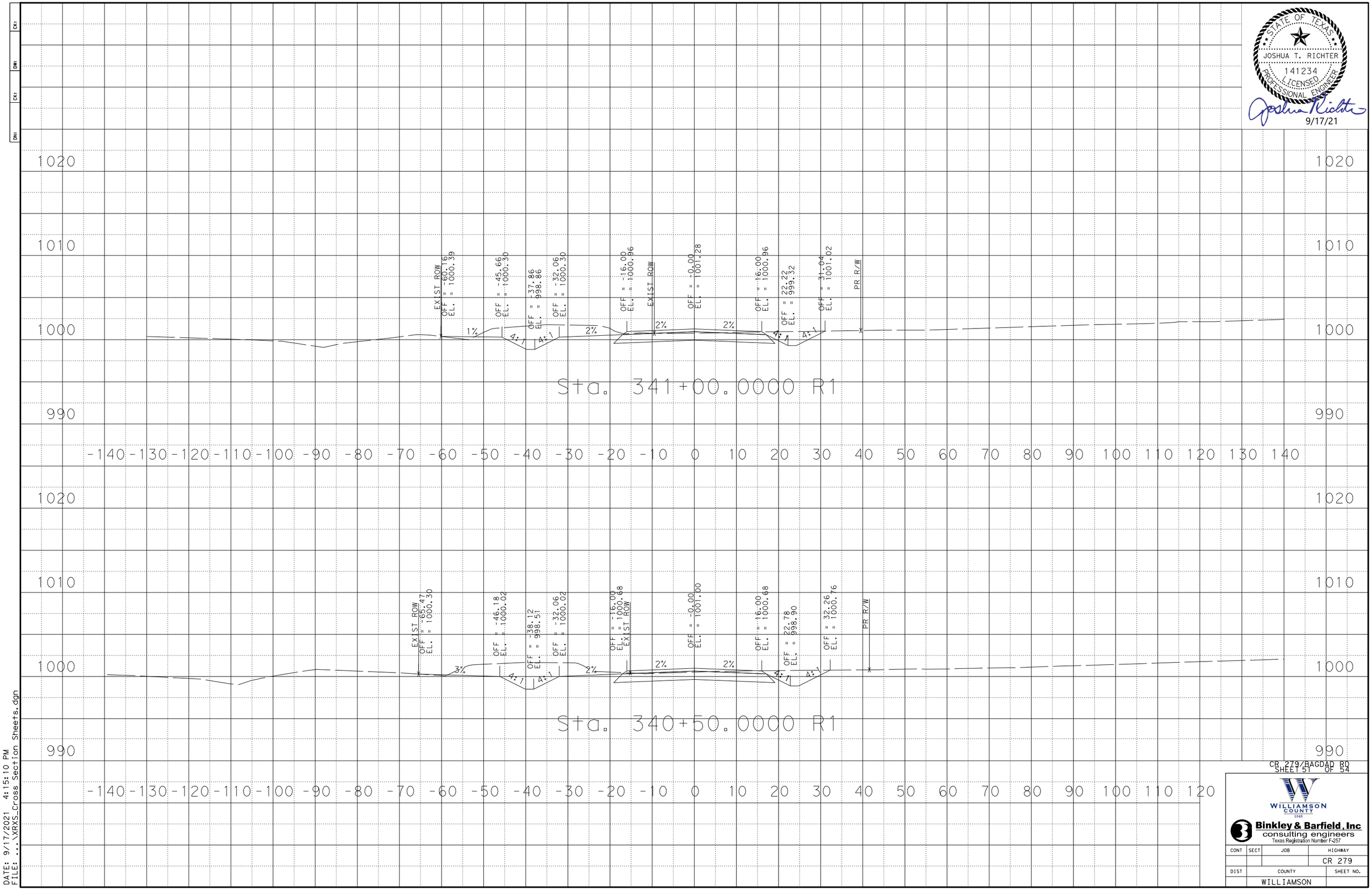

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

DATE: 9/17/2021 4:15:10 PM
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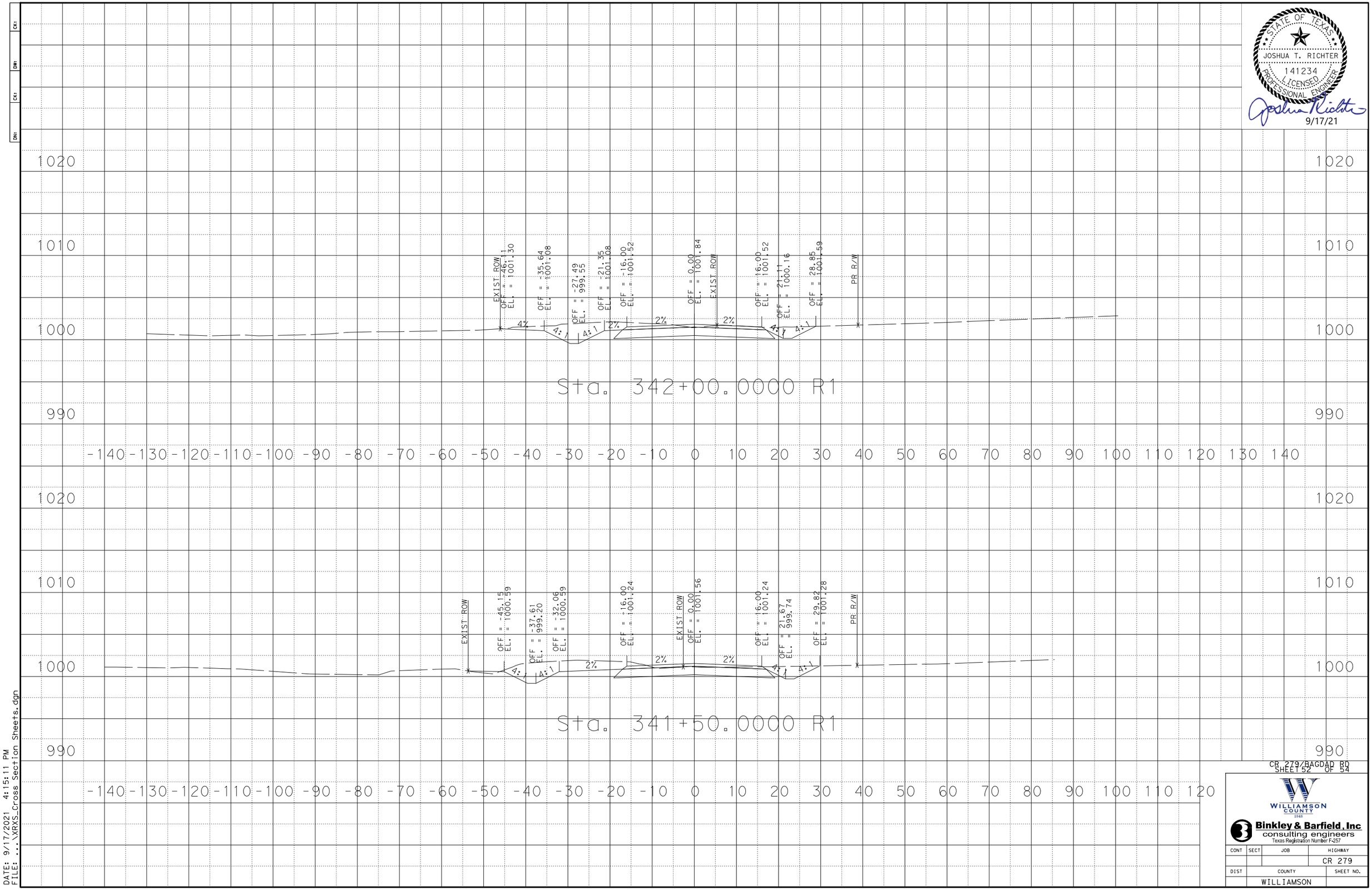

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WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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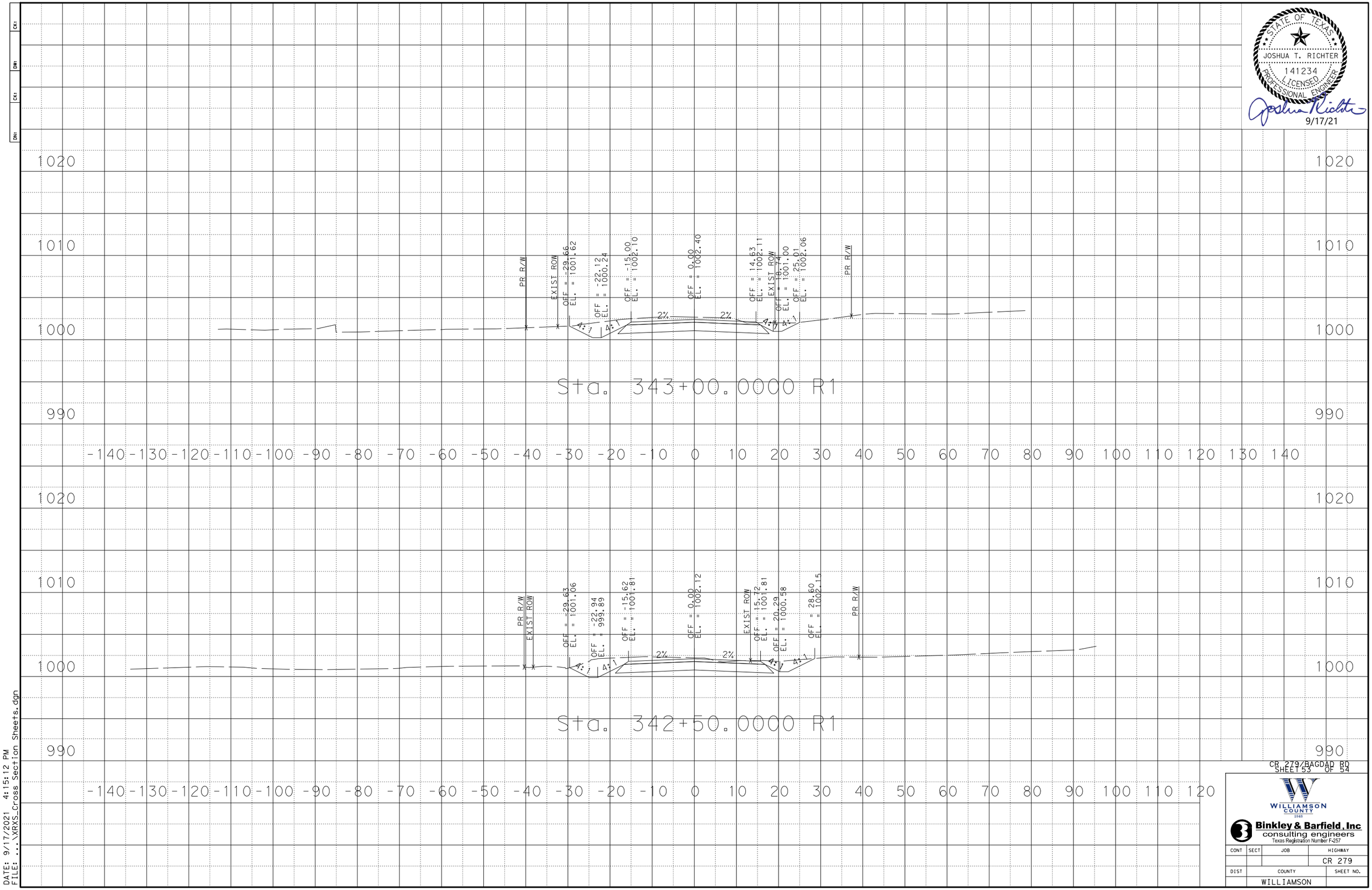

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER
9/17/21

CR 279/BAGDAD RD
SHEET 53 OF 54

WILLIAMSON COUNTY 1848

Binkley & Barfield, Inc
consulting engineers
Texas Registration Number F-257

CONT	SECT	JOB	HIGHWAY
			CR 279
DIST		COUNTY	SHEET NO.
		WILLIAMSON	

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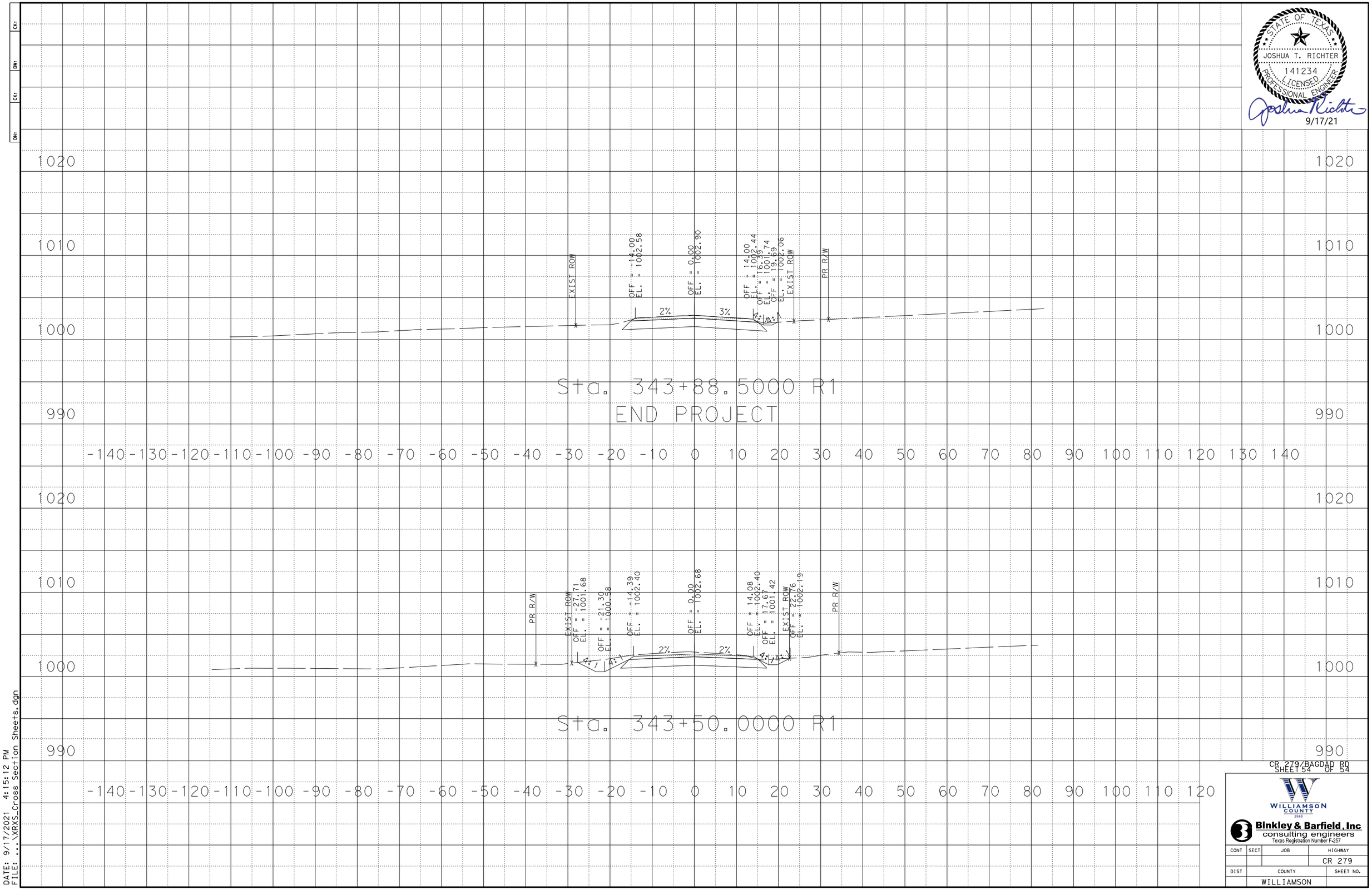

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EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT H – INSPECTION, MAINTENANCE, REPAIR AND RETROFIT

PROJECT NAME: Liberty Hill Bypass
CITY, STATE, ZIP: Liberty Hill, Texas, 78642

BMP maintenance operations should be performed on a regular basis as outlined below and as required to ensure that the BMPs and measures are constructed and functioning as designed. Operations must also be performed as required to maintain site aesthetics, vegetation, BMP access, and debris removal. After a Texas licensed professional engineer has certified that the permanent BMPs and measures were constructed as designed and submitted certification to the TCEQ regional office, the maintenance schedule as outlined below will commence.

General:

1. Records and diaries will be kept for maintenance activities listed and performed by Williamson County and contractors. All records must be retained for a period of not less than five (5) years.
2. Maintenance and contracted personnel may oversee minor repairs. Major repairs or retrofits must be overseen by Williamson County.
3. Roadways and roadsides will be reviewed regularly, by maintenance forces. BMPs will be inspected after rainfall events greater than four inches to ensure no damage to grass cover, accumulation of litter, or erosion has occurred. Areas of concern will be noted, and any necessary maintenance scheduled.
4. Right-of-way areas will be mowed by contract. Cutting height is a minimum of five inches. Mowing will be delayed during times when preferred vegetation is seeding to allow for natural propagation to continue.

Vegetative Filter Strips:

1. Problem insects and weeds will be controlled with minimal use of insecticides and herbicides.
2. If the filter strip is made up of turf grass, it will be mowed as needed to limit vegetation height to 18 inches. If native grasses are used, the filter will be mowed a minimum of twice annually.
3. Filter strip structures (i.e. level spreaders) will be inspected to remove obstructions no less than 4 times per year.
4. Excess sediment will be removed by hand or with flat-bottomed shovels.
5. If areas on the filter strip are eroded, they will be filled, compacted, and reseeded so that the final grade is level.
6. Filter strips will be inspected at least twice annually for erosion or damage to vegetation.

Maintenance Contact

The Maintenance Supervisor may be contacted for questions or concerns that pertain to the maintenance of this facility after it is completed and operating. The current maintenance supervisor is named below. The Maintenance Supervisor may be contacted at the following location:

Responsible Party
Maintenance Contact: Williamson County Maintenance
Adam Boatright, PE,
County Engineer

Signature: Adam D. Boatright Date: 10/04/2023

Name: Adam Boatright, PE
Address: 3151 S.E. Inner Loop, Suite B, Georgetown, Texas 78626
Phone: (512) 943-3330

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT J – MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

During construction, temporary BMPs outlined in the Storm Water Pollution Prevention Plan (SW3P), located in the Construction Plans, will be utilized to treat any on-site runoff prior to entering any surface streams. After construction vegetative filter strips will be in place to meet the 80% TSS removal requirements. After construction, the project limits will be revegetated to prevent pollution of surface streams.

A responsible party must report a hazardous materials spill of a reportable quantity as soon as possible but not later than 24 hours after the discovery of the spill or discharge to the Texas Spill Reporting Hotline at 1-800-832-8224 (24 hours) or the Austin regional office of the TCEQ at 512-339-2929 (normal office hours). Reportable quantities for hazardous substances can be found in Title 30 Texas Administrative Code Section 327.4.

EDWARDS AQUIFER PROTECTION PROGRAM ROADWAY APPLICATION-TCEQ-20872

ATTACHMENT K – VOLUME AND CHARACTER OF STORMWATER

The post-construction peak project runoff for the Liberty Hill Bypass project will be increased when compared to the pre-construction peak runoff. The post construction runoff C factor will increase due to the proposed pavement increasing the impervious area within the project right of way. Potential sources of contamination will be from sediment, debris, and chemicals generated on site by activities related to grading and paving. These potential contaminants are explained in more detail in Attachment D above. Vegetative filter strips will be installed to treat the required total suspended solids from the project. The pre and post-project runoff coefficients are 0.41 and 0.50 respectively.

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

I Bill Gravell, Jr.,
Print Name

Williamson County Judge,
Title - Owner/President/Other

of Williamson County,
Corporation/Partnership/Entity Name

have authorized Riley Sladek
Print Name of Agent/Engineer

of LJA Engineering
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Bill Gravell (Aug 31, 2023 14:36 CDT)

Applicant's Signature

Aug 31, 2023

Date

THE STATE OF Texas

§ County of Williamson

§

BEFORE ME, the undersigned authority, on this day personally appeared Bill Gravell 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 31st day of August, 2023.

ANDREA L. SCHIELE
Notary Public, State Of Texas
Notary ID# 126562040
Comm. Exp. 02-23-2025

NOTARY PUBLIC

Andrea Schiele

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 02-23-2025

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Liberty Hill Bypass
Regulated Entity Location: Georgetown, Texas
Name of Customer: Williamson County
Contact Person: J. Terron Evertson Phone: 512-943-3330
Customer Reference Number (if issued):CN 600897888
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	61.81 Acres	$ 8000
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: _____

TCEQ-0574 (Rev. 02-24-15)

Date: 07/12/2023

Application Fee Schedule

Texas Commission on Environmental Quality

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Exception Requests

Extension of Time Requests

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 600897888		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy) 7/12/2023

☐ 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:*

Williamson County

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (*if applicable*)

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☒ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:							
	Williamson County						
	3151 SE Inner Loop						
	City	Georgetown	State	TX	ZIP	78626	ZIP + 4

16. Country Mailing Information (*if outside USA*)	17. E-Mail Address (*if applicable*)
	tevertson@wilco.org

18. Telephone Number	19. Extension or Code	20. Fax Number (*if applicable*)
(512) 943-3330		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

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

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

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

Liberty Hill Bypass

23. Street Address of the Regulated Entity: *(No PO Boxes)*	Liberty Hill Bypass						
	City	Liberty Hill	State	TX	ZIP	78642	ZIP + 4
24. County	Williamson						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	RM 1869 to CR269 (Bagdad Road)

26. Nearest City	State	Nearest ZIP Code
Liberty Hill	TX	78642

27. Latitude (N) In Decimal:	30.659174		28. Longitude (W) In Decimal:	-97.930690	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30°	39'	42.59"	97°	55'	54.28"

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)

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

Roadway

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	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Riley Sladek, PE	41. Title:	Roadway Design Project Manager

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(512) 439-4738		( ) -	rsladek@lja.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:	LJA Engineering	Job Title:	Sr. Project Manager
Name *(In Print)*:	Riley Sladek	Phone:	(512) 439- 4738
Signature:		Date:	07/12/2023