

APPENDIX O

Runway Protection Zone Analysis Memo



WisDOT
Southwest Regional Office
Madison Office
2101 Wright Street
Madison, WI 53704



Governor Tony Evers
Secretary Craig Thompson
wisconsin.dot.gov
Telephone: (608) 246-3800
FAX: (608) 246-7996
Email: swr.dtsd@dot.wi.gov

February 16, 2024

Re: US 51 (Stoughton Road) North Corridor Study: US 51 Concept in DCRA Area

Dear Mr. Wilson,

The Wisconsin Department of Transportation (WisDOT) and the Federal Highway Administration (FHWA) are studying the US 51 (Stoughton Road) North transportation corridor that extends from the WIS 30 interchange in the city of Madison to the I-39/90/94 interchange in the town of Burke (See Exhibit 1). The US 51 North study area includes the portion of US 51 that is located adjacent to Dane County Regional Airport (DCRA) and passes through two Runway Protection Zones (RPZs). The purpose of this letter to share a roadway concept developed as part of the US 51 North study and solicit your feedback regarding airport-related impacts to determine whether or not the Federal Aviation Administration (FAA) would require a Runway Protection Zone (RPZ) analysis(es) for changes within the RPZ areas that overlap the US 51 North corridor.

Background

The purpose of the US 51 North study is to develop and evaluate potential long-term solutions to address the corridor transportation needs, including improving safety for all travel modes, improving traffic operations to congestion, and replacing aging infrastructure.

The US 51 North study area includes the portion of US 51 that is located adjacent to Dane County Regional Airport (DCRA) and passes through the RWY 21 and RWY 32 RPZs (see Exhibit 2). Because the study includes analysis of a range of improvements (including, but not limited to roadway cross section/alignment, infrastructure, and property changes), WisDOT continues to coordinate with stakeholders, including DCRA. Further, WisDOT is aware that the completion of an RPZ Alternatives Analysis may be necessary to satisfy Federal Aviation Administration (FAA) requirements.

Described below is a US 51 concept specific to the section of roadway adjacent to DCRA located between Pierstorff Street and Hoepker Road within the city of Madison. Note that the concept described is not intended to increase roadway capacity, does not include the addition of a multi-use path, or feature a major roadway realignment. Please note that DCRA has stated that they consider the concept described below as the best option in the DCRA area of the corridor. In an email dated 02/02/24, DCRA indicated they considered this the best alternative (See Exhibit 3).

US 51 Stoughton Road – On alignment Reconstruction to desirable standards between Pierstorff St and Hoepker Rd

Description: This concept features reconstruction of US 51 similar to what exists today (4-lane roadway with paved shoulders and unpaved median) on the existing roadway alignment. The exception would be the s-curve section immediately north of Pierstorff St, which would include a slight eastward realignment to achieve the desirable geometric safety standards. A crash analysis was performed on the US 51 corridor for the 5-year period from 2017 to 2021. During this timeframe, there were 16 recorded crashes that occurred in the area north of Pierstorff Street to south of Rieder Road. Eight of these crashes were a direct result of vehicles failing to navigate the horizontal curvature of the roadway without any influence from weather or roadway



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conditions, including one that resulted in a fatality, one that resulted in suspected serious injury, and one that resulted in suspected moderate injury. The proposed modified s-curve would address the existing geometric deficiency and improve safety issues that exist today in this location. As a result of the proposed improvements, the existing median cable barrier, which is located within the Rwy 32 RPZ and was installed as a safety measure, would be removed.

Listed below are some of the DCRA related topics

- **Effects on existing Rwy 32 RPZ:** US 51 reconstructed on modified alignment (slightly shifted away from the approach end of Runway 32). No significant land use changes within the RPZ and no permanent DCRA property boundary changes are anticipated to be sought by WisDOT within the existing RPZ. Outside of the existing RPZ, due to the s-curve realignment, WisDOT anticipates seeking a minimal amount of permanent right-of-way (approximately 0.25 acres) from DCRA in the area of the proposed future RPZ for Rwy 32.

With the realignment of the S-curve, there may be an opportunity for DCRA to gain property (up to approximately 0.5 acres) on the west side of US 51 that WisDOT would no longer need for highway right-of-way.

- **Effects on existing Rwy 21 RPZ:** US 51 reconstructed on existing alignment within RPZ. No significant land use changes within the RPZ and no permanent DCRA property boundary changes are anticipated to be sought by WisDOT within this RPZ.
 - This concept includes reconstruction of the intersection of US 51 / Hanson Rd to the same "full access" configuration that exists today. Modifications to this intersection include acceleration and deceleration lanes on US 51 along with dedicated right and left turn lanes on Hanson Road to improve safety. No additional permanent right-of-way is anticipated with this design. This represents no significant land use changes within the RPZ.
- **Effects on DCRA property:**
 - WisDOT would seek a Temporary Limited Easement (TLE) to accommodate construction outside the boundaries of the existing right-of-way. A TLE is an interest in land and must be used when the project requires WisDOT or its contractors to use a portion of the owner's property temporarily to construct the highway project. The construction boundaries have not yet been defined but are typically a 10 ft offset from where slope intercepts are close to existing or proposed right-of-way.
 - WisDOT would seek to acquire 0.20 acres of permanent right-of-way to add a "Restricted Crossing U-Turn" (RCUT) on the west side of US 51 north of the intersection of US 51/Rieder Road. This RCUT would reduce U-Turn movements at Amelia Earhart Dr. and provide acceleration/deceleration lanes to remove turning vehicles from Thru-traffic lanes as a traffic safety enhancement.
 - DCRA support for this option: Email from 10/5/2023, supports the improvements for Rieder Road and the RCUT (See Exhibit 3)
 - At the October 2022 Public Involvement Meeting for the study, the Wisconsin Aviation Operations Manager relayed concerns with the number of U-turns occurring at the Amelia Earhart Drive intersection.



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- Existing drainage indicates mostly sheet flow and some ditching throughout the area. The project improvements are anticipated to have a minimal effect on the overall drainage patterns through the corridor. The project is not anticipated to include the development of stormwater ponds or retention systems. Existing wetlands within the corridor are anticipated to remain.
- **Effects on Airspace Interests:** Vertically, this roadway reconstruction concept results in topographical elevations similar to what exists today with slight geometric modifications to meet standards. WisDOT acknowledges that the project will require FAA airspace analysis, but no significant hazards to aeronautics are anticipated.

The following exhibits are attached to assist in your review:

- Exhibit 1: Study Location Map
- Exhibit 2: DCRA Area Map
- Exhibit 3: DCRA Email Correspondence
- Exhibit 4: US 51 Preliminary Concept Alignment Plan View – Includes preliminary alignment, typical sections, slope intercepts and right of way impacts from Pierstorff St to north of Hanson Road
- Exhibit 5: US 51 Preliminary Concept Plan and Profile Sheets – Includes preliminary alignment and preliminary vertical profile adjustments
- Exhibit 6: Hanson Road Alternative Concept – Plan view of proposed full access concept at Hanson Road and US 51
- Exhibit 7: Rieder Road Alternative Concept – Plan view of proposed concept at Rieder Road and US 51 including the RCUT north of the intersection

In closing, WisDOT requests that FAA representatives review this information and respond with feedback and questions. Specifically, WisDOT is asking if FAA would require any further RPZ analysis for this proposed US 51 roadway concept adjacent to DCRA. If so, what additional RPZ analysis would be required?

Please let me know if you have any questions.

Sincerely,

Jeff

Jeff Berens
Major Studies Project Manager
WisDOT SW Region - Madison Office
(608)245-2656
Jeff.berens@dot.wi.gov

Exhibit 1
Study Location Map



US 51 (Stoughton Road) North Study LOCATION MAP

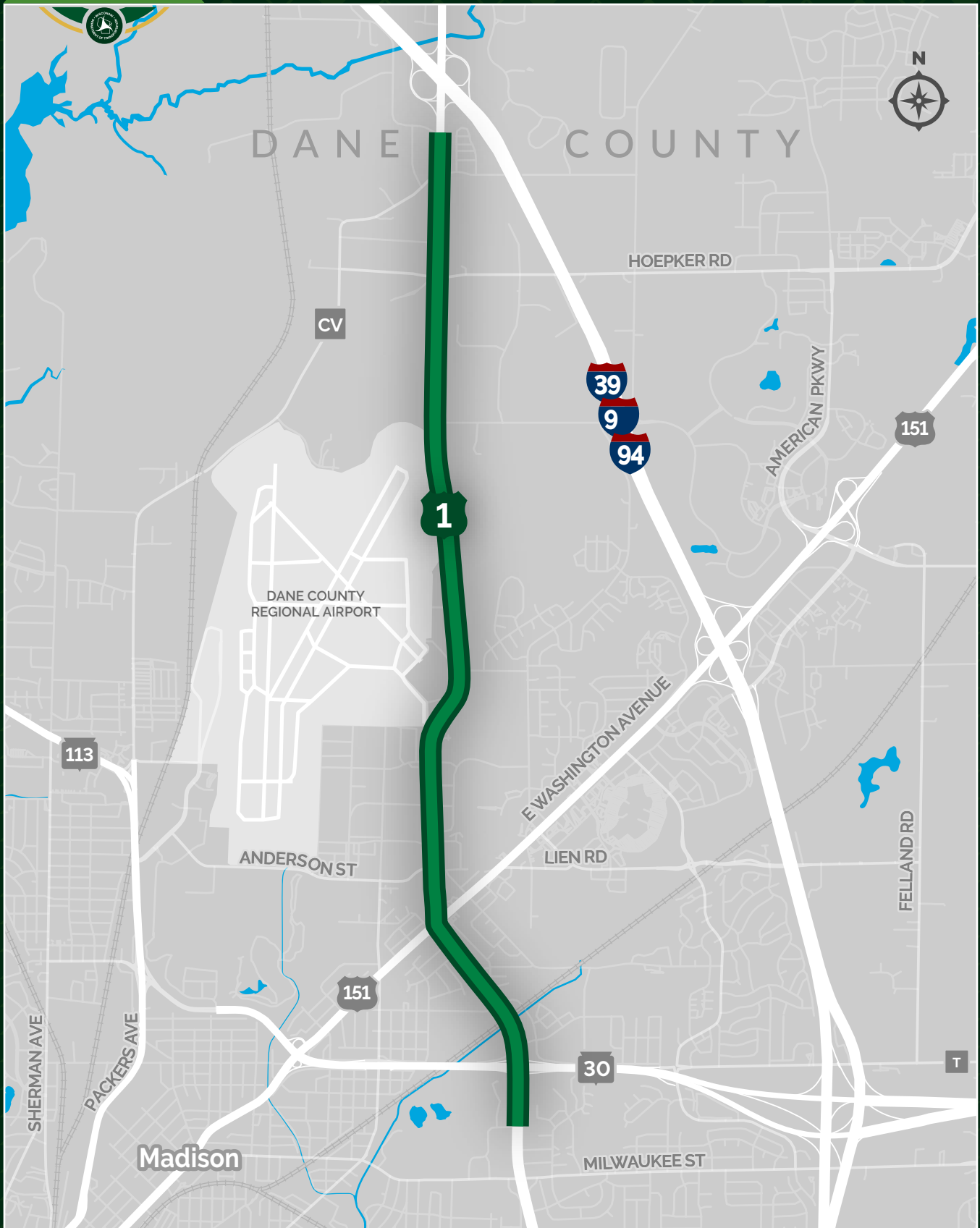


Exhibit 2
DCRA Area Map



Exhibit 3

DCRA Email Correspondence

From: [Kirchner, Michael](#)
To: [Berens, Jeff - DOT](#); [Jones, Kimberly](#)
Cc: [Rasmussen, Chad](#); [Levi Ney](#); [Messina, Matthew R - DOT](#); [Davis, Howard - DOT](#); [Malicki, Matthew - DOT](#); [Gehrke, Michelle](#); [Hemesath, Lisa \(FHWA\)](#); [Howe, Michelle - DOT](#); [Schrum, Dan](#); zfreeman@kapurinc.com; [Matthew D. Zitzow](#); [Jones, Kimberly](#)
Subject: RE: 5410-08-01 US 51 Stoughton Road North Corridor Study: Revised US 51 Concept in DCRA Area
Date: Friday, February 02, 2024 12:42:00 PM

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Jeff

DCRA has no further comments. We feel this is the best alternative.

Thanks

Mike

From: Berens, Jeff - DOT <Jeff.Berens@dot.wi.gov>
Sent: Friday, January 19, 2024 7:05 AM
To: Jones, Kimberly <Jones.kimberly@msnairport.com>; Kirchner, Michael <kirchner@msnairport.com>
Cc: Rasmussen, Chad <Rasmussen.Chad@msnairport.com>; Levi Ney <Levi.Ney@meadhunt.com>; Messina, Matthew R - DOT <Matthew.Messina@dot.wi.gov>; Davis, Howard - DOT <Howard.Davis@dot.wi.gov>; Malicki, Matthew - DOT <Matthew.Malicki@dot.wi.gov>; Gehrke, Michelle <michelle.gehrke@dot.gov>; Hemesath, Lisa (FHWA) <lisa.hemesath@dot.gov>; Howe, Michelle - DOT <michelle.howe@dot.wi.gov>; Schrum, Dan <DSchrum@srfconsulting.com>; zfreeman@kapurinc.com; Matthew D. Zitzow <matthew.zitzow@tkda.com>
Subject: 5410-08-01 US 51 Stoughton Road North Corridor Study: Revised US 51 Concept in DCRA Area

Kim and Mike,

Since our last correspondence, WisDOT has been working on developing a US 51 improvement alternative that would address the transportation needs on the corridor while not requiring any permanent right-of-way from DCRA within the current Runway (Rwy) 14 and Rwy 21 RPZs. The alternative is outlined in the attached letter and exhibits and does not include a multi-use path. Please review and let me know if you have any questions or comments. If DCRA is supportive of this option, WisDOT would plan to send this information to FAA for review to determine if an RPZ analysis(es) would be required for the proposed changes within the RPZs. If possible, I would like to get comments back from you by close-of-business on Friday, February 2, 2024.

Thank you,

Jeff

Jeff Berens, P.E.
Major Studies Project Manager
WisDOT SW Region - Madison Office
(608) 245-2656

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Proofpoint

From: [Kirchner, Michael](#)
To: [Berens, Jeff - DOT](#)
Cc: [Jones, Kimberly](#); ["Oliver, Chad \(FAA\)"](#)
Subject: FW: USH 51 corridor study alternatives
Date: Thursday, October 05, 2023 1:29:47 PM
Attachments: [image002.png](#)

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Jeff
See airports comments in red.
Thanks
Mike

From: Berens, Jeff - DOT <Jeff.Berens@dot.wi.gov>
Sent: Wednesday, September 27, 2023 9:04 AM
To: Levi Ney <Levi.Ney@meadhunt.com>
Cc: kirchner@msnairport.com
Subject: RE: USH 51 corridor study alternatives

Hi Levi,

Thank you for reaching out. I would like to feedback on the following items:

- US 51 alternative concepts developed in the DCRA area, specifically in the following locations:
 - Pierstorff Street – Maintain existing intersection with minor improvements **DCRA supports the proposed improvements.**
 - Rieder Road – Maintain existing intersection with proposed R-CUT approximately 900 feet north of the intersection **DCRA supports the proposed improvements.**
 - Amelia Earhart Drive – Maintain existing intersection **DCRA supports the proposed improvements.**
 - Hanson Road **Order of DCRA preference listed below.**
 - Maintain full access intersection with acceleration and deceleration lanes **1**
 - Restricted Left Turn intersection (no SB lefts onto Hanson Road) **2**
 - Roundabout or signal - Taking into account the lighting information I recently sent from the city of Madison (see attached email) **3**
 - Hoepker Road **Order of DCRA preference listed below.**
 - Maintain existing intersection with improvements such as adding or extending turn lanes **1**
 - Roundabout **2**
- Potential alignment shift options to reduce impacts to RPZs. Does DCRA there a preferred alignment shift that should be investigated further? Is there an alignment shift that DCRA would not support? **Order of DCRA preference listed below.**

Alternative	Preference
1	1

2	3
3	2

- Multi-use path adjacent to US 51 on the east side
 - Is DCRA/FAA open to allowing a multi-use path within RPZ areas? **No.**
 - Is DCRA open to allowing a multi-use path on current DCRA property outside of RPZ areas? **No.**

I have attached a previous email to DCRA that provides more detail on the alternative concepts and potential alignment shifts as well as links to maps. Please let me know if you have any questions, issues accessing the links, or require additional information.

Jeff

Jeff Berens, P.E.
Major Studies Project Manager
WisDOT SW Region - Madison Office
(608) 245-2656

From: Levi Ney <Levi.Ney@meadhunt.com>
Sent: Tuesday, September 26, 2023 2:34 PM
To: Berens, Jeff - DOT <Jeff.Berens@dot.wi.gov>
Cc: kirchner@msnairport.com
Subject: USH 51 corridor study alternatives

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Hi Jeff,

Mike Kirchner asked that I reach out to you regarding the feedback WisDOT has requested from the Dane County Regional Airport. We understand WisDOT needs the Airport's feedback on the following items:

1. Preferred alignment
2. Roundabout at Hanson Road intersection
3. Bike lane within Runway Protection Zone (RPZ)

If there is anything missing from this list please let me know.

Could you please send the alignment alternatives?

Than you.

Levi Ney, PE

Civil Engineer | Aviation

Direct: 608-443-0620 | [Transfer Files](#)



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Exhibit 4

US 51 Preliminary Alignment Concept Plan View

US 51 Preliminary Concept Alignment Plan View

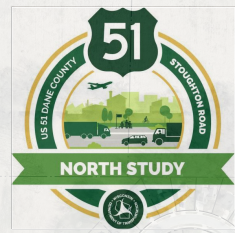
CONCEPTUAL

(Not for public distribution)

US 51 Mainline Alignment

at Rieder Rd

- Alignment Alternative ———
- Existing R/W - - - - -
- Approx. Slope Intercepts ·····
- Proposed R/W  1" = 200-feet
- Potential Existing R/W Relinquished to DCRA 



DANE COUNTY
REGIONAL AIRPORT

AMELIA EARHART DR

DANE COUNTY
AIRPORT

DANE COUNTY
AIRPORT

DANE COUNTY
AIRPORT

RESTRICTED CROSSING
U-TURN (RCUT) LOCATION

OLD GATE RD

DANE COUNTY
AIRPORT

RIEDER RD

DANE COUNTY AIRPORT

RUNWAY PROTECTION
ZONE (RPZ)

FUTURE RUNWAY PROTECTION
ZONE (RPZ)

BARTILLON DR

PIERSTORFF ST

DL22X LLC

JAMES L GARTMANN
MADISON VETERINARY CLINIC
HECTOR ADAME LLC

KINSMAN BLVD

CITY OF MADISON PARKS
AMUND REINDAHL PARK

NOTE: ALL PROPOSED ALIGNMENTS MEET A 55 MPH POSTED SPEED.

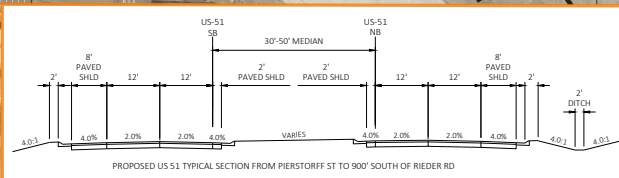
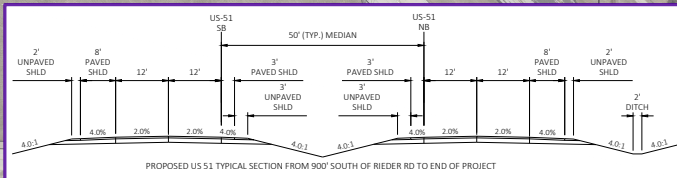
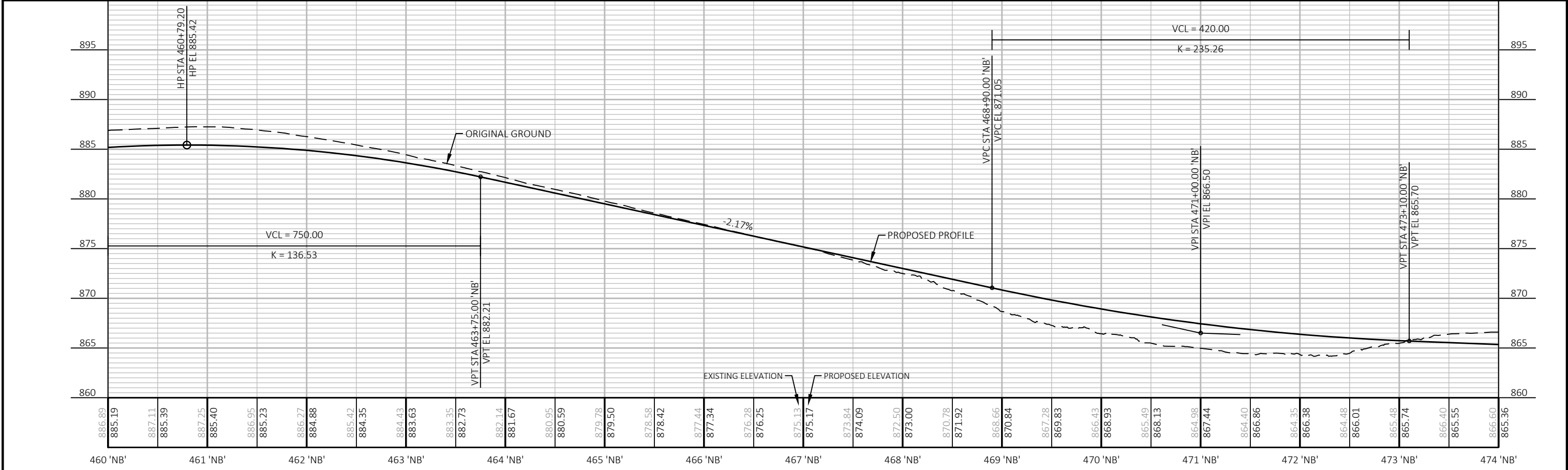
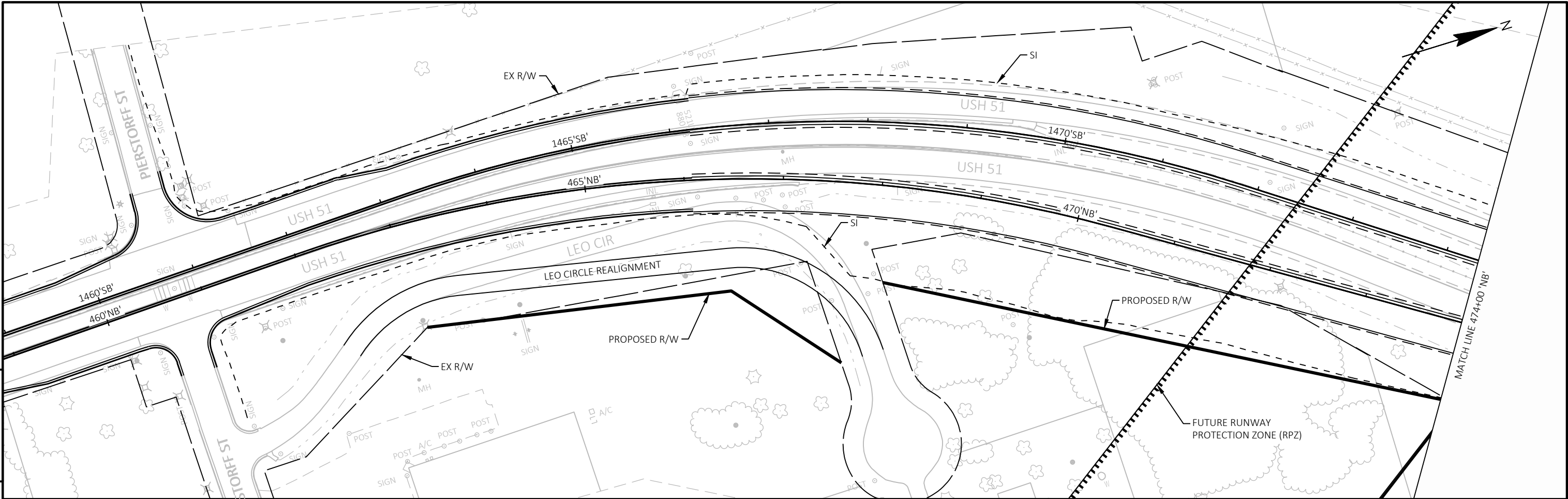


Exhibit 5

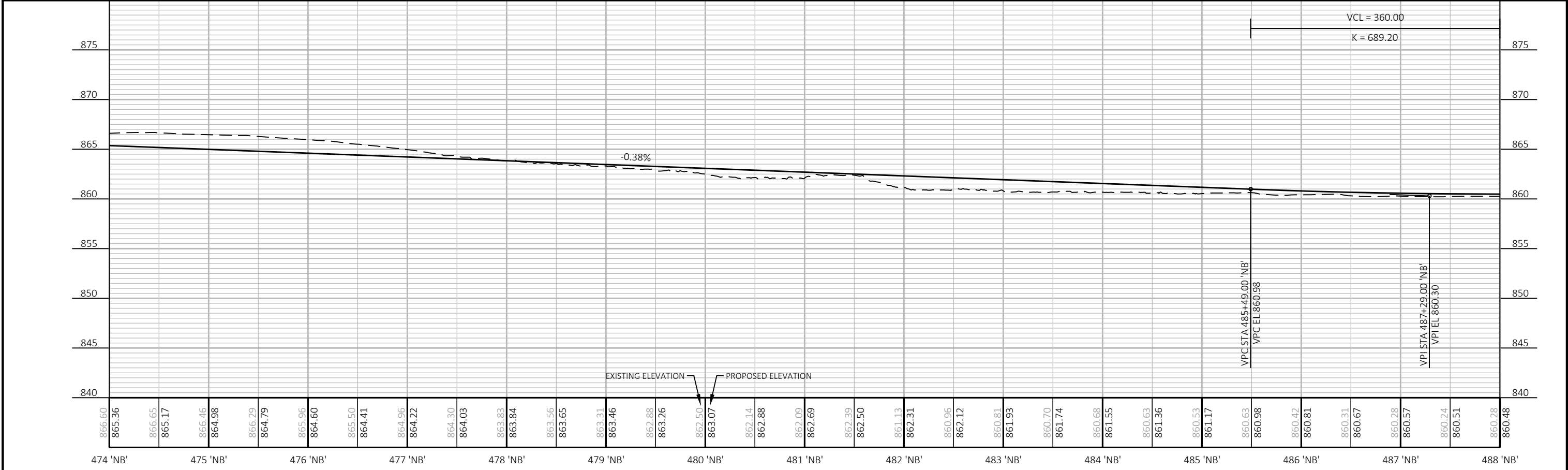
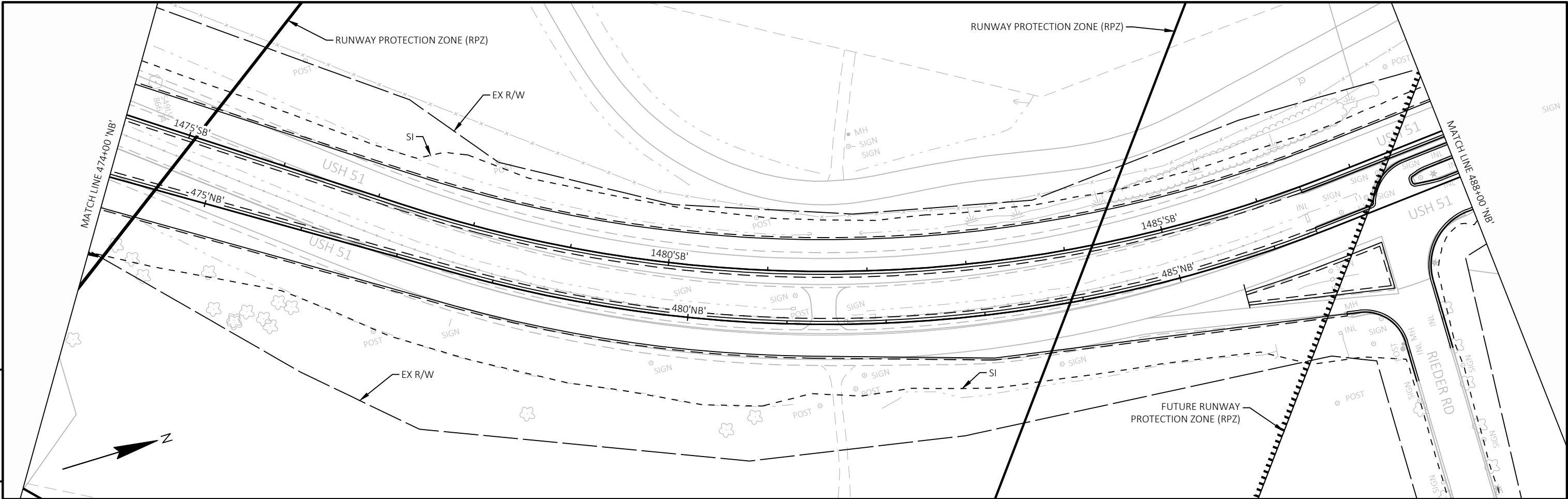
US 51 Preliminary Concept Plan and Profile Sheets

Sheets 1 – 9: Northbound US 51 Plan and Profile

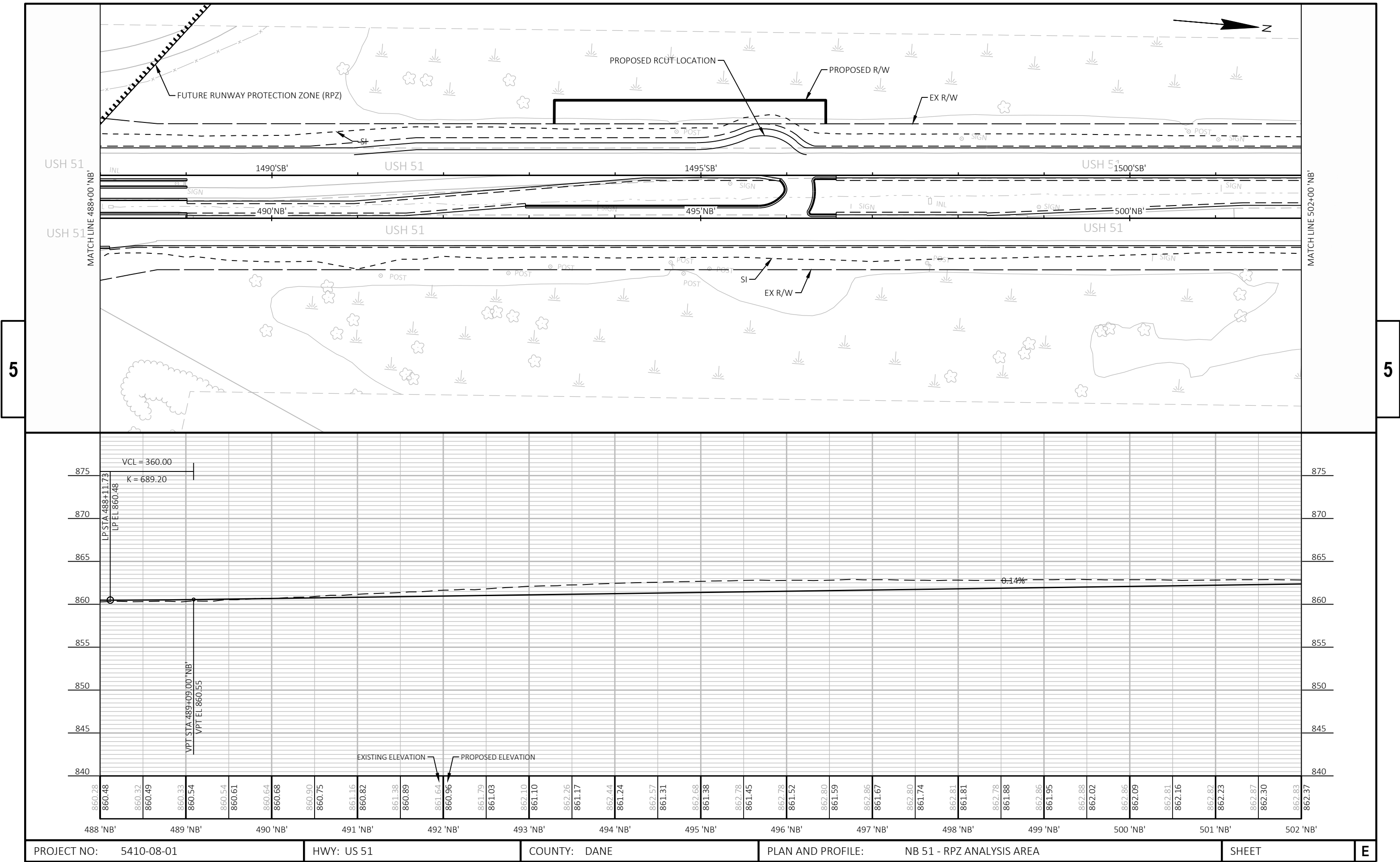
Sheets 10 - 14: Southbound US 51 Profile Only



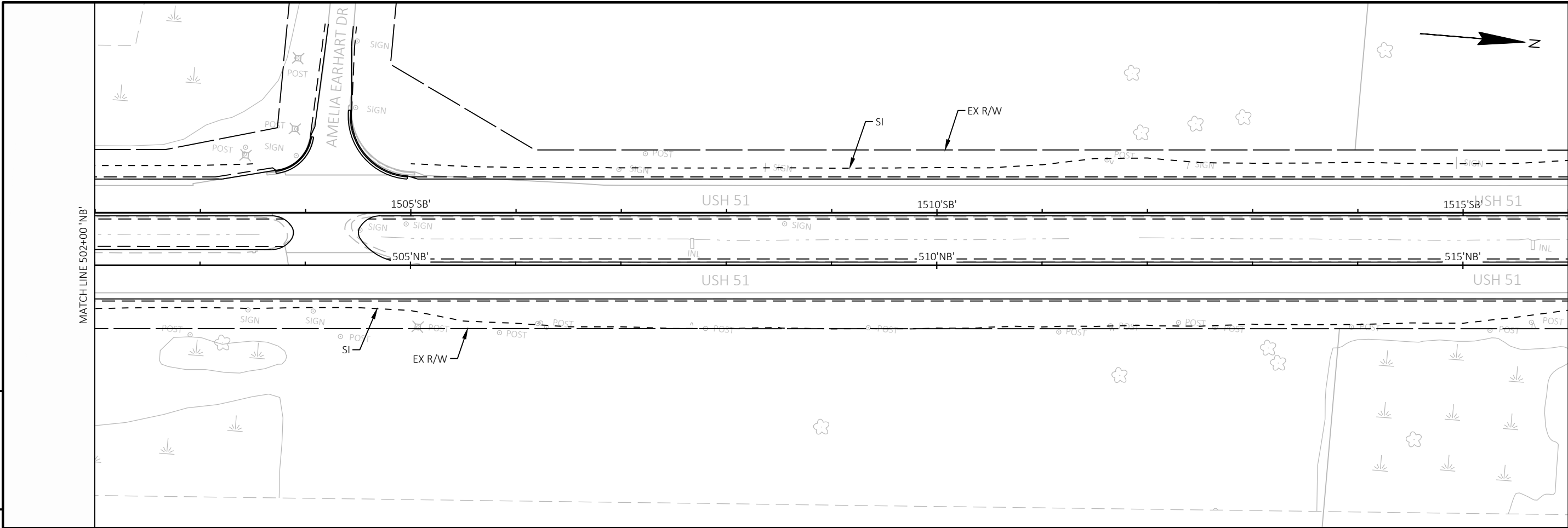
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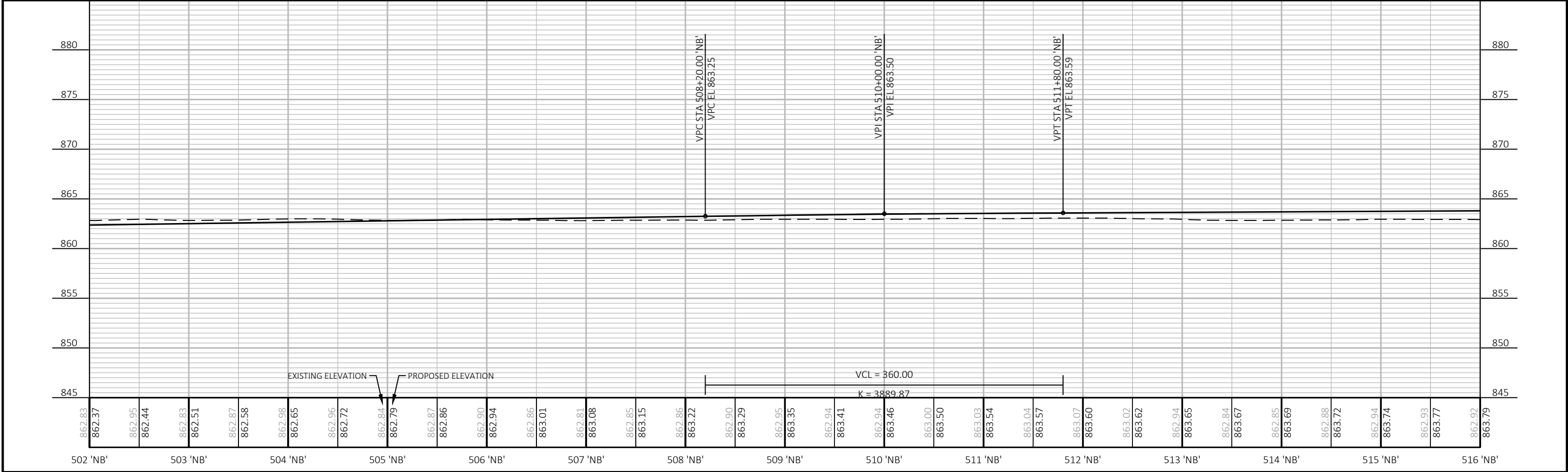
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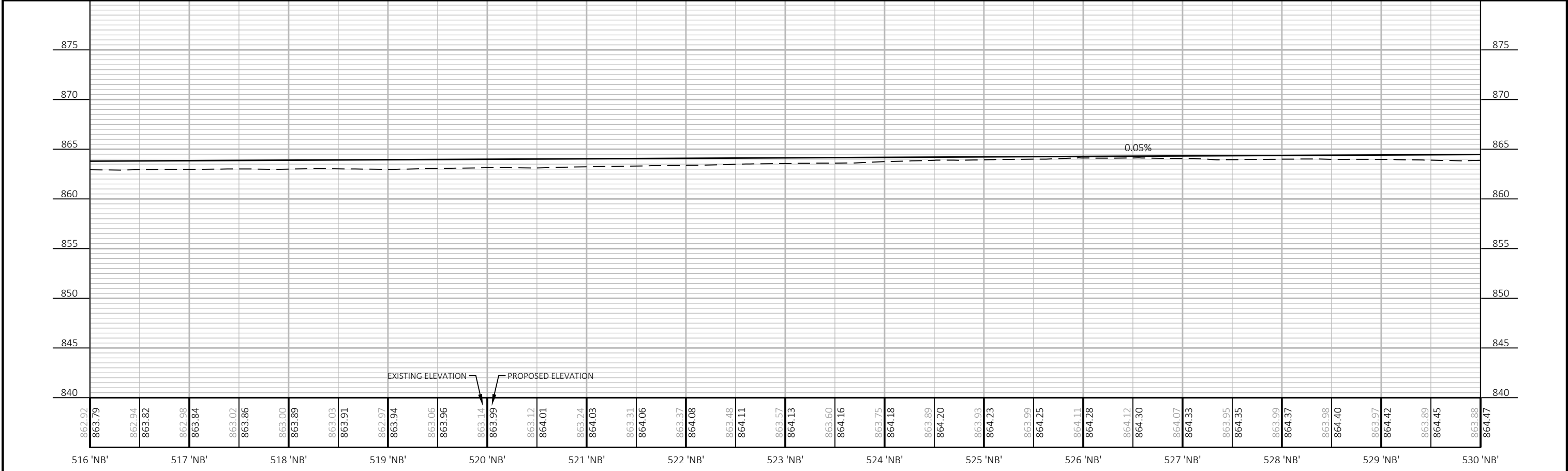
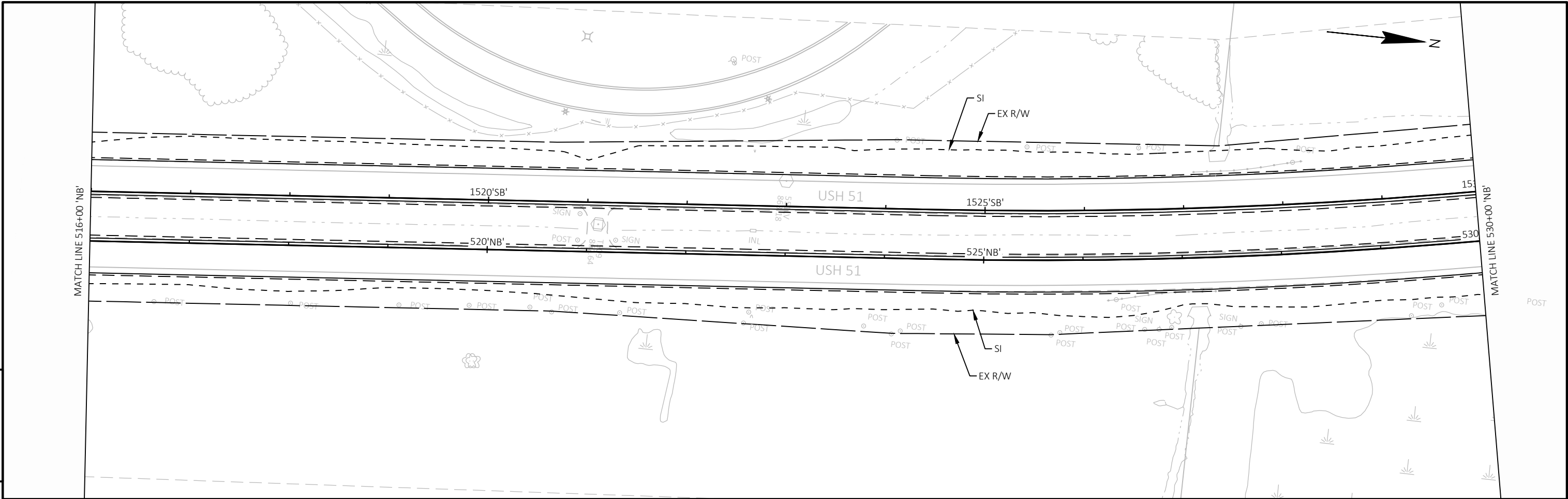
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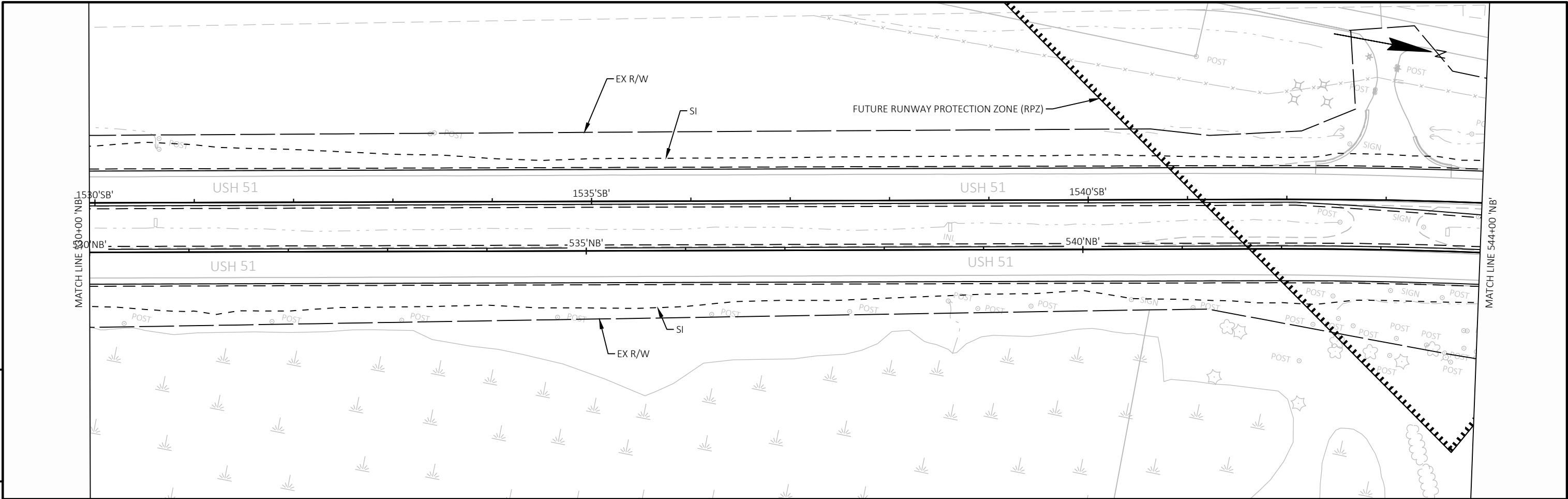
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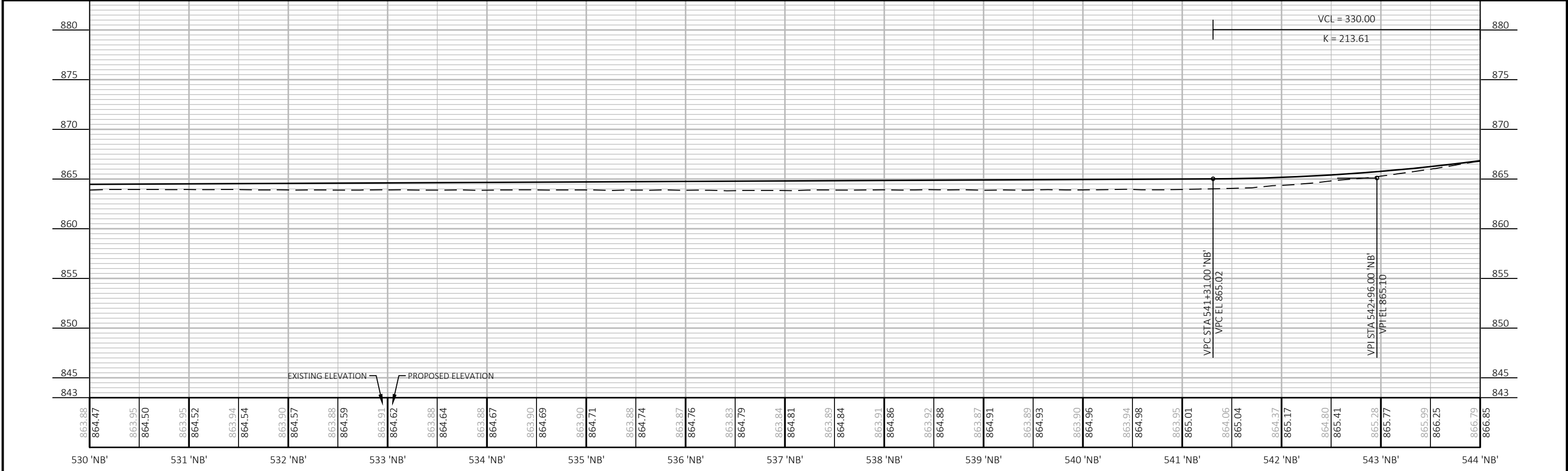
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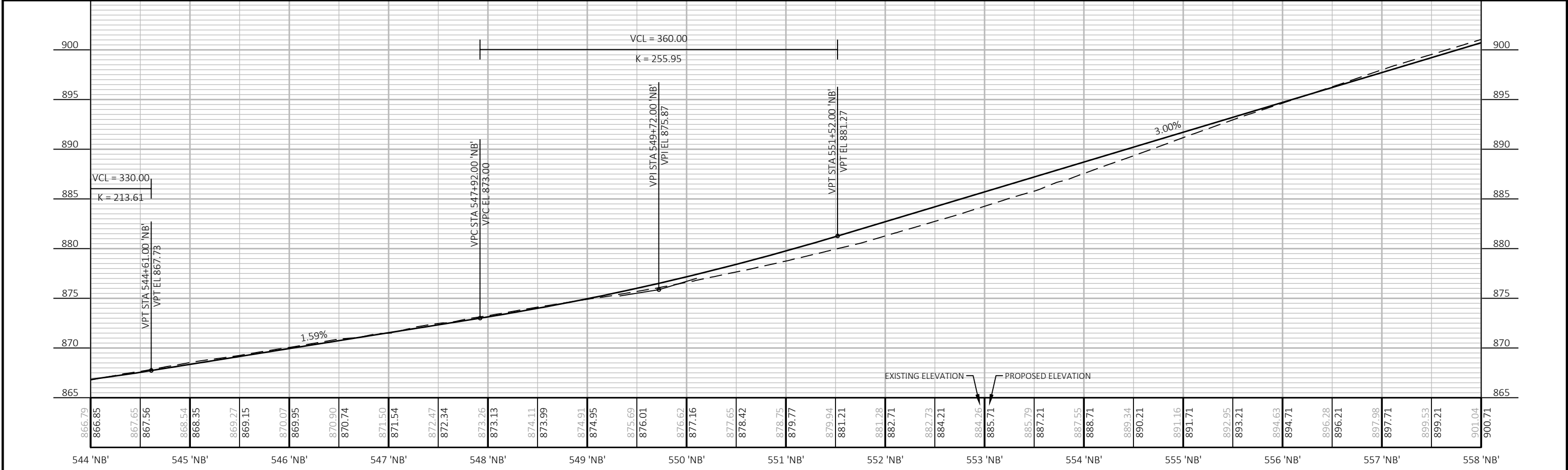
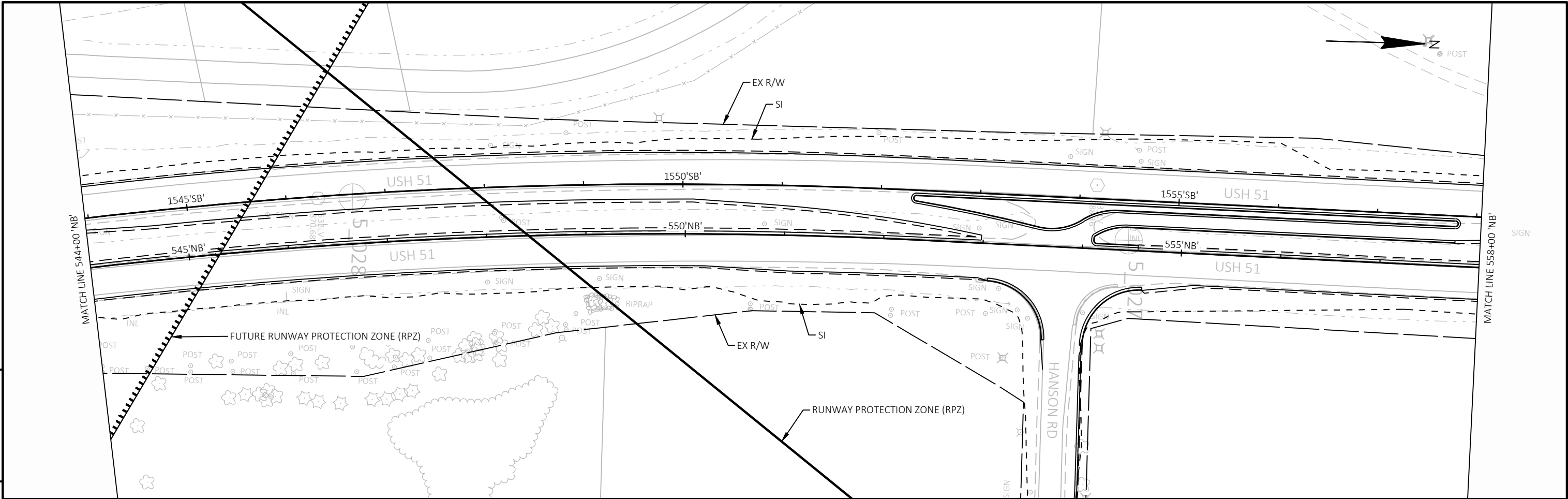
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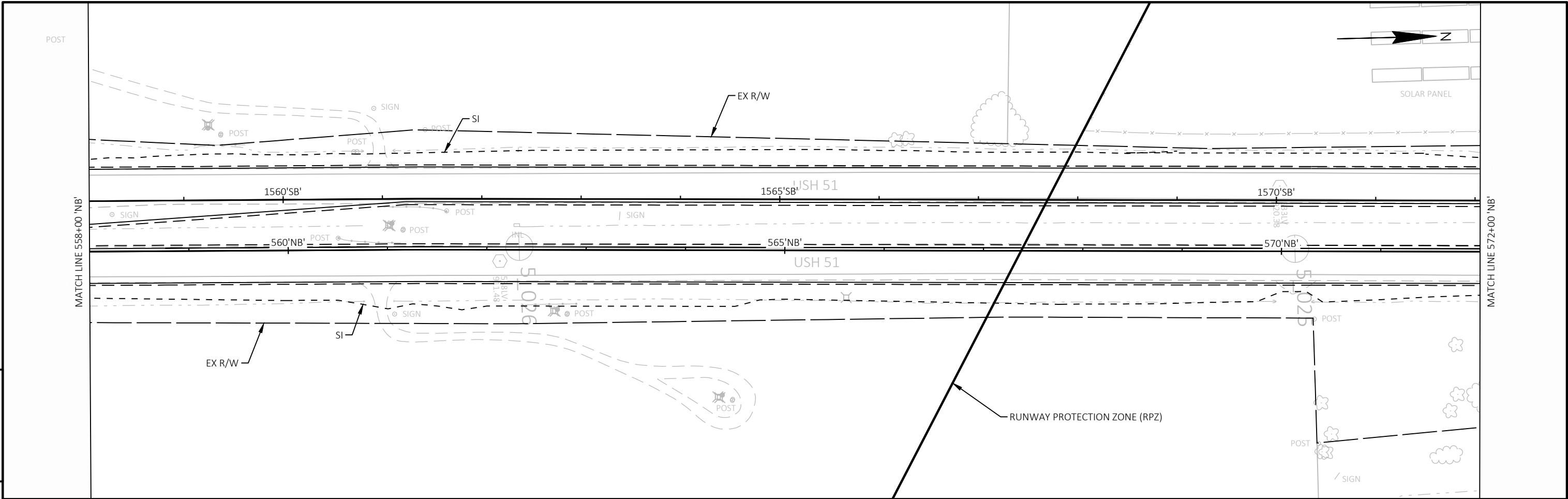


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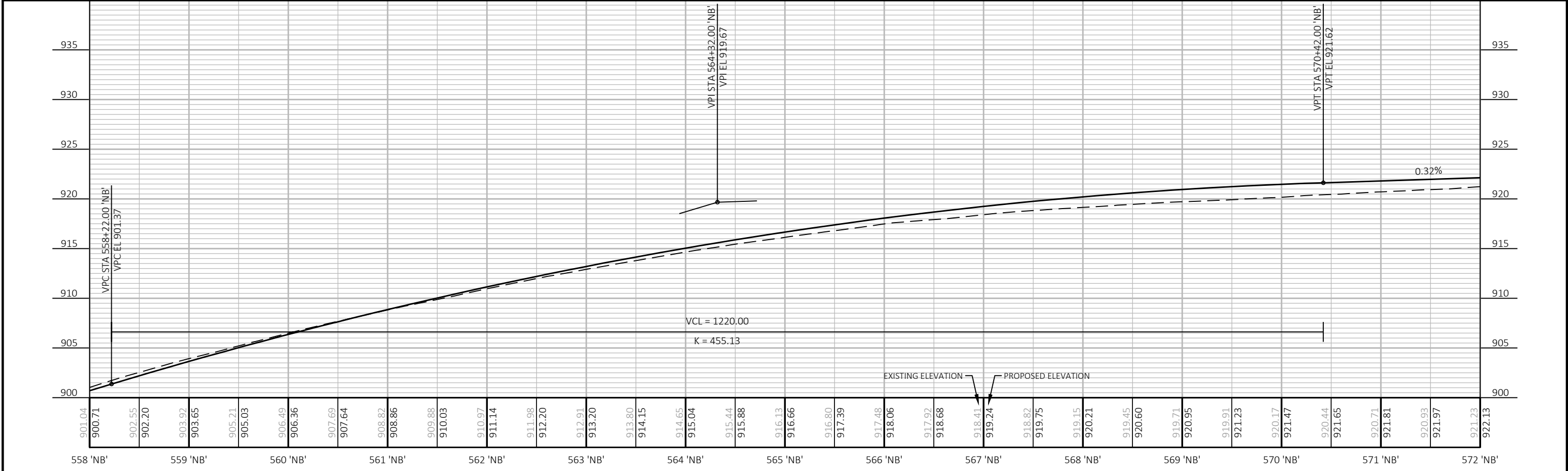


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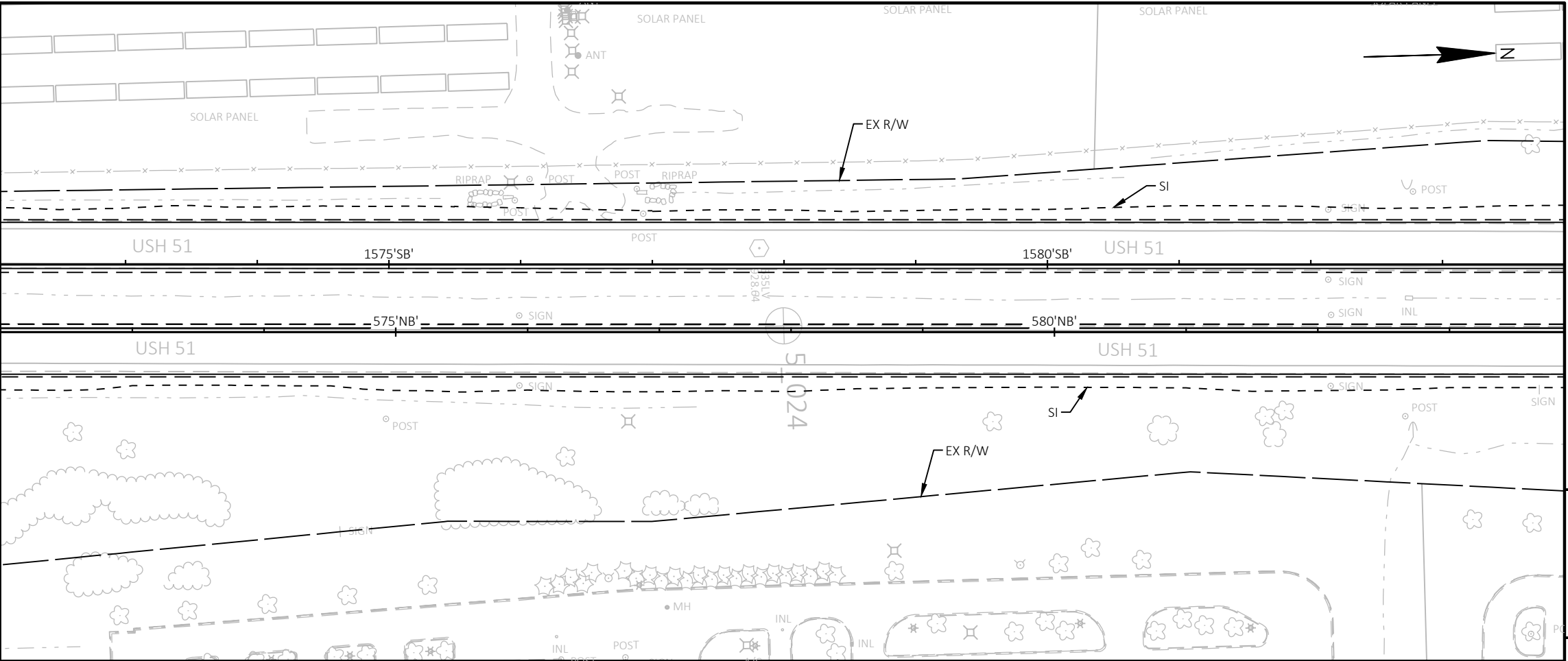
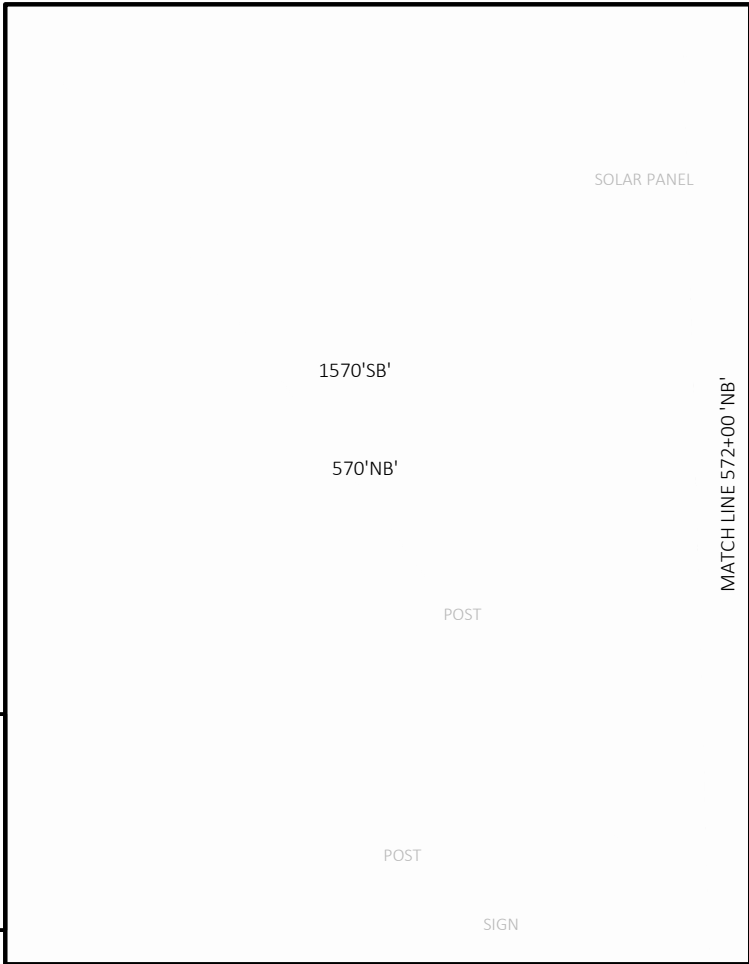


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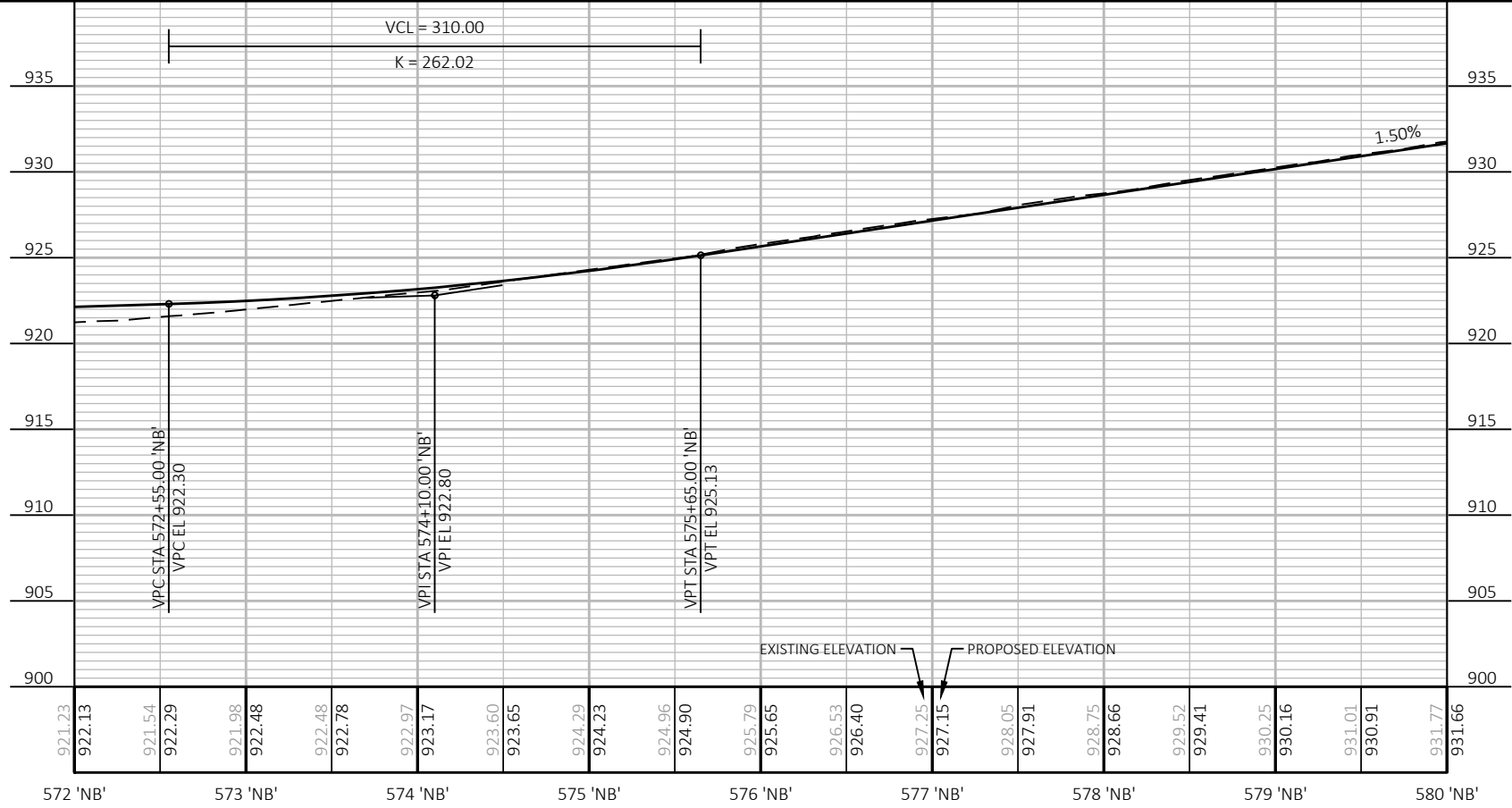


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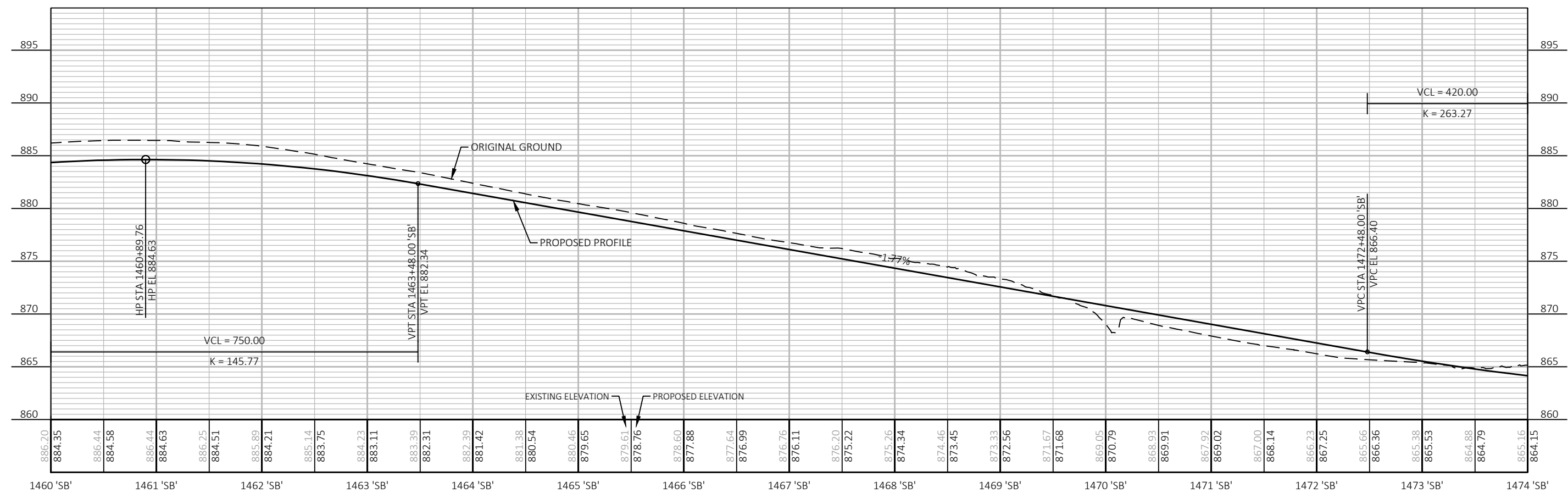
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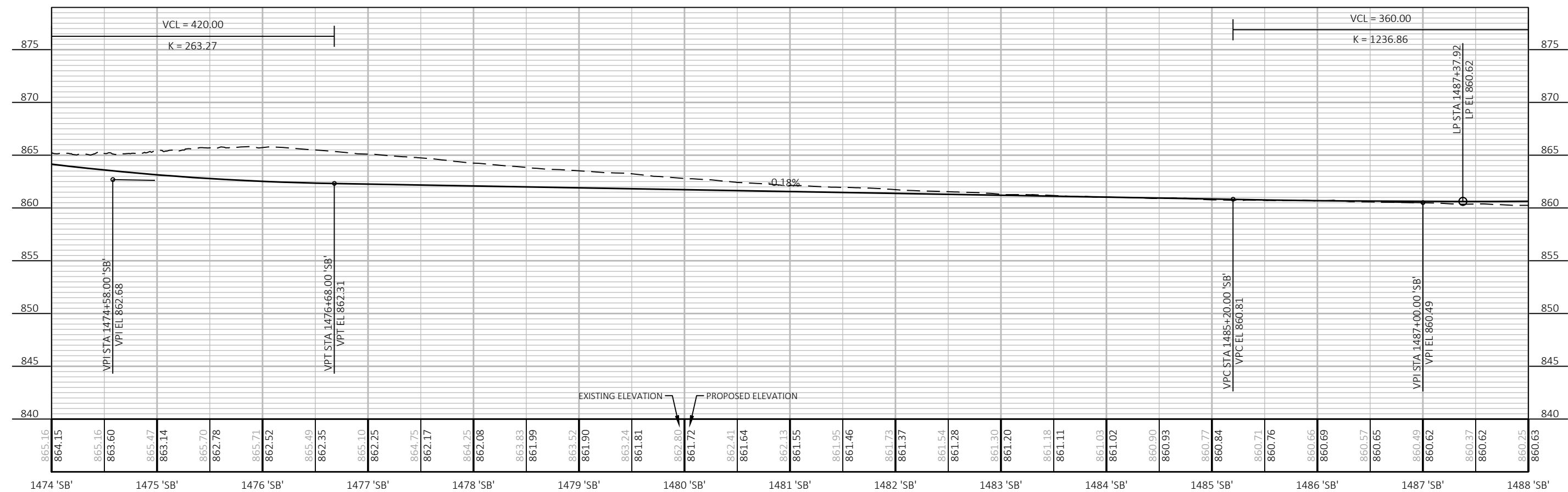
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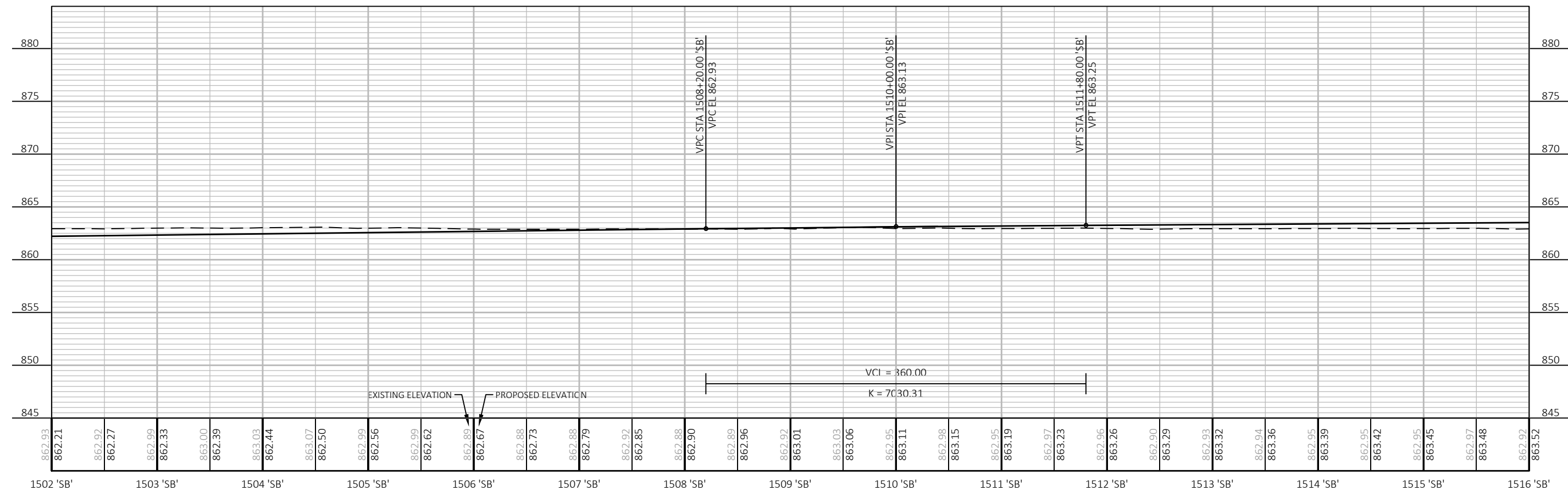
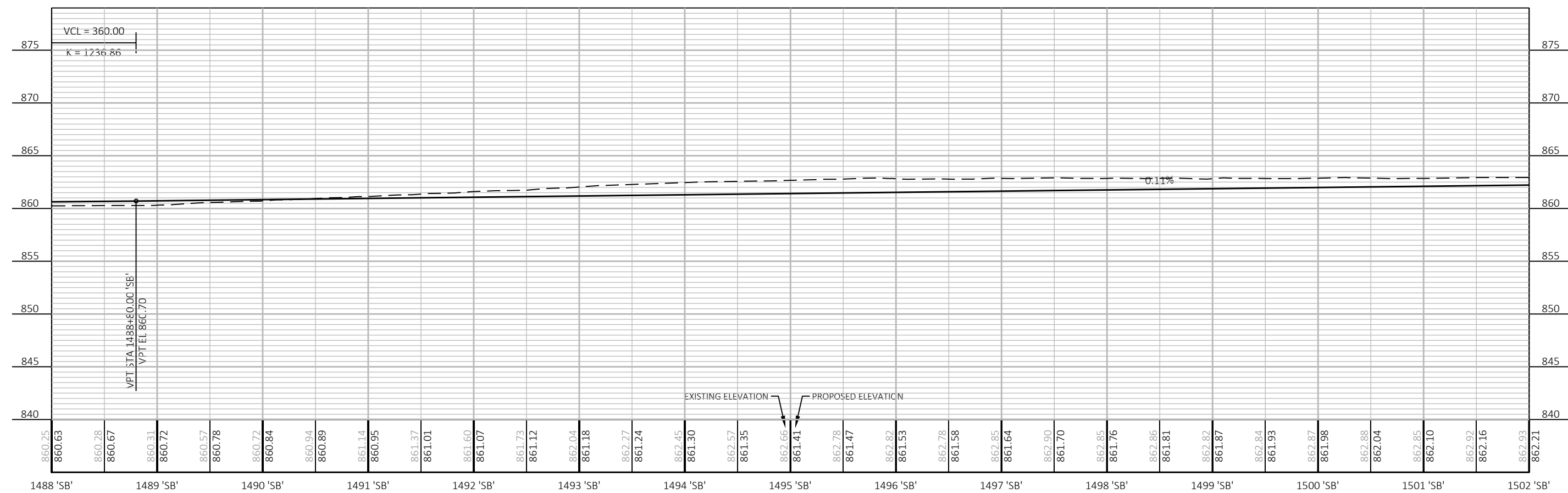
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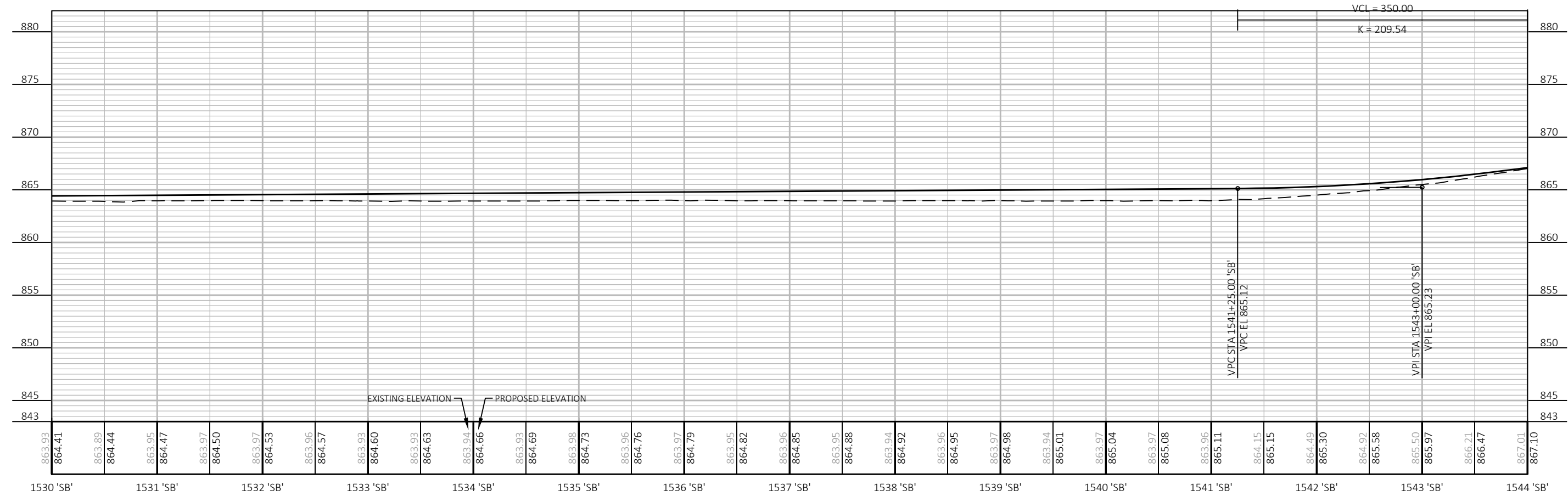
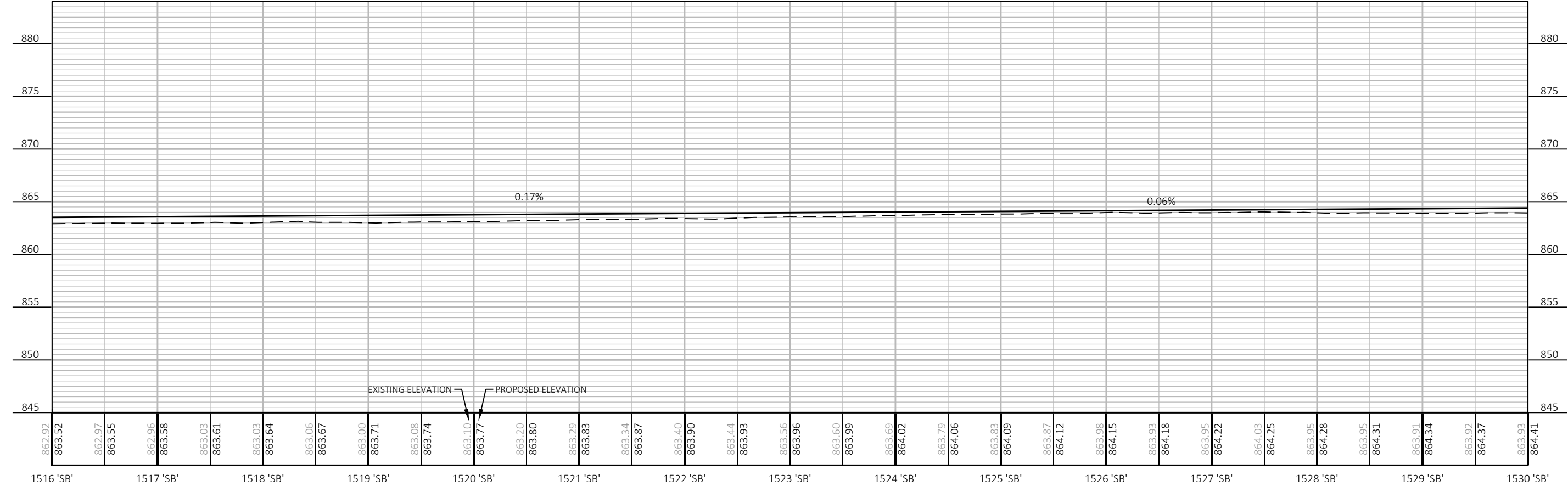


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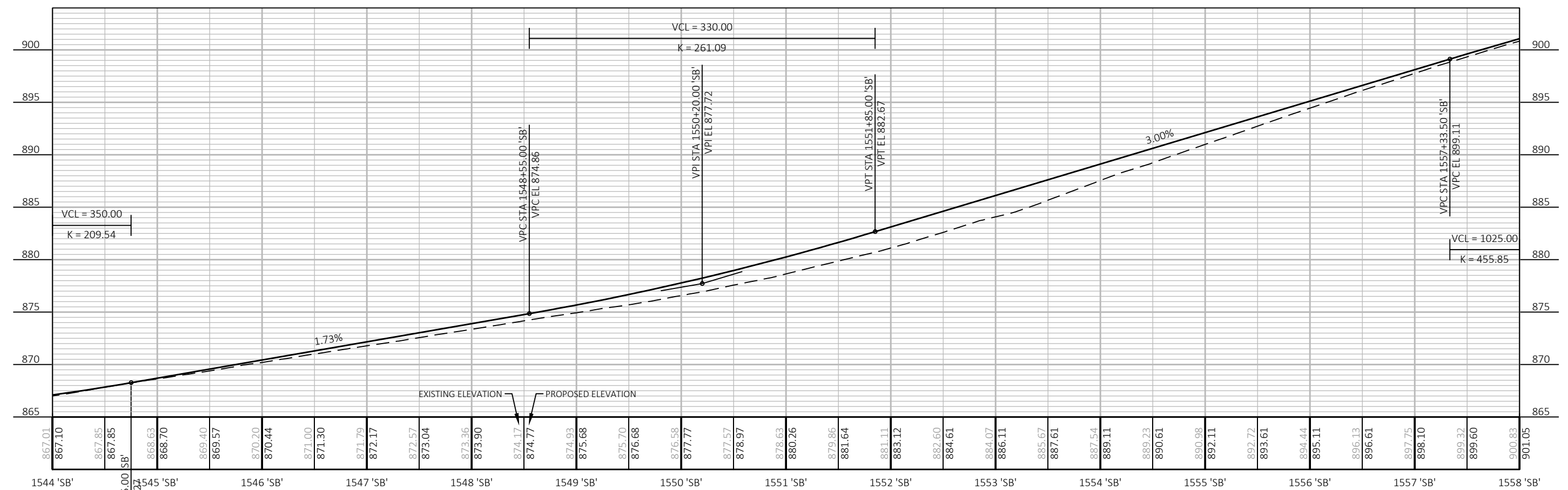


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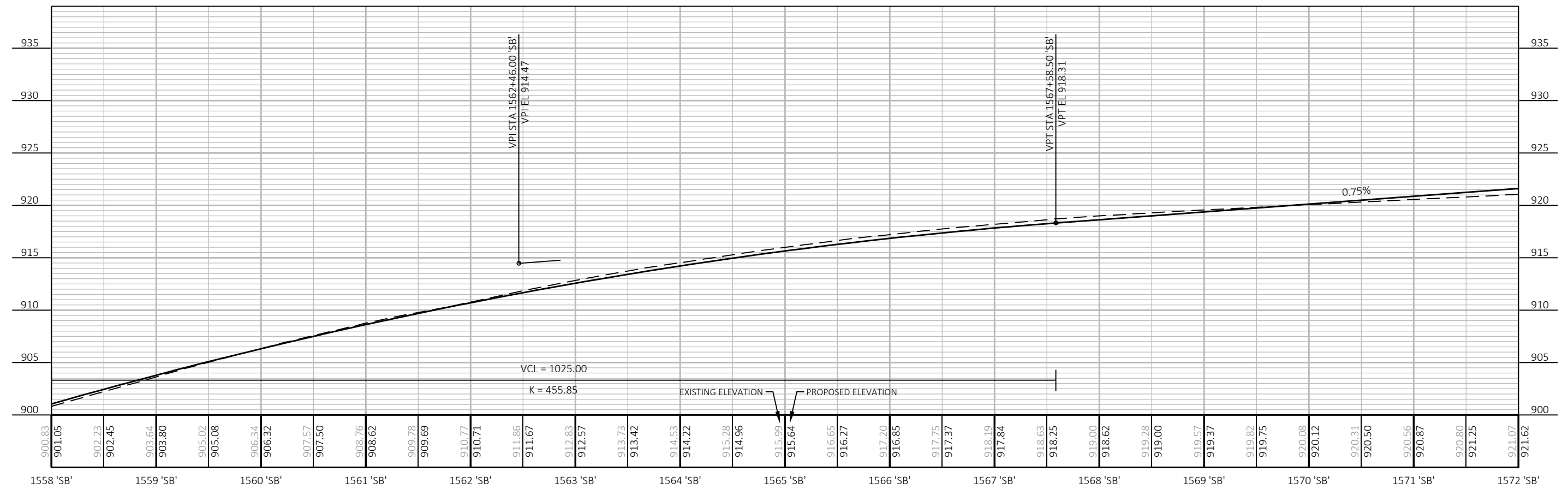




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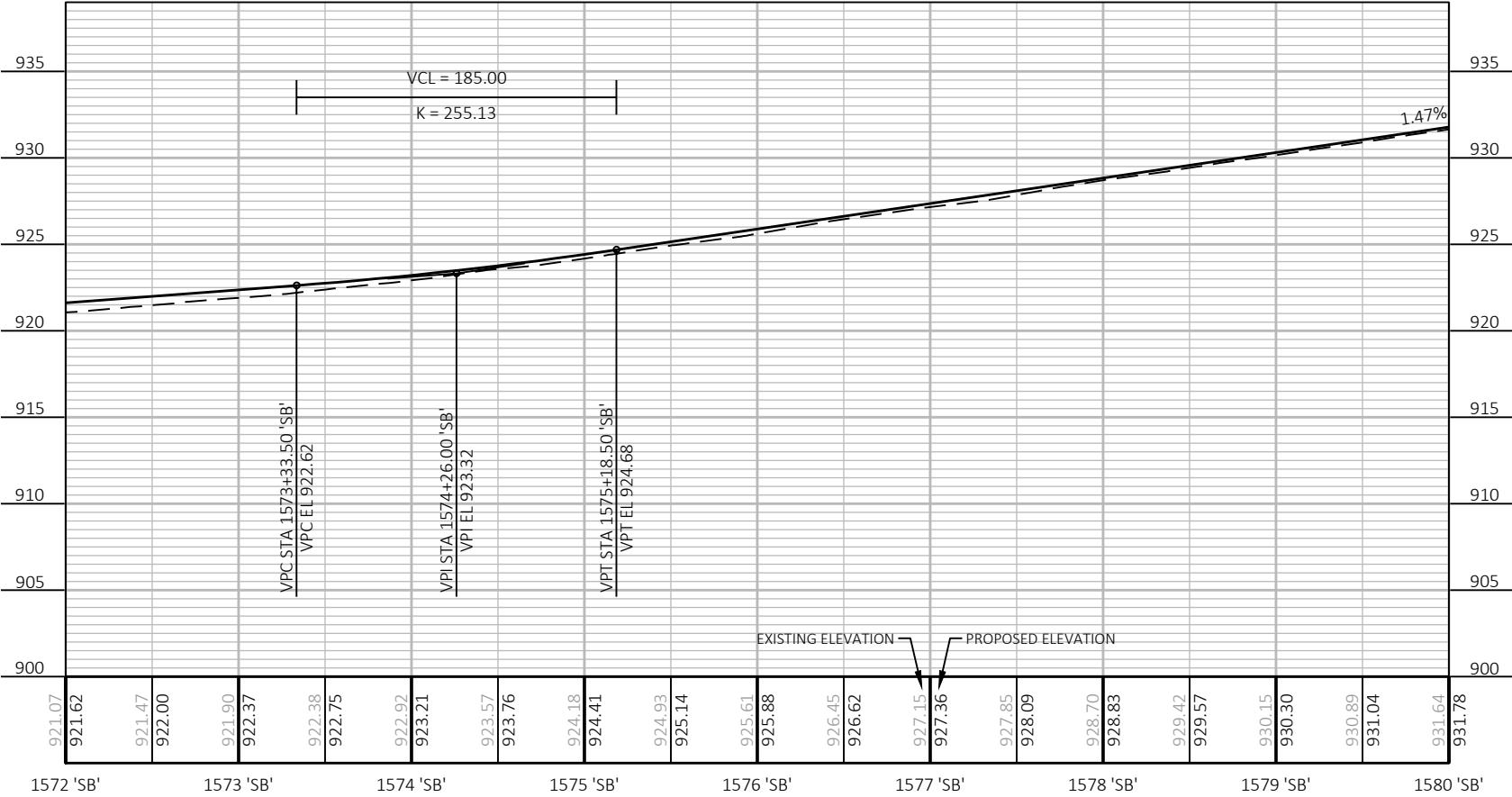


Exhibit 6

Hanson Road Alternative Concept

Hanson Road Alternative Concept



Exhibit 7

Rieder Road Alternative Concept

Rieder Road Alternative Concept

