NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

MATERIALS AND RESEARCH DIVISION

Experimental Study MR 2013-01

Evaluation of East Jordan Iron Works
3025 Self level manhole casting

Work Plan

SOIA-7-002(119)053

February, 2013

Prepared by

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
BISMARCK, NORTH DAKOTA
www.dot.nd.gov

INTERM DIRECTOR
Grant Levi, P.E.

MATERIALS AND RESEARCH DIVISION
Ron Horner, P.E.

Experimental Study MR 2013-01

Evaluation of East Jordan Iron Works 3025 Self level manhole casting

Work Plan

SOIA-7-002(119)053

February, 2013

Written by

T.J. Murphy

Disclaimer

The contents of this report reflect the views of the author or authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not reflect the official views of the North Dakota Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, Specification, or regulation.

TABLE OF CONTENTS

Purpose and Need 1

Objective 1

Location 1

Design 2

Evaluation 3

Appendix A: EJIW 3025 Product # 00302511A01 specification.

Appendix B: SOIA-7-002(119)053 plan and profile - Manhole casting locations

Evaluation of East Jordan Iron Works
3025 SELFLEVEL Manhole Casting

Purpose and Need

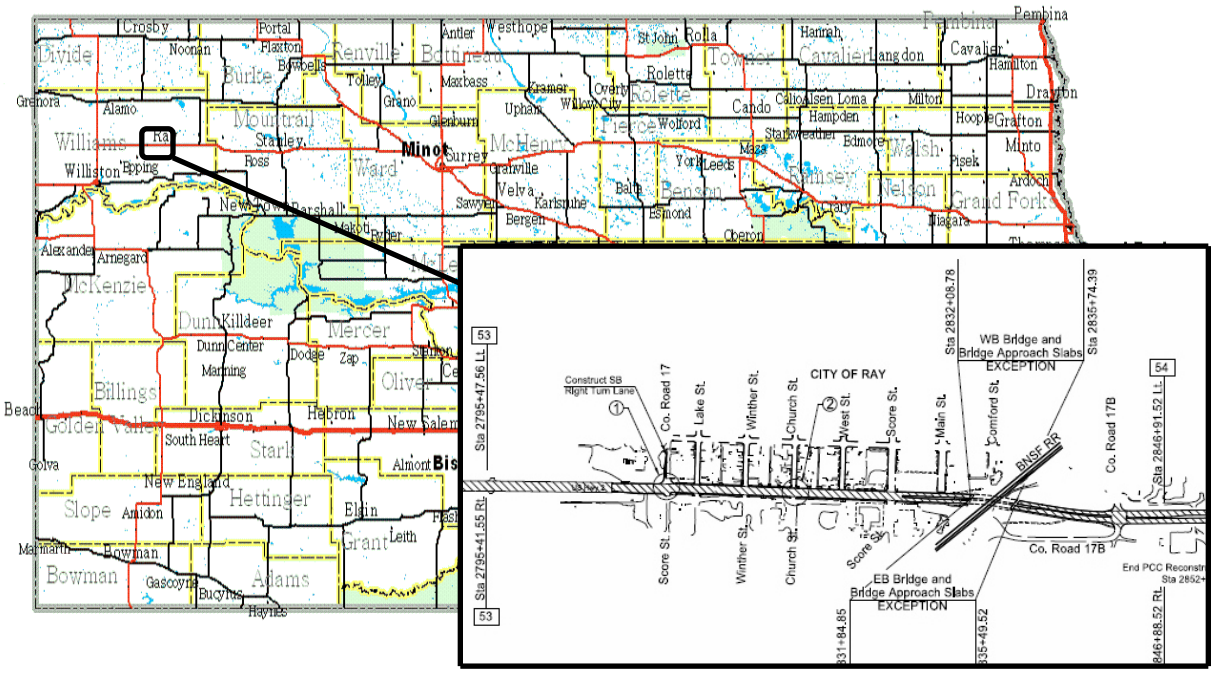
NDDOT currently specifies the Neenah R-1955-1 floating manhole casting or approved equal. The vendor for East Jordan Iron Works (EJIW) has a product the 3025 SELFLEVEL Assembly manhole casting that they claim as an “equivalent” product. The EJIW product number 00302511A01, 3025 SELFLEVEL manhole casting assembly has been selected for evaluation by the Design Division. This work plan will outline the installation and evaluation process.

Objective

The objective of this experimental project is to evaluate the performance of the EJIW product number 00302511A01, 3025 SELFLEVEL manhole casting assembly as acceptable equal to the Neenah R-1955-1. The EJIW product details can be found in Appendix A.

Location

NDDOT plans to incorporate EJIW 3025 Selflevel manhole castings as part of project and SOIA-7-002(119)053. This project is located near Ray, ND on US 2.



Design

NDDOT plans to incorporate EJIW 3025 SELFLEVEL manhole on US 2 as part of project SOIA-7-002(119)053. The EJIW 3025 Selflevel manhole casting will be incorporated with a plan note which is included below.

722-P01 MANHOLE CASTING TYPE 1 AND MANHOLE CASTING TYPE 2:
These two pay items consist of removing the existing manhole castings that are located in paved roadway, furnishing, and installing the new manhole castings.

The manhole castings specified under the pay item "Manhole Casting Type 2" shall be replaced with EJ castings. The product number 00302511A01 assembly and the 1040 cover 1-1/2" thick shall be used. For information regarding the EJ castings the Contractor shall call Sales Representative Mark Garrison at (715) 271-9014 or email mark.garrison@ejco.com.

All remaining castings shall be as specified on Standard Drawing D-722-05A.

All castings shall be placed flush to within 1/8 inch below the pavement.

The price bid shall include all equipment materials, and labor necessary to remove the existing casting, install the new casting, and adjust to the final grade. This will be measured and paid for as "Manhole Casting Type 1" and "Manhole Casting Type 2" each.

SOIA-7-002(119)053

This project consists of PCC Reconstruction, Turn Lanes, Turn Lane Extension, Traffic Signal, HAWK System, Guardrail, Sidewalk Canopy, Bridge Approach Slabs Joints Seal, and Incidentals. The project will have twelve manhole casting installed. Six of which will be the experimental “Manhole Casting Type 1” (EJIW) and six of which will be the control “Manhole Casting Type 2” (Neenah). The design sheets showing the exact manhole casting locations can be found in Appendix B.

NDDOT intends to evaluate the EJIW product number 00302511A01, 3025 SELFLEVEL manhole casting assembly along with the control Neenah R-1955-1 floating manhole casting.

Evaluation

The project will be evaluated during construction and completion then followed up with an annual evaluation for the next ten years.

To assure quality construction practices the concrete load used to set the casting (control or experimental) shall be tested for slump and air. A set of 6 test cylinders shall be cast from the same load for compressive strength testing. All tests shall conform to section 802.03 of the Field Sampling and Testing Manual.

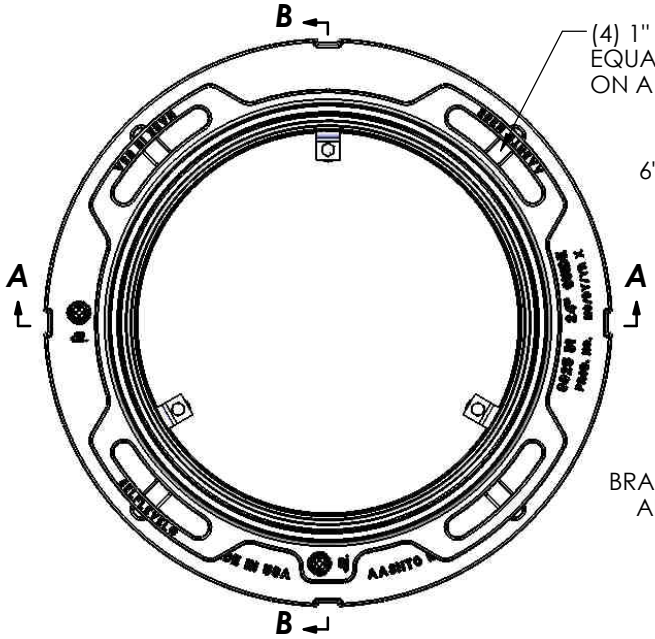
The project will be evaluated on the following criteria:

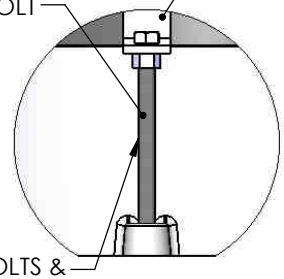
- Visual Inspection
- Durability Issues
- Photos

Materials and Research will publish a biannual report documenting the observations of this project.

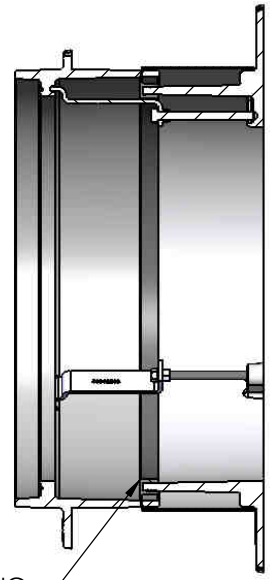
Appendix A

3025 SELFLEVEL Assembly

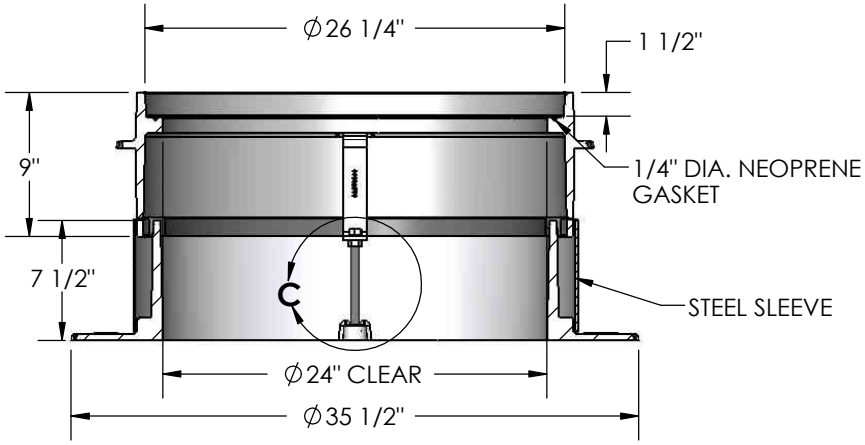




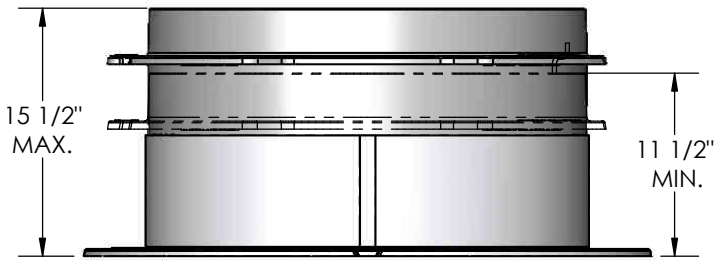
ADJUSTING BRACKET DETAIL C



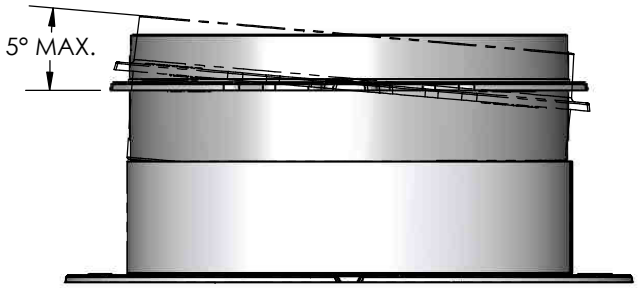
SECTION B-B



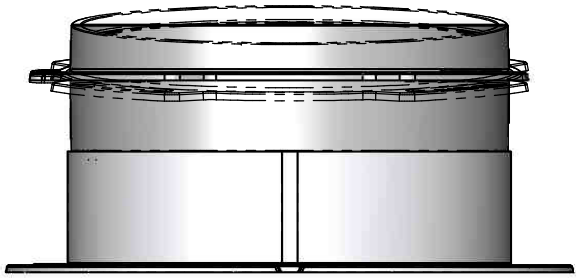
SECTION A-A



SIDE VIEW
(SHOWING TRAVEL OF UPPER FRAME)



FRONT VIEW
(SHOWING MAXIMUM TIP @ 5° ANGLE)



SIDE VIEW
(SHOWING MAXIMUM TIP @ 5° ANGLE)

Product Number

00302511A01

Design Features

-Materials
  Frame
    Ductile Iron (70-50-05)
  Frame
    Ductile Iron (70-50-05)
  Accessory
    Steel

-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√ Designates Machined Surface

Certification

-ASTM A536
-AASHTO M306
-
-Country of Origin: USA

Major Components

00302511
00302519
00302596

Drawing Revision

2/28/2009 Designer: JIJ
06/01/2012 Revised By: JIJ

Disclaimer

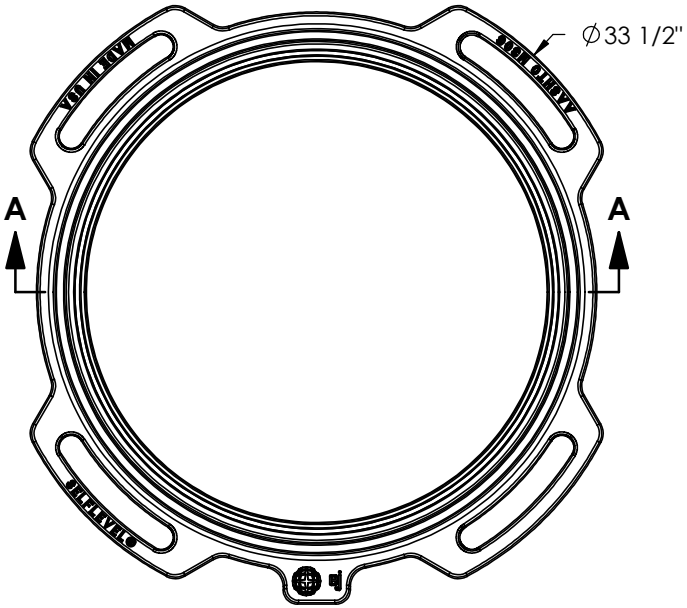
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

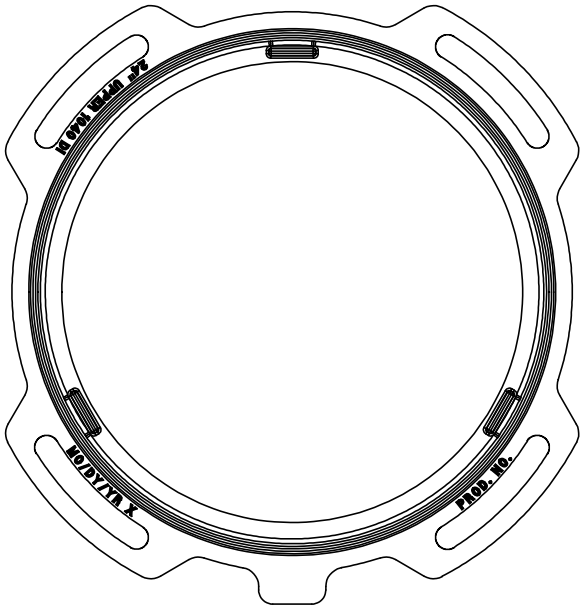
CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2011 EJ Group, Inc. All rights reserved.

Contact

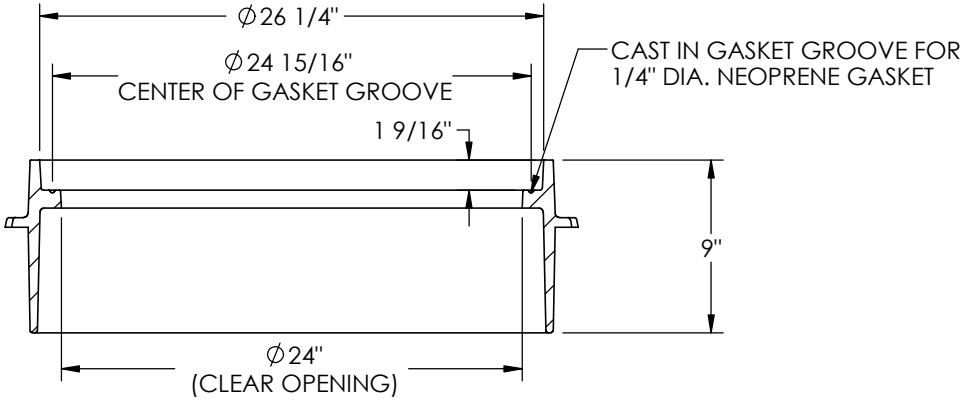
800.626.4653
ejco.com

3025 SELFLEVEL Frame





BOTTOM VIEW



SECTION A-A

Product Number

00302511

Design Features

-Materials
  Ductile Iron (80-55-06)
-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√ Designates Machined Surface

Certification

-ASTM A536
-
-
-Country of Origin: USA

Drawing Revision

3/14/2012 Designer: JIJ
06/05/2012 Revised By: JIJ

Disclaimer

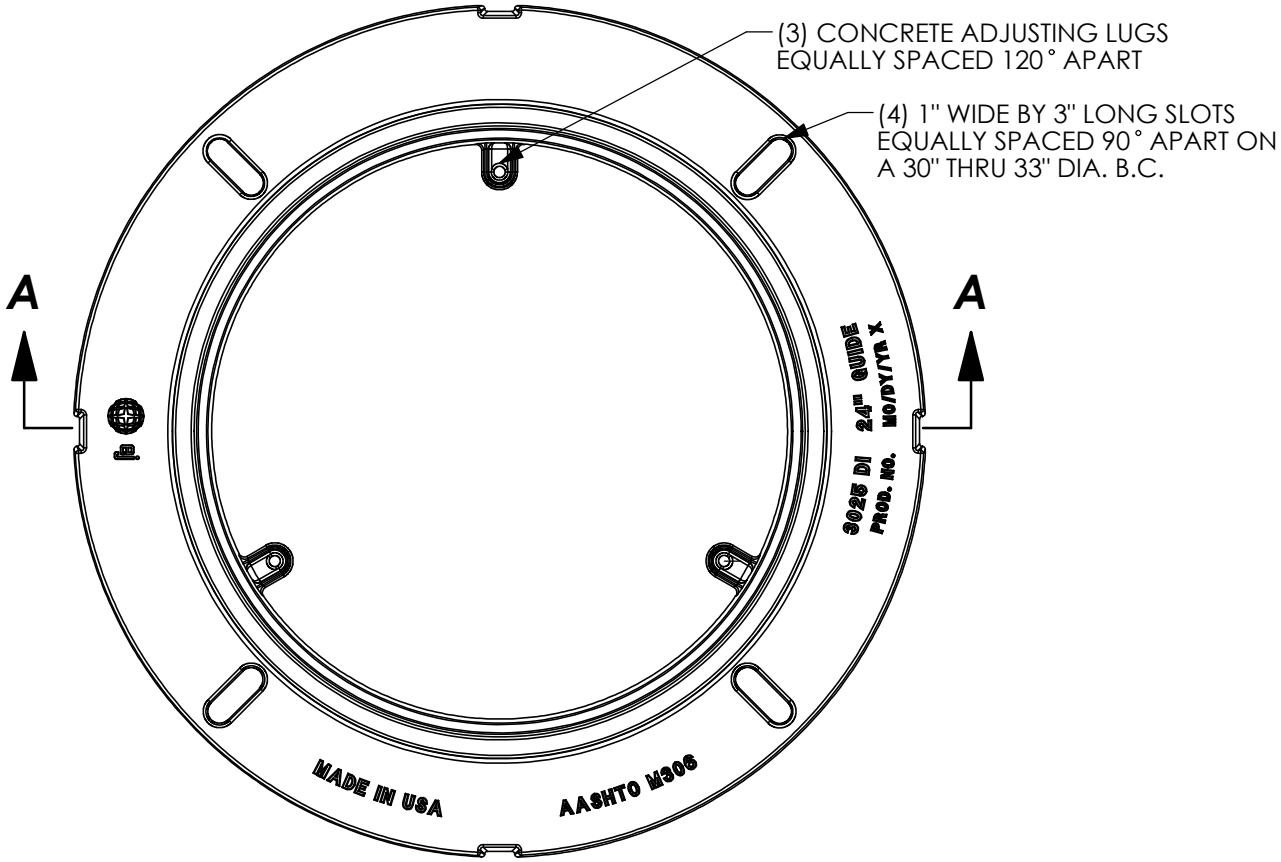
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

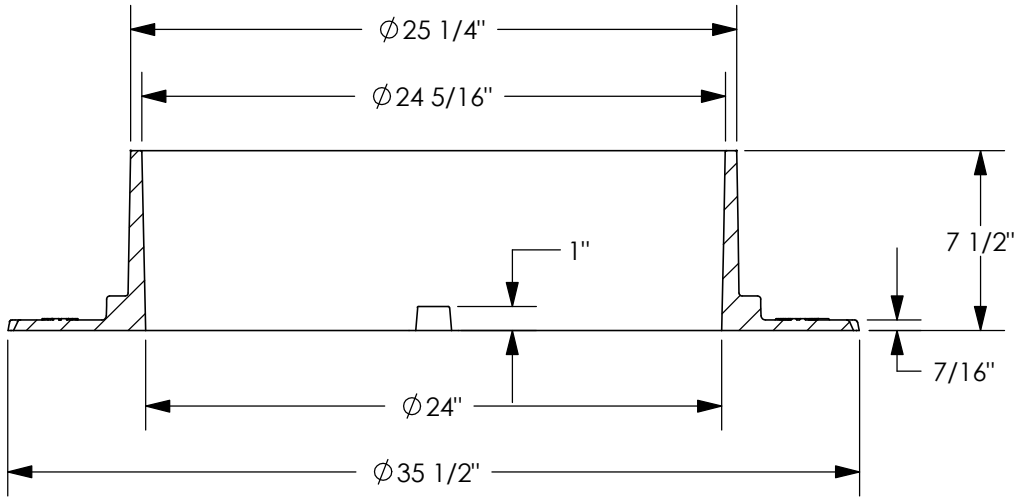
CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2011 EJ Group, Inc. All rights reserved.

Contact

800 626 4653
ejco.com

3025 SELFLEVEL Frame





SECTION A-A

Product Number

00302519

Design Features

-Materials
  Ductile Iron (80-55-06)
-Design Load
  Heavy Duty
-Open Area
  n/a
-Coating
  Undipped
-√Designates Machined Surface

Certification

-ASTM A536
-
-
-Country of Origin: USA

Drawing Revision

03/14/2012 Designer: JIJ
06/05/2012 Revised By: JIJ

Disclaimer

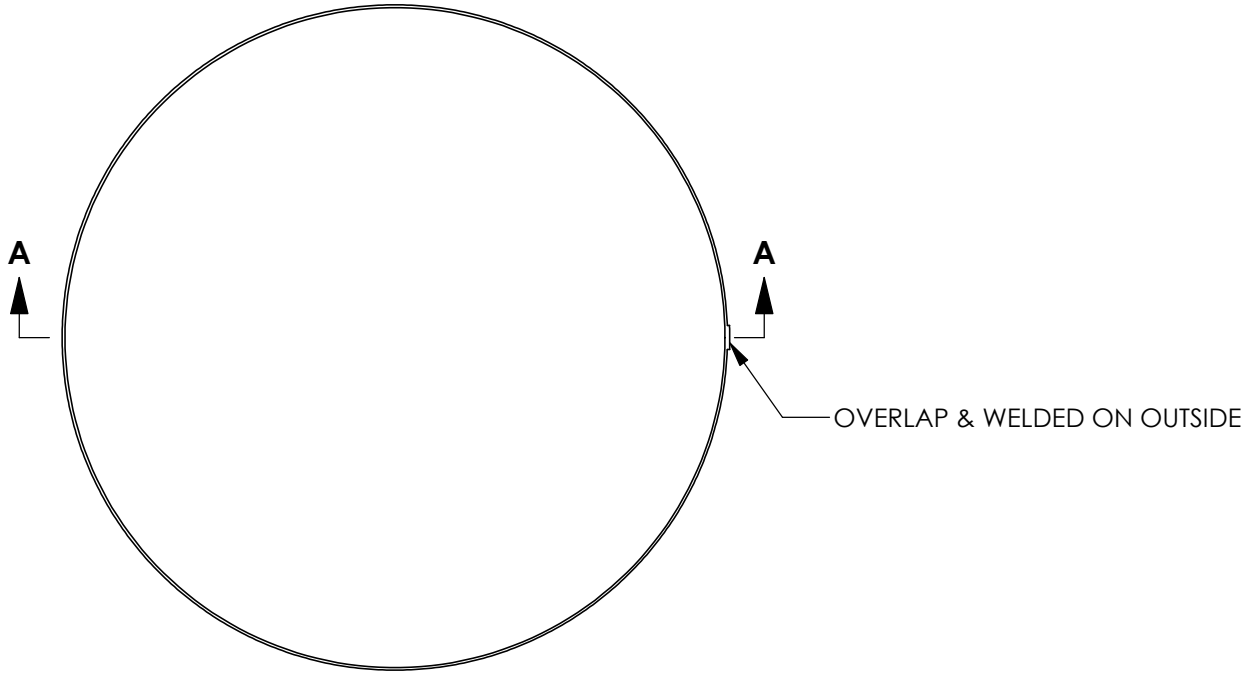
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

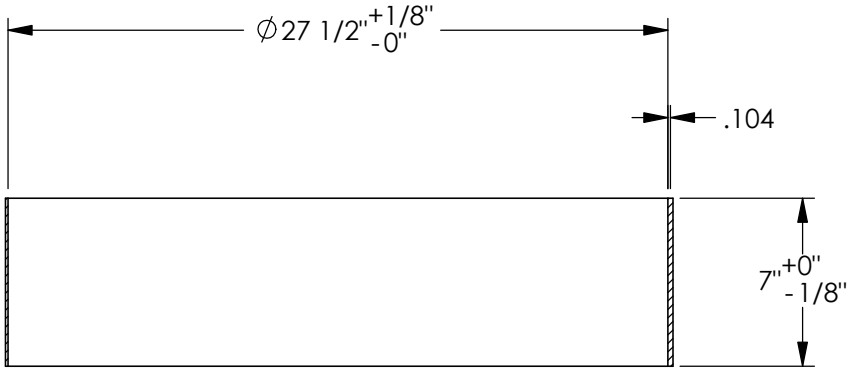
CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2011 EJ Group, Inc. All rights reserved.

Contact

800 626 4653
ejco.com

3025 Selflevel Steel Sleeve





SECTION A-A

Product Number

00302596

Design Features

-Materials
Steel (12 gage Hot Rolled)
-Design Load
n/a
-Open Area
n/a
-Coating
Paint (Flat Black Rustoleum)
-√ Designates Machined Surface

Certification

-
-
-
-Country of Origin: USA

Drawing Revision

06/04/2012 Designer: JIJ
06/05/2012 Revised By: JIJ

Disclaimer

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact

800 626 4653
ejco.com

EJ SELF LEVEL® Specification – Concrete Installation

General

This specification is applicable where a height adjustable manhole frame with a cover or grate is being installed in a concrete slab. Frames shall be made from ductile iron. Frame castings shall be EJ SELF LEVEL® Model 3025 or approved equal. Covers shall be either EJ Model 1040 or 1905 and be made from either gray or ductile iron.

Material

Manufacturer shall certify that the ductile iron conforms to ASTM A536 grade 70-50-05 or 80-55-06. Gray iron castings shall conform to ASTM A48 Class 35B. Castings must contain a minimum of 85% recycled content.

Markings

All products shall have the product name or series number, country of origin, specific part number, production date, material information, and the manufactures identification or name (EJ) permanently cast on the product. The top of manhole covers shall have the country of origin and manufacturers identification. Bottom of the casting shall have the product name or series number, part number, production date (example: mm/dd/yy) for tracking purposes, and material quality (such as ASTM A536) to verify the materials used. Castings without proper markings shall be rejected.

Product Specifics

This product shall be available with a 24" clear opening design and be designed to accept covers that are 26" Diameter x 1-1/2" thick. Castings shall be adjust able and have a minimum height adjustment of 11-1/2" and a maximum height adjustment of 15-1/2". The product shall be provided with a steel outer sleeve which will allow the upper frame to move in either an up or down direction after installation. The upper frame shall be provided with a minimum of 4 protrusions that will allow the upper frame to be securely imbedded into the concrete slab. The product shall be provided with 3 adjusting bolts and brackets that will allow the frame to be held at the correct elevation while the product is being installed. Adjusting bolts and brackets shall be removed after frame installation and concrete curing.

For locations not placed in direct traffic paths the covers shall be suitable for traffic loading and shall have passed a 50,000 pound proof load test as outlined in AASHTO M306. For locations where the traffic path will be over the product the covers shall be suitable for traffic loading and shall have passed a 150,000 pound proof load test as outlined in AASHTO M306 and weigh a minimum of 175 pounds. Covers shall be labeled as per the bidding documents. Cover dimensions shall be 26" diameter x 1-1/2" seat thickness.

Castings shall be of uniform quality, free from sand holes, gas holes, cracks, shrinkage and other surface defects. Castings shall be reasonably well cleaned by shot blasting. Runners, risers, fins and other cast-on pieces shall be removed from the castings and such areas shall be ground smooth. As-cast

dimensions may vary within accepted foundry tolerances as outlined in the Iron Castings Handbook published by the American Foundrymen's Society, Inc. Nominally, casting dimensional tolerances shall be +/- 1/16 inch per foot. Castings shall be furnished uncoated.

Product Options

It is recommended for installations that will be subject to traffic that an appropriate INFRA-RISER product be installed underneath the lower guide frame. This will help cushion the impact of traffic onto the underlying infrastructure.

Certification

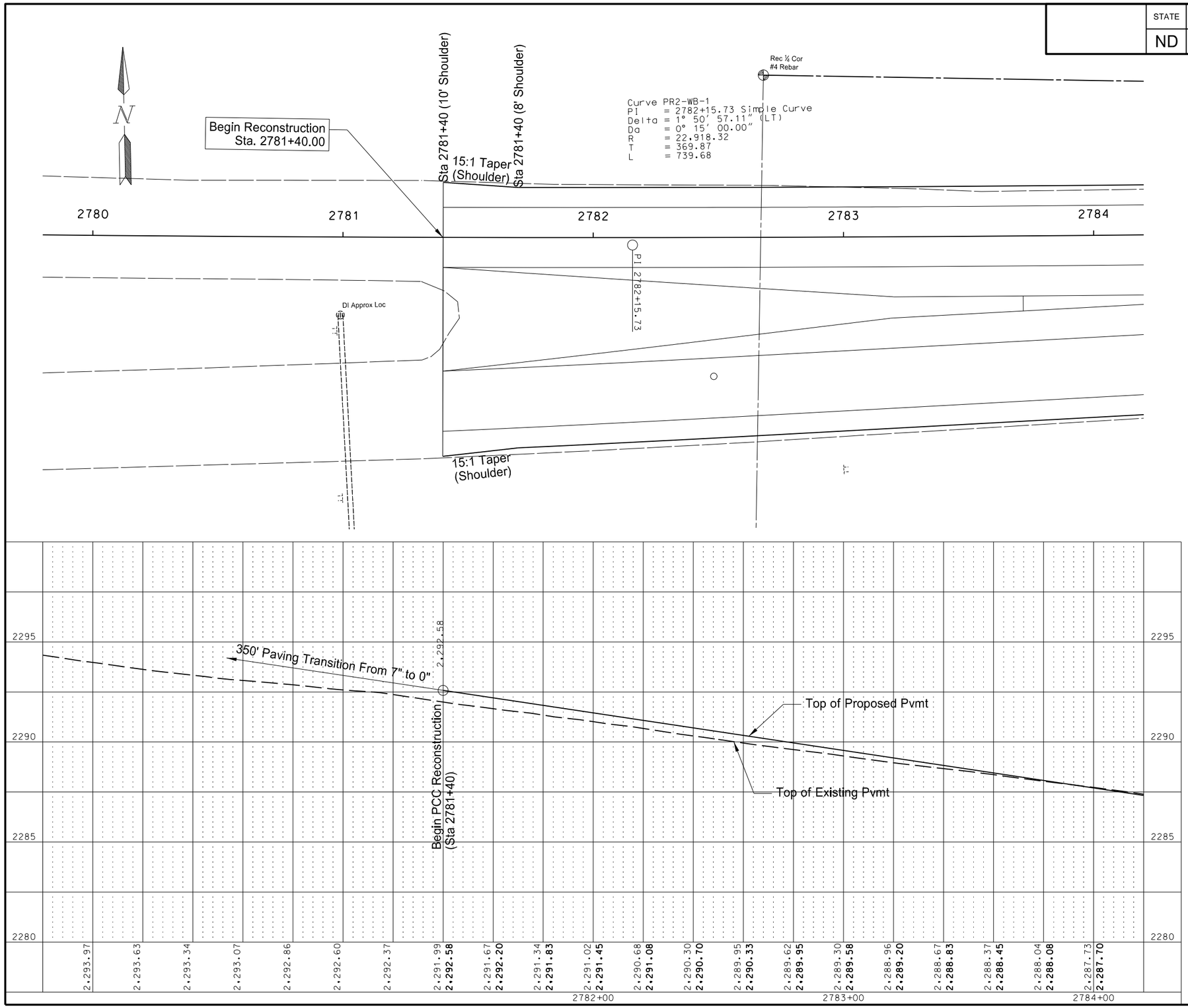
ASTM A48 Class 35B	Material
AASHTO M105 Class 35B	Material
ASTM A536 70-50-05	Material
ASTM A536 80-55-05	Material
AASHTO M306	Performance
ISO 9001:2008	Quality Assurance

Quality Assurance

System of manufacturing quality assurance must conform to the requirements of ISO 9001:2008 and be certified by a third party.

Appendix B

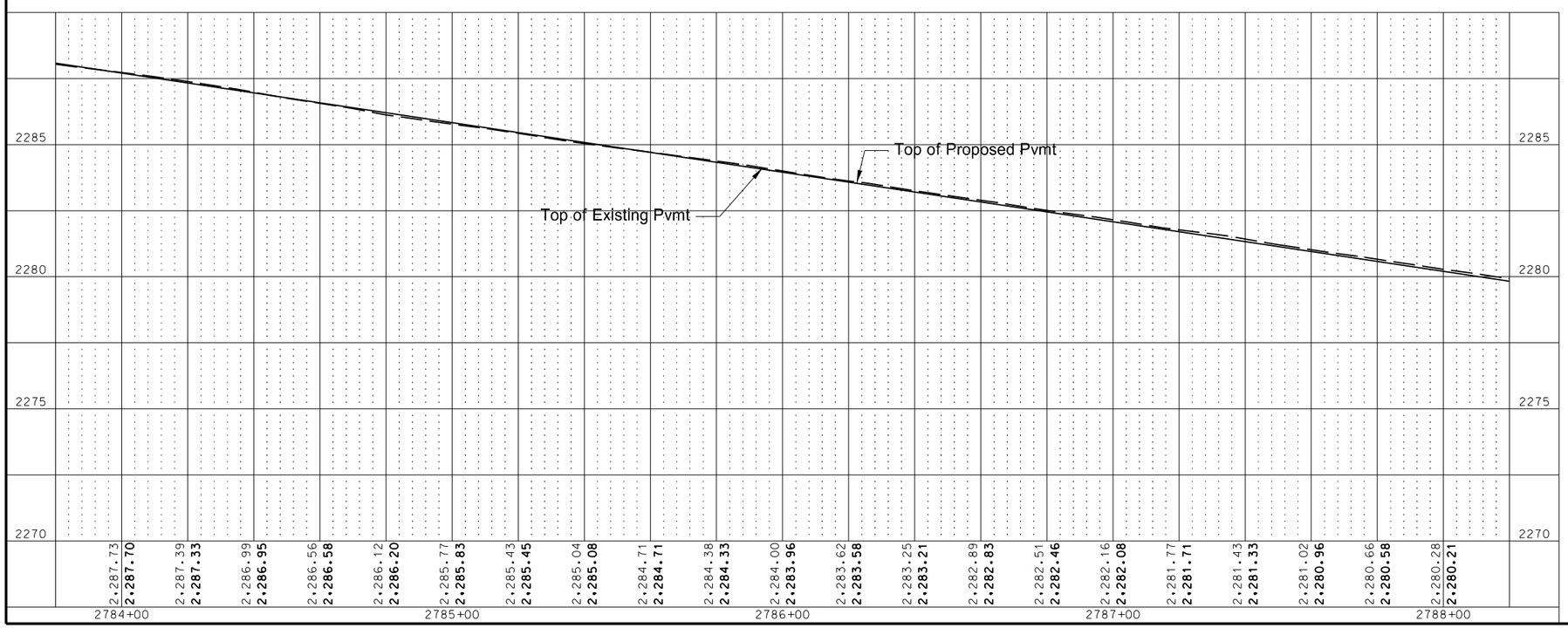
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	1



PLAN AND PROFILE

2781+40 TO 2784+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

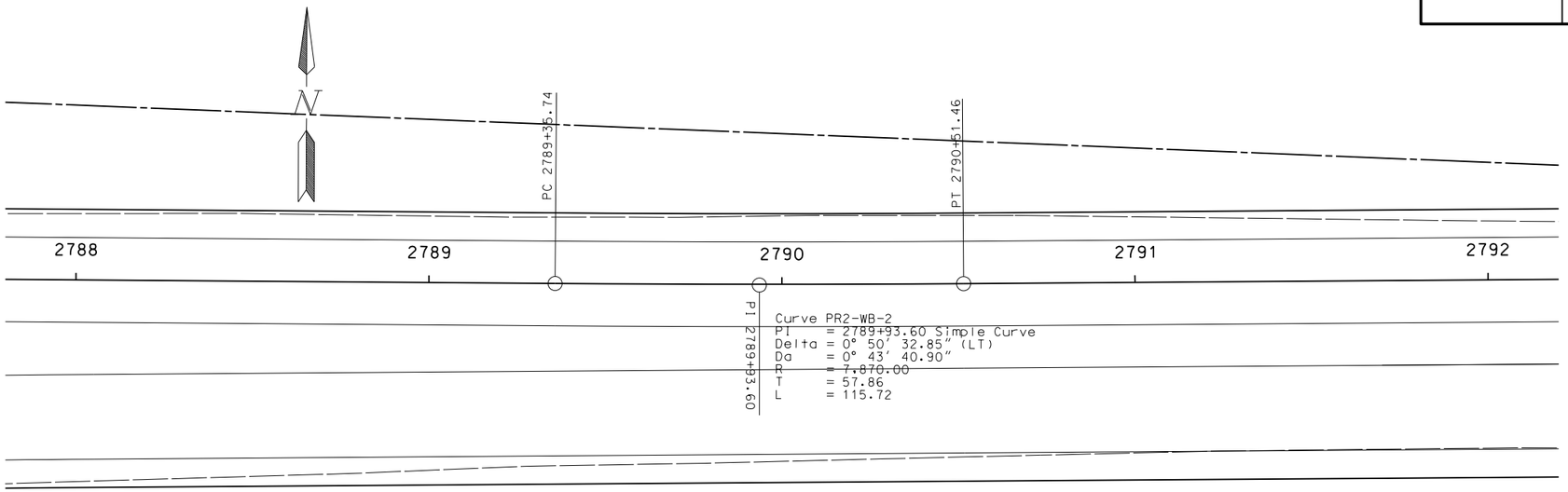
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	2

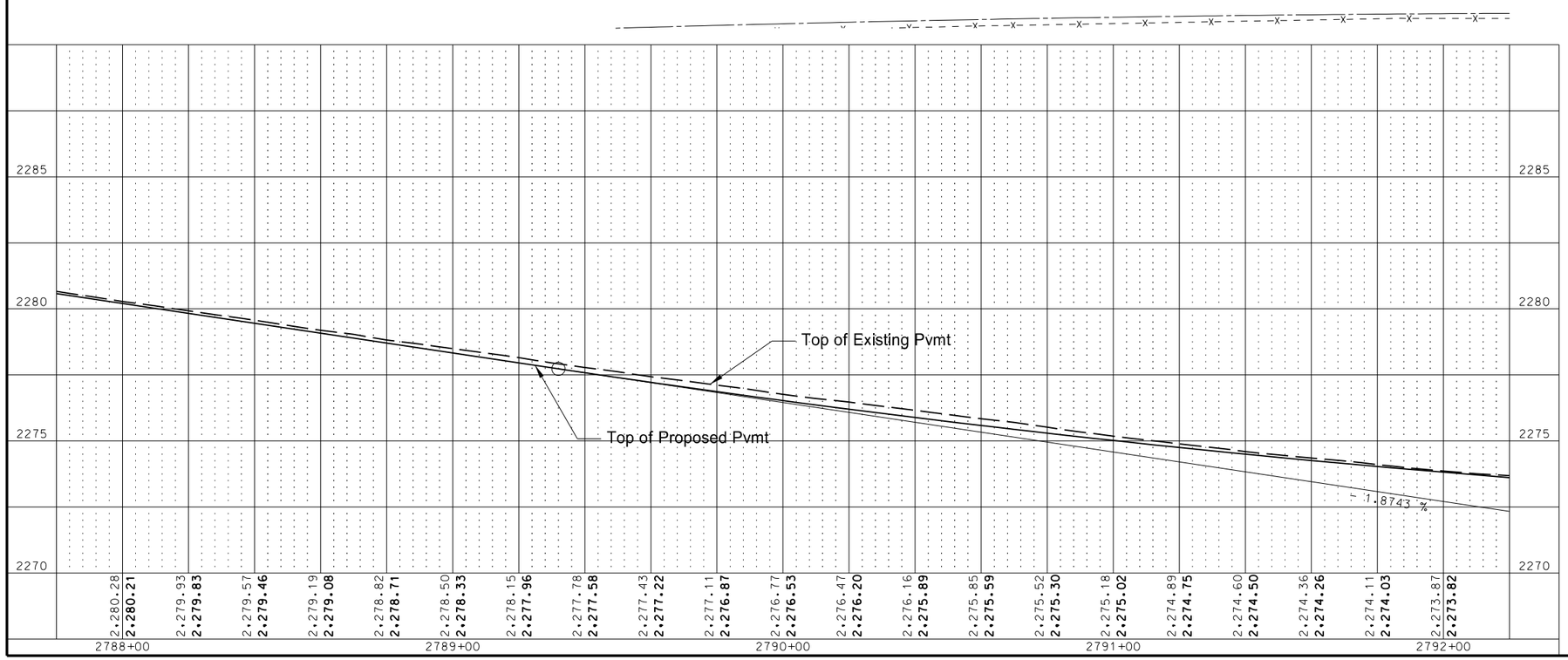


PLAN AND PROFILE

2784+00 TO 2788+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	3

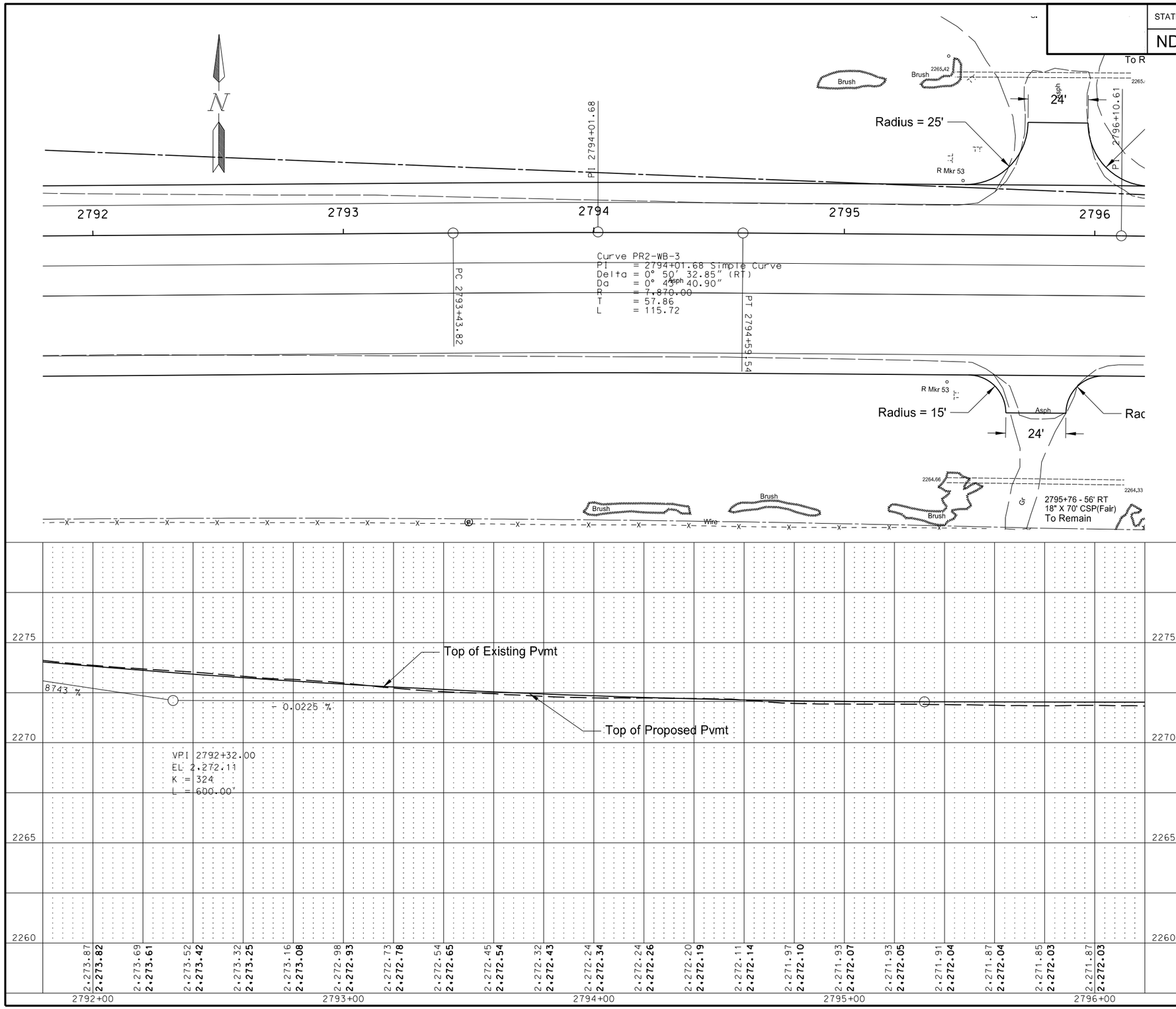




PLAN AND PROFILE

2788+00 TO 2792+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

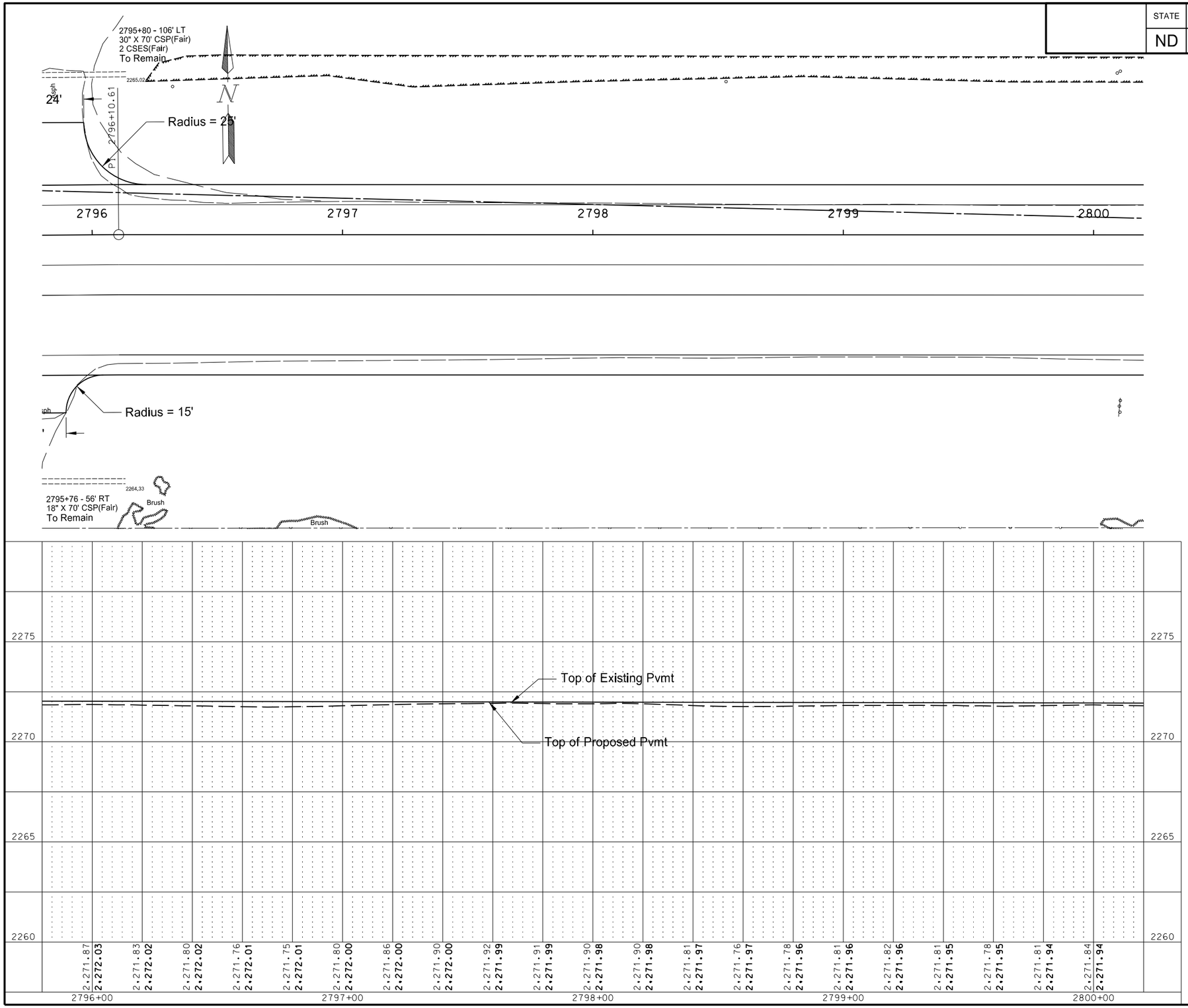
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	4



PLAN AND PROFILE

2792+00 TO 2796+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

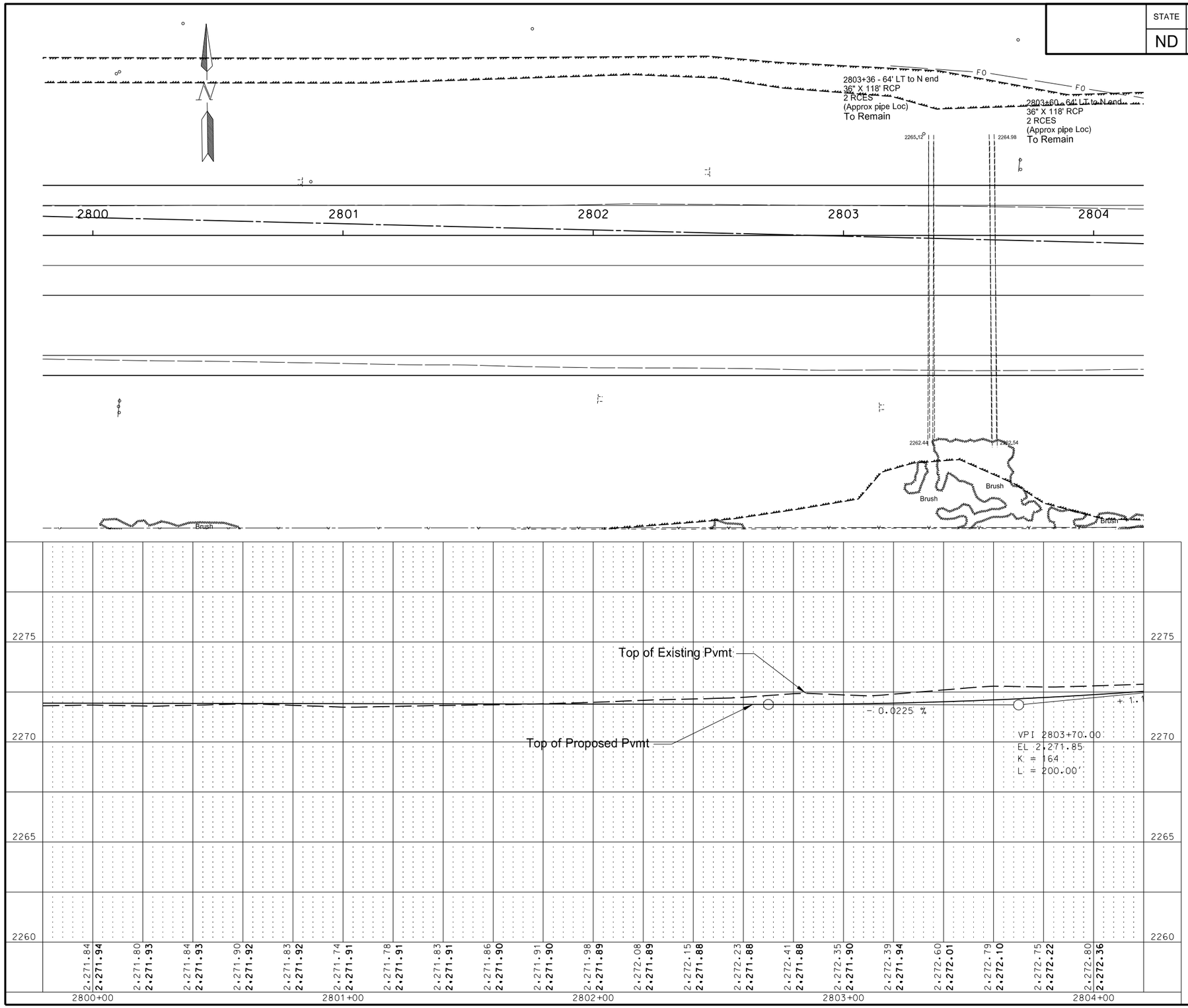
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	5



PLAN AND PROFILE

2796+00 TO 2800+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

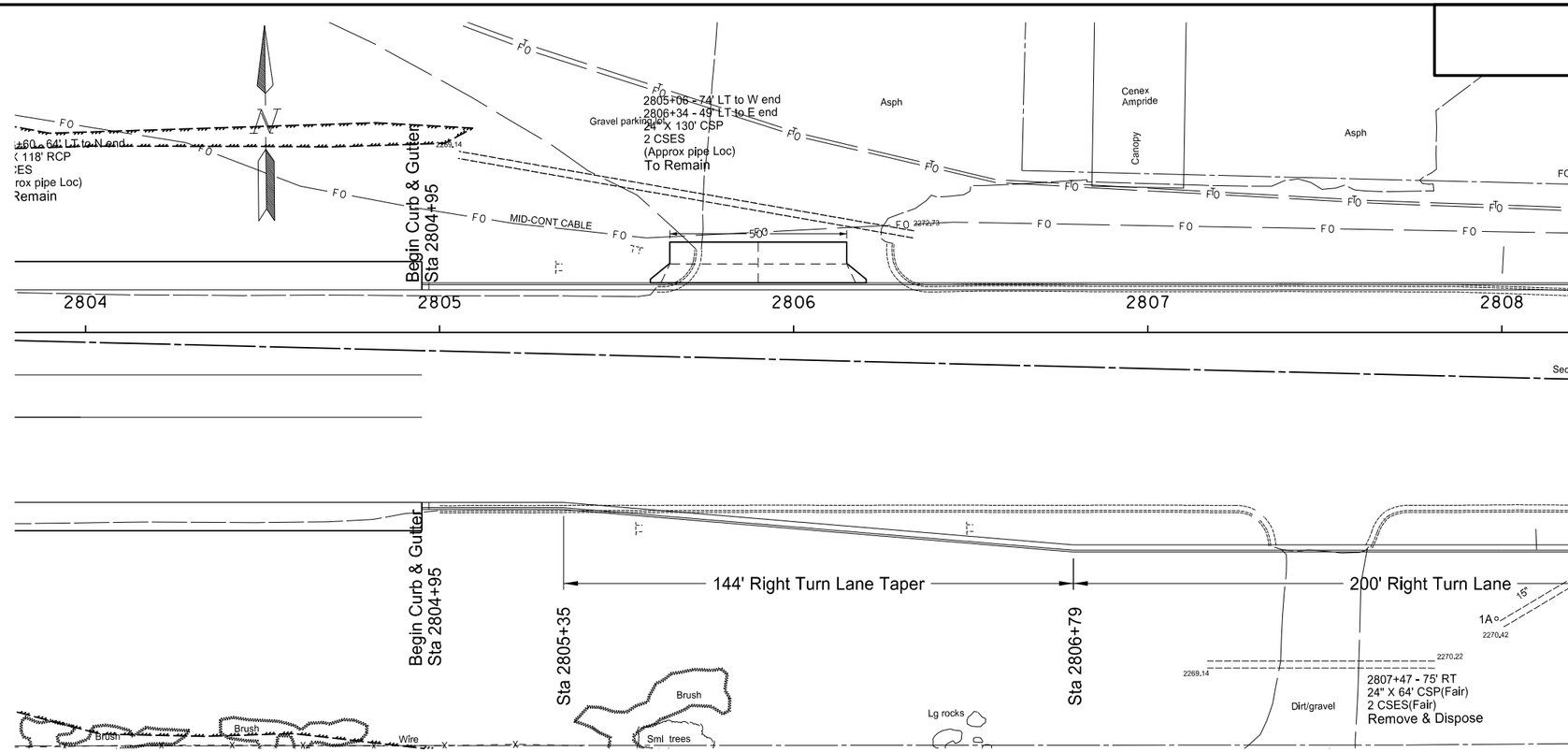
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	6



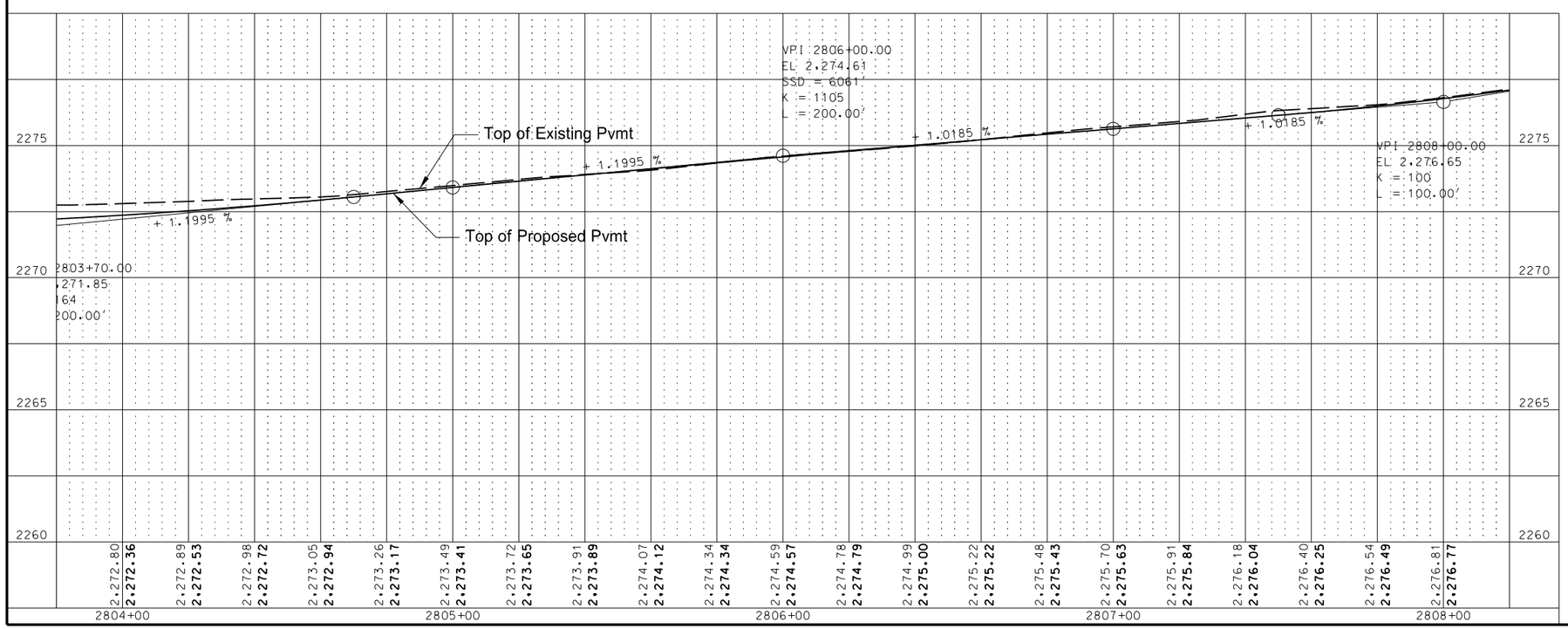
PLAN AND PROFILE

2800+00 TO 2804+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	7



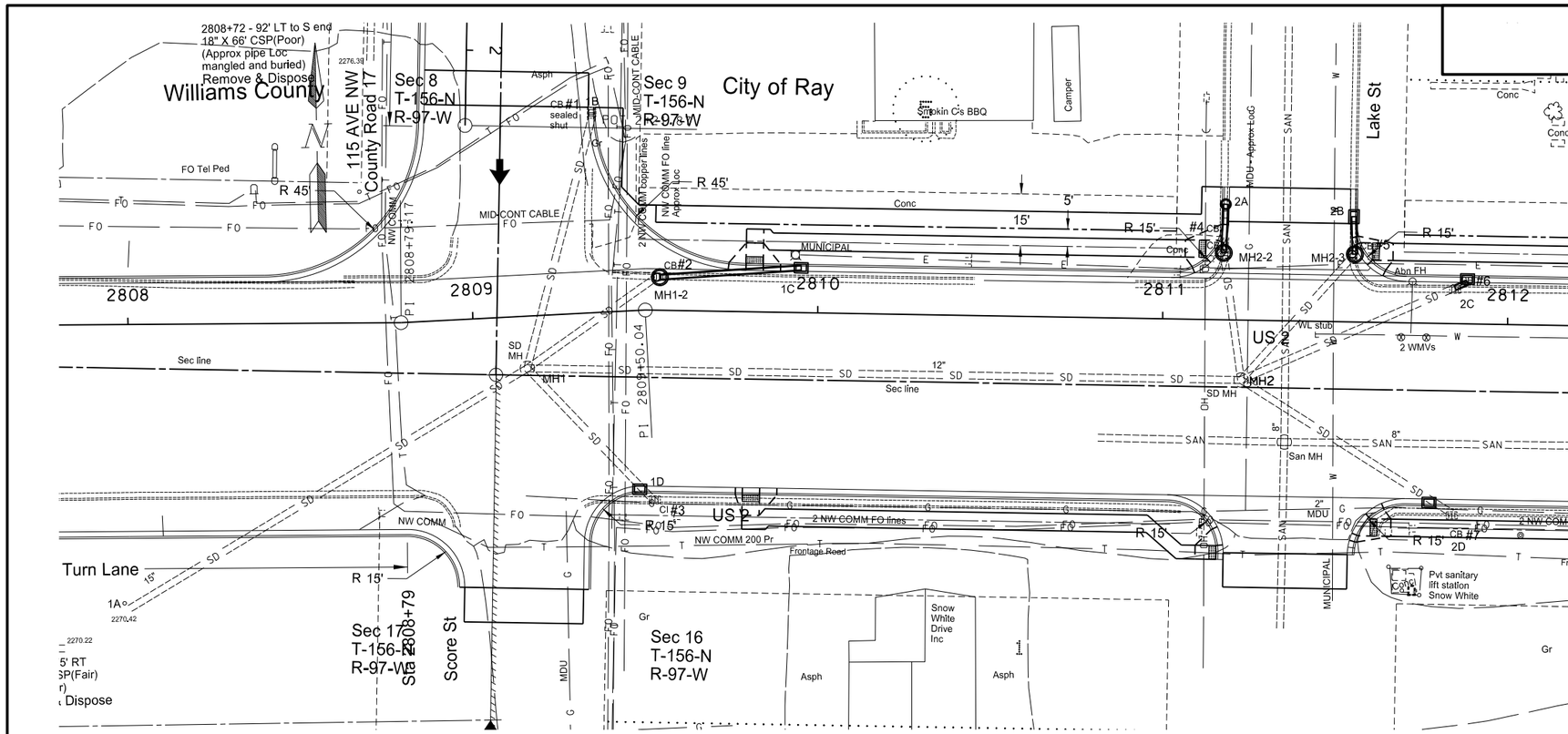
SPEC CODE	BID ITEM		UNIT	QUANTITY
202	174	REMOVAL OF PIPE ALL TYPES & SIZES		
		2807+47 - 94' Rt	LF	64



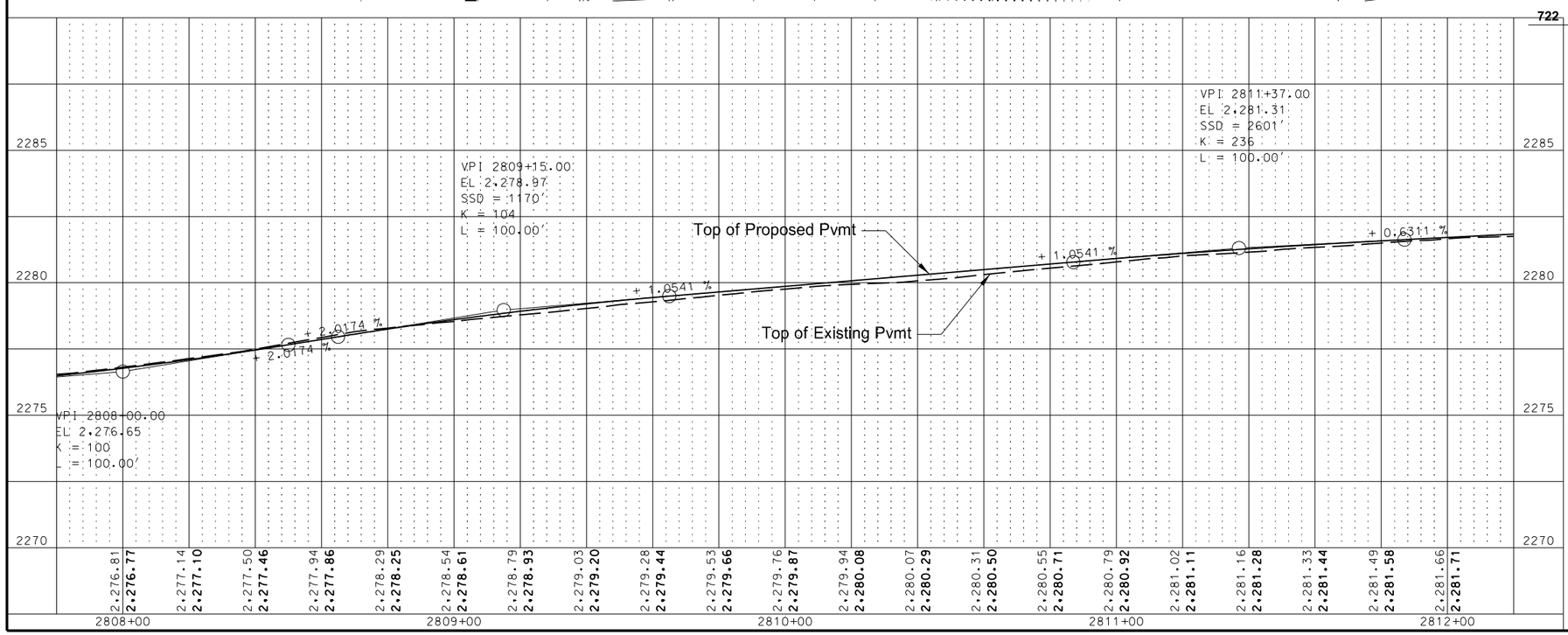
PLAN AND PROFILE

2804+00 TO 2808+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	8



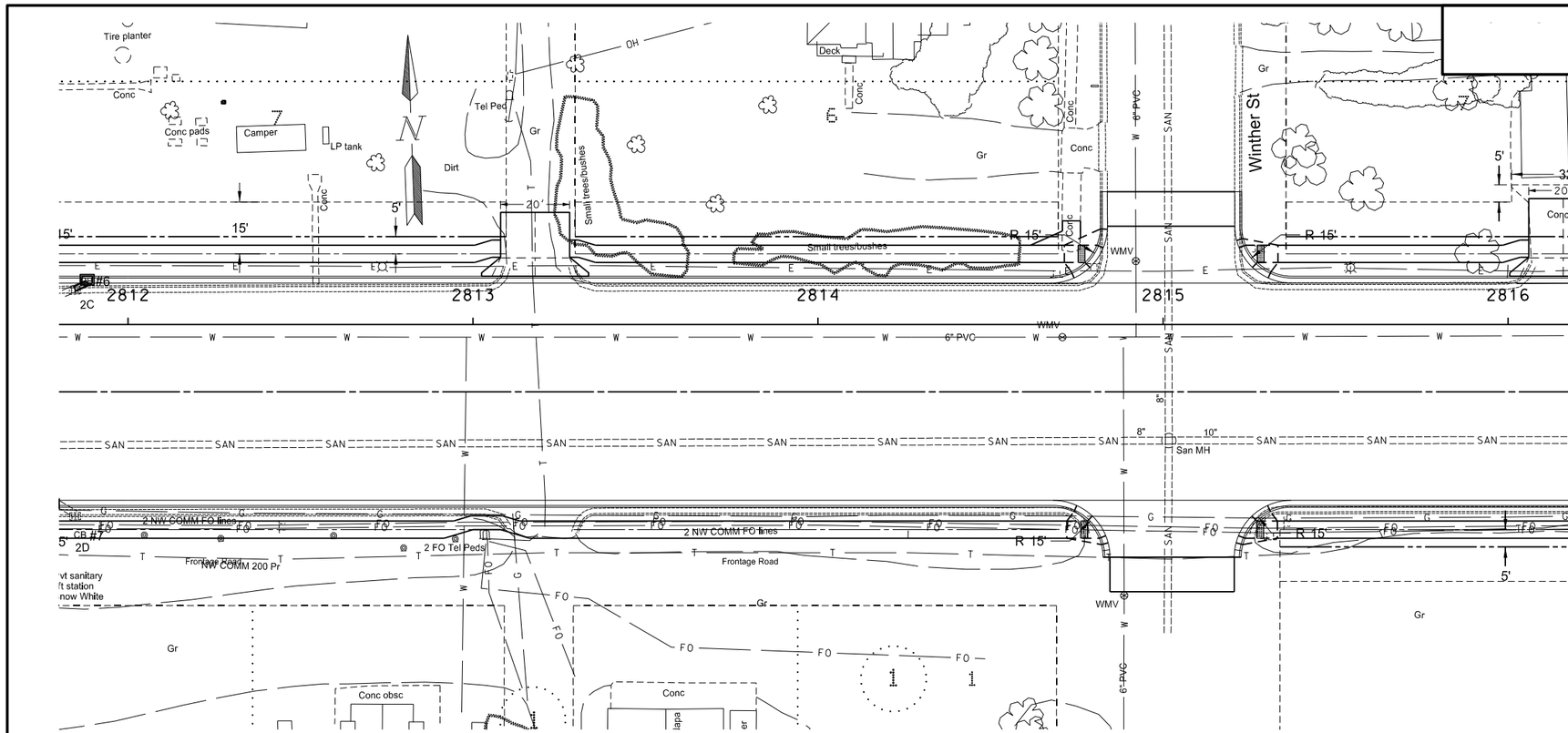
SPEC	CODE	BID ITEM	UNIT	QUANTITY
202	174	**REMOVAL OF PIPE ALL TYPES & SIZES**		
		2808+72 - 76' Lt to 142' Lt	LF	66
		1D	LF	5
		2D	LF	8
202	230	**REMOVAL OF INLETS**		
		CB #2, CI #3	EA	2
		CB #4, CB #5, CB #6, CB #7	EA	4
714	4092	**PIPE CONDUIT 12 IN - STORM DRAIN**		
		2C	LF	4
714	4097	**PIPE CONDUIT 15 IN - STORM DRAIN**		
		1-2 to 1C	LF	42
		2-2 to 2A	LF	14
		2-3 to 2B	LF	12
722	100	**MANHOLE 48 IN**		
		MH 1-2	EA	1
		MH 2-2	EA	1
		MH 2-3	EA	1
722	318	**MANHOLE CASTING TYPE 2**		
		MH 1	EA	1
		MH 2	EA	1
		2811+35 - 35.2' Rt (San)	EA	1
722	1100	**MANHOLE RISER 48 IN**		
		MH 1-2	LF	4.9
		MH 2-2	LF	4.87
		MH 2-3	LF	5.36
722	3510	**INLET - TYPE 2**		
		1C	EA	1
		1D	EA	1
		2B	EA	1
		2C	EA	1
		2D	EA	1
722	4050	**INLET MOUNTABLE CURB - TYPE A**		
		2A	EA	1
722	6240	**ADJUST UTILITY APPURTENANCE**		
		2811+69 - 4.3' Rt	EA	1
		2811+77 - 4.2' Rt	EA	1

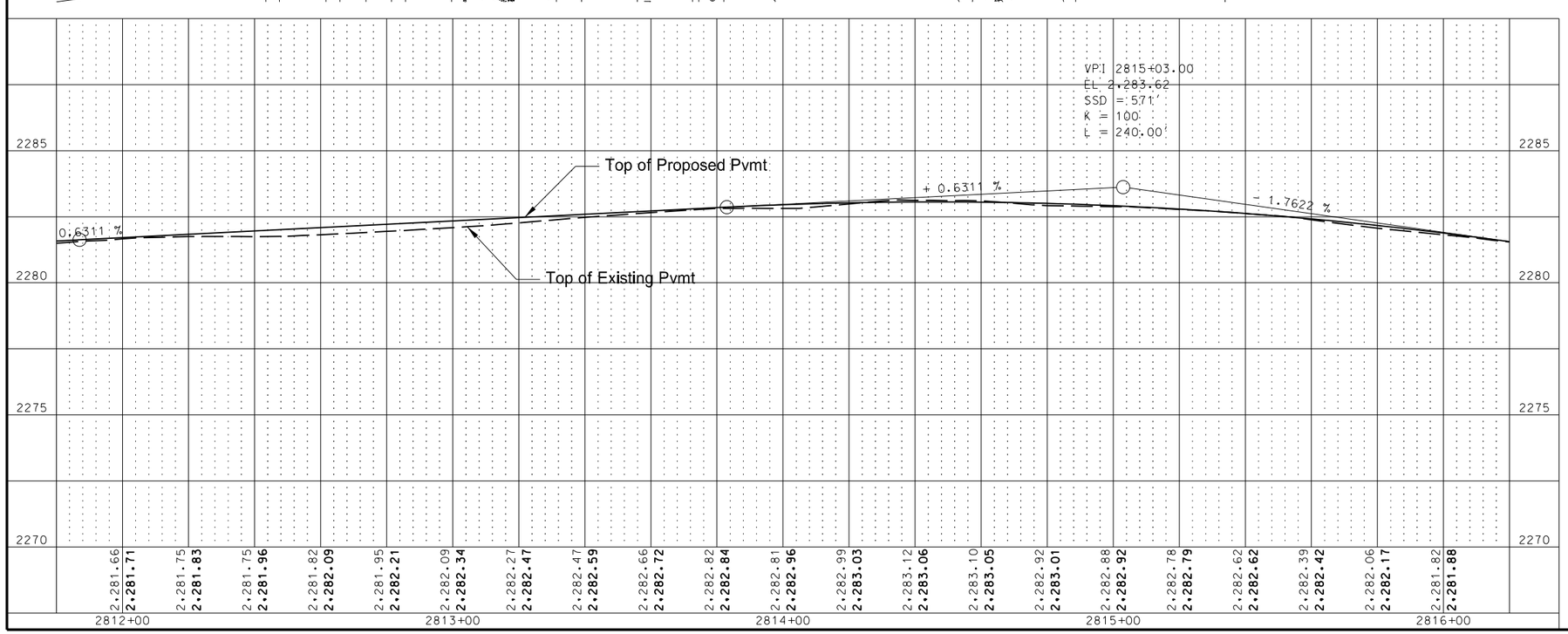


PLAN AND PROFILE

2808+00 TO 2812+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	9



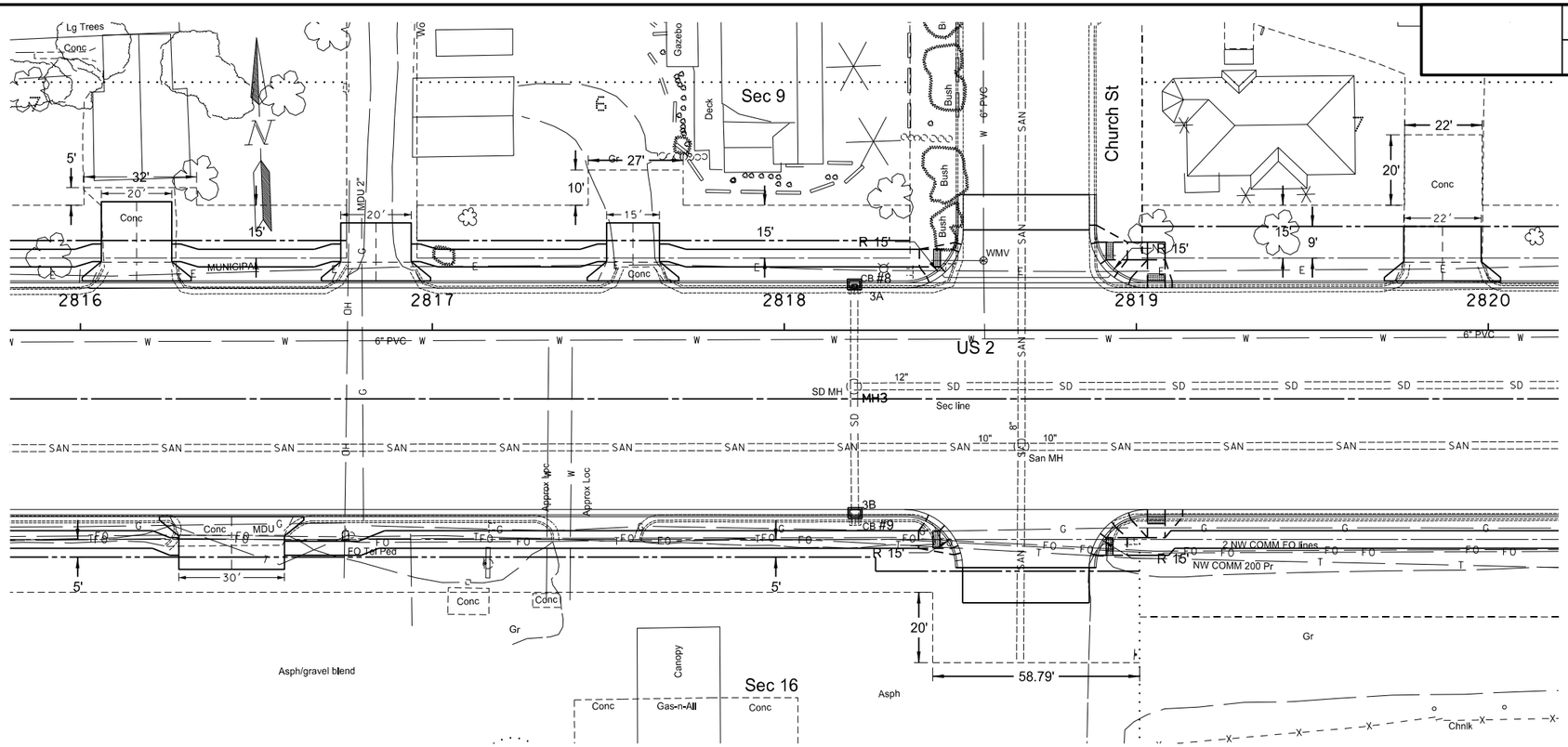


SPEC CODE	BID ITEM	UNIT	QUANTITY
722 318	MANHOLE CASTING TYPE 2		
	2815+02 - 33.7' Rt (San)	EA	1
722 6240	ADJUST UTILITY APPURTENANCE		
	2814+71 - 3.7' Rt	EA	1
	2814+92 - 18.3' Lt	EA	1

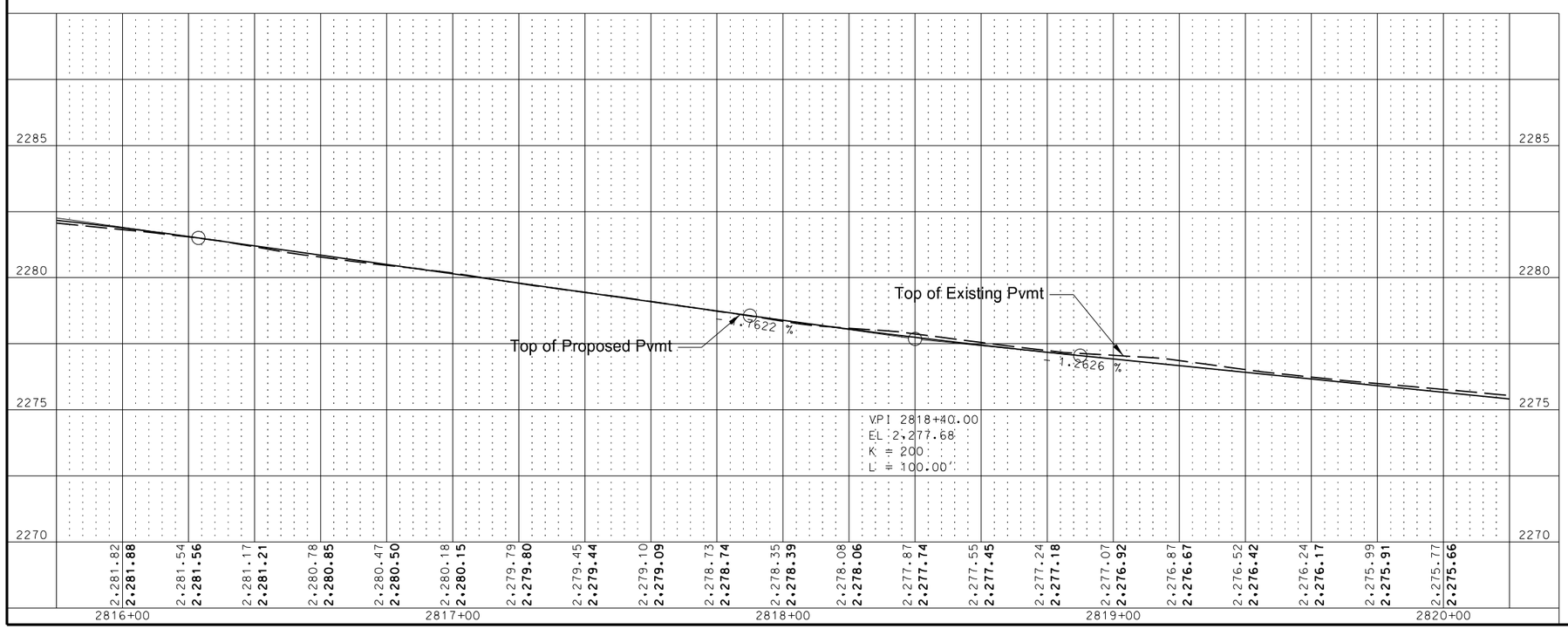
PLAN AND PROFILE

2812+00 TO 2816+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	10



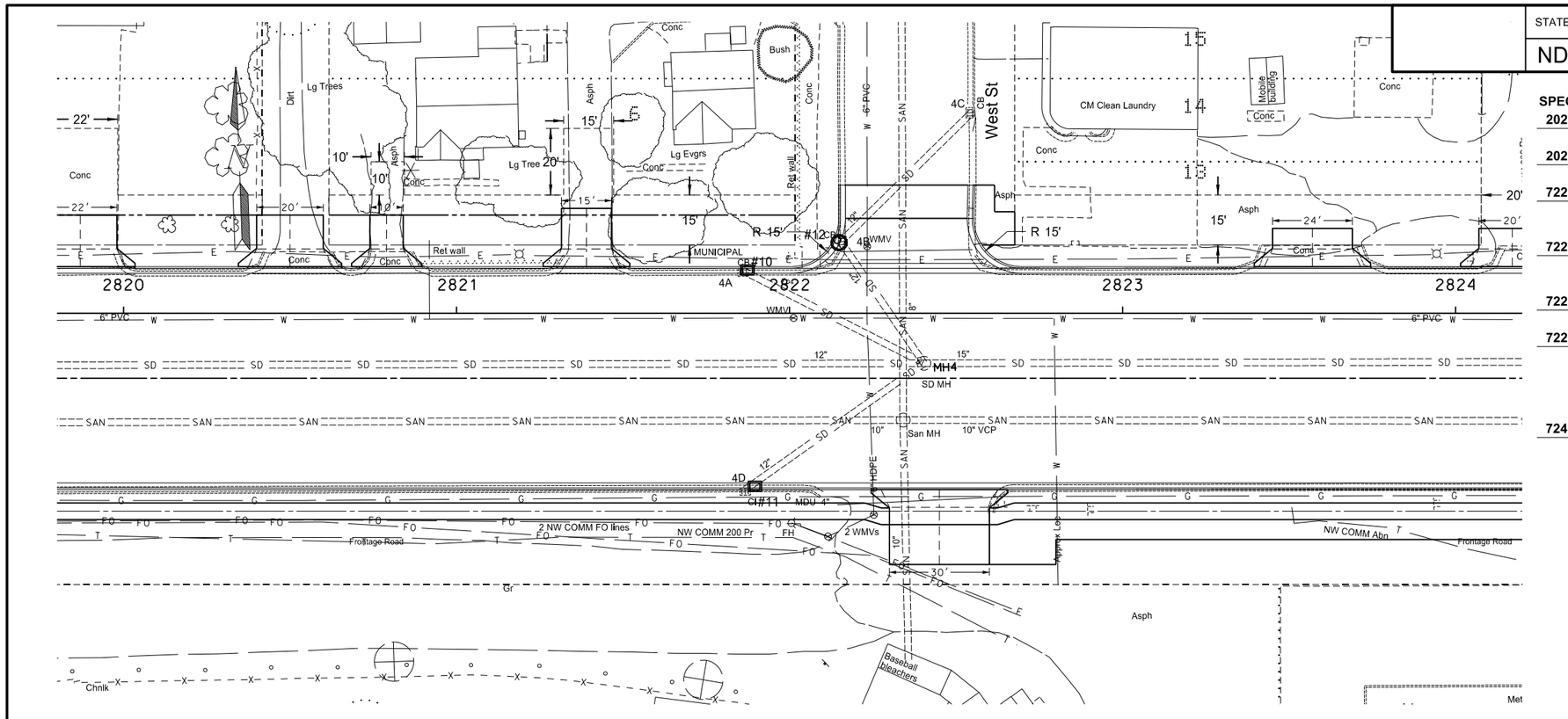
SPEC CODE		BID ITEM	UNIT	QUANTITY
202	174	**REMOVAL OF PIPE ALL TYPES & SIZES**		
		3B	LF	2
202	230	**REMOVAL OF INLETS**		
		CB #8, CI #9	EA	2
714	4092	**PIPE CONDUIT 12 IN - STORM DRAIN**		
		3A	LF	2
722	318	**MANHOLE CASTING TYPE 2**		
		MH 3	EA	1
		2818+67 - 33.1' Rt (San)	EA	1
722	3510	**INLET - TYPE 2**		
		3A	EA	1
		3B	EA	1
722	6240	**ADJUST UTILITY APPURTENANCE**		
		2818+57 - 19.7' Lt	EA	1



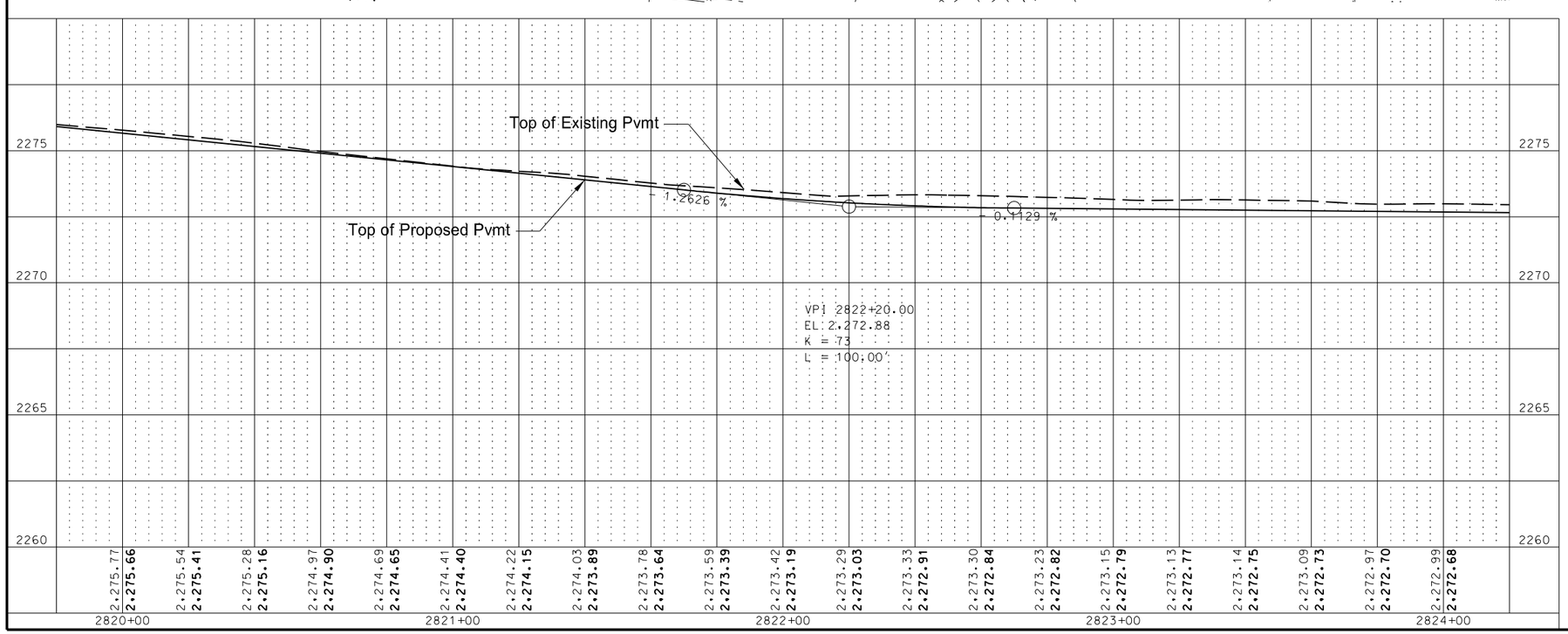
PLAN AND PROFILE

2816+00 TO 2820+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	11



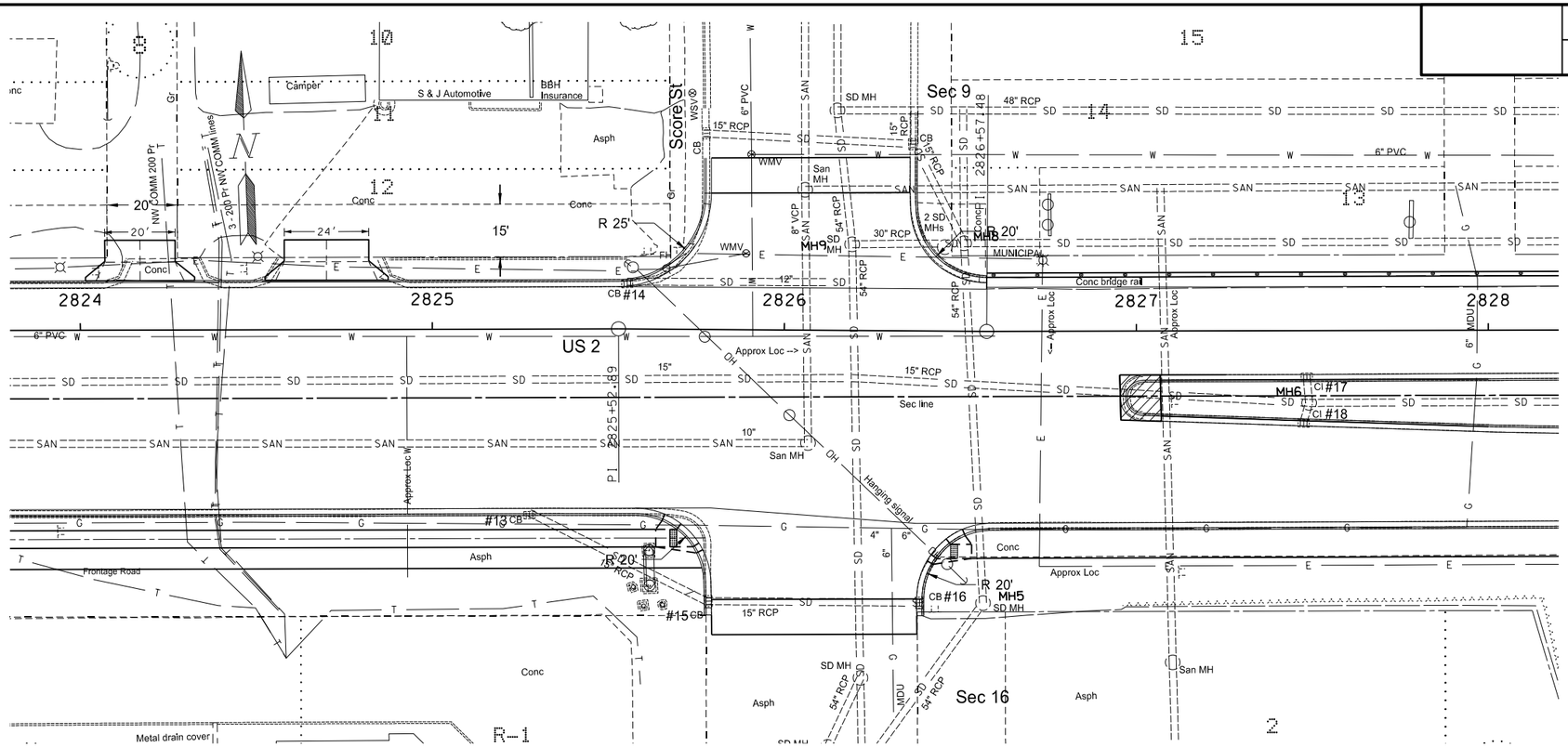
SPEC	CODE	BID ITEM	UNIT	QUANTITY
202	174	**REMOVAL OF PIPE ALL TYPES & SIZES**		
		4D	LF	2
202	230	**REMOVAL OF INLETS**		
		CB #10, CI #11, CB #12	EA	3
722	317	**MANHOLE CASTING TYPE 1**		
		2822+34 - 32.2' Rt (San)	EA	1
		MH 4	EA	1
722	3510	**INLET - TYPE 2**		
		4A	EA	1
		4D	EA	1
722	3701	**INLET SPECIAL - TYPE 2 - 48 IN**		
		4B	EA	1
722	6240	**ADJUST UTILITY APPURTENANCE**		
		2822+01 - 1.5' Rt	EA	1
		2822+12 - 67.1' Rt	EA	1
		2822+23 - 20.0' Lt	EA	1
		2822+25 - 60.6' Rt	EA	1
724	427	**ADJUST HYDRANT**		
		2822+01 - 63.1' Rt	EA	1



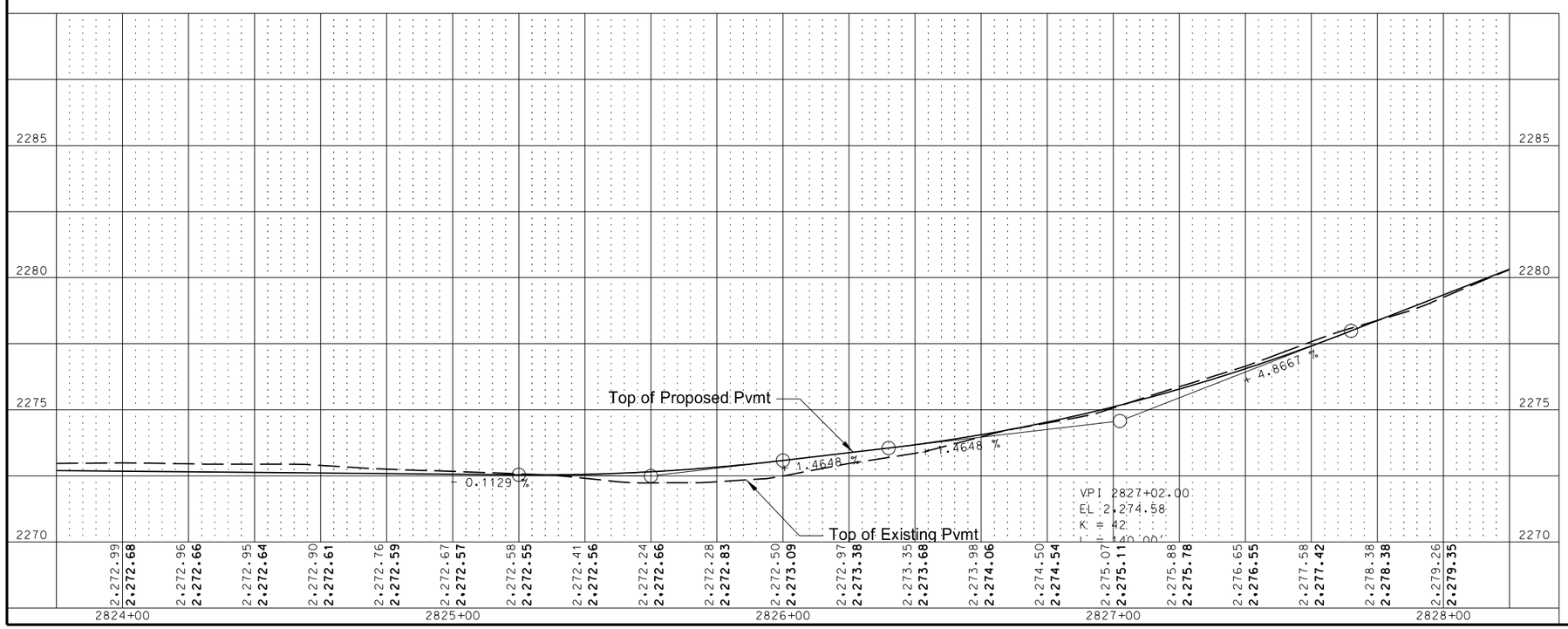
PLAN AND PROFILE

2820+00 TO 2824+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	12



SPEC CODE		BID ITEM	UNIT	QUANTITY
722	317	**MANHOLE CASTING TYPE 1**		
		2826+06 - 39.8' Lt (San)	EA	1
		2826+07 - 32.1' Rt (San)	EA	1
		MH 9	EA	1
722	6160	**ADJUST INLET**		
		CB #13, CB #14, CB #15, CB #16	EA	4
		CI #17, CI #18	EA	2
722	6200	**ADJUST MANHOLE**		
		MH 6	EA	1
722	6240	**ADJUST UTILITY APPURTENANCE**		
		2825+89 - 21.6' Lt	EA	1

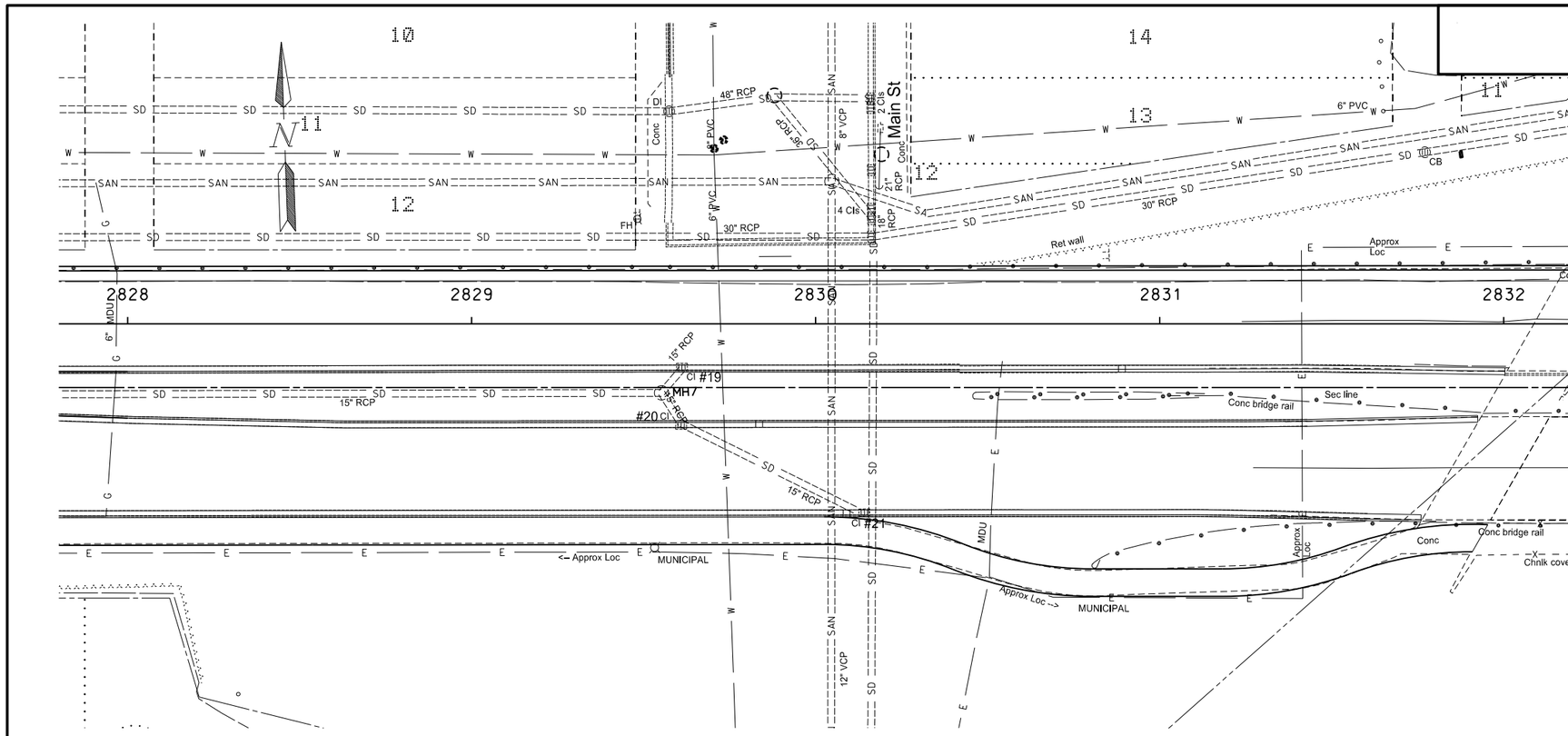


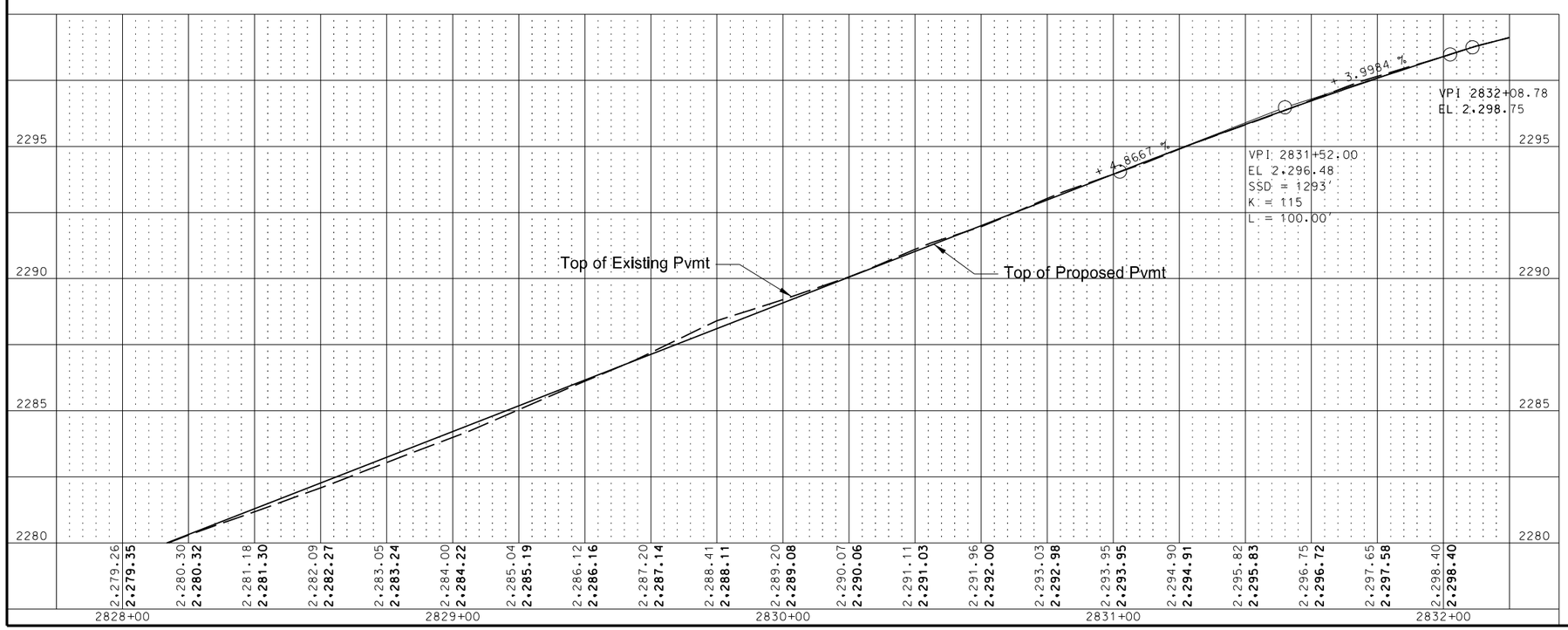
PLAN AND PROFILE

2824+00 TO 2828+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	13

SPEC CODE	BID ITEM	UNIT	QUANTITY
722 6160	ADJUST INLET		
	CI #20, CI #21	EA	2

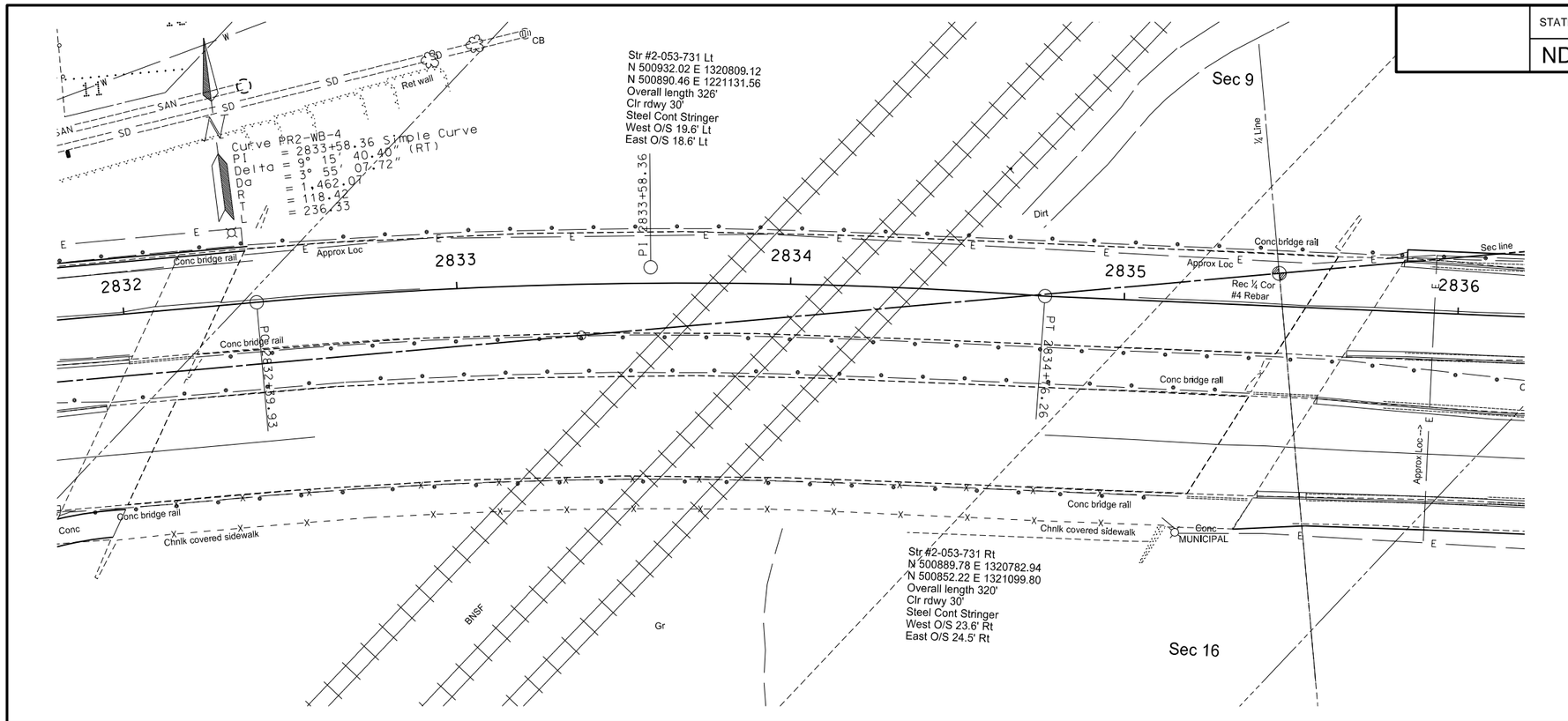


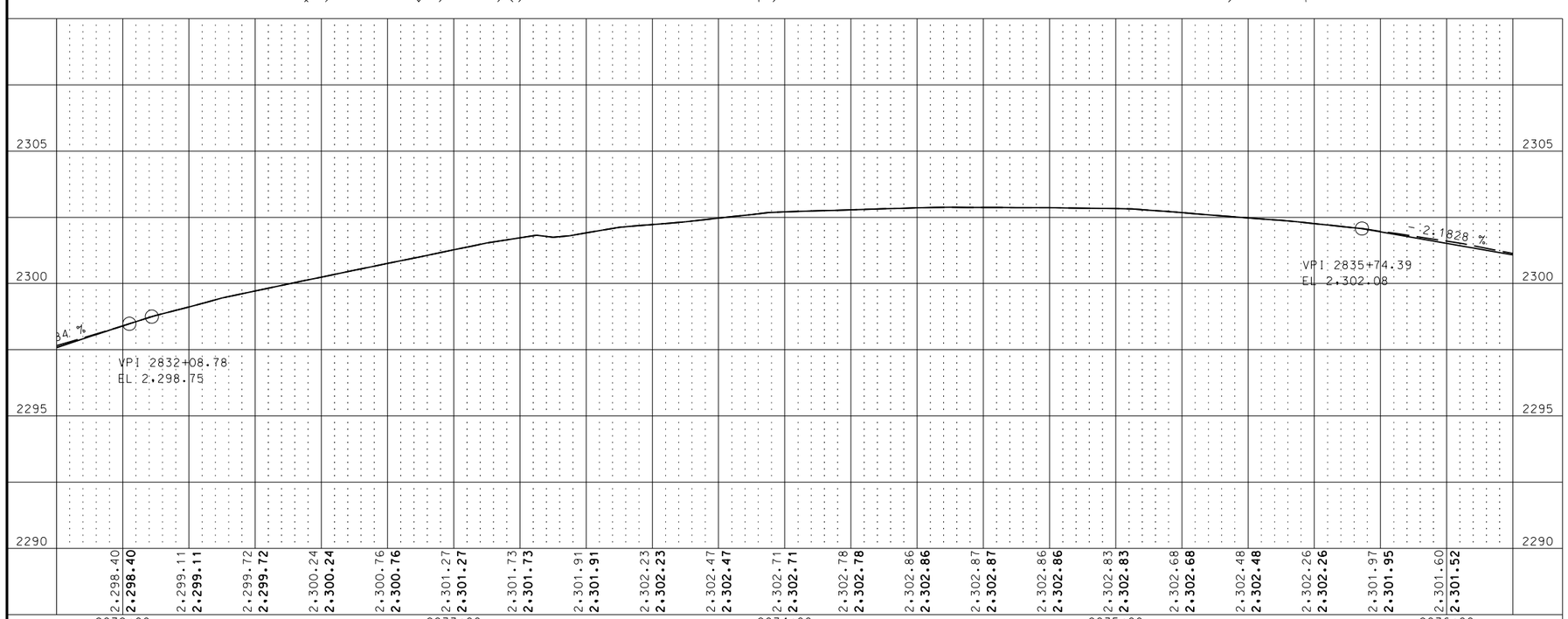


PLAN AND PROFILE

2828+00 TO 2832+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	14



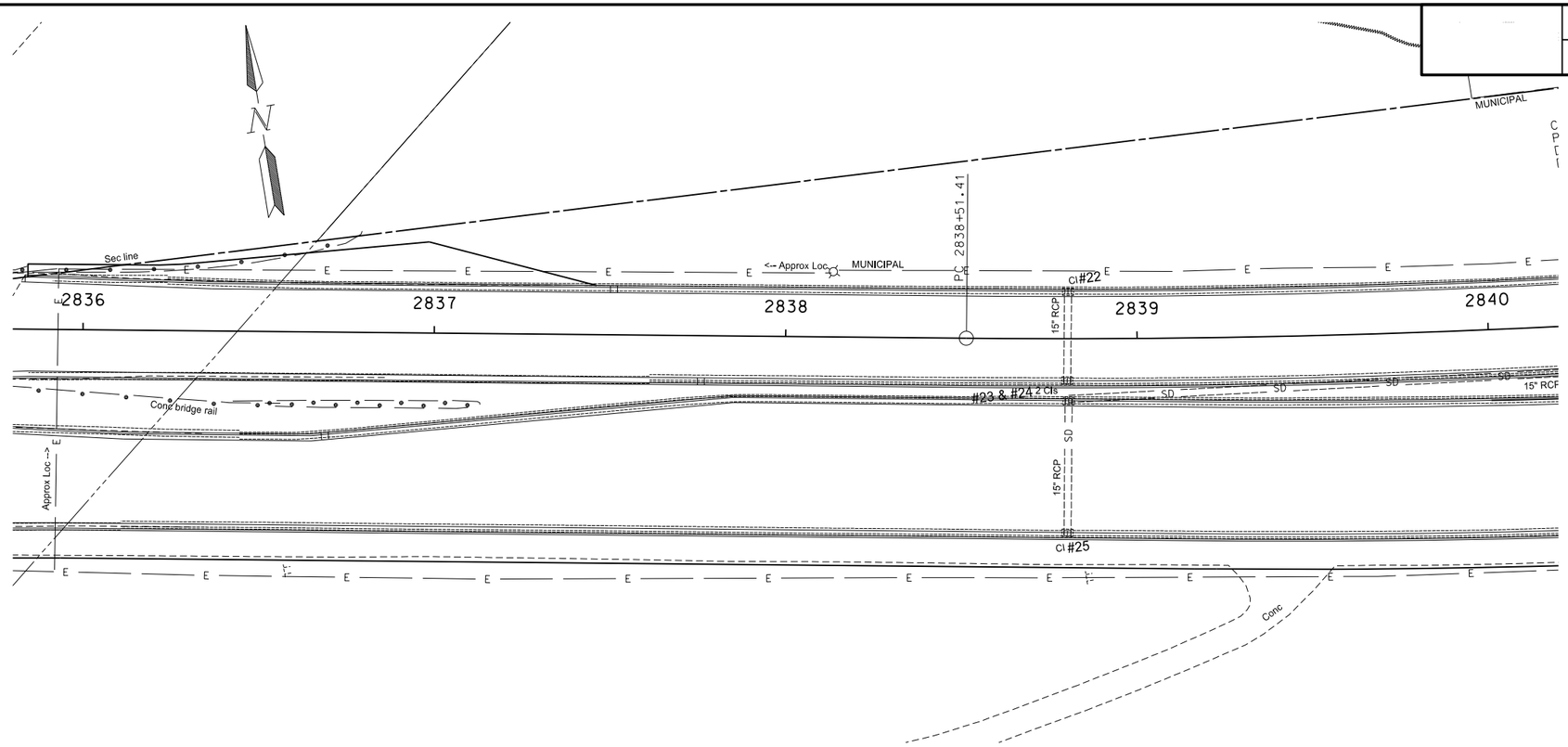


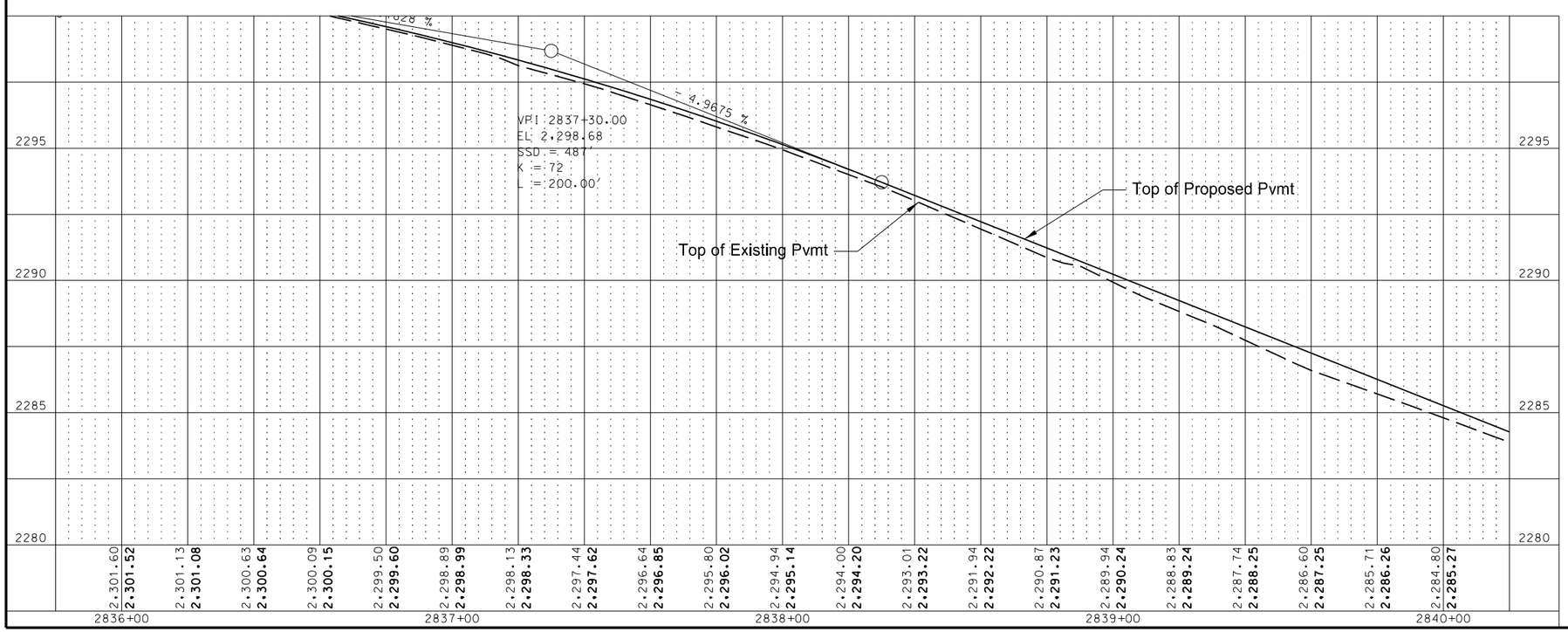
PLAN AND PROFILE

2832+00 TO 2836+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	15

SPEC CODE	BID ITEM	UNIT	QUANTITY
722 6160	ADJUST INLET		
	CI #22, CI #23, CI #24, CI #25	EA	4

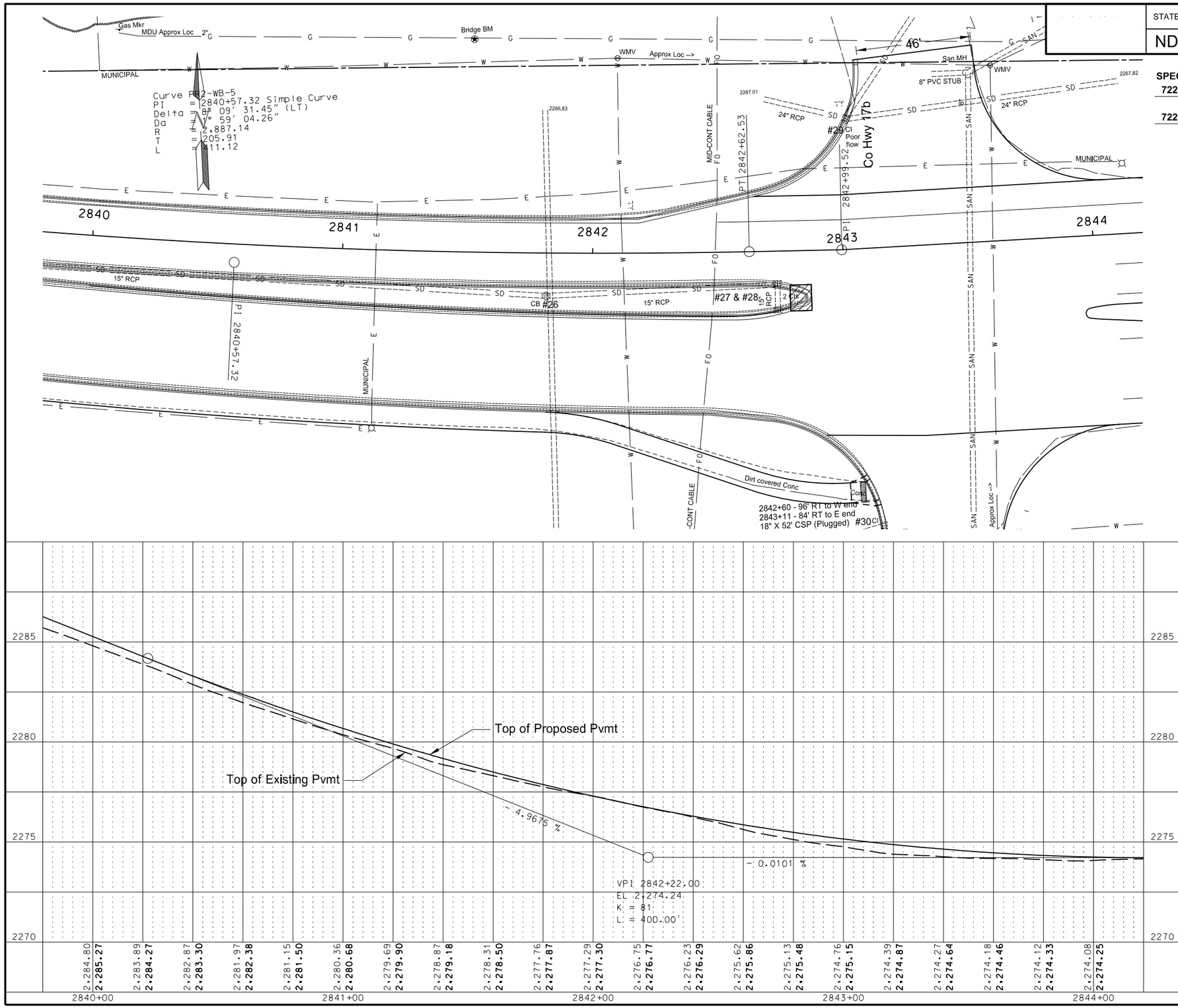




PLAN AND PROFILE

2836+00 TO 2840+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	16

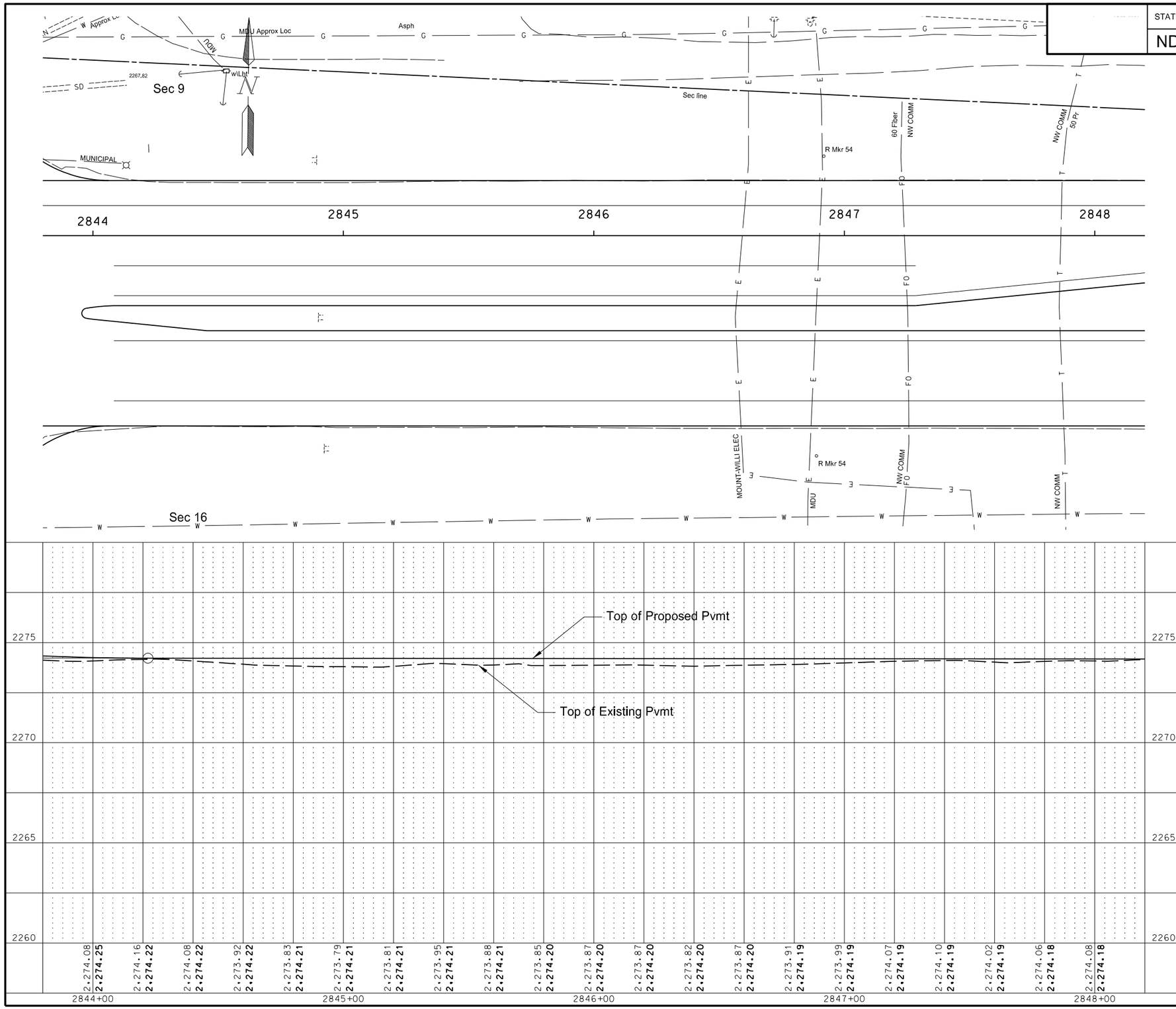


SPEC CODE	BID ITEM	UNIT	QUANTITY
722 317	**MANHOLE CASTING TYPE 1**		
	2843+54 - 67.8' Lt (San)	EA	1
722 6160	**ADJUST INLET**		
	CB #26, CI #27, CI #28, CI #29, CI #30	EA	5

PLAN AND PROFILE

2840+00 TO 2844+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	17

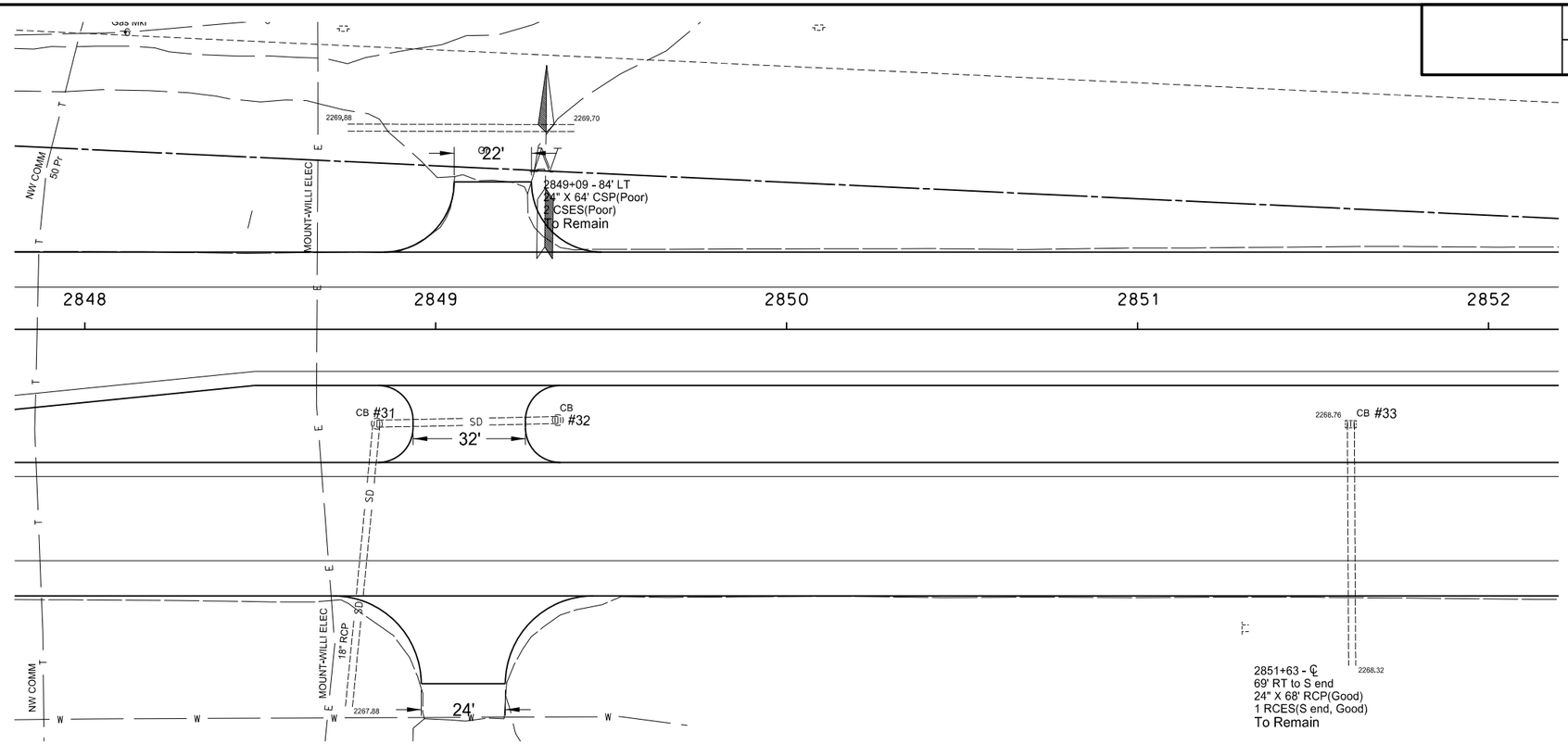


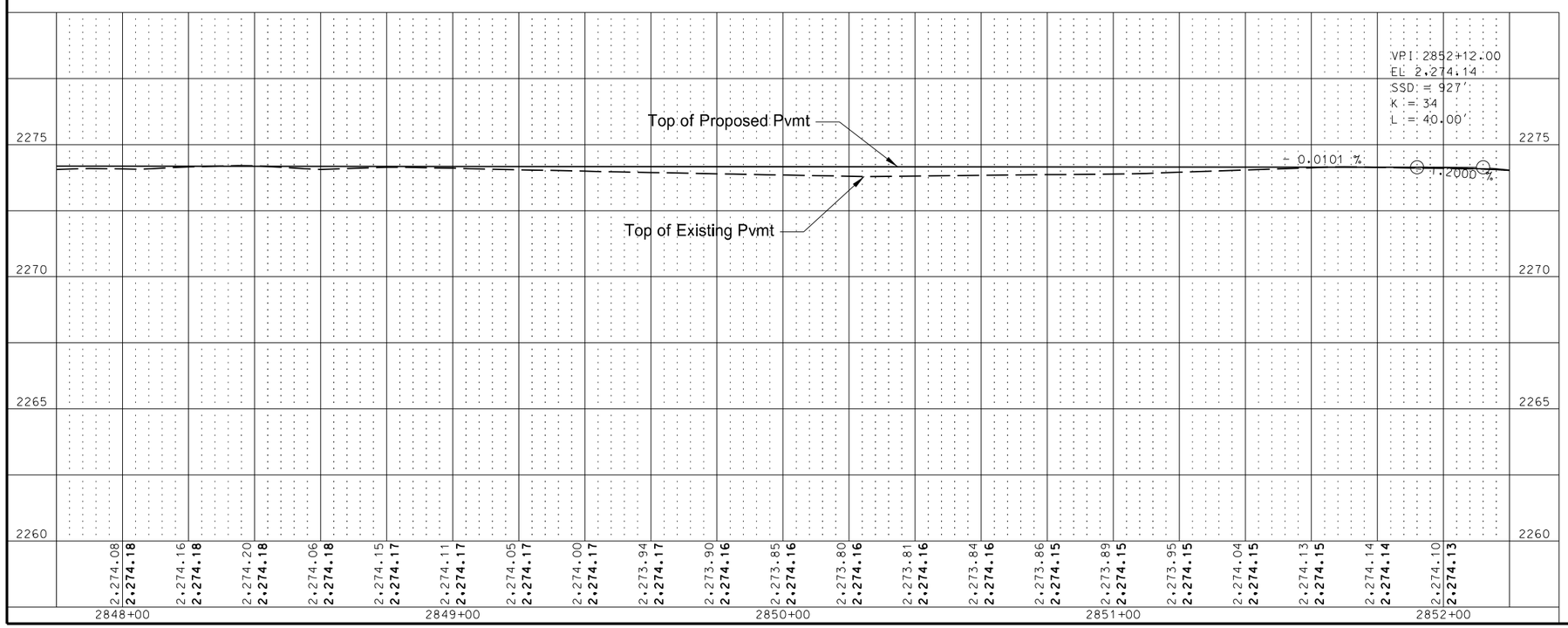
PLAN AND PROFILE

2844+00 TO 2848+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	18

SPEC CODE	BID ITEM	UNIT	QUANTITY
722 6160	ADJUST INLET		
	CB #31, CB #32	EA	2

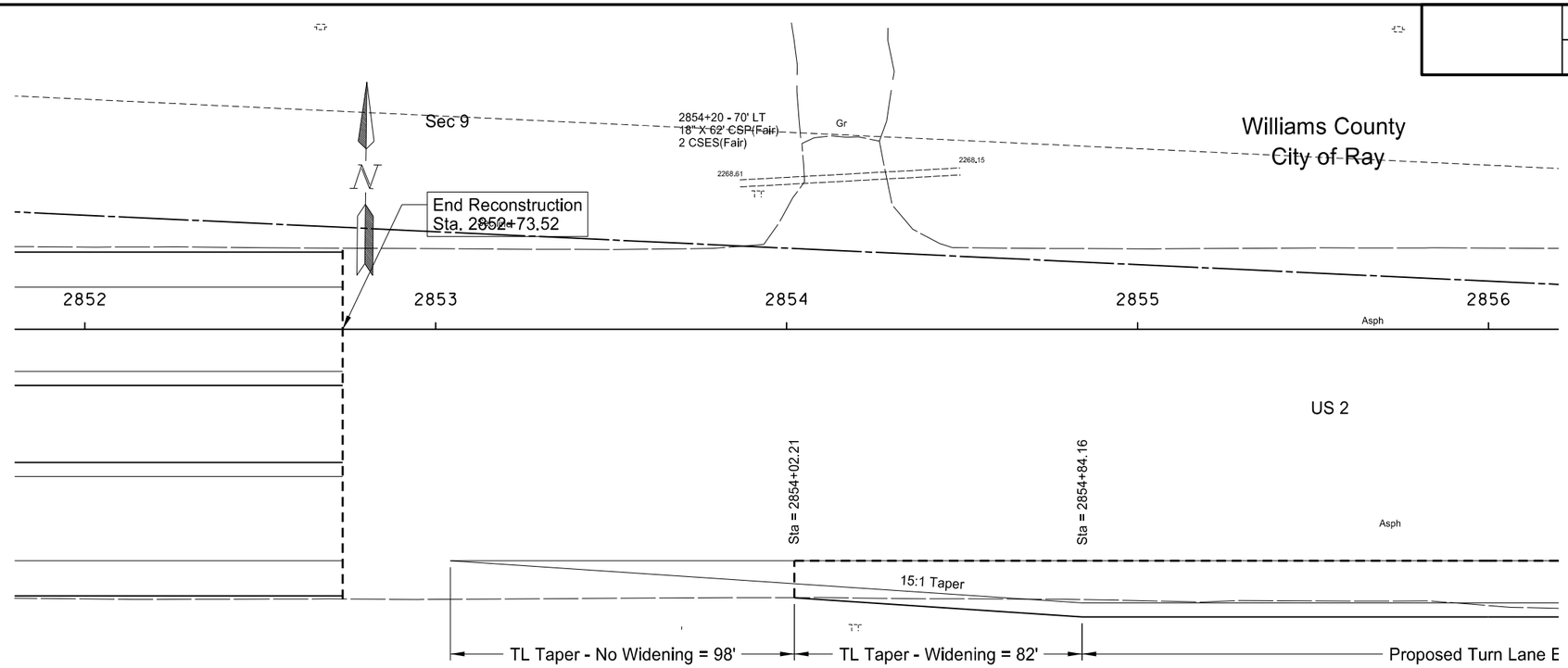


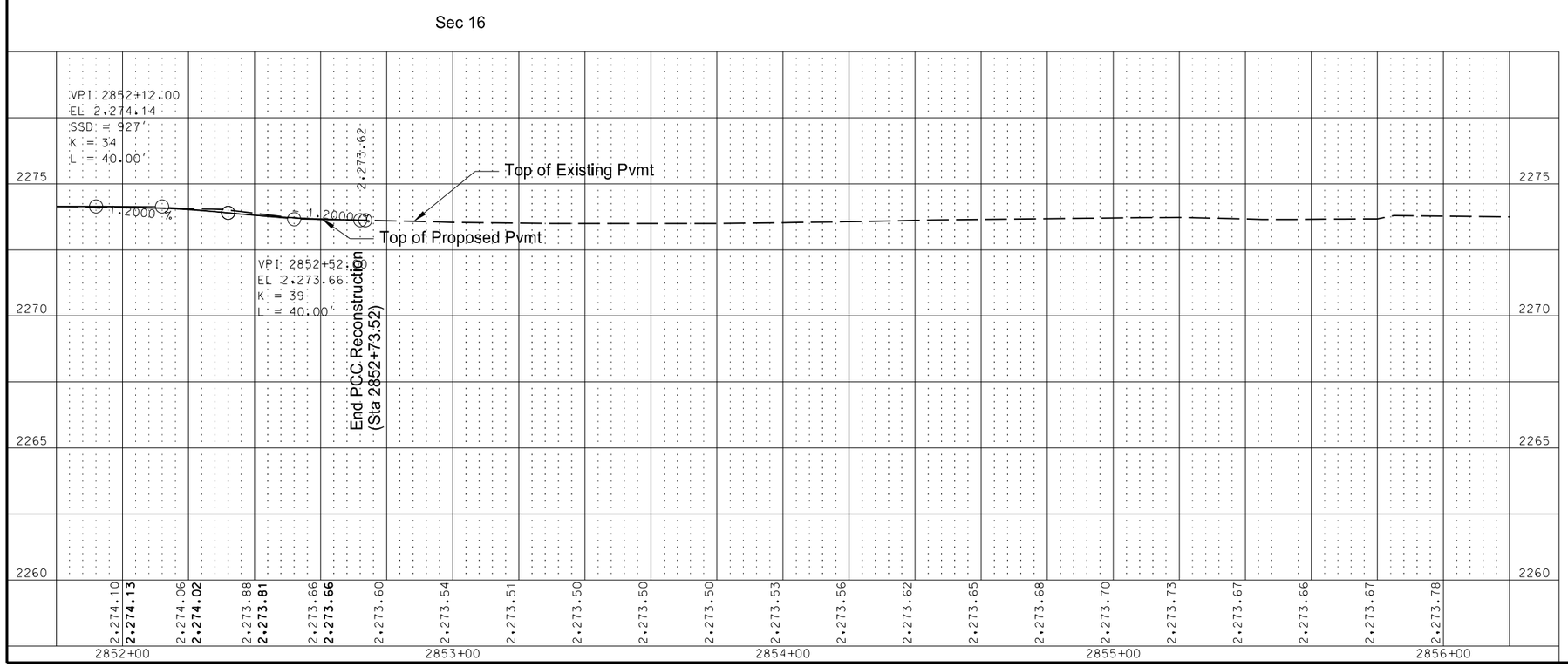


PLAN AND PROFILE

2848+00 TO 2852+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	19

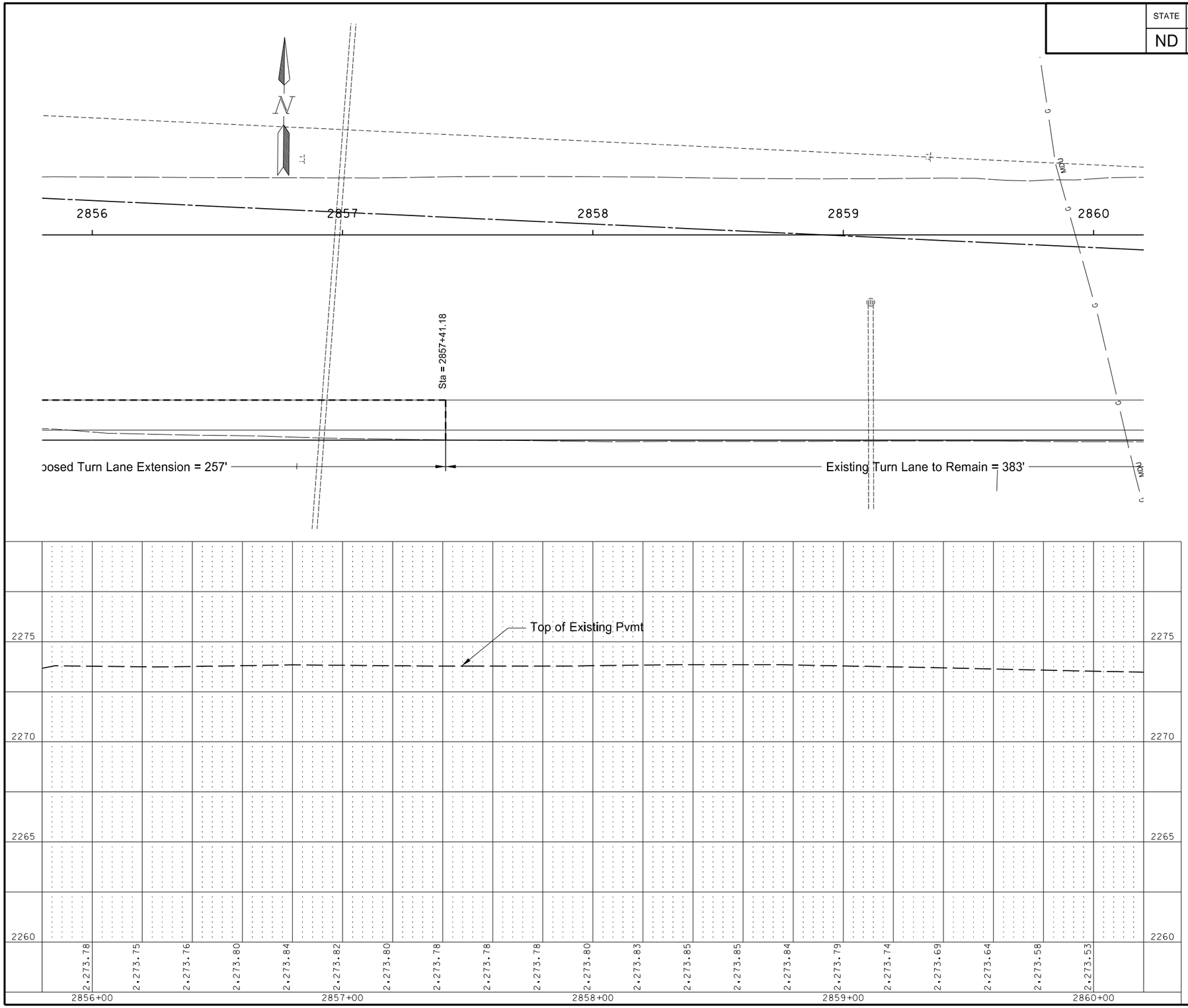




PLAN AND PROFILE

2852+00 TO 2856+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

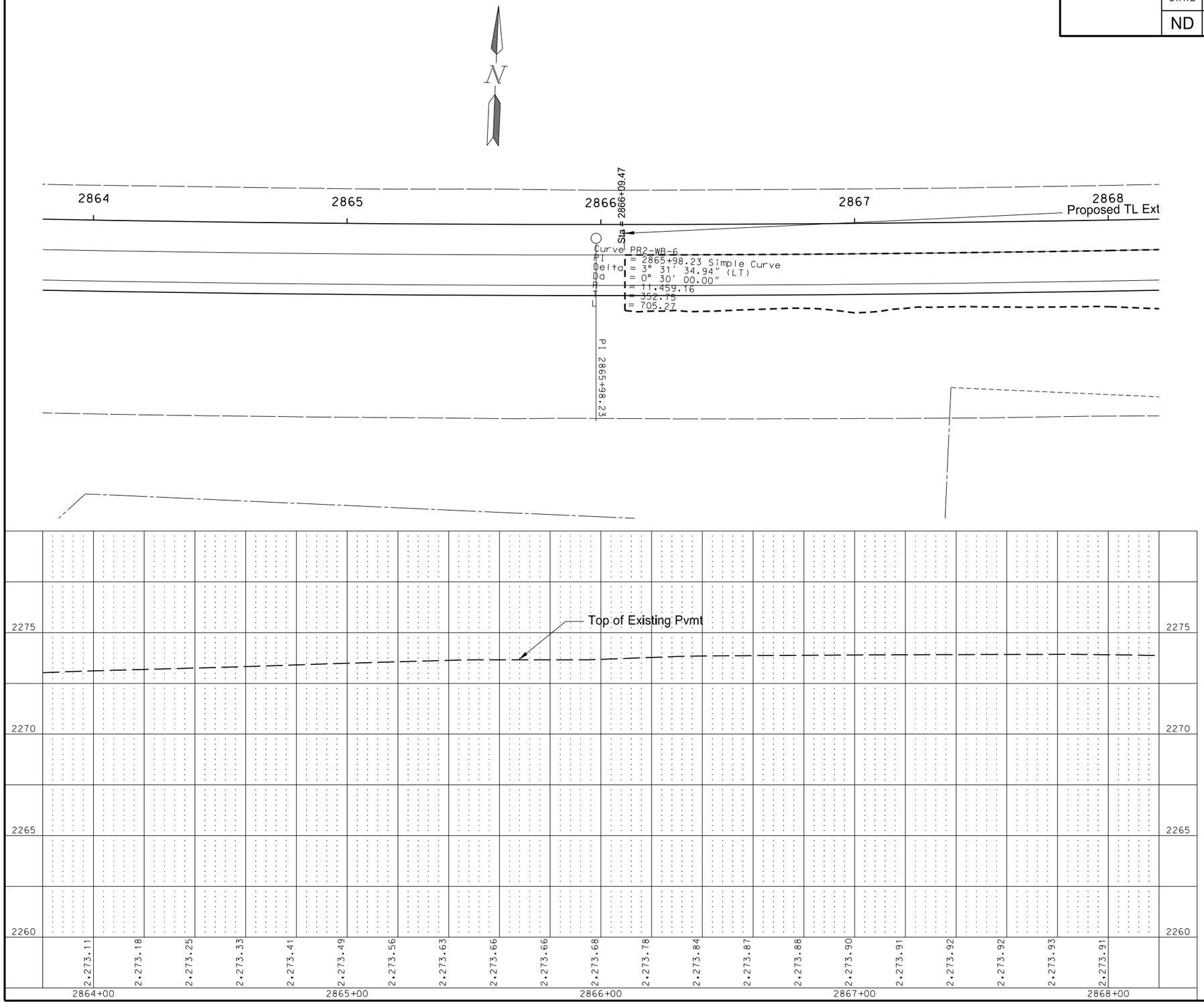
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	20



PLAN AND PROFILE

2856+00 TO 2860+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

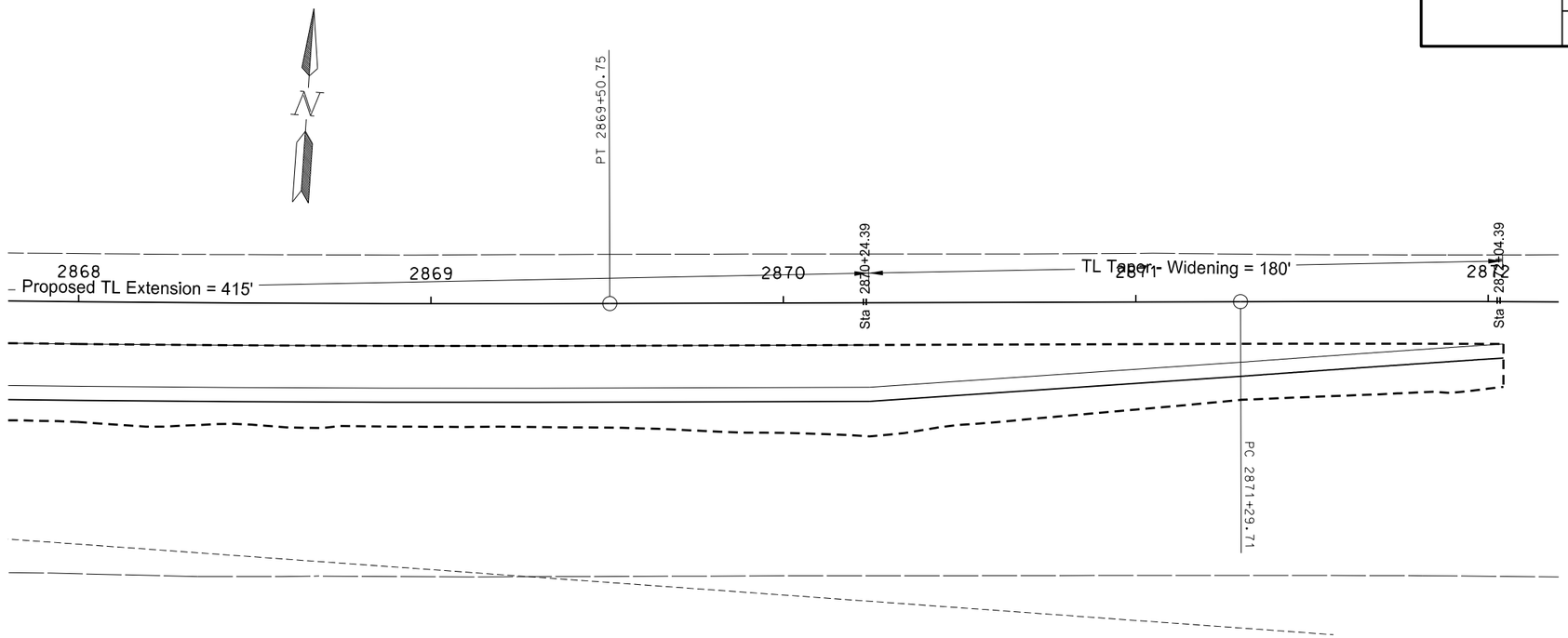
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	21

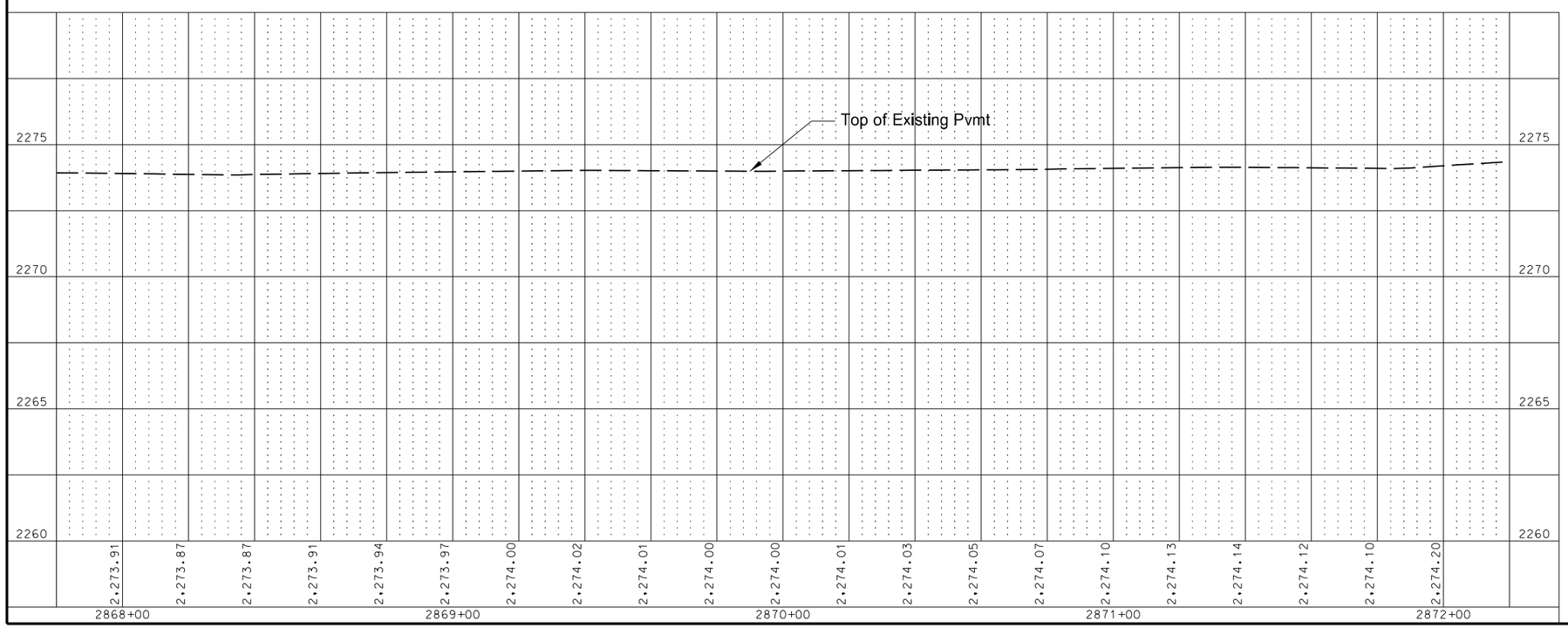


PLAN AND PROFILE

2864+00 TO 2868+00
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	22

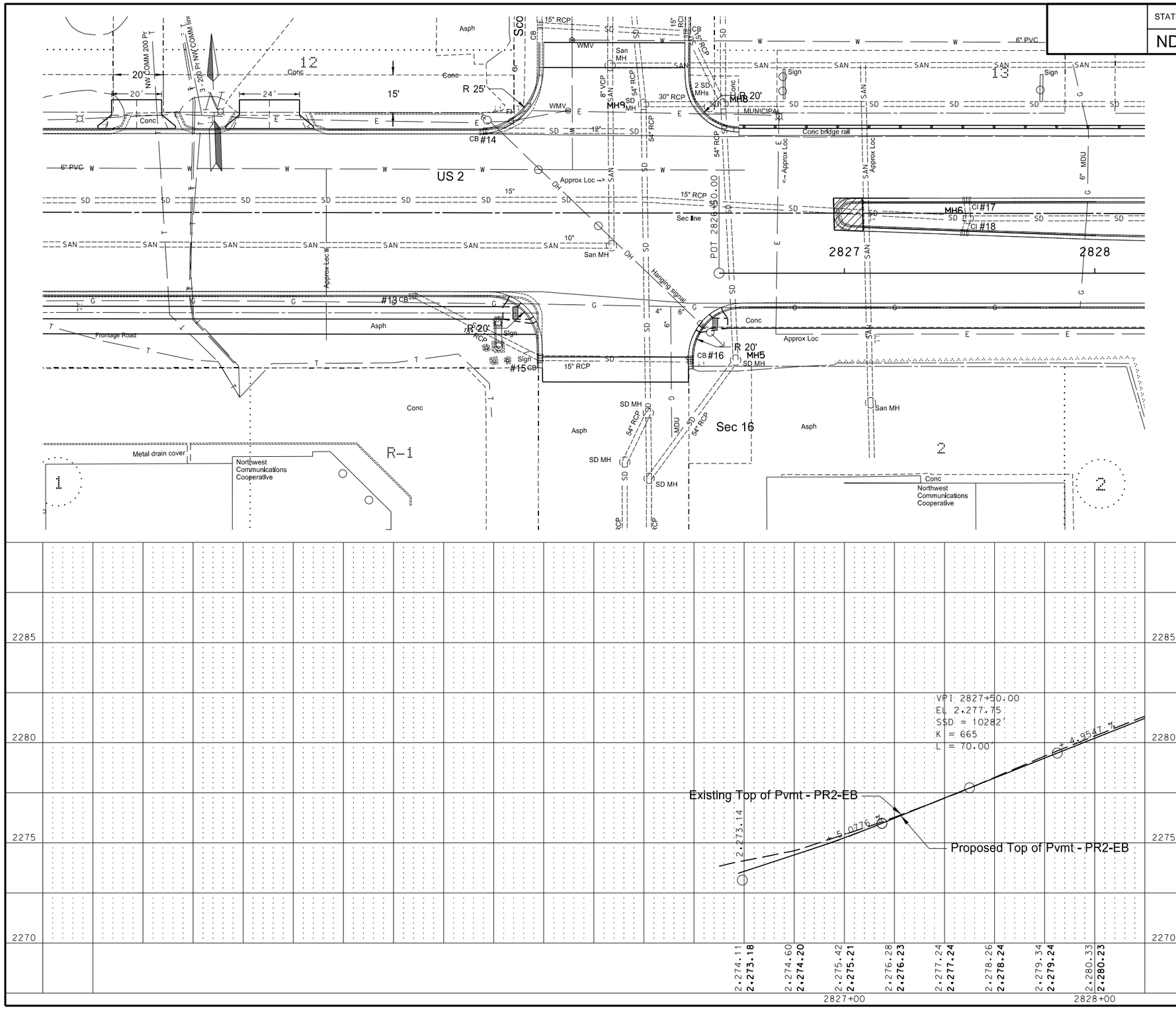




PLAN AND PROFILE

2868+00 TO 2872+04.39
PR2-WB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

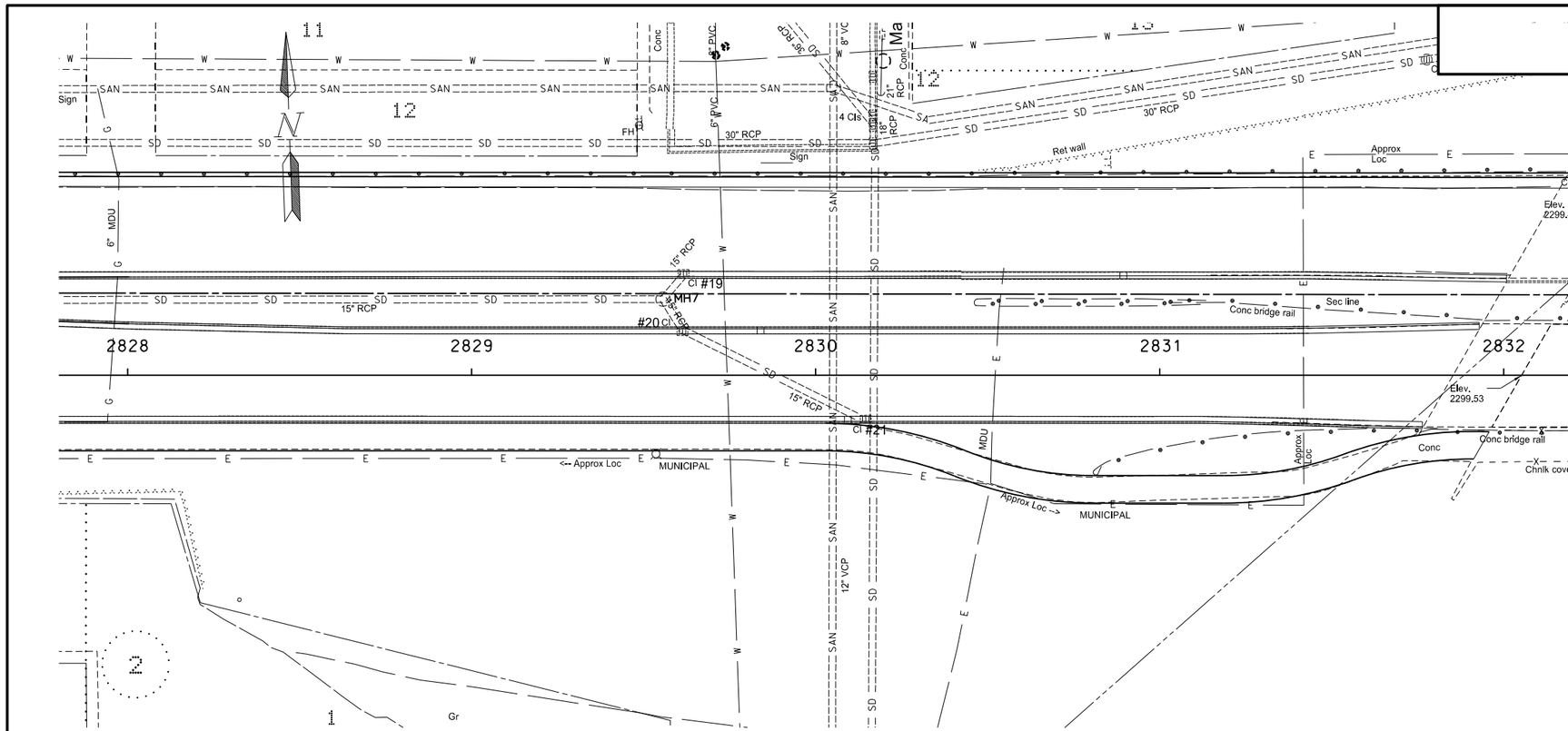
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	23

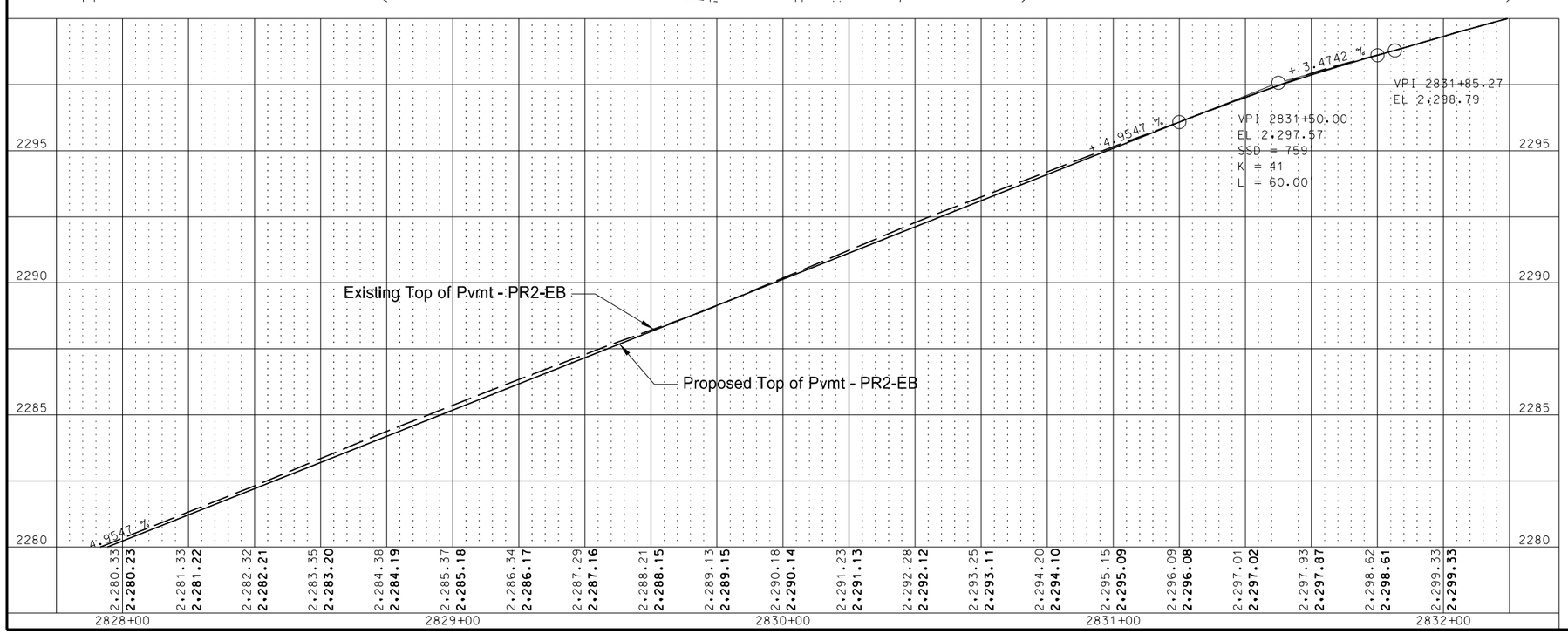


PLAN AND PROFILE

2826+50 TO 2828+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	24

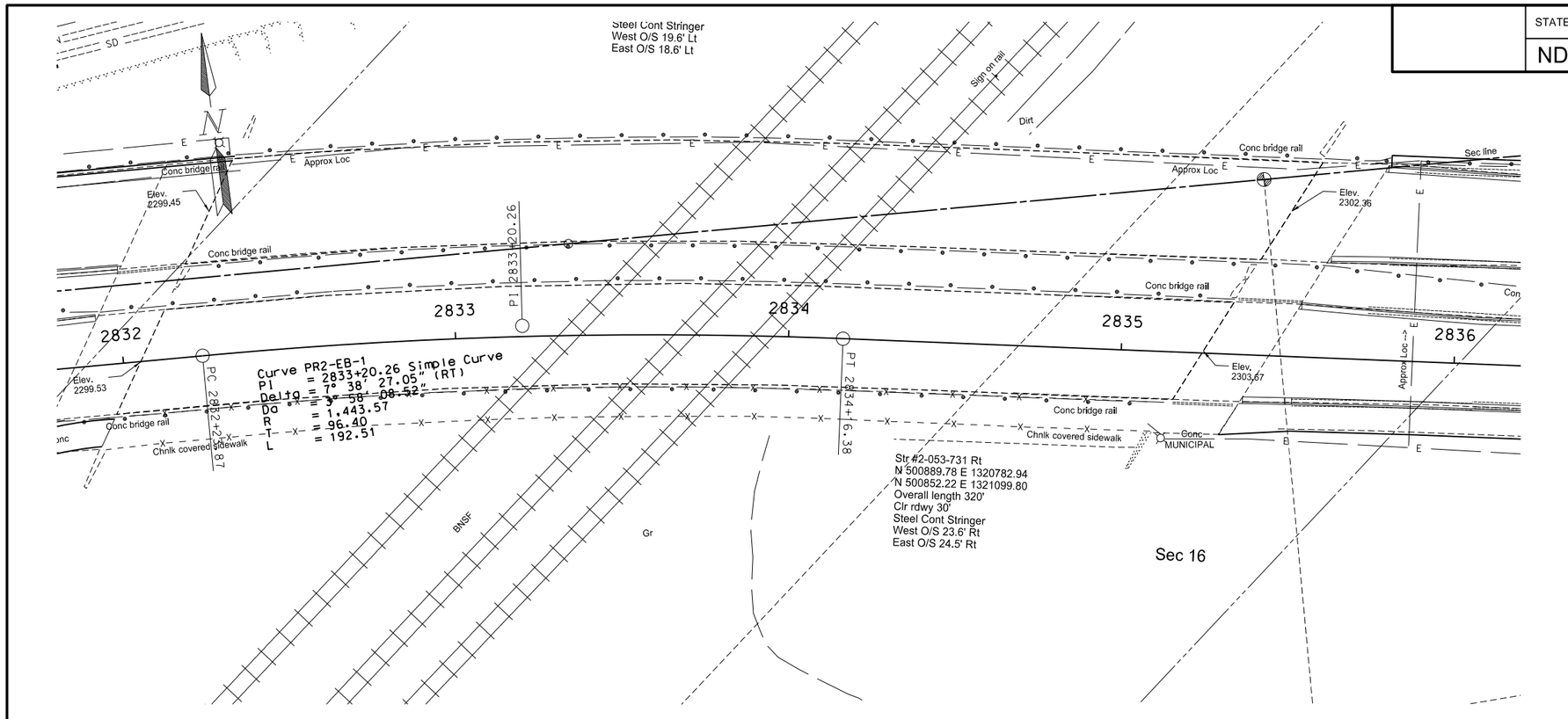


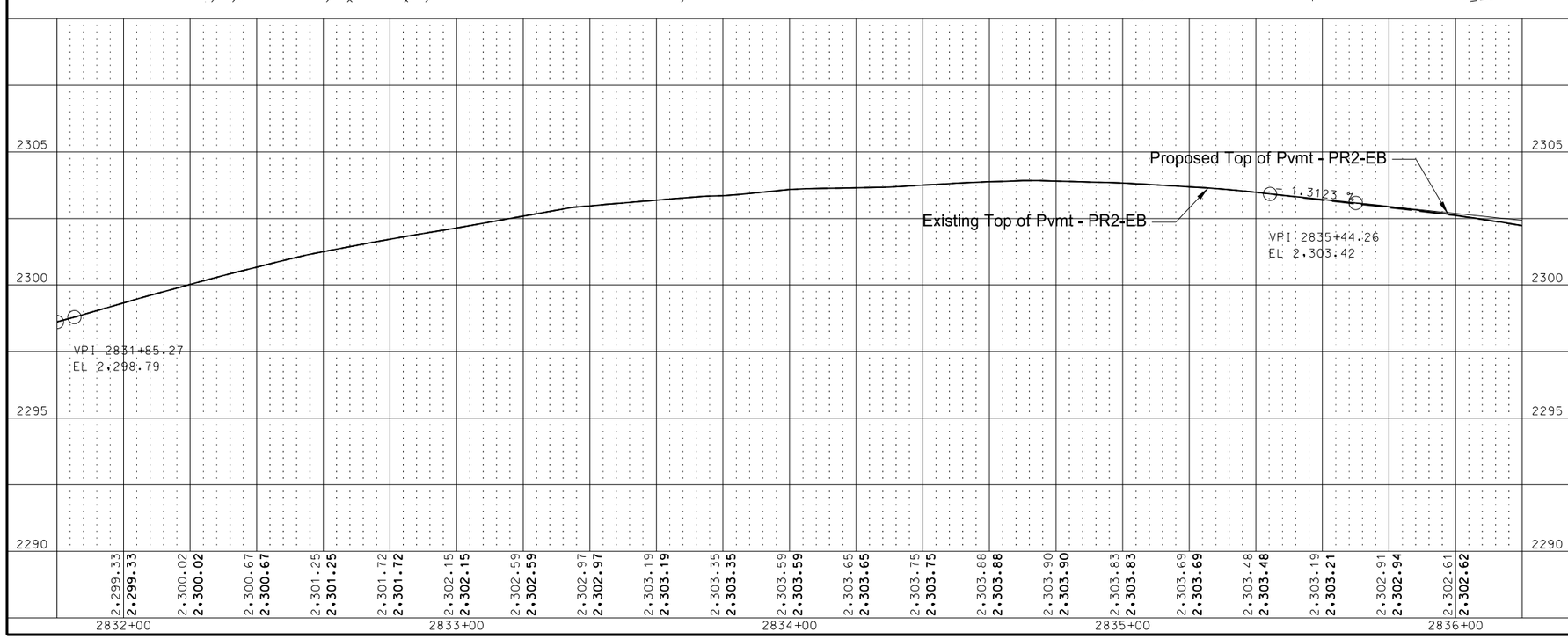


PLAN AND PROFILE

2828+00 TO 2832+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	25

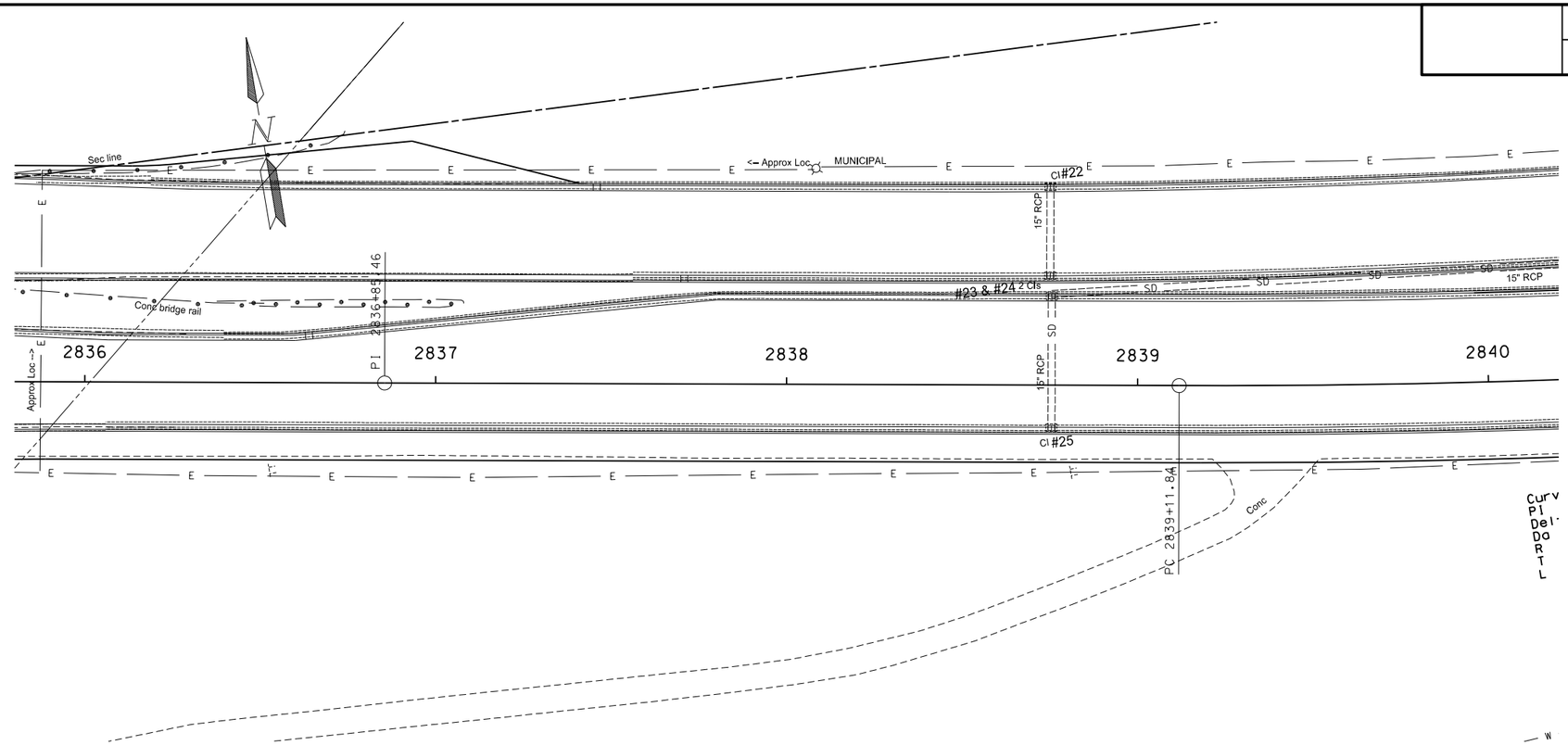


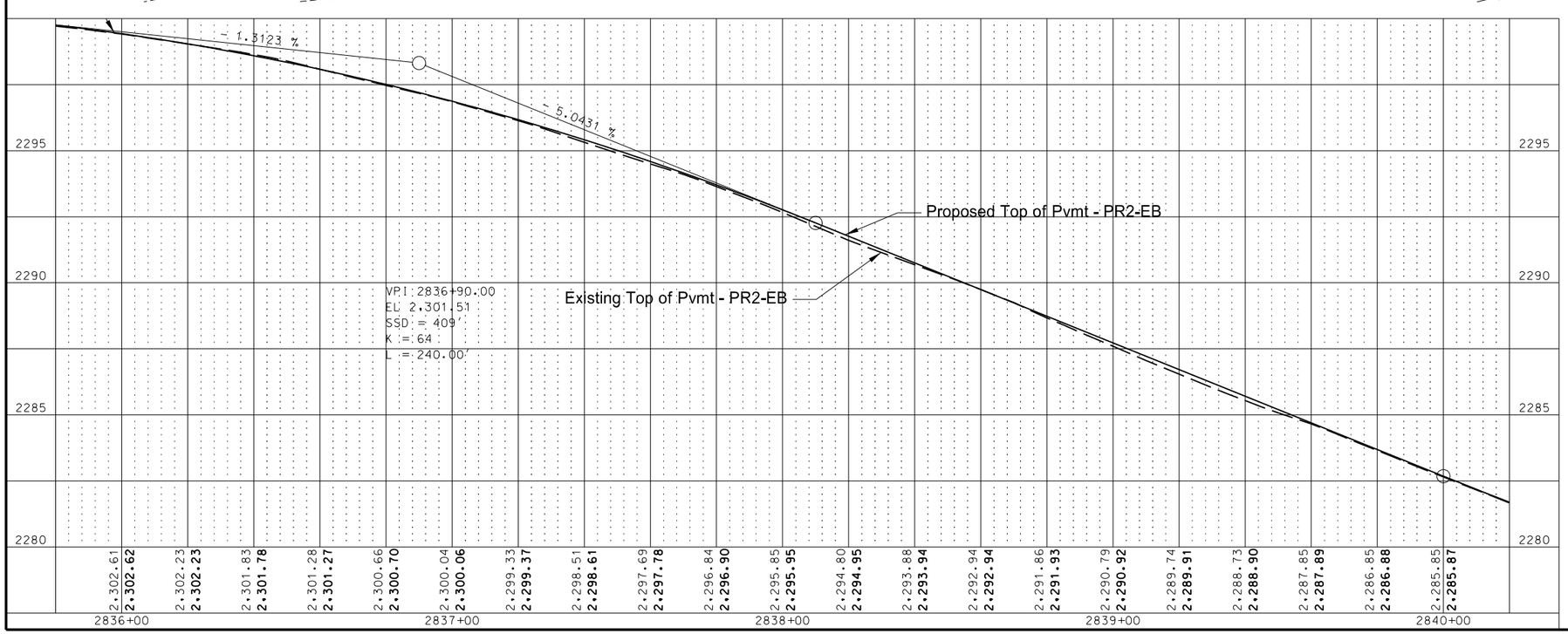


PLAN AND PROFILE

2832+00 TO 2836+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	26

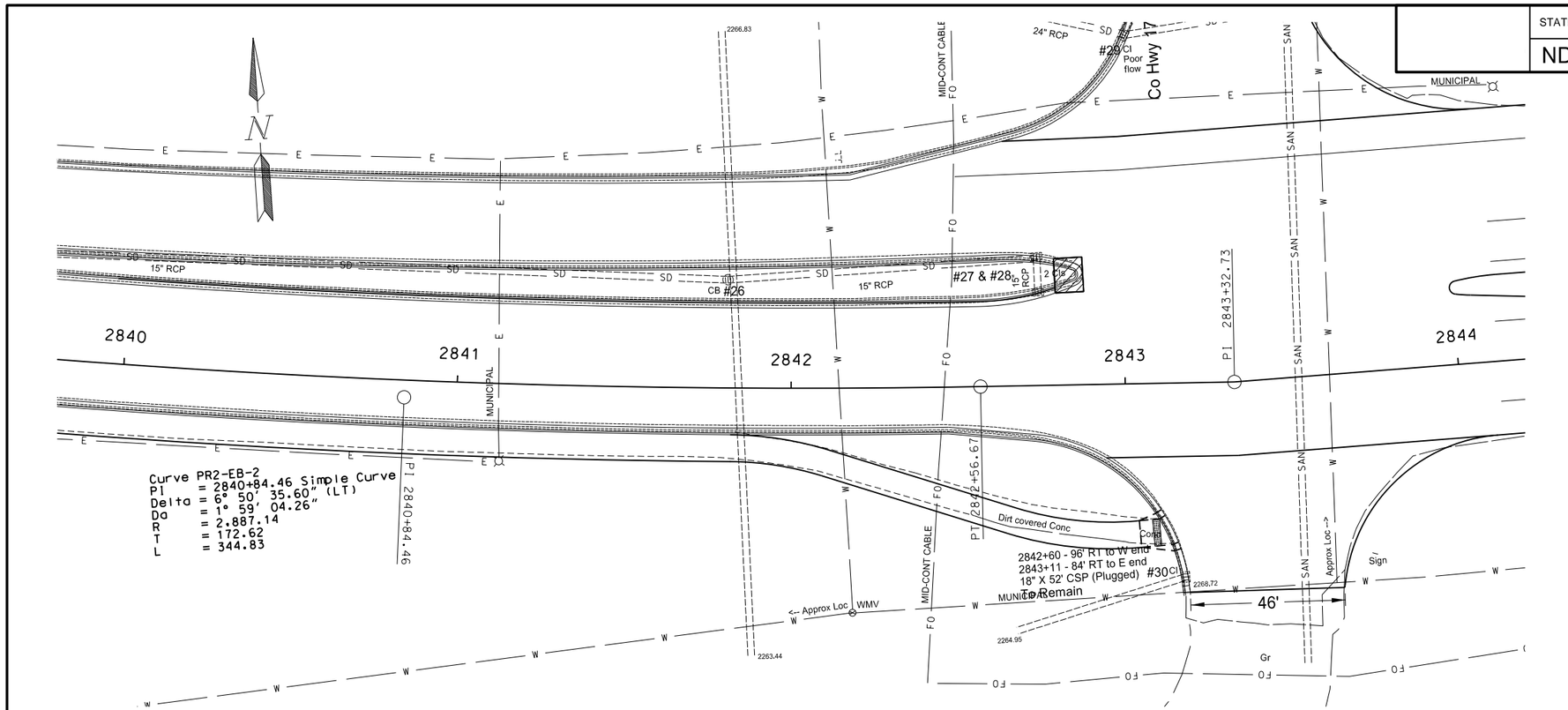


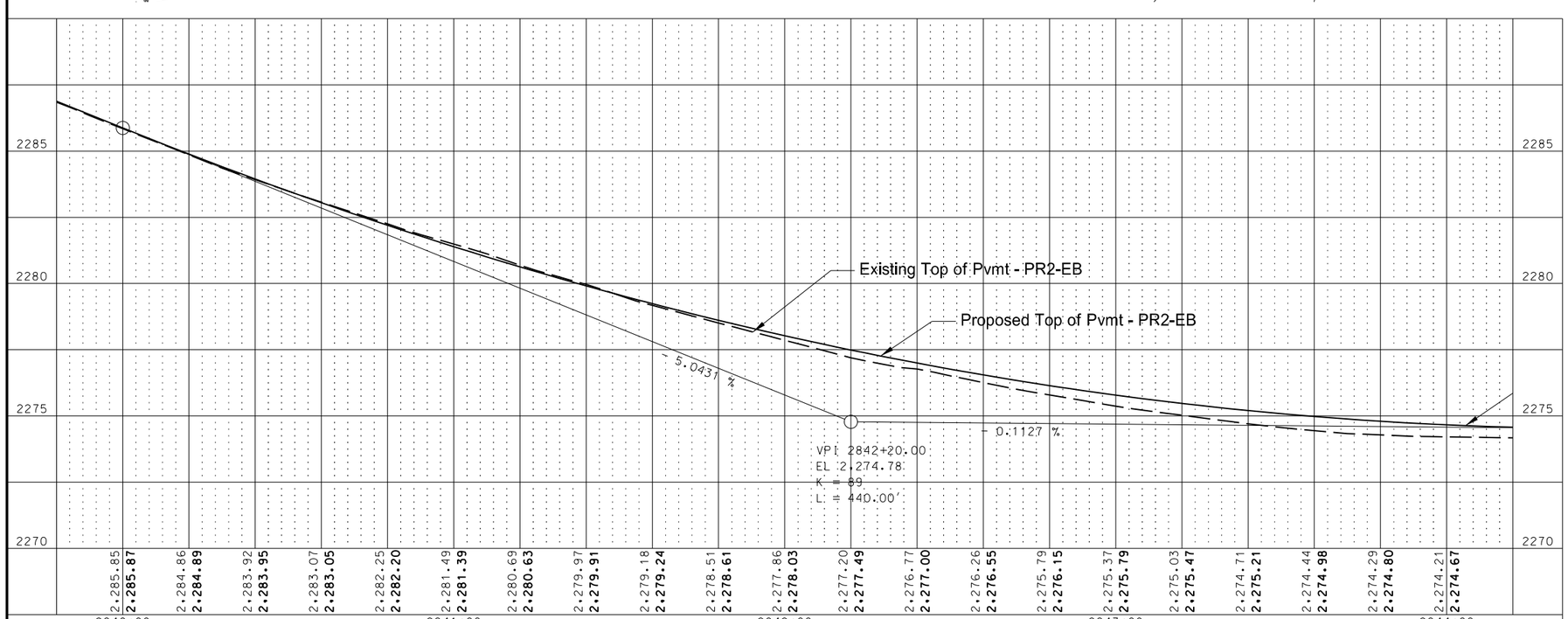


PLAN AND PROFILE

2836+00 TO 2840+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	27

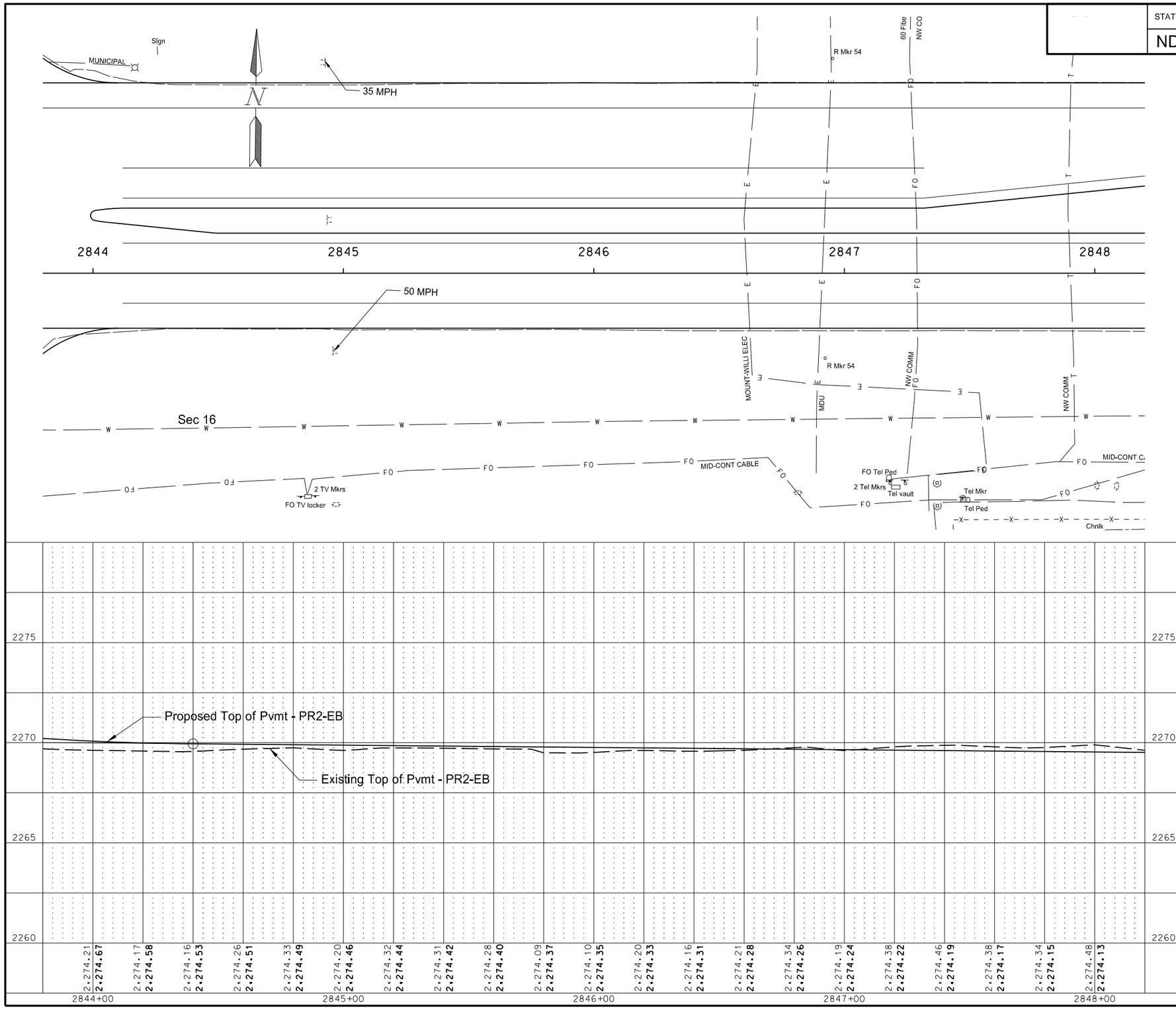




PLAN AND PROFILE

2840+00 TO 2844+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

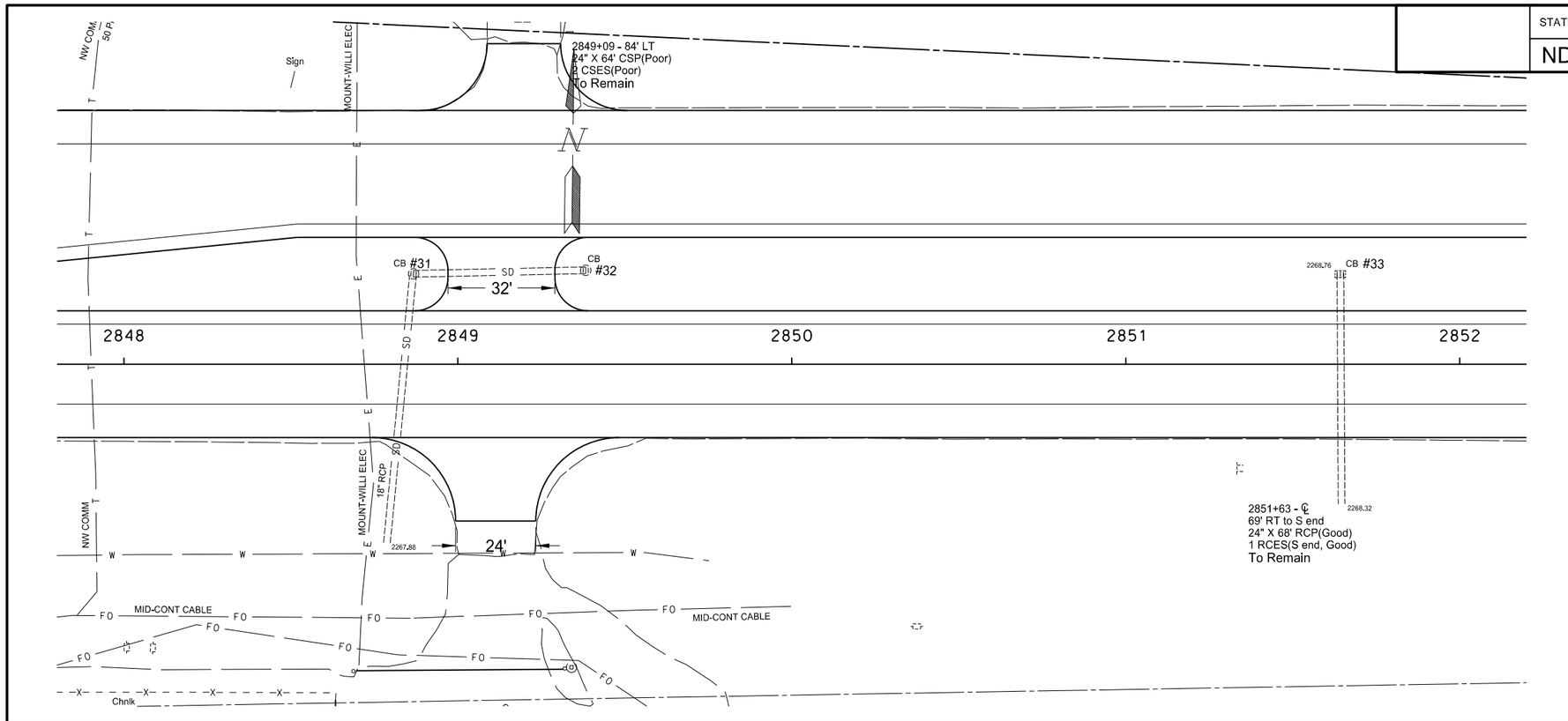
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	28

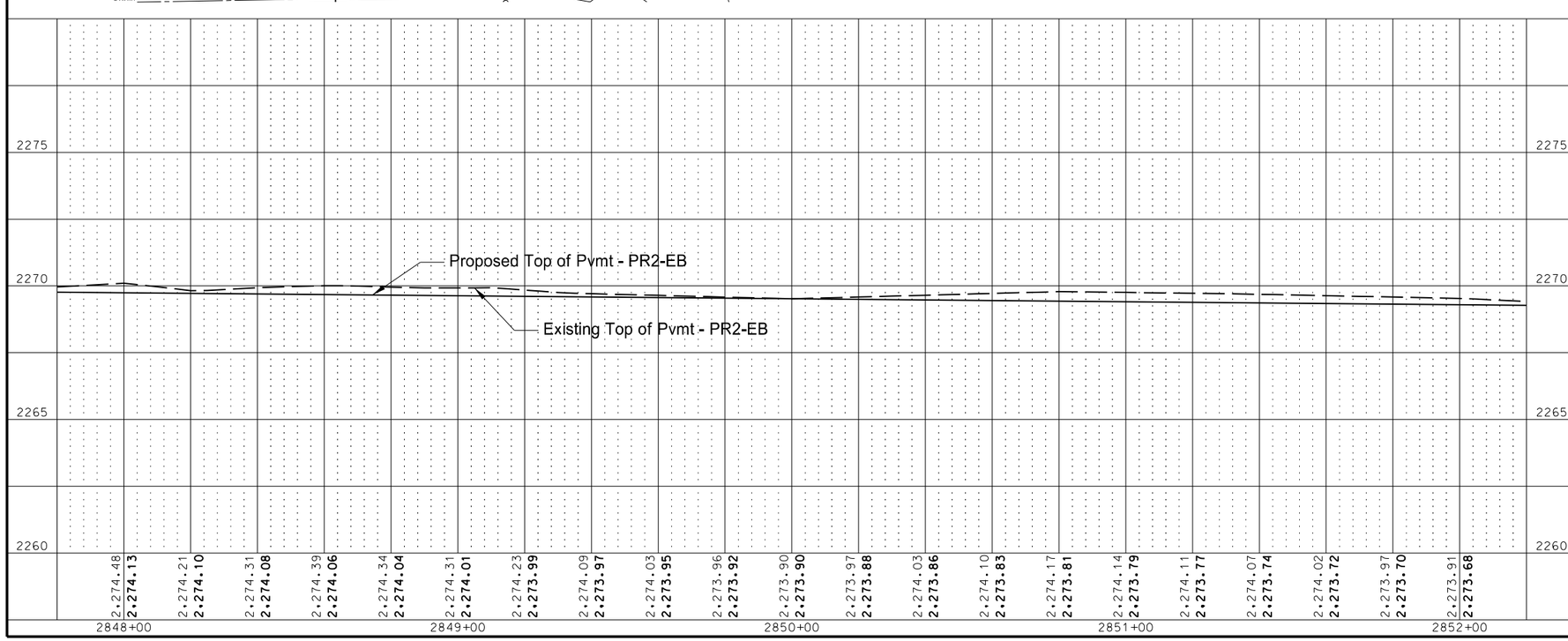


PLAN AND PROFILE

2844+00 TO 2848+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	29

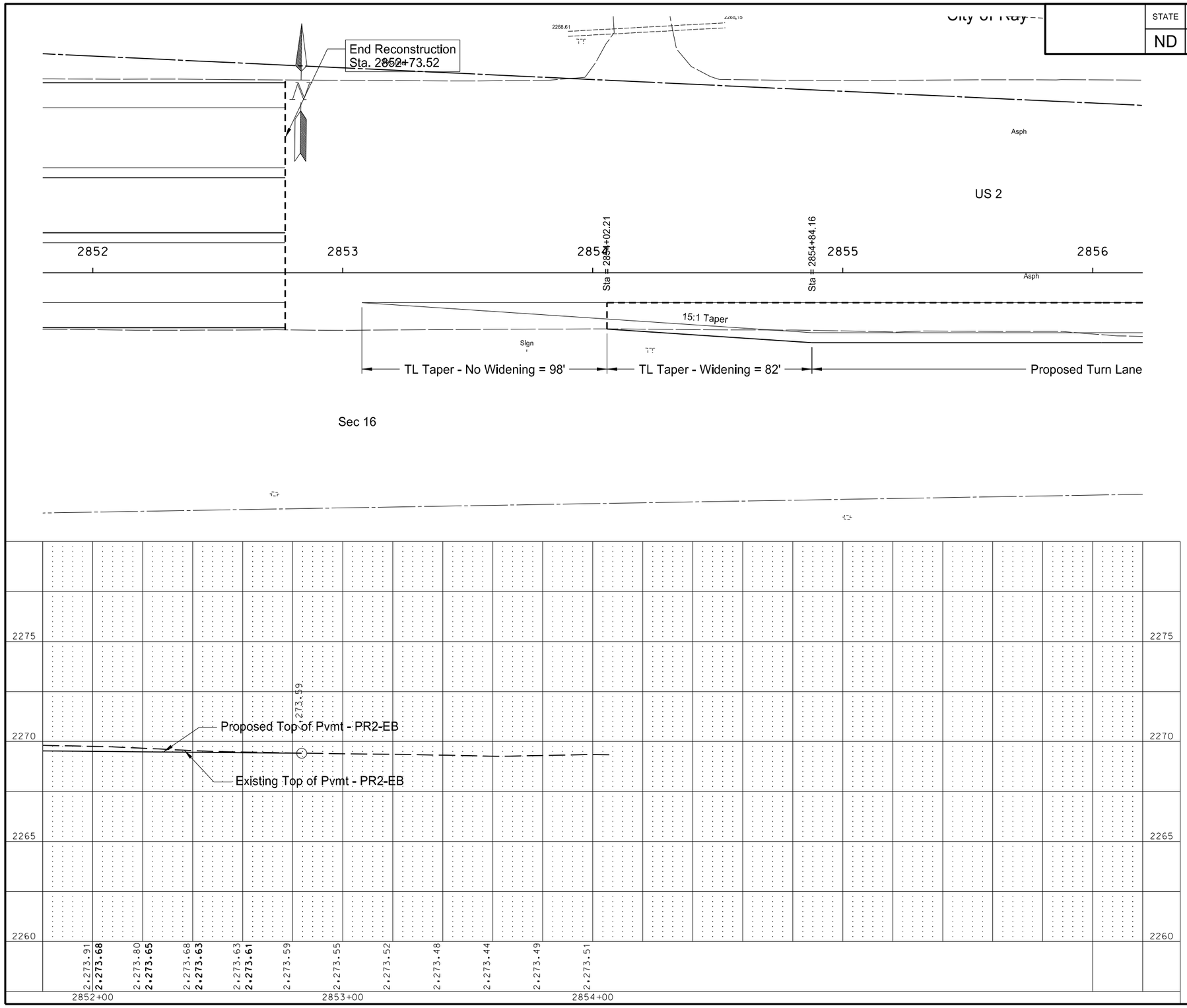




PLAN AND PROFILE

2848+00 TO 2852+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIA-7-002(119)053	60	30



PLAN AND PROFILE

2852+00 TO 2856+00
PR2-EB
US 2 Reconstruction Through Ray
RP 52.7334 to RP 54.4759

2/15/2013 3:02:14 PM agottsman R:\project\70002053.119\design\SHEETS\060PP_030_EB.dgn