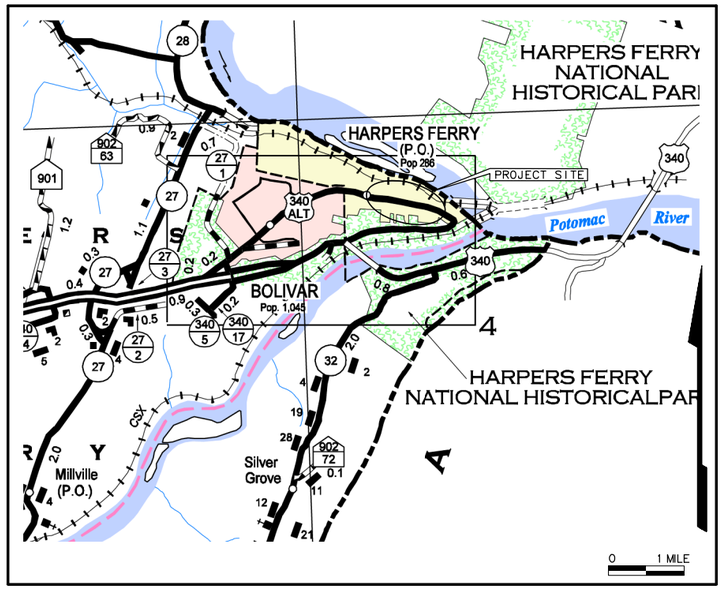


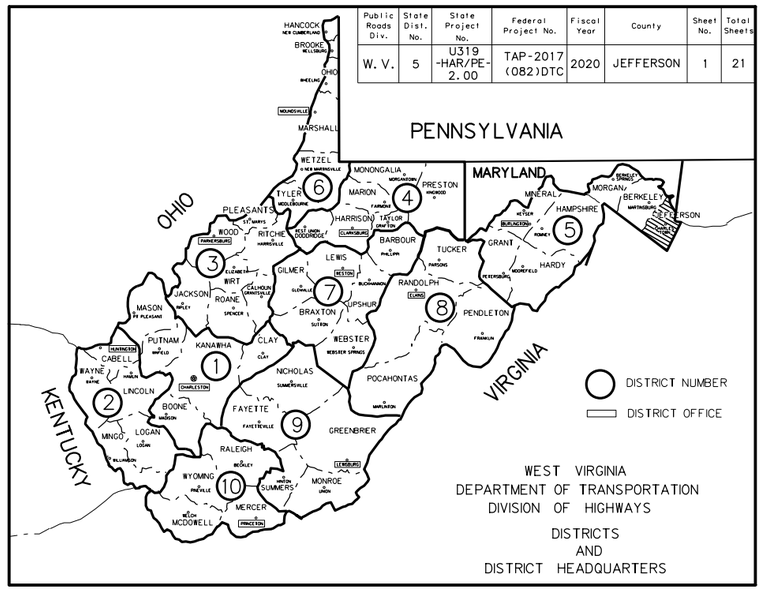
UTILITIES

WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SIDEWALK DESIGN STUDY

FEDERAL PROJECT NO. TAP-2017(082)DTC
STATE PROJECT NO. U319-HAR/PE-2.00
ROUTE NO. ALT. 340
DISTRICT FIVE
JEFFERSON COUNTY

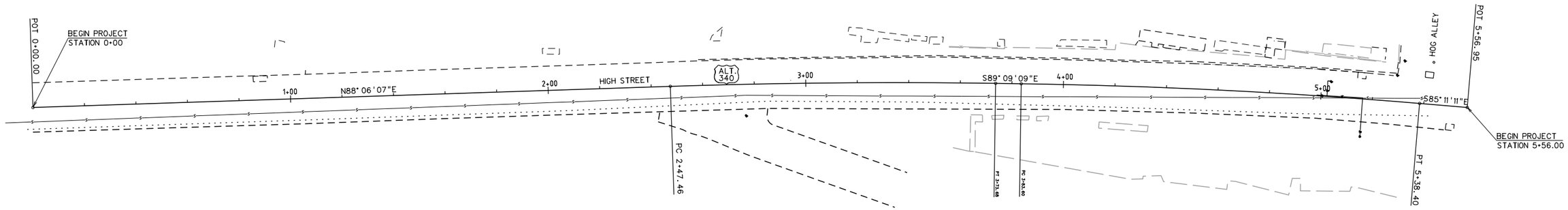
HARPERS FERRY HIGH STREET

	Station		Station		f.t.		mile(s)
Roadway	0+00.00	to	5+60.00	=	556	=	0.105
Total Project Length =				=	556	=	0.105



Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319 -HAR/PE- 2.00	TAP-2017 (082)DTC	2020	JEFFERSON	1	21

TYPE OF SUBMISSION
SIDEWALK STUDY



SCALES

PLAN HOR. 0 10 ft.

PROFILE VERT. 10 ft. 0
HOR. 0 10 ft.

DESIGN DESIGNATION

A.D.T. (20 _ _)	_ _ _ _ _ _ _
A.D.T. (20 _ _)	_ _ _ _ _ _ _
D.H.V. _ _ _	_ _ _ _ _ _ _
D. _ _ _ _ _	_ _ _ _ _ _ _
T. _ _ _ _ _	_ _ _ _ _ _ _
V. _ _ _ _ _	_ _ _ _ _ _ _

CONVENTIONAL SIGNS

- STATE LINE
- COUNTY LINE
- CORPORATION LINE
- PROPOSED R/W & EASEMENT LINE
- EXISTING R/W LINE
- PROPERTY LINE
- EXISTING FENCE
- PROPOSED FENCE
- EDGE OF STREAM
- PROPOSED GUARD RAIL
- EXISTING GUARD RAIL
- RAILROAD
- G GAS LINE
- W WATER LINE
- T TELEPHONE LINE
- E ELECTRIC LINE
- TELEPHONE POLE
- POWER POLE
- COMBINED POWER AND TELEPHONE POLE
- TREE
- SHRUB
- RIGHT OF WAY MARKER

LAYOUT SCALE
0 20 ft.

INDEX TO SHEETS

NO.	DESCRIPTION
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2 - 5	DESIGN STUDY NARRATIVE
6 - 7	EXISTING ROAD - OPTION 1
8 - 14	EXISTING CROSS SECTIONS
15	TYPICAL SECTIONS
16 - 17	PLAN - OPTION 2
18 - 19	PLAN - OPTION 3
20 - 21	PROFILE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PLANS PREPARED BY:
RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
SIGNED_____
DATED_____
KEYSER, WV

PROJECT NO. U319-HAR/PE-2.00 & TAP-2017(082)DTC

J05C06C03-TITLE 1

Background

Harpers Ferry is a small town located in Jefferson County, WV at the confluence of the Potomac and Shenandoah Rivers. According to available census records, the town has an approximate full-time population of 281 residents. The Harpers Ferry National Historic Park is located in the eastern portion of the town. The current boundary for the National Park is at the intersection of Hog Alley. This project is outside the boundaries of the park. National Park records show that there were approximately 266,000 visitors to this National Park in 2018. Visitors to the Harpers Ferry National Historic Park access the business district outside the Park Boundary limits each year. Visitors tour the Park and adjacent Town primarily as walking pedestrians as parking space is very limited.

Vehicular traffic accesses the Town and Historic District via High Street (US 340 Alt). Visitors to the National Park are directed to a parking lot along US 340 maintained by the National Park Service (NPS). Shuttle buses transport visitors to the portion of town controlled by the (NPS). Visitors walk through the Harpers Ferry area which includes US 340 Alt. that includes the business section within this study area. There are no available traffic counts within the study area. However, previous counts to the west near Town Hall indicates an average daily traffic count of 4,000 vehicles.

During the peak of tourist season, many pedestrians walk along the roadway due to congestion along the narrow street areas. Pedestrian traffic walking within the roadway travel lane poses safety risks to both pedestrians and vehicular traffic.

There are no detailed evaluation of utilities for this study. Utilities are shown as located.

Existing Conditions

The existing roadway within the study area has a width of nineteen feet and serves two-way traffic. A sidewalk exists along the north side of the street. There is no sidewalk along the south side of the street. The existing sidewalk fronting the businesses is mainly brick. The width of sidewalk varies throughout from approx. 3 to 5 feet. The lower section of sidewalk is situated between concrete retaining walls supporting the roadway and retaining walls on the outside supporting the sidewalk. As noted in the photo below, many of the structures fronting the sidewalk have roof downspouts that span over existing sidewalk and are connected to handrailing. Storm water runoff from roofs are directed to and discharge along the edge of the existing roadway.

Figures 1 and 2 provide a general view of the existing roadway and sidewalk conditions within the study limits. The existing sidewalk varies in width. Buildings and storefront entrances are accessed directly from the sidewalk. In many instances, there are stairs leading up or down to the building entrance. Figures 3 and 4 show some typical entrances situated along and on the existing sidewalk.

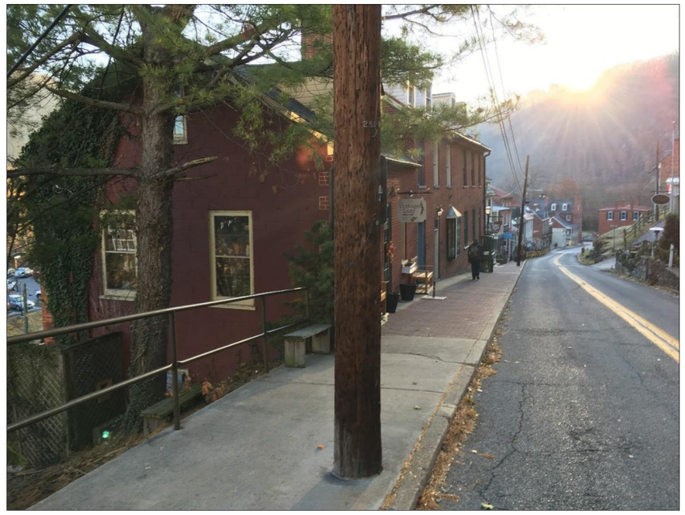

Figure 1-Typical Road/Sidewalk Section (Looking East)

Figure 2-Typical Road/Sidewalk Section (Looking west)

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN STUDY NARRATIVE
(SHEET 1)

Figure 3 - Building Entrance, West (Upper End)

Figure 4 - Existing Sidewalk, East End

In order to examine various options for sidewalk improvement, a review of available right of way is necessary. Any improvements that would alter sidewalk or street width could have adverse impact upon private property beyond the existing right of way limits. Existing right of way plans were obtained from the West Virginia Division of Highways (WVDOH). Figure 5 (shown below) shows the right of way plans for this section of highway The Right of Way plans were prepared as State Project 3034 and dated 1921 and are depicted as "As-Built". The plans designated this section as a 'CLASS A ROAD'.

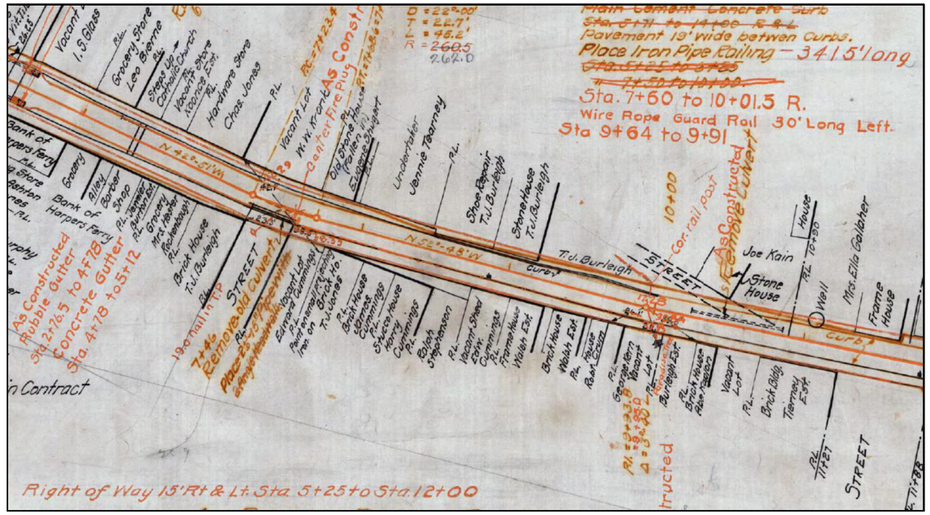

Figure 5-Right of Way Plan Sheet

The 1921 right of way plans show that the right of way is 30 feet, 15 feet left and right of centerline. The right of way plans also show a typical section for the constructed roadway. Current conditions indicate that the existing concrete roadway has been overlaid with asphalt in subsequent years. The original section is shown in Figure 6 below.

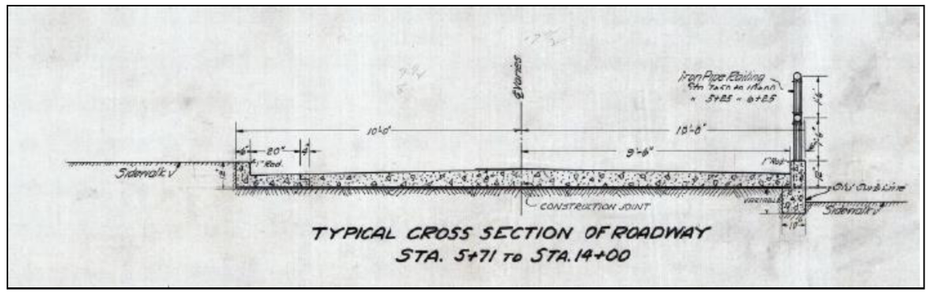

Figure 6-Original Construction Typical Section

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN STUDY NARRATIVE
(SHEET 2)

Utilities

While a detailed evaluation of utilities has not been completed, there is buried sanitary sewer and public water lines located in the roadway. Overhead utilities serving power, telephone, and other communications are located at various points along the project corridor. Utility poles are located within the existing sidewalk area. Careful evaluation of service connections to individual properties would be necessary for any sidewalk or street alterations.

Cultural Resources

This study also includes a preliminary evaluation of the cultural resource elements within the project area. The preliminary study evaluated the historic and architectural elements of the buildings, sidewalks, walls, and railing within the project area. The Preliminary Evaluation Document has been prepared and is submitted separate from this report. The Summary and Recommendations from the report is re-printed below for consideration.

Based on a review of the preliminary design alternatives, there are several potential character-defining elements along High Street that could be impacted, depending in part on the final alternative selected. Particular attention should be paid to brick sidewalks and downspouts. Avoidance or replacement in-kind would both be acceptable treatments that can be developed based on the alternative chosen. Furthermore, while impacts appear to be minimal to elements such as stone retaining walls, iron fences, and steps/entryways, care should be given in implementing specific designs in and around areas that contain these features. Overall, Option 1 and Option 2 present an acceptable balance of new construction and retention of existing historic elements. With careful review of specific designs, both alternatives can be constructed with minimal potential for adverse effects. Option 3 presents a greater potential for creating adverse effects, both in terms of specific impacts to character-defining features such as sidewalks and downspouts, but also in terms of impacts to the overall sense of setting, feeling, and association along High Street.

Study Options

This study will evaluate options for improving pedestrian traffic in the business district along US 340 Alt. from Hog Alley westward to the staircase leading down to Potomac Street and Train Station. The linear distance is approximately 450 feet.

As described previously, the sidewalk exists on the north side of the roadway (street). There is no existing sidewalk on the south side within the project limits.

Option 1 – Repair existing Features

The existing roadway width is 19 feet with minor variations throughout. The roadway surface is asphaltic concrete. The sidewalk varies in width throughout the length of the project and is brick. There is no available parking along the street. Building fronts are immediately adjacent to the sidewalk on the north side.

Figure 7 - Typical Sidewalk near Public Way

Option 1 would leave the existing sidewalk and roadway conditions unchanged. This option would evaluate the existing retaining walls and handrails for replacement. Roof downspouts would be evaluated to provide alternate discharge point or aesthetically improve the condition. Additional evaluation of the roof drains and solution to stormwater discharge would need detailed evaluation. The varying width of brick sidewalk and curbing would remain unchanged. Any repairs or replacement of brick sidewalk or downspouts should be such that the existing features are not changed to any extent and meet Section 106 requirements.

This option would minimize any historic or cultural resource issues related to the Town as well as Harpers Ferry National Historic Park. It would not address the peak seasonal pedestrian traffic along the street. It is assumed that pedestrians would continue to walk within the existing roadway and thereby continued safety risks. The sidewalk would remain narrow between Hog Alley and Public Way with the retaining wall and elevated roadway unchanged (distance of approximately 200 feet), The advantage would be lower cost to repair deficient items. The disadvantage is that the traffic and pedestrian patterns would remain unchanged.

One alternative within this option would be to determine the peak hours for pedestrians and physically close the street during certain hours. In order to accomplish this, the Town would need to coordinate with all business owners, the WVDOH, and the National Park Service. This would mean the Town would need to have available workforce and materials to set up and remove barriers each day the closure would be in effect.

A significant disadvantage to the intermittent closure would be access to Public Way. There would need to be adequate alternative access for residents of this section of Town.

The estimated cost to repair existing curbing, decorative handrail, downspout improvements is estimated to be approximately **$40,000**.

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN STUDY NARRATIVE
(SHEET 3)

Option 2 – Reduce To One-Way Traffic

Option 2 for consideration would be the closure of one lane of traffic permanently between Hog Alley and Public Way. The closure would be the lane traveling from the Historic District westward toward Bolivar. The existing sidewalk beyond Public Way to the west has reasonable width. This single lane closure limit would permit the continued vehicular usage of Public Way. As with Option 1, Historic and Cultural impacts would need a detailed evaluation.

This option would require construction of permanent barriers near the existing roadway center to separate vehicular and pedestrian traffic. Intermittent opening would be required to provide access to any residences/businesses on the south side of the road.

Closure of one lane would impact deliveries to the businesses along this section of street. Currently, delivery trucks generally park for short periods of time in the westbound lane to make deliveries. In a one lane scenario, delivery trucks would need to block traffic to make deliveries.

Community and WVDOH input would be needed for this option as both business and traffic would be impacted. All underground utilities would need to be evaluated to determine adverse impacts generated by the partial closure.

There are two possible alternatives within this option. The first would be to leave the existing sidewalk unchanged and simply provide a pedestrian way along the former traffic lane. Intermediate access points would need to be provided between Hog Alley and Public Way for pedestrian access to businesses. Approximate cost for this alternative would be **$60,000**. Cost is based upon work considered in Option 1 plus the additional cost of road closure devices.

The second alternative would be to reconstruct the sidewalk to sufficient widths along this segment. The roadway would need excavated with new retaining wall and railing system constructed. The sidewalk would be replaced to sufficient ADA widths. An advantage to this alternate is that the roof downspouts could be directed to a storm collection system under the newly constructed sidewalk and eliminate the current condition as shown in Figure 8. Disadvantage would be the careful design consideration for any wall, sidewalk, or downspout replacement in order to avoid adverse impact to the cultural resources. Based upon the Cultural Resources evaluation, considerable detail of roof drains and downspouts would be required to avoid adverse impact to the overall character of the architecture. Approximate cost for this alternative would be **$175,000.**

Figure 8 - Existing Roof Downspouts

Option 3 – Shift Roadway and Widen Sidewalk

Option 3 would be the shifting of roadway alignment between Hog Alley and Public Way. This option would shift the existing traffic lanes approximately two (2) feet to the south and equivalent widening of the existing sidewalk. The south edge has an existing concrete curb as shown previously in Figure 6. Shifting the roadway in this segment would facilitate the removal and reconstruction of the retaining wall on the north side. Relocating the existing retaining wall would permit sidewalk widening and improve the pedestrian movement.

Deign considerations would need to provide a template and features that nearly match the existing aesthetics for the area.

This option would be the most disruptive as it would possibly change the character of the street. Detailed Historic and Cultural evaluations would be required. Given that Hog Alley is at or near the Historic Park Boundary, The National Park Service could have significant input. The WVDOH would also have significant impact relative to design and safety features.

No alignment changes would be made from Public Way to the western end of the study area. This is due mainly to the existing structures near the edge of existing road. Sidewalk and curb repairs would be evaluated and restored as part of the overall project.

Estimated cost for this option is approximately **$2000,000**. Cost could vary depending upon the context sensitive design considerations.

Based upon the preliminary Cultural Resources Report, this alternative would be the most challenging in that character defining features would be impacted.

Recommendations

The location and historic setting of Harpers Ferry limits the sidewalk improvements without creating adverse impacts within the project area. Option 3, as discussed above, would be the most challenging and difficult option to advance given the cultural history and setting. While it has potential to sustain traffic flow and increase pedestrian access and capacity, it would change the character of the street.

Option 1 would be the least intrusive as it would require spot improvements along the project length. This option may not achieve the goals of the Town in terms of improving pedestrian safety and capacity during peak tourist season.

Option 2 remains viable as these options would keep the street alignment and most existing features intact. Advancement of these options would adversely impact the traffic flow through High Street. Ultimately the traffic flow and vehicular accessibility would need weighed verses the need for greater pedestrian access to this street. Stakeholders along High Street, National Park Service, and overall community input would be necessary to alter traffic flow within this project area.

Options 1 and 2 would require careful design considerations for any repairs to avoid adverse impact.

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DESIGN STUDY NARRATIVE
(SHEET 4)

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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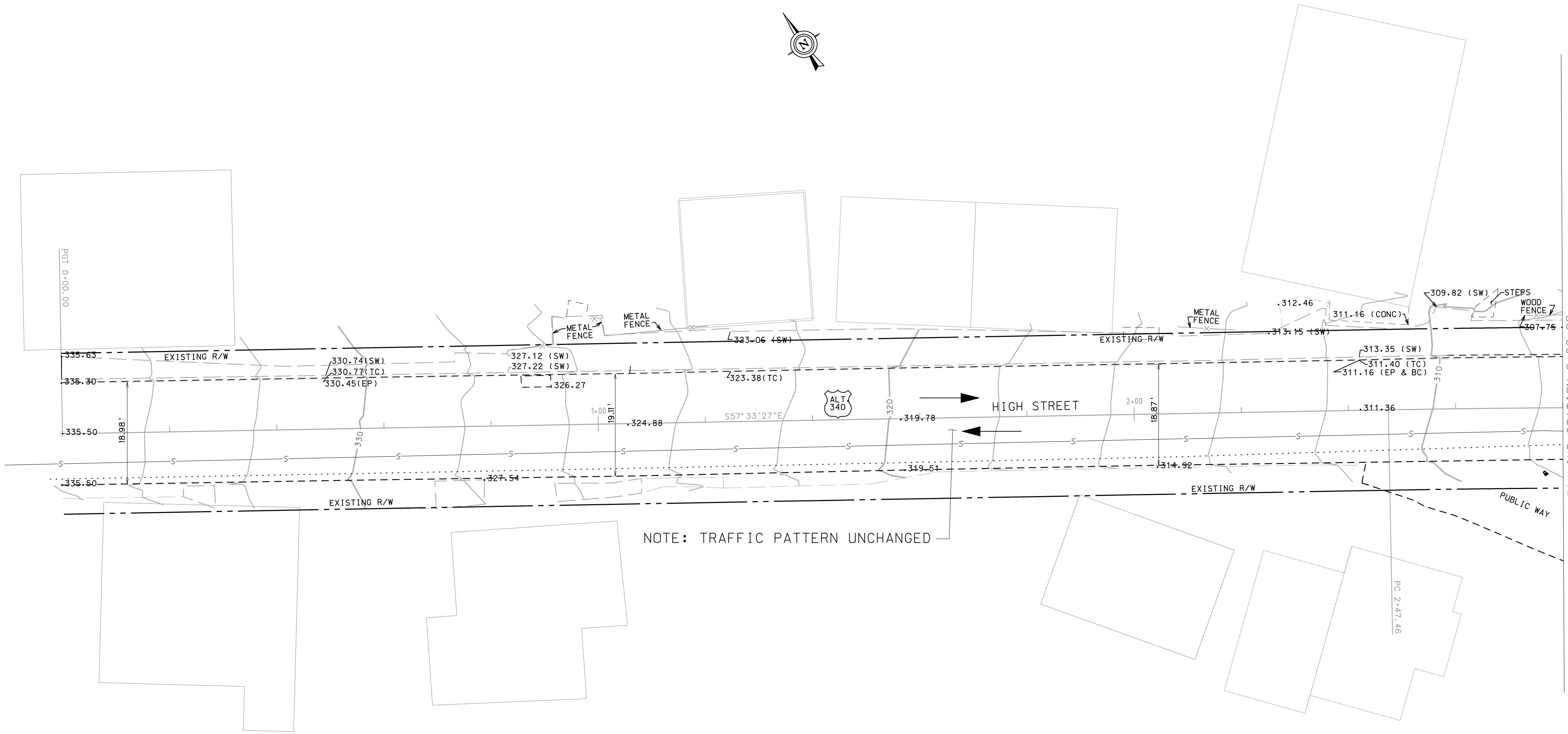

- DENOTES EXISTING SIDEWALK AREA

SCALE : 0 10 ft.

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EXISTING ROAD
(OPTION 1)

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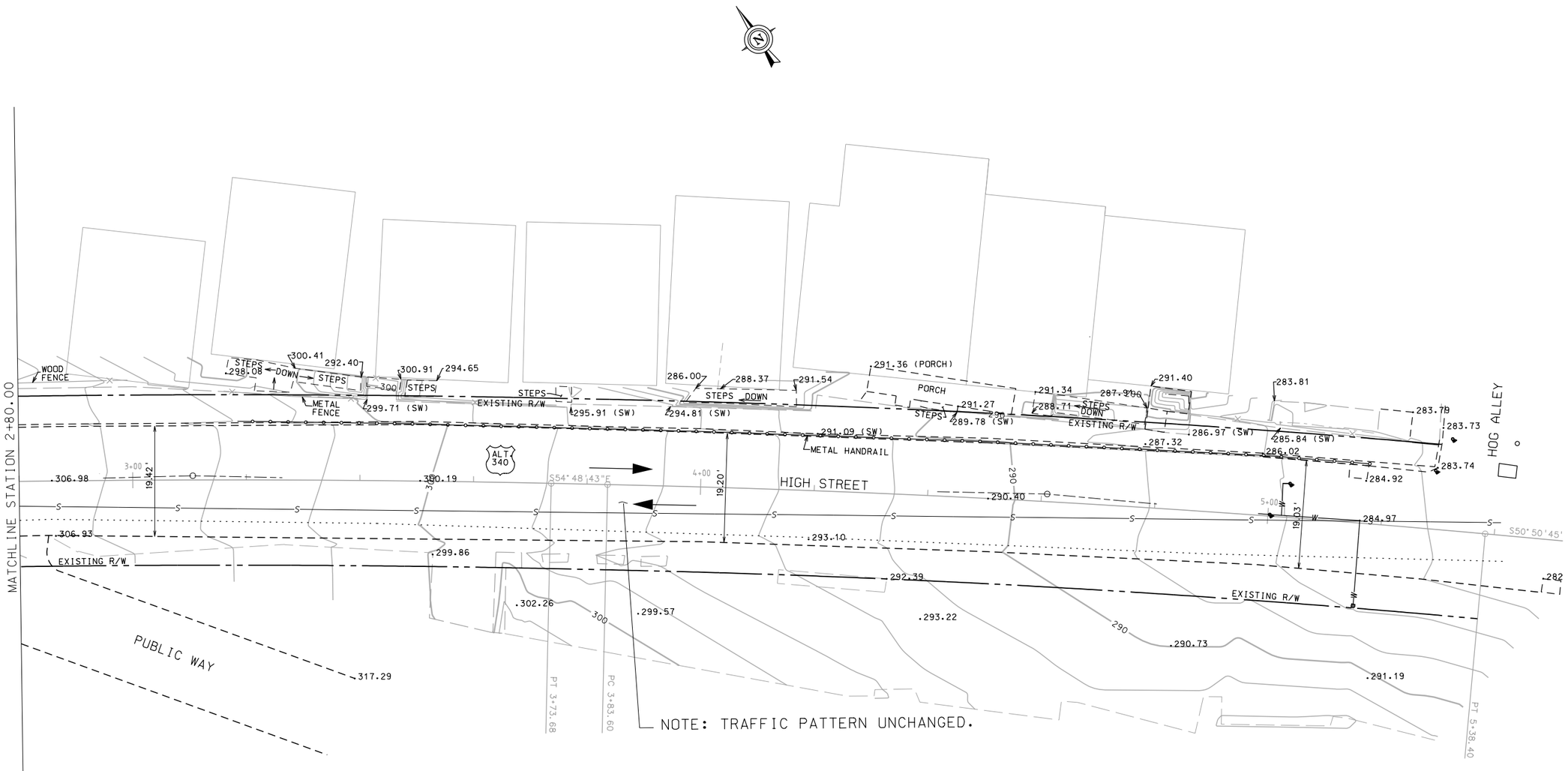

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SCALE : 0 10 ft.

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EXISTING ROAD
(OPTION 1)

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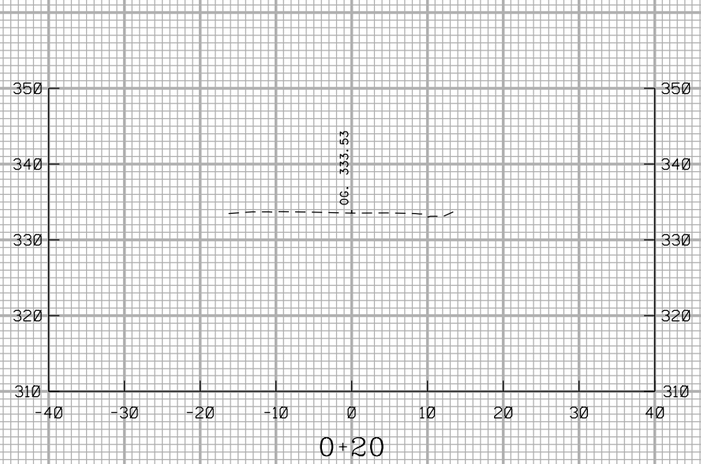

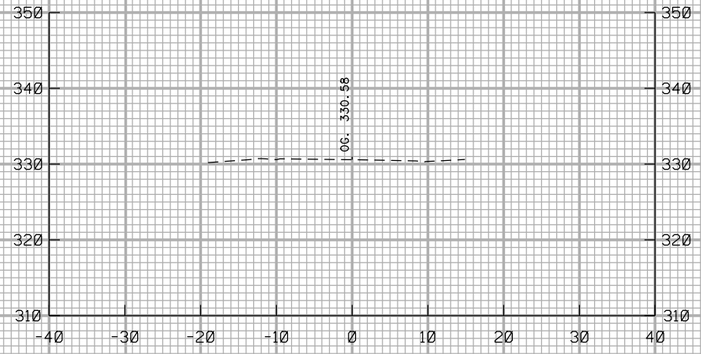

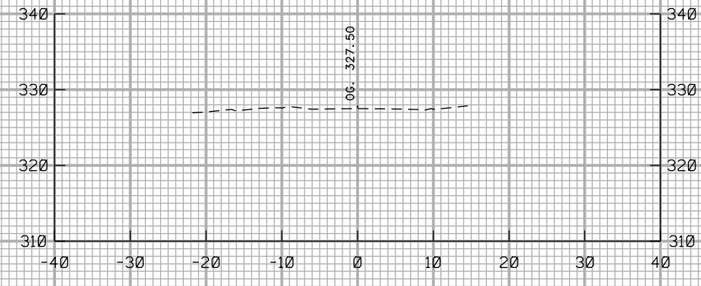

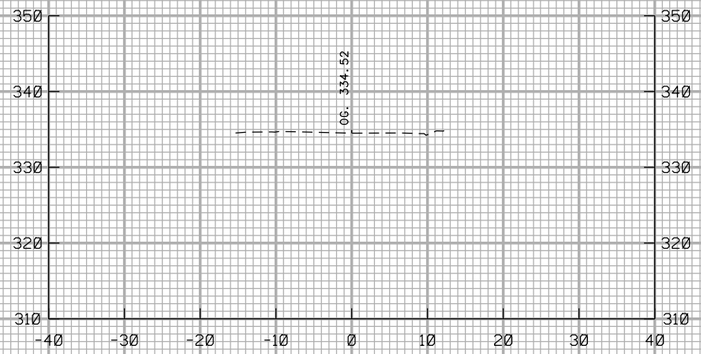

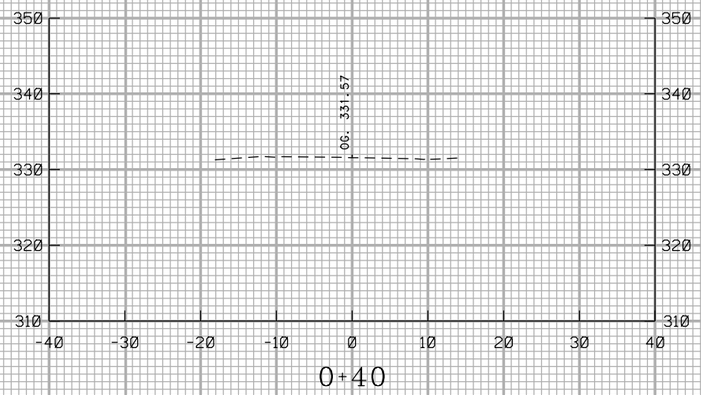

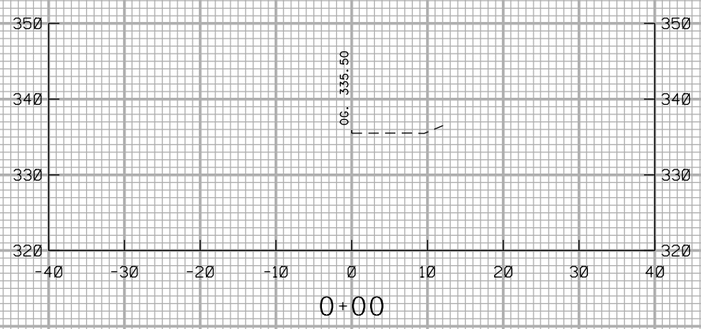

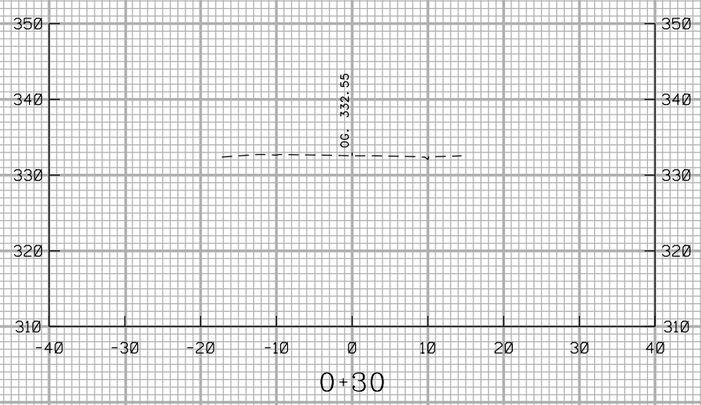

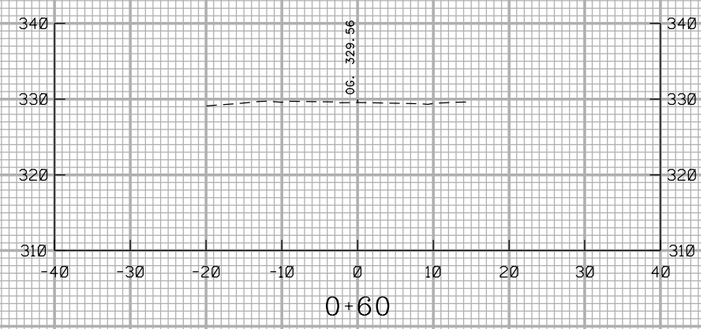

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AREAS CHECKED		/ /
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SCALES
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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EXISTING CROSS SECTIONS

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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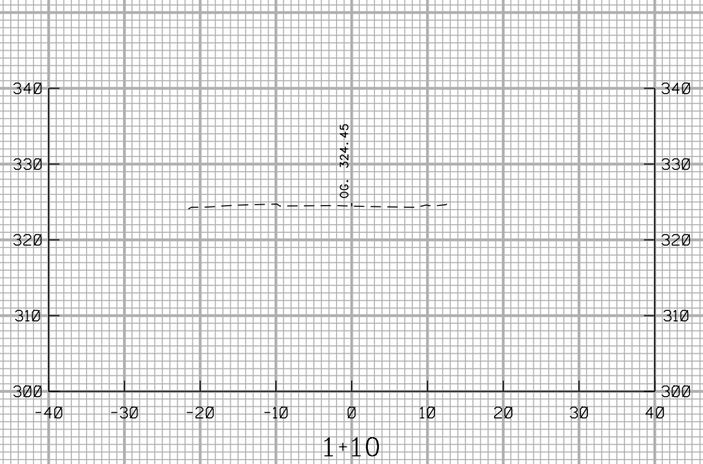

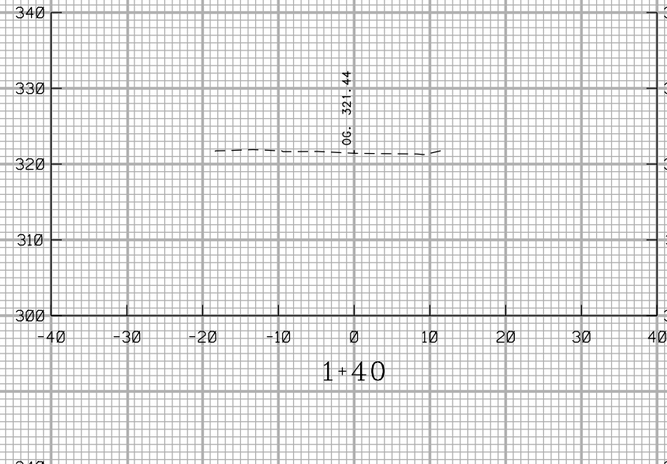

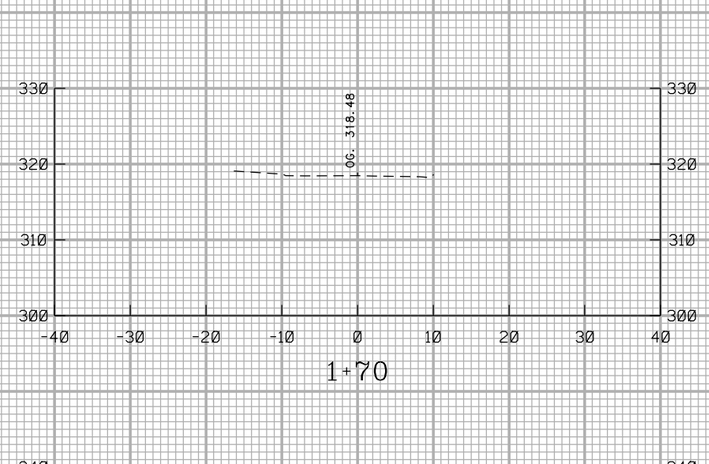

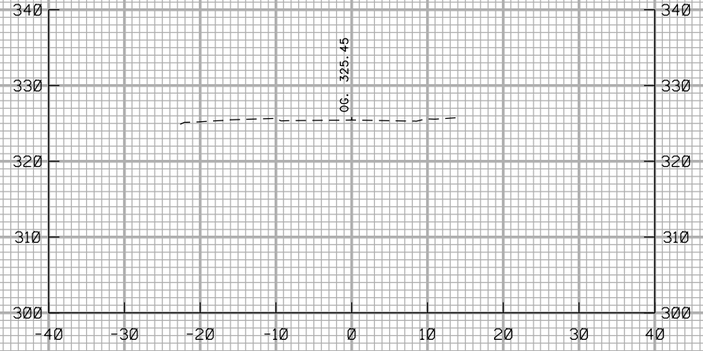

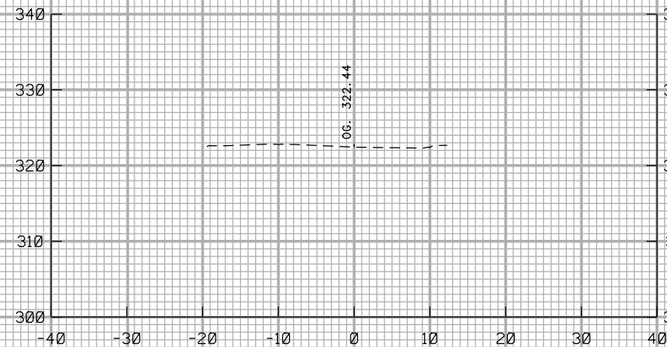

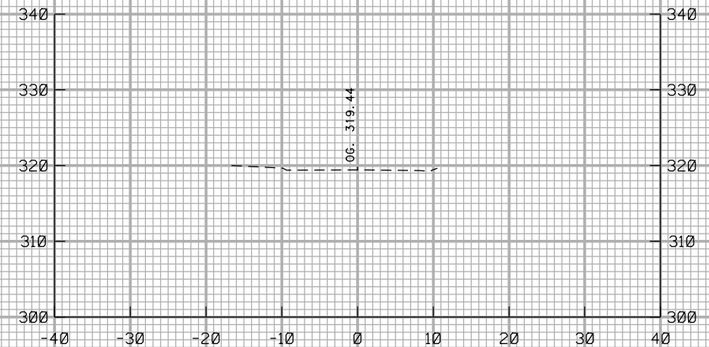

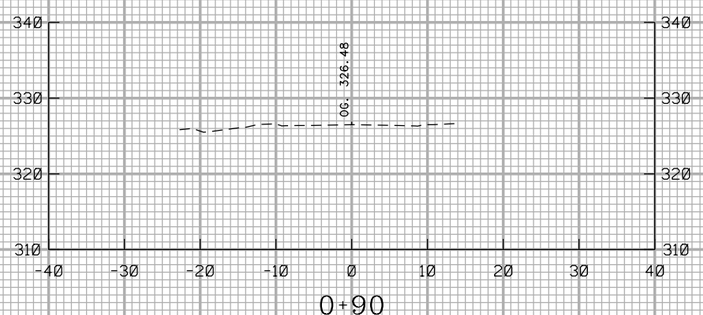

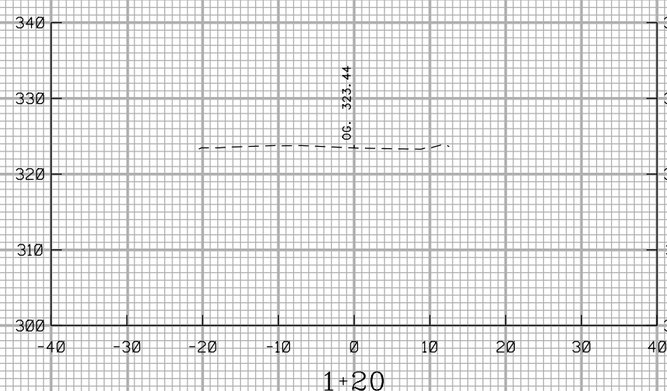

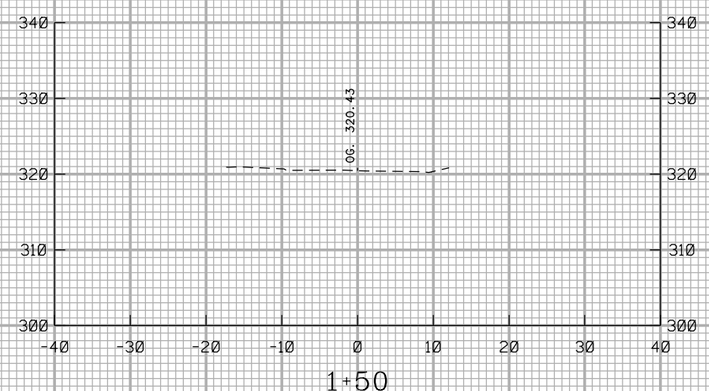

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FINAL SURVEY	BY	DATE
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PLOTTED		
TEMPLATE		
AREAS CHECKED		
NO.		

SCALES
10 ft.
0 10 ft. 0

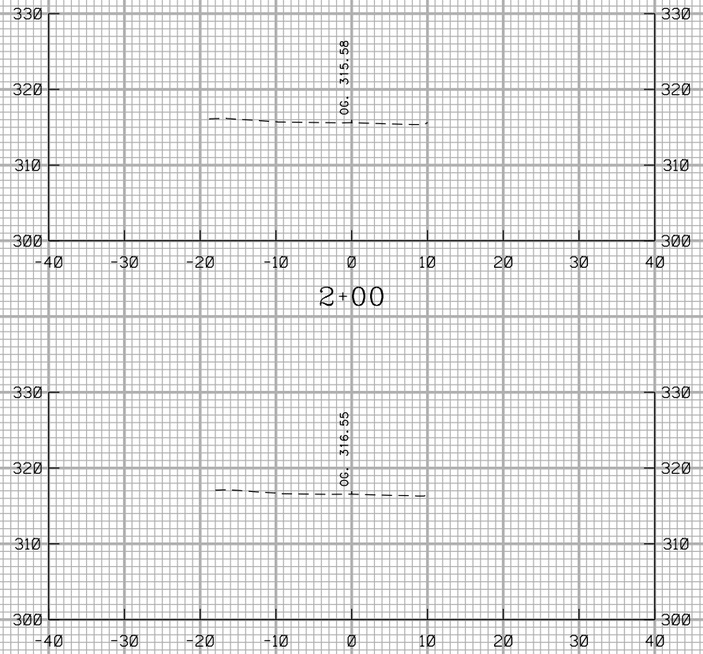
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

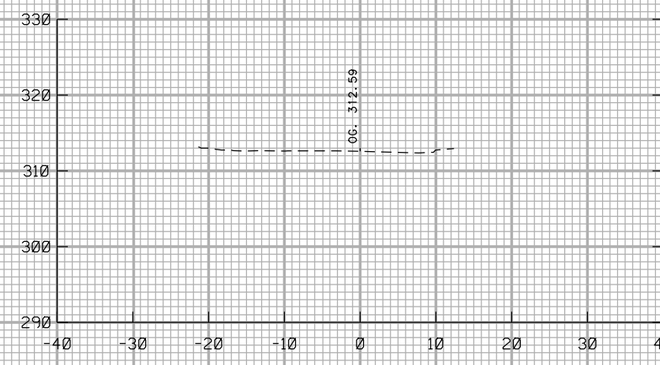
EXISTING CROSS SECTIONS

J05C07C03-XSECT2 b

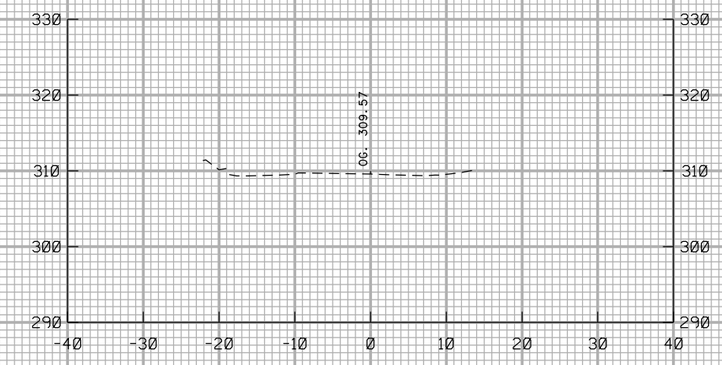
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	10	21



2+00

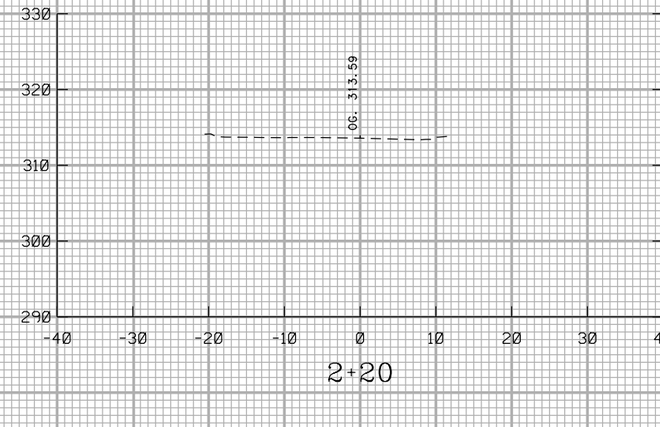


2+30

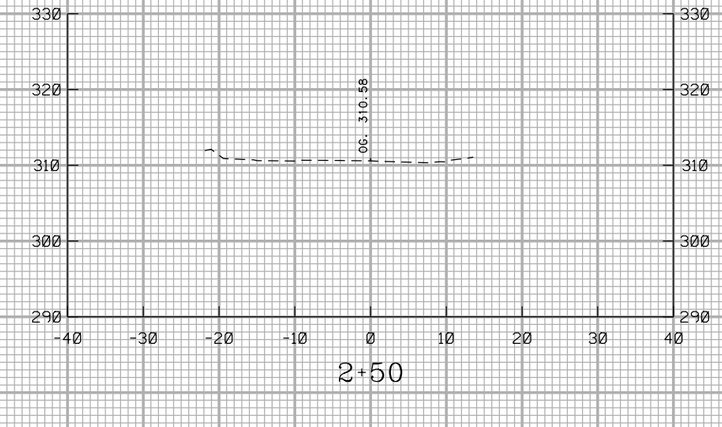


2+60

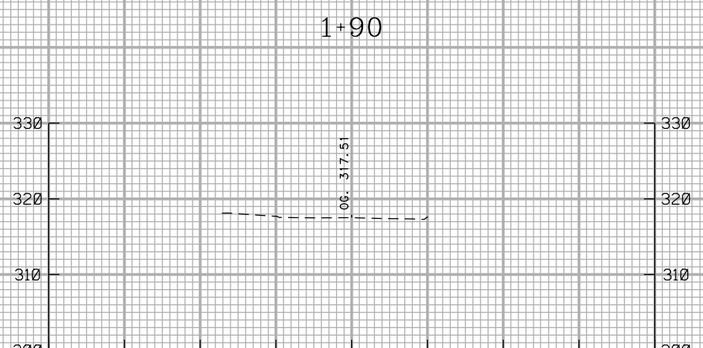
1+90



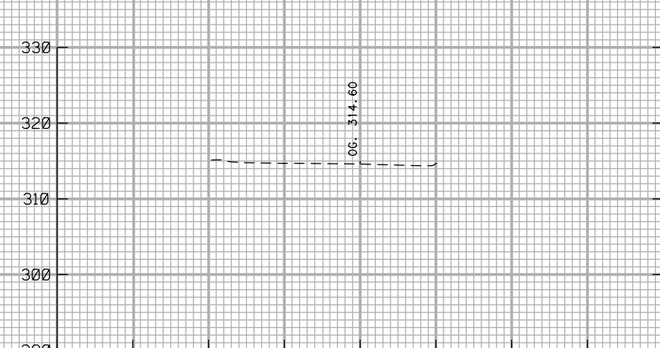
2+20



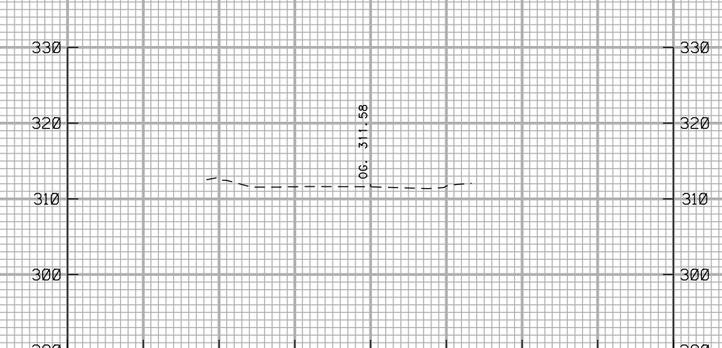
2+50



1+80



2+10



2+40

ORIGINAL SURVEY		BY	DATE
SURVEYED			
PLOTTED			
TEMPLATE			
BOOK			
NO.			
AREAS CHECKED			

FINAL SURVEY		BY	DATE
SURVEYED			
PLOTTED			
TEMPLATE			
BOOK			
NO.			
AREAS CHECKED			

SCALES
10 ft.
0 10 ft. 0

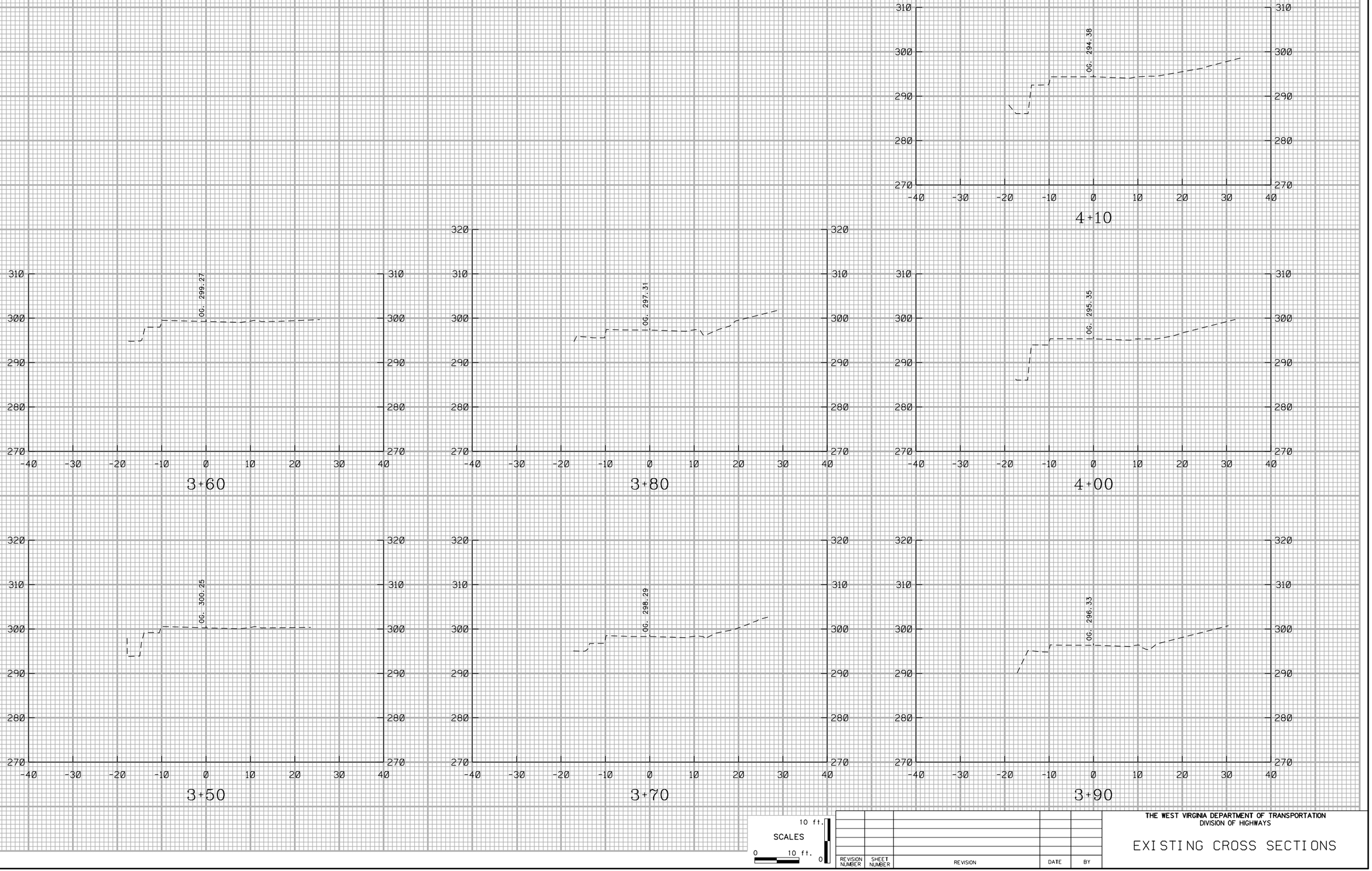
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EXISTING CROSS SECTIONS

J05C07C03-XSECT2 5

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	12	21



ORIGINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TEMPLATE		
BOOK		
NO.		
AREAS CHECKED		

FINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TEMPLATE		
BOOK		
NO.		
AREAS CHECKED		

SCALES
10 ft.
0 10 ft. 0

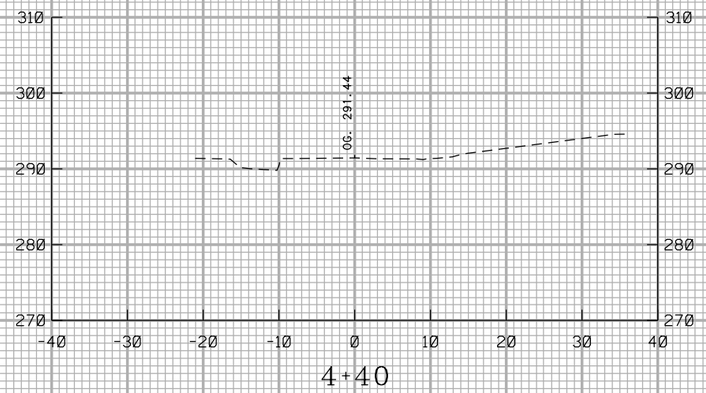
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

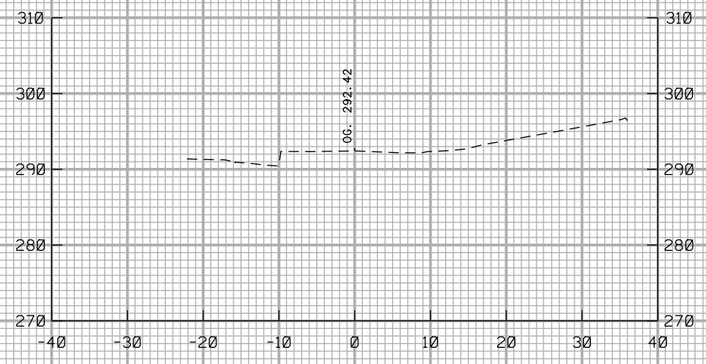
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

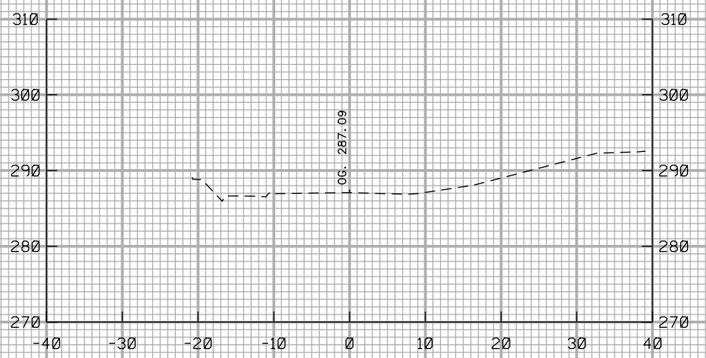
EXISTING CROSS SECTIONS

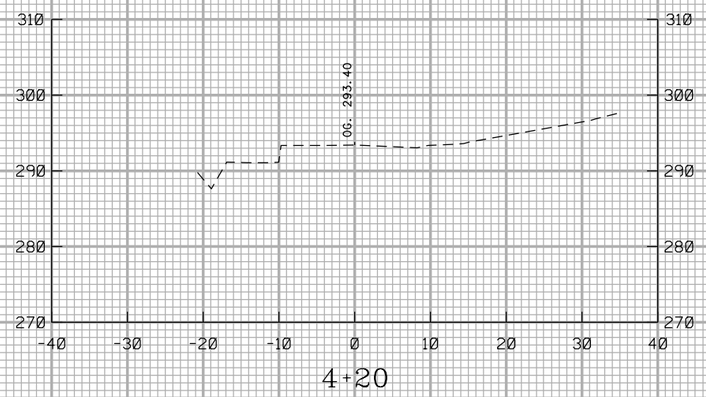
J05C07C03-XSECT2 b

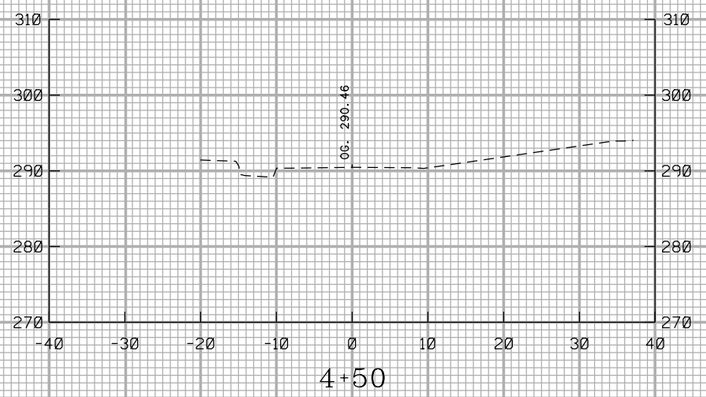
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	13	21

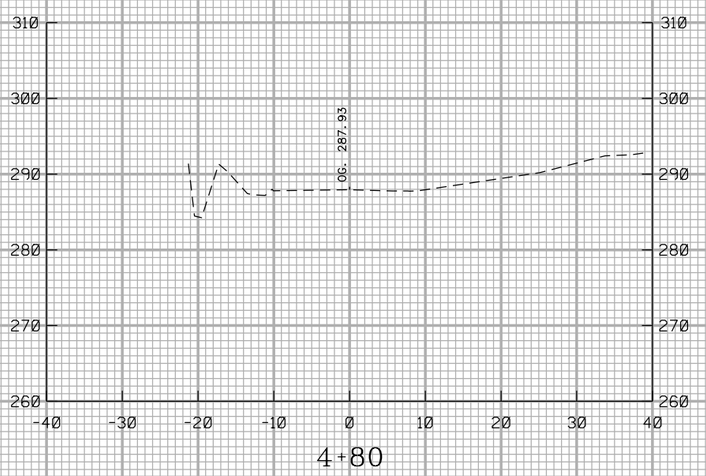












ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS CHECKED		
NO.		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS CHECKED		
BOOK NO.		

SCALES
10 ft.
0 10 ft. 0

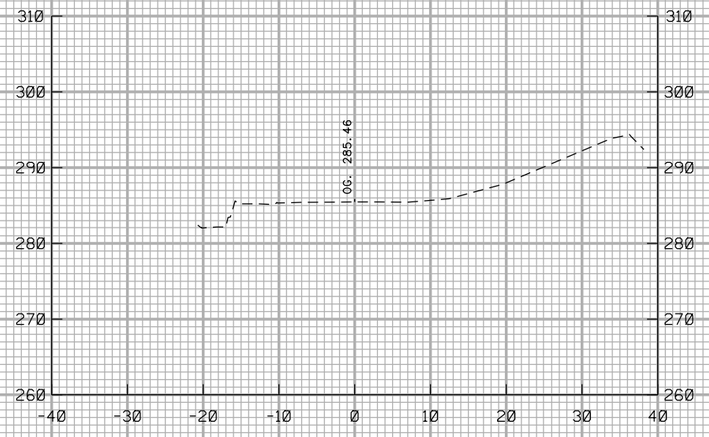
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

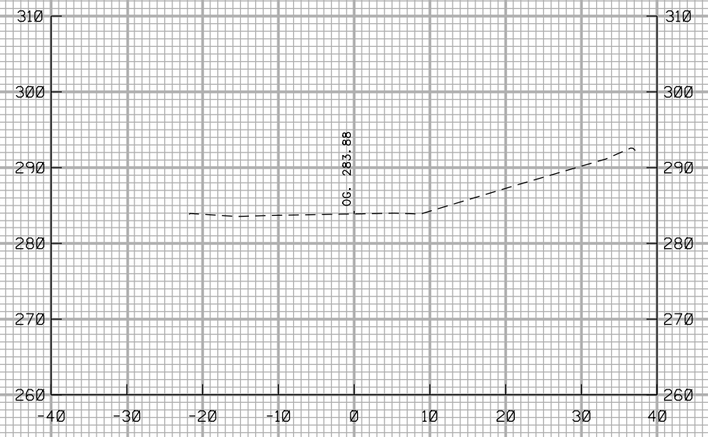
EXISTING CROSS SECTIONS

J05C07C03-XSECT2 b

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W.V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	14	21

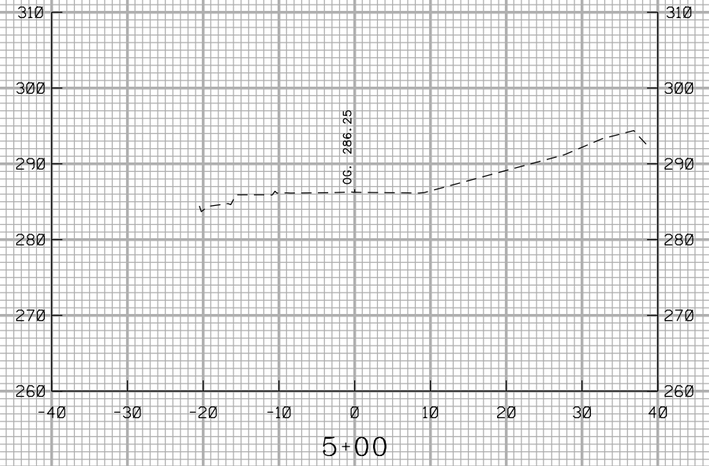


5+10

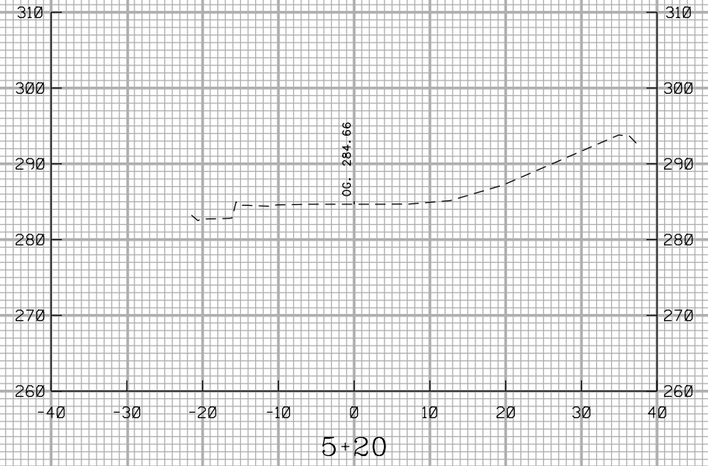


5+30

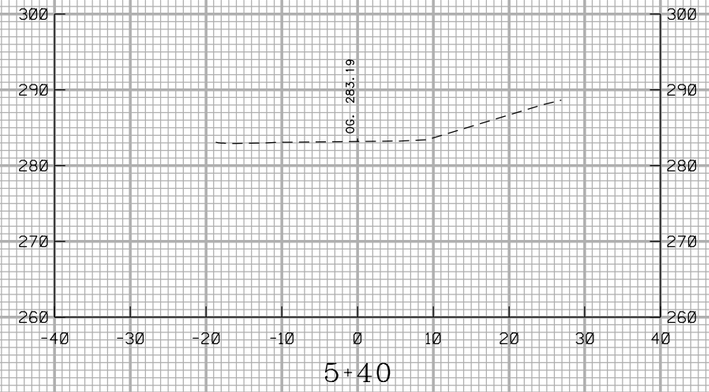
5+50



5+00



5+20



5+40

ORIGINAL SURVEY	BY	DATE	FINAL SURVEY	BY	DATE
SURVEYED			SURVEYED		
PLOTTED			PLOTTED		
BOOK			BOOK		
NO.			NO.		
TEMPLATE			TEMPLATE		
AREAS CHECKED			AREAS CHECKED		

SCALES

10 ft.

0 10 ft. 0

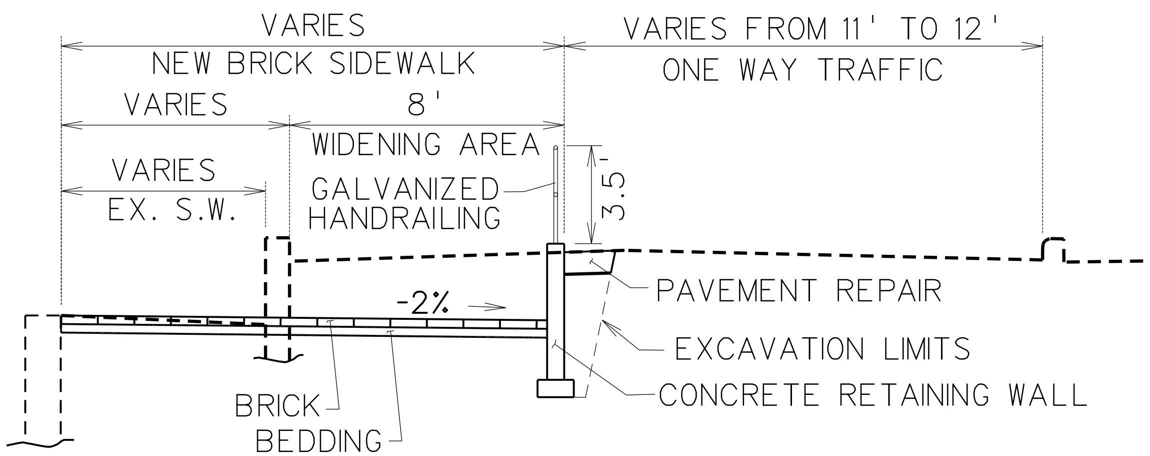
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EXISTING CROSS SECTIONS

J05C07C03-XSECT2 b

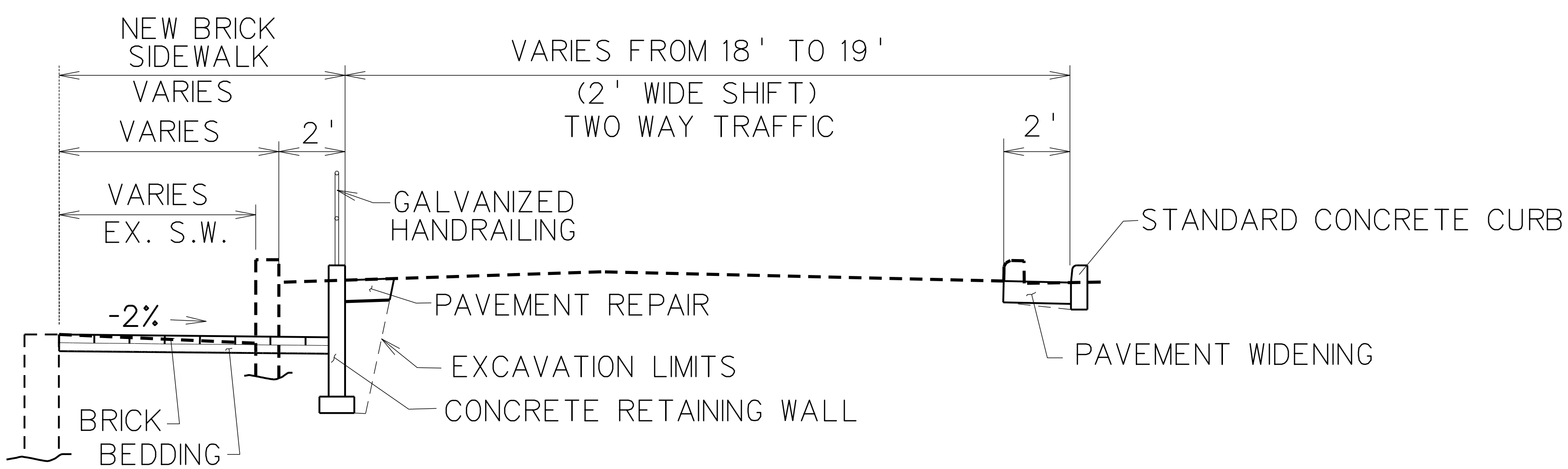
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082) DTC	2020	JEFFERSON	15	21



OPTION #2 TYPICAL SECTION

OPTION #2 QUANTITIES

BOLLARDS, 3 EA.
BEDDING MATERIAL, 46 CY.
CLASS 1 AGGREGATE, 57 CY
CLASS B CONCRETE FOR RETAINING WALL, 40 CY.
GALVANIZED HANDRAILING, 306 LF.
HMA BASE COURSE, 35 TON
HMA WEARING COURSE, 10 TON
SIDEWALK, BRICK 414 SY
SIGNING, 20.5 SF.
PLASTIC DELINEATED POSTS, 4 EA.
UNCLASSIFIED EXCAVATION, 1 LS



OPTION #3 TYPICAL SECTION

OPTION #3 QUANTITIES

BEDDING MATERIAL, 26 CY.
CLASS 1 AGGREGATE, 81 CY
CONCRETE CURBING, 263 LF.
CLASS B CONCRETE FOR RETAINING WALL, 40 CY.
GALVANIZED HANDRAILING, 306 LF.
HMA BASE COURSE, 51 TON
HMA WEARING COURSE, 14 TON
SIDEWALK, BRICK 232 SY
UNCLASSIFIED EXCAVATION, 1 LS

SUBMISSION DATE:

RK&K
P. 304.788.3370
159 Plaza Drive, Keyser, WV 26743
Engineers Construction Managers Planners Scientists
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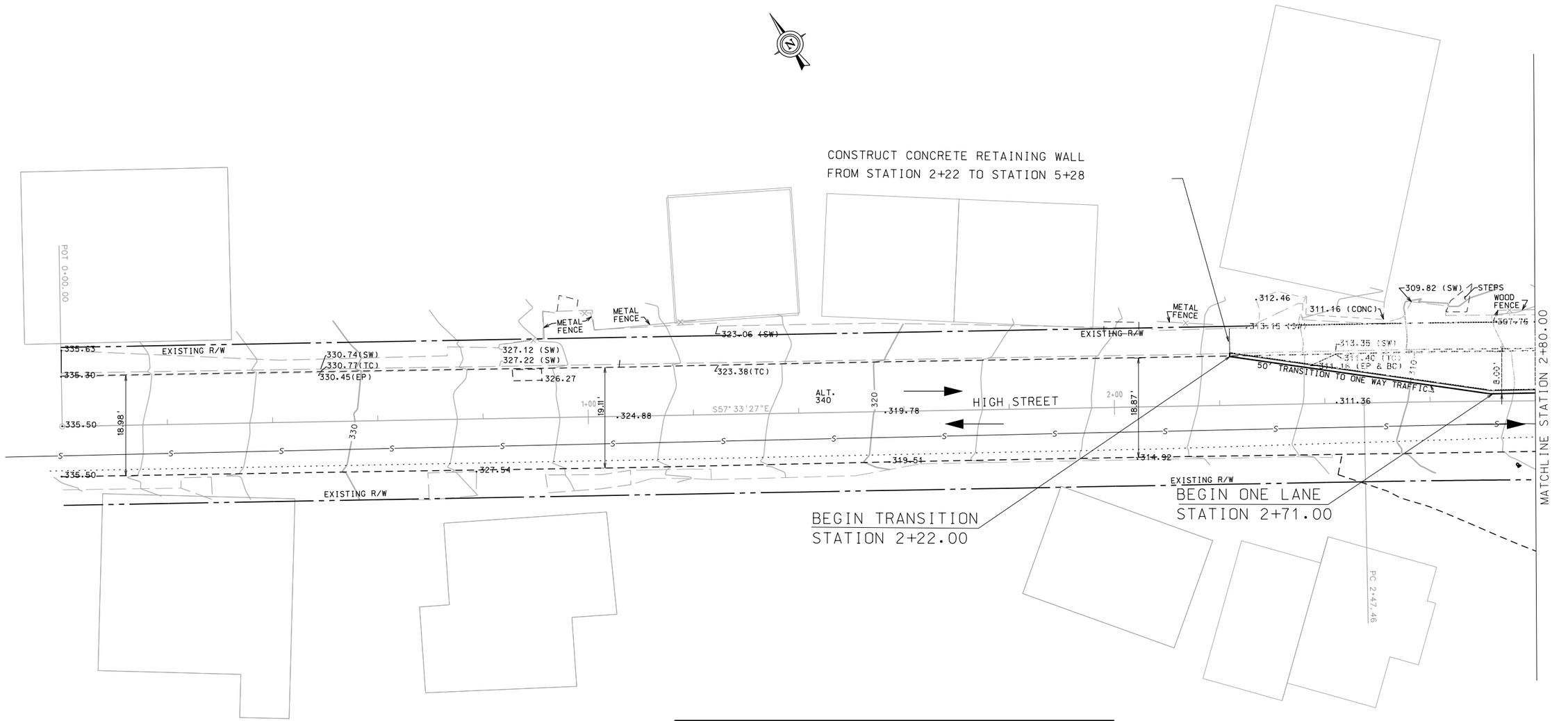
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPICAL SECTIONS

RDY_WV51_pln-01.dgn

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	16	21



SUBMISSION DATE:

SCALE : 0 10 ft.

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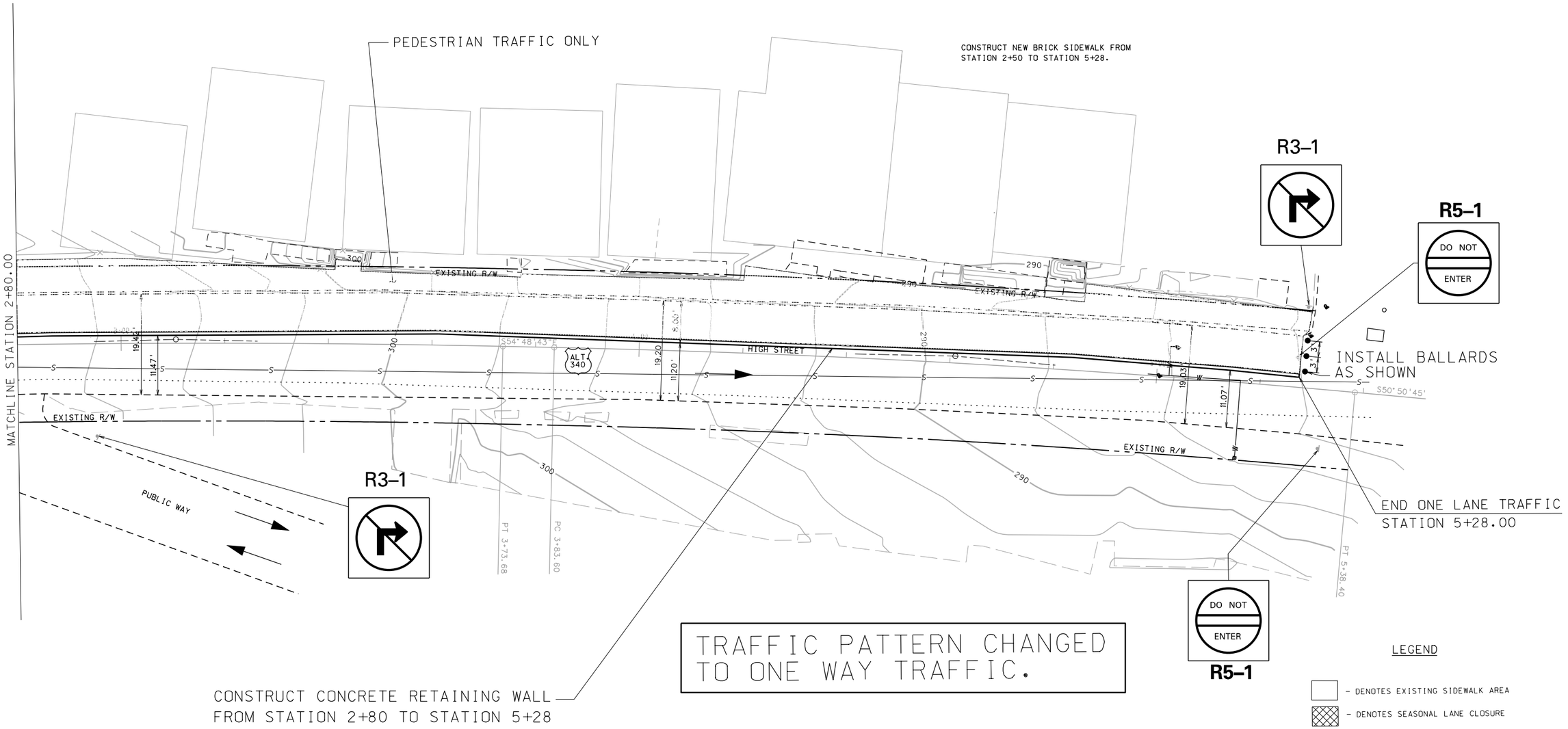
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLAN
(OPTION 2)

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	17	21

CONSTRUCT CONCRETE RETAINING WALL
FROM STATION 2+80 TO STATION 5+28



SUBMISSION DATE:

SCALE : 0 10 ft.

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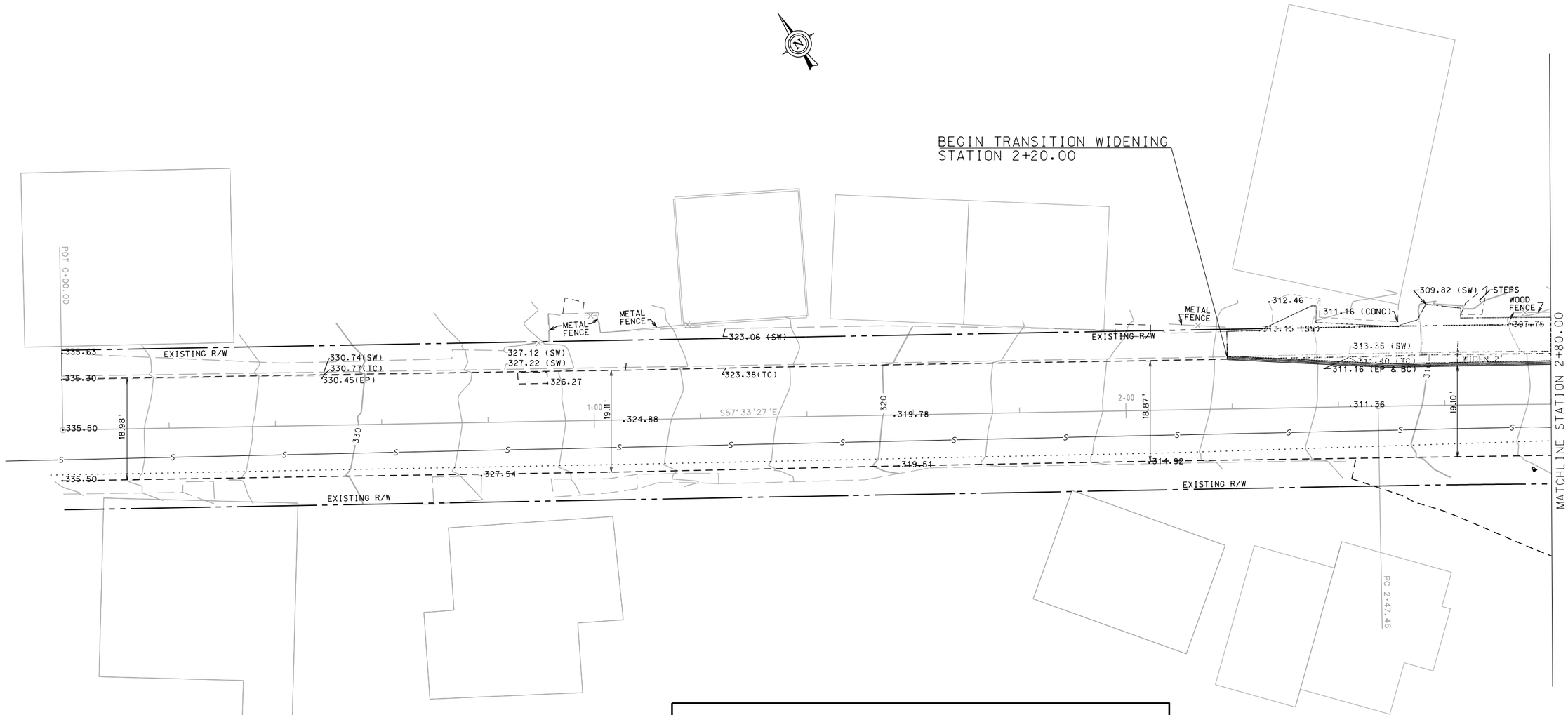
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLAN
(OPTION 2)

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082) DTC	2020	JEFFERSON	18	21



TRAFFIC LANE SHIFT FROM STATION 2+50 TO HOG ALLEY.

LEGEND

- DENOTES EXISTING SIDEWALK AREA
- DENOTES SEASONAL LANE CLOSURE
- DENOTES WIDENING

SUBMISSION DATE:

SCALE : 0 10 ft.

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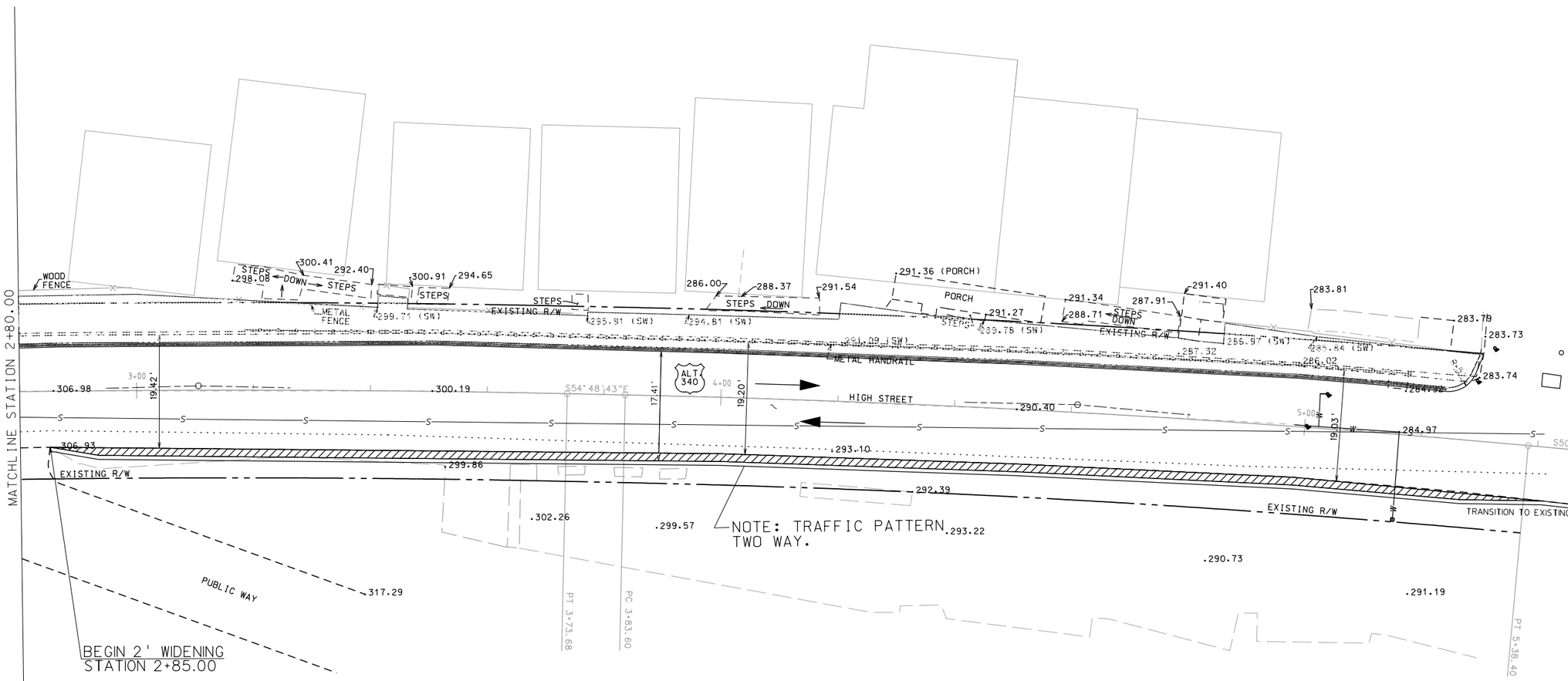
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLAN
(OPTION 3)

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082) DTC	2020	JEFFERSON	19	21



TRAFFIC LANE SHIFT FROM STATION 2+50 TO HOG ALLEY.

LEGEND

- DENOTES EXISTING SIDEWALK AREA
- DENOTES NEW BRICK SIDEWALK
- DENOTES WIDENING

SUBMISSION DATE:

SCALE : 0 10 ft.

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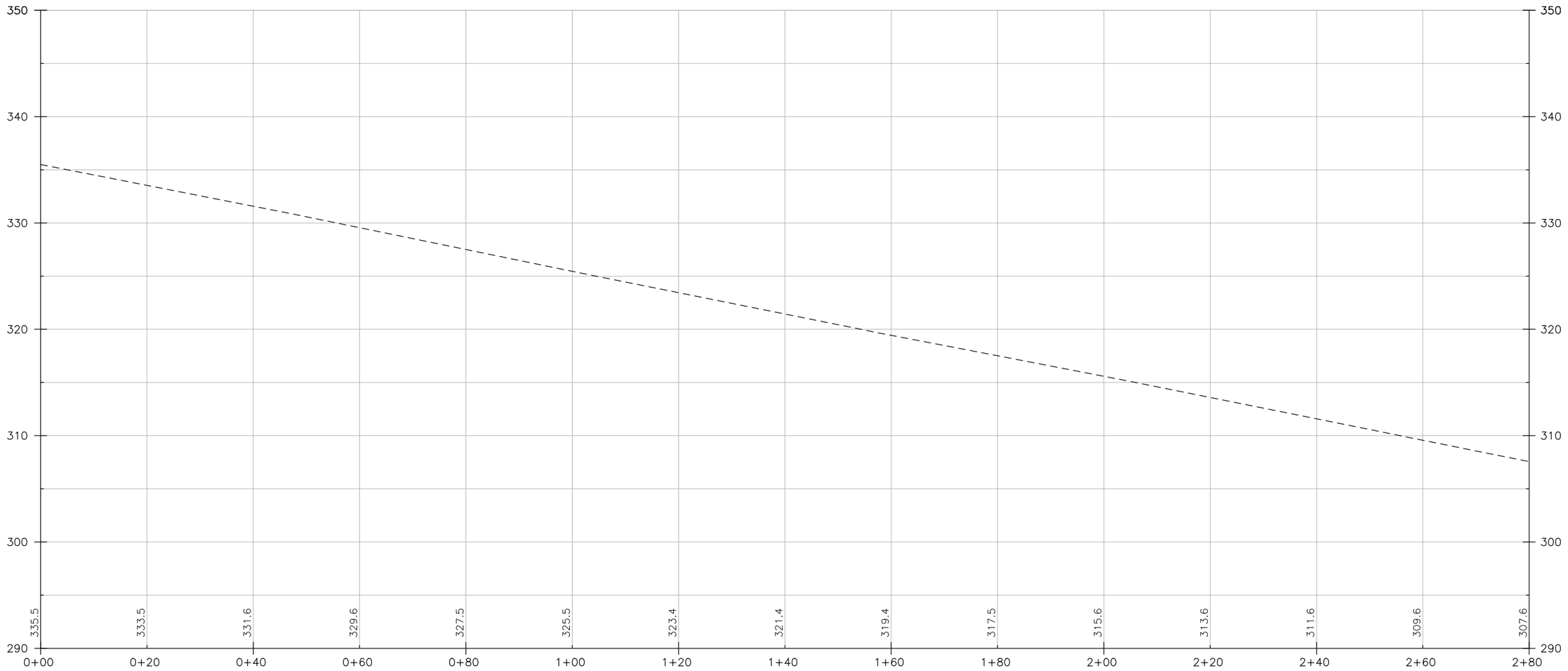
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLAN
(OPTION 3)

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082)DTC	2020	JEFFERSON	20	21



VERT. SCALE : 10 ft. / 0

HORIZ. SCALE : 0 — 20 ft.

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

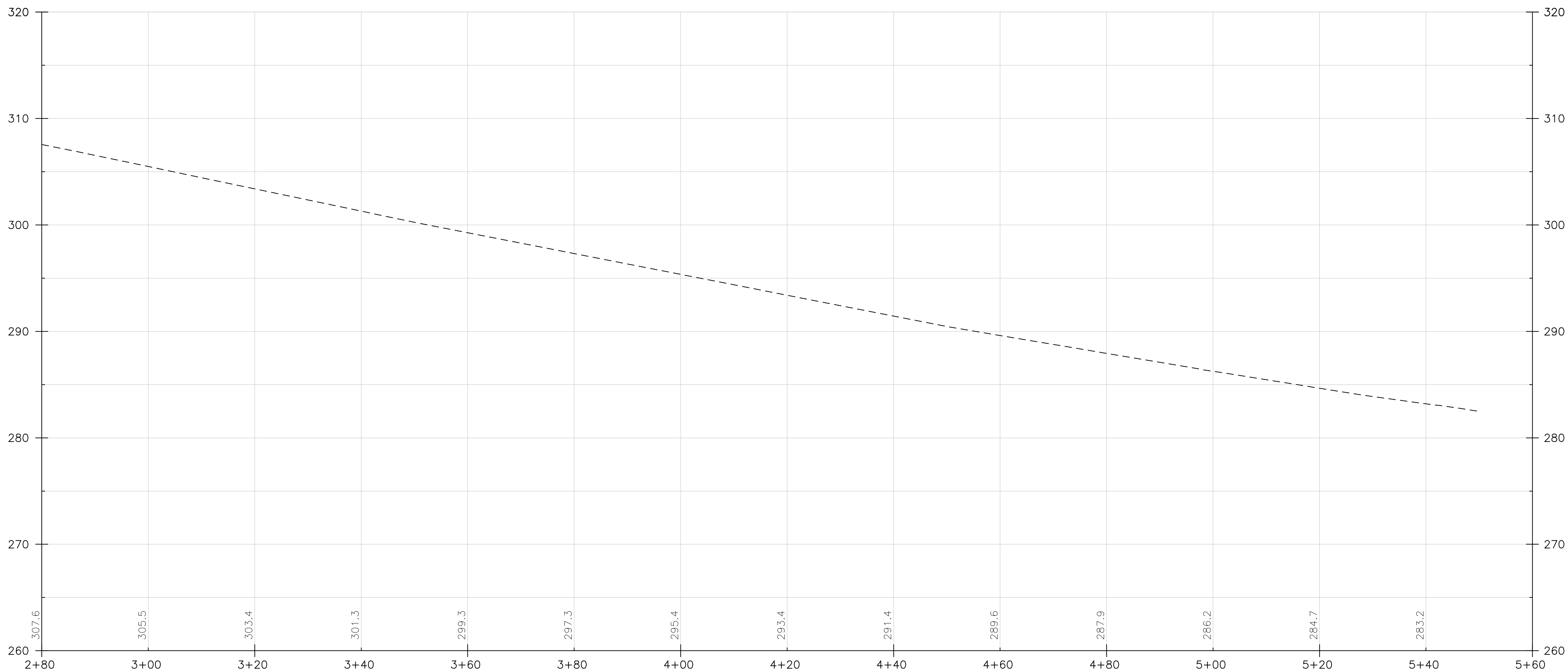
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROFILE

STATION 0+00 TO STATION 2+80

SUBMISSION DATE:

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	U319-HAR/PE-2.00	TAP-2017(082) DTC	2020	JEFFERSON	21	21



SUBMISSION DATE:

VERT. SCALE : 0 10 ft.

HORIZ. SCALE : 0 20 ft.

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROFILE

STATION 2+80 TO STATION 5+60