



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

**PRIMARY ROAD SYSTEM  
WAPELLO COUNTY  
BRIDGE REPLACEMENT - PPCB**

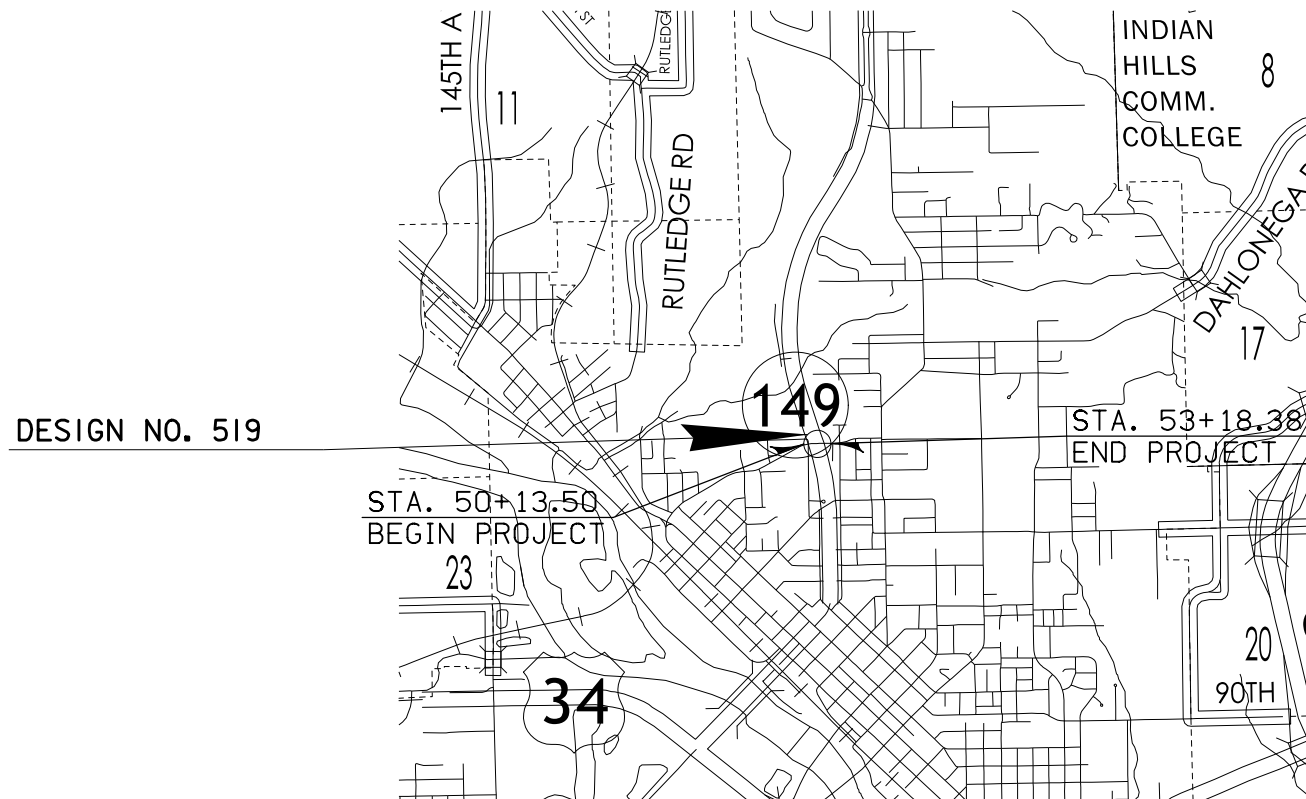
W PARK BLVD 1.4 MI  
N OF US 34 IN OTTUMWA

SCALES: As Noted

| No.             | DESCRIPTION  |
|-----------------|--|
| <b>A Sheets</b> | <b>Title Sheets</b>                                |
| * A.1           | Title Sheet  |
| <b>D Sheets</b> | <b>Mainline Plan and Profile Sheets</b>            |
| * D.1           | Plan & Profile Legend & Symbol Information Sheet   |
| * D.2           | West Park Boulevard                                |
| <b>G Sheets</b> | <b>Survey Sheets</b>                               |
| * G.1           | Reference Ties and Bench Marks                     |
| G.2 - 3         | Horizontal Control Tab. & Super for all Alignments |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>          |
| * J.1           | Traffic Control Plan                               |
| <b>V Sheets</b> | <b>Bridge and Culvert Situation Plans</b>          |
| * V.1           | Bridge Situation Plan                              |
| * V.2           | Bridge Site Plan                                   |
| <b>W Sheets</b> | <b>Mainline Cross Sections</b>                     |
| W.1             | Cross Sections Legend & Symbol Information Sheet   |
| W.2 - 6         | Mainline Cross Sections                            |
|                 | * Color Plan Sheets                                |

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



Design Speed = 30 mph  
Clear Zone - 10'  
D5 PLAN - Date: 10/16/2017

**DESIGN DATA URBAN**

|                    |        |        |
|--------------------|--------|--------|
| 2019 AADT          | 11,400 | V.P.D. |
| 2039 AADT          | 11,900 | V.P.D. |
| 20-- DHV           | --     | V.P.H. |
| TRUCKS             | 5 %    |        |
| Total Design ESALs | --     |        |

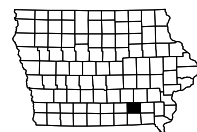
**INDEX OF SEALS**

| SHEET NO. | NAME | TYPE                    |
|-----------|------|-------------------------|
| A.1       | X    | Primary Signature Block |
|           |      |                         |
|           |      |                         |
|           |      |                         |

**PRELIMINARY PLANS**

Subject to change by final design.

D5 PLAN - Date: 10/16/2017



### SURVEY SYMBOLS

- C Centerline BL of Road (ML or SR)
- BL Topo Breakline
- GD L Guard Rail Steel
- PPA Power Pole Co. 1
- SIGN SI Sign
- SIGN SL Speed Limit Sign
- \* TEV Evergreen Tree
- TLNR Tree Line Right
- ⊙ WV WW Water Valve
- FHD Fire Hydrants
- SHR Shrub
- ⊙ TA TA Tower Anchor
- CON Concrete or A/C Slab
- RET Retaining Walls
- BRG Bridge
- MH Utility Access (Manhole)
- ENU Edge Unpaved Entrance & Parking
- TLNL Tree Line Left
- ⊙ GV GV Gas Valve
- DU Centerline Draw or Stream (Up)
- IN Storm Sewer Intake
- St. S. -- Existing Storm Sewer Line

### UTILITY LEGEND

- G - Mid American Energy  
Danielle Schneider  
302 S. Vine  
Ottumwa, IA 52501  
641-683-4171
- San. - City of Ottumwa  
Dwight Dohlman  
105 E. 3rd  
Ottumwa, IA 52501  
641-683-0655
- T1 - Iowa Communications Network  
Mike Broderick  
400 E 14th Street  
Grimes State Office Bldg  
Des Moines, IA 50139  
515-725-4610
- Alliant Energy  
Mark Wills  
200 1st Street SE  
Cedar Rapids, IA 52401  
319-786-8196
- W - Ottumwa Water & Hydro  
Tim Albert  
230 Water Works Drive  
Ottumwa, IA 52501  
641-684-4606

### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK     |       | Design Color No. |  |
|--------------|-------|------------------|--|
| Green        | (2)   |                  | Existing Topographic Features and Labels                               |
| Blue         | (1)   |                  | Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation    |
| Magenta      | (5)   |                  | Existing Utilities   |
| SHADING      |       | Design Color No. |  |
| Yellow       | (4)   |                  | Highlight for Critical Notes or Features                               |
| Red          | (3)   |                  | Delineates Restricted Areas  |
| Lavender     | (9)   |                  | Temporary Pavement Shading   |
| Gray, Light  | (48)  |                  | Proposed Pavement Shading  |
| Gray, Med    | (80)  |                  | Proposed Granular Shading  |
| Gray, Dark   | (112) |                  | Proposed Grade and Pave Shading "In conjunction with a paving project" |
| Brown, Light | (236) |                  | Grading Shading  |
| Tan          | (8)   |                  | Proposed Sidewalk Shading  |
| Blue, Light  | (230) |                  | Proposed Sidewalk Landing Shading                                      |
| Pink         | (11)  |                  | Proposed Sidewalk Ramp Shading   |

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK    |       | Design Color No. |                                 |
|-------------|-------|------------------|---------------------------------|
| Green       | (2)   |                  | Existing Ground Line Profile    |
| Blue        | (1)   |                  | Proposed Profile and Annotation |
| Magenta     | (5)   |                  | Existing Utilities              |
| Blue, Light | (230) |                  | Proposed Ditch Grades, Left     |
| Black       | (0)   |                  | Proposed Ditch Grades, Median   |
| Rust        | (14)  |                  | Proposed Ditch Grades, Right    |

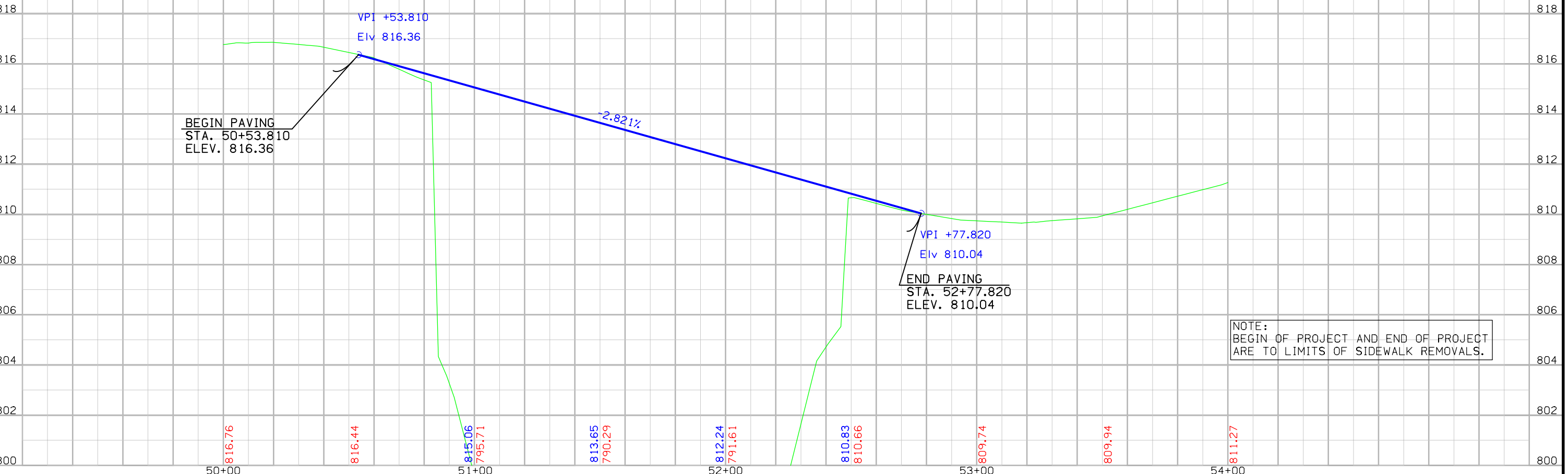
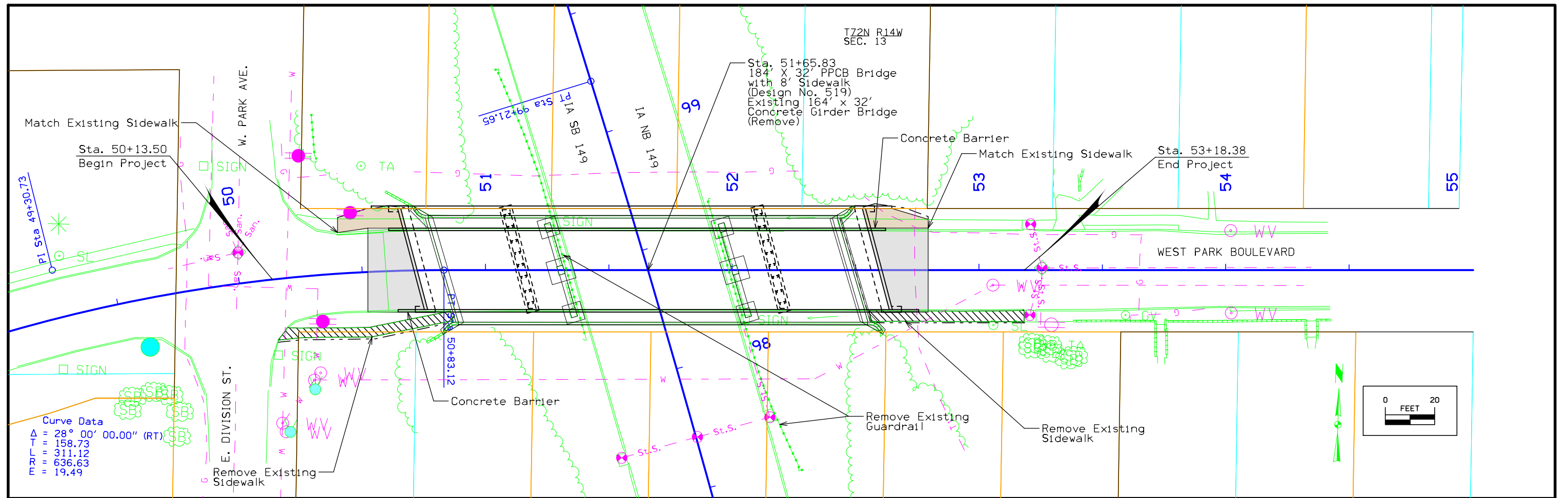
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- High Tension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

### RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)



|          |         |             |                       |                |                |                       |              |     |
|----------|---------|-------------|-----------------------|----------------|----------------|-----------------------|--------------|-----|
| FILE NO. | ENGLISH | DESIGN TEAM | IOWA DOT/ TRANSYSTEMS | WAPELLO COUNTY | PROJECT NUMBER | BRFN-149-1(72)--39-90 | SHEET NUMBER | D.2 |
|----------|---------|-------------|-----------------------|----------------|----------------|-----------------------|--------------|-----|

**Survey Information**  
**Wapello County**  
**BRFN-149-1(72)39-90**  
**West Park Boulevard Bridge over IA 149**  
**SAP 0890**

**General Information**

Measurement units for this survey are in US survey feet. The datum for the project is in the Iowa Regional Coordinate System (IaRCS) Zone 12. PSBA utilized control provided by IADOT from a static survey for Horizontal Control and Vertical Control.

**Vertical Control**

Vertical datum for this survey is relative to NAVD88 (GEOID12A). The vertical for this project was established by Static observations provided by IADOT. Verified vertical with the Iowa Regional Coordinate System (IaRCS) Zone 12. Held the Elevation at IADOT CP-9001 (817.778) Ran a level Circuit through remaining project control.

**Horizontal Control**

Project datum and control established using the Iowa Regional Coordinate System (IaRCS) Zone 12).

**Control Points**

| Point Name | Northing   | Easting     | Elevation | Feature Definition     |
|------------|------------|-------------|-----------|------------------------|
| 2          | 6245094.14 | 22868748.78 | 809.25    | CP-2 SET 5/8"Rebar     |
| 90001      | 6245082.98 | 22868418.55 | 817.78    | CP-9001 State Supplied |

**Alignment Information**

The horizontal alignment for this survey is a retracement of Plans Project Number U-159(4). Survey Stationing was equated to Plan PT Station 99+21.64 and Station 108+38.74 Measured (108+40.50 Record) and ran back without equations to PC Station 81+82.88 Measured (81+79.90 Record)

Survey Stationing relates to as built Plan Stationing as follows:

PC Station 81+79.90 Plans Project Number U-159(4). Survey PC Station 81+82.88 Found Mag Nail

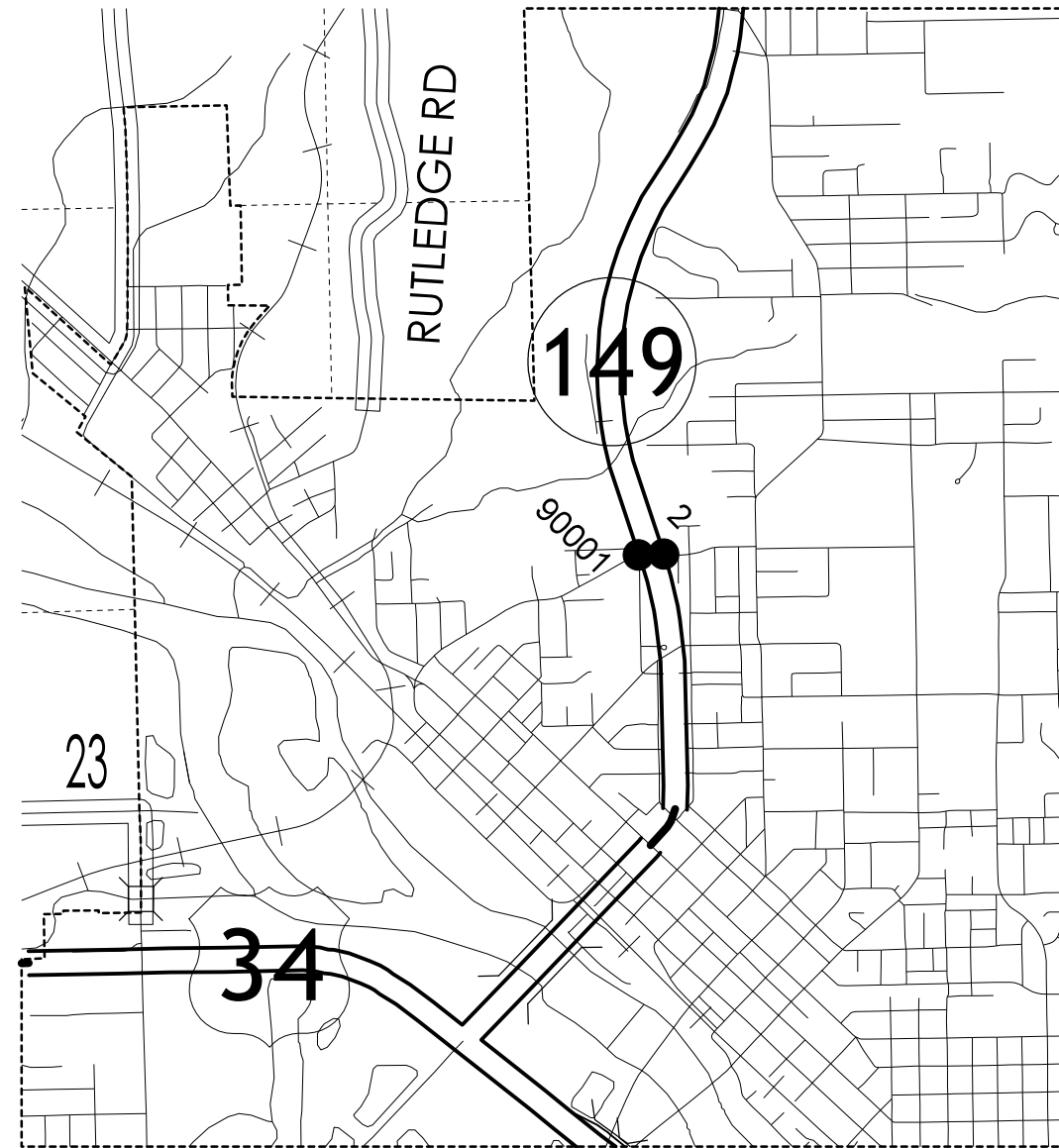
PT Station 99+21.64 Plans Project Number U-159(4). Survey PT Station 99+21.64 Found Mag Nail

PC Station 108+40.50 Plans Project Number U-159(4). Survey PC Station 108+38.74 Found Mag Nail

The horizontal alignment for the Park Avenue extension was re-established from plans obtained from the City of Ottumwa. The retracement of the Plans begins at Station 0+00 at the West end of the existing bridge and increase in stationing to the west. The alignment was re-established and existing City Right of Way was determined. The situation plan for the existing bridge Project Number U-159(4) has the PI station for the alignments as station 98+41.12 Main line = 1+65.84 Park Street. The measured main line station is 98+41.62. The PI stationing on Park Avenue was changed to 51+65.84 to eliminate having negative Stationing and ran from West to East.

### CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points  
Primary control is for use with RTK base stations and for RTN validation.  
Future surveys will use primary project control to establish temporary  
control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 12

Coordinate listing from next sheet will be used with 1aRTN for monument  
recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 12

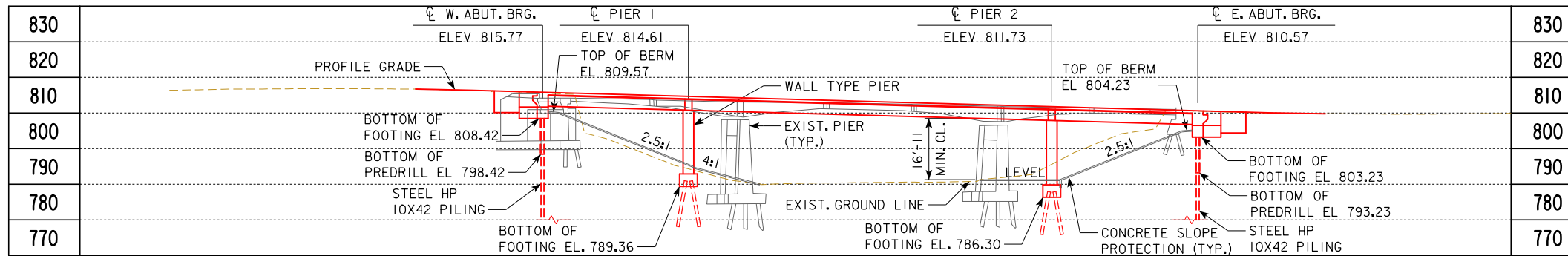
| Point Name | Northing   | Easting     | Elevation | Feature Definition     |
|------------|------------|-------------|-----------|------------------------|
| 2          | 6245094.14 | 22868748.78 | 809.25    | CP-2 SET 5/8"Rebar     |
| 90001      | 6245082.98 | 22868418.55 | 817.78    | CP-9001 State Supplied |

**TRAFFIC CONTROL PLAN**

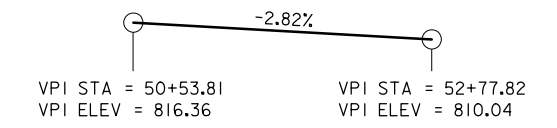
1. Traffic on IA 149 will be detoured during the bridge removal only. Short term 20 minute closures will be required for placement of new bridge beams.
2. West Park Boulevard will be closed to traffic and detoured on to City Streets during construction.
3. Traffic Control on this project shall be in accordance with the Standard Road Plans. For additional complementary information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the current Standard and Supplemental Specifications.

**511 TRAVEL RESTRICTIONS**

| Route | Direction | County | Location Description            | Feature Crossed | Object Type | Maint. Bridge No.,<br>Structure ID,<br>or FHWA No. | Type of<br>Restriction | Existing<br>Measurement | Construction<br>Measurement | Construction<br>Measurement<br>as Signed | Projected<br>As Built<br>Measurement | Remarks |
|-------|-----------|--------|---------------------------------|-----------------|-------------|--|------------------------|-------------------------|-----------------------------|--|--------------------------------------|---------|
|       |           |        | No Travel Restrictions Expected |                 |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |                                 |                 |             |  |                        |                         |                             |  |                                      |         |



BENCH MARK NO. 1: 6245094.14N, 22868748.78E  
 CP-2 SET 5/8" REBAR ELEV 809.25  
 BENCH MARK NO. 2: 6245082.98N, 22868418.55E  
 CP-9001 STATE SUPPLIED ELEV 817.78



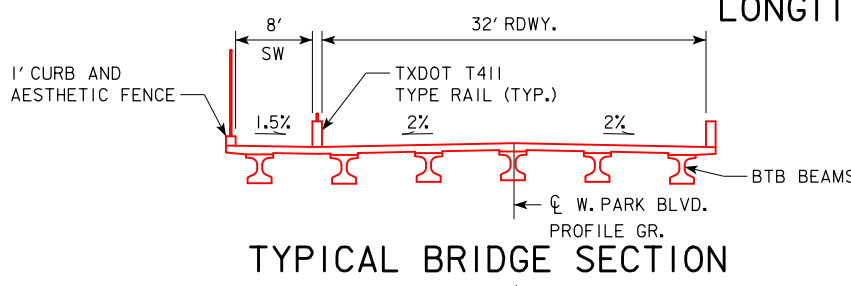
**LONGITUDINAL SECTION ALONG CL WEST PARK BLVD. PROFILE GRADE**

NOTE:  
 TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.03 FEET BELOW THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

AESTHETIC FEATURES WILL BE ADDED DURING FINAL DESIGN.

PIERS EXEMPT FROM VEHICULAR COLLISION FORCE DESIGN.

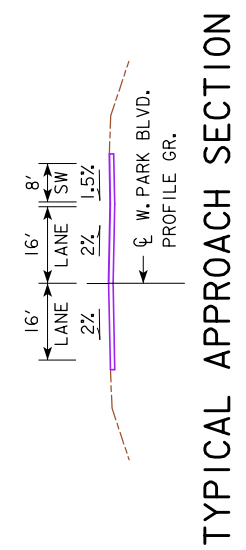
**PROPOSED PROFILE GRADE**



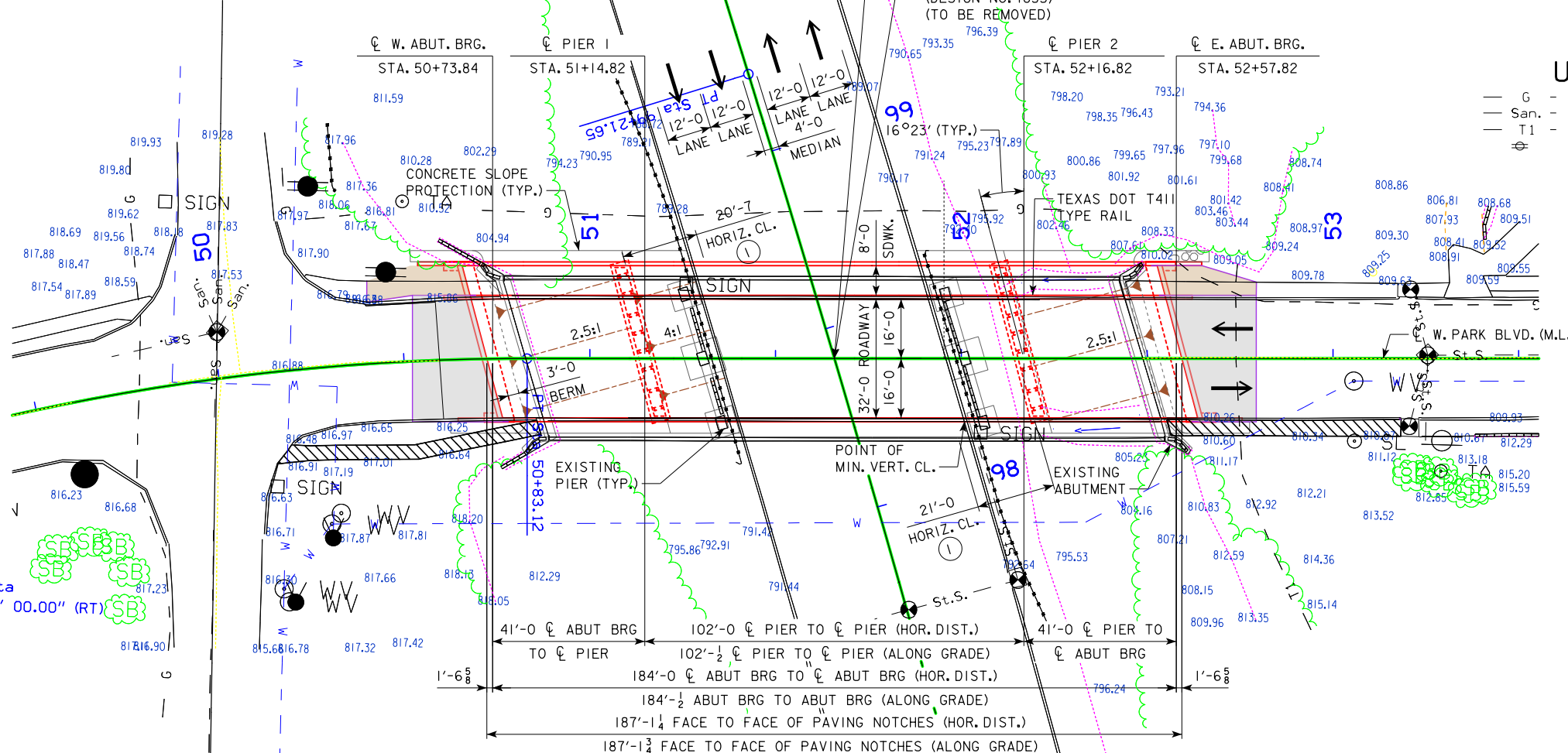
**TYPICAL BRIDGE SECTION**

**UTILITIES LEGEND:**

- G - GLID GAS LINE - MIDAIVER GAS - QUALITY D
- San. - SAID SANITARY SEWER - CITY OF OTTUMA - QUALITY D
- T1 - TLID TELEPHONE LINE - IOWA COMMUNICATIONS NETWO - QUALITY D
- PPB - PPB POWER POLE ALLIANT ENERGY



**TYPICAL APPROACH SECTION**



Curve Data  
 $\Delta = 28^\circ 00' 00.00''$  (RT)  
 $T = 158.73$   
 $L = 311.12$   
 $RR = 636.63$   
 $E = 19.49$



**WEST PARK BLVD TRAFFIC ESTIMATE**

|                    |     |        |
|--------------------|-----|--------|
| 2019 AADT          | 590 | V.P.D. |
| TRUCKS             | 5   | %      |
| TOTAL DESIGN ESALS |     |        |

**LOCATION**

W. PARK BLVD  
 OVER IA-149  
 T-72N R-14W  
 SECTION 13  
 CENTER TOWNSHIP  
 WAPELLO COUNTY  
 FHWA NO. 50661  
 BRIDGE MAINT. NO. 9001.40149  
 LATITUDE 41.032636°  
 LONGITUDE -92.413981°

**IOWA 149 TRAFFIC ESTIMATE**

|                    |        |        |
|--------------------|--------|--------|
| 2019 AADT          | 11,400 | V.P.D. |
| 2039 AADT          | 11,900 | V.P.D. |
| TRUCKS             | 5      | %      |
| TOTAL DESIGN ESALS |        |        |

**MINIMUM VERTICAL CLEARANCE**

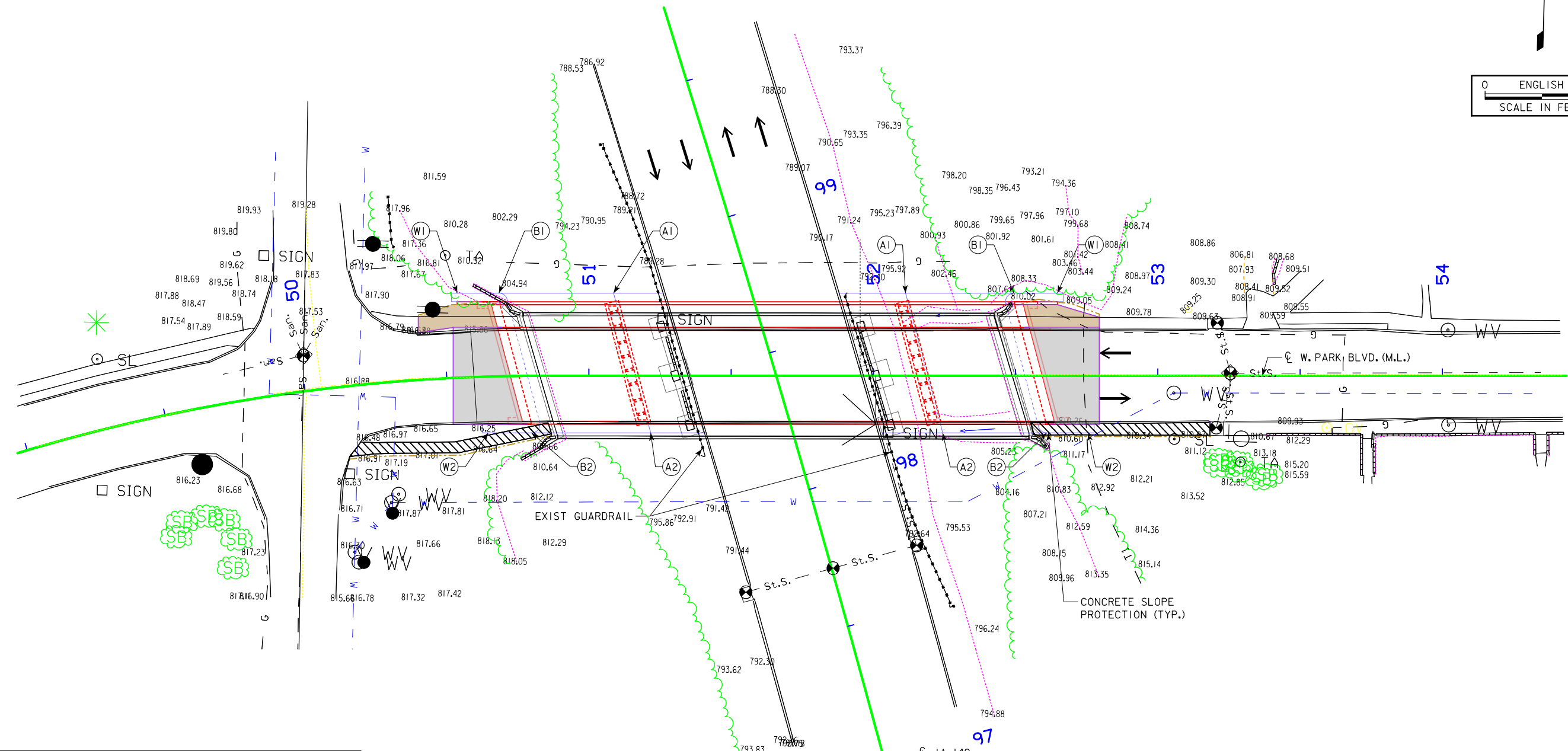
OVERHEAD STA. = 52+00.84  
 OVERHEAD ELEV. = 811.87  
 DEPTH OF SUPERSTRUCTURE = 3.83'  
 IA-149 STA. = 98+15.56  
 IA-149 ELEV. = 791.12  
 MINIMUM VERT. CLEARANCE = 16.92'

**SITUATION PLAN**

① MEASURED FROM EDGE OF DRIVING LANE

DESIGN FOR 16°23' SKEW R.A.  
**184'-1/2 X 32'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE W/ 8' MULTI USE SIDEWALK**  
 41'-0 END SPANS (BTB BEAM TYPE) 102'-0 INTERIOR SPAN  
**SITUATION PLAN**  
 STA. 51+65.82 SEPT., 2017  
**WAPELLO COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 2 FILE NO. 31545 DESIGN NO. 519





| POINTS | W. ABUTMENT |           |        | E. ABUTMENT |           |        |
|--------|-------------|-----------|--------|-------------|-----------|--------|
|        | STATION     | OFFSET    | ELEV.  | STATION     | OFFSET    | ELEV.  |
| A1     | 51+08.64    | 29.08' LT | 794.88 | 52+11.31    | 29.08' LT | 791.00 |
| A2     | 51+21.71    | 20.08' RT | 794.88 | 52+24.38    | 20.08' RT | 791.00 |
| B1     | 50+68.99    | 29.25' LT | 809.57 | 52+49.44    | 29.08' LT | 804.23 |
| B2     | 50+79.71    | 20.07' RT | 809.57 | 52+60.91    | 20.08' RT | 804.23 |
| W1     | 50+54.98    | 29.73' LT | 815.93 | 52+64.68    | 29.08' LT | 810.07 |
| W2     | 50+63.97    | 19.80' RT | 816.00 | 52+75.57    | 20.08' RT | 809.93 |

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

PRELIMINARY  
 DESIGN FOR 16°23' SKEW R.A.  
**184'- $\frac{1}{2}$  X 32'-0 PRETENSIONED PRESTRESSED  
 CONCRETE BEAM BRIDGE W/ 8' MULTI USE SIDEWALK**  
 41'-0 END SPANS (BTB BEAM TYPE) 102'-0 INTERIOR SPAN  
**SITE PLAN**  
 STA. 51+65.82 SEPT., 2017  
**WAPELLO COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 2 OF 2 FILE NO. 31545 DESIGN NO. 519

**SITE PLAN**

**LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)**

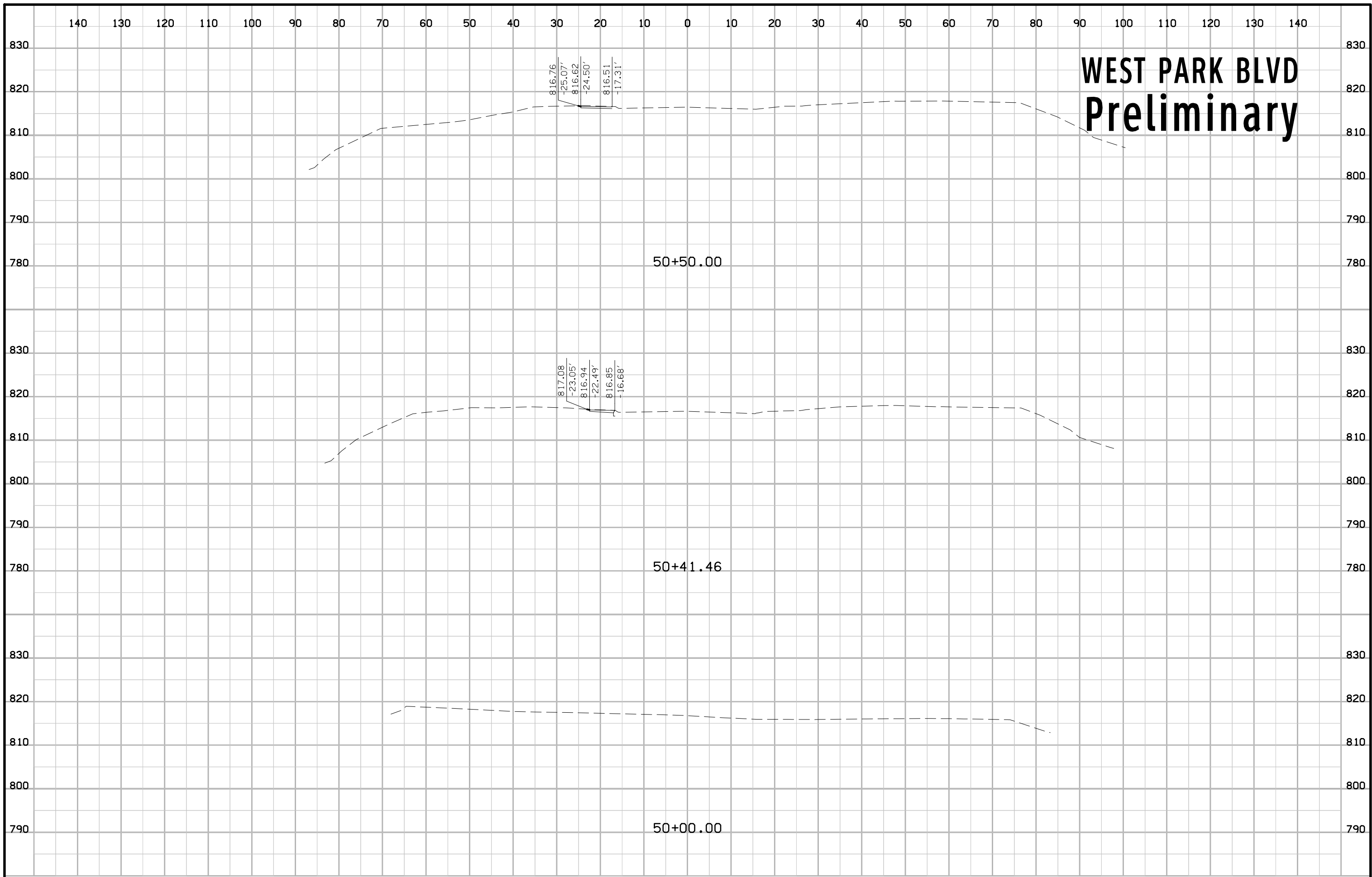
- - - - - - Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- - - - - Additional Topsoil Removal
- Subgrade Treatment
- - - - - Granular Shoulder
- Pavement
- - - - - Existing Pipe\R/CB
- Proposed Pipe\R/CB
- Proposed Dike
- All Elements Associated with Proposed Entrances

**SYMBOL LEGEND OF CROSS SECTION SHEETS**

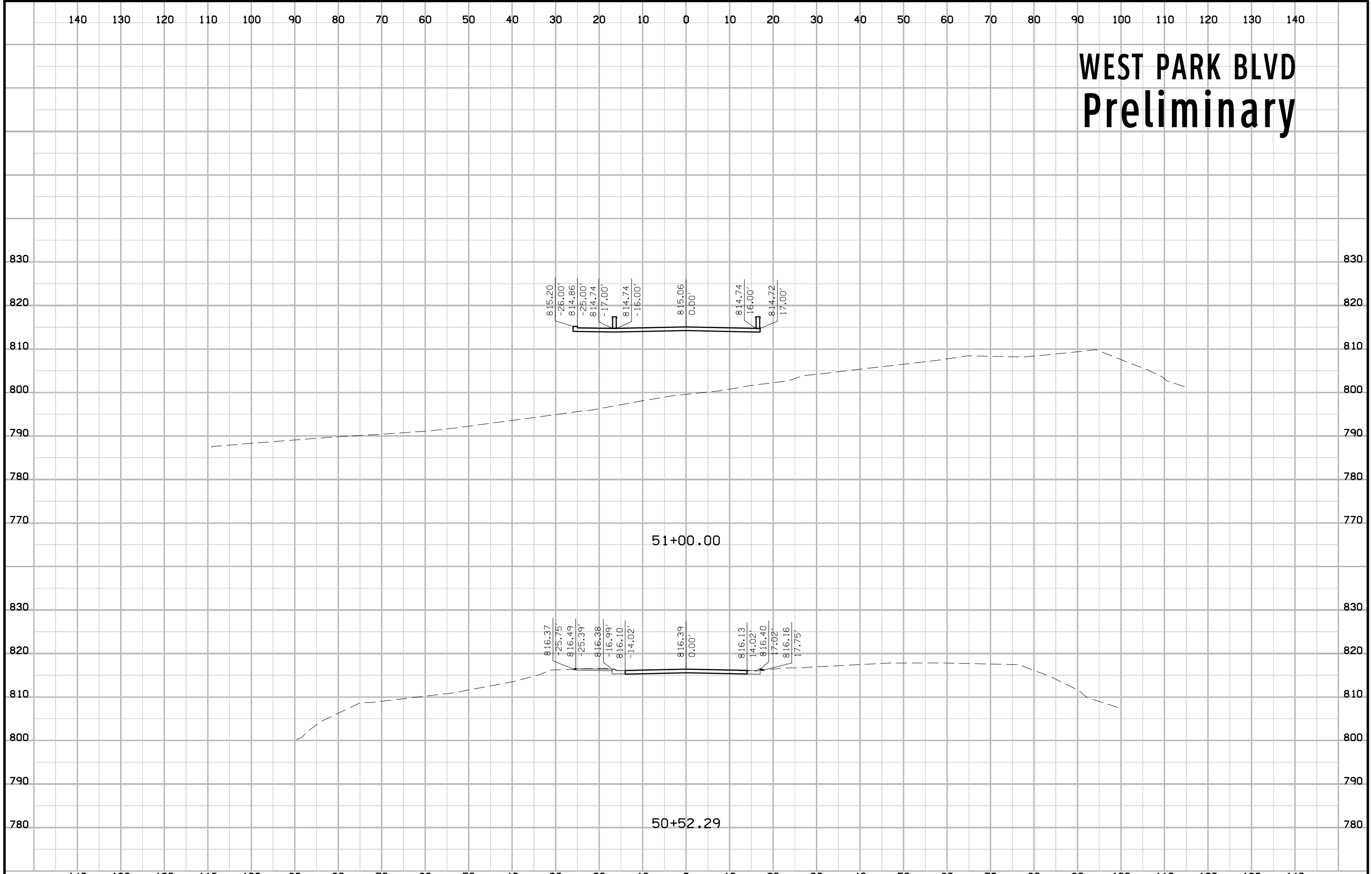
- Existing  
ROW  
|  
- - - - - Existing Right-of-Way Limit
- Proposed  
ROW  
|  
- - - - - Proposed Right-of-Way Limit
- Temporary  
ROW  
|  
- - - - - Temporary Right-of-Way Limit

**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

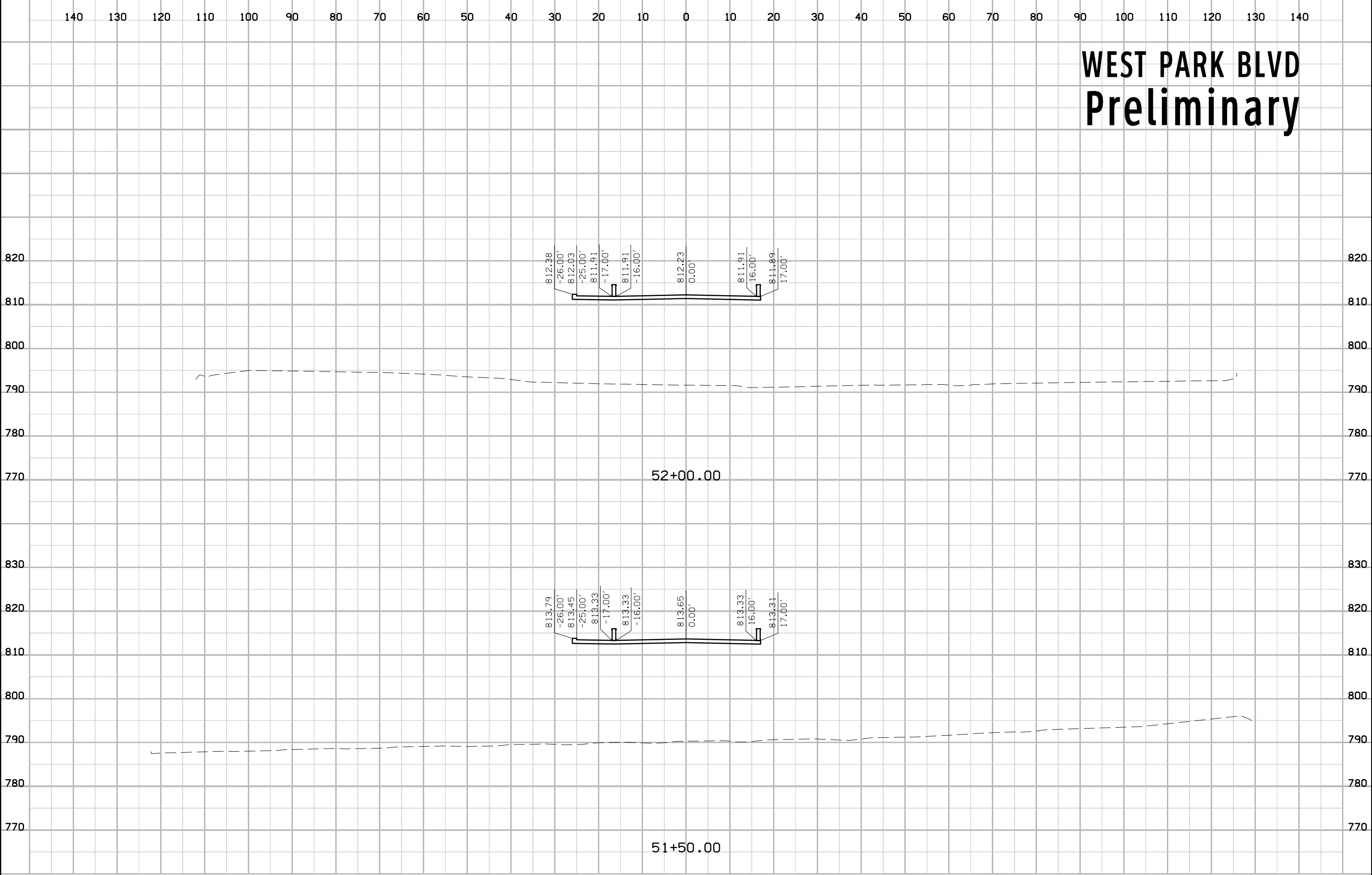
(COVERS SHEET SERIES W, X, Y, & Z)



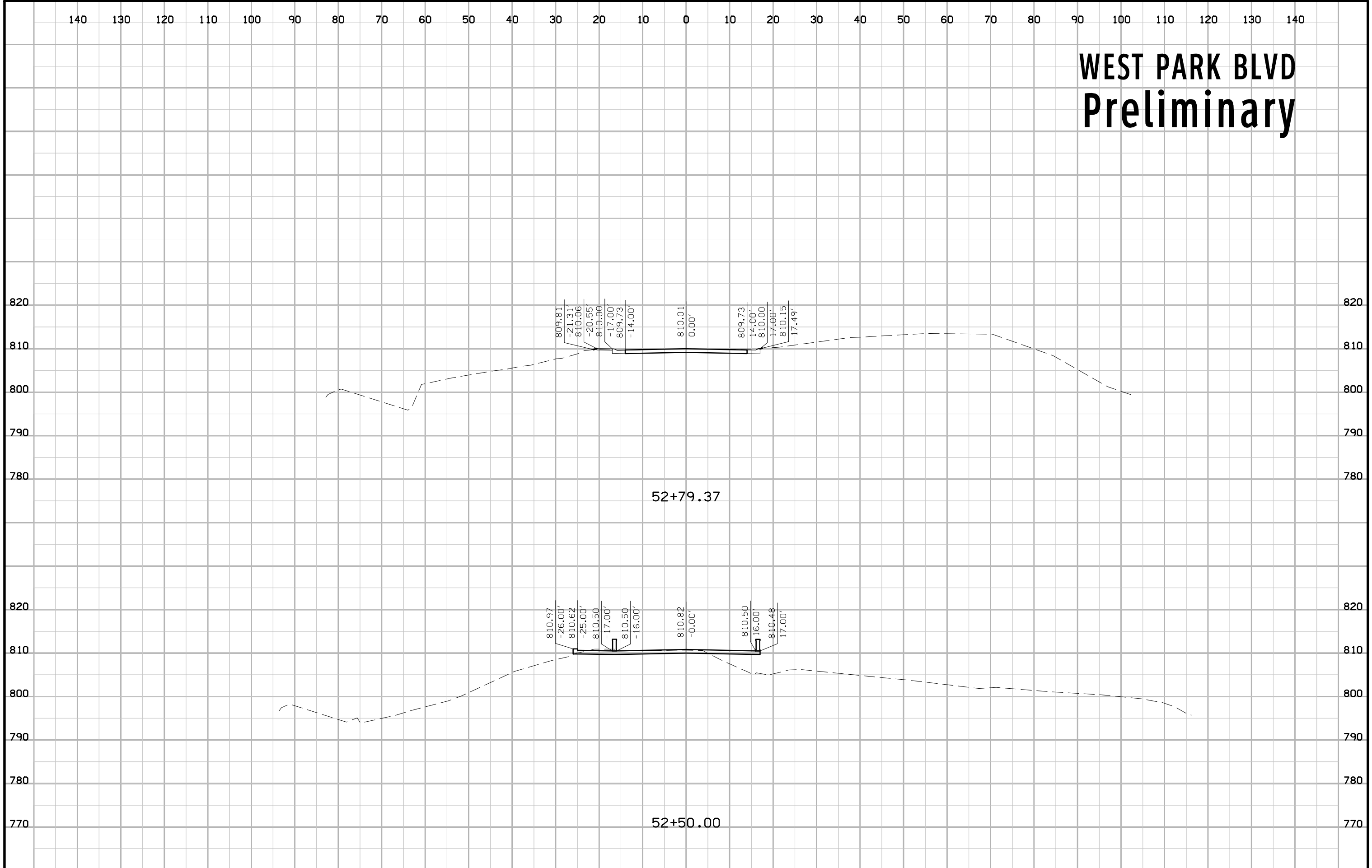
# WEST PARK BLVD Preliminary



# WEST PARK BLVD Preliminary



# WEST PARK BLVD Preliminary



# WEST PARK BLVD Preliminary

