915 Roadway Plan-Profile Sheet

915.1 General

The signed and sealed Building Information Model (BIM) files contain the complete horizontal and vertical geometry definitions for the project. The Roadway Plan-Profile sheet shows a 2D representation of the design contained within the model(s). Various roadway elements such as pavement width, medians, paved shoulders, curbs, drainage elements, tapers, turn provisions, and intersecting roadways, are annotated on this sheet.

Roadway profiles are typically provided for new construction and reconstruction projects and are shown with the plan view on the same sheet. When roadway profiles are not needed, title the sheet as Roadway Plan Sheet.

When appropriate, the plan or plan-profile sheet may utilize multi-stacking (subdividing sheet horizontally); each panel containing a roadway plan view with (when appropriate) the corresponding roadway profile directly below.

Use the following horizontal scales:

	Standard	Optional
Curbed Roadways	1″ = 40′	1″ = 50′
Flush-shoulder Roadways	1″ = 50′	1″ = 100′

See ***Exhibit 915-1*** for an example of a Roadway Plan-Profile sheet.

915.2 Roadway Plan

Display a north arrow and scale within each plan view, typically in the upper right portion.

Display the roadway plan view such that the centerline of construction or baseline of construction stationing increases from left to right. Display bearings for tangent sections (in the direction of stationing) below the centerline or baseline. Display station numbers close to station ticks.

Display existing topography including roads, streets, drives, buildings, underground and overhead utilities, walls, curbs, pavements, fences, railroads, and bridges, drainage structures and similar items, as well as streams, ponds, lakes, wooded areas, ditches, existing gasoline storage tanks within limits of topographical survey, and other physical features. Label existing features as needed to clarify the design intent.

915.2.1 Required Labeling and Information

Include labeling and dimensions only to the extent necessary to convey the design intent of the improvements. Provide the following labeling and dimensions:

- Flag and station the begin and end project limits and construction limits. The project limits should be at the beginning and the end of the full typical sections. Include the begin and end construction limits where they differ from the project limits. Transitions for maintenance of traffic and other construction work such as feathering, friction course, guardrail, drainage work, signing and marking work, sidewalk, shared use path, and urban side path may fall outside of the project limits but must be included within the construction limits. If plans include more than one project, identify the limits for each by Financial Project ID.
- Display station equations along the centerline or baseline of construction.
- Flag and station the begin and end of project exceptions (e.g., excluded intersections, bridges).
- Indicate each type of construction classification where more than one type is involved (e.g., new construction, resurfacing, bridge work, widening, and milling). Use shading, patterning, or labeling to convey the information. Indicate the limits of pavement and grading at side street intersections. Provide a legend when shading or patterning is used.
- Display proposed curbs, traffic separators, sidewalks, shared use paths, urban side paths, curb ramps, retaining walls, and driveways. Label curbs and curb ramps indicating type. Label and dimension sidewalks, shared use paths, urban side paths, medians, and traffic separators.
- Dimension the traveled way along the mainline and where pavement widths change. Dimension the traveled way of side streets and driveways.
- Display proposed drainage systems by depicting drainage pipes and French drain with a single line, and the outline of inlets, manholes, junction boxes, and outfall features (e.g., mitered end section (MES), end wall). Identify by structure number only. Do not label pipe sizes or lengths.
- Display box culverts and three-sided culverts. Identify by structure number only. Do not label culvert sizes or lengths.
- Display and label R/W lines. Display and label construction easements or license agreements.
- Display and label the limits of wetlands based on permit or regulatory requirements.

- Display and label Verified Vertical Elevation and Horizontal Location (V_{vh}) for underground utilities.
- Display and label overhead utilities indicating the line voltage. For a multi-line electrical overhead crossing, accurately show the location of each line. Show utility line heights where overhead lines may impact proposed construction.
- Identify all traffic monitoring sites in or within one-half mile of the project limits with the following notation:

  Traffic Monitoring Site Number (XXXX)

  Roadway Section Number (XXXX)

  Milepost (XX.XXX)

  Site includes vehicle detectors in roadway and pedestal, pole or base mounted cabinet, buried cable, and solar power unit on R/W. Inquiries about monitoring sites should be addressed to the Traffic Data Section Manager of the Transportation Data and Analytics Office, Office of Planning.
- When it is determined that a sectional view is helpful to convey the design intent at critical locations, display and label the sectional view near the critical location.

Projects with minor utility work or impacts may include these features on the Roadway Plan-Profile sheet.

915.2.2 Horizontal Curves

PC and PT points of horizontal curves are designated by small circles with short radial lines from these points, and PI points by a small triangle with a short section of tangent on either side. Display the following horizontal curve data on the plan view:

PI	(Station)	R	(Radius Length)
Δ	(Delta Angle with Direction)	PC	(Station)
D	(Degree of Curve)	PT	(Station)
T	(Tangent Length)	e	(Superelevation Rate)
L	(Length of Curve)		

915.2.3 Bridges and Bridge Culverts

Bridge-sized culverts (a.k.a., bridge culverts) are defined in ***FDM 265.1***. Flag and station the begin station and end station for bridge culverts (outside wall to outside wall). Provide a bridge number and a drainage structure number for all bridge culverts.

Display proposed bridges and approach slabs by simple outline. Flag and station the begin station and end station for the bridge and for the approach slabs. Provide a bridge number for all bridges.

When appropriate, display a short section of lateral ditch/outfall centerline on the Roadway Plan-Profile sheet.

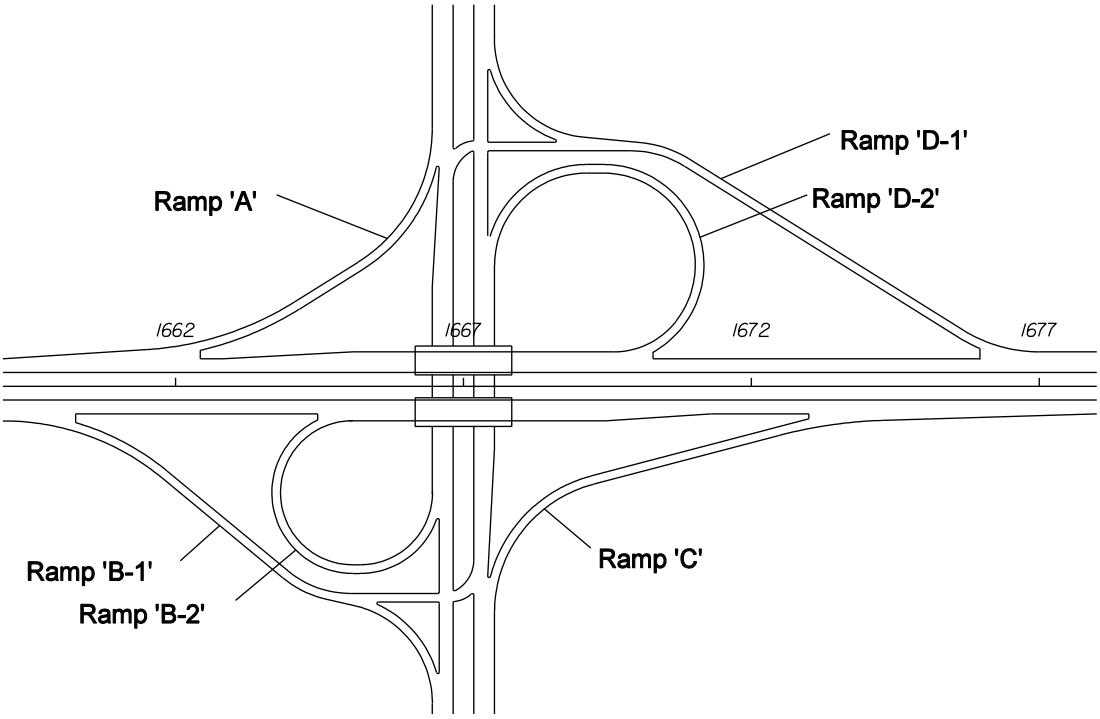
915.2.4 Interchanges

The entire interchange should be shown on one sheet using a 1" = 400' scale. With larger interchanges, consider using match lines and placing extended portions of the alignment in available space on the sheet.

Display the ramp baseline of construction, typically located along the right edge of pavement with respect to the direction of traffic. Ramp stationing should be increasing in the same direction as the project.

Identify ramps using letters or a combination of letters and numbers (e.g., Ramp A, Ramp B-1, Ramp B-2). Ramps in the first left quadrant along mainline stationing should be assigned first. Name assignments progress in a counterclockwise direction around the interchange (see ***Figure 915.2.1***). For projects with two or more interchanges, continue name assignments with the next letter and in same counterclockwise direction noted above.

Figure 915.2.1 Interchange Layout



Frontage roads should be assigned a unique alpha or numeric designation to avoid confusion with ramp nomenclature.

915.2.4.1 Ramp Terminal Details

Consider providing ramp terminal details at a scale of 1" = 40'. Ramp terminal details should be shown on the same page as the interchange.

915.3 Roadway Profile

Display roadway profiles directly below the corresponding roadway plan view. As illustrated in ***Exhibit 915-1***, each roadway profile must include a background grid at the appropriate scale. The horizontal scale and interval stationing for the roadway profile must be the same as that used for the roadway plan view. The vertical scale is typically 10% of the horizontal scale (e.g., 1″ = 100′ horizontal scale would typically use a 1″ = 10′ vertical scale).

Align the begin roadway profile stationing with the begin roadway plan view stationing. Display stationing along the bottom of the grid. Display vertical elevations along both sides of the grid.

When sufficient space is not available to place the roadway profile directly below the corresponding roadway plan view, the roadway profile may be shown on a separate Roadway Profile sheet. Separate Roadway Profile sheets must use the same horizontal and vertical scales and grid format and must clearly reference the associated roadway plan sheets.

915.3.1 Required Labeling and Information

Include labeling and dimensions only to the extent necessary to convey the design intent of the improvements. Provide the following labeling and dimensions:

- Flag and station the begin and end project and construction limits matching what is shown in the roadway plan view.
- Label the percent grade for each tangent section. When two tangent grades intersect and no vertical curve is required, label the PI station and elevation.
- Flag and station the superelevated sections (see ***FDM 915.3.3***).
- Show the cross section template of the underlying road, railroad, or waterway for bridges and box culverts along the centerline or baseline of construction. Display minimum vertical clearances for bridges.
- Show and label all high-water elevations affecting base clearance and roadway grades.
- Display and label only transverse underground utilities.

Do not display proposed drainage pipes or inlets in the profile view.

915.3.2 Vertical Curves

Indicate vertical curve PCs and PTs by small circles and PIs by a small triangle with short sections of tangent shown on each side. Extend vertical lines from the PC and PT points and place a dimension line indicating the length of the vertical curve. The PC and PT stations and elevations must be labeled on the vertical lines.

For vertical curves, show the profile grade elevations on even stations and at appropriate intervals. Place the elevations between the dimension line and the grade line. Also, place the curve length, dimension lines and the profile grade elevations above the grade line for sag vertical curves and below the grade line for crest vertical curves. Place the dimensions and elevations reasonably near the grade line. The PI station and elevation must be noted, lettered vertically above the PI symbol for crest curves and below for sag curves.

Show the profile grade elevation of the beginning and ending station of each sheet vertically just above the grade line, except when the beginning or ending station is on a vertical curve.

915.3.3 Superelevation

Standard superelevation details shown in ***Standard Plans*****, *Indexes 000-510*** and ***000-511*** may be used for projects with simple curves.

Show superelevation profiles for:

- Reverse curves
- Compound curves
- Other conditions requiring special superelevation not covered in the standards

Show complete profile grade line and edges of pavement (right and left) within the superelevation zone on the grid format. Label the begin and end superelevation stations and indicate the section in full superelevation.

915.3.4 Special Ditch Profile

Display and label special ditches and treatment swales (ditch blocks) in the profile. Show the percent ditch grade and a beginning or ending ditch PI with elevation and station plus. Show the ditch PI with elevation at the begin and end points of ditch blocks.

For multi-lane divided projects, three special ditch grades (right and left roadway ditches and a median ditch) may occur at the same location. In such cases, it may be advantageous to:

- Show the median ditch at a convenient location on the sheet with a separate elevation datum, or
- Provide spot elevation labels in the plan view.

Depict uniform ditches of non-standard depth by a dimension line in the lower portion of the grid and label as a special ditch with location and depth or show them by flagging the DPIs at each end with station elevation and side. Standard depth ditches are not labeled.

915.3.5 Special Gutter Grades

Show special gutter grades in profile for cases where the gutter grades are not controlled by the typical section. Include prolongations of gutter profile grades across street intersections on plan-profile sheets if an inlet is not provided before the intersection.

915.3.5.1 Shoulder Rocking Gutter Profiles

Shoulder rocking is used to achieve positive drainage when a minimum 0.3% longitudinal gutter grade cannot be maintained using uniform shoulder cross slopes. Provide a gutter profile for each side of a concrete barrier wall, along with the profile of the wall top. The top of the wall profile must follow the roadway profile which will create a varied wall height between the high and low points along the gutter profile.

A special detail depicting the concrete barrier wall reveal is often provided to supplement the ***Standard Plans*** details. These profiles may be depicted in either table or graphical format on the Roadway Plan-Profile sheet.

See ***FDM 210.4.1 or FDM 211.4.1*** for more information on design requirements for shoulder rocking profiles.

915.3.6 Special Sidewalk Profiles

Display and label special sidewalk profiles when the profile grade of the proposed sidewalk is independent of the roadway profile. Sidewalk profiles are typically located at the back of the proposed sidewalk (closest to the R/W).

When special sidewalk profiles are included on the Roadway Plan-Profile sheet, indicate the location of the sidewalk profile grade line (PGL) on the typical section.

915.4 Ramp Profiles

Develop ramp profile grades along the baseline of each ramp. A profile of the edge of the pavement opposite the baseline is typically shown as well. Show ramp profiles anywhere within available space on the Roadway Plan-Profile sheet.

Use the same scales used for the Roadway Plan-Profile sheet displaying the interchange. Each ramp profile must include a background grid at the appropriate scale.

915.4.1 Spline Grade

Spline grades are used to show the interconnection and interrelation of the ramp edge of pavement with the mainline edge of pavement. Showing this profile in the plans is typically not necessary. However, if the mainline pavement is superelevated or within the superelevation transition zone, the profile can be beneficial to illustrate the design intent.

Display the spline grade elevations at intervals of 20 or 40 feet. Show elevations for the outer edge of mainline pavement and inner and outer edges of the ramp pavement at the nose areas.

Join the grades of each pavement edge by smooth splines or simple curves. Label the three grade profiles and all equality stations. Flag and label nose stations. Place the scale near the profile.

915.5 Special Profiles

Showing special profiles in the plans is typically not necessary. However, if it is determined that providing a special profile in the plans is helpful to convey the design intent, they should be shown anywhere within available space on the Roadway Plan-Profile sheet.

The standard scale used for special profiles should be 1" = 20' horizontally and 1" = 2' vertically. Each profile must include a background grid at the appropriate scale.

915.5.1 Intersections

Supplemental profiles at intersections may be necessary to define edge of pavement profiles. Include sections showing pavement surface elevations for nose points and other critical locations. Label the existing ground line and curb line per the ***CADD Manual***.

915.5.2 Curb Returns

Curb return profiles may be necessary to define the gutter flow line from the PC to the PT point of the return at an intersection.

Identify each curb return profile with its PC and PT stations shown. Elevations should be shown at appropriate intervals and low and high spots must be identified by location and elevation.

915.5.3 Railroad-Highway Grade Crossings

Supplemental profiles for railroad-highway grade crossings may be necessary to define lane lines, edges of pavement, and gutter flow lines.

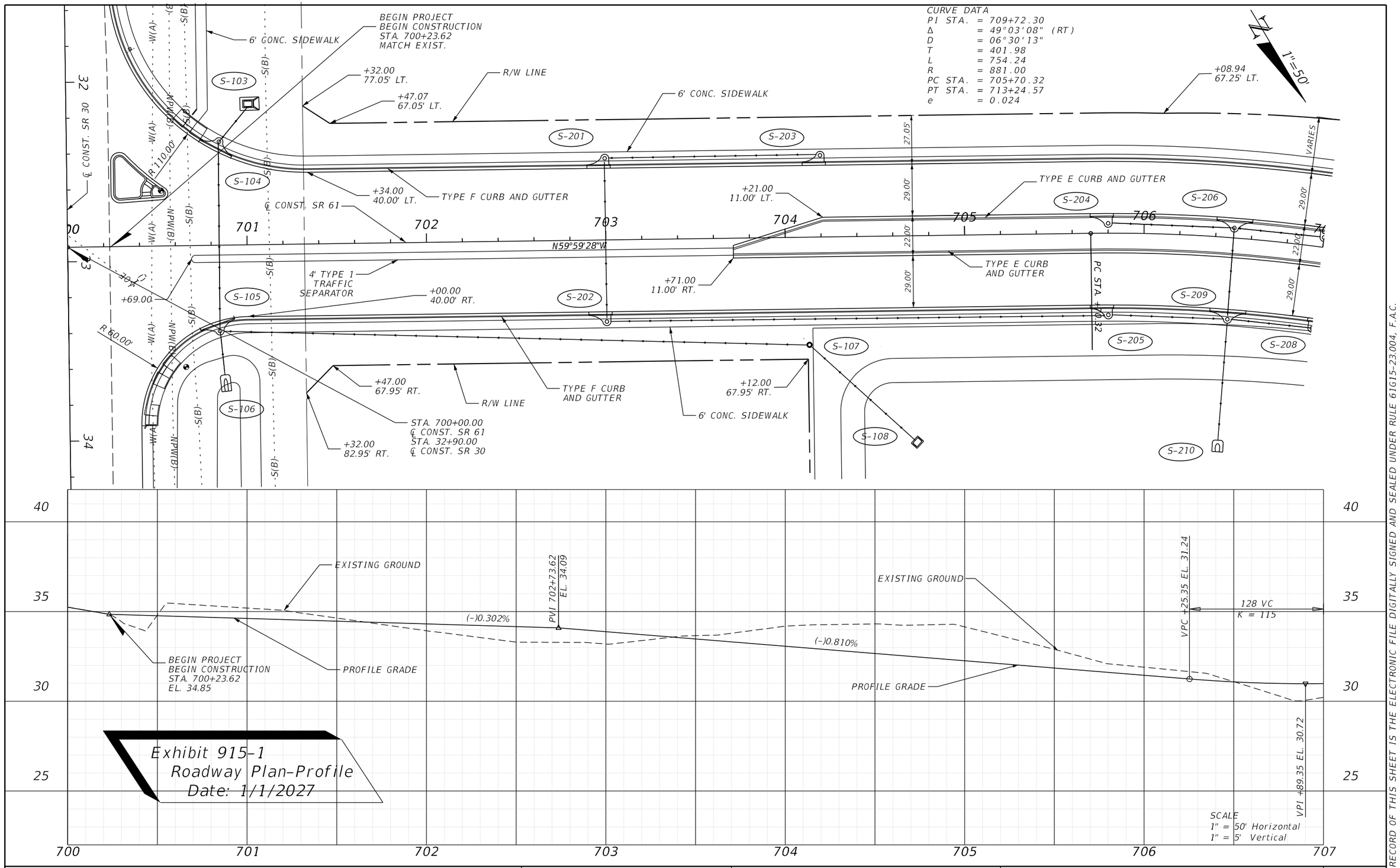


Exhibit 915-1
Roadway Plan-Profile
Date: 1/1/2027

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
LUKE S. WALKER, P.E.
LICENSE NUMBER: 12345
ROADWAY ENGINEERS, INC
123 MAIN ST
TALLAHASSEE, FL 32301

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 61	WAKULLA	220495-5-52-01

ROADWAY PLAN-PROFILE

SHEET NO. 12

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