

REVISION DATE 06/13/18

Sample Plan

PROFILES ----- NARRATIVE

References:

- Design Scene: Chapter 9 - Plan and Profiles
- Road Design Manual: Chapter 3-4; 5-2; 6-3
- Technical Manual: 5-292.300
- Technical Memorandum: 17-13-TS-06 Design Speed Guidance for State Highways
18-02-TS-0R Performance-Based Practical Design Guidelines

<http://hub.metro/design/technicalguidance.html> Surveys Datum Statements for Plans

General Information:

The centerline profile of the ground is its side view, drawn to an exaggerated scale and showing the original ground line and proposed elevations.

Wherever possible, provide the profile along the defined alignment (whether centerline or offset). If this is not possible, design should provide a spline grade along the defined alignment for staking purposes.

The grade line shows the percent of grade of the tangents and lengths of all vertical curves, with stationing and elevations, where changes occur and at points of intersection.

Consideration must also be given to fitting the grade to existing and proposed features such as roads, railroads, bridges, drainage patterns, Right of Way, noise walls, etc. For roadway construction under an existing roadway bridge, minimum clearances can be found in the LRFD Bridge Design Manual Page No. 2-11.

Top of bridge footing elevations and size of footing may be shown on the plan if deemed necessary.

The designer should contact Bridge Maintenance and Materials to determine whether clearances under bridges should be increased.

Include bypass/staging profiles.

The beginning or terminal of specific roadway profiles such as ramps or loops will be controlled by the profiles, cross-slopes, and supers of other roadways. Use an appropriate distance beyond the nose to establish the beginning ramp grade. Extend profiles beyond noses by establishing vertical control points extending beyond the noses along the ramp/loop horizontal alignment.

When two roadways merge, it may simplify the profiles to use only one grade and add a note on the other "Profile grade controlled by adjacent roadway".

For projects with curb and gutter at large or major intersections or major entrances provide spline grades at the gutter line along the radii. See Construction Plan Details for example of spline grade tabulation.

All profiles need to be reviewed to see that they meet design speed. For those that do not, a design exception must be requested from Director of the Office of Project Management/Geometric Design Support/State Design Engineer. Any design exception must be noted on the Title Sheet.

When tying into existing grades, surveys should provide the in-place profile data, unless mapping values can be deemed sufficiently accurate.

Check profile elevations against groundwater elevations. Coordinate any water table clearance issues with Materials, Foundations and/or Water Resources.

Use the latest wording for the vertical control note as shown on the plan sheet.

It is desirable to show vertical curve design speed parameters on the profiles. Where those do not control, also show the horizontal curve design speed parameters.

Coordinate horizontal alignment with vertical curvature. See Section 3-4.07 of the Road Design Manual.

General Information cont'd.:

Check profile elevations and clearances against existing and proposed utilities.

Check to make sure that the material labels match the pay item description (i.e. excavation-common vs common excavation, etc.).

Sample Plan

PROFILES ----- CHECKLIST

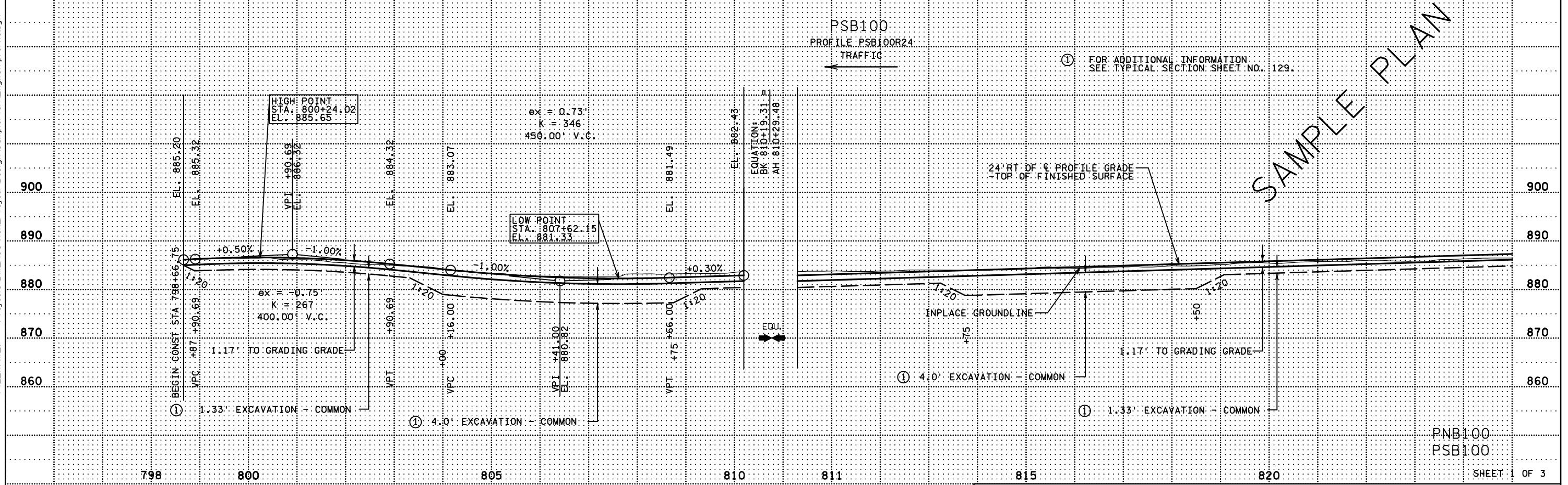
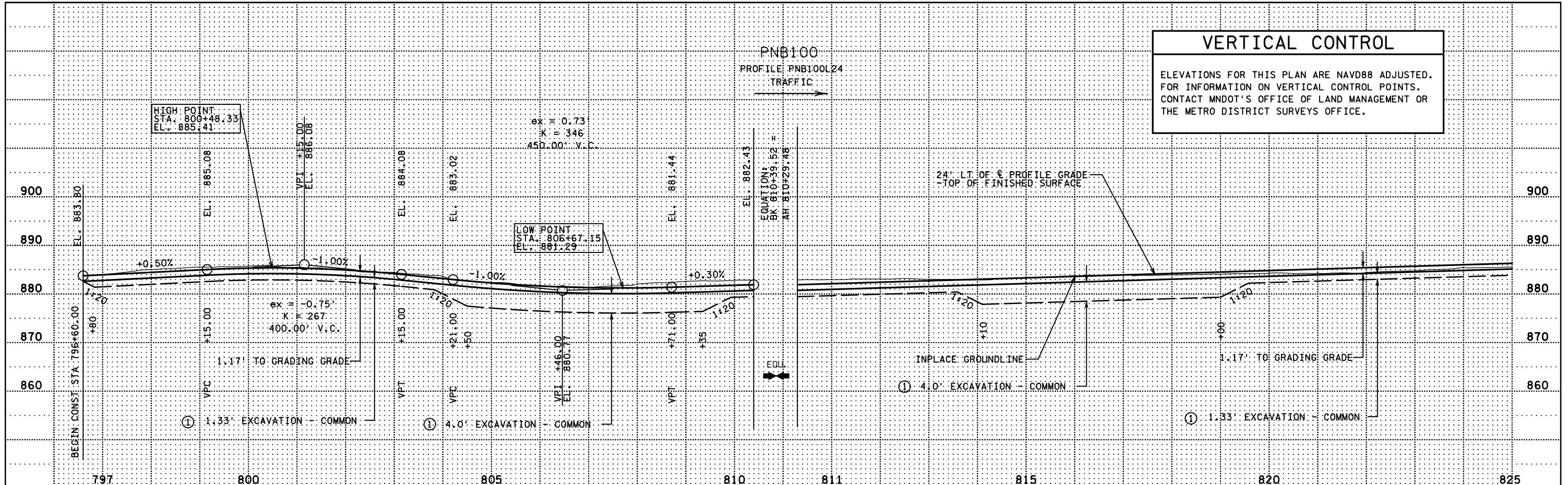
- 1. Vertical control note on first profile sheet
- 2. Ditch grades (Note: Shown to bottom of slope dressing)
- 3. Muck excavation limits
- 4. Subgrade excavation with depths and transitions
- 5. Bridge approach treatments
- 6. Rock Excavations
- 7. Check profile elevations against groundwater elevations
- 8. Buried utility crossings - gas, oil, power, telephone, etc.
- 9. Culvert crossings
- 10. Equations
- 11. Alignment Designation
- 12. Entrance profiles
- 13. Profile grade, in-place ground line, grading grade designation
- 14. Vertical curve data, grade percentages, stationing
- 15. High point / low point
- 16. Bridges
- 17. Traffic flow arrows
- 18. Drawn by: and Checked by: Initials and Engineer's signature

PROFILES NARRATIVE AND CHECKLIST

23-OCT-2019

REVISION DATE 05/08/19
 PLOTTED/REVISED: 23-OCT-2019

VERTICAL CONTROL
 ELEVATIONS FOR THIS PLAN ARE NAVD88 ADJUSTED.
 FOR INFORMATION ON VERTICAL CONTROL POINTS,
 CONTACT MNDOT'S OFFICE OF LAND MANAGEMENT OR
 THE METRO DISTRICT SURVEYS OFFICE.



SAMPLE PLAN

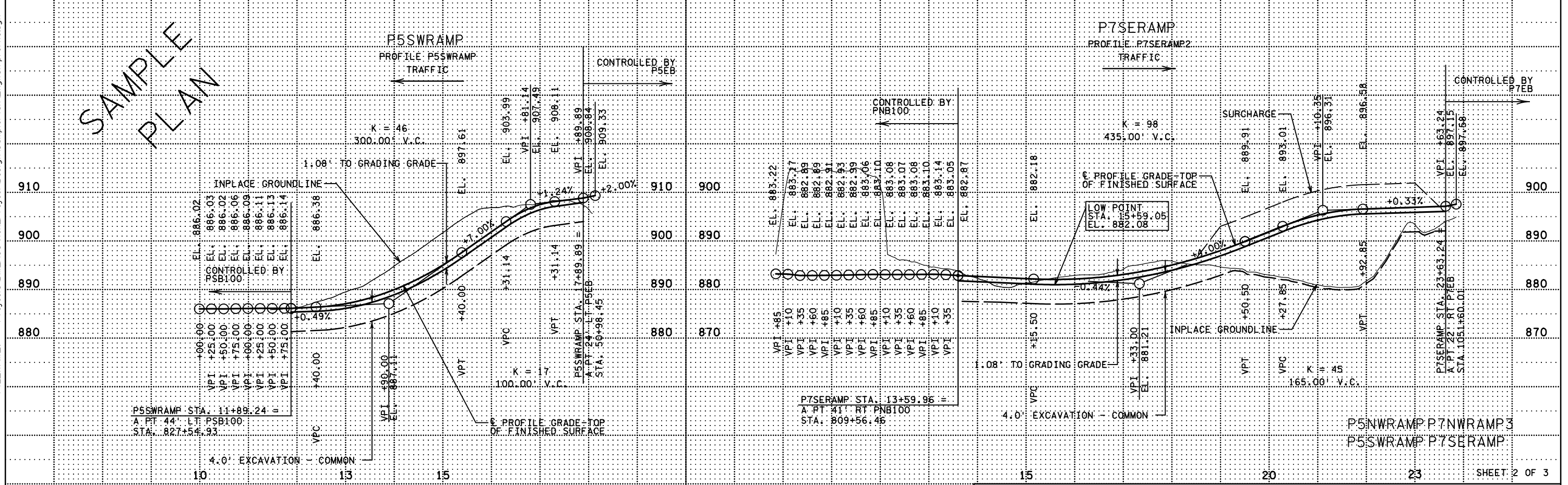
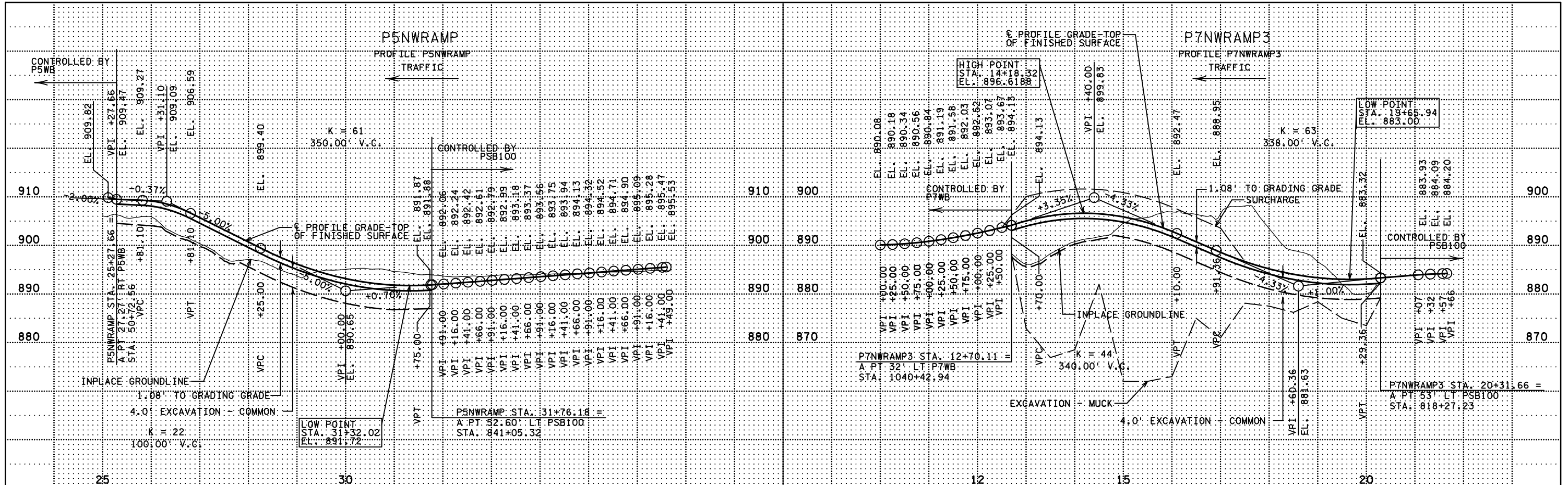
PNB100
 PSB100
 SHEET 1 OF 3

DISTRICT #: Metro
 PLOT NAME: profile
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PROFILES

REVISION DATE 05/08/19
 PLOTTED/REVISED: 23-OCT-2019

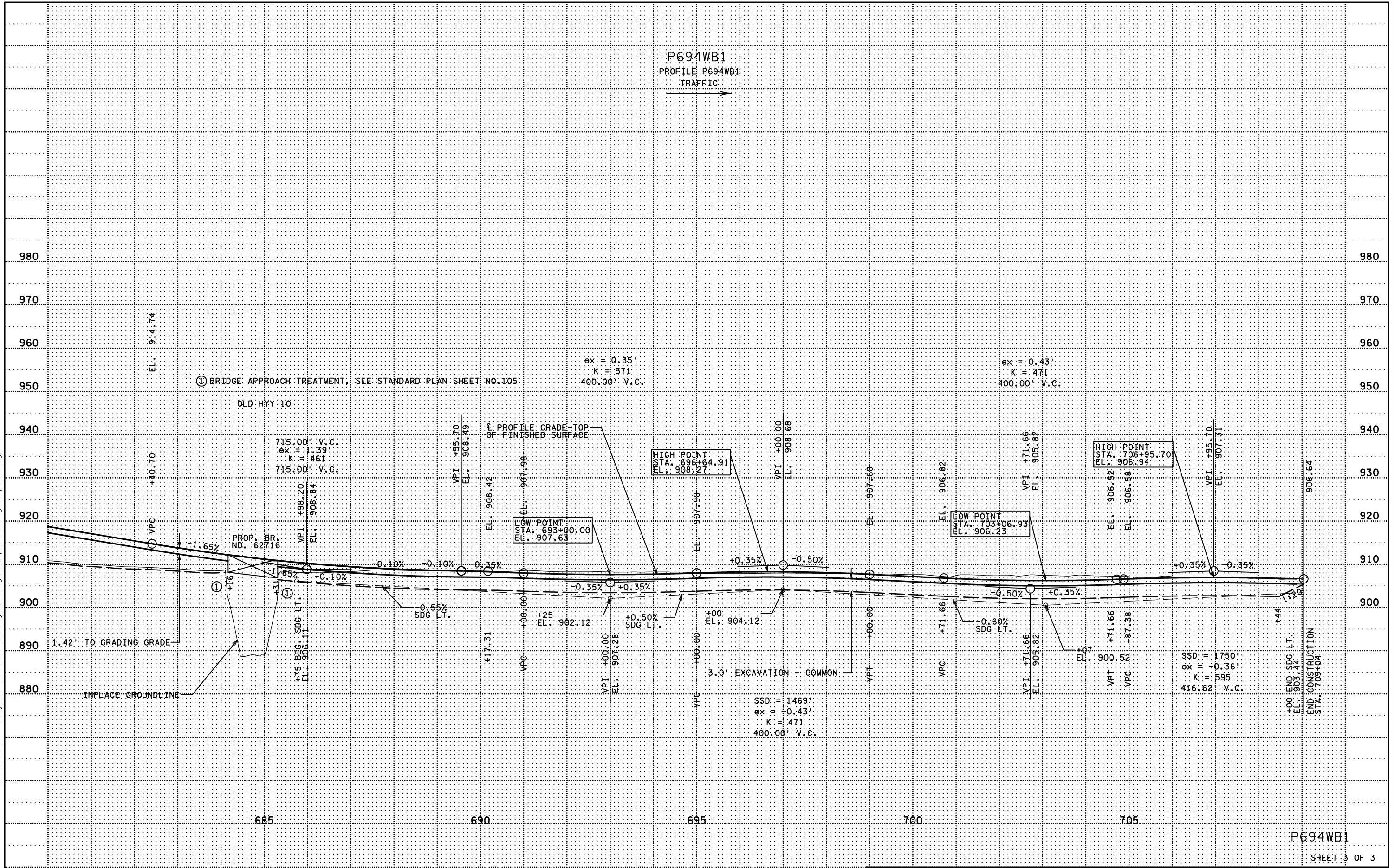
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PROFILES

REVISION DATE 06/13/18
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DISTRICT *: Metro
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FILENAME: Projects\DM_R05\Non_Project\Design\SamplePlan\English\prof\ledgn



P694WB1
PROFILE P694WB1
TRAFFIC

BRIDGE APPROACH TREATMENT, SEE STANDARD PLAN SHEET NO.105

ex = 0.35'
K = 571
400.00' V.C.

ex = 0.43'
K = 471
400.00' V.C.

HIGH POINT
STA. 696+64.91
EL. 908.27

LOW POINT
STA. 693+00.00
EL. 907.63

LOW POINT
STA. 703+06.93
EL. 906.23

HIGH POINT
STA. 706+95.70
EL. 906.94

SSD = 1750'
ex = 0.36'
K = 595
416.62' V.C.

P694WB1
SHEET 3 OF 3

PROFILES