

TO: All Design Section Staff
FROM: Bijan Khaleghi
DATE: May 24, 2021
SUBJECT: Wall Structure Sheets and Detailing Practices

This design memorandum specifies WSDOT's policy for producing plan sets for wall structures that have been assigned to the bridge design group.

Add the following subsection to BDM 11.1.3

D. Wall Structure Sheets and Detailing Practices

- Wall sheets within the contract plan set shall be determined and placed by the WSDOT region office responsible for the corridor project regardless of the design group responsible for drafting the wall plans. Any bridge plan sheet that includes wall geometry should do so only for reference and should only include minimal wall information as necessary to reduce redundant information.
- Walls that directly support bridge loads or act as a bridge abutment, such as a geosynthetic retaining wall supporting a bridge footing, shall be laid out and detailed entirely in the bridge plan set as these will be treated as bridge structural components.
- Unless the wall to be detailed meets specific criteria as mentioned previously, the wall sheets will stand alone in their own section of the plan set as determined by the WSDOT region office. Therefore, although it is important to show and reference the walls on the bridge layout sheet, the walls shall have their own separate layout sheet(s) as required. The following specifies general minimum requirements for each wall sheet detailed by the bridge design group.
 - Layout
 - It is permissible for all of the walls within the plan set to be placed on a single wall layout sheet if the size and scaling permits, and only when deemed appropriate by the design engineer as a means to best convey overall design intent, otherwise each wall will have its own individual layout.
 - If using a single layout sheet, the wall sheets should be organized by placing all walls in the same location within the Contract Plans.
 - Each layout view shall include stationing and offset along the alignment for both the wall alignment and the main project construction alignment.
 - Each layout view shall include all utilities that will be in place (existing) at the time of wall construction and are located within the vicinity of the wall.
 - Developed Elevation
 - Each wall shall have a developed elevation view. This view may be placed on the layout sheet if size and scaling permits, otherwise will be placed on its own sheet.

- Each elevation view shall be detailed using the same vertical and horizontal scale. Exaggerated horizontal or vertical scales are not permitted.
 - Each elevation view shall have an overall dimension of the wall along the wall alignment line.
 - Each elevation view shall include additional horizontal dimension lines denoting the size and total number of each wall section panels if applicable and the locations of expansion joints and or contraction joints.
 - The elevation view shall show the existing and proposed ground line at the top and bottom of the wall.
 - Each elevation view shall show, at a minimum, the top elevation and bottom elevation at the beginning of the wall and the end of the wall, as well as the elevation at any profile transition.
 - Each elevation view shall show all existing utilities that will intersect the face of the wall or wall alignment. New utilities intersecting the face of the wall or wall alignment that will need to be accommodated by the construction of the wall shall be shown as well.
 - A reference elevation may be shown in a wall elevation view if deemed necessary by the design engineer to help clarify the design intent and improve plan readability. If shown, the elevation line shall be placed below the ground line as determined by the design engineer. The reference elevation should be determined based on 20-foot increments from 0 and should be set at the previous 20-foot incremented elevation prior to the lowest elevation of the ground line. For example, a low ground elevation of 163.35' would call for a minimum reference elevation of 160.00' but for plan clarity and readability could be set at any previous 20-foot incremented elevation such as 140.00' or 100.00' but is recommended to keep it as close as possible to the low ground elevation to maintain visual association with the view.
 - For wall height dimensioning standards refer to BDM Chapter 8.1.10E.
- Details
- All relevant details necessary to construct all aspects of the wall shall be included in the plan set. Standard Plan retaining wall details shall not be included unless modifications to such details have been made. shall
 - For additional detailing requirements refer to BDM Chapter 8.1.10E.
 - If a design requires specific and unique architectural finishes, a detail sheet or sheets shall be included in the wall plan set as required.

Background

The current practice of developing wall plan sheets has minimally defined standards resulting in variations in plans and interpretations between different design groups. This policy memorandum provides a more standardized approach to wall sheet set development.

If you have any questions regarding this policy memorandum, please contact Cory Churchill at Cory.Churchill@wsdot.wa.gov, Rick Brice at Richard.Brice@wsdot.wa.gov or Bijan Khaleghi Bijan.Khaleghi@wsdot.wa.gov at (360) 705-7181.

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