Index D549-025  GRS-IBS

Design Criteria


Design Assumptions and Limitations

Design GRS-IBS in accordance with SDG 3.13.4. Include these additions and modifications while using the Design Methods presented in Appendix C of the *FHWA-HRT-11-026 "Geosynthetic Reinforced Soil Integrated Bridge System Interim Implementation Guide".*

Use of GRS abutments on limited access highways requires the approval of the State Structures Design Engineer. The use of these Developmental Standard Plans will typically be restricted by the SDO and not approved for use on water crossings subject to stream flow in excess of 7 ft/sec, or locations with sufficient wave action to displace scour countermeasures.

When using these Developmental Standard Plans, the designer must request Developmental Specification Dev549 from the District Specifications Office.

This Developmental Design Standard is for use only with standard CMUs having nominal dimensions of 8” x 8” x 16”; therefore, if other block types and/or dimensions are desired (e.g. those used for Modular Block Walls), provide project specific designs in the plans.

Details presented in this Developmental Standard are intended for use with flat slab type superstructures. Standardized details will be developed for beam type superstructures in the future.

Plan Content Requirements

Insert the entire Developmental Standard Plans Index, received from the Central Office monitor, into the appropriate component plan set in accordance with FDM 115.

In the Structures Plans:

A full height block is typical in front of the bearing seat; however, a half-height block and/or special height polystyrene board may be required to accommodate elevations. If this is required, show project specific details in the plans.

When specifying color, do not specify "brick red" for the textured blocks if scour countermeasures are shown. "Brick red" is reserved for the solid blocks hidden by the scour countermeasure to assist Maintenance in determining effectiveness of the countermeasure.

Where beam type superstructures are used, show project specific details in the plans for grade beam and backwall. In these cases, expansion joints will be required between the backwall and bridge deck.
When a backwall is used, Begin/End Bridge Stations will be at FFBW. Otherwise, Begin/End Bridge Stations will be located at ends of the superstructure.

Show details for filling CMU with concrete and rebar for special locations such as corners of wingwall and face of abutment.

Complete the following data tables and notes and include them in the plans. Use additional sheets as necessary. Supplemental details and notes to Standard Plans Drawings and Tables are permitted as required to address special conditions. Include these items in the plans. However, the data tables themselves should not be modified when using Standard Plans Drawings. See Introduction I.3 for more information regarding use of Data Tables.

Detail scour countermeasures in Data Table as follows:

When detailing scour countermeasures, indicate Finish Grade Elev. as "N/A".

Indicate the contraction scour elevation as the Scour Elev. in the data table. Indicate the countermeasure type and finish slope in the notes. Ensure the finish slope and EL. RR provide for at least 2.5 feet of cover over RSF when Bank and Shore Riprap is used. When scour design procedures do not apply, indicate "N/A".
Note to Designer:
The Geotechnical Engineer shall provide the values within the red boxes designated below in a signed and sealed report to the Structural Engineer.
## Payment

<table>
<thead>
<tr>
<th>Item number</th>
<th>Item Description</th>
<th>Unit Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>549-1</td>
<td>GRS Retaining Wall</td>
<td>SF</td>
</tr>
<tr>
<td>549-2</td>
<td>GRS Bridge Abutment</td>
<td>SF</td>
</tr>
<tr>
<td>549-3</td>
<td>Gravel Fill</td>
<td>CY</td>
</tr>
</tbody>
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