

FOUNDATION REPORT
Retaining Wall – SR 162: SIA Serving
Aluminum Company of America
From SR 162 Station 110+70 to Ramp Station 16+60
Project No. 05950-3537-04
Pin No. 119593.00
Blount County

EXECUTIVE SUMMARY:

This report covers the site investigation and the geotechnical recommendations for the proposed retaining wall which will support the new ramp from Cusick Road to SR 162. The retaining wall has a maximum height of 17 feet, the retaining wall is to cross over a 20 foot box culvert at Station 14+00. Based on the site conditions and the subsurface information, a Gabion Wall is the recommended suitable type of wall.

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INTRODUCTION:

This report covers the site investigation and the geotechnical recommendations for the proposed wall which will support the future ramp from Cusick Road to west bound SR 162 in Blount County. Since the proposed wall is located on the embankment slope of SR 162, only one hole was accessible to the drilling equipment. The wall will cross over a 20 foot box culvert at Station 14+00.00.

GEOLOGY SOIL AND SITE CONDITIONS:

The project site is dominated by the Maryville Limestone Formation of the Conasauga Group, which consists of thick bedded bluish gray ribboned limestone. The limestone weathers to clay and silty clay.

SUBSURFACE AND SURFACE EXPLORATION:

The subject retaining wall begins at SR 162 Station 110+70 and ends at Ramp Station 16+60 with a maximum height of 17 feet. One auger hole was advanced at the accessible part of the wall which indicated 6 feet of moist, moderately firm clay overlying limestone.

DISCUSSION AND RECOMMENDATIONS:

Geotechnical recommendations provided in this report and on the retaining wall conceptual drawing are based on information provided to the Geotechnical Engineering Section and on the work with the design division of Region One. To minimize the height of the wall, the wall was located at the boundary of the FEMA Firm Flood Zone which support/retain rock material embankment with slope ratio of 1.5: 1. Due to the limited subsurface information, ground improvement under the wall has to be performed with replacing a minimum of 2 feet of soil with rock material.

Acceptable Wall Type:

Gabion Wall:

Based on the site condition including an existing box culvert, subsurface information, wall profile and cross-sections, a Gabion Wall is recommended to be constructed at the proposed site.

TABLE 1 - FOUNDATION PARAMETERS FOR GABION WALL

STATION LIMITS	FOUNDATION BEARING CONDITION REQUIREMENT	NOMINAL BEARING RESISTANCE (psf)	COEFFICIENT OF SLIDING FRICTION
110+70 – 16+60	On a minimum 2' rock material	10,000	0.6 (Gabion basket on rock fill material)

TABLE 2 – DESIGN REQUIREMENT AND PARAMETERS

Description	Value - Gabion Walls
Effective (Drained) Friction Angle	
Retained Backfill-Select Backfill	34° to max 40°
Unit Weight-	
Select Backfill Material	Varies



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 Attachment
 March 5, 2014