COMPANY NAME	Calculation No.
	CALCULATION NUMBER
CALCULATION SHEET	Project No.
onlinestructuraldesign.com	PROJECT NUMBER

		Calc. By	Date	Rev.
Project Title:	**Project Name**	Author	today	0
Subject/Feature:	**Calculation of shear lug depth and thickness**	Checked By	Date	
	Imperial Units calculation / spreadsheet	Checker	today	

Input	Output
Steel and concrete properties	Shear lug depth
Shear force	Shear lug thickness
Shear lug width	

Design shear force:

V_{lg} = 10.00 kips

Allowable stress of concrete:

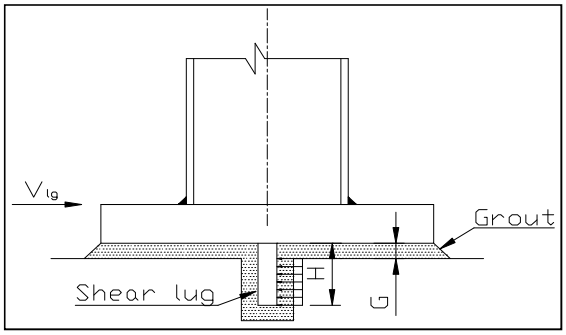
f'_c = 5.00 ksi

Required bearing area for the shear lug:

A_{lg} = $V_{lg}/(0.35*f'_c)$ = 5.71 in^2

Width of the shear lug:

W_s = 10.00 in



Necessary shear lug depth below the concrete foundation:

H-G = 0.57 in

Grout thickness:

G = 1.00 in

Required minimum depth of the shear lug:

H_{min} = 1.57 in

Shear lug depth:

H = 2.00 in

Minimum yield stress of the type of steel being used:

F_y = 50.00 ksi

Cantilever end moment acting on a unit length of the shear lug:

$M_{lg} = (V_{lg}/W) * (H/2+G)$ = 2 kip-in/in

Resistance factor for flexure:

ϕ_b = 0.75

per Manual of Steel Construcion (LRFD) Chapter 2

Required minimum thickness of the shear lug:

$t_{lg} = ((6*M_{lg})/(0.75*F_y))^{0.5}$ = 0.57 in

References:

Manual of Steel Construction - American Institute of Steel Construction Inc., Load and resistance factor design (LRFD)