Reconstructive surgery commonly employs grafted costal cartilages, but the appropriate cartilage to select is often a question of the volume of material necessary to shape the graft. However, there is little information regarding the depth (superficial-to-deep) of commonly grafted costal cartilages. Therefore, this cadaveric study sought to determine the average depth of the 5th, 6th, 7th, and 8th costal cartilages since these are the most commonly grafted cartilages. The cartilages were analyzed from medial, lateral, and intermediate locations, revealing that the thickest cartilage is found at the medial portion of the 6th cartilage while the thinnest cartilage is found at the medial aspect of the 8th cartilage. Average depth did not differ between cartilages near each respective rib, but the average thickness differed greatly near the sternum. Results support the assumption that any location along the 6th costal cartilage has, on average, a greater depth than any part of the 5th, 7th, or 8th cartilages.