

therewith. For the purposes hereof the Secretary of War, in his discretion, may take into consideration, and revise the surveys and estimates of such a waterway heretofore made by Brevet-Colonel C. E. Blunt, of the United States Corps of Engineers, in compliance with a joint resolution of the Congress approved March twenty-second, eighteen hundred and sixty-seven.

The canal for which Colonel Blunt made surveys and estimates was of 14 feet depth, with lock-chambers 275 x 46 feet. His surveys covered six lines, some of which presented great difficulty in the ascent of the Niagara Terrace even with these dimensions, and only one, the longest, offered any marked natural advantage. None of these is impossible with the dimensions now required; routes No. 1, 2, 2a, 3, and 5a do not come within the description of the act above cited, the last being without Niagara County, the others opening upon Niagara River 9 miles below the present termination of a 20-foot depth. No estimates upon these are therefore presented. Examination of the ground and application of the present project to the profiles of these routes have shown me that they offer no advantage either in expense of construction or efficiency of service. Route No. 4 also opens upon the river at a point below the present termination of 20-foot depth, but near enough to it to come reasonably within the terms of the act. Of all the routes surveyed by Colonel Blunt it is the only one remaining for comparison with route No. 5. Projects and estimates upon these two routes are therefore presented.

The dimensions of canals and locks adopted and used in all the estimates are as follows :

	Depth.
Width of canal at bottom.....	100
Depth of canal.....	20½
Width of canal at water-surface in rock...	100
Width of canal at water-surface in earth..	150
Length of lock-chamber.....	400
Width of lock-chamber .....	80
Width of gates.....	60
Depth over miter-sill.....	21
Lift, in general.....	18