

Bank-Operated Cableways

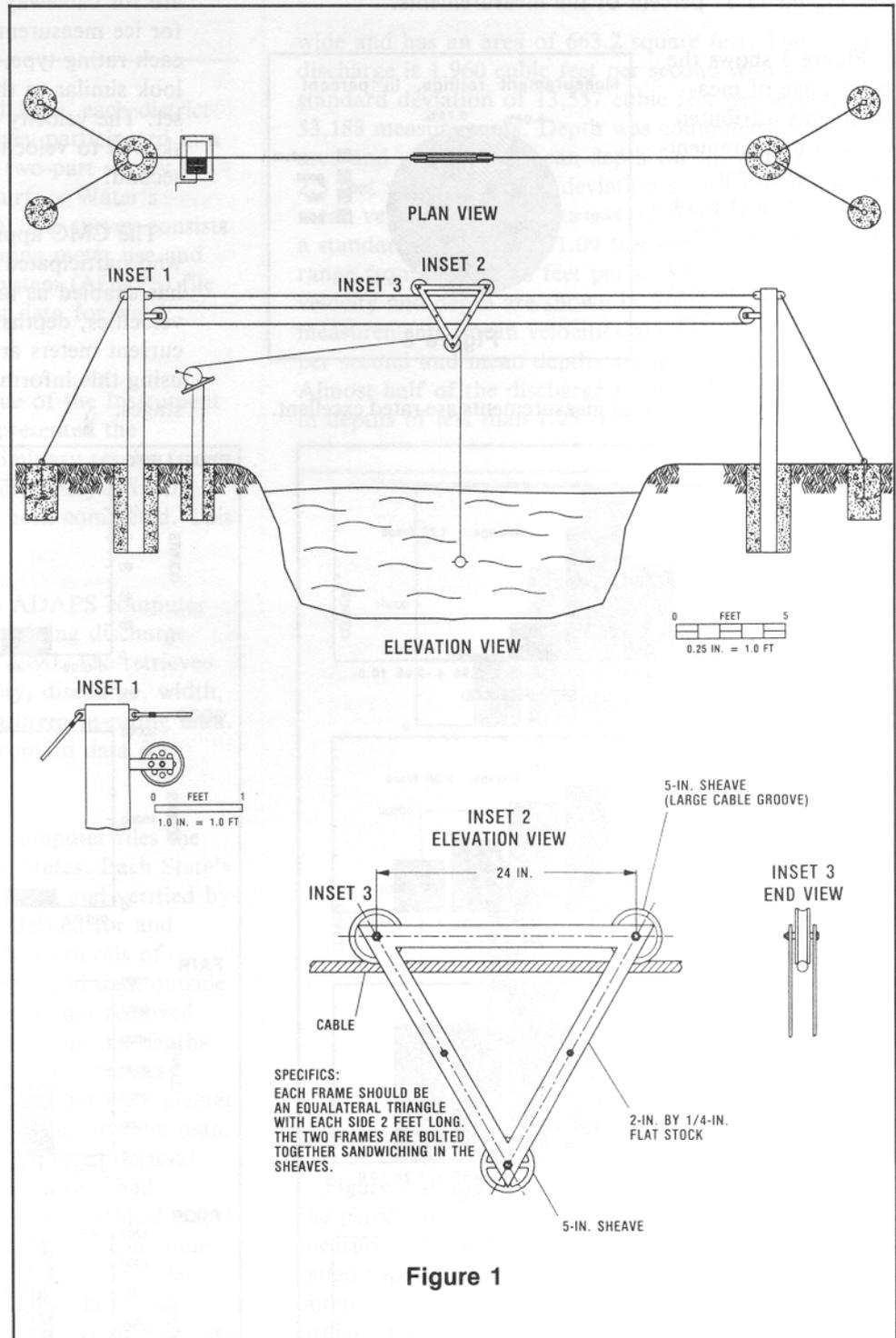
by D.E. Hitch

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Due to safety considerations and installation costs that can easily exceed \$8,000, a need for an alternative to the traditional USGS cableway and cable car are readily apparent. The Las Vegas Sub-district Office has developed a bank-operated cableway system for new installations and for rehabilitating existing cableways.

The only limit to the width of a bank-operated cableway is the amount of line on your A or B reel. Streams with widths up to 100 feet can easily be measured by bank-type cableways. For a new installation, our total cost (including labor) is about \$1,200.

A typical installation starts with two 6-inch-diameter pipes 8 feet long. Each pipe needs three brackets welded on—one for the backstay cables, one for the sheave for the moving cable, and one for the main cable. The main cable should be 1/2 to 3/4 inch in diameter to keep cable sag to a minimum (Figure 1). Unlike traditional cableways, sag is not necessary for safety reasons for a system that does not place a person in jeopardy. A turnbuckle attached from the steel pipe to the main cable is used to adjust the sag. The backstay cables and the moving cable use 1/4-inch-diameter wire rope. Backstay cable may use a larger cable. The 8-foot pipe is buried 3 feet in the ground and secured with approxi-



mately five bags or more of concrete. The backstay cables are secured with a 1/2-inch U-bolt in a small concrete block of six or

more bags of concrete. The moving cable runs through a 6-inch sheave attached to each post and attaches to the

carrier (Figure 1, insets 2 and 3). The carrier is made of 2-inch by 1/4-inch flat stock. The reel mount is made of 10-gauge steel plate with appropriate holes welded to a 3-inch pipe. The length of the pipe is dependent on whether you prefer to sit or stand. A hole with three or four bags of concrete will hold the reel mount in place.

Existing cableways can be converted to bank-operated systems that will reduce much of the refurbishing cost and eliminate most of the safety concerns. Two brackets made of 2-1/2- by 1/4-inch flat stock with a 5- or 6-inch sheave are attached directly to the cable by means of a U-bolt at each end of the bracket (Figure 2). This eliminates the need for separate post or backstay cables. The sheave bracket has a 9/16-inch hole for a locking pin to keep the carriage at its correct station or lock it in place when not in use. A regular USGS lock is used. A reel-mounting plate similar to that used for our new bank cableways is installed. Obviously, retrofitting an existing cableway with U-bolts will reduce the integrity of the cable. On a cableway intended to support a streamgager, a U-bolt should never be found on the live cable. This, however, is the beauty of the bank-operated cableway; regardless of whether the mass anchor is inadequate or the U-bar is placed in horizontally instead of vertically, or tramway strand is used instead of wire rope, the streamgager is out of harm's way. By placing the reel mount on the bank, the streamgager (with wire cutters,

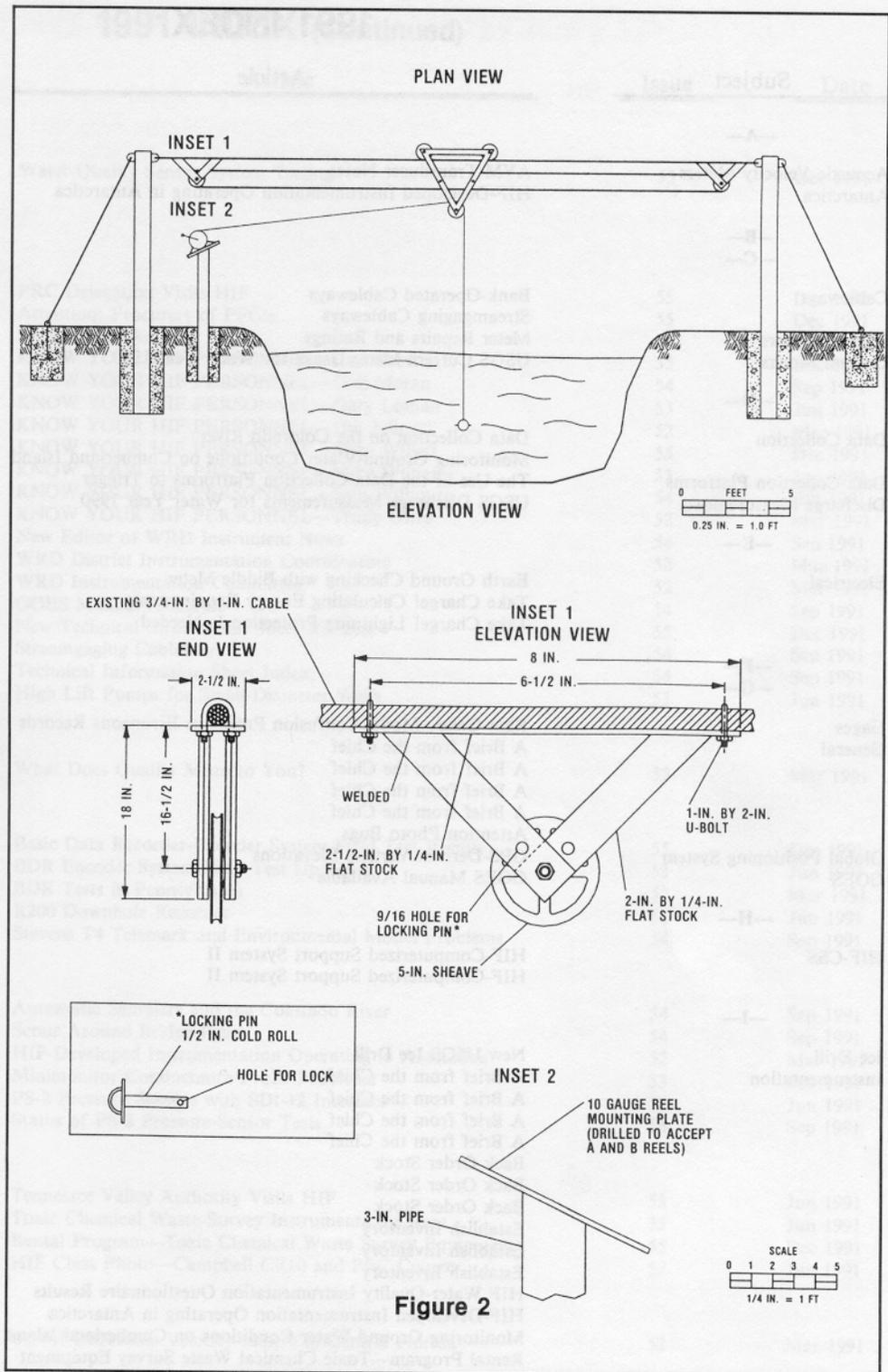


Figure 2

which he should always carry) can limit any losses to only a current meter, a hanger bar, and a weight. That's cheap in comparison to a good technician!

I would like to acknowledge Dave Simpson, Las Vegas Subdistrict Office, whose input and expertise contributed significantly to our bank-operated cableway system.