Use 2 1/2' minimum thickness sign backing material.

Build Pulling Winch with a self locking mechanism. Use winch and cable attachment that complies with SAE Standard J1853 and mount with three 5/8" diameter bolts, washers and lock washers.

Use tempered, high carbon steel gears. Copper braze drive gears and arc weld gears and lock washers. Be milled temper for strength. Ensure that the holes are larger than the diameter of the cable to prevent the cable from being damaged.

Use 0.100 inch minimum thickness sign backing material. Use 2 1/2' minimum thickness sign backing material. Use double galvanized 7 strand steel wire cable not less than 3/16" diameter meeting ASTM A475.

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Use 4" wide x 2" deep x 1/8" thick stainless steel hinges with 4-3/16" dia #10-24 x 1" long slotted countersunk flat head stainless steel stove bolts/machine screws with stainless steel washers to mount sign. Punch holes round for 3/8" bolts.

Use 3/8" thick steel plate conforming to AASHTO M270 Grade 36 and galvanized to meet the specifications of SAE Standard J1853 for pulling winch and pulley attachment hardware. Use 3/8" thick steel plate conforming to AASHTO M270 Grade 36 and galvanized to meet the specifications of SAE Standard J1853 for pulling winch and pulley attachment hardware.

Use 8-30-2018

Roger Weigel, Registration Number PE: 05050, on 8-30-2018 and the original document is stored at the North Dakota Department of Transportation.