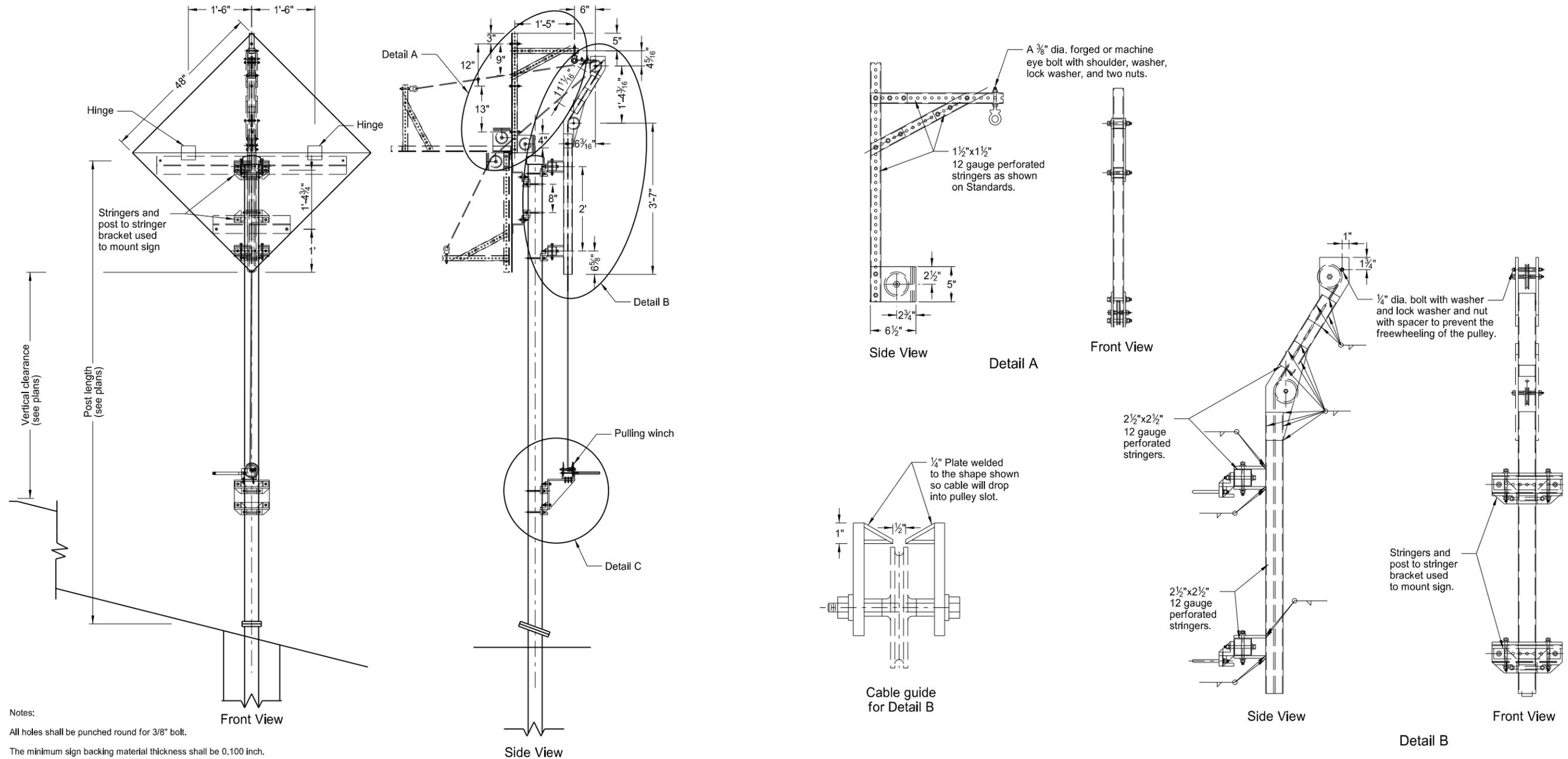


PULLEY WINCH SIGN COVER FOR WARNING SIGNS



Notes:

All holes shall be punched round for 3/8" bolt.

The minimum sign backing material thickness shall be 0.100 inch.

Pulling Winch shall be built for pulling operations with a self locking mechanism. The winch and cable attachment shall comply with SAE Standard J1853 and be mounted using three 3/8" diameter bolts, washers and lock washers.

Gears shall be laminated, high carbon steel. Gears shall be arc welded and drive gears shall be copper brazed. Reel shall be rigid welded construction for added strength. The reel shall be free wheeling when the ratchet is disengaged. Gear ratio shall be matched for easy cranking. Finish shall be zinc plated. Handle shall be heavy duty steel with molded grips. Base shall be embossed reinforced steel. All drive shafts shall have permanently lubricated bearings. A cable clamp shall be included. Pulling winch shall have the large hub for use with the cable operation.

Hinges shall be stainless steel, 4" wide x 2" deep x 1/8" thick with 4-3/16" Dia #10-24 x 5/8" long slotted countersunk flat head stainless steel stove bolts/machine screws with stainless steel locking nuts to attach to the extruded panels. Centerline of the hinge pin shall be placed with offset letters so the sign will hang down vertically.

Attachment hardware for the pulling winch and pulleys shall be 3/8" thick steel plate conforming to AASHTO M270 Grade 36 and galvanized in conformance with ASTM A153. Pulleys shall be approximately 3" in diameter plus a 5/16" diameter for the cable ride. Pulleys shall have spacers between the hub and the attachment brackets so they will ride in the center of the brackets without moving back and forth. Bolts, nuts and washers shall be fabricated of steel meeting ASTM A307 and galvanized in conformance with ASTM A153.

Cable shall be a double galvanized 7 strand steel wire cable not less than 3/16" in diameter meeting ASTM A475.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
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This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 02/26/14 and the original document is stored at the North Dakota Department of Transportation