

NATURAL RESOURCES CONSERVATION SERVICE
GENERAL SPECIFICATION ROCK-JACK AND FIGURE-4 FENCE

FENCE

(Feet)

CODE 382

Standard Drawings can be found here: <http://www.mt.nrcs.usda.gov/technical/eng/drawings.html>

GENERAL REQUIREMENTS

SCOPE

The work shall consist of furnishing materials and installing materials for the specified design at the location(s) shown on the plan map, drawings, or as staked in the field.

Fencing includes brace assemblies, gates, cattle guards, and other components required for meeting site conditions and achieving the objectives of the practice application.

It shall be the responsibility of the owner to obtain all necessary permits and/or rights, and to comply with all regulations and laws pertaining to this installation.

Boundary fences shall comply with state laws and standards for construction. NRCS will not survey property boundaries.

On Federal, State, or Tribal lands, the landowner / leasee must have clearances and approvals or permits from the responsible permitting agency prior to any construction.

For federally funded practices the area of potential effect for each undertaking must be investigated for cultural resources under section 106 of the National Historical Preservation Act of 1966, as amended, before soil disturbance occurs.

For federally funded practices, NRCS must determine if installation of this practice will affect any federal, tribal, or state listed threatened or endangered species or their habitat prior to application or construction. If

this action may affect a listed species or result in modification of critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatment(s) that avoid adverse effects. Further assistance will be provided only if the land user selects one of the alternative conservation treatments for installation; or at the request of the land owner, NRCS may initiate consultation with the U.S. Fish and Wildlife Service. Any special requirements for endangered species are shown under Special Requirements.

For federally funded practices, if during installation any cultural resources, historical resources, threatened or endangered species are found, the landowner / leasee agrees to stop all work and immediately notify NRCS.

NRCS assumes no responsibility for interference with private or public utilities or facilities.

Installation shall be in accordance with these specifications and special requirements. For federally funded practices, no changes are to be made in the specifications, design, or drawings without prior approval of NRCS.

Installation shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The owner, operator, contractor or other persons will conduct all work and operations in accordance with proper safety codes with due regards to the safety of all persons and property.

The completed job shall be workmanlike and

Specification MT-382(Rock-Jack and Figure-4 Fence)-2

present a good appearance. The job site shall have a neat appearance after completion.

Waste materials shall be burned, buried, or removed from the site as required by local laws and regulations.

Chemicals pollutants such as oil, transmission fluid, lubricant, and grease spills shall be cleaned up, disposed of, and removed from the site in accordance to Federal, State, Tribal and Local governmental regulations. The contractor shall be responsible for preventing his operation from contamination open and ground water sources.

TYPE OF FENCES

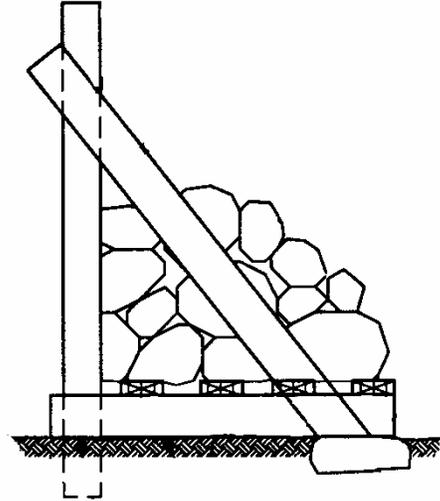
Rock-jack and Figure-4 Fence

Rock-jack and Figure-4 fences are highly functional and usually have minimal maintenance requirements. These fences are particularly useful in areas where it is difficult to set regular posts, such as swampy or rocky areas. Rock-jacks provide the primary fence support in lieu of brace and end post assemblies. An alternative system of wire supports, in the configuration of the number 4, is used in lieu of line posts to provide wire support. Figure-4's, steel posts, and fence stays can be used in combination to suit site conditions.

Rock-jack and Figure-4 fences should be considered for use in areas where raw materials are available onsite and when construction and maintenance costs will be less than fences with set posts.

ROCK-JACK AND FIGURE-4 FENCE

MATERIALS SPECIFICATIONS



Rock-jacks are constructed from either dimension lumber, round posts or split poles.

CONSTRUCTION: ROCK-JACK AND FIGURE-4 FENCE

See Montana Standard Drawing MT-SD-382.110.

ROCK-JACKS

For rock-jacks used as line posts in a fence line:

Rock Jack Components	Dimensions	Lengths
Anchor Post	4 inch x 4 inch dimensional lumber or 6 inch diameter post	5 1/2 feet
Diagonal Braces (legs)	2" x 6" dimensional lumber, or	5 feet 8 inches
Base Supports	3" x 6" round posts or 3" x 6" split poles	4 feet
Flooring	2" x 6" dimensional lumber	4 feet, 3.5 feet, 3 feet, & 2.5 feet

Specification MT-382(Rock-Jack and Figure-4 Fence)-3

For rock-jacks that are used at fence corners, gates, pull post locations, or other locations where extra support is needed:

Rock Jack Components	Dimension	Length
Anchor Post	6 inch x 6 inch dimensional lumber or 6 inch diameter post	5 1/2 feet, may be longer depending on gate design
Diagonal Braces (legs)	2" x 6" dimensional lumber, or 3" x 6" round posts or 3" x 6" split poles	8 feet
Base Supports		5 feet 8 inches
Flooring	2" x 6" dimensional lumber	5.5 feet, 5 feet, 4.5 feet, 4 feet, 3.5 feet, 3 feet & 2.5 feet

The anchor post is set in the ground to a one-foot depth. If soil conditions prevent setting anchor post, rock cribs can be used. The anchor post has sufficient length that at least 4-1/2 feet of post rises above the ground level when set.

All joints shall be notched for a snug fit and to allow one-half of each nail length to be driven into or through each piece. Two 40d or 50d galvanized nails are used to attach the diagonal braces (legs) to the anchor posts. All other nails at joints will have a minimum of 2 1/2 inches of nail penetration into the receiving piece.

Floor joists may overlap and can be attached on the same side of the anchor post as the diagonal braces. The end of the floor support joists shall rest solidly on rocks situated to provide additional frame support.

At gates or fence ends, the diagonal braces are set perpendicular to each other with one brace parallel to fence line. At corners, the

diagonal braces are set parallel to each fence line.

Corners wider than 90 degrees may need additional braces and support joists.

The outer end of each diagonal brace shall be placed in a shallow hole dug in the ground to help prevent brace movement.

The floor of the rock-jack shall be constructed of 2-inch x 6-inch boards. Do not nail the platform down. Once the rock-jack frame is constructed and the floorboards are in place, rocks are placed on the rock-jack floor. Large rock weights will be placed at each joint with lesser weight rock distributed evenly over the rock platform. Weight of rock on the platform is 300 to 500 pounds. Line wires are stapled to the anchor post of the line rock-jack. Rock-jacks used for gate, corner, or pull post locations will have the wire wrapped around the anchor post.

FIGURE-4'S

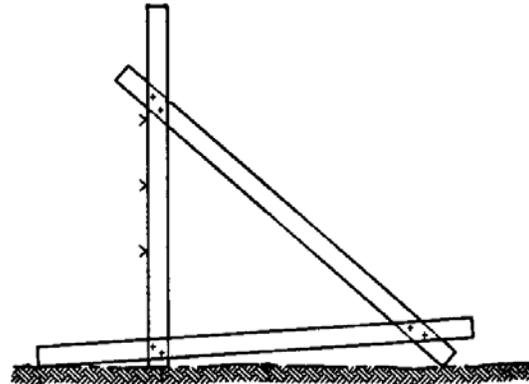


Figure 4 fence supports are constructed from either dimension lumber, round, or split poles. Figure-4 supports are composed of 3 frame members: vertical post, diagonal brace, and ground leg.

The upright post shall be at least four feet in length. The diagonal brace and ground leg of the support frame shall each be 5-1/2 feet long. A recommended construction design employs 2-inch x 6-inch boards for each member of the figure-4 support. The bottom end of the vertical post rests on the ground

Specification MT-382(Rock-Jack and Figure-4 Fence)-4

surface. Fasten the diagonal brace to the vertical post at a point approximately 8-inches below the top of the post. Extend the diagonal brace several inches past the vertical post. The end of the diagonal brace pointed away from the fence line rests on the ground surface. The fence line end of the ground leg is attached to the bottom of the vertical post so that about 1-1/2 feet extends past the post. The distance from the end of the ground leg pointed away from the fence, to the midpoint of the post, will then be about four feet. Fasten the ground leg to the vertical post above the ground surface and below the bottom line wire. The outer end of the ground leg is attached to the diagonal brace at a point 10 to 12 inches above the groundline. Two 40d nails are driven into or through figure-4 frame members at each joint. Line wire strands are stapled to the upright post member of the figure-4 support frame.

In wet or swampy areas, a pair of 3 to 4-inch diameter poles can replace the single ground leg frame member of the figure-4 described above. These poles are attached to the bottom of either side of the post and diagonal brace to act as floaters and keep the post from sinking into the wet ground.

ROCK-JACK, FIGURE-4, AND LINE POST SPACING

Rock-jacks are placed at all abrupt breaks in topography and definite changes in alignment to the fence line.

Snow conditions and type of intermediate supports	In-line rock-jacks (line-jacks) spacing
Level (rocky or swampy) sites with light snowfall	100-foot intervals and figure-4's set every 25 feet with a stay (wood, wire, fiberglass) placed midway between each figure-4
moderately steep topography and/or areas of moderate snowfall	75-foot intervals with stays (wood or fiberglass) spaced at 12-and-one-half-foot intervals between rock-jacks.
steep, rocky slopes, or sites with heavy snow loads	50-foot intervals and Figure-4's are set 25 feet from each rock-jack with a wooden stay placed midway between a figure-4
On sites where steel posts can be driven	160-foot intervals and steel posts are set at 20-foot intervals between rock-jacks. A stay is placed mid-way (10 feet) between steel posts

INSTALLATION

Installation of the fence shall conform to the specifications and Exhibits or other drawings, as provided. Minimum life expectancy is 20 years.

The completed job shall be workmanlike and present a good appearance. The installer and other persons will conduct all work in accordance with proper safety procedures.