

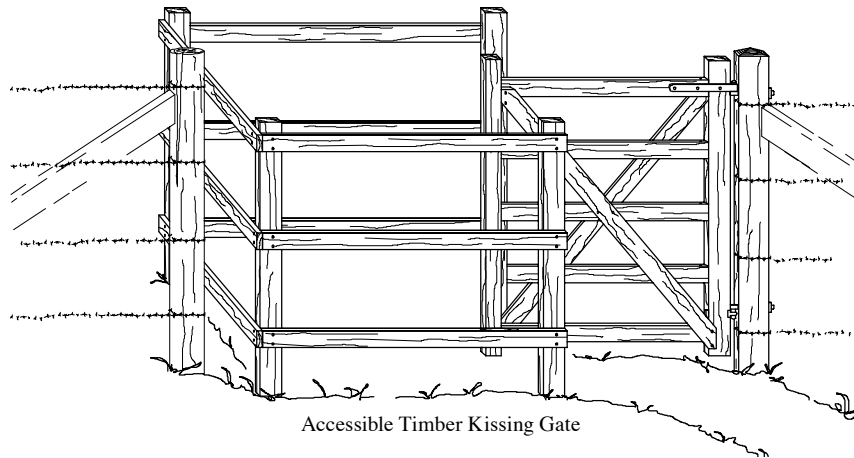


## Accessible Gates for Trails and Roads

James "Scott" Groenier, Project Leader

The Missoula Technology and Development Center (MTDC) has reviewed available gate designs from around the world that allow wheelchair access, but restrict all-terrain vehicles (ATVs), motorcycles, and mountain bikes. We also searched for an existing gate or gate design that would allow access by wheelchairs and horses, but keep out ATVs and motorcycles.

When the Forest Service installs a gate, berm, or other type of device to restrict motor vehicles on a road or trail, but encourages foot travel beyond the restriction, a passage 32 inches wide must be provided for someone using a wheelchair (Section 504 of the Rehabilitation Act of 1973).



Accessible Timber Kissing Gate

### Highlights...

- When foot travel is encouraged past a gate blocking motorized access, the Forest Service must provide a 32-inch-wide passage for persons using wheelchairs.
- This tech tip includes drawings of gate designs that will block all-terrain vehicles and motorcycles, but will allow wheelchairs and, in some cases, horses to pass.

### Wheelchair Accessible Gates

Web sites with designs that allow wheelchair access while restricting access by ATVs and motorcycles are listed near the end of this tech tip. The best Web site was that of Scottish Natural Heritage, an organization in the United Kingdom (UK). They have a series of drawings for gate designs that meet accessibility requirements in the UK.

The Scottish Natural Heritage gates are smaller than those required for accessibility in the United States. We increased the opening dimensions to meet Federal requirements in the United States. The timber kissing gate (figure 1) and the chicane (figure 2) have been modified to meet the Federal requirements. In addition, a modified kissing gate design was developed to be used for existing fence openings (figure 3).



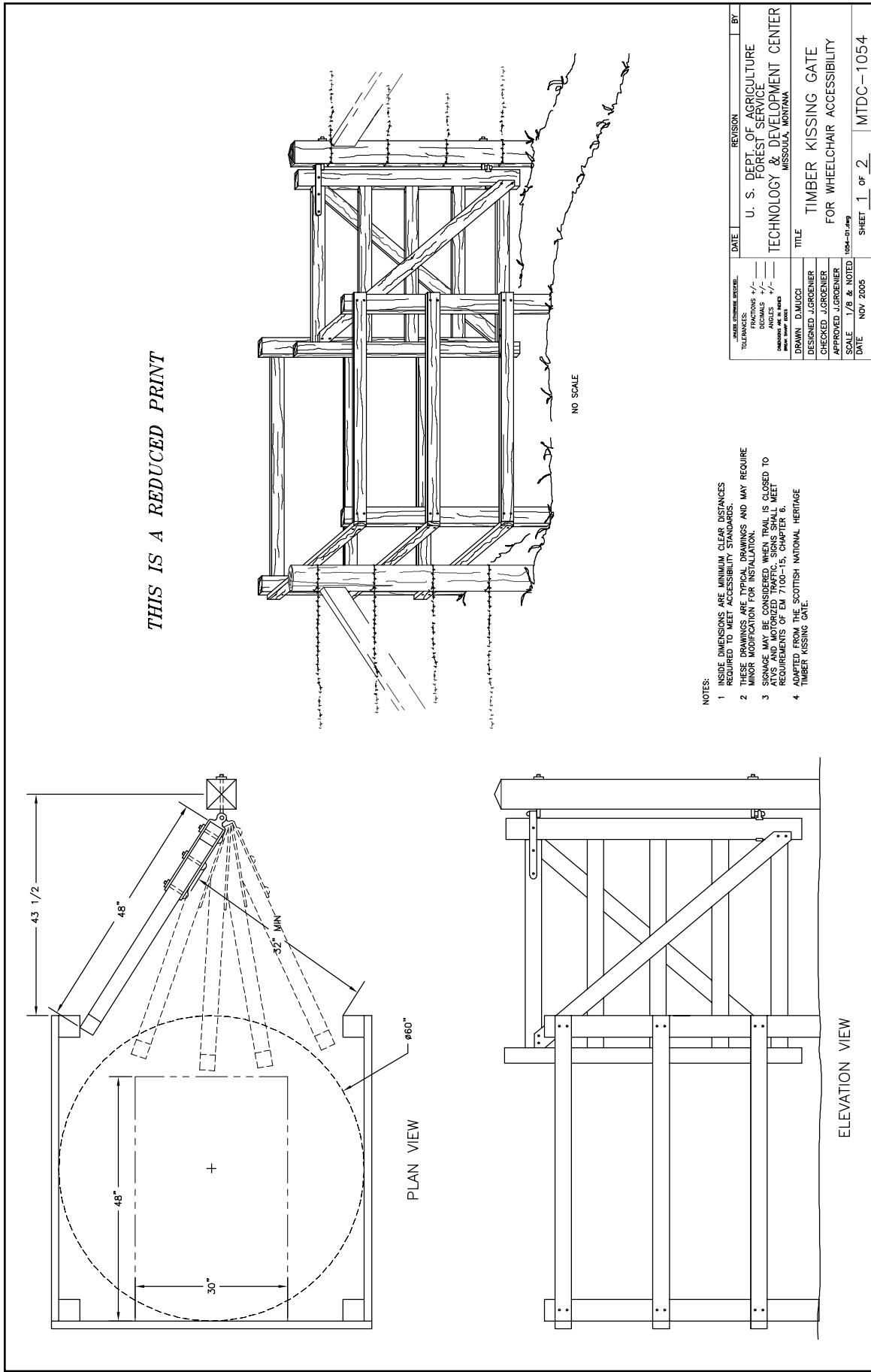
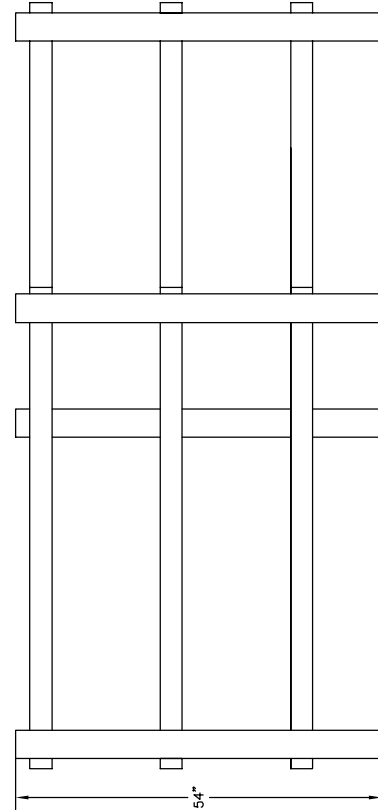
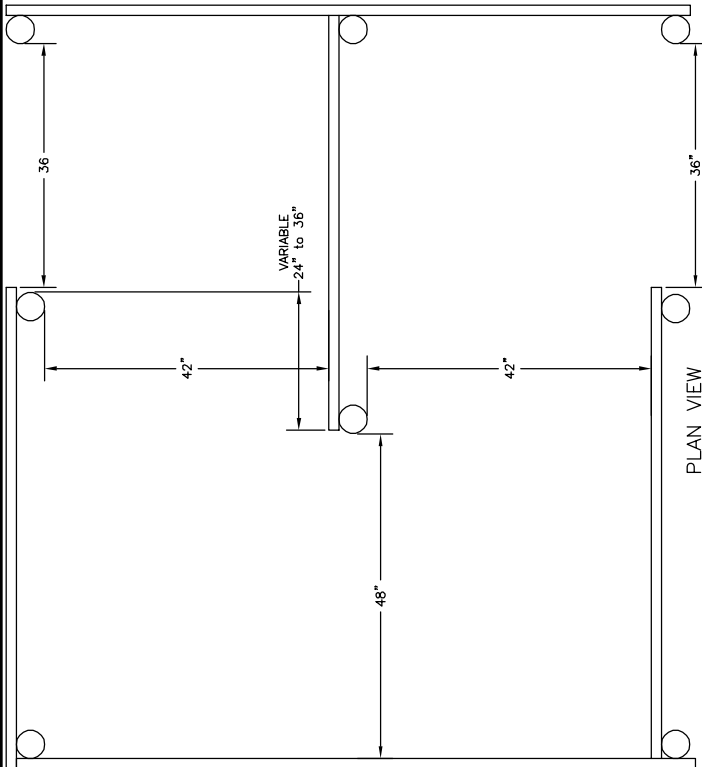
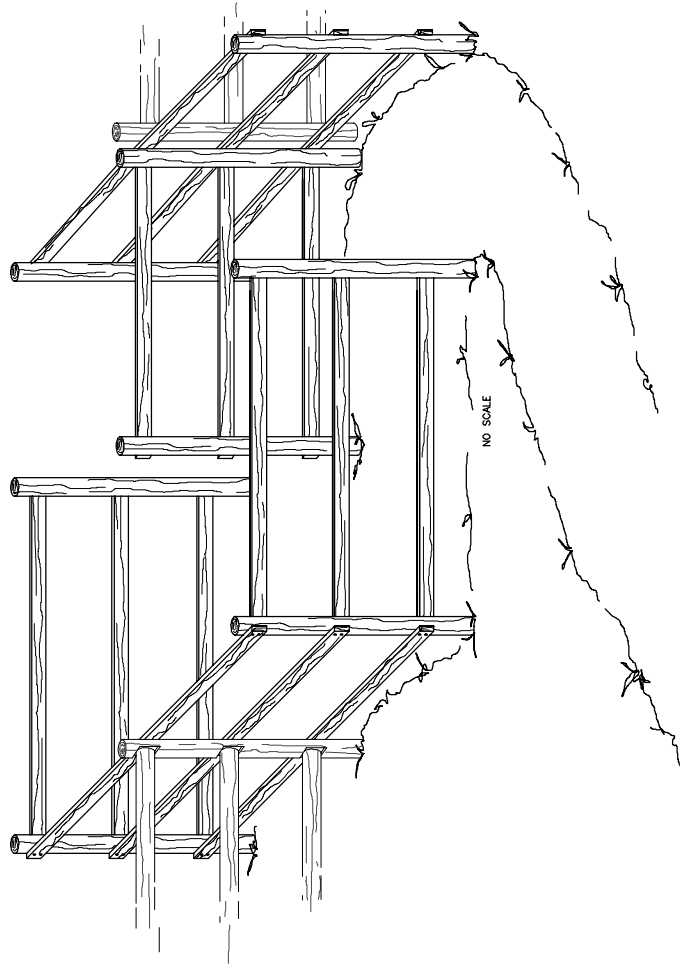


Figure 1—Accessible timber kissing gate drawing (MTDC-1054-01) as modified from a Scottish Natural Heritage design.

THIS IS A REDUCED PRINT



NOTES:

- 1 INSIDE DIMENSIONS ARE MINIMUM CLEAR DISTANCES REQUIRED TO MEET ACCESSIBILITY STANDARDS.
- 2 THESE DRAWINGS ARE TYPICAL DRAWINGS AND MAY REQUIRE MINOR MODIFICATION FOR INSTALLATION.
- 3 SIGNAGE MAY BE CONSIDERED WHEN TRAIL IS CLOSED TO ATVs AND MOTORIZED TRAFFIC. SIGNS SHALL MEET REQUIREMENTS OF EM 7100-15, CHAPTER 6.
- 4 ADAPTED FROM THE SCOTTISH NATIONAL HERITAGE TRILBER WISSING GAIL.

U.S. DEPT. OF AGRICULTURE FOREST SERVICE TECHNOLOGY & DEVELOPMENT CENTER MISSOULA, MONTANA	DATE	REVISION	BY
DESIGNED J. GROENIER			
CHECKED J. GROENIER			
APPROVED J. GROENIER			
SCALE 1/8" & NOTED			
DATE NOV 2005			

TOLERANCES DIMENSIONS +/- ANGLES +/- HOLE DIA. +/- HOLE DIA. +/-	DATE	REVISION	BY
DRAWN D. MURCO			
TITLE			
FOR WHEELCHAIR ACCESSIBILITY			
1005-01.dwg			
SHEET 1 of 1			
MTDC-1055			

Figure 2—Accessible chicane drawing (MTDC-1055) as modified from a Scottish Natural Heritage design.

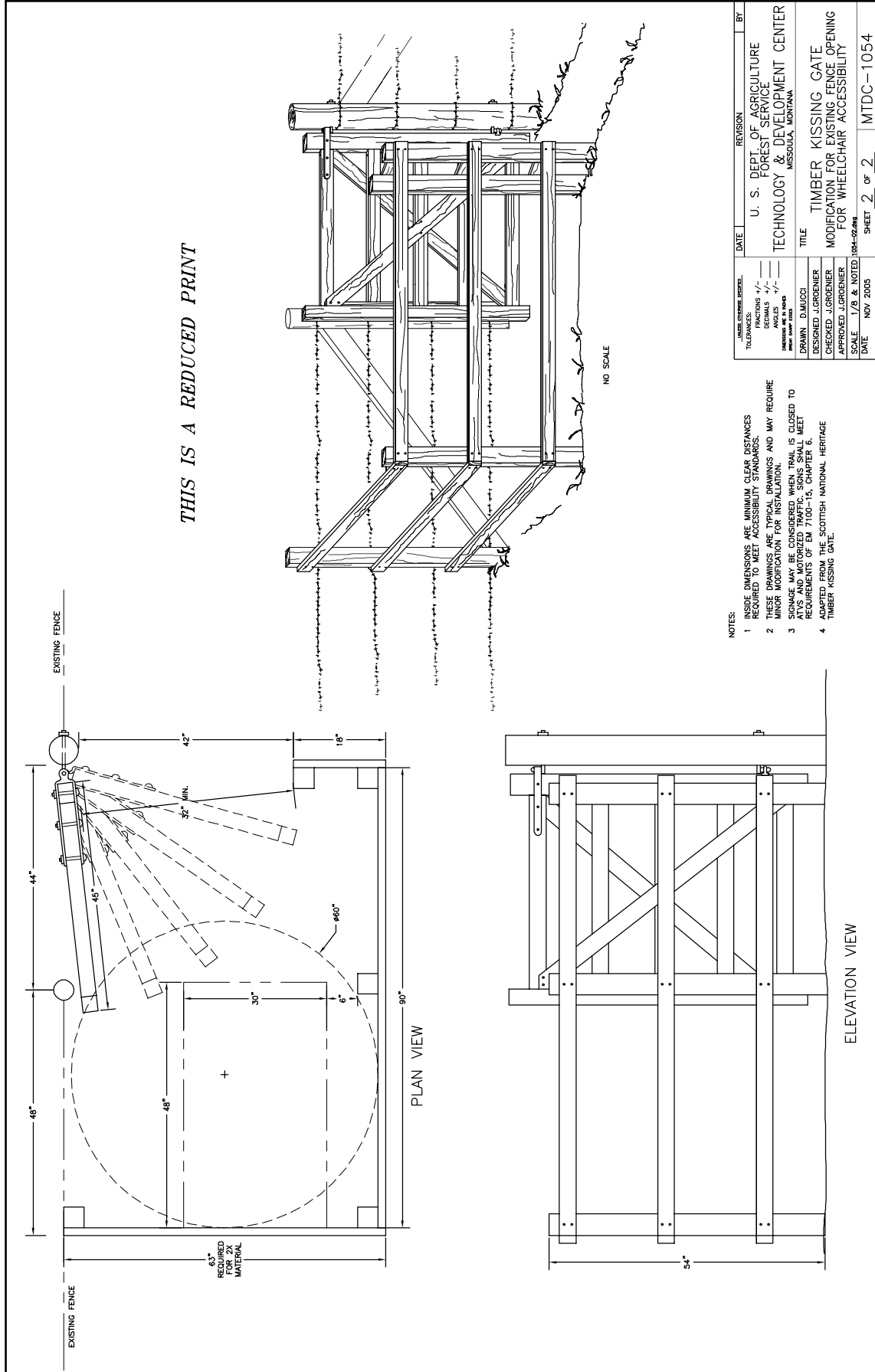


Figure 3— Accessible modified timber kissing gate drawing (MTDC-1054-02) for installation into existing gate openings.

## Horse Accessible Gates

Another concern was finding a way to allow horse and pedestrian access, while restricting ATVs and motorcycles. Two types of structures that will allow horse access, but restrict ATVs, are the “V” gates used at the Ashley National

Forest (figures 4 and 5) and at the Lolo National Forest (figure 6). The bottom log should be removed from the gate shown in figure 6 because the log could be a tripping hazard and it prevents wheelchair access. A horse stile restricts



Figure 4—A horse walking through a “V” gate in Utah. This gate is not accessible because it is narrower than the minimum width required for passage of a wheelchair (32 inches) and the bar across the opening is higher than 1 inch.

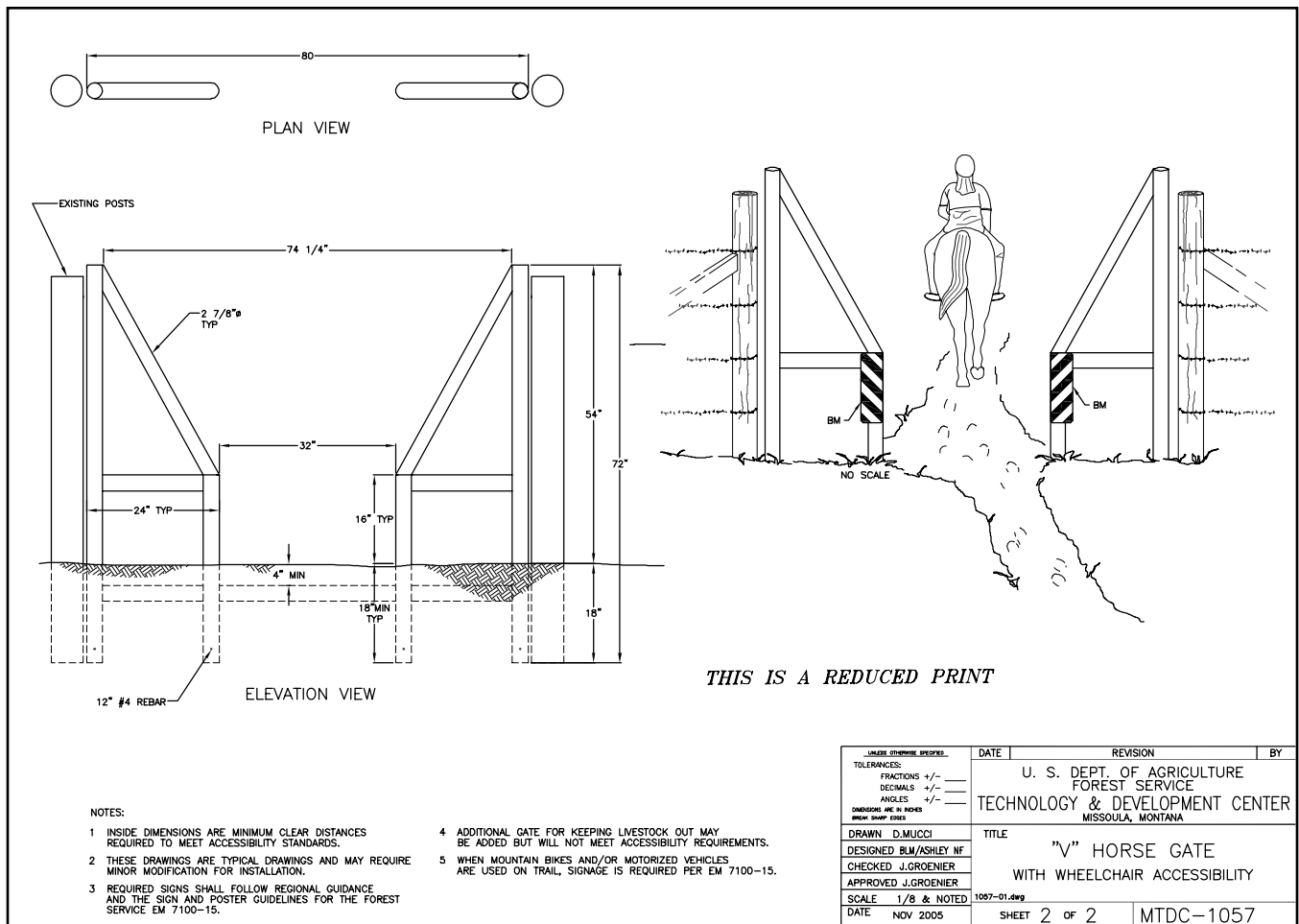


Figure 5—Accessible “V” gate drawing (MTDC-1057-02).



Figure 6—A gate in the Lolo National Forest that allows horses to pass, but restricts ATVs. This gate is not accessible because it is narrower than the minimum width required for passage of a wheelchair (32 inches) and the bar across the opening is higher than 1 inch.

ATVs and motorcycles and discourages mountain bikes, while allowing passage by horses (figure 7).



Figure 7—A horse stile. This gate is not accessible because the bars across the opening are higher than 1 inch.

## Combination Wheelchair/Horse Accessible Gates

The greatest challenge was to find a gate that allowed horses and wheelchairs to pass, but restricted all motorized traffic. The “V” gate design (see figure 5) allows wheelchairs and horses, but only restricts ATVs—not motorcycles. We combined the kissing gate (see figure 1) with the horse stile to design the horse gate with wheelchair accessibility (figure 8). Wheelchairs are able to go into the center of the gate, turn around and go out the other side. Horses can walk over the two stiles. The gate dimensions work well together because the required turning diameter for a wheelchair is 60 inches. This corresponds to the minimum required spacing of the stiles for horses to step over them in stride. The stile should be no higher than 12 inches because horses may choose to jump over stiles that are higher.

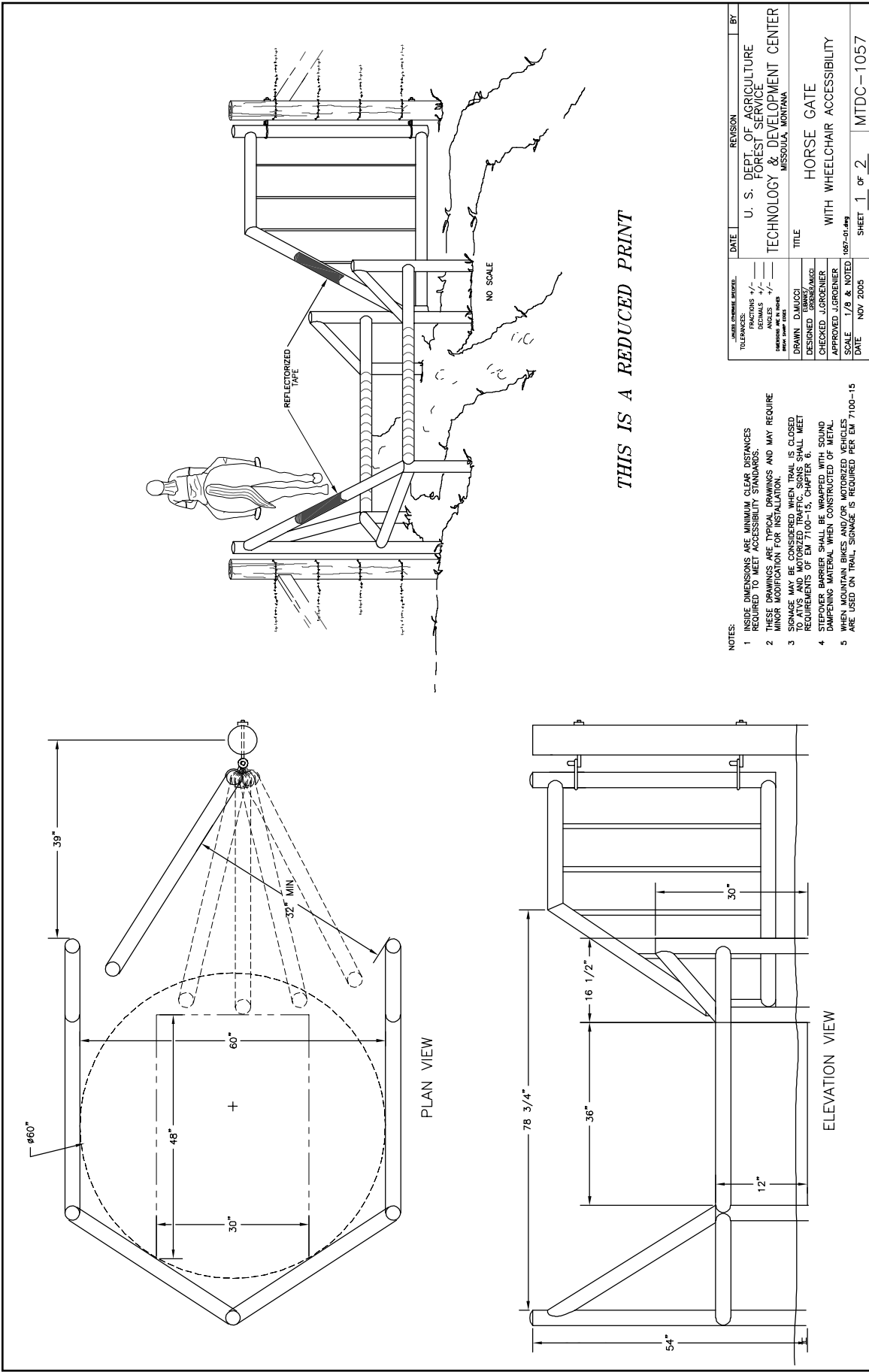


Figure 8—MTDC accessible horse gate drawing (MTDC-1057-01).





*THIS IS A REDUCED PRINT*

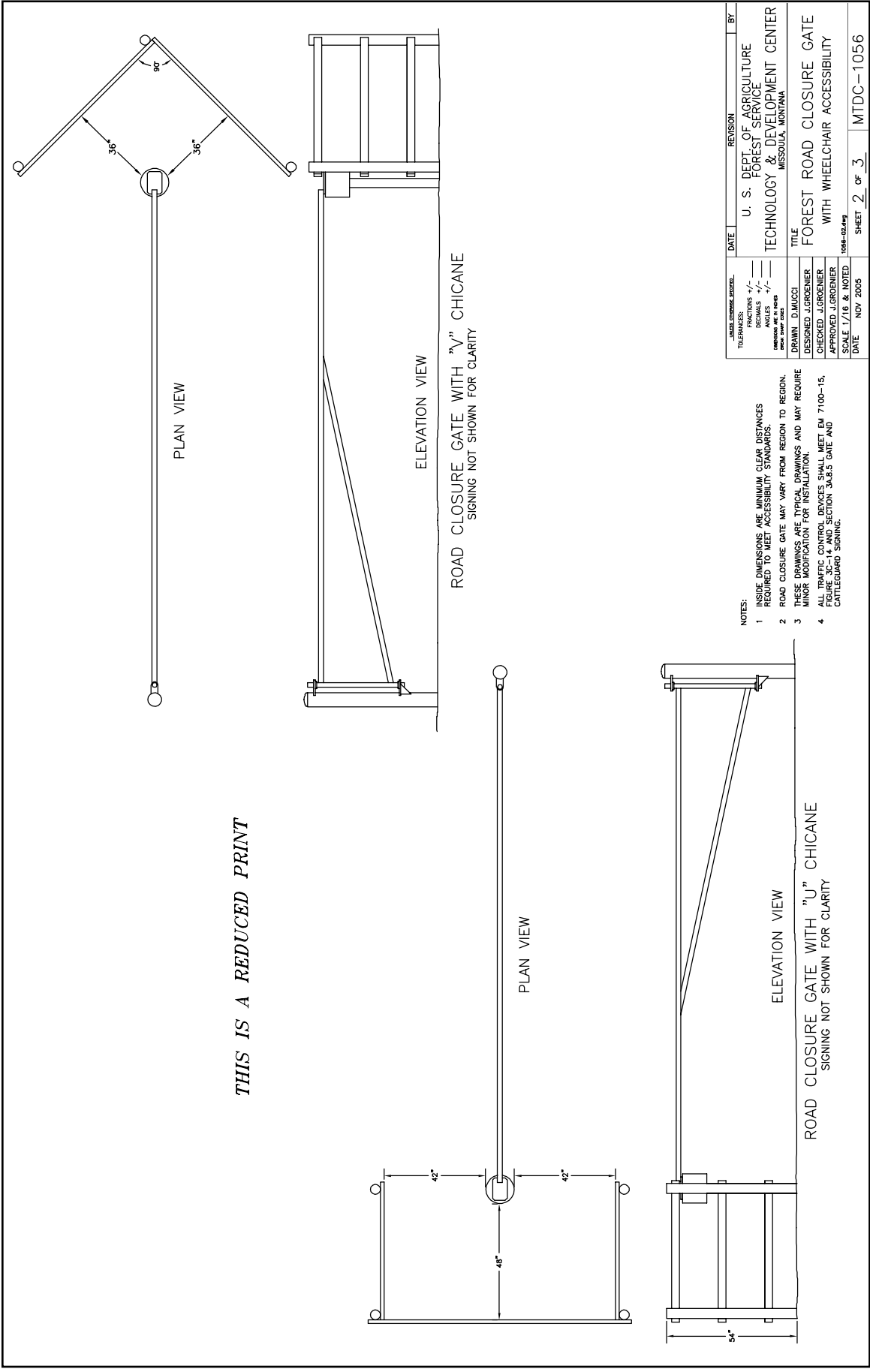


Figure 10—Accessible road closure gate drawing (MTDC-1056-02) with “V” and “U” chicanes (hidden entries) that allow accessibility.



## Signs

Mountain bikes, motorcycles, and small ATVs may be able to maneuver around obstacles and gates. In these cases, signs should be considered for additional travel management. All signs (including object markers) must meet the requirements of the Sign and Poster Guidelines for the Forest Service (EM 7100–15), chapter 6. Additionally, signs are required when mountain bikes or motorized vehicles are allowed on Forest Service trails.

## Summary

This project developed drawings for gates that meet the accessibility requirements for wheelchairs, horses, or both, but restrict motorized vehicle access. The new gates can help the Forest Service fulfill its policy of universal design, providing access to public lands for all people.

## Web Sites for Gate Designs and Suppliers in the United Kingdom

**Scottish Natural Heritage** <http://www.snh.org.uk/publications/online/accessguide/gates.asp>

**BTCV (British Trust for Conservation Volunteers)** <http://handbooks.btcv.org.uk/handbooks/content/section/3320>

**Bushey and District Footpaths Association (BADFA)** <http://www.badfa.org.uk/gates&stiles/GATES.htm>

**Centrewire Ltd.** <http://www.centrewire.com/installed.htm>

**Jackson's Fine Fencing** [http://www.jacksons-fencing.co.uk/pages/products/timber\\_prod\\_range.aspx?tc1=BD](http://www.jacksons-fencing.co.uk/pages/products/timber_prod_range.aspx?tc1=BD)

## Other Accessibility Web Sites

**American Trails** <http://www.americantrails.org/resources/accessible/>

**National Center on Accessibility** <http://ncaonline.org/trails/>

**USDA Forest Service—Accessibility** <http://www.fs.fed.us/recreation/programs/accessibility/>

## Other Related Projects

Beneficial Designs, Inc., is working on a project called *Designing an Accessible Vehicle Barrier for Trails*.

Beneficial Designs, Inc.

2240 Meridian Blvd., Suite C

Minden, NV 89423-8628

Phone: 775-783-8822

Fax: 775-783-8823

Web site: <http://beneficialdesigns.com/169/>

## Acknowledgments

For information and assistance, the author would like to thank Ellen Eubanks, San Dimas Technology and Development Center; Gina Reese, Ashley National Forest; Donna Sheehy, Northern Region; and Janet Zeller, Washington Office.

Thanks to MTDC's publication and photography staffs, especially Sunni Bradshaw, for technical support and to Deb Mucci for design drawings.

The drawings in this tech tip are available on the Internet at: <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm06232340/drawings/> (Username: t-d, Password: t-d)

These drawings can be viewed by Forest Service and Bureau of Land Management employees on their internal computer network at: <http://fsweb.wo.fs.fed.us/eng/facilities/accrec/gates/>

## About the Author

**James “Scott” Groenier**, professional engineer, began working for MTDC as a project leader in 2003. Scott earned a bachelor’s degree in civil and environmental engineering from the University of Wisconsin at Madison and a master’s degree in civil engineering from Montana State University. He worked for the Wisconsin and Illinois State Departments of Transportation and with an engineering consulting firm before joining the Forest Service in 1992. He worked as the east zone structural engineer for the Eastern Region and as a civil engineer for the Ashley and Tongass National Forests before coming to MTDC.

## Library Card

Groenier, James “Scott.” 2006. Accessible gates for trails and roads. Tech Tip 0623–2340–MTDC. Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula Technology and Development Center. 12 p.

This tech tip includes drawings for gates that can be used to close roads and trails to motorized vehicle access while still allowing access by wheelchairs and, in some cases, horses.

When the Forest Service installs a gate, berm, or other type of restriction to block motorized vehicle access but encourages foot access, a passage 32 inches wide must be provided so a person using a wheelchair can get through (Section 504 of the Rehabilitation Act of 1973).

Keywords: accessibility, all-terrain vehicles, ATVs, chicanes, horses, kissing gates, motorcycles, wheelchairs

---

**Electronic copies of MTDC’s documents are available on the Internet at:** <http://www.fs.fed.us/eng/t-d.php>.

**For further information about accessible gates, contact Scott Groenier at MTDC.**

Phone: 406–329–4719

Fax: 406–329–3719

E-mail: [jgroenier@fs.fed.us](mailto:jgroenier@fs.fed.us)

**Forest Service and Bureau of Land Management employees can search a more complete collection of MTDC’s documents, videos, and CDs on their internal computer network at:** <http://fsweb.mtdc.wo.fs.fed.us/search/>.



The Forest Service, United States Department of Agriculture (USDA), has developed this information for the guidance of its employees, its contractors, and its cooperating Federal and State agencies, and is not responsible for the interpretation or use of this information by anyone except its own employees. The use of trade, firm, or corporation names in this document is for the information and convenience of the reader, and does not constitute an endorsement by the Department of any product or service to the exclusion of others that may be suitable.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable,

sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.