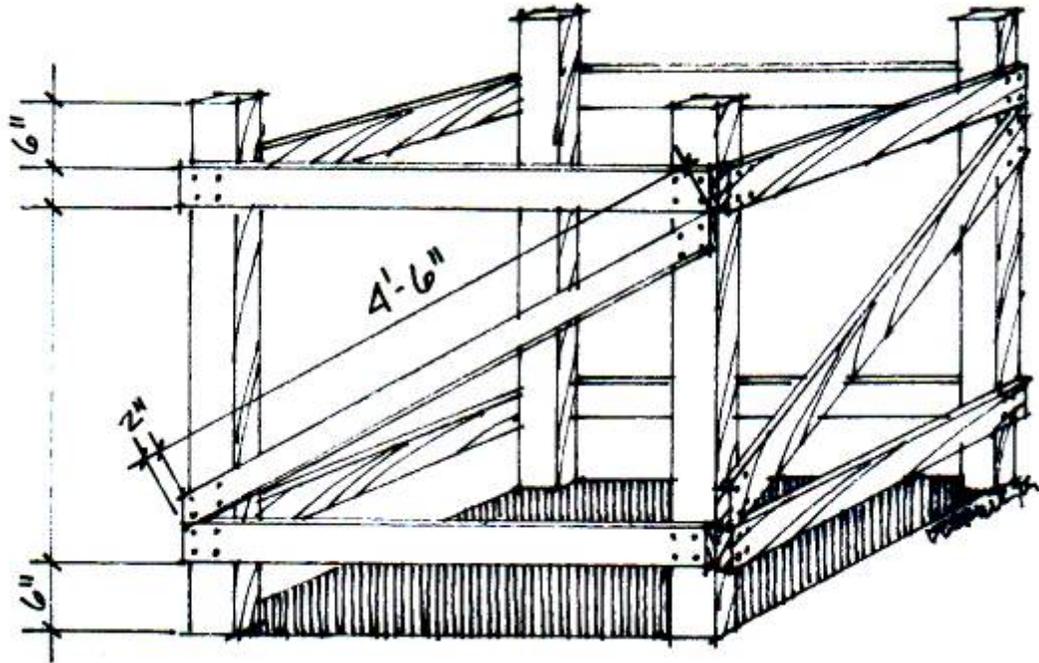


How to build your own INSTRUMENT QUAD



This one cost only \$60. It is made from five 2x4s, and two 4x4s, 40 spiral nails, and some paint. These instrument quadrupeds are easy-to-assemble, weather resistant, and make a nice visible addition to any outdoor geotechnical instrumentation program.

PART I **The Basic construction**

HERE is the solution for protecting your geotechnical instruments from damage... the veritable instrument quadruped – day and night, a four-footed friend for the instrumentation specialist who wants dependability, simplicity, and an attractive corral that says, “Keep away from this sensitive instrument” with unequalled style. Under average conditions your “quad” will last for a decade, and

should it be damaged, it is easy to repair with hammer and nails. Anyone can build these quads with parts so ingeniously selected that the assembling can be done with a saw, a hammer, and a paint roller for a few dollars at

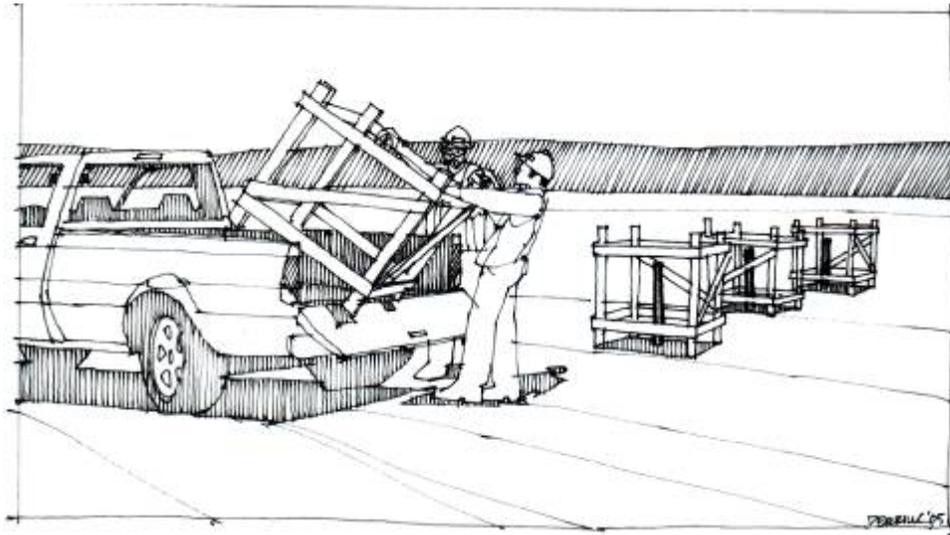
**By GORD McKENNA and
DERRILL SHUTTLEWORTH**

your local carpentry shop or out in the back forty. They are easy for one person to haul around, won't blow over in a strong wind, will help keep your instruments from being run over by mobile equipment, and make finding these instruments in the bush much easier.

Begin construction by cutting two-by-four and two four-by-four pieces of lumber in half (four footers) and two diagonal braces. Next apply a coat of paint to any surfaces desired. Using 3 ¼ in. galvanized Ardox / spiral nails, hammer the quad together. If you have the space, you can set up an assembly line, constructing a dozen or more quads at once! A nail gun and mitre saw can be used to speed up production and cut labour costs.

PART II **Options can be added easily**

The rest of the job consists of finishing touches.



- ☞ **Paint:** Painting is an inexpensive option that you will probably want to use. You might use bright colours for visibility, or corporate colours for branding.
- ☞ **Flasher:** Use duct tape to add one or two flashers for additional visibility in the night time or in inclement weather.
- ☞ **Flag:** A bicycle flag or buggy whip adds to the visibility of the quad. Use two high-visibility flags for high-traffic areas.
- ☞ **Instrument number placard:** Attach a placard with the instrument number for positive permanent identification.
- ☞ **Contact information:** A sticker or placard attached to the quad will provide your name and phone number for inquisitive onlookers.
- ☞ **Field table:** A piece of plywood or a wooden plank can be cut to turn the quad into a field table – a place to set your notebook or readout instrument. Half-inch dia. holes cut into a piece of wood can be used to thread instrumentation cables through for ease of reading.

PART III Use and maintenance

When you complete construction, you will find these quads have a multitude of uses, far superior to most other forms of marking and identification.

Your quad can be stored in a warehouse or outside in the field. Two quads can be transported in a ½ ton pickup out to the drill-site. When instrumentation is complete, just carry (or even roll) the quad to the right location, add your options, and you are ready. Instrumentation cables can be draped over each corner to keep them out of the mud. Or you can screw your data-logger box right to the quad – it is sturdy enough to hold the biggest logger with ease.

As the wood dries with time, it actually becomes stronger. If your quad should become damaged, a few good hits with a hammer or perhaps a few new nails will make it as good as new, ready again for 7-day-a-week use.

Time to read the instrument: you drive your pick-up truck right up to the quad, pull any wires through your truck window, and you can read the instrument from the safety of your cab. If it's a slope inclinometer you are reading, just nudge the quad aside, read the instrument, then reposition your quad over the instrument again, and you're off to the next instrument and its high-visibility instrument quad.

Gord McKenna
Senior Geotechnical Engineer
Norwest Corporation
Vancouver, BC Canada, Phone 640-602-8992

Derrill Shuttleworth
Studio Two
Edmonton, AB, Canada. Phone 780-466-4081

Based on designs perfected by Syncrude Canada Ltd,
Fort McMurray, Alberta, Canada.

