

Dear Road Wizard: Work at the Five Mile Road connection to Chinden Boulevard seems incomplete. When will the pit along Chinden's southeast corner be filled? J.F.©

You mean the "borrow pit?" That's an indigenous term, in this case meaning "drainage ditch."

Were you to watch from a helicopter during a rain, you'd see water flow across the intersection towards a rough asphalt channel on the southeast side, down a grate and into a buried pipe about 25 feet long. From there, water continues downhill to a creek and the Boise River.

It doesn't look very polished, but it will do until ITD expands this section of Chinden to five lanes and installs a more permanent drainage course.

Dear Road Wizard: I recently made a round trip to Seattle, driving on I-82 and I-90, and noticed patterned indentations on concrete surfaces. Any idea what they were? J.R.©

You do challenge my right to be called a "wizard!" I haven't been to Seattle lately, but, undaunted by a low travel budget, I offer three ideas.

If the "pattern" was of closely spaced lines parallel to the road edge, it was etched by a grinding machine. The purpose was to remove high spots and give you a smoother ride. Concrete does rut, so this is not unusual. You'll see such marks around Ada County on concrete and asphalt surfaces.

If the pattern was transverse -- crossing the road from left to right -- it was "tining." These parallel grooves are 3/8th inch deep. They create surface friction (for your tires) on a concrete finish that would otherwise be too slick. The grooves also help water drain to the edge of the road.

If you saw transverse grooves (rumble strips) outside the fog line, those are intended to make noise, roughen your ride, and wake you up if you go micro-sleepy in Seattle and your car wanders leaderless over the line.

Over time, tining marks disappear as the road wears down. The concrete work at Fairview Avenue and Milwaukee Street is still fresh, however, and the tining obvious. Go sightseeing! Fairview at Curtis Road has them, too.

Dear Road Wizard: What policy governs the number of signal lights ACHD puts at intersections? Some places have way too many lights! How much do they cost? R.V.©

The "policy" comes from the *Manual on Uniform Traffic Control Devices* (MUTCD), a national guide that ACHD follows with occasional adaptations. Considerable research into driver behavior and safety goes into this guide. When accidents and lawsuits force local authorities to defend their signal arrangements, they are better off with the MUTCD on their side.

The MUTCD requires two signal heads for the major movement at each approach, even if that major move uses only one lane. One is backup in case of burnout. Sometimes the major movement is a turn movement, as at the north leg of Glenwood/Goddard streets. (In its peak hour, only six cars go "thru"!)

Naturally, lanes with unique movements each get a head. Head arrangements at any intersection are influenced by its past history, special features (curves) and use of innovations like protected/permissive heads (which dangle over lane lines, not over the center of the lane). "Goldilocks" rules also apply: not too close together, not too high, not too low, and not too close to the driver, within driver's cone of vision.

Each head costs between \$200 to \$550. The more expensive are the light-emitting diode systems I described a couple weeks ago. The heads are a small part of the total material cost. Controllers go for \$10,000, for example.