

Best Practices WIM

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Idaho's Permanent WIM Program – Brief Overview

- 13 Permanent Systems
- 40 Instrumented Lanes
 - 7 four lane sites, 6 two lane sites
- 80 Piezo sensors – two sensors, and one loop per lane
- 6 Sites Solar Power, 7 Sites AC
- First System Installed July 1994
- Most Recent Installed Sept 1997

Idaho's WIM System Vendor

- Electronic Control Measurement (ECM) Inc.

Site Selection – Data Considerations

- Traffic Mix -- Will the data be what you want?
- Is there sufficient volume?
- Is the commercial/passenger vehicle mix useful?
- Is the location of interest to your data clients?
- All factors considered: Is it a useful site?



Will the site provide the data you want?

Site Selection – Roadside Considerations

- Pavement considerations -- slope, rutting, roughness, cracking
- Pavement layout -- turn bays, striping, corners?
- Is there a safe pullout?
- Power and phone availability?
- Overhead power lines? Cell phone antennae's nearby?
- What is the estimated pavement life?
- What is the future maintenance schedule?

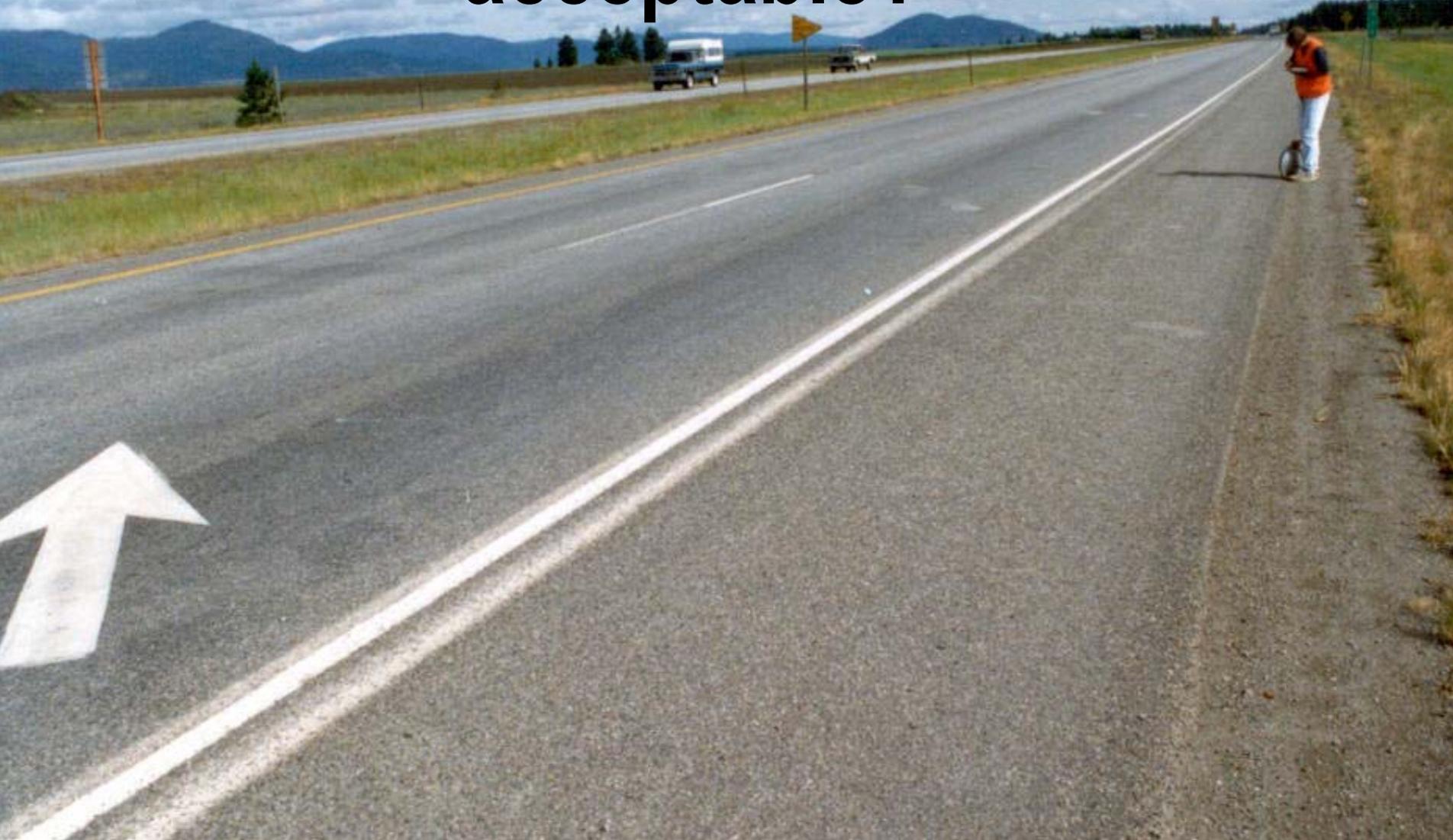
Is adequate pullout room available?





**Are corners and slope
within acceptable
limits?**

**Are lane designations
acceptable?**



System Installation

- Turn key project or do-it-yourself?
- Or a combination of the two?

Installation Construction Zone

- Traffic control – get the best available
- Safety first - protect yourself from traffic



**Try to slow
traffic down
in the
construction
zone**

Secure a safe work area.



Site convenience

- Keep materials and tools handy
- Room for movement
- Safety first



Cabinet and Pedestal

- Protected from traffic
- Accessible
- Power and phone availability
- Sufficient size and design



Solar or AC power?



**Is the cabinet
protected from traffic?**



**Is the cabinet
accessible?**

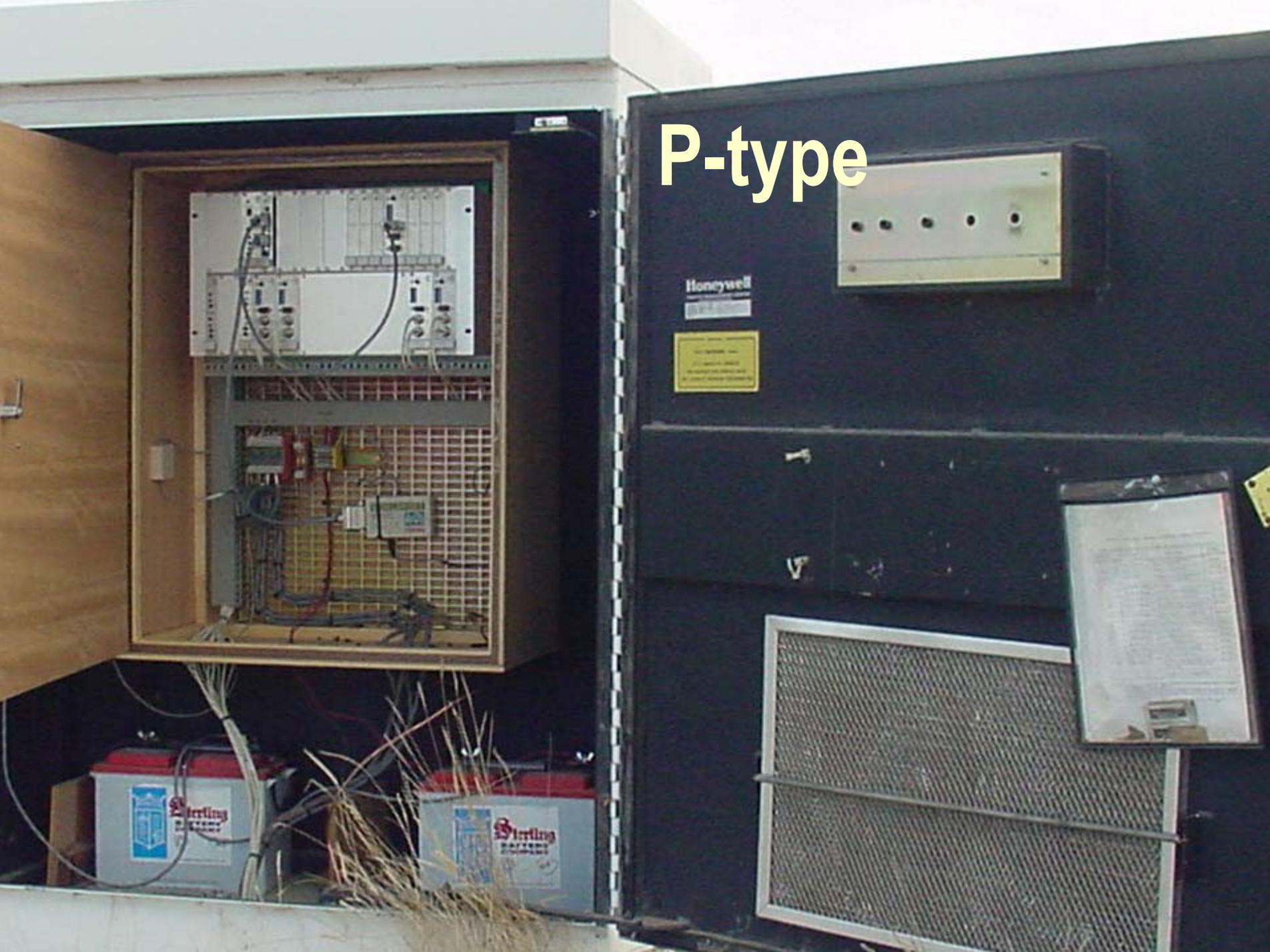


Is your cabinet the correct design?

M-type cabinet

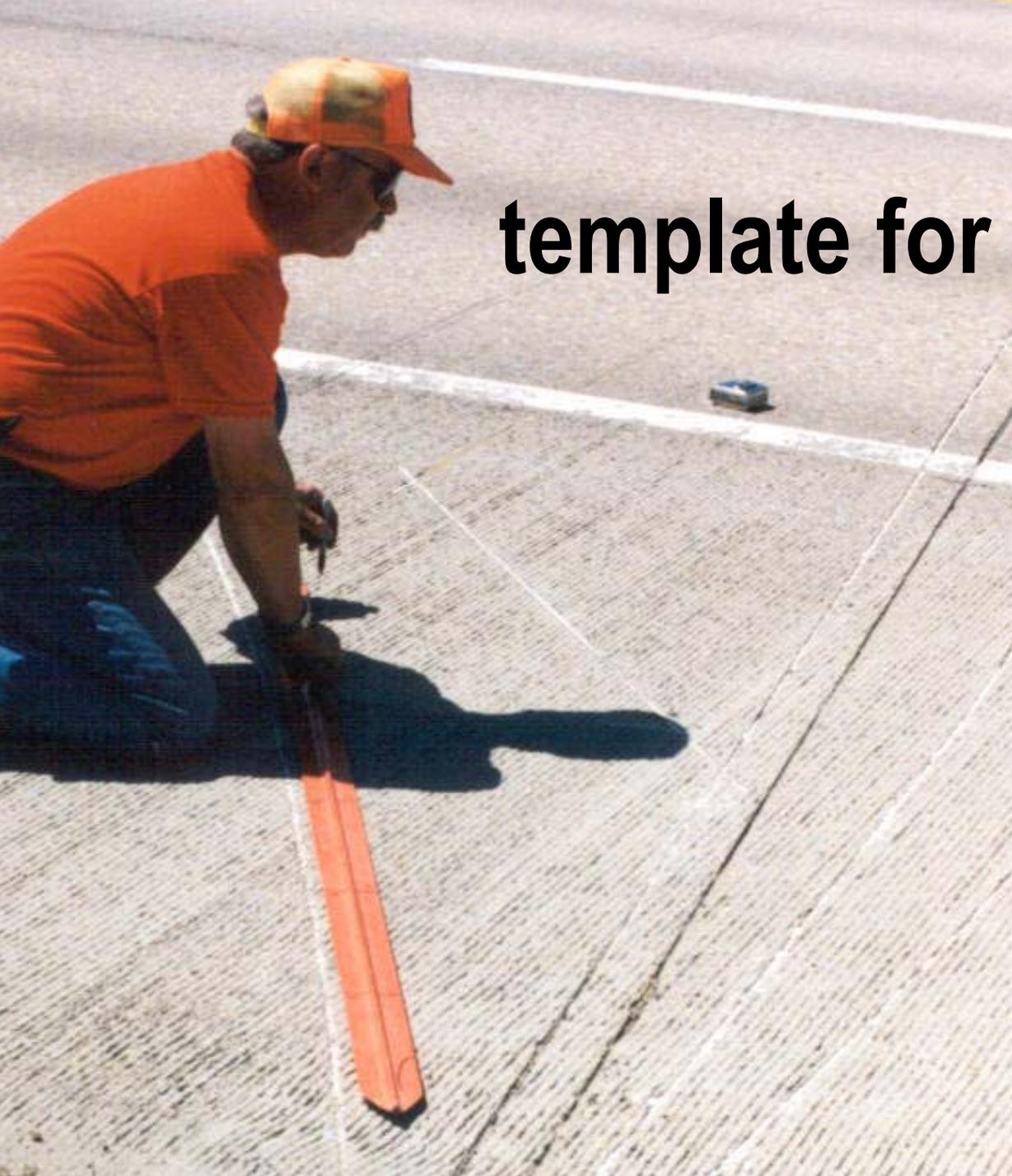


P-type



Preliminary layout

- Preparing for the saw cutting
- Measure carefully
- Standard or Metric?
- Follow vendor recommendations
- Protect your warranty



template for

**Use a
layout**



Leave lines that
are easy for the
sawyer to follow.

Painted slot



6/10/2002



**Painted depth
mark on blade
and slot are
prominent**

Making the saw cut

- Observe all safety rules
- Have cuts well marked
- Watch closely -- especially depth



**Watch
depth carefully**



**Try not
to cut
existing
wires....**

Preparing the slot

- Check for proper depth and size
- Clean to required specs
- Don't forget lead wire slots

Smooth bottom of slot as needed



**Use a power
sprayer to clean
the slot**

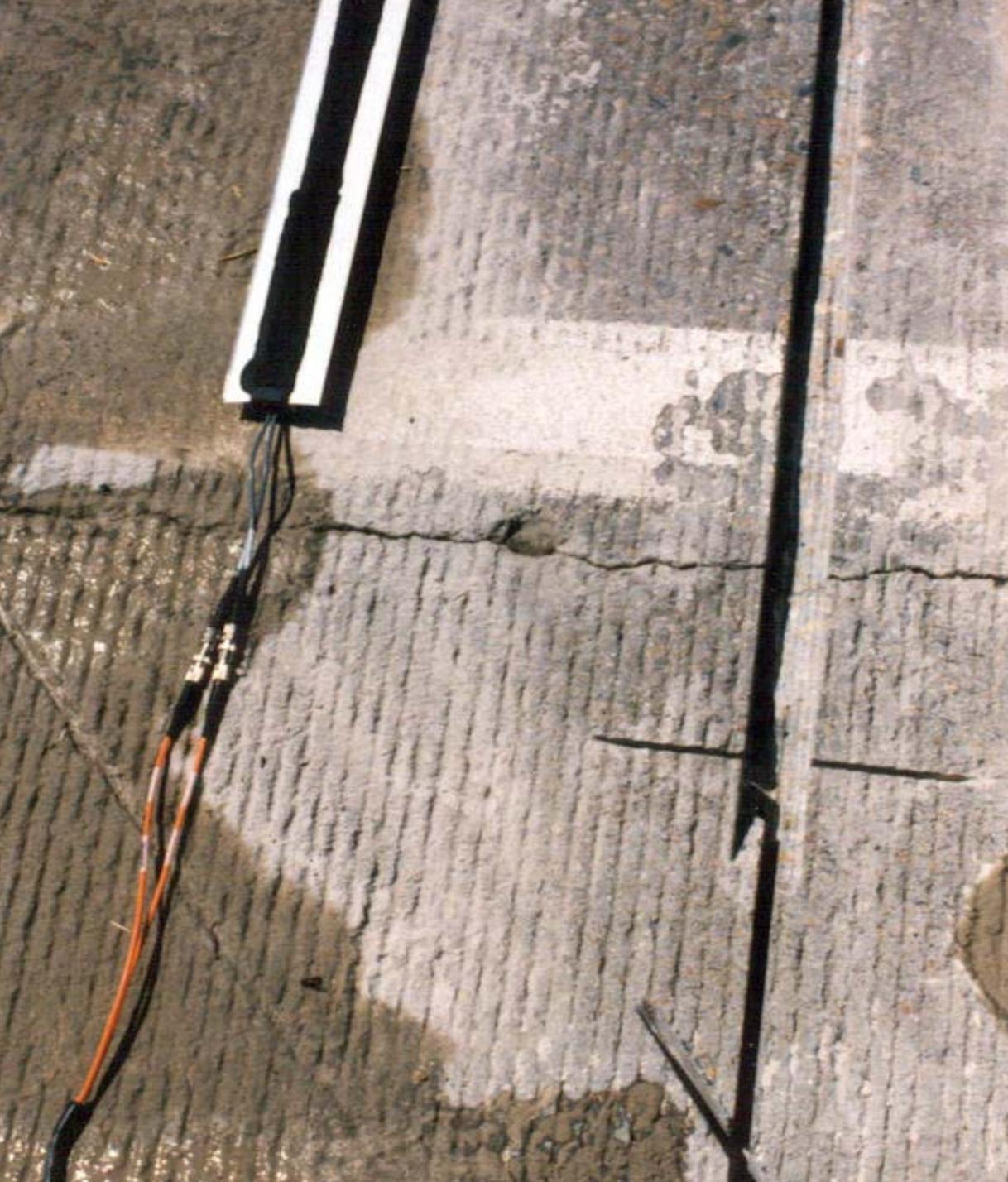




**Spray wash and
dry slot as needed**



For some applications, it cannot be too clean



**Slot and
sensor
ready for
installation**

Installing the sensors

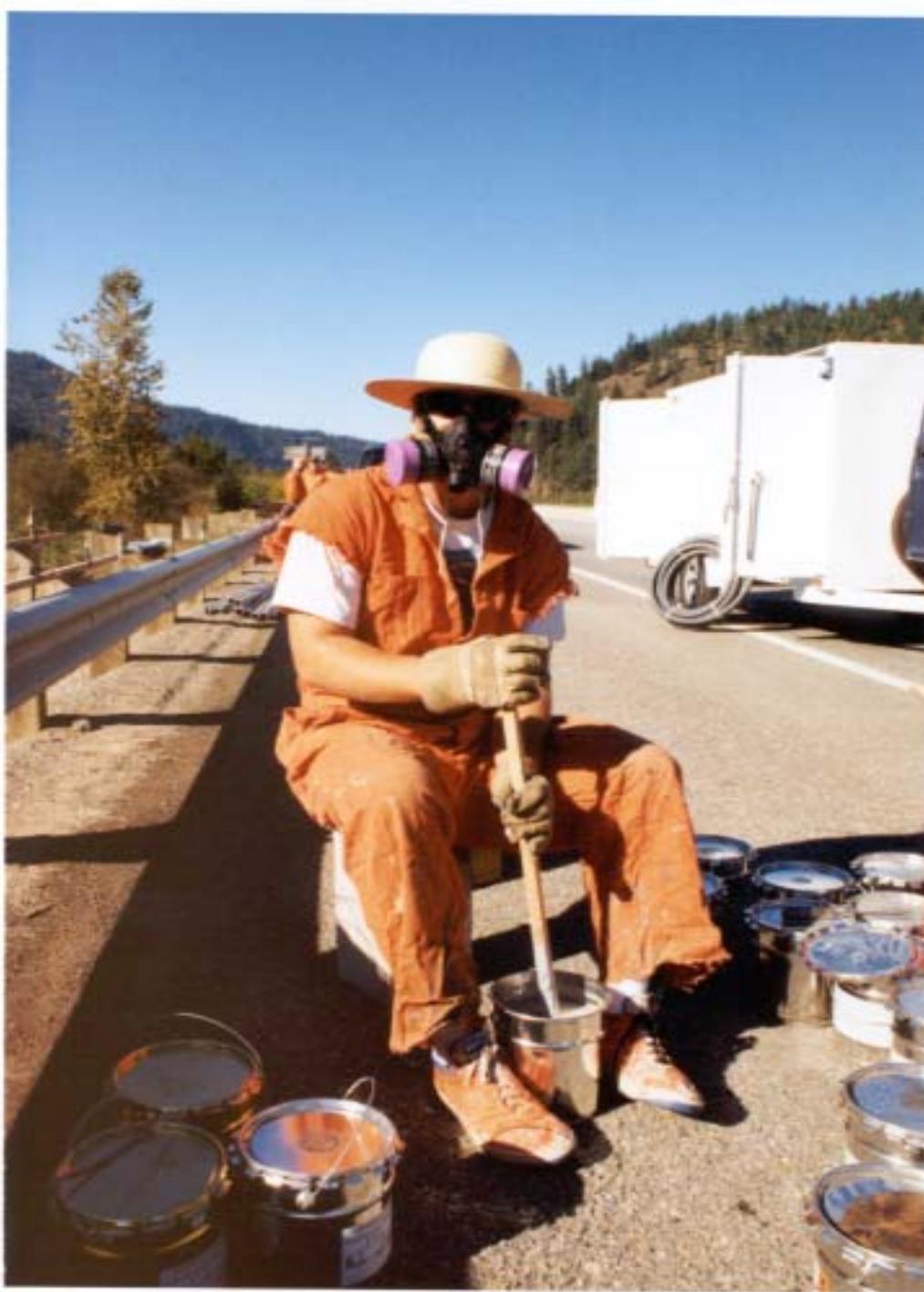
- Follow vendor recommendations
- Check sensor prior to installation
- Make sure lead wires are long enough
- Plan ahead for your epoxy type
- Use breathing protection
- Watch the weather

Check sensors prior to installation



Checking an optic sensor





**Use
adequate
breathing
protection**

**Epoxy types
vary in cure
time and
rate of flow**





Select
the
best
epoxy
for
your
appli-
cation



**Taping slot
edges
results in a
cleaner
finished
installation**



**Sensor
is held
down
until
epoxy
hardens**



**Some
sensors
require
finish
sanding**



**Finished
sensor
installation
should be
clean and
smooth**

Additional Considerations

- Use the correct wire for your application
- Conduit Size
- Horizontal boring
- Test lead wires whenever possible
- Label all wires
- Rodents



**Use correct
wire type for
your
application -
such as
direct burial
cable where
needed**



**Save yourself some trouble --
label wires wherever possible**

**Use adequate
size conduit**





**Small
home run
conduit
may be a
future
problem**



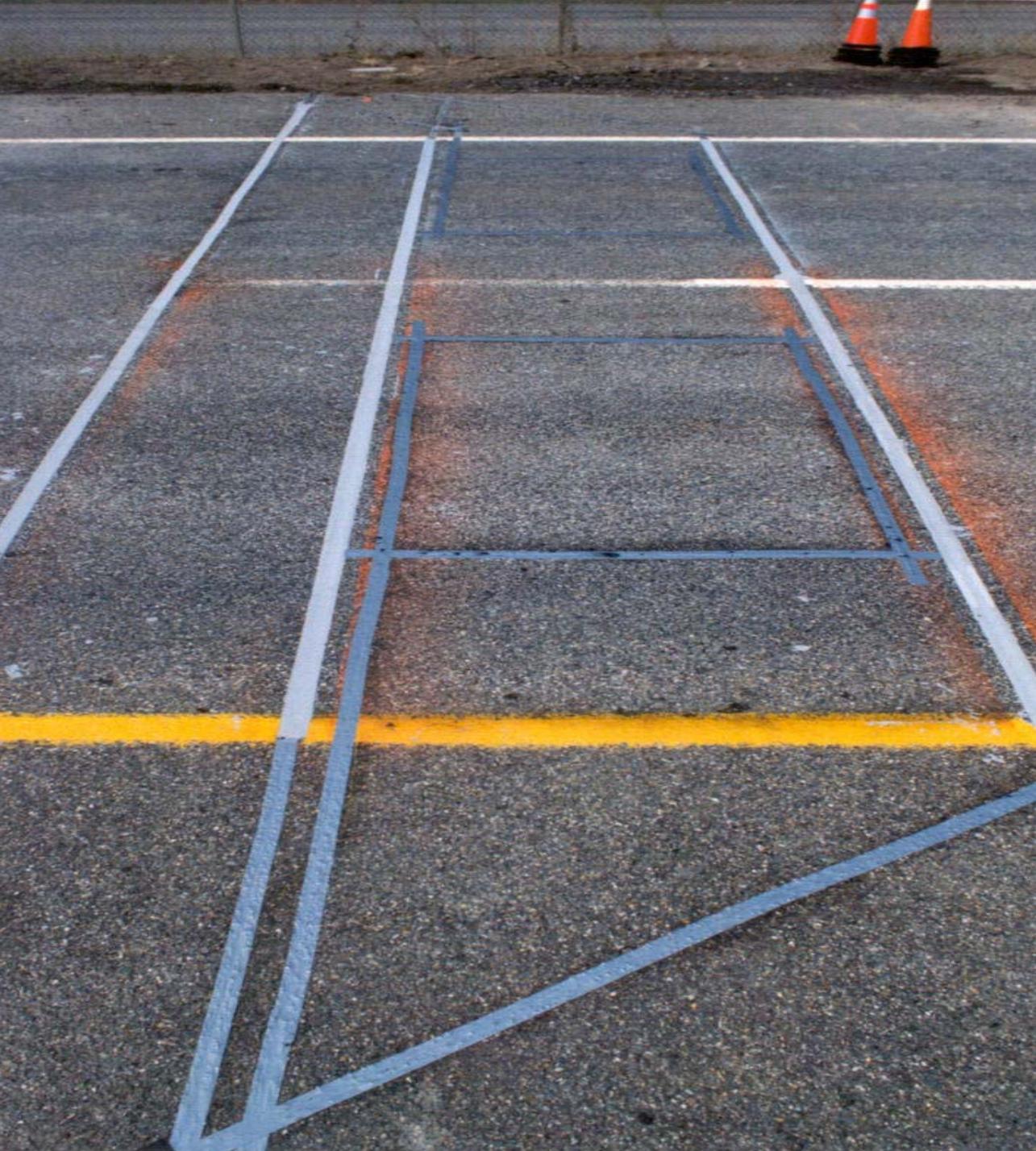
Flex conduit has some advantages, but.....

Horizontal boring may be an option



Horizontal boring makes larger conduit sizes possible





**Finished
installation
should be
clean and
smooth**

Final Considerations

- Complete all wiring
- Perform testing and calibration
- Monitor site condition and data
- Schedule maintenance
- Consider a maintenance agreement
- Keep in touch with your vendor

A close-up photograph of a concrete curb and asphalt pavement. The curb is a vertical strip of light gray concrete. A vertical crack runs down the center of the curb. To the left of the curb, the asphalt pavement is dark gray and shows a cross-shaped crack. The text "Watch for problems such as cracking" is overlaid on the right side of the image.

**Watch for
problems
such as
cracking**

Consider as much direct involvement as possible

- When your familiar with the system installation, maintenance is easier
- System operation is easier to understand
- Save money

**If you think system
installation seems too
difficult, remember.....**



Everything is relative.....