## Caudill, Ethan

**From:** Holloway, Andrew
**Sent:** Tuesday, October 7, 2025 9:30 AM
**To:** Knapp, Kenneth; Caudill, Ethan; Fisher, Don
**Cc:** Mellen, Adam; Baker, Jared; Alford, Jennifer
**Subject:** RE: 112691-LOR-20/301

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

All,

As discussed in our meeting:

- After running simulations on a variety of MGS to curb offsets, NCHRP 1089 ran test 3-11 (pickup truck, 62mph, 25 degrees) on MGS at a 6' offset from 6" curb and test 3-10 (passenger car, 62mph, 25 degrees) at a 1' offset from a 6" curb These tests were deemed critical to evaluate the potential for pickup truck override at larger offsets and small car underride or snagging at lesser offsets
    - Both tests passed MASH 2016 criteria
- The study identified through simulation efforts that curbs with a shorter height or more traversable shape will result in a reduction in vertical trajectory and therefore can be used in lieu of the 6" curb
- Testing was done on level terrain A 10:1 approach slope for 6' would result in a 7 2" reduction in elevation of the rail, which would increase the potential for override

ORE has not updated L&D1 to reflect the new research from NCHRP 1089, but we plan to with the July 2026 update For now, the table/details below can be used and referenced Note that the 31" is relative to the top of curb for 1'-6' offsets Additionally, it is important to keep the approach slopes as flat as possible when offsetting MGS behind curb I placed a copy of NCHRP 1089 here if needed: O:\Engineering\Roadway\Standards\Research\NCHRP 1089 - Install Guidelines for MGS with Curb pdf

**Table 35. Recommended placement offsets and heights for MGS behind curbs.**

| Lateral Offset (face of curb to face of rail) | MGS Installation Height |
|---|---|
| ≤ 0.5 ft | 31 in. relative to roadway surface |
| 1 ft–6 ft | 31 in. relative to top of curb/soil backfill |
| > 6 ft | Not recommended; further analysis required |

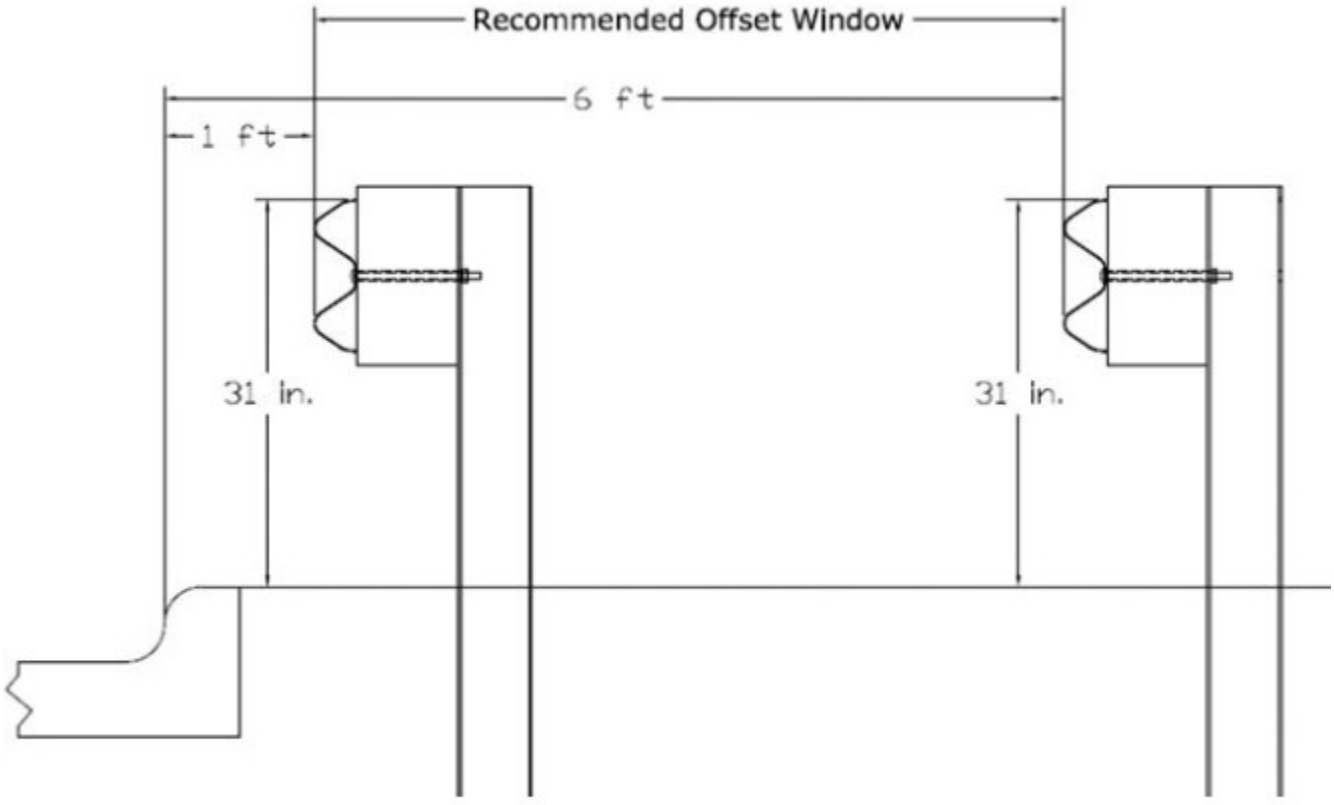


***Figure 219. Recommended placement of MGS behind curb, 31-in.-tal relative to curb/soil.***

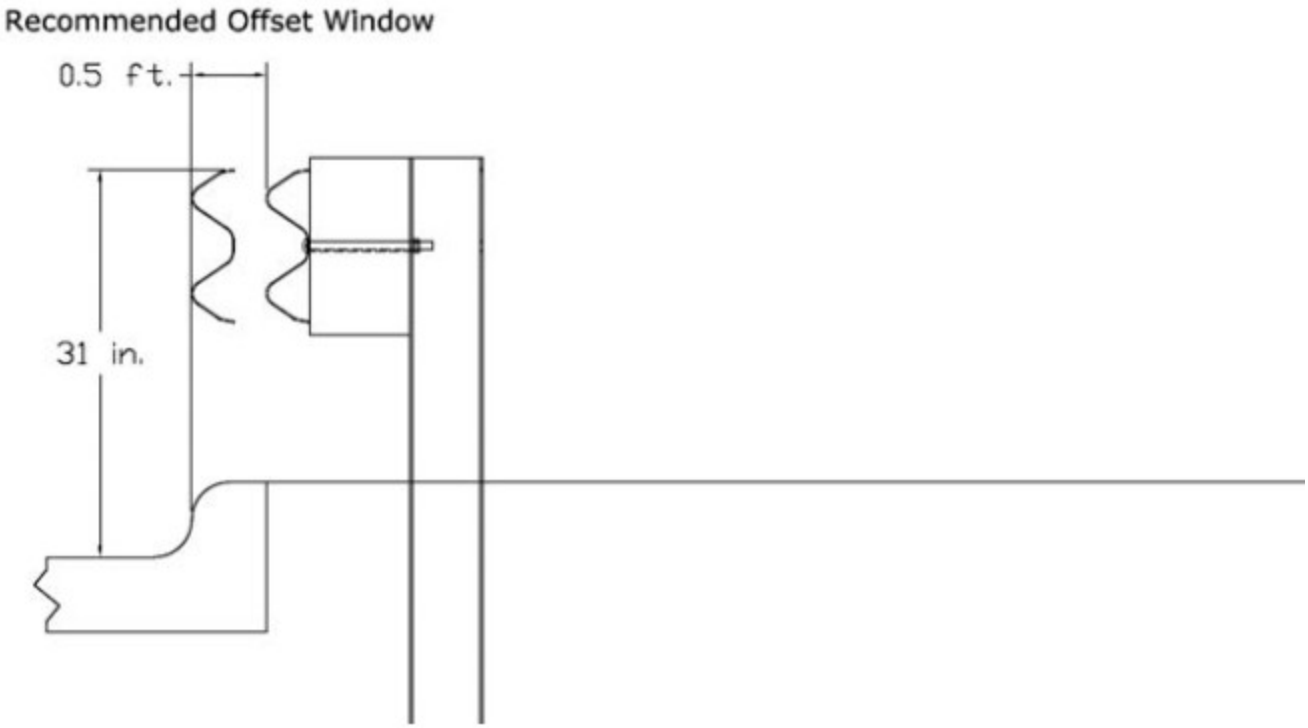


***Figure 218. Recommended placement of MGS behind curb, 31-in.-ta relative to roadway.***

**Andrew Holloway, P.E.**
Office of Roadway Engineering
1980 W Broad Street, Columbus, Ohio 43223
Office: 614 387 4020 Cell: 513 305 7932

Department of Transportation

-----Original Appointment-----
**From:** Caudill, Ethan <Ethan.Caudill@dot.ohio.gov>
**Sent:** Wednesday, October 1, 2025 2:07 PM
**To:** Caudill, Ethan; Knapp, Kenneth; Fisher, Don
**Cc:** Mellen, Adam; Baker, Jared; Holloway, Andrew
**Subject:** 112691-LOR-20/301
**When:** Tuesday, October 7, 2025 8:30 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting; DOT D03 Production Conference Room

This meeting is to discuss roadside safety options surrounding PID: 112691, Elyria urban paving

1. Surrounding SFN's: 4702670, 4702700 (https://maps.app.goo.gl/RwmnEgA823zjioPT6)
2. Surrounding SFN: 4729552 (https://maps.app.goo.gl/DXiTKZ4QC6ThrGeF8)
3. Painting roadside features black

---

# Microsoft Teams Need help?

## Join the meeting now

Meeting ID: 256 344 933 398 4

Passcode: NC3XF95t

---

### Dial in by phone

+1 614-721-2972,,322271182# United States, Columbus

Find a local number

Phone conference ID: 322 271 182#

### Join on a video conferencing device

Tenant key: 682042763@t.plcm.vc

Video ID: 118 898 868 0

More info

For organizers: Meeting options | Reset dial-in PIN

The State of Ohio is a disability inclusion state. We promote access to our meetings and trainings. To request a reasonable accommodation due to a disability, please use the Help link to contact the ADA Coordinator for the scheduling agency.

Org help

---