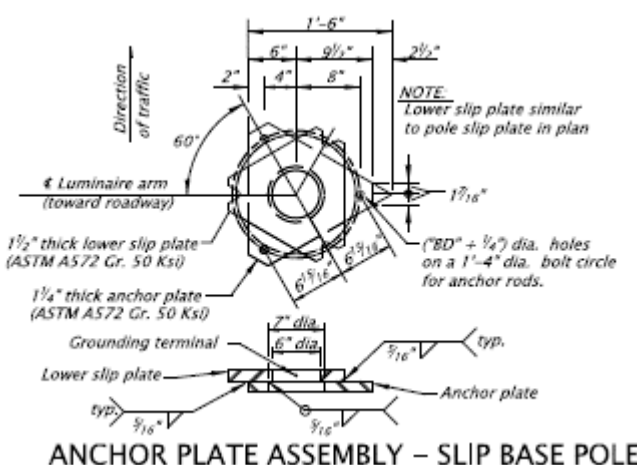


Project Title:	Evaluation of Triangular Slip Base for Breakaway Luminaire Supports (2024-02-BD)
Project Synopsis:	<p>Investigate MASH compliance of breakaway luminaire supports using a triangular, three-bolt slip base system.</p>  <p style="text-align: center;">ANCHOR PLATE ASSEMBLY – SLIP BASE POLE</p> <p>https://www.oregon.gov/ODOT/Engineering/202301/TM629.pdf https://www.oregon.gov/ODOT/Engineering/202301/TM630.pdf</p>
Project Goal(s):	<p>The goal of this research is to evaluate the MASH TL-3 impact performance of luminaire supports with a non-proprietary triangular, three-bolt slip base system.</p>
Project Background:	<p>Full-scale testing experience of luminaire poles in accordance with MASH criteria is limited. Testing to date, which includes tests sponsored by TxDOT and NCHRP, has been performed on poles mounted on frangible cast aluminum transformer style bases. An ongoing Roadside Safety Pooled Fund project is investigating the MASH performance of luminaire poles with a four-bolt, rectangular slip base assembly. The objective is to evaluate critical pole configurations (in terms of height, weight, center of gravity, etc.) to permit MASH compliance assessment of less critical configurations.</p> <p>Other types of breakaway luminaire pole systems, such as the three-bolt, triangular slip base, are used by some states. Research is needed to determine if luminaire poles with the three-bolt, triangular slip base system comply with MASH criteria.</p>
Proposed Work Plan:	<p>Task 1: Literature Review and State Survey <i>The research team will review previous and ongoing research projects to determine critical luminaire pole configurations that have met MASH requirements with other base types. A survey instrument will be distributed to the Roadside Safety Pooled Fund members to identify triangular slip base details used in conjunction with luminaire poles.</i></p> <p>Task 2: Engineering Analysis <i>The research team will use the data obtained in Task 1 to determine critical configurations of luminaire poles with triangular slip bases likely to meet MASH requirements. Computer simulation may be used to help determine luminaire pole configurations recommended for full-scale crash testing.</i></p> <p>Task 3: Full-scale Crash Testing <i>The research team will evaluate a critical configuration of a luminaire pole with three-bolt, triangular slip base according to MASH criteria. The testing may be limited to only MASH Test 3-60 if the pole configuration has been successfully crash tested with another base type. Test 3-</i></p>

	<i>60 is the critical test for evaluating activation of the breakaway device and assessing occupant risk.</i>								
Deliverables:	Final report to document research effort, including literature review, crash testing, and recommendations for further research in the event of the system failing testing criteria.								
Urgency and Expected Benefit:	This project would assess MASH compliance of luminaire poles with triangular slip bases. Such bases are used by various states and this research will provide information to support their continued implementation through state standards.								
Problem Funding and Research Period:	<table> <tr> <td>Task 1 Lit Review</td> <td>\$10,095</td> </tr> <tr> <td>Task 2 Analysis</td> <td>\$17,898</td> </tr> <tr> <td>Task 3 Construction</td> <td>\$136,735</td> </tr> <tr> <td>Total Estimated Cost</td> <td>\$164,728</td> </tr> </table> <p>Estimated Research Period = 18 months</p>	Task 1 Lit Review	\$10,095	Task 2 Analysis	\$17,898	Task 3 Construction	\$136,735	Total Estimated Cost	\$164,728
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