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| **Roadside Safety Pooled Fund Program** **Research Problem Statement** | State:  Florida |
| Title:  Special Baseplate Guardrail Posts | |
| Problem Statement:  Special guardrail posts with baseplates (PWF01-06) are commonly used along standard guardrail runs at locations where concrete structures prevent the installation of a conventional buried timber or steel post. Concrete structures may include; bridge decks, drainage structures (i.e. curb inlets), and culvert headwalls. Additionally, at locations where buried utilities or structures prohibit the installation of standard posts, the baseplate post option could provide an alternative when installed in combination with a continuous moment slab. This post option needs to be reevaluated to establish MASH acceptability when used with 31-in w-beam guardrail and thrie-beam.  One additional problem with the current usage is when a single baseplate post is installed within a run of standard guardrail it creates a stiffer section of rail. A modified baseplate with bolts located only behind the post would allow the post to rotate and deflect as a standard post. | |
| Objectives of the Study:  Part 1) Determine the acceptable MASH test level for the baseplate post option under various installation conditions (i.e. single post at standard spacing, multiple posts at both standard and reduced spacing, and the use of both w-beam and thrie-beam guardrail). Review TxDOT's T631 standard post which may be appropriate:  <http://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/standard/bridge/rlstd038.pdf>  Part 2) Develop a new baseplate option with an equivalent rotational stiffness as a standard buried post. | |
| Expected Benefits:  Provide a MASH acceptable alternative to buried guardrail posts for continuation of guardrail (either w-beam or thrie-beam) across bridges, over buried utilities, or other concrete structure adjacent to the roadway. With the impending adoption of the MASH Implementation Agreement evaluating currently used alternatives is necessary for their continued use. | |
| Description of the Proposed Feature to be Tested: *(Be as detailed as possible. Include drawings and/or plans, if available.)*  Part 1) – Evaluation of Existing Special Baseplate Posts: Research will be needed to evaluate the most appropriate Special Baseplate standard from the TF13 Barrier Hardware Guide (i.e. PWF01 thru PWF06) or TxDOT’s T361, for MASH testing. Below is a photograph of a guardrail installation with special baseplate post, design details for a Thrie-beam post and details for a W-beam post.    C:\Users\rd960ds\AppData\Local\Temp\SNAGHTML1139eb4.PNG  **Special Baseplate Post (Thrie-beam)**    **Special Baseplate Post (W-beam)**  Part 2) – Development of Equivalent Special Baseplate Post to Standard Buried Post: Below is a concept drawing for a rear-anchorage baseplate post, which would allow the post to rotate similar to a standard buried post. Research may also consider a modified breakaway steel post (*MwRSF, TRB Paper No. 12-3604*) with a primary baseplate anchorage in-lieu of a buried component (see detail below for: *Universal Breakaway Steel Post for the Bullnose Median Barrier*). Consideration should also be given to a post-to-baseplate connection which utilizes a shear/fusion plate similar to ground mounted sign structure (example detail shown below).  cid:image002.jpg@01D0E704.4034C530  **Special Baseplate Concept (Rear Anchorage)**    **Universal Breakaway Steel Post**  **for the Bullnose Median Barrier (TRB 12-3604)**    **Fuse/Hinge Plates (Multi-Column Ground Signs)** | |
| Estimated Cost *(of the feature per linear foot installed):* | Total Estimated Cost of Crash Test: |
| Contact Person: | Telephone: |