
FINAL REPORT

UPDATE OF THE AASHTO GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE ONLINE GUIDE

Requested by

**American Association of State Highway
and Transportation Officials (AASHTO)
Standing Committee on Highways**

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SPECIAL NOTE: This report **IS NOT** an official publication of the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, or The National Academies.

TABLE OF CONTENTS

1
2
3 **ACKNOWLEDGMENTS**
4
5 **DISCLAIMER**
6
7 **ABSTRACT**
8
9 **EXECUTIVE SUMMARY.....4**
10
11 **CHAPTER 1: INTRODUCTION5**
12
13 **CHAPTER 2: PROJECT IMPLEMENTATION.....6**
14
15 **CHAPTER 3: DETAILED WORK PLAN.....11**
16
17 **CHAPTER 4: CONCLUSION & RECOMMENDATIONS.....18**
18
19 **REFERENCES.....20**
20
21 **APPENDICES.....21**
22
23
24

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11

DISCLAIMER

12
13 The opinions and conclusions expressed or implied are those of the research agency that performed the
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17

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21 do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because
22 they are considered essential to the object of this report.
23

ABSTRACT

24
25
26
27 Task Force 13 (TF13) operates under the AASHTO Subcommittee on New Highway Materials, AASHTO-
28 AGC-ARTBA Joint Committee. TF13 membership is comprised of volunteers in Federal, State, and Local
29 government, as well as Industry consultants, contractors, and hardware manufacturers. One of the
30 primary products of the Joint Committee is the AASHTO publication, "A Guide to Standardized
31 Highway Barrier Hardware" (Guide), first published in 1971 and most recently updated in hard copy in
32 1995.
33

34 Since publication of the Guide in 1995, Task Force 13 has developed and maintained a Barrier Hardware
35 Online Guide (Online Guide), available at
36

37 <https://www.aashtotf13.org>
38

39 The electronic format of the Online Guide is intended to facilitate the timely updating and dissemination
40 of information on crashworthy barrier hardware to the roadside safety community.
41

42 The objective of this research is to review and update the AASHTO Standardized Highway Barrier
43 Hardware Online Guide.
44

EXECUTIVE SUMMARY

1
2 The project team has worked to gather a collection of the most recently published and
3 available information on Systems & Components with an assigned Designator in the
4 Guide. Where available Owner agencies or Manufacturers were contacted to obtain
5 Online Guide formatted content. Where Owners were not available, new content was
6 produced under direction of the Project Panel for select non-proprietary Systems.
7

8 In addition to the collection and archiving of Online Guide formatted details &
9 specifications, other files include photographs, mixed media, source Computer Aided
10 Design (CAD) files, marketing literature, and Federal Highway Administration
11 (FHWA) Eligibility Letters.
12

13 To facilitate the management of this archive, a database was created to log various
14 status fields for each unique Designator. The database structure was extended from
15 datasets provided from the existing Online Guide contents. Every effort was made to
16 provide similar format to existing architecture to aid in transfer of the information
17 supplied by this Project back into the existing live Guide framework.
18

19 In addition, new fields have been appended to each record, in order to capture
20 performance attributes to aid in future search and filter capabilities of the online Guide.
21 These include the Crash Test Specification, Crash Test Level, and FHWA Eligibility
22 Letter designations, where available in the course of the literature review.
23

24 Summary of Project Deliverables for Guide:

- 25 **A)** The information for each Designator and Device Owner, has been collected
26 into an electronic database consisting of 628 independent designators and
27 39 owner agencies. The database contents have been provided as files
28 within the digital archive transmitted along with this report.
- 29 **B)** Each designator has been provided a separate folder in an electronic file
30 repository which includes 674 Folders, 1,927 Files, and 867 MB of
31 information. These files consist of 383 Guide Formatted PDF's, 403 CAD
32 (DWG or DGN) source files, 186 Text Specification (DOC) source files, and
33 95 Image (JPG or BMP) files. These file system contents have been
34 provided within the digital archive transmitted along with this report.

35

36

CHAPTER 1: INTRODUCTION

Task Force 13 (TF13) maintains five (5) roadway hardware guides, as follows:

- A Guide to Standardized Barrier Hardware
- A Guide to Standardized Bridge Rail & Transition Hardware
- A Guide to Small Sign Support Hardware
- A Guide to Standardized Highway Lighting Pole Hardware
- A Guide to Standardized Highway Drainage Products

Each guide contains hardware "systems" in various categories. This project was conducted to update the Guide to Standardized Barrier Hardware, which contains the following functional system categories:

- Crash Cushion
- End Treatment/Terminal
- Guardrail
- Work Zone

In addition to Systems within these categories, the Barrier Hardware Guide contains Component hardware items that are used in one or more non-proprietary Systems. Component categories are as follows:

- Fastener
- Post
- Rail

The project focused on collecting, updating, and organizing guide content for the four (4) System groups, and three (3) Component groups listed above. Priority was given to Systems that are FHWA-accepted as meeting the requirements of NCHRP Report 350 and/or MASH (Manual for Assessing Safety Hardware). Systems in previous editions of the Guide that meet NCHRP 230, or other outdated criteria, were labeled as "archive", and recommended to be removed from the updated online Guide.

Data and content were collected from a variety of sources, and organized into a tabular database and structured array of content folders. Each hardware System has an "Owner", which is the organization responsible for providing updated content for the Guide. For proprietary Systems, the private developer or manufacturer of the device is the Owner. For non-proprietary Systems and Components, the Owner is typically the government agency that funded development of the device or their designated agent who assisted in development or tested the device for compliance. For a number of non-proprietary Systems and Components, which were developed under federal programs or government consortiums, the Federal Highway Administration (FHWA) is listed as the Owner.

Chapter 2 describes work items completed during the project.

CHAPTER 2: PROJECT IMPLEMENTATION

Project tasks were completed in accordance with the Panel-approved Work Plan. Primary tasks are shown in Table 1 below.

TABLE 1: PRIMARY TASKS IN ORIGINAL WORK PLAN

Task 1. Prepare Comprehensive Status List
Task 2. Prepare Detailed Work Plan
Task 3. Conference call
Task 4. Execute the Panel-approved Work Plan
Task 5. Review Standard Operating Procedures.
Task 6. Prepare Final Report.

The following sections describe the primary tasks in detail.

CHAPTER 2.1: PROJECT TASK 1

IDENTIFY, COMPILE AND DELIVER A COMPREHENSIVE LIST OF SYSTEMS AND COMPONENTS THAT REQUIRE UPDATING IN THE CURRENT ONLINE GUIDE.

Existing data & files were collected via the project panel from a variety of sources, including: the current online Guide and its website administrators, TF13 Executive Committee, TF13 technical representatives and other members, FHWA, state DOT's, testing agencies, System manufacturers, and others.

All existing information was collected and organized via the following sub-tasks:

- a) Created a database with a record for each Designator currently in the Guide.
- b) Reviewed and categorized existing content for established System & Component Designators.
- c) Populated each record of the database with information identifying the status of the corresponding element.
- d) Reviewed AASHTO Designator Master List, FHWA Acceptance Letters, and other sources to identify all Systems & Components that are within the scope of the Barrier Hardware Guide.
- e) Created records & populated status fields for Designators found in d) above that are not in the current online Guide, but are to be added to the Guide, as directed by the Panel.

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Initial Designator status classifications are as follows:

- All materials up-to-date & adequate.
- Drawing/Data Sheet outdated & requires minor updates by project team.
- Drawing/Data Sheet outdated & requires moderate updates by project team.
- Drawing/Data Sheet outdated & requires major updates by project team.
- Drawing/Data Sheet missing & new one required to be created by project team.
- Drawing missing, outdated, or incomplete & needs to be returned to the manufacturer for updating.
- Photo missing or inadequate & needs to be created or obtained by the project team.
- Photo missing or inadequate & may be obtained from the originator of the element.
- Reference to FHWA Letter is missing or inaccurate.
- Link to FHWA Letter is incorrect.
- Testing Criteria and/or Test Level compliance is missing or inaccurate.
- Manufacturer is missing or inaccurate.
- Link(s) to Related Designators are missing or incorrect.
- Element should be moved to a permanent archive.
- Element should be deleted from the Barrier Guide.
- Element should be deferred & addressed in another project.

Status fields were created and populated in the database to provide the status of each Designator record. In addition, the level of effort required to update materials for each Designator was assessed, and labeled accordingly. Status fields collected for each Designator and their description are as follows:

- DESIGNATOR
- TITLE
- SOURCE
- PROPRIETARY
- OWNER
- REVISIONS
- ARCHIVE
- DELETE
- DEFER
- COMMENTS

The DESIGNATOR field is the alphanumeric System or Component ID, which uses the naming scheme as developed for the Barrier Guide.

The TITLE field is a text string description of the System or Component.

1
2 The SOURCE field is a short text identifier of which reference the designator
3 information was obtained from. The options are:

- 4
5 • TTI (the current online guide database),
6 • OLD (the 1995 guide printed and/or online archive),
7 • XLS (the committee spreadsheet),
8 • XLS2 (the Under Review/ Approved spreadsheet)

9
10 The PROPRIETARY field was marked Y or N if the system or component was
11 submitted by a private entity.

12
13 The OWNER field was marked Y or N if the system or component has a content owner.
14 All PROPRIETARY = Y devices have an OWNER. Some PROPRIETARY = N devices
15 have content owners, whom have published other devices to the guide. In addition, all
16 systems which were in the SOURCE=XLS2 were set as OWNER=Y, as they are recently
17 submitted Under Review/ Approved status and the information should be obtainable
18 from the content provider or Technical Representatives.

19
20 The REVISIONS field is an assessment of the effort required for this project team to
21 address any issues. The possible values are:

22
23 MAJOR:

24 Selected if:

- 25 • No information was available to review, or,
26 • The designator needs major revisions to its materials.

27
28 Many designators in this category had no known drawings available at the time of
29 review. Some had an Owner or had drawings available from other sources. In some
30 cases, the Designator is non-proprietary without a known Owner, and therefore
31 requires a complete set of content production.

32
33 MODERATE:

34 Selected if:

- 35 • Information was available to review, but required a significant amount of
36 editing, or the Designator needs moderate revisions to contents of its materials.

37
38 These include drawings in which a CAD file is available, but it has not been updated
39 since it appeared in the 1995 Guide. Also included are Designators with an Owner, but
40 no updates since 1995, and/or the ability of the Owner to provide updated content is
41 unknown.

MINOR:

Selected if:

- Information was available to review and was essentially complete, with only edits to links, logos, contact info, or typographical errors needed.
- The designator needs only minor revisions to its materials, such as cropping/resizing photos & thumbnails, converting file formats; etc.

NONE:

Selected if:

- Information was available to review and was complete with no edits required,
- The device was marked as DELETE/ARCHIVE/DEFER,
- The Designator's descriptive materials are basically up-to-date.
- Only organization of the materials is needed, such as: deleting, archiving, or transferring materials; inserting completed & acceptable materials from another source; and/or, placing the materials in their proper locations in the "final" database.

The ARCHIVE field is a Y or N value, for if the system is obsolete and should be removed from the current working version of the Guide.

The DELETE field is a Y or N value, for if the designator should be deleted entirely from the Guide. This would be in cases where a designator was assigned but no information was provided, and thus should be released for another System or Component.

The DEFER field is a Y or N value, representing if the Designator is for a product that is not within the ownership of the barrier guide, such as bridge railings, or sign & luminaire supports.

The COMMENTS field is a text string which enabled us to capture general notes of the drawing status, content revisions or resources reviewed.

FINDINGS

Project Task 1 was completed, and produced a comprehensive status list for 691 barrier hardware designators. The *Status List* provides an assessment of current information available for each designator, and estimates the effort required to organize and update materials for each. The list was then used to sort the designators into common status categories, which identify the general methods and work tasks necessary to complete the update of the online Guide.

1 From the initial review, there were a total of 691 individual Designators from all
2 available resources, and below is a breakdown of the REVISIONS field described above:

- 3
- 4 • 150 (21.7%) had no information available and required a full submittal from the
5 Owner or to be generated anew by the project team (MAJOR).
- 6 • 192 (27.8%) had limited information available and required source file updates or
7 additional content (MODERATE).
- 8 • 241 (34.9%) had published content available but required minor editing
9 (MINOR).
- 10 • 108 (15.6%) required no revisions to contents due to being up-to-date, obsolete, or
11 located under the ownership of another hardware guide (NONE).
- 12

13 Note, at the completion of this project, the final tally of designators increased from 691
14 to 728, with 628 Systems and Components which are to be considered for inclusion in
15 the Online Guide.

17 **CHAPTER 2.2: PROJECT TASK 2**

18 **DEVELOP & DELIVER A DETAILED WORK PLAN WITH RECOMMENDATIONS AND** 19 **PRIORITIZATION OF WORK ITEMS NEEDED TO IMPLEMENT UPDATES IDENTIFIED** 20 **IN TASK 1.**

21 Project Task 2 was completed, and resulted in the development of a Work Plan with
22 prioritizations and recommendations of work items needed to implement updates
23 identified in Project Task 1. The plan was focused to maximize value of the updated
24 material that could be created within the project budget.

26 **CHAPTER 2.3: PROJECT TASK 3**

27 **PARTICIPATE IN A CONFERENCE CALL WITH THE PROJECT PANEL TO DISCUSS** 28 **AND FINALIZE THE DETAILED WORK PLAN.**

29 Project Task 3 was completed, and included a conference call with the Project panel to
30 discuss the details of Project Tasks 1 & 2.

32 **CHAPTER 2.4: PROJECT TASK 4**

33 **EXECUTE THE PANEL-APPROVED WORK PLAN.**

34 Project Task 4 has been completed, and this Report encompasses the work shown in the
35 following Chapter 3 detailing the Work Plan.

1 **CHAPTER 2.5: PROJECT TASK 5**

2 **REVIEW STANDARD OPERATING PROCEDURES** currently used by AASHTO TF13
 3 Subcommittee 2 - Barrier Hardware for the addition of new systems, components, and
 4 information to the online guide, and provide recommendations for improvements.

5 Project Task 5 “Review Standard Operating Procedures” was replaced, under direction
 6 of the Panel, with an alternate assignment to collect Designator attributes for Device
 7 Crash Test Specification & Test Level.
 8

9 **CHAPTER 2.6: PROJECT TASK 6**

10 **DELIVER A FINAL REPORT** documenting the entire project, as well as electronic files
 11 containing all updated information that can be directly incorporated into the online
 12 guide.

13 **CHAPTER 3: DETAILED WORK PLAN**

14 A detailed Work Plan was prepared in accordance with Project Task 2 and subsequently
 15 approved by the Panel. Figure 1 shows a timeline for completion of primary tasks in
 16 the Work Plan, and discussion of each task is provided below:

17 **Figure 1 Project 20-07/328 Work Plan Schedule**

NCHRP PROJECT 20-07 / TASK 328 SCHEDULE		2013									
		FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	
ORIGINAL BUDGET ALLOTMENT		HOURS	50	50	50	50	50	50	20	40	
TASK											
1	Solicit, Collect & Compile Updated Materials & Data for All Designators With an Owner.										
a	Assign Owner to 218 designators.	5	5								
b	Prepare list of revisions for each Owner.	15	15								
c	Contact Owners & provide instructions.	5	5								
d	Compile & organize materials received from Owners.	20		5	5	5	5				
2	Generate Updated Materials & Data for <u>System</u> Designators with No Owner.										
a	Update System designators requiring <i>Major</i> content revisions.	175	25	45	45	25	25	10			
b	Update System designators requiring <i>Moderate</i> content revisions.	50				20	20	10			
c	Update System designators requiring <i>Minor</i> content revisions.	50						30	10	10	
3	Prepare Final Report & Project Deliverables										
a	Conduct Review & Provide Recommendations for Improving Standard Operating Procedures	10							10		
b	Prepare recommendations for database organization & package all updated data & materials.	10								10	
c	Prepare Final Report	20								20	
4	Generate Updated Materials & Data for <u>Component</u> Designators with No Owner (<i>Time Permitting</i>)										
a	Update Component designators	500 est									

18
 19

1 CHAPTER 3.1: WORK PLAN TASK 1

2 Solicit, Collect & Compile Updated Materials & Data for All Designators 3 With an Owner.

4 Each designator was tagged with either "Yes" or "No" depending on whether or not it
5 has an "Owner". An Owner is an organization with one or more of the following
6 characteristics:

- 7 • Is the originator of materials previously submitted for the designator;
- 8 • Is the manufacturer or sole supplier of proprietary systems or components
9 covered by the designator; or,
- 10 • Is a testing facility or other agent of a research program that has been assigned to
11 supply a designator's descriptive materials for inclusion into the Guide.

12 Of the 628 final Designators under the scope of this project, an Owner was identified for
13 279, with 254 having a Company assigned. Of the Systems, 246 of 248 have an Owner
14 identified and assigned.

15 The current online Guide database contained 14 Company organizations that have
16 either submitted Guide materials in the past or are otherwise involved with
17 development or production of barrier hardware contained in the Guide. A few of these
18 are manufacturers of products, but not necessarily the "Device Owner". The final count
19 of Owner agencies from this project is now at 39. Of these 39, 31 were contacted
20 regarding the Designators/Systems that are within their ownership.

21 Task 1 included the following subtasks:

- 22 a) Assign the appropriate Owner organization to each of the Designators.
- 23 b) Prepare list of designators & general description of changes needed for
24 each Owner.
- 25 c) Prepare & distribute cover letter for each Owner with instructions &
26 deadlines for submitting updated materials.
- 27 d) Compile & organize updated materials received back from the owners;
28 enter data into database
- 29 e) Catalog available information into a new consolidated folder hierarchy.
30 This project resulted in the creation of 665 separate folders containing files
31 for each Designator including PDF, DWG, DOC, Images & FHWA letters.

32 Using the FHWA website & eligibility letters, as well as other resources provided by the
33 Panel, Owner information for all proprietary systems were collected. New Companies
34 were added to the original database table, increasing the total to thirty-eight (39)
35 organizations. Each of these new Companies has been given a numerical index, which

1 is outside the bounds of the existing data – to avoid potential overlap when they are
2 merged back into the working database.

3 For each Company ID, the Designator table has been updated to match Designators
4 with this Company ID value. From this, we were able to filter & group the Designators
5 associated with each Owner. Each Owner was then contacted, identifying the goals of
6 this Project, and outlining which Designators are listed under their organization's
7 ownership. Instructions and links to Guide submittal templates were provided in order
8 to assist each Owner with supplying the most current set of information and Guide
9 materials.

10 In addition, for each System type, there is a TF13 Technical Representative who acts as
11 the point of contact for materials that are submitted to the Guide. These Tech Reps are
12 volunteers of Taskforce 13, and help to bridge the communication between the Owner
13 agency & the publication review committees. Each Tech Rep, as well as selected
14 members of this project Panel who are actively engaged with the TF13 submittal
15 process, were also sent correspondence outlining information needs for each
16 Designator.

17 Follow-up correspondence was sent regularly throughout the duration of this project to
18 Owners who did not reply to the initial request. Alternate means of communication,
19 and other points of contact, were attempted when prior messages resulted in no
20 response. In addition, those Owners who did reply often maintained communication
21 with the Project Team, as we helped respond to their questions about the Online Guide
22 formatting requirements and aiding in their submittal package transfer.

23 The results were extremely positive, with 24 of the 31 Owner agencies responding to
24 requests. We were able to greatly increase the volume of information on a wide scope
25 of Designators/Systems. Many Systems that may have been in the Guide previously
26 now have new details with updated information submitted. A number of Systems that
27 have never been represented in the Guide now have properly formatted details &
28 specifications ready for review & inclusion. Of the two-hundred forty six (246) Systems
29 identified as having an Owner, this Project has helped to procure Guide-formatted PDF
30 files for one-hundred seventy one (171) unique Systems.

31 A Comment Regarding Designator Approval Status

32 During conversation with TF13 executives, concerns were expressed about maintaining
33 consistency of “Approved” versus “In-review” status of drawings. We have received
34 files which are in a variety of approved/review states. Some Owners have admitted
35 their files they are sending are out of date since 2005 or earlier. Per one of the original
36 spreadsheets maintained by TF13, a number of Designators were marked as being
37 "Approved" or "In-review", and their status has transferred into the final Project
38 database.

39

1 CHAPTER 3.2: WORK PLAN TASK 2

2 **Generate Updated Materials & Data for System Designators with No** 3 **Owner.**

4 The Guide contains designators that correspond to either barrier hardware Systems or
5 barrier hardware Components, which are individual parts within one or more Systems.
6 Priority for preparing updated materials was given to System designators, as these are
7 more important to users of the Guide. Hardware Systems are typically the entities that
8 are tested & accepted for use as a whole, and many appear as recommended roadside
9 safety devices in the AASHTO Roadside Design Guide (RDG). In many instances, the
10 RDG refers highway designers directly to the Barrier Guide for additional information
11 related to the respective System designator.

12 Materials (drawings, photos, etc.) for Systems with Owners were, or are, to be updated
13 and submitted by their Owners. Forty-one (41) System designators have no specific
14 Owner, and therefore needed to be updated by the project team. A list of these was
15 sent to the Panel with a request to prioritize them, in order for the project team to focus
16 on generating new or updated contents for the highest priority System designators.
17 Responses were received from the Panel, and numerical equivalents for
18 High/Medium/Low priority were recorded. The list was then ranked and sorted to
19 show the highest priority Designators at the top. Of the forty one (41) Systems ranked
20 by the Panel, the project team generated content or procured Guide formatted details
21 for thirty three (33) System designators. The remaining eight (8) represent special cases
22 that will be assigned new Owners, or addressed at a later date.

23 See Appendix H for a full breakdown of these Systems.

24

25 CHAPTER 3.3: WORK PLAN TASK 3

26 **Prepare Final Report and Other Project Deliverables.**

27 Task 3 includes sub-tasks, as follows:

- 28 a) **Conduct review and provide recommendation for improving the TF-13**
29 **Standard Operating Procedures.** As requested by the Panel, this sub-task was
30 removed and replaced with an alternate assignment to collect System
31 designator attributes for Crash Test Specification (NCHRP Report 350 or
32 MASH) & Test Level. These attributes were researched and entered into the
33 final database. These attribute fields will accommodate searching capabilities
34 for the online Guide. For example, a user may wish to see a list of System-
35 Crash Cushions that are accepted in accordance with only MASH and Test
36 Level 3. Filtering capabilities will search the database, and display only System

1 Designators that meet the criteria. Additional attribute fields are anticipated to
2 be established and populated in future versions of the Barrier Guide database
3 and user interface to allow expanded search capabilities for Guide users.

- 4 b) **Prepare recommendations for database organization and package all updated**
5 **data & materials.** A primary benefit of providing an online Guide (as opposed
6 to paper) is that data & materials can be readily updated, as needed, on a
7 regular basis. The project team has provided recommendations intended to
8 foster this process, and submitted them to the Panel and TF13 for
9 consideration.

10 All data and materials generated from Tasks 1 & 2 above were compiled,
11 organized, and formatted such that it can be imported into the online Barrier
12 Guide. Since the online Guide application is continually being updated and
13 improved, the project team worked to ensure that all new data & materials are
14 organized and presented in a variety of formats that are readily transferrable to
15 a range of data access platforms. Characteristics of the project deliverables that
16 should help the Online Guide administrator implement the contents are as
17 follows:

- 18 • File Naming & Dating Conventions
- 19 • Designator Schema
- 20 • Photo & Thumbnail and other means of designator identification
- 21 • Process used to organize the online Guide & to update materials.
- 22 • Listing of materials created or revised by the project team.
- 23 • Listing of materials collected from other Owners.
- 24 • Description of any revisions implemented to Guide database structure.

- 25
- 26 c) **Prepare Final Report and Project Deliverables.** This document is the Final
27 Report that summarizes & documents all project activities. Other project
28 deliverables include a tabular database provided in various file formats, and a
29 comprehensive electronic package of Guide materials organized by Designator
30 ID.

31

32

CHAPTER 3.4: WORK PLAN TASK 4

Generate Updated Materials & Data for Component Designators with No Owner (*Time Permitting*).

Component designators consist of Fastener, Post, & Rail hardware elements that are component parts used in one or more hardware Systems. The final Project database identifies three-hundred eighty (380) Component designators, of which three-hundred seventy (372) have no Owner assigned. The vast majority of Components are non-proprietary items, and therefore do not have specific Owners at this time.

The Project team collected all currently-available materials for Components, including:

- 207 Guide formatted Component details.
- 292 source CAD files.
- 139 original specification documents.

These materials were compiled, organized and included into the final project database and electronic file package.

As shown in Task 2, priority for preparing new and/or updated Guide materials was given to System designators. The level of project resources needed to complete all project tasks and create Guide materials for all System designators on the Panel's priority list was greater than the amount of funding available in the project budget. As a result, no new Guide materials for Component designators were produced by the project team. However, the completed task of compiling and organizing all existing Component materials will allow Guide user access to materials for a majority of Component designators, as well as facilitate inclusion of new Component materials moving forward.

A recommendation for future research includes a project specific to updating data and creating/revising Guide materials for Components conducted in a systematic fashion, developed jointly between the project team & panel. Priority should be given to Fastener, Post & Rail Components which are specifically referenced in any of the updated Barrier Hardware System materials. The data should include cross-references between associated Components and Systems. In addition, various versions of the "Components Guide" should be reviewed for possible consolidation. It is anticipated that it may be beneficial to have one Components Guide that covers components referenced in the Barrier Hardware and Bridge Rail & Transitions Guides, since there are components common to Systems in both of these Guides.

Additional activities and meetings between the project team and Panel assisted in facilitating completion of the project tasks. These included:

1. Conference call with the TF13 Executive Committee on April 5th, 2013.

-
- 1 2. The Principal Investigator provided an overview of project status via webcast
2 during the TF13 meeting in Lincoln, NE on April 18th, 2013. This led to further
3 discussions of the existing website interface and data contents.

 - 4 3. Conference call with the TF13 Executive Committee on May 20th, 2013. A
5 variety of topics were discussed, including the near-term imperative to
6 determine the desired Guide interface changes, which could affect final
7 deliverables for this project, as well as the scope of the next phase of website
8 development.

 - 9 4. Conference call with the project Panel to discuss current project status on July
10 3rd, 2013 to discuss collection of designator attributes to aid in search
11 functionality of the Guide. The existing Online Guide currently displays a single
12 attribute field (column) containing values for both Test Specification and Test
13 Level. Capturing these attributes in separate fields for each System provides
14 benefits to the Guide user for searches by removing any inconsistency or overlap
15 with devices that share the same root designator yet have a different Test
16 specification or Test Level acceptance.

 - 17 5. Web meeting with project Panel on August 12th, 2013.

 - 18 6. The Principal Investigator provided an overview of project status via webcast
19 during the TF13 meeting in College Station, TX on September 26th, 2013.

 - 20

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

Completion of the project tasks described above has provided significantly better organized data, and produced greatly expanded content for inclusion in the updated TF13 Guide to Standardized Barrier Hardware. The final project deliverables provide up-to-date content to be incorporated into the existing online Guide framework, as well as future improvements to the Guide's functionality and user interface. In addition, the updated materials provide data and content format examples for future submissions of systems and components to the Guide. With this new solid base of data related to existing Designators, it is likely going to be easier for TF13 volunteers to maintain organization of the Guide, and facilitate continued improvements. TF13 guides are "living" documents that require some level of continual attention in order to keep them current and valuable assets to the highway community. Efforts required maintaining TF13 guides are greatly reduced when existing Guide materials are highly organized and complete. This allows Guide maintenance activities to focus on new content and improvements to presentation of the guides.

The following recommendations are made to further improve TF13 Guides:

1. Designator ID Assignments to Improve Consistency & Search-Ability

There is a current practice in the Barrier Guide of using overlapping designators to identify variations of a System or Component. For example, SGM04a and SGM04b are two (2) distinct Systems that are represented by a single drawing labeled SGM04a-b, which does not present any problems. However, SGM04a and SGM04b must be separate Systems in the Guide database in order to differentiate the characteristics of the two (2) systems. In this case, *Strong-Post W-Beam Median Barrier*, contains two variations. "SGM04a" is a Steel Post variation, while the "SGM04b" is the Timber Post variation. They are similar enough to utilize the same drawing with the difference highlighted, but are clearly different barrier Systems.

In other cases, such as SGR07a-f, this designator represents six (6) different systems from different manufacturers, who submit six (6) different drawings, and is shown in the current online guide as six rows. The base Designator, SGR07, represents "*High Tension Cable Barrier*", and a-f represents different manufacturers' version of this barrier type. In some cases, a manufacturer may have multiple versions of their high-tension cable barrier, such as 3-cable & 4-cable, or TL-3 & TL-4. In this case, the current Designator schema does not provide a means to differentiate variations of barrier characteristics from the same manufacturer.

And as a final example, FBB01-05 is a designator representing a single drawing and is shown in the current online guide as a single row. Each number 01 to 05 represents variations in length of a single component type.

1 These examples illustrate a lack of consistency in using the numeric portion versus the
2 trailing letter of the designator, as a way to identify different systems or components as
3 compared to different variations of the same system or component. Moving forward, it
4 would be beneficial to develop a consistent policy, which is applied uniformly to
5 maintain specific meaning for each segment of the Designator schema. It is anticipated
6 that this can be done with minimal changes to existing Designator ID's, with the
7 exception of a few isolated cases that fall outside the typical Designator ID system. It is
8 recommended that a number of Designators with these kinds of inconsistency in
9 approach be reassigned, for clarity and search capabilities.

10 **2. Criteria for Posting Online Guide Contents**

11 In conversation, it was indicated that the Barrier Guide would be more functional if all
12 designators were searchable, regardless of if they are "approved", "in-review", or
13 whether they have a complete set of file contents. It would be more beneficial to the
14 roadway safety community to have a full working database that perhaps only returns a
15 name & company contact, than to restrict the Guide contents to only those Systems
16 which have TF13 approved details. The very limited information present on the current
17 site could be improved, if only by simply adding records for the complete set of
18 designators, ignoring the missing files.

19 Other Guides under the Authority of TF13, exhibit this kind of functionality, where
20 systems still "In Review" are searchable but flagged accordingly. In addition, these
21 other online guides have the capability to store and distribute a much wider scope of
22 file types for each Designator. This functionality greatly improves the usefulness and
23 timeliness of content delivery to the end user, and is strongly recommended to be
24 adopted into the Barrier Guide.

25 **3. System Attributes and User Interface**

26 Based on our own usage of the existing site, as well as after reviewing comments in an
27 AASHTO TF13 Website Review document, we have put together a sample list of
28 Designator Attributes that, if searchable, would assist users in finding Systems that are
29 suitable for their site application. A list of potential attributes for each barrier category
30 is provided in Appendix I.

31 In addition, Appendix J provides a mockup of a refined user interface that is likely to
32 improve Guide user experience. Adding attribute fields to the database, combined with
33 user interface improvements would greatly help towards achieving the goal of making
34 TF13 Guides the "go to" source for roadside safety devices.

35

1 REFERENCES

- 2 1. A file set & database export from the current online guide, available at
3 https://www.aashtotf13.org/guide_display.php
- 4 2. A physical hard copy of the 1995 guide.
- 5 3. An archived version of the 1995 guide available online
6 (http://aashtotf13.tamu.edu/OldGuide/toc_si.html)
- 7 4. A zip file archive of 1995 guide source drawings.
- 8 5. A spreadsheet list of system designators maintained by Taskforce 13 committee
9 (updated in 2012)
- 10 6. A spreadsheet list of system designators which are presently Under Review or
11 pending addition to the current online guide. (2013)
- 12 7. Archive data from prior NCHRP 20-07 / Task 192 (2005): ZIP archive contained (77)
13 source CAD files and (74) source DOC files for Systems & Components. Also
14 included (30) thumbnail images.
- 15 8. McTrans data disks (Four 3.5" Floppies Containing Multipart zip Archive)
- 16 9. FHWA Office of Safety Website
- 17 10. Many generous contributions of source materials from various state Transportation
18 agencies, crash test facilities, and proprietary device owners.
19

1	APPENDICES
2	
3	Appendix A: Full Designator List and Initial Comprehensive Status
4	Appendix B: System Designators Assigned to Archive, Delete, or Defer Status
5	Appendix C: System Designators and File Contents
6	Appendix D: System Designators and Attributes
7	Appendix E: System Designators and FHWA Letters
8	Appendix F: System Designators and TF13 Drawing Review Status (Approved)
9	Appendix G: System Designators and Owner, Grouped by Owner
10	Appendix H: Status of Non-Proprietary Systems / Consolidated Ranks from Panel
11	Appendix I: Suggested Descriptor Fields for System Designators in TF13 Guides
12	Appendix J: Suggested Website User Interface Controls and Input Fields
13	Appendix K: Device Owners
14	Appendix L: Guide Files & Data Transfer Summary
15	
16	

Appendix A: Full Designator List and Initial Comprehensive Status

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FBB01	Guardrail Bolt & Recessed Nut	MINOR	FBB01-05 same drawing, dated 2005_06_30, Needs Logo.
FBB02	Guardrail Bolt & Recessed Nut	MINOR	
FBB03	Guardrail Bolt & Recessed Nut	MINOR	
FBB04	Guardrail Bolt & Recessed Nut	MINOR	
FBB05	Guardrail Bolt & Recessed Nut	MINOR	
FBB06	Guardrail Bolt & Recessed Nut	NONE	FBB06-07 same drawing,dated 2007_05_15, from MwRSF.
FBB07	Guardrail Bolt & Recessed Nut	NONE	FBB06-07 same drawing,dated 2007_05_15, from MwRSF.
FBB08	Round Head Bolt with Washer and Hex Nut	NONE	FBB08-09 same drawing,dated 2008_04_28, from MwRSF.
FBB09	Round Head Bolt with Washer and Hex Nut	NONE	FBB08-09 same drawing,dated 2008_04_28, from MwRSF.
FBC10	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBC12	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBC14	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBC16	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBC18	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBC20	Carriage Bolt	MODERATE	FROM 1995 GUIDE
FBH01	Cable Hook Bolt & Nut	MINOR	FBH01-03 same drawing, dated 2005_03_24, Needs Logo.
FBH02	Cable Hook Bolt & Nut	MINOR	
FBH03	Cable Hook Bolt & Nut	MINOR	
FBH04	Shouldered Cable Hook Bolt & Nut	MINOR	Drawing, dated 2005_04_21, Needs Logo.
FBL05	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL06	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL08	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL10	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL12	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL16	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL20	Lag Screw	MODERATE	FROM 1995 GUIDE
FBL24	Lag Screw	MODERATE	FROM 1995 GUIDE
FBS12	Cap Screw and Washer	MODERATE	FROM 1995 GUIDE
FBS14	Cap Screw and Washer	MODERATE	FROM 1995 GUIDE
FBS16	Cap Screw and Washer	MODERATE	FROM 1995 GUIDE
FBT12	Toggle Bolt	MODERATE	FROM 1995 GUIDE
FBU01	U-Bolt and Nut	NONE	Under Review. Drawing dated 9/15/2011.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FBX01	NULL	MAJOR	Under Review
FBX02	NULL	MAJOR	Under Review
FBX06a	Hex Bolt & Nut	MINOR	Same drawing covers FBX06,08,10,12,14,16,20,24. Needs Logo.
FBX06b	High-Strength Hex Bolt and Nut	MODERATE	FROM 1995 GUIDE
FBX08a	Hex Bolt & Nut	MINOR	
FBX08b	High-Strength Hex Bolt and Nut	MODERATE	FROM 1995 GUIDE
FBX10a	Hex Bolt & Nut	MINOR	
FBX10b	High-Strength Hex Bolt and Nut	MODERATE	FROM 1995 GUIDE
FBX12a	Hex Bolt & Nut	MINOR	
FBX12b	High-Strength Hex Bolt and Nut	MODERATE	FROM 1995 GUIDE
FBX14a	Hex Bolt & Nut	MINOR	
FBX14b	High-Strength Hex Bolt and Nut	MODERATE	FROM 1995 GUIDE
FBX16a	Hex Bolt & Nut	MINOR	
FBX16b	High-Strength Structural Hex Bolt & Nut	MINOR	Same drawing covers FBX16,20,22,24,27,30,36. Needs logo.
FBX20a	Hex Bolt & Nut	MINOR	
FBX20b	High-Strength Structural Hex Bolt & Nut	MINOR	
FBX22b	High-Strength Structural Hex Bolt & Nut	MINOR	
FBX24a	Hex Bolt & Nut	MINOR	
FBX24b	High-Strength Structural Hex Bolt & Nut	MINOR	
FBX27b	High-Strength Structural Hex Bolt & Nut	MINOR	
FBX30b	High-Strength Structural Hex Bolt & Nut	MINOR	
FBX36b	High-Strength Structural Hex Bolt & Nut	MINOR	
FCA01	BCT Cable Anchor Assembly	MODERATE	FROM 1995 GUIDE
FCA02	BCT Cable Anchor Assembly	MODERATE	FROM 1995 GUIDE
FCA03	BCT Cable Anchor Assembly	NONE	Under Review. Drawing dated 9/9/2011.
FCA04	BCT Cable Anchor Assembly	NONE	Under Review. Drawing dated 9/9/2011.
FCC20	U-bolt Cable Clips	MODERATE	FROM 1995 GUIDE
FMM01	Cable Wedge	MINOR	Drawing updated 2005, needs logo, remove links.
FMM02	BCT Post Sleeve	MODERATE	FROM 1995 GUIDE
FMM03	Pipe Sleeve Spacer	MODERATE	FROM 1995 GUIDE
FMM04	Pipe Sleeve Spacer	MODERATE	FROM 1995 GUIDE
FMM07	Tubular W-beam Splice Positioner	MODERATE	FROM 1995 GUIDE
FMM08	NULL	MAJOR	Under Review
FMW01	Rebar Loop Connector	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FMW02	Temporary Barrier Connector Pin	MINOR	Drawing updated 2008, need to remove links.
FMW03	Temporary Barrier Connector Pin with Retaining Bolt	MINOR	Drawing updated 2007, need to remove links.
FMW04	End Pin Pipe Sleeve	NONE	Under Review. Drawing dated 9/9/2011.
FNS20	Square Nut	MINOR	Drawing updated in 2005. Needs logo, remove links.
FNX06a	Hex Nuts	MINOR	Drawing covers FNX06a,08a,10a,12a,14a,16a,20a,24a,30a,36a, updated in 2005. Needs logo.
FNX06b	High-Strength Hex Nuts	MODERATE	FROM 1995 GUIDE
FNX08a	Hex Nuts	MINOR	
FNX08b	High-Strength Hex Nuts	MODERATE	FROM 1995 GUIDE
FNX10a	Hex Nuts	MINOR	
FNX10b	High-Strength Hex Nuts	MODERATE	FROM 1995 GUIDE
FNX12a	Hex Nuts	MINOR	
FNX12b	High-Strength Hex Nuts	MODERATE	FROM 1995 GUIDE
FNX14a	Hex Nuts	MINOR	
FNX14b	High-Strength Hex Nuts	MODERATE	FROM 1995 GUIDE
FNX16a	Hex Nuts	MINOR	
FNX16b	High-Strength Structural Hex Nuts	MINOR	Drawing covers FNX16b,20b,22b,24b,27b,30b,36b, updated in 2005. Needs logo.
FNX20a	Hex Nuts	MINOR	
FNX20b	High-Strength Structural Hex Nuts	MINOR	
FNX22b	High-Strength Structural Hex Nuts	MINOR	
FNX24a	Hex Nuts	MINOR	
FNX24b	High-Strength Structural Hex Nuts	MINOR	
FNX27b	High-Strength Structural Hex Nuts	MINOR	
FNX30a	Hex Nuts	MINOR	
FNX30b	High-Strength Structural Hex Nuts	MINOR	
FNX36a	Hex Nuts	MINOR	
FNX36b	High-Strength Structural Hex Nuts	MINOR	
FPA01	Guardrail Anchor Bracket	MODERATE	FROM 1995 GUIDE
FPA02	Cable Guardrail Anchor Bracket	MINOR	Drawing updated 2005, needs logo, remove links.
FPA03	NULL	MAJOR	Under Review
FPA04	Nose Cable Anchor Plate	NONE	Under Review. Drawing dated 9/12/2011.
FPB01	BCT Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB02	Terminal Connector Bearing Plate	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FPB03	Anchor Bolt Bearing Plate	MINOR	Drawing updated 2005, needs logo.
FPB04	Anchor Bolt Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB05	Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB06	Embedded Anchor Bolt Plate	MODERATE	FROM 1995 GUIDE
FPB07	Thrie Beam Terminal Connector Plate	MODERATE	FROM 1995 GUIDE
FPB08	Anchor Bolt Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB09	Tubular Post Base Plate	MODERATE	FROM 1995 GUIDE
FPB10	Anchor Bolt Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB11	Bearing Plate	MODERATE	FROM 1995 GUIDE
FPB12	Anchor Bolt Bearing Plate	MODERATE	FROM 1995 GUIDE
FPC01	Aluminum Rail Clamp Bar	MODERATE	FROM 1995 GUIDE
FPC02	Aluminum Rail Clamp Bar	MODERATE	FROM 1995 GUIDE
FPC09	Variable Resistance Post Clamp Bar	MODERATE	FROM 1995 GUIDE
FPP01	Box Beam Guardrail Support Bracket	MINOR	Drawing updated 2005, needs logo.
FPP02	Shelf Angle Bracket	MODERATE	FROM 1995 GUIDE
FPP03	Box Beam Terminal Support Bracket	MODERATE	FROM 1995 GUIDE
FPP04	Box Beam Rail Support Plate	MINOR	Drawing updated 2005, needs logo.
FPP05	Driveway End Post Bracket	MODERATE	FROM 1995 GUIDE
FRH16a	Hooked Anchor Stud & Nuts	MINOR	Drawing covers FRH16a-36b, updated 2005, needs logo.
FRH16b	Hooked Anchor Stud & Nuts	MINOR	
FRH20a	Hooked Anchor Stud & Nuts	MINOR	
FRH20b	Hooked Anchor Stud & Nuts	MINOR	
FRH24a	Hooked Anchor Stud & Nuts	MINOR	
FRH24b	Hooked Anchor Stud & Nuts	MINOR	
FRH30a	Hooked Anchor Stud & Nuts	MINOR	
FRH30b	Hooked Anchor Stud & Nuts	MINOR	
FRH36a	Hooked Anchor Stud & Nuts	MINOR	
FRH36b	Hooked Anchor Stud & Nuts	MINOR	
FRJ16a	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ16b	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ20a	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ20b	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ24a	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ24b	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FRJ30a	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ30b	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ36a	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRJ36b	J-Hook Anchor Stud and Nut	MODERATE	FROM 1995 GUIDE
FRS01	NULL	MAJOR	Under Review
FRS16a	Straight Anchor Stud & Nuts	MINOR	Drawing covers FRS16a-36b, updated 2005, needs logo.
FRS16b	Straight Anchor Stud & Nuts	MINOR	
FRS20a	Straight Anchor Stud & Nuts	MINOR	
FRS20b	Straight Anchor Stud & Nuts	MINOR	
FRS24a	Straight Anchor Stud & Nuts	MINOR	
FRS24b	Straight Anchor Stud & Nuts	MINOR	
FRS30a	Straight Anchor Stud & Nuts	MINOR	
FRS30b	Straight Anchor Stud & Nuts	MINOR	
FRS36a	Straight Anchor Stud & Nuts	MINOR	
FRS36b	Straight Anchor Stud & Nuts	MINOR	
FWC06a	Plain Round Washer	MINOR	Drawing covers FWC06a-36a, updated 2005, needs logo.
FWC08a	Plain Round Washer	MINOR	
FWC10a	Plain Round Washer	MINOR	
FWC12a	Plain Round Washer	MINOR	
FWC12b	Hardened Round Washer	MINOR	Drawing covers FWC12b-36b, updated 2005, needs logo.
FWC14a	Plain Round Washer	MINOR	
FWC14b	Hardened Round Washer	MINOR	
FWC16a	Plain Round Washer	MINOR	
FWC16b	Hardened Round Washer	MINOR	
FWC20a	Plain Round Washer	MINOR	
FWC20b	Hardened Round Washer	MINOR	
FWC22b	Hardened Round Washer	MINOR	
FWC24a	Plain Round Washer	MINOR	
FWC24b	Hardened Round Washer	MINOR	
FWC27b	Hardened Round Washer	MINOR	
FWC30a	Plain Round Washer	MINOR	
FWC30b	Hardened Round Washer	MINOR	
FWC36a	Plain Round Washer	MINOR	
FWC36b	Hardened Round Washer	MINOR	

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
FWM02	PORTABLE CONCRETE BARRIER CONNECTOR PIN	NULL	
FWM03	PORTABLE CONCRETE BARRIER CONNECTOR PIN WITH RETAINING BOLT	NULL	
FWM04	END PIN PIPE SLEEVE	NULL	
FWR01	Square Guardrail Washer	MINOR	Drawing updated 2005, needs logo.
FWR03	Rectangular Guardrail Plate Washer	MODERATE	FROM 1995 GUIDE
FWR06	Plate Washer	MODERATE	FROM 1995 GUIDE
FWR07	Anchor Plate	MODERATE	FROM 1995 GUIDE
FWR08	3-Cable Guardrail Back-up Washer	MODERATE	FROM 1995 GUIDE
FWR09	Tubular Bridge Post Bearing Plate	MODERATE	FROM 1995 GUIDE
FWR10	U-Bolt Plate Washer	NONE	Under Review. Drawing dated 9/15/2011.
LPB01	LOW-PROFILE, CONCRETE BARRIER	NULL	
PAB02	BR1 Type C Aluminum Post Base Plate	MODERATE	FROM 1995 GUIDE
PAB03	BR2 Type C Aluminum Post Base Plate	MODERATE	FROM 1995 GUIDE
PAF01	Variable Resistance Extruded Post	MODERATE	FROM 1995 GUIDE
PAF02	BR1 Type C Aluminum Bridge Post	MODERATE	FROM 1995 GUIDE
PAF03	BR2 Type C Aluminum Bridge Post	MODERATE	FROM 1995 GUIDE
PAF07	BR2 Type A Aluminum Bridge Post	MODERATE	FROM 1995 GUIDE
PDB01a	W-Beam Timber Blockout	MINOR	Drawing updated 2005, needs logo.
PDB01b	W-Beam Timber Blockout	MINOR	Drawing updated 2005, needs logo.
PDB02a	Thrie Beam Timber Blockout	MINOR	Drawing updated 2005, needs logo.
PDB02b	Thrie Beam Timber Blockout	MINOR	Drawing updated 2005, needs logo.
PDB03	Transition Spacer Blockouts	MODERATE	FROM 1995 GUIDE
PDB04	Transition Spacer Blockouts	MODERATE	FROM 1995 GUIDE
PDB05	Transition Spacer Blockouts	MODERATE	FROM 1995 GUIDE
PDB06	Transition Spacer Blockouts	MODERATE	FROM 1995 GUIDE
PDB07	Transition Spacer Blockouts	MODERATE	FROM 1995 GUIDE
PDB08	W-beam Timber Blockout	MODERATE	FROM 1995 GUIDE
PDB09	W-Beam Timber Blockout for Steel Guardrail Post	NONE	Drawing updated 2007.
PDB10a	MGS Timber Blockout for Steel Guardrail Post	NONE	Drawing updated 2007.
PDB10b	MGS Timber Blockout for Steel Guardrail Post	NONE	Drawing updated 2007.
PDB11a	MGS Timber Blockout for Timber Guardrail Post	NONE	Drawing updated 2007.
PDB11b	MGS Timber Blockout for Timber Guardrail Post	NONE	Drawing updated 2007.
PDB12	W-Beam Tapered Timber Blockout for Timber	NONE	Drawing updated 2007.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
	Guardrail Post		
PDB13a	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB13b	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB13c	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB13d	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB13e	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB13f	MGS Blockouts for MGA Round Post Applications	NONE	Drawing updated 2007.
PDB16	CRT Timber Post for Thrie-Beam Guardrail	NONE	Drawing updated 2007.
PDB17	NULL	MAJOR	Under Review
PDB18	NULL	MAJOR	Under Review
PDB19	NULL	MAJOR	Under Review
PDB20	Tapered Timber Blockout for Steel Guardrail Post	NONE	Under Review. Drawing dated 9/19/2011.
PDB21	NULL	MAJOR	Under Review
PDB22	NULL	MAJOR	Under Review
PDE01	Timber Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PDE02	Timber Guardrail Post	MINOR	
PDE03	Timber Guardrail Post	MINOR	
PDE04	Timber Guardrail Post	MINOR	
PDE05	Timber Guardrail Post	MINOR	
PDE06	Timber Guardrail Post	MINOR	
PDE07	Timber Guardrail Post	MINOR	
PDE08	Timber Guardrail Post	MINOR	
PDE09	CRT Timber Post	MODERATE	FROM 1995 GUIDE
PDE11	Weakened Round Timber Cable Guardrail Post	MODERATE	FROM 1995 GUIDE
PDE13	Strong Round Timber Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PDE14	Strong Round Timber Median Barrier Post	MINOR	Drawing updated 2005, needs logo.
PDE15	Timber Median Barrier Post	MINOR	Drawing updated 2005, needs logo.
PDE16	NULL	MAJOR	Approved
PDE17a	Round Post for MGS Guardrail System	MINOR	Drawing updated 2007, No contact info. Approved
PDE17b	Round Post for MGS Guardrail System	MINOR	Drawing updated 2007, No contact info. Approved
PDE17c	Round Post for MGS Guardrail System	MINOR	Drawing updated 2007, No contact info. Approved.
PDE17c	NULL	MAJOR	Approved
PDE18	Timber Guardrail Post	NONE	Drawing updated 2007.
PDE19	NULL	MAJOR	Under Review

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
PDE20	NULL	MAJOR	Under Review
PDF01	BCT Timber Post	MODERATE	FROM 1995 GUIDE
PDF02	Long BCT Timber Post	MODERATE	FROM 1995 GUIDE
PDF03	Long BCT Timber Post	MODERATE	FROM 1995 GUIDE
PDF04	BCT Timber Post for Thrie-Beam Bullnose End Terminal	NONE	Drawing updated 2007.
PFE01	Flanged-Channel Post	MINOR	Drawing updated 2005, needs logo.
PFP01	Strut and Yoke Assembly	MODERATE	FROM 1995 GUIDE
PLS01	Weak Post Soil Plate	MODERATE	FROM 1995 GUIDE
PLS02	Trapezoidal Soil Plate	MINOR	Drawing updated 2005, needs logo.
PLS03	Foundation Tube Soil Plate	MODERATE	FROM 1995 GUIDE
POF01	Concrete Timber-Post Foundation	MODERATE	FROM 1995 GUIDE
POF02	Concrete Timber-Post Foundation	MODERATE	FROM 1995 GUIDE
POF03	Cable Guardrail Terminal Anchor Assembly	MINOR	Drawing updated 2005, needs logo.
POF04	Weak-Post Turned Down Terminal Anchor	MODERATE	FROM 1995 GUIDE
PSE01	Cable Guardrail Post & Welded Soil Plate	MINOR	Drawing updated 2005, needs logo.
PSE02	Cable Median Barrier Post & Soil Plate	MINOR	Drawing updated 2005, needs logo.
PSE03	Weak Post Guardrail Post & Welded Soil Plate	MINOR	Drawing updated 2005, needs logo.
PSE05	Box Beam Anchor Post	MODERATE	FROM 1995 GUIDE
PSE06	Cable Guardrail Anchor Post	MINOR	Drawing updated 2005, needs logo.
PSE07	Weak Post Box Beam Post & Welded Soil Plate	MINOR	Drawing updated 2005, needs logo.
PSE08	Weak Post Box Beam Post & Welded Soil Plate	MINOR	Drawing updated 2005, needs logo.
PSE09	Weak Post Box Beam Post & Welded Soil Plate	MINOR	Drawing updated 2005, needs logo.
PTE05	Foundation Tube	MODERATE	FROM 1995 GUIDE
PTE06	MGS and Thrie-Beam Foundation Tubes	MINOR	Drawing updated 2007, no contact info.Approved.
PTE07	MGS and Thrie-Beam Foundation Tubes	MINOR	Drawing updated 2007, no contact info. Approved.
PTE08	Foundation Tube for Bullnose End Terminal Slip Post	NONE	Under Review. Drawing dated 9/19/2011.
PTF01	Tubular Bridge Post	MODERATE	FROM 1995 GUIDE
PWB01	W-Beam Guardrail Blockout	MINOR	Drawing updated 2005, needs logo.
PWB02	Thrie Beam Guardrail Blockout	MODERATE	FROM 1995 GUIDE
PWB03	Modified Thrie Beam Blockout	MINOR	Drawing updated 2005, needs logo.
PWE01	Wide-Flange Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PWE02	Wide-Flange Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PWE03	Wide-Flange Guardrail Post	MINOR	Drawing updated 2005, needs logo.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
PWE04	Wide-Flange Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PWE05	Wide-Flange Median Barrier Post	MINOR	Drawing updated 2005, needs logo.
PWE06	Wide-Flange Guardrail Post	NONE	Drawing updated 2007. Approved.
PWE07	Wide-Flange Guardrail Post	NONE	Drawing updated 2007. Approved.
PWE08	NULL	MAJOR	Approved
PWE09	NULL	MAJOR	Approved
PWE10	NULL	MAJOR	Under Review
PWE11	Wide-Flange Bullnose End Terminal Slip Post	NONE	Under Review. Drawing dated 9/19/2011.
PWE12	NULL	MAJOR	Under Review
PWE13a	WIDE-FLANGE GUARDRAIL POST	MAJOR	Under Review
PWE13b	WIDE-FLANGE GUARDRAIL POST	MAJOR	Under Review
PWE13c	WIDE-FLANGE GUARDRAIL POST	MAJOR	Under Review
PWF01	Culvert Mounted Guardrail Post	MINOR	Drawing updated 2005, needs logo.
PWF02	Deck Mounted Bridge Rail Post	MODERATE	FROM 1995 GUIDE
PWF03	Side-Mounted Bridge Post	MODERATE	FROM 1995 GUIDE
PWF04	Deck-Mounted Bridge Post	MODERATE	FROM 1995 GUIDE
PWF05	Deck-Mounted Bridge Railing Post	MODERATE	FROM 1995 GUIDE
PWF06	Deck-Mounted Bridge Railing Post	MODERATE	FROM 1995 GUIDE
RAE02	Round Aluminum Rail End Cap	MODERATE	FROM 1995 GUIDE
RAM02	Round Tube Aluminum Bridge Rail	MODERATE	FROM 1995 GUIDE
RAM06	Semi-Elliptical Aluminum Bridge Rail	MODERATE	FROM 1995 GUIDE
RAM07	Large Semi-Elliptical Aluminum Bridge Rail	MODERATE	FROM 1995 GUIDE
RAM08	TRU-Beam Aluminum Barrier Rail	MODERATE	FROM 1995 GUIDE
RAS02	Round Tube Aluminum Rail Splice	MODERATE	FROM 1995 GUIDE
RAS06	Semi-Elliptical Aluminum Rail Splice	MODERATE	FROM 1995 GUIDE
RAS07	Large Semi-Elliptical Aluminum Rail Splice	MODERATE	FROM 1995 GUIDE
RAS08	TRU-Beam Rail Splice	MODERATE	FROM 1995 GUIDE
RBM01	Square Box Beam Rail	MINOR	Drawing updated 2005, needs logo.
RBM05	Box Beam Guardrail End Rail	MODERATE	FROM 1995 GUIDE
RBM06	Rectangular Tube Bridge Rail	MODERATE	FROM 1995 GUIDE
RBM07a	Rectangular Tube Bridge Railing	MODERATE	FROM 1995 GUIDE
RBM07b	Rectangular Tube Bridge Railing	MODERATE	FROM 1995 GUIDE
RBM07c	Rectangular Tube Bridge Railing	MODERATE	FROM 1995 GUIDE
RBM08a	Square Tube Bridge Rail	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
RBM08b	Square Tube Bridge Rail	MODERATE	FROM 1995 GUIDE
RBM09	Small Square Tube Bridge Rail	MODERATE	FROM 1995 GUIDE
RBM10	Rectangular Tube Bridge Rail	MODERATE	FROM 1995 GUIDE
RBM11	Box Beam Median Barrier Rail	MINOR	Drawing updated 2005, needs logo.
RBM13	Box Beam Guardrail End Rail	MODERATE	FROM 1995 GUIDE
RBS01	Square Box Beam Splice	MINOR	Drawing updated 2005, needs logo.
RBS02	Rectangular Box Beam Splice	MINOR	Drawing updated 2005, needs logo.
RBS03	Tube Rail Splice	MODERATE	FROM 1995 GUIDE
RCE01	Compensating Cable End Assembly	MINOR	Drawing updated 2005, needs logo, remove links.
RCE03	Cable End Fitting	MINOR	Drawing updated 2005, needs logo, remove links.
RCM01	Wire Rope	MINOR	Drawing updated 2005, needs logo, remove links.
RCM02	Thrie-Beam Bullnose Nose Cable	NONE	Under Review. Drawing dated 9/12/2011.
REE01	MELT Diaphragm Plate	MODERATE	FROM 1995 GUIDE
RER01	Bent Plate Rub Rail	MINOR	Drawing updated 2005, needs logo, no contact info.
RET01	NULL	MAJOR	Under Review
RLR01	Channel-Section Rub Rail & Splice	MINOR	Drawing updated 2005, needs logo, no contact info.
ROM01	Safety Shape Portable Concrete Barrier	MODERATE	FROM 1995 GUIDE
ROM02	F Shape Portable Concrete Barrier	MODERATE	FROM 1995 GUIDE
ROM04	Visi-Barrier New Jersey Shape	MODERATE	Get updated drawing from manufacturer.
ROM05	Visi-Barrier F Shape	MODERATE	Get updated drawing from manufacturer.
RPX01	Collapsing Tube	MODERATE	FROM 1995 GUIDE
RTB01a	Thrie-Beam Back-up Plate	MINOR	Drawing updated 2005, needs logo, no contact info.
RTB01b	Thrie-Beam Back-up Plate	MINOR	Drawing updated 2005, needs logo, no contact info.
RTE01b	Thrie-Beam Terminal Connector	MODERATE	FROM 1995 GUIDE
RTE02a	Thrie-Beam End Section Rounded	MODERATE	FROM 1995 GUIDE
RTE03a	Thrie-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RTE03b	Thrie-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RTE04a	Thrie-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RTE04b	Thrie-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RTM01a	1-&2-Space Thrie-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info.
RTM01b	1-&2-Space Thrie-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info.
RTM02a	1-&2-Space Thrie-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info.
RTM02b	1-&2-Space Thrie-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info.
RTM03a	3-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
RTM03b	3-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RTM04a	4-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RTM04b	4-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RTM06a	6-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RTM06b	6-Spaced Thrie-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RTM07a	Slotted and Bent Thrie-Beam Guardrail	MINOR	Drawing updated 2007, no contact info.
RTM07b	Slotted and Bent Thrie-Beam Guardrail	MINOR	Drawing updated 2007, no contact info.
RTM07c	Slotted and Bent Thrie-Beam Guardrail	MINOR	Drawing updated 2007, no contact info.
RTM07d	Slotted and Bent Thrie-Beam Guardrail	MINOR	d & e not in 2007 drawing.
RTM07e	Slotted and Bent Thrie-Beam Guardrail	MINOR	d & e not in 2007 drawing.
RWB01a	W-Beam Back-up Plate	MINOR	Drawing updated 2005, needs logo, no contact info.
RWB01b	W-Beam Back-up Plate	MINOR	Drawing updated 2005, needs logo, no contact info.
RWE01a	W-Beam End Section Flared	MODERATE	FROM 1995 GUIDE
RWE01b	W-Beam End Section Flared	MODERATE	FROM 1995 GUIDE
RWE02a	W-Beam Terminal Connector	MODERATE	FROM 1995 GUIDE
RWE02b	W-Beam Terminal Connector	MODERATE	FROM 1995 GUIDE
RWE03a	W-Beam End Section Rounded	MODERATE	FROM 1995 GUIDE
RWE04a	MELT W-Beam End Section	MODERATE	FROM 1995 GUIDE
RWE05a	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE05b	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE06a	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE06b	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE07a	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE07b	W-Beam End Section Buffer	MODERATE	FROM 1995 GUIDE
RWE0a	MELT W-BEAM END SECTION	NULL	
RWM01a	W-Beam Spacer Guardrail	MODERATE	FROM 1995 GUIDE
RWM01a	W-BEAM SPACER GUARDRAIL	NULL	
RWM01b	W-Beam Spacer Guardrail	MODERATE	FROM 1995 GUIDE
RWM02a	2-Space W-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info, Error in table on Pg. 1. 2.77 should be 2.67.
RWM02b	2-Space W-Beam Guardrail	MINOR	Drawing updated 2005, needs logo, no contact info, Error in table on Pg. 1. 2.77 should be 2.67.
RWM03a	3-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RWM03b	3-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
RWM04a	4-Space W-Beam Guardrail	MODERATE	Drawing not updated since 1994, Pg. 2 missing.
RWM04b	4-Space W-Beam Guardrail	MODERATE	Drawing not updated since 1994, Pg. 2 missing.
RWM06a	6-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RWM06b	6-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RWM08a	8-Space W-Beam Guardrail	MODERATE	Drawing not updated since 1994, Pg. 2 missing.
RWM08b	8-Space W-Beam Guardrail	MODERATE	Drawing not updated since 1994, Pg. 2 missing.
RWM10a	Tubular W-Beam Rail	MODERATE	FROM 1995 GUIDE
RWM11a	Turned-Down W-Beam Terminal Section	MODERATE	FROM 1995 GUIDE
RWM13a	Bullnose Anchor Rail Section	MODERATE	FROM 1995 GUIDE
RWM14a	BCT Terminal Rail Section	MODERATE	FROM 1995 GUIDE
RWM22a	Long 2-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RWM22b	Long 2-Space W-Beam Guardrail	MODERATE	FROM 1995 GUIDE
RWT01a	W-Thrie Beam Transition Section	MODERATE	FROM 1995 GUIDE
RWT01b	W-Thrie Beam Transition Section	MODERATE	FROM 1995 GUIDE
RWT02	ASYMMETRICAL W-THRIE BEAM TRANSITION SECTION	MAJOR	Under Review
SBA01a	Chicago Barrier Railing	NONE	
SBA02a	BR2 Type A Aluminum Bridge Railing	NONE	
SBA03a	BR1 Type C Aluminum Bridge Railing	NONE	
SBA04a	Tru-Beam Bridge Railing	NONE	
SBB01a	2-Tube Curb-Mounted Bridge Railing	NONE	
SBB01b	2-Tube Curb-Mounted Bridge Railing	NONE	
SBB02a	W And Tube Beam Bridge Railing	NONE	
SBB03a	Side-Mounted Rectangular Tube Bridge Railing	NONE	
SBB03b	AESTHETIC BALUSTRADE BRIDGE RAILING	NULL	
SBC01a	Vertical-Wall Bridge Railing	NONE	
SBC01b	Vertical-Wall Bridge Railing	NONE	
SBC01c	Vertical-Wall Bridge Railing	NONE	
SBC02a	Open-Profile Concrete Bridge Railing	NONE	
SBC02b	OPEN-PROFILE CONCRETE BRIDGE RAILING	NULL	
SBC03a	Aesthetic Balustrade Bridge Railing	NONE	
SBC04a	F SHAPE CONCRETE BRIDGE RAILINGS	NULL	
SBC04b	F Shape Concrete Bridge Railing	NONE	
SBC04c	F Shape Concrete Bridge Railing	NONE	

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SBC05b	Safety-Shape Concrete Bridge Railing	NONE	
SBC06a	SAFETY-SHAPED CONCRETE BRIDGE RAILING	NULL	
SBC06b	Safety-Shape Concrete Bridge Railing	NONE	
SBC07b		NONE	
SBC08b		NONE	
SBC09b		NONE	
SBC10b		NONE	
SBC11b		NONE	
SBC12b		NONE	
SBC13b		NONE	
SBC14b		NONE	
SBC15b		NONE	
SBC16b		NONE	
SBC17b	Permanent Parapet Precast Concrete Bridge Railing	NONE	
SBC18b	Permanent Half-Section Precast Concrete Bridge Railing	NONE	
SBC19b	Permanent Median Precast Concrete Barrier	NONE	
SBC20a	Visi-Barrier Safety Shape System	NONE	
SBT01a	Side-Mounted Thrie Beam Bridge Railing	NONE	
SBT01a	SIDE-MOUNTED THRIE-BEAM BRIDGE RAILING	NULL	
SBW01a	Tubular W-Beam Bridge Railing	NONE	
SCI01a	G-R-E-A-T System	NONE	Possible Archive.
SCI01b	G-R-E-A-T CZ System	NONE	Possible Archive.
SCI02	Hi-Dro Cell Cluster	NONE	Possible Archive.
SCI02b		NULL	
SCI03	Hi-Dro Sandwich System	NONE	Possible Archive.
SCI03b		NULL	
SCI04	Hex-Foam Sandwich System	NONE	Possible Archive.
SCI04b		NULL	
SCI05	Low Maintenance Attenuator	NONE	Possible Archive.
SCI06a	Energite	NONE	
SCI06b	Fitch Universal Module	NONE	
SCI06c	Energite III	MINOR	Drawing updated 2005.
SCI07	Connecticut Impact Attenuation System	MODERATE	FHWA Letter CC-77. DXF from 1995 Guide Available.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SCI08	Narrow Connecticut Impact Attenuation System	MODERATE	FHWA Letter CC-58. DXF from 1995 Guide Available
SCI09	ADIEM Energy Absorbing End Treatment	MAJOR	FHWA Letter CC-38. No drawing found.
SCI10	N-E-A-T System	MINOR	Drawing updated 2005.
SCI11	ABSORB 350	MINOR	Drawing updated 2005.
SCI12	BEAT-BP (Bridge Pier)	MINOR	Drawing updated 2005.
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	MAJOR	FHWA Letter CC-69D&E. No drawing found.
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	MAJOR	FHWA Letter CC-69D&E. No drawing found.
SCI14	CushionWall II	MAJOR	No info found.
SCI15	EASI-Cell Cluster	MINOR	Drawing updated 2005.
SCI16a	REACT 350 (36) Wide	MINOR	Drawing updated 2005.
SCI16b	REACT 350 (60/96/120) Wide	MINOR	Drawing updated 2005.
SCI16c	REACT 350 II	MAJOR	No info found.
SCI17a	SCI100GM Impact Attenuator	MINOR	Drawing updated 2005. No photo.
SCI17b	SCI70GM Impact Attenuator	MINOR	Drawing updated 2005. Drawing in TTI data dump, but not on website. No photo.
SCI18a	TRACC Crash Cushion Family (Narrow)	MAJOR	FHWA Letter CC-54A-H. No drawing found.
SCI18b	TRACC Crash Cushion Family	MAJOR	FHWA Letter CC-54A-H. No drawing found.
SCI19	Stop Gate	MAJOR	No info found.
SCI20	Quest Crash Cushion	MAJOR	FHWA Letter CC-87A-C. No drawing found.
SCI21	HEART Crash Cushion	MAJOR	FHWA Letter CC-89-A. No drawing found.
SCI22	SLED Sentry Longitudinal Energy Dissipater	MAJOR	FHWA Letter CC-108. No drawing found.
SCI23	X-Tenuator Crash Cushion	MAJOR	FHWA Letter cc-109. No drawing found.
SCI24	ACZ 350 TL-2 Crash Cushion	MAJOR	FHWA Letter cc-110. No drawing found.
SCI25	Raptor Crash Cushion TL-1	MAJOR	FHWA Letter cc-113. No drawing found.
SCI26a	Quadguard M10 Narrow Family	MAJOR	FHWA Letter cc-112. No drawing found.
SCI26b	Quadguard M10 Narrow Family	MAJOR	FHWA Letter cc-112. No drawing found.
SCI27	Quadguard M10 Wide Family	MAJOR	FHWA Letter cc-112. No drawing found.
SCI28	Compressor Crash Cushion	MAJOR	FHWA Letter cc-95-A-B. No drawing found.
SCI29	ArmorZone End Terminal TL-2	MAJOR	FHWA Letter CC-119, CONFLICT WITH ARMORFLEX & BARRIER SYSTEMS
SCI30	Quadguard M10 Narrow Family TL-2	MAJOR	FHWA Letter CC-121.
SCI31	Quadguard M10 Wide Family TL-2	MAJOR	FHWA Letter CC-121.
SCI32	CrashGard Sand Barrel System	MAJOR	FHWA Letter cc-97. No drawing found.
SCI33	QuadGuard Elite 8 Bay M10	MAJOR	FHWA Letter CC-112A-B.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SCI34	QuadGuard Elite 8 Bay Wide M10	MAJOR	FHWA Letter CC-112A-B.
SCI35	QuadGuard Elite 4 Bay M10	MAJOR	FHWA Letter CC-112A-B.
SCI36	QuadGuard Elite 4 Bay Wide M10	MAJOR	FHWA Letter CC-112A-B.
SCT01a	Universal TAU II	MINOR	Drawing updated 2005. No photo.
SCT01b	Universal TAU II	MINOR	Drawing updated 2005. No photo.
SCT01c	TAU IIR/Universal TL-2 & TL-3	MAJOR	No info found.
SCT02a	QuadGuard (24, 30, or 36)	MINOR	Drawing updated 2005.
SCT02b	QuadGuard CZ	MINOR	Drawing updated 2005.
SCT02c	QuadGuard CZ on a Plate	MINOR	Drawing updated 2005.
SCT02d	QuadGuard High Speed	MINOR	Drawing updated 2005.
SCT02e	QuadGuard Elite	MINOR	Drawing updated 2005.
SCT02f	QuadGuard LMC	MINOR	Drawing updated 2005.
SCT02g	QuadGuard CEN	MINOR	Drawing updated 2005.
SCT02h	QuadGuard (69 or 90)	MINOR	Drawing updated 2005.
SEB01	Box Beam Guardrail Anchor	MAJOR	From 1995 Guide. Should be updated to new system covered in FHWA Letter CC-107.
SEB02		NONE	No device associated with this designator.
SEB03	WY-BET Wyoming Box Beam End Terminal	MODERATE	Drawing in 1995 Guide. Needs to be updated by Trinity Industries, Inc.
SEB04	WY-BET Wyoming Box Beam End Terminal (Median)	MODERATE	Drawing in 1995 Guide. Needs to be updated by Trinity Industries, Inc.
SEB05	Box Beam BEAT	MINOR	Drawing updated in 2005.
SEB06	Box Beam BEAT-MT (Median)	MINOR	Drawing updated in 2005.
SEC01	Cable Guardrail Anchor	MINOR	Drawing updated in 2005; needs Logo in title blocks.
SEC07a	CCT (Trinity CASS End Terminal)	MAJOR	Possibly FHWA Letter B-157. No other info found.
SEC07b	Brifen Wire Rope End Treatment	MAJOR	FHWA Letter CC-86-A-B. No other info found.
SEC07c		MAJOR	designator was SECO7 O is incorrect, should be 0. No device associated with this designator.
SEC07d		NONE	No device associated with this designator.
SEC07e	NUCOR Cable End Terminal	MAJOR	No info found.
SEC08	ArmorWire End Terminal TL-3	MAJOR	FHWA Letter CC-105. No other info found.
SEC09	Safence Cable End Terminal	MAJOR	No info found.
SEC10	Cable End Terminal Low Tension	MAJOR	FHWA Letter CC-111. No other info found.
SED01	Steel Backed Timber Guardrail Tangent End Terminal	MAJOR	FHWA Letter CC-116. Eastern Federal Lands Highway Division. No other info found. SOURCE FILES OBTAINED, BUT CANNOT BE EDITED
SER01	Low-Profile Construction-Zone End Treatment	MODERATE	FHWA Letter CC-44. DWG file from 1995 Guide available.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SER02	Triton Barrier CET	MINOR	Drawing updated in 2005.
SER03	Low Profile Barrier End Treatment	MAJOR	Unknown system associated with designator.
SER04	Florida Low-Profile Barrier Terminal	MAJOR	FHWA Letter CC-106. Florida DOT. No other info available.
SET01	Trend System	MODERATE	In 1995 Guide. current status unknown.
SET02	Quadtrend 350	MINOR	Drawing updated in 2005. Thumbnail photo not showing on web table.
SET03a	Thrie Beam Bull Nose, Wood Post	MODERATE	2007 drawing in TTI Data Dump, not on website. Designator in title block is wrong. FHWA Letter is CC-68. Links to Componets to be checked. No photo.
SET03b	Thrie Beam Bull Nose, Steel Post	MAJOR	No info available.
SEW01	Weak Post W-Beam Terminal	MODERATE	System may be accepted for TL-2. If not, it should be archived.
SEW02a	Trailing End Terminal-Foundation Tube Option	MODERATE	System acceptance unkown. If not, it should be archived.
SEW02b	Trailing End Terminal-Concrete Footing Option	MODERATE	System acceptance unkown. If not, it should be archived.
SEW03a	Timber Post Breakaway Cable Terminal	NONE	fix title
SEW03b	Timber Post Breakaway Cable Terminal	NONE	fix title
SEW04a	Steel Post Breakaway Cable Treminal	NONE	fix title
SEW04b	Steel Post Breakaway Cable Terminal	NONE	fix title
SEW05	Modified Eccentric Loader Breakaway Cable Treminal	MAJOR	This designator should be re-assigned to "Eccentric Loader Terminal (ELT) TL-3" in FHWA Letter CC-56-A. New drawing required.
SEW06	Brakemaster 350	MINOR	Drawing updated in 2005.
SEW07	ET-2000 Guardrail Extruder Terminal	MAJOR	Should change to ET-PLUS with new materials supplied by Trinity.
SEW08	C-A-T Crash-Cushion/Attenuating Terminal	MAJOR	FHWA Letter CC-33-A. No other info available.
SEW09	Bullnose Median Barrier Terminal	MAJOR	May be new 350 version to re-assign desinator to. If not, archive.
SEW10	Wide Bullnose Median Barrier Terminal	MODERATE	May be new 350 version to re-assign desinator to. If not, archive.
SEW11	Slotted Rail Terminal (SRT-75)	MAJOR	Get updated info from Trinity.
SEW12a	Slotted Rail Terminal (SRT-350)(SRT-31)	MAJOR	Get updated info from Trinity.
SEW12b	Slotted Rail Term(SRT-350)(SRT-31)	MAJOR	Get updated info from Trinity.
SEW13	Sentre System	MAJOR	Get updated info from EAS, or archive.
SEW14a	FLEAT	MINOR	Updated in 2005.
SEW14b	FLEAT	MINOR	Updated in 2005.
SEW15	FLEAT - MGS System	MINOR	Updated in 2005.
SEW16a	FLEAT-MT (Median)	MINOR	fix designator. Needs option b added to drawing.
SEW16b	FLEAT-MT (Median)	MINOR	Needs Option b added to drawing, or new drawing from Road Systems.
SEW17a	Sequential Kinking Terminal (SKT)	MINOR	Updated in 2005.
SEW17b	Sequential Kinking Terminal (SKT)	MINOR	Updated in 2005.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SEW17c	Sequential Kinking Terminal (SKT)	MINOR	Updated in 2005.
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	MINOR	Updated in 2005.
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	MINOR	Updated in 2005.
SEW19	X-TENSION GUARDRAIL TERMINAL - TANGENT	MAJOR	Get updated info from manufacturer.
SEW19b	X-Tension End Terminal (Tangent)	MAJOR	UNUSED ?Get updated info from manufacturer.
SEW20	X-TENSION GUARDRAIL TERMINAL - FLARED	MAJOR	Get updated info from manufacturer.
SEW20b	X-Tension End Terminal (Flared)	MAJOR	UNUSED?Get updated info from manufacturer.
SEW21	X-TENSION MEDIAN GUARDRAIL TERMINAL (XMAS)	MAJOR	Get updated info from manufacturer.
SEW22	Soft Stop End Terminal	MAJOR	Get updated info from manufacturer.
SEW23	X-LITE SYSTEM, TANGENT	MAJOR	Get updated info from manufacturer.
SEW24	X-LITE SYSTEM, FLARED	MAJOR	Get updated info from manufacturer.
SEW25	TREND End Terminal, Tangent/Flared	MAJOR	Get updated info from manufacturer.
SEW26	TREND End Terminal, Median	MAJOR	Get updated info from manufacturer.
SGM01a	Weak-Post Cable Median Barrier	MINOR	drawing updated 2005. Pdf has fhwa link & extra fhwa memo page at end
SGM01b	Weak Post HT Cable Median Barrier	MAJOR	No info found.
SGM02	Weak-Post W-Beam Median Barrier	MINOR	drawing updated 2005. Pdf has fhwa link
SGM03	Weak-Post Box-Beam Median Barrier	MINOR	drawing updated 2005. Pdf has fhwa link
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	MINOR	drawing updated 2005. Pdf has fhwa link
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	MINOR	drawing updated 2005. Pdf has fhwa link
SGM05		NONE	
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	MINOR	drawing updated 2005. Pdf has fhwa link
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	MINOR	drawing updated 2005. Pdf has fhwa link
SGM07a	Gibraltar TL-3 Cable Barrier	MAJOR	ONLY WANTS A LINK TO THEIR WEBSITE FROM THE GUIDE, will not be submitting
SGM07b	Gibraltar TL-4 Cable Barrier	MAJOR	ONLY WANTS A LINK TO THEIR WEBSITE FROM THE GUIDE, will not be submitting
SGM07e	NUCOR HT Barrier TL-3	MAJOR	No info found.
SGM07f	NUCOR HT Barrier TL-4	MAJOR	No info found.
SGM08a		NONE	
SGM08b		NONE	
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	MODERATE	PDF MISSING SPEC PAGE
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	MODERATE	PDF MISSING SPEC PAGE

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	MODERATE	PDF MISSING SPEC PAGE
SGM10a	F-Shape Median Barrier	MINOR	drawing updated 2005. PDF has fhwa link
SGM10b	F-Shape Median Barrier	MINOR	drawing updated 2005. PDF has fhwa link
SGM11a	Safety-Shape Median Barrier	MINOR	drawing updated 2005. PDF has fhwa link
SGM11b	Safety-Shape Median Barrier	MINOR	drawing updated 2005. PDF has fhwa link
SGM12	Tall-Wall Median Barrier	MINOR	drawing updated 2005. PDF has fhwa link
SGM13	3N Median Barrier	MAJOR	1994 dwg available. From Italy. Possible Archive.
SGM14	Single Slope Median Barrier	MODERATE	FROM 20-07/192 DRAWINGS
SGM15a	Visi-Barrier, F-Shape, 32" High	NONE	Visi-Barrier, F-Shape, 32" High
SGM15b	Visi-Barrier, F-Shape, 42" High	NONE	
SGM15c	Visi-Barrier, NJ-Shape, 32" High	NONE	
SGM15d	Visi-Barrier, NJ-Shape, 42" High	NONE	
SGM15e	Visi-Barrier, Single-Slope, 32" High	NONE	
SGM15f	Visi-Barrier, Single-Slope, 42" High	NONE	
SGM20	BarrierGate	MINOR	PDF HAS LINKS & TYPO ON DESIGNATOR
SGM21		NONE	
SGM22	Reactive Tension Movable Barrier,TL-3	MINOR	PDF HAS LINKS
SGM22b	Quickchange Reactive Tension Movable Barrier, TL-4	NONE	
SGM23	ArmorGuard Gate	MINOR	3 OPTIONS ON 1 DESGINATOR? VS A-B-C. PDF HAS LINKS.
SGM24	NU-GUARD-27	MAJOR	No info found. Title should be more descriptive.
SGM25	NU-GUARD-31	MAJOR	No info found. Title should be more descriptive.
SGM26a	GMS GUARDRAIL: 27" MEDIAN W-BEAM	MAJOR	No info found.
SGM26b	GMS GUARDRAIL: 27" MEDIAN W-BEAM	MAJOR	No info found.
SGM26c	GMS GUARDRAIL: 27" MEDIAN W-BEAM	MAJOR	No info found.
SGM26d	GMS GUARDRAIL: 27" MEDIAN W-BEAM	MAJOR	No info found.
SGM27a	GMS GUARDRAIL: 31" MEDIAN W-BEAM	MAJOR	No info found.
SGM27b	GMS GUARDRAIL: 31" MEDIAN W-BEAM	MAJOR	No info found.
SGM27c	GMS GUARDRAIL: 31" MEDIAN W-BEAM	MAJOR	No info found.
SGM27d	GMS GUARDRAIL: 31" MEDIAN W-BEAM	MAJOR	No info found.
SGM28	Safence Cable Median Barrier	MAJOR	No info found.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SGM29	Midwest Guardrail System Median Barrier	MAJOR	No info found.
SGM30	VarioGuard Barrier	MAJOR	CHANGE OWNER Volkmann and Rossbach, Germany System. No info found. FHWA Letter B-208.
SGM31	Emergency Median Access Barrier	MAJOR	No info found. B-216 NO CONTACT INFORMATION AVAILABLE
SGM32	SAFENCE Cable Barrier 4:1	MAJOR	No info found.
SGM33a	ArmorWire Cable Barrier TL-3	MAJOR	No info found.
SGM33b	ArmorWire Cable Barrier TL-4	MAJOR	No info found.
SGM34	Rough Stone Masonry Guardrail TL-2	MAJOR	No info found.
SGM35	GMS GUARDRAIL: 39" MEDIAN THRIE-BEAM	MAJOR	No info found.
SGM36a	CASS System S3 Post, 4:1, TL-3	MAJOR	No info found.
SGM36b	CASS System S3 Post, 4:1, TL-4	MAJOR	No info found.
SGR01a	Weak-Steel Post Cable Guardrail	MINOR	drawing updated 2005. PDF has fhwa link
SGR01b	Weak-Steel Post Cable Guardrail	MINOR	drawing updated 2005. PDF has fhwa link
SGR01c	Weak-Timber Post Cable Guardrail	MAJOR	1994 dwg file available.
SGR01d	Weak Post Cable HT Guardrail	MAJOR	No info found.
SGR02a	Weak-Post W-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link
SGR02b	Weak-Post W-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link
SGR03	Weak-Post Box-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link. 1994 dwg available.
SGR04a	Strong-Post W-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link. extra pages. 1994 dwg available.
SGR04b	Strong-Post W-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link. extra pages. 1994 dwg available.
SGR04c	Strong-Post W-Beam Guardrail	MINOR	drawing updated 2005. PDF has fhwa link. extra pages.
SGR05	Culvert Mounted W-Beam Guardrail	MAJOR	1994 dwg available.
SGR06		NONE	
SGR07a	Trinty CASS (Cable safety system)	MAJOR	no info found.
SGR07b	BRIFEN 3- rope WRSF	MAJOR	no info found.
SGR07c	BRIFEN 4-rope WRSF, TL-3 ; TL-4	MAJOR	no info found.
SGR07d	BRIFEN 4-rope WRSF, TL-4	MAJOR	no info found.
SGR07e	NU-CABLE TL-3 ROADSIDE	MAJOR	no info found.
SGR07f	NU-CABLE TL-4 ROADSIDE	MAJOR	no info found.
SGR08a	Ironwood Aesthetic Guardrail	MAJOR	no info found.
SGR09a	Strong-Post Thrie-Beam Guardrail	MODERATE	drawing updated 2005. PDF missing spec page. 1994 dwg

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SGR09b	Strong-Post Thrie-Beam Guardrail	MODERATE	available. drawing updated 2005. PDF missing spec page. 1994 dwg available.
SGR09c	Strong-Post Thrie-Beam Guardrail	MODERATE	drawing updated 2005. PDF missing spec page. 1994 dwg available.
SGR10		NONE	
SGR11		NONE	
SGR12		NONE	
SGR13	3N Guardrail	MAJOR	1994 dwg available.
SGR14	Stop Gate	NONE	
SGR15	Safe-T-Curve Barrier	MINOR	drawing updated 2005. no changes.
SGR20a	Midwest Guardrail System (6'-3")	MINOR	drawing updated 2005. PDF has links.
SGR20b	Midwest Guardrail System (6'-3")	MINOR	drawing updated 2005. PDF has links.
SGR20c	Midwest Guardrail (6'-3") (White Pine)	MAJOR	no info found.
SGR21a	MGS (3'-1 1/2")	MINOR	drawing updated 2005. PDF has links.
SGR21b	MGS (3'-1 1/2")	MINOR	drawing updated 2005. PDF has links.
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	MINOR	Approved. drawing updated 2005. PDF has links. drawing on TTI but not in TTI database.
SGR22b	MGS (1'-6 3/4")	MINOR	drawing updated 2005. PDF has links.
SGR23a	MGS (6'-3") used with curb	MINOR	drawing updated. PDF has links.
SGR23b	MGS (6'-3") used with curb	MINOR	drawing updated. PDF has links.
SGR24a	Reduced Spacing, Strong Post, W-Beam G-rail on a Slope	MINOR	drawing updated. PDF has links.
SGR24b	Reduced Spacing, Strong Post, W-Beam G-rail on a Slope	MINOR	drawing updated. PDF has links.
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	MINOR	drawing updated. PDF has links.
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	MINOR	drawing updated. PDF has links.
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	MINOR	drawing updated. PDF has links.
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	MINOR	drawing updated. PDF has links.
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	MINOR	drawing updated. PDF has links.
SGR28a	MGS With Round Posts	MINOR	drawing updated. PDF has links.
SGR28b	MGS With Round Posts	MINOR	drawing updated. PDF has links.
SGR28c	MGS With Round Posts	MINOR	drawing updated. PDF has links.
SGR28d	MGS With Round Posts	MAJOR	no info found.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SGR28e	MGS With Round Posts	MAJOR	no info found.
SGR28f	MGS With Round Posts	MAJOR	no info found.
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	MINOR	drawing updated. PDF has links.
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	MINOR	drawing updated. PDF has links.
SGR30	Timber Guardrail System for Attachment to Noise Wall	MINOR	drawing updated. PDF has links.
SGR31	Low Profile Concrete Barrier	MINOR	drawing updated. PDF has links.
SGR32	NU-GUARD-27	MAJOR	no info found.
SGR33	NU-GUARD-31	MAJOR	no info found.
SGR34a	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	MAJOR	no info found.
SGR34b	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	MAJOR	no info found.
SGR34c	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	MAJOR	no info found.
SGR34d	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	MAJOR	no info found.
SGR35a	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	MAJOR	no info found.
SGR35b	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	MAJOR	no info found.
SGR35c	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	MAJOR	no info found.
SGR35d	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	MAJOR	no info found.
SGR36	Formet Strong Post Thrie Beam	MAJOR	no info found.
SGR37	Rough Stone Masonry Guardrail TL-2	MAJOR	no info found.
SGR38a	MGS Adjacent to 2:1 Fill Slope	MAJOR	no info found.
SGR38b	MGS Adjacent to 2:1 Fill Slope	MAJOR	Approved. no info found.
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE Wall	MAJOR	no info found.
SGR40	T-Intersection, Short Radius W Beam	MAJOR	no info found.
SGR41	MGS without Block Outs	MAJOR	no info found.
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3	MAJOR	no info found. FHWA Letter B-225. WSDOT system. TTI drawings.
SGR43	GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM	MAJOR	no info found.
SGR44	Ezy-Guard Heavy Duty MASH	MAJOR	no info found.
SGR45	Combo Steel/Concrete Barrier TL-2	MAJOR	no info found. FHWA Letter B-235. Caltrans system.
SGR46	NatureRail Wood SYP TL-2	MAJOR	no info found.
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	MAJOR	no info found. FHWA Letter B-240. TxDOT system. TTI drawings.
SGR48	TIMBARRIER STREETGUARD PLUS RAIL SYSTEM	NONE	
STB01	Safety Shape to Vertical Wall Transition	NONE	

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
STB02	W-Beam to Flared Concrete Wall Transition	NONE	
STB02b	W-Beam to Flared Concrete Wall Transition	NULL	
STB03	W-Beam to Curved Back Wall Transition	NONE	
STB03b	W-Beam to Curved Back Wall Transition	NULL	
STB04	Nested W-Beam to Vertical Wall Transition	NONE	
STB04b	Nested W-Beam to Vertical Wall Transition	NULL	
STB05	Nested Thrie-Beam to Vertical Wall Transition	NONE	
STB05b	NESTED THRIE-BEAM TO VERTICAL WALL TRANSITION	NULL	
STB06	Nested Thrie-Beam to Flared Wall Transition	NONE	
STB06b	NESTED THRIE-BEAM TO FLARED WALL TRANSITION	NULL	
STC01	Three Cable Transition To BCT End Terminal	NONE	
STC02	Four Cable Transition To W-Beam (Longstreet Request)	NONE	
STG01	W-Beam to Thrie Beam Transition	NONE	
STG02	MGS W-BEAM TO THRIE BEAM TRANSITION	NONE	
STG03a	MGS W Bm to Thrie Bm Trans Stl Posts	NONE	
STG03a	NULL	NONE	Under Review
STG03b	MGS W Bm to Thrie Bm Trans Wd Posts	NONE	
STG03b	NULL	NONE	Under Review
SWC01	Quickchange Movable Barrier	MODERATE	In 1995 Guide. Not updated since then.
SWC02	J-J Hooks Portable Concrete Barrier	MODERATE	In 1995 Guide. Not updated since then.
SWC03	Low Profile Construction Zone Barrier	MODERATE	In 1995 Guide. Not updated since then.
SWC04	Pin & Rebar Portable Concrete Barrier	MODERATE	In 1995 Guide. Not updated since then.
SWC05		NONE	Unknown system associated with this designator.
SWC06		NONE	Unknown system associated with this designator.
SWC07		NONE	Unknown system associated with this designator.
SWC08	Removable Temporary Work Zone Barrier Anchors	MODERATE	In 1995 Guide. Not updated since then. NO CONTACT INFORMATION AVAILABLE
SWC09	Temporary F-Shape Concrete Barrier Element	MINOR	Drawing from MwRSF & updated 2007. Found in TTI data dump. Not on TTI website. No photo.
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	MINOR	Drawing from MwRSF & updated 2007. Found in TTI data dump. Not on TTI website. No photo.
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	MINOR	Drawing from MwRSF & updated 2007. Found in TTI data dump. Not on TTI website. No photo.

DESIGNATOR	TITLE	REVISIONS?	COMMENTS
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	MINOR	Drawing from MwRSF & updated 2007. Found in TTI data dump. Not on TTI website. No photo.
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	MAJOR	FHWA Letters B-170-A-B. No other info found. SCDOT System.
SWC14	Temporary Concrete Barrier TL-3 (Florida)	MAJOR	No info found. FLDOT System.
SWC15	Temporary Concrete Barrier (Pinned)	MAJOR	No info found. Possibly FHWA Letter B-180.
SWC16	Portable Concrete Barrier Transition	MAJOR	No info found. Possibly FHWA Letter B-180. MwRSF System.
SWC17	Portable Concrete Barrier Termination	MAJOR	No info found. Possibly FHWA Letter B-180. MwRSF System.
SWM01	Triton Barrier	MODERATE	Have 1995 DWG. Not upated since then. May be old system for archive.
SWM02	Dragnet Vehicle Arresting Barrier	MAJOR	In 1995 Guide. Don't have DWG file. Not updated since then.
SWM03a	Triton Barrier	MAJOR	No info found.
SWM03b	Triton Barrier	MAJOR	No info found.
SWM04	Vulcan Barrier	MAJOR	FHWA Letter B-134-A-D. No other info found.
SWM05		NONE	Unknown system associated with designator. Possibly FHWA Letter B-151, Permatile Precast Concrete Barrier 10ft Length.
SWM06	BarrierGuard 800	MINOR	Drawing updated in 2005. System on TTI website.
SWM07	ARMORGUARD BARRIER	MINOR	Drawing updated in 2005. System on TTI website.
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	MINOR	Drawing PDF in TTI data dump. Not on TTI website. Updated in 2007. No photo. Drawing needs minor revisions.
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	MINOR	Drawing PDF in TTI data dump. Not on TTI website. Updated in 2007. No photo. Drawing needs minor revisions.
SWM10	ZONEGUARD PORTABLE STEEL BARRIER	MAJOR	FHWA Letter B-176-A. No other info found.
SWM11	YODOCK Rail Kit for Barrier Wall	MAJOR	FHWA Letter B-97A. No other info found.
SWM12		NONE	Unkown system associated with designator.
SWM13		NONE	Unkown system associated with designator.
SWM14		NONE	Unkown system associated with designator.
SWM15	Vulcan Barrier Gate	MAJOR	FHWA Letter B-201. No other info found.
SWM16a	Orion Portable Steel Barrier TL-3	MAJOR	CONFLICT WITH ARMORFLEX & BSI. FHWA Letter B-217. No other info found.
SWM16b	Orion Portable Steel Barrier TL-3	MAJOR	CONFLICT WITH ARMORFLEX & BSI. FHWA Letter B-217. No other info found.
SWM17	ARMORZONE , BARRIER, TL-2, MASH	MAJOR	No info found.
SWM18	TRACC/VULCAN Transition	MAJOR	No info found.

Appendix B: System Designators Assigned to Archive, Delete, or Defer Status

DESIGNATOR	TITLE	ARCHIVE
SCI01a	G-R-E-A-T System	Y
SCI01b	G-R-E-A-T CZ System	Y
SCI02	Hi-Dro Cell Cluster	Y
SCI03	Hi-Dro Sandwich System	Y
SCI04	Hex-Foam Sandwich System	Y
SCI05	Low Maintenance Attenuator	Y
SCI06a	Energite	Y
SCI06b	Fitch Universal Module	Y
SEB01	Box Beam Guardrail Anchor	Y
SER03	Low Profile Barrier End Treatment	Y
SEW01	Weak Post W-Beam Terminal	Y
SEW02a	Trailing End Terminal-Foundation Tube Option	Y
SEW02b	Trailing End Terminal-Concrete Footing Option	Y
SEW03a	Timber Post Breakaway Cable Terminal	Y
SEW03b	Timber Post Breakaway Cable Terminal	Y
SEW04a	Steel Post Breakaway Cable Terminal	Y
SEW04b	Steel Post Breakaway Cable Terminal	Y
SEW05	Modified Eccentric Loader Breakaway Cable Terminal	Y
SEW09	Bullnose Median Barrier Terminal	Y
SEW10	Wide Bullnose Median Barrier Terminal	Y
SGR01c	Weak-Timber Post Cable Guardrail	Y

DESIGNATOR	TITLE	DELETE
SBC07b		Y
SBC08b		Y
SBC09b		Y
SBC10b		Y
SBC11b		Y
SBC12b		Y
SBC13b		Y
SBC14b		Y
SBC15b		Y
SBC16b		Y
SCI02b		Y
SCI03b		Y
SCI04b		Y
SEB02		Y
SEC07d		Y
SEW19b	X-Tension End Terminal (Tangent)	Y
SEW20b	X-Tension End Terminal (Flared)	Y
SGM05		Y
SGM08a		Y
SGM08b		Y
SGM21		Y
SGR06		Y
SGR10		Y
SGR11		Y
SGR12		Y
SGR14	Stop Gate	Y
SWC05		Y
SWC06		Y
SWC07		Y
SWM05		Y
SWM12		Y
SWM13		Y
SWM14		Y

DESIGNATOR	TITLE	DEFER
SBA01a	Chicago Barrier Railing	Y
SBA02a	BR2 Type A Aluminum Bridge Railing	Y
SBA03a	BR1 Type C Aluminum Bridge Railing	Y
SBA04a	Tru-Beam Bridge Railing	Y
SBB01a	2-Tube Curb-Mounted Bridge Railing	Y
SBB01b	2-Tube Curb-Mounted Bridge Railing	Y
SBB02a	W And Tube Beam Bridge Railing	Y
SBB03a	Side-Mounted Rectangular Tube Bridge Railing	Y
SBB03b	AESTHETIC BALUSTRADE BRIDGE RAILING	Y
SBC01a	Vertical-Wall Bridge Railing	Y
SBC01b	Vertical-Wall Bridge Railing	Y
SBC01c	Vertical-Wall Bridge Railing	Y
SBC02a	Open-Profile Concrete Bridge Railing	Y
SBC02b	OPEN-PROFILE CONCRETE BRIDGE RAILING	Y
SBC03a	Aesthetic Balustrade Bridge Railing	Y
SBC04a	F SHAPE CONCRETE BRIDGE RAILINGS	Y
SBC04b	F Shape Concrete Bridge Railing	Y
SBC04c	F Shape Concrete Bridge Railing	Y
SBC05b	Safety-Shape Concrete Bridge Railing	Y
SBC06a	SAFETY-SHAPED CONCRETE BRIDGE RAILING	Y
SBC06b	Safety-Shape Concrete Bridge Railing	Y
SBC07b		Y
SBC08b		Y
SBC09b		Y
SBC10b		Y
SBC11b		Y
SBC12b		Y
SBC13b		Y
SBC14b		Y
SBC15b		Y
SBC16b		Y
SBC17b	Permanent Parapet Precast Concrete Bridge Railing	Y
SBC18b	Permanent Half-Section Precast Concrete Bridge Railing	Y
SBC19b	Permanent Median Precast Concrete Barrier	Y

SBC20a	Visi-Barrier Safety Shape System	Y
SBT01a	Side-Mounted Thrie Beam Bridge Railing	Y
SBT01a	SIDE-MOUNTED THRIE-BEAM BRIDGE RAILING	Y
SBW01a	Tubular W-Beam Bridge Railing	Y
STB01	Safety Shape to Vertical Wall Transition	Y
STB02	W-Beam to Flared Concrete Wall Transition	Y
STB02b	W-Beam to Flared Concrete Wall Transition	Y
STB03	W-Beam to Curved Back Wall Transition	Y
STB03b	W-Beam to Curved Back Wall Transition	Y
STB04	Nested W-Beam to Vertical Wall Transition	Y
STB04b	Nested W-Beam to Vertical Wall Transition	Y
STB05	Nested Thrie-Beam to Vertical Wall Transition	Y
STB05b	NESTED THRIE-BEAM TO VERTICAL WALL TRANSITION	Y
STB06	Nested Thrie-Beam to Flared Wall Transition	Y
STB06b	NESTED THRIE-BEAM TO FLARED WALL TRANSITION	Y
STC01	Three Cable Transition To BCT End Terminal	Y
STC02	Four Cable Transition To W-Beam (Longstreet Request)	Y
STG01	W-Beam to Thrie Beam Transition	Y
STG02	MGS W-BEAM TO THRIE BEAM TRANSITION	Y
STG03a	MGS W Bm to Thrie Bm Trans Stl Posts	Y
STG03a	NULL	Y
STG03b	MGS W Bm to Thrie Bm Trans Wd Posts	Y
STG03b	NULL	Y

Appendix C: System Designators and File Contents

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SCI06c	Energite III	2005	2000	N	Y
SCI07	Connecticut Impact Attenuation System	2013	2013	2013	N
SCI08	Narrow Connecticut Impact Attenuation System	2013	2013	2013	N
SCI09	ADIEM Energy Absorbing End Treatment	N	N	N	N
SCI10	N-E-A-T System	2005	2000	N	Y
SCI11	ABSORB 350	2013	N	N	Y
SCI12	BEAT-BP (Bridge Pier)	2005	N	N	Y
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	2012	N	N	Y
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	2012	N	N	Y
SCI14	CushionWall II	N	N	N	Y
SCI15	EASI-Cell Cluster	2005	N	N	Y
SCI16a	REACT 350 (36) Wide	2005	N	N	Y
SCI16b	REACT 350 (60/96/120) Wide	2005	N	N	N
SCI16c	REACT 350 II	N	N	N	N
SCI17a	SCI100GM Impact Attenuator	2005	N	N	Y
SCI17b	SCI70GM Impact Attenuator	2005	N	N	Y
SCI18a	TRACC Crash Cushion Family (Narrow)	N	N	N	N
SCI18b	TRACC Crash Cushion Family	N	N	N	N
SCI19	Stop Gate	N	N	N	N
SCI20	Quest Crash Cushion	N	N	N	N
SCI21	HEART Crash Cushion	N	N	N	N
SCI22	SLED Sentry Longitudinal Energy Dissipater	N	N	N	N
SCI23	X-Tenuator Crash Cushion	2013	N	N	N
SCI24	ACZ 350 TL-2 Crash Cushion	N	N	N	N
SCI25	Raptor Crash Cushion TL-1	2013	2013	2013	Y
SCI26a	Quadguard M10 Narrow Family	N	N	N	N
SCI26b	Quadguard M10 Narrow Family	N	N	N	N
SCI27	Quadguard M10 Wide Family	N	N	N	N
SCI28	Compressor Crash Cushion	N	N	N	N
SCI29	ArmorZone End Terminal TL-2	2013	2013	2013	Y
SCI30	Quadguard M10 Narrow Family TL-2	N	N	N	N
SCI31	Quadguard M10 Wide Family TL-2	N	N	N	N
SCI32	CrashGard Sand Barrel System	FROM	N	N	Y
SCI33	QuadGuard Elite 8 Bay M10	N	N	N	N

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SCI34	QuadGuard Elite 8 Bay Wide M10	N	N	N	N
SCI35	QuadGuard Elite 4 Bay M10	N	N	N	N
SCI36	QuadGuard Elite 4 Bay Wide M10	N	N	N	N
SCT01a	Universal TAU II	2005	N	N	Y
SCT01b	Universal TAU II	2005	N	N	Y
SCT01c	TAU IIR/Universal TL-2 & TL-3	2013	N	N	Y
SCT02a	QuadGuard (24, 30, or 36)	2005	N	N	Y
SCT02b	QuadGuard CZ	2005	N	N	Y
SCT02c	QuadGuard CZ on a Plate	2005	N	N	Y
SCT02d	QuadGuard High Speed	2005	N	N	Y
SCT02e	QuadGuard Elite	2005	N	N	Y
SCT02f	QuadGuard LMC	2005	N	N	Y
SCT02g	QuadGuard CEN	2005	N	N	Y
SCT02h	QuadGuard (69 or 90)	2005	N	N	Y
SEB03	WY-BET Wyoming Box Beam End Terminal	N	2000	N	N
SEB04	WY-BET Wyoming Box Beam End Terminal (Median)	N	N	N	N
SEB05	Box Beam BEAT	2005	N	N	Y
SEB06	Box Beam BEAT-MT (Median)	2005	N	N	Y
SEC01	Cable Guardrail Anchor	2005	2005	2005	N
SEC07a	CCT (Trinity CASS End Terminal)	N	N	N	N
SEC07b	Brifen Wire Rope End Treatment	N	N	N	N
SEC07e	NUCOR Cable End Terminal	N	N	N	N
SEC08	ArmorWire End Terminal TL-3	2013	2013	2013	Y
SEC09	Safence Cable End Terminal	N	N	N	N
SEC10	Cable End Terminal Low Tension	N	N	N	N
SED01	Steel Backed Timber Guardrail Tangent End Terminal	2013	2013	2013	N
SER01	Low-Profile Construction-Zone End Treatment	N	2000	Y	N
SER02	Triton Barrier CET	2005	N	N	Y
SER04	Florida Low-Profile Barrier Terminal	2013	2013	2013	N
SET01	Trend System	N	2000	N	N
SET02	Quadtrend 350	2005	N	N	N
SET03a	Thrie Beam Bull Nose, Wood Post	2011	N	N	N
SET03b	Thrie Beam Bull Nose, Steel Post	2011	N	N	N
SEW06	Brakemaster 350	2005	2000	N	N
SEW07	ET-2000 Guardrail Extruder Terminal	N	N	N	N

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SEW08	C-A-T Crash-Cushion/Attenuating Terminal	N	N	N	N
SEW11	Slotted Rail Terminal (SRT-75)	N	2000	N	N
SEW12a	Slotted Rail Terminal (SRT-350)(SRT-31)	N	2000	N	N
SEW12b	Slotted Rail Term(SRT-350)(SRT-31)	N	2000	N	N
SEW13	Sentre System	N	2000	N	N
SEW14a	FLEAT	2005	N	N	Y
SEW14b	FLEAT	2005	N	N	Y
SEW15	FLEAT - MGS System	2005	N	N	Y
SEW16a	FLEAT-MT (Median)	2005	N	N	Y
SEW16b	FLEAT-MT (Median)	2005	N	N	Y
SEW17a	Sequential Kinking Terminal (SKT)	2005	N	N	Y
SEW17b	Sequential Kinking Terminal (SKT)	2005	N	N	Y
SEW17c	Sequential Kinking Terminal (SKT)	2005	N	N	Y
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	2005	N	N	Y
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	2005	N	N	Y
SEW19	X-TENSION GUARDRAIL TERMINAL - TANGENT	2013	N	N	N
SEW20	X-TENSION GUARDRAIL TERMINAL - FLARED	2013	N	N	N
SEW21	X-TENSION MEDIAN GUARDRAIL TERMINAL (XMAS)	2013	N	N	N
SEW22	Soft Stop End Terminal	N	N	N	N
SEW23	X-LITE SYSTEM, TANGENT	2013	N	N	N
SEW24	X-LITE SYSTEM, FLARED	2013	N	N	N
SEW25	TREND End Terminal, Tangent/Flared	N	N	N	N
SEW26	TREND End Terminal, Median	N	N	N	N
SGM01a	Weak-Post Cable Median Barrier	2005	2005	2005	N
SGM01b	Weak Post HT Cable Median Barrier	N	N	N	N
SGM02	Weak-Post W-Beam Median Barrier	2005	2005	2005	N
SGM03	Weak-Post Box-Beam Median Barrier	2005	2005	2005	N
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	2005	2005	2005	N
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	2005	2005	2005	N
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	2005	2005	2005	N
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	2005	2005	2005	N
SGM07a	Gibraltar TL-3 Cable Barrier	N	N	N	N
SGM07b	Gibraltar TL-4 Cable Barrier	N	N	N	N
SGM07e	NUCOR HT Barrier TL-3	2011	N	N	N
SGM07f	NUCOR HT Barrier TL-4	2011	N	N	N

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	2005	2005	2005	N
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	2005	2005	2005	N
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	2005	2005	2005	N
SGM10a	F-Shape Median Barrier	2005	2005	2005	N
SGM10b	F-Shape Median Barrier	2005	2005	2005	N
SGM11a	Safety-Shape Median Barrier	2005	2005	2005	N
SGM11b	Safety-Shape Median Barrier	2005	2005	2005	N
SGM12	Tall-Wall Median Barrier	2005	2005	2005	N
SGM13	3N Median Barrier	N	2000	N	N
SGM14	Single Slope Median Barrier	2013	2005	2013	N
SGM15a	Visi-Barrier, F-Shape, 32" High	2013	N	N	N
SGM15b	Visi-Barrier, F-Shape, 42" High	2013	N	N	N
SGM15c	Visi-Barrier, NJ-Shape, 32" High	2013	N	N	N
SGM15d	Visi-Barrier, NJ-Shape, 42" High	2013	N	N	N
SGM15e	Visi-Barrier, Single-Slope, 32" High	2013	N	N	N
SGM15f	Visi-Barrier, Single-Slope, 42" High	2013	N	N	N
SGM20	BarrierGate	2005	2000	N	Y
SGM22	Reactive Tension Movable Barrier,TL-3	2013	N	N	N
SGM22b	Quickchange Reactive Tension Movable Barrier, TL-4	2013	N	N	N
SGM23	ArmorGuard Gate	2013	N	N	Y
SGM24	NU-GUARD-27	2011	N	N	N
SGM25	NU-GUARD-31	2011	N	N	N
SGM26a	GMS GUARDRAIL: 27" MEDIAN W-BEAM	2011	N	N	N
SGM26b	GMS GUARDRAIL: 27" MEDIAN W-BEAM	2011	N	N	N
SGM26c	GMS GUARDRAIL: 27" MEDIAN W-BEAM	2011	N	N	N
SGM26d	GMS GUARDRAIL: 27" MEDIAN W-BEAM	2011	N	N	N
SGM27a	GMS GUARDRAIL: 31" MEDIAN W-BEAM	2011	N	N	N
SGM27b	GMS GUARDRAIL: 31" MEDIAN W-BEAM	2011	N	N	N
SGM27c	GMS GUARDRAIL: 31" MEDIAN W-BEAM	2011	N	N	N
SGM27d	GMS GUARDRAIL: 31" MEDIAN W-BEAM	2011	N	N	N
SGM28	Safence Cable Median Barrier	N	N	N	N
SGM29	Midwest Guardrail System Median Barrier	N	N	N	N
SGM30	VarioGuard Barrier	N	N	N	N
SGM31	Emergency Median Access Barrier	N	N	N	N
SGM32	SAFENCE Cable Barrier 4:1	N	N	N	N

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SGM33a	ArmorWire Cable Barrier TL-3	2013	2013	2013	Y
SGM33b	ArmorWire Cable Barrier TL-4	2013	2013	2013	Y
SGM34	Rough Stone Masonry Guardrail TL-2	N	N	N	N
SGM35	GMS GUARDRAIL: 39" MEDIAN THRIE-BEAM	2011	N	N	N
SGM36a	CASS System S3 Post, 4:1, TL-3	N	N	N	N
SGM36b	CASS System S3 Post, 4:1, TL-4	N	N	N	N
SGR01a	Weak-Steel Post Cable Guardrail	2005	2005	2005	Y
SGR01b	Weak-Steel Post Cable Guardrail	2005	2005	2005	Y
SGR01d	Weak Post Cable HT Guardrail	N	N	N	N
SGR02a	Weak-Post W-Beam Guardrail	2005	2005	2005	N
SGR02b	Weak-Post W-Beam Guardrail	2005	2005	2005	N
SGR03	Weak-Post Box-Beam Guardrail	2005	2005	2005	N
SGR04a	Strong-Post W-Beam Guardrail	2005	2005	2005	N
SGR04b	Strong-Post W-Beam Guardrail	2005	2005	2005	Y
SGR04c	Strong-Post W-Beam Guardrail	2005	2005	2005	N
SGR05	Culvert Mounted W-Beam Guardrail	N	2005	2005	N
SGR07a	Trinty CASS (Cable safety system)	N	N	N	N
SGR07b	BRIFEN 3- rope WRSF	N	N	N	N
SGR07c	BRIFEN 4-rope WRSF, TL-3 ; TL-4	N	N	N	N
SGR07d	BRIFEN 4-rope WRSF, TL-4	N	N	N	N
SGR07e	NU-CABLE TL-3 ROADSIDE	2011	N	N	N
SGR07f	NU-CABLE TL-4 ROADSIDE	2011	N	N	N
SGR08a	Ironwood Aesthetic Guardrail	N	N	N	N
SGR09a	Strong-Post Thrie-Beam Guardrail	2005	2005	2005	Y
SGR09b	Strong-Post Thrie-Beam Guardrail	2005	2005	2005	Y
SGR09c	Strong-Post Thrie-Beam Guardrail	2005	2005	2005	N
SGR13	3N Guardrail	N	2000	N	N
SGR15	Safe-T-Curve Barrier	2013	N	N	N
SGR20a	Midwest Guardrail System (6'-3")	2011	N	N	Y
SGR20b	Midwest Guardrail System (6'-3")	2011	N	N	Y
SGR20c	Midwest Guardrail (6'-3") (White Pine)	2011	N	N	Y
SGR21a	MGS (3'-1 1/2")	2011	N	N	N
SGR21b	MGS (3'-1 1/2")	2011	N	N	N
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	2011	N	N	Y
SGR22b	MGS (1'-6 3/4")	2011	N	N	Y

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SGR23a	MGS (6'-3") used with curb	2011	N	N	Y
SGR23b	MGS (6'-3") used with curb	2011	N	N	Y
SGR24a	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	2011	N	N	Y
SGR24b	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	2011	N	N	Y
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	2011	N	N	Y
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	2011	N	N	Y
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	2011	N	N	Y
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	2007	N	N	Y
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	2007	N	N	Y
SGR28a	MGS With Round Posts	2008	N	N	Y
SGR28b	MGS With Round Posts	2008	N	N	Y
SGR28c	MGS With Round Posts	2008	N	N	Y
SGR28d	MGS With Round Posts	2008	N	N	Y
SGR28e	MGS With Round Posts	2008	N	N	Y
SGR28f	MGS With Round Posts	2008	N	N	Y
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	2009	N	N	Y
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	2009	N	N	Y
SGR30	Timber Guardrail System for Attachment to Noise Wall	2008	N	N	Y
SGR31	Low Profile Concrete Barrier	2011	N	N	Y
SGR32	NU-GUARD-27	2011	N	N	N
SGR33	NU-GUARD-31	2011	N	N	N
SGR34a	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	2011	N	N	N
SGR34b	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	2011	N	N	N
SGR34c	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	2011	N	N	N
SGR34d	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	2011	N	N	N
SGR35a	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	2011	N	N	N
SGR35b	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	2011	N	N	N
SGR35c	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	2011	N	N	N
SGR35d	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	2011	N	N	N
SGR36	Formet Strong Post Thrie Beam	N	N	N	N
SGR37	Rough Stone Masonry Guardrail TL-2	2011	N	N	Y
SGR38a	MGS Adjacent to 2:1 Fill Slope	2012	N	N	Y
SGR38b	MGS Adjacent to 2:1 Fill Slope	2012	N	N	Y
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE Wall	2011	N	N	Y
SGR40	T-Intersection, Short Radius W Beam	2013	2013	2013	N

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SGR41	MGS without Block Outs	N	N	N	N
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3	2013	2013	2013	N
SGR43	GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM	2011	N	N	N
SGR44	Ezy-Guard Heavy Duty MASH	2013	N	N	N
SGR45	Combo Steel/Concrete Barrier TL-2	SOURCE	Y	N	N
SGR46	NatureRail Wood SYP TL-2	N	N	N	N
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	2013	2000	N	N
SGR48	TIMBARRIER STREETGUARD PLUS RAIL SYSTEM	2013	N	N	Y
SWC01	Quickchange Movable Barrier	2013	2000	N	N
SWC02	J-J Hooks Portable Concrete Barrier	2013	2000	N	Y
SWC03	Low Profile Construction Zone Barrier	N	2000	Y	N
SWC04	Pin & Rebar Portable Concrete Barrier	2013	2013	2013	N
SWC08	Removable Temporary Work Zone Barrier Anchors	N	N	N	N
SWC09	Temporary F-Shape Concrete Barrier Element	2012	N	N	Y
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	2008	N	N	Y
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	2008	N	N	Y
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	2012	N	N	Y
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	2013	2013	2013	N
SWC14	Temporary Concrete Barrier TL-3 (Florida)	SOURCE	N	N	N
SWC15	Temporary Concrete Barrier (Pinned)	N	N	N	N
SWC16	Portable Concrete Barrier Transition	2011	N	N	Y
SWC17	Portable Concrete Barrier Termination	2011	N	N	Y
SWM01	Triton Barrier	2000	N	N	N
SWM02	Dragnet Vehicle Arresting Barrier	N	N	N	Y
SWM03a	Triton Barrier	N	N	N	Y
SWM03b	Triton Barrier	N	N	N	Y
SWM04	Vulcan Barrier	N	N	N	N
SWM06	BarrierGuard 800	2005	N	N	Y
SWM07	ARMORGUARD BARRIER	2013	N	N	Y
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	2007	N	N	N
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	2007	N	N	N
SWM10	ZONEGUARD PORTABLE STEEL BARRIER	2013	N	N	N
SWM11	YODOCK Rail Kit for Barrier Wall	N	N	N	N
SWM15	Vulcan Barrier Gate	N	N	N	N
SWM16a	Orion Portable Steel Barrier TL-3	2013	2013	2013	Y

DESIGNATOR	TITLE	PDF?	DWG?	DOC?	IMG?
SWM16b	Orion Portable Steel Barrier TL-3	2013	2013	2013	Y
SWM17	ARMORZONE , BARRIER, TL-2, MASH	2013	2013	2013	Y
SWM18	TRACC/VULCAN Transition	N	N	N	N

Appendix D: System Designators and Attributes

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SCI06c	Energite III	Y	NCHRP 350	TL-3
SCI07	Connecticut Impact Attenuation System	N	NCHRP 350	TL-3
SCI08	Narrow Connecticut Impact Attenuation System	N	NCHRP 350	TL-3
SCI09	ADIEM Energy Absorbing End Treatment	N	NCHRP 350	TL-3
SCI10	N-E-A-T System	Y	NCHRP 350	TL-2
SCI11	ABSORB 350	Y	NCHRP 350	TL-3
SCI12	BEAT-BP (Bridge Pier)	Y	NCHRP 350	TL-3
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	Y	NCHRP 350	TL-3
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	Y	NCHRP 350	TL-3
SCI14	CushionWall II	N		0
SCI15	EASI-Cell Cluster	Y	NCHRP 350	TL-1
SCI16a	REACT 350 (36) Wide	Y	NCHRP 350	TL-3
SCI16b	REACT 350 (60/96/120) Wide	Y	NCHRP 350	TL-3
SCI16c	REACT 350 II	N	NCHRP 350	TL-3
SCI17a	SCI100GM Impact Attenuator	Y	NCHRP 350	TL-3
SCI17b	SCI70GM Impact Attenuator	Y	NCHRP 350	TL-2
SCI18a	TRACC Crash Cushion Family (Narrow)	N	NCHRP 350	TL-3
SCI18b	TRACC Crash Cushion Family	N	NCHRP 350	TL-3
SCI19	Stop Gate	N	NCHRP 350	TL-2
SCI20	Quest Crash Cushion	N	NCHRP 350	TL-3
SCI21	HEART Crash Cushion	N	NCHRP 350	TL-3
SCI22	SLED Sentry Longitudinal Energy Dissipater	N	NCHRP 350	TL-2
SCI23	X-Tenuator Crash Cushion	N	NCHRP 350	TL-3
SCI24	ACZ 350 TL-2 Crash Cushion	N	NCHRP 350	TL-2
SCI25	Raptor Crash Cushion TL-1	N	NCHRP 350	TL-1
SCI26a	Quadguard M10 Narrow Family	N	MASH	TL-3
SCI26b	Quadguard M10 Narrow Family	N	MASH	TL-3
SCI27	Quadguard M10 Wide Family	N	MASH	TL-3
SCI28	Compressor Crash Cushion	N	NCHRP 350	TL-3
SCI29	ArmorZone End Terminal TL-2	N	MASH	TL-2
SCI30	Quadguard M10 Narrow Family TL-2	N	MASH	TL-2
SCI31	Quadguard M10 Wide Family TL-2	N	MASH	TL-2
SCI32	CrashGard Sand Barrel System	N	NCHRP 350	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SCI33	QuadGuard Elite 8 Bay M10	N	MASH	TL-3
SCI34	QuadGuard Elite 8 Bay Wide M10	N	MASH	TL-3
SCI35	QuadGuard Elite 4 Bay M10	N	MASH	TL-2
SCI36	QuadGuard Elite 4 Bay Wide M10	N	MASH	TL-2
SCT01a	Universal TAU II	Y	NCHRP 350	TL-2, TL-3
SCT01b	Universal TAU II	Y	NCHRP 350	TL-2, TL-3
SCT01c	TAU IIR/Universal TL-2 & TL-3	N	NCHRP 350	TL-2, TL-3
SCT02a	QuadGuard (24, 30, or 36)	Y	NCHRP 350	TL-3
SCT02b	QuadGuard CZ	Y	NCHRP 350	TL-3
SCT02c	QuadGuard CZ on a Plate	Y	NCHRP 350	TL-1, TL-2, TL-
SCT02d	QuadGuard High Speed	Y	NCHRP 350	TL-3+
SCT02e	QuadGuard Elite	Y	NCHRP 350	TL-3
SCT02f	QuadGuard LMC	Y	NCHRP 350	TL-3
SCT02g	QuadGuard CEN	Y	EN 1317:2000	
SCT02h	QuadGuard (69 or 90)	Y	NCHRP 350	TL-3
SEB03	WY-BET Wyoming Box Beam End Terminal	N	NCHRP 350	TL-3
SEB04	WY-BET Wyoming Box Beam End Terminal (Median)	N	NCHRP 350	TL-3
SEB05	Box Beam BEAT	Y	NCHRP 350	TL-3
SEB06	Box Beam BEAT-MT (Median)	Y	NCHRP 350	TL-3
SEC01	Cable Guardrail Anchor	Y	NCHRP 350	TL-3
SEC07a	CCT (Trinity CASS End Terminal)	N	NCHRP 350	TL-3
SEC07b	Brifen Wire Rope End Treatment	N	NCHRP 350	TL-3
SEC07e	NUCOR Cable End Terminal	N		0
SEC08	ArmorWire End Terminal TL-3	N	NCHRP 350	TL-3
SEC09	Safence Cable End Terminal	N	NCHRP 350	TL-3
SEC10	Cable End Terminal Low Tension	N	NCHRP 350	TL-3
SED01	Steel Backed Timber Guardrail Tangent End Terminal	N	NCHRP 350	TL-2
SER01	Low-Profile Construction-Zone End Treatment	N	NCHRP 350	TL-2
SER02	Triton Barrier CET	Y	NCHRP 350	TL-2, TL-3
SER04	Florida Low-Profile Barrier Terminal	N	NCHRP 350	TL-2
SET01	Trend System	N		0
SET02	Quadtrend 350	Y	NCHRP 350	TL-3
SET03a	Thrie Beam Bull Nose, Wood Post	Y	NCHRP 350	TL-3
SET03b	Thrie Beam Bull Nose, Steel Post	N	NCHRP 350	TL-3
SEW06	Brakemaster 350	Y	NCHRP 350	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SEW07	ET-2000 Guardrail Extruder Terminal	N		0
SEW08	C-A-T Crash-Cushion/Attenuating Terminal	N	NCHRP 350	TL-3
SEW11	Slotted Rail Terminal (SRT-75)	N		0
SEW12a	Slotted Rail Terminal (SRT-350)(SRT-31)	N	NCHRP 350	TL-3
SEW12b	Slotted Rail Term(SRT-350)(SRT-31)	N	NCHRP 350	TL-3
SEW13	Sentre System	N		0
SEW14a	FLEAT	Y	NCHRP 350	TL-2, TL-3
SEW14b	FLEAT	Y	NCHRP 350	TL-2, TL-3
SEW15	FLEAT - MGS System	Y	NCHRP 350	TL-3
SEW16a	FLEAT-MT (Median)	Y	NCHRP 350	TL-3
SEW16b	FLEAT-MT (Median)	Y	NCHRP 350	TL-3
SEW17a	Sequential Kinking Terminal (SKT)	Y	NCHRP 350	TL-3
SEW17b	Sequential Kinking Terminal (SKT)	Y	NCHRP 350	TL-3
SEW17c	Sequential Kinking Terminal (SKT)	Y	NCHRP 350	TL-2
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	Y	NCHRP 350	TL-3
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	Y	NCHRP 350	TL-3
SEW19	X-TENSION GUARDRAIL TERMINAL - TANGENT	N	NCHRP 350	TL-3
SEW20	X-TENSION GUARDRAIL TERMINAL - FLARED	N	NCHRP 350	TL-3
SEW21	X-TENSION MEDIAN GUARDRAIL TERMINAL (XMAS)	N	NCHRP 350	TL-3
SEW22	Soft Stop End Terminal	N	MASH	TL-3
SEW23	X-LITE SYSTEM, TANGENT	N	NCHRP 350	TL-3
SEW24	X-LITE SYSTEM, FLARED	N	NCHRP 350	TL-3
SEW25	TREND End Terminal, Tangent/Flared	N	NCHRP 350	TL-3
SEW26	TREND End Terminal, Median	N	NCHRP 350	TL-3
SGM01a	Weak-Post Cable Median Barrier	Y	NCHRP 350	TL-3
SGM01b	Weak Post HT Cable Median Barrier	N	NCHRP 350	TL-3
SGM02	Weak-Post W-Beam Median Barrier	Y	NCHRP 350	TL-2
SGM03	Weak-Post Box-Beam Median Barrier	Y	NCHRP 350	TL-3
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	Y	NCHRP 350	TL-3
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	Y	NCHRP 350	TL-3
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	Y	NCHRP 350	TL-3
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	Y	NCHRP 350	TL-3
SGM07a	Gibraltar TL-3 Cable Barrier	N	NCHRP 350	TL-3
SGM07b	Gibraltar TL-4 Cable Barrier	N	NCHRP 350	TL-4
SGM07e	NUCOR HT Barrier TL-3	Y	NCHRP 350	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SGM07f	NUCOR HT Barrier TL-4	Y	NCHRP 350	TL-4
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	N	NCHRP 350	TL-3
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	N	NCHRP 350	TL-4
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	N	NCHRP 350	TL-3
SGM10a	F-Shape Median Barrier	Y	NCHRP 350	TL-4
SGM10b	F-Shape Median Barrier	Y	NCHRP 350	TL-5
SGM11a	Safety-Shape Median Barrier	Y	NCHRP 350	TL-4
SGM11b	Safety-Shape Median Barrier	Y	NCHRP 350	TL-5
SGM12	Tall-Wall Median Barrier	Y	NCHRP 350	TL-5
SGM13	3N Median Barrier	N	NCHRP 350	TL-5
SGM14	Single Slope Median Barrier	N	NCHRP 350	TL-5
SGM15a	Visi-Barrier, F-Shape, 32" High	N	NCHRP 350	TL-4
SGM15b	Visi-Barrier, F-Shape, 42" High	N	NCHRP 350	TL-5
SGM15c	Visi-Barrier, NJ-Shape, 32" High	N	NCHRP 350	TL-4
SGM15d	Visi-Barrier, NJ-Shape, 42" High	N	NCHRP 350	TL-5
SGM15e	Visi-Barrier, Single-Slope, 32" High	N	NCHRP 350	TL-4
SGM15f	Visi-Barrier, Single-Slope, 42" High	N	NCHRP 350	TL-5
SGM20	BarrierGate	Y	NCHRP 350	TL-3
SGM22	Reactive Tension Movable Barrier,TL-3	Y	NCHRP 350	TL-3
SGM22b	Quickchange Reactive Tension Movable Barrier, TL-4	N	NCHRP 350	TL-4
SGM23	ArmorGuard Gate	Y	NCHRP 350	TL-3
SGM24	NU-GUARD-27	N	NCHRP 350	TL-3
SGM25	NU-GUARD-31	Y	NCHRP 350	TL-3
SGM26a	GMS GUARDRAIL: 27" MEDIAN W-BEAM	N	MASH	TL-3
SGM26b	GMS GUARDRAIL: 27" MEDIAN W-BEAM	N	MASH	TL-3
SGM26c	GMS GUARDRAIL: 27" MEDIAN W-BEAM	N	MASH	TL-3
SGM26d	GMS GUARDRAIL: 27" MEDIAN W-BEAM	N	MASH	TL-3
SGM27a	GMS GUARDRAIL: 31" MEDIAN W-BEAM	N	MASH	TL-3
SGM27b	GMS GUARDRAIL: 31" MEDIAN W-BEAM	N	MASH	TL-3
SGM27c	GMS GUARDRAIL: 31" MEDIAN W-BEAM	N	MASH	TL-3
SGM27d	GMS GUARDRAIL: 31" MEDIAN W-BEAM	N	MASH	TL-3
SGM28	Safence Cable Median Barrier	N	NCHRP 350	TL-4
SGM29	Midwest Guardrail System Median Barrier	N	NCHRP 350	TL-3
SGM30	VarioGuard Barrier	N	NCHRP 350	TL-3
SGM31	Emergency Median Access Barrier	N	MASH	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SGM32	SAFENCE Cable Barrier 4:1	N	MASH	TL-3
SGM33a	ArmorWire Cable Barrier TL-3	N	NCHRP 350	TL-3
SGM33b	ArmorWire Cable Barrier TL-4	N	NCHRP 350	TL-4
SGM34	Rough Stone Masonry Guardrail TL-2	N	NCHRP 350	TL-2
SGM35	GMS GUARDRAIL: 39" MEDIAN THRIE-BEAM	N		0
SGM36a	CASS System S3 Post, 4:1, TL-3	N	MASH	TL-3
SGM36b	CASS System S3 Post, 4:1, TL-4	N	MASH	TL-4
SGR01a	Weak-Steel Post Cable Guardrail	Y	NCHRP 350	TL-3
SGR01b	Weak-Steel Post Cable Guardrail	Y	NCHRP 350	TL-3
SGR01d	Weak Post Cable HT Guardrail	N	NCHRP 350	TL-3
SGR02a	Weak-Post W-Beam Guardrail	Y	NCHRP 350	TL-2
SGR02b	Weak-Post W-Beam Guardrail	Y	NCHRP 350	TL-3
SGR03	Weak-Post Box-Beam Guardrail	Y	NCHRP 350	TL-3
SGR04a	Strong-Post W-Beam Guardrail	Y	NCHRP 350	TL-2
SGR04b	Strong-Post W-Beam Guardrail	Y	NCHRP 350	TL-3
SGR04c	Strong-Post W-Beam Guardrail	Y	NCHRP 350	TL-3
SGR05	Culvert Mounted W-Beam Guardrail	N	NCHRP 350	TL-3
SGR07a	Trinity CASS (Cable safety system)	N	NCHRP 350	TL-3, TL-4
SGR07b	BRIFEN 3- rope WRSF	N	NCHRP 350	TL-3
SGR07c	BRIFEN 4-rope WRSF, TL-3 ; TL-4	N	NCHRP 350	TL-3, TL-4
SGR07d	BRIFEN 4-rope WRSF, TL-4	N	NCHRP 350	TL-4
SGR07e	NU-CABLE TL-3 ROADSIDE	Y	NCHRP 350	TL-3
SGR07f	NU-CABLE TL-4 ROADSIDE	Y	NCHRP 350	TL-4
SGR08a	Ironwood Aesthetic Guardrail	N	NCHRP 350	TL-3
SGR09a	Strong-Post Thrie-Beam Guardrail	N	NCHRP 350	TL-3
SGR09b	Strong-Post Thrie-Beam Guardrail	N	NCHRP 350	TL-4
SGR09c	Strong-Post Thrie-Beam Guardrail	N	NCHRP 350	TL-3
SGR13	3N Guardrail	N	NCHRP 350	TL-5
SGR15	Safe-T-Curve Barrier	Y	NCHRP 350	TL-3
SGR20a	Midwest Guardrail System (6'-3")	Y	MASH	TL-3
SGR20b	Midwest Guardrail System (6'-3")	Y	MASH	TL-3
SGR20c	Midwest Guardrail (6'-3") (White Pine)	N	MASH	TL-3
SGR21a	MGS (3'-1 1/2")	Y	NCHRP 350	TL-3
SGR21b	MGS (3'-1 1/2")	Y	NCHRP 350	TL-3
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	Y	NCHRP 350	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SGR22b	MGS (1'-6 3/4")	Y	NCHRP 350	TL-3
SGR23a	MGS (6'-3") used with curb	Y	NCHRP 350	TL-3
SGR23b	MGS (6'-3") used with curb	Y	NCHRP 350	TL-3
SGR24a	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	Y	NCHRP 350	TL-3
SGR24b	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	Y	NCHRP 350	TL-3
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	Y	NCHRP 350	TL-3
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	Y	NCHRP 350	TL-3
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	Y	NCHRP 350	TL-3
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	Y	NCHRP 350	TL-3
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	Y	NCHRP 350	TL-3
SGR28a	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR28b	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR28c	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR28d	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR28e	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR28f	MGS With Round Posts	Y	NCHRP 350	TL-3
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	Y	NCHRP 350	TL-3
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	Y	NCHRP 350	TL-3
SGR30	Timber Guardrail System for Attachment to Noise Wall	Y	NCHRP 350	TL-3
SGR31	Low Profile Concrete Barrier	Y	NCHRP 350	TL-2
SGR32	NU-GUARD-27	Y	NCHRP 350	TL-3
SGR33	NU-GUARD-31	Y	NCHRP 350	TL-3
SGR34a	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	N	MASH	TL-3
SGR34b	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	N	MASH	TL-3
SGR34c	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	N	MASH	TL-3
SGR34d	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	N	MASH	TL-3
SGR35a	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	N	MASH	TL-3
SGR35b	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	N	MASH	TL-3
SGR35c	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	N	MASH	TL-3
SGR35d	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	N	MASH	TL-3
SGR36	Formet Strong Post Thrie Beam	N		0
SGR37	Rough Stone Masonry Guardrail TL-2	Y	NCHRP 350	TL-2
SGR38a	MGS Adjacent to 2:1 Fill Slope	N	MASH	TL-3
SGR38b	MGS Adjacent to 2:1 Fill Slope	N	MASH	TL-3
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE	Y	MASH	TL-3

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SGR40	T-Intersection, Short Radius W Beam	N	NCHRP 350	TL-2
SGR41	MGS without Block Outs	N		0
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3	N	MASH	TL-3
SGR43	GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM	N		0
SGR44	Ezy-Guard Heavy Duty MASH	N	MASH	TL-3
SGR45	Combo Steel/Concrete Barrier TL-2	N	NCHRP 350	TL-2
SGR46	NatureRail Wood SYP TL-2	N	NCHRP 350	TL-2
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	N	MASH	TL-3
SGR48	TIMBARRIER STREETGUARD PLUS RAIL SYSTEM	N	NCHRP 350	TL-2
SWC01	Quickchange Movable Barrier	N	NCHRP 350	TL-3
SWC02	J-J Hooks Portable Concrete Barrier	N	NCHRP 350	TL-3
SWC03	Low Profile Construction Zone Barrier	N	NCHRP 350	TL-2
SWC04	Pin & Rebar Portable Concrete Barrier	N	NCHRP 350	TL-3
SWC08	Removable Temporary Work Zone Barrier Anchors	N		0
SWC09	Temporary F-Shape Concrete Barrier Element	Y	MASH	TL-3
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	Y	NCHRP 350	TL-3
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	Y	NCHRP 350	TL-3
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	Y	NCHRP 350	TL-3
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	N	NCHRP 350	TL-3
SWC14	Temporary Concrete Barrier TL-3 (Florida)	N	NCHRP 350	TL-3
SWC15	Temporary Concrete Barrier (Pinned)	N	NCHRP 350	TL-3
SWC16	Portable Concrete Barrier Transition	N	MASH	TL-3
SWC17	Portable Concrete Barrier Termination	Y	MASH	TL-3
SWM01	Triton Barrier	N	NCHRP 350	TL-2, TL-3
SWM02	Dragnet Vehicle Arresting Barrier	N	NCHRP 350	TL-3
SWM03a	Triton Barrier	Y	NCHRP 350	TL-2, TL-3
SWM03b	Triton Barrier	Y	NCHRP 350	TL-2, TL-3
SWM04	Vulcan Barrier	N	NCHRP 350	TL-2, TL-3, TL-
SWM06	BarrierGuard 800	Y	NCHRP 350	TL-4
SWM07	ARMORGUARD BARRIER	Y	NCHRP 350	TL-3
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	Y	NCHRP 350	TL-3
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	Y	NCHRP 350	TL-3
SWM10	ZONEGUARD PORTABLE STEEL BARRIER	N	NCHRP 350, MASH	TL-3, TL-4
SWM11	YODOCK Rail Kit for Barrier Wall	N	NCHRP 350	TL-2
SWM15	Vulcan Barrier Gate	N	NCHRP 350	TL-2, TL-3, TL-

DESIGNATOR	TITLE	TF13 APPROVED	TEST	TEST LEVEL
SWM16a	Orion Portable Steel Barrier TL-3	N	NCHRP 350	TL-3
SWM16b	Orion Portable Steel Barrier TL-3	N	NCHRP 350	TL-3
SWM17	ARMORZONE , BARRIER, TL-2, MASH	N	MASH	TL-2
SWM18	TRACC/VULCAN Transition	N	NCHRP 350	TL-2, TL-3

Appendix E: System Designators and FHWA Letters

DESIGNATOR	TITLE	FHWA?
SCI06c	Energite III	CC-29
SCI07	Connecticut Impact Attenuation System	CC-77
SCI08	Narrow Connecticut Impact Attenuation System	CC-58
SCI09	ADIEM Energy Absorbing End Treatment	CC-38
SCI10	N-E-A-T System	CC-25
SCI11	ABSORB 350	CC-66, CC-66A, CC-66B
SCI12	BEAT-BP (Bridge Pier)	CC-69C
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	CC-69B, CC-69D, CC-69E
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	CC-69B, CC-69D, CC-69E
SCI14	CushionWall II	
SCI15	EASI-Cell Cluster	CC-71
SCI16a	REACT 350 (36) Wide	CC-26A
SCI16b	REACT 350 (60/96/120) Wide	CC-50, CC-73A
SCI16c	REACT 350 II	CC-26J
SCI17a	SCI100GM Impact Attenuator	CC-85
SCI17b	SCI70GM Impact Attenuator	CC-85A
SCI18a	TRACC Crash Cushion Family (Narrow)	CC-54 thru CC-54I
SCI18b	TRACC Crash Cushion Family	CC-54 thru CC-54I
SCI19	Stop Gate	CC-55
SCI20	Quest Crash Cushion	CC-87, CC-87A, CC-87B, CC-87C
SCI21	HEART Crash Cushion	CC-89, CC-89A
SCI22	SLED Sentry Longitudinal Energy Dissipater	CC-108
SCI23	X-Tenuator Crash Cushion	CC-109, CC-109A, CC-109B
SCI24	ACZ 350 TL-2 Crash Cushion	CC-110
SCI25	Raptor Crash Cushion TL-1	CC-113
SCI26a	Quadguard M10 Narrow Family	CC-112
SCI26b	Quadguard M10 Narrow Family	CC-112B
SCI27	Quadguard M10 Wide Family	CC-112
SCI28	Compressor Crash Cushion	CC-95, CC-95A, CC-95B
SCI29	ArmorZone End Terminal TL-2	B-223, CC-119
SCI30	Quadguard M10 Narrow Family TL-2	CC-121
SCI31	Quadguard M10 Wide Family TL-2	CC-121
SCI32	CrashGard Sand Barrel System	CC-97, CC-97A

DESIGNATOR	TITLE	FHWA?
SCI33	QuadGuard Elite 8 Bay M10	CC-112A
SCI34	QuadGuard Elite 8 Bay Wide M10	CC-112A
SCI35	QuadGuard Elite 4 Bay M10	CC-112A
SCI36	QuadGuard Elite 4 Bay Wide M10	CC-112A
SCT01a	Universal TAU II	CC-75, CC-75A, CC-75B, CC-75C
SCT01b	Universal TAU II	CC-75, CC-75A, CC-75B, CC-75C
SCT01c	TAU IIR/Universal TL-2 & TL-3	CC-75, CC-75A, CC-75B, CC-75C
SCT02a	QuadGuard (24, 30, or 36)	CC-35B
SCT02b	QuadGuard CZ	CC-35A
SCT02c	QuadGuard CZ on a Plate	CC-35F
SCT02d	QuadGuard High Speed	
SCT02e	QuadGuard Elite	CC-57
SCT02f	QuadGuard LMC	CC-43, CC-45
SCT02g	QuadGuard CEN	
SCT02h	QuadGuard (69 or 90)	CC-42A
SEB03	WY-BET Wyoming Box Beam End Terminal	CC-60, CC-60A
SEB04	WY-BET Wyoming Box Beam End Terminal (Median)	CC-60, CC-60A
SEB05	Box Beam BEAT	CC-69
SEB06	Box Beam BEAT-MT (Median)	CC-69A
SEC01	Cable Guardrail Anchor	CC-63
SEC07a	CCT (Trinity CASS End Terminal)	B-157
SEC07b	Brifen Wire Rope End Treatment	CC-86, CC-86A, CC-86B
SEC07e	NUCOR Cable End Terminal	
SEC08	ArmorWire End Terminal TL-3	CC-105
SEC09	Safence Cable End Terminal	CC-93, CC-93A, CC-93B
SEC10	Cable End Terminal Low Tension	CC-111
SED01	Steel Backed Timber Guardrail Tangent End Terminal	CC-116
SER01	Low-Profile Construction-Zone End Treatment	CC-44
SER02	Triton Barrier CET	CC-47A
SER04	Florida Low-Profile Barrier Terminal	CC-106
SET01	Trend System	
SET02	Quadtrend 350	CC-49
SET03a	Thrie Beam Bull Nose, Wood Post	CC-68, CC-68A
SET03b	Thrie Beam Bull Nose, Steel Post	CC-68, CC-68A
SEW06	Brakemaster 350	CC-41

DESIGNATOR	TITLE	FHWA?
SEW07	ET-2000 Guardrail Extruder Terminal	
SEW08	C-A-T Crash-Cushion/Attenuating Terminal	CC-33, CC-33A
SEW11	Slotted Rail Terminal (SRT-75)	
SEW12a	Slotted Rail Terminal (SRT-350)(SRT-31)	CC-100
SEW12b	Slotted Rail Term(SRT-350)(SRT-31)	CC-100
SEW13	Sentre System	
SEW14a	FLEAT	CC-46, CC-46A, CC-46B, CC-46C, CC-61, CC-61B, CC-
SEW14b	FLEAT	CC-46, CC-46A, CC-46B, CC-46C, CC-61, CC-61B, CC-
SEW15	FLEAT - MGS System	CC-88,CC-88A
SEW16a	FLEAT-MT (Median)	CC-46D
SEW16b	FLEAT-MT (Median)	CC-88E
SEW17a	Sequential Kinking Terminal (SKT)	CC-40, CC-40A, CC-40B, CC-61, CC-61A, CC-61B, CC-
SEW17b	Sequential Kinking Terminal (SKT)	CC-40, CC-40A, CC-40B, CC-61, CC-61A, CC-61B, CC-
SEW17c	Sequential Kinking Terminal (SKT)	CC-40, CC-40A, CC-40B, CC-61, CC-61A, CC-61B, CC-
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	CC-88,CC-88A
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	CC-88,CC-88A
SEW19	X-TENSION GUARDRAIL TERMINAL - TANGENT	CC-91, CC-102
SEW20	X-TENSION GUARDRAIL TERMINAL - FLARED	CC-91, CC-102
SEW21	X-TENSION MEDIAN GUARDRAIL TERMINAL (XMAS)	CC-91, CC-102
SEW22	Soft Stop End Terminal	CC-115
SEW23	X-LITE SYSTEM, TANGENT	CC-120, CC-120A
SEW24	X-LITE SYSTEM, FLARED	CC-120, CC-120A
SEW25	TREND End Terminal, Tangent/Flared	CC-123T, CC-123F
SEW26	TREND End Terminal, Median	CC-122
SGM01a	Weak-Post Cable Median Barrier	B-64
SGM01b	Weak Post HT Cable Median Barrier	B-227
SGM02	Weak-Post W-Beam Median Barrier	B-64
SGM03	Weak-Post Box-Beam Median Barrier	B-64
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	B-64
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	B-64
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	B-64
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	B-64
SGM07a	Gibraltar TL-3 Cable Barrier	B-137
SGM07b	Gibraltar TL-4 Cable Barrier	B-137A, B-137A1, B-137B, B-137C (HAS), B-137C
SGM07e	NUCOR HT Barrier TL-3	B-96, B-96A

DESIGNATOR	TITLE	FHWA?
SGM07f	NUCOR HT Barrier TL-4	B-167
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	B-64
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	B-64
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	B-64
SGM10a	F-Shape Median Barrier	B-64
SGM10b	F-Shape Median Barrier	B-64
SGM11a	Safety-Shape Median Barrier	B-64
SGM11b	Safety-Shape Median Barrier	B-64
SGM12	Tall-Wall Median Barrier	B-64
SGM13	3N Median Barrier	B-46
SGM14	Single Slope Median Barrier	B-17
SGM15a	Visi-Barrier, F-Shape, 32" High	B-64
SGM15b	Visi-Barrier, F-Shape, 42" High	B-64
SGM15c	Visi-Barrier, NJ-Shape, 32" High	B-64
SGM15d	Visi-Barrier, NJ-Shape, 42" High	B-64
SGM15e	Visi-Barrier, Single-Slope, 32" High	B-64
SGM15f	Visi-Barrier, Single-Slope, 42" High	B-64
SGM20	BarrierGate	B-25
SGM22	Reactive Tension Movable Barrier,TL-3	B-69, B-69A, B-69B, B-69D
SGM22b	Quickchange Reactive Tension Movable Barrier, TL-4	B-69, B-69A, B-69B, B-69D
SGM23	ArmorGuard Gate	B-87, B-173
SGM24	NU-GUARD-27	B-162, B-186
SGM25	NU-GUARD-31	B-162
SGM26a	GMS GUARDRAIL: 27" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM26b	GMS GUARDRAIL: 27" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM26c	GMS GUARDRAIL: 27" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM26d	GMS GUARDRAIL: 27" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM27a	GMS GUARDRAIL: 31" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM27b	GMS GUARDRAIL: 31" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM27c	GMS GUARDRAIL: 31" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM27d	GMS GUARDRAIL: 31" MEDIAN W-BEAM	B-150, B-150A, B-150B, B-150C
SGM28	Safence Cable Median Barrier	B-88, B-88A, B-88B, B-88C, B-88D, B-88E
SGM29	Midwest Guardrail System Median Barrier	B-133
SGM30	VarioGuard Barrier	B-208
SGM31	Emergency Median Access Barrier	B-216

DESIGNATOR	TITLE	FHWA?
SGM32	SAFENCE Cable Barrier 4:1	B-88F, B-88G
SGM33a	ArmorWire Cable Barrier TL-3	B-222
SGM33b	ArmorWire Cable Barrier TL-4	B-222
SGM34	Rough Stone Masonry Guardrail TL-2	B-202
SGM35	GMS GUARDRAIL: 39" MEDIAN THRIE-BEAM	B-156
SGM36a	CASS System S3 Post, 4:1, TL-3	B-232
SGM36b	CASS System S3 Post, 4:1, TL-4	B-232A
SGR01a	Weak-Steel Post Cable Guardrail	B-64
SGR01b	Weak-Steel Post Cable Guardrail	B-64
SGR01d	Weak Post Cable HT Guardrail	B-227
SGR02a	Weak-Post W-Beam Guardrail	B-64
SGR02b	Weak-Post W-Beam Guardrail	B-64A
SGR03	Weak-Post Box-Beam Guardrail	B-64
SGR04a	Strong-Post W-Beam Guardrail	B-64
SGR04b	Strong-Post W-Beam Guardrail	B-64
SGR04c	Strong-Post W-Beam Guardrail	B-64
SGR05	Culvert Mounted W-Beam Guardrail	B-64
SGR07a	Trinty CASS (Cable safety system)	B-141, B-141A, B-141B, B-141C, B-141D, B-141E, B-
SGR07b	BRIFEN 3- rope WRSF	B-82, B-82A, B-82B, B-82B1, B-82C, B-82C1, B-82D
SGR07c	BRIFEN 4-rope WRSF, TL-3 ; TL-4	B-82, B-82A, B-82B, B-82B1, B-82C, B-82C1, B-82D
SGR07d	BRIFEN 4-rope WRSF, TL-4	B-82, B-82A, B-82B, B-82B1, B-82C, B-82C1, B-82D
SGR07e	NU-CABLE TL-3 ROADSIDE	B-96, B-96A
SGR07f	NU-CABLE TL-4 ROADSIDE	B-167, B-184, B-184A, B-193
SGR08a	Ironwood Aesthetic Guardrail	B-56, B-56A, B-56B
SGR09a	Strong-Post Thrie-Beam Guardrail	B-64
SGR09b	Strong-Post Thrie-Beam Guardrail	B-64
SGR09c	Strong-Post Thrie-Beam Guardrail	B-64
SGR13	3N Guardrail	B-28, B-46
SGR15	Safe-T-Curve Barrier	B-69A
SGR20a	Midwest Guardrail System (6'-3")	B-133, B-212
SGR20b	Midwest Guardrail System (6'-3")	B-133, B-212
SGR20c	Midwest Guardrail (6'-3") (White Pine)	B-133, B-212
SGR21a	MGS (3'-1 1/2")	B-133
SGR21b	MGS (3'-1 1/2")	B-133
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	B-133

DESIGNATOR	TITLE	FHWA?
SGR22b	MGS (1'-6 3/4")	B-133
SGR23a	MGS (6'-3") used with curb	B-133
SGR23b	MGS (6'-3") used with curb	B-133
SGR24a	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	B-64C
SGR24b	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	B-64C
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	None
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	None
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	None
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	B-64B
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	B-64B
SGR28a	MGS With Round Posts	B-175
SGR28b	MGS With Round Posts	B-175
SGR28c	MGS With Round Posts	B-175
SGR28d	MGS With Round Posts	B-175
SGR28e	MGS With Round Posts	B-175
SGR28f	MGS With Round Posts	B-175
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	B-58
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	B-58
SGR30	Timber Guardrail System for Attachment to Noise Wall	B-135
SGR31	Low Profile Concrete Barrier	B-116
SGR32	NU-GUARD-27	B-162, B-186
SGR33	NU-GUARD-31	B-162
SGR34a	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR34b	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR34c	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR34d	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR35a	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR35b	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR35c	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR35d	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	B-150, B-150A, B-150B, B-150C
SGR36	Formet Strong Post Thrie Beam	
SGR37	Rough Stone Masonry Guardrail TL-2	B-202
SGR38a	MGS Adjacent to 2:1 Fill Slope	B-211, B-211A
SGR38b	MGS Adjacent to 2:1 Fill Slope	B-211, B-211A
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE Wall	

DESIGNATOR	TITLE	FHWA?
SGR40	T-Intersection, Short Radius W Beam	B-209
SGR41	MGS without Block Outs	
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3	B-225
SGR43	GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM	B-150,B-150A,B-150B,B-150C,B-156, CC-96
SGR44	Ezy-Guard Heavy Duty MASH	B-229
SGR45	Combo Steel/Concrete Barrier TL-2	B-235
SGR46	NatureRail Wood SYP TL-2	B-153, B-153A, B-153B
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	B-240
SGR48	TIMBARRIER STREETGUARD PLUS RAIL SYSTEM	B-163
SWC01	Quickchange Movable Barrier	B-40, B-63
SWC02	J-J Hooks Portable Concrete Barrier	B-52
SWC03	Low Profile Construction Zone Barrier	B-36
SWC04	Pin & Rebar Portable Concrete Barrier	B-41, B-70, B-84, B-86, B-90, B-93, B-98
SWC08	Removable Temporary Work Zone Barrier Anchors	
SWC09	Temporary F-Shape Concrete Barrier Element	B-215
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	B-112
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	B-122
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	B-180
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	B-170, B-170A, B-170B
SWC14	Temporary Concrete Barrier TL-3 (Florida)	
SWC15	Temporary Concrete Barrier (Pinned)	B-206
SWC16	Portable Concrete Barrier Transition	B-41A
SWC17	Portable Concrete Barrier Termination	B-221
SWM01	Triton Barrier	B-21, B-21A, B-26, B-48, B-179
SWM02	Dragnet Vehicle Arresting Barrier	CC-70
SWM03a	Triton Barrier	B-21, B-21A, B-26, B-48, B-179
SWM03b	Triton Barrier	B-21, B-21A, B-26, B-48, B-179
SWM04	Vulcan Barrier	B-134, B-134A, B-134C, B-134D
SWM06	BarrierGuard 800	B-131
SWM07	ARMORGUARD BARRIER	B-108
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	B-117
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	B-117
SWM10	ZONEGUARD PORTABLE STEEL BARRIER	B-176, B-176A, B-220
SWM11	YODOCK Rail Kit for Barrier Wall	B-97, B-97A
SWM15	Vulcan Barrier Gate	B-201

DESIGNATOR	TITLE	FHWA?
SWM16a	Orion Portable Steel Barrier TL-3	B-217
SWM16b	Orion Portable Steel Barrier TL-3	B-217
SWM17	ARMORZONE , BARRIER, TL-2, MASH	B-223, CC-119
SWM18	TRACC/VULCAN Transition	B-134A, CC-54I

Appendix F: System Designators and TF13 Drawing Review Status (Approved)

DESIGNATOR	TITLE	TF13 APPROVED
SCI06c	Energite III	Y
SCI10	N-E-A-T System	Y
SCI11	ABSORB 350	Y
SCI12	BEAT-BP (Bridge Pier)	Y
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	Y
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	Y
SCI15	EASI-Cell Cluster	Y
SCI16a	REACT 350 (36) Wide	Y
SCI16b	REACT 350 (60/96/120) Wide	Y
SCI17a	SCI100GM Impact Attenuator	Y
SCI17b	SCI70GM Impact Attenuator	Y
SCT01a	Universal TAU II	Y
SCT01b	Universal TAU II	Y
SCT02a	QuadGuard (24, 30, or 36)	Y
SCT02b	QuadGuard CZ	Y
SCT02c	QuadGuard CZ on a Plate	Y
SCT02d	QuadGuard High Speed	Y
SCT02e	QuadGuard Elite	Y
SCT02f	QuadGuard LMC	Y
SCT02g	QuadGuard CEN	Y
SCT02h	QuadGuard (69 or 90)	Y
SEB05	Box Beam BEAT	Y
SEB06	Box Beam BEAT-MT (Median)	Y
SEC01	Cable Guardrail Anchor	Y
SER02	Triton Barrier CET	Y
SET02	Quadtrend 350	Y
SET03a	Thrie Beam Bull Nose, Wood Post	Y
SEW06	Brakemaster 350	Y
SEW14a	FLEAT	Y
SEW14b	FLEAT	Y
SEW15	FLEAT - MGS System	Y
SEW16a	FLEAT-MT (Median)	Y
SEW16b	FLEAT-MT (Median)	Y
SEW17a	Sequential Kinking Terminal (SKT)	Y
SEW17b	Sequential Kinking Terminal (SKT)	Y
SEW17c	Sequential Kinking Terminal (SKT)	Y
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	Y
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	Y
SGM01a	Weak-Post Cable Median Barrier	Y
SGM02	Weak-Post W-Beam Median Barrier	Y
SGM03	Weak-Post Box-Beam Median Barrier	Y
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	Y
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	Y
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	Y

DESIGNATOR	TITLE	TF13 APPROVED
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	Y
SGM07e	NUCOR HT Barrier TL-3	Y
SGM07f	NUCOR HT Barrier TL-4	Y
SGM10a	F-Shape Median Barrier	Y
SGM10b	F-Shape Median Barrier	Y
SGM11a	Safety-Shape Median Barrier	Y
SGM11b	Safety-Shape Median Barrier	Y
SGM12	Tall-Wall Median Barrier	Y
SGM20	BarrierGate	Y
SGM22	Reactive Tension Movable Barrier,TL-3	Y
SGM23	ArmorGuard Gate	Y
SGM25	NU-GUARD-31	Y
SGR01a	Weak-Steel Post Cable Guardrail	Y
SGR01b	Weak-Steel Post Cable Guardrail	Y
SGR02a	Weak-Post W-Beam Guardrail	Y
SGR02b	Weak-Post W-Beam Guardrail	Y
SGR03	Weak-Post Box-Beam Guardrail	Y
SGR04a	Strong-Post W-Beam Guardrail	Y
SGR04b	Strong-Post W-Beam Guardrail	Y
SGR04c	Strong-Post W-Beam Guardrail	Y
SGR07e	NU-CABLE TL-3 ROADSIDE	Y
SGR07f	NU-CABLE TL-4 ROADSIDE	Y
SGR15	Safe-T-Curve Barrier	Y
SGR20a	Midwest Guardrail System (6'-3")	Y
SGR20b	Midwest Guardrail System (6'-3")	Y
SGR21a	MGS (3'-1 1/2")	Y
SGR21b	MGS (3'-1 1/2")	Y
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	Y
SGR22b	MGS (1'-6 3/4")	Y
SGR23a	MGS (6'-3") used with curb	Y
SGR23b	MGS (6'-3") used with curb	Y
SGR24a	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	Y
SGR24b	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	Y
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	Y
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	Y
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	Y
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	Y
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	Y
SGR28a	MGS With Round Posts	Y
SGR28b	MGS With Round Posts	Y
SGR28c	MGS With Round Posts	Y
SGR28d	MGS With Round Posts	Y
SGR28e	MGS With Round Posts	Y
SGR28f	MGS With Round Posts	Y
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	Y

DESIGNATOR	TITLE	TF13 APPROVED
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	Y
SGR30	Timber Guardrail System for Attachment to Noise Wall	Y
SGR31	Low Profile Concrete Barrier	Y
SGR32	NU-GUARD-27	Y
SGR33	NU-GUARD-31	Y
SGR37	Rough Stone Masonry Guardrail TL-2	Y
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE Wall	Y
SWC09	Temporary F-Shape Concrete Barrier Element	Y
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	Y
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	Y
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	Y
SWC17	Portable Concrete Barrier Termination	Y
SWM03a	Triton Barrier	Y
SWM03b	Triton Barrier	Y
SWM06	BarrierGuard 800	Y
SWM07	ARMORGUARD BARRIER	Y
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	Y
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	Y

Appendix G: System Designators and Owner, Grouped by Owner

DESIGNATOR	TITLE	company_id	company_name
SCI06c	Energite III	1	Energy Absorption Systems, Inc.
SCI10	N-E-A-T System	1	Energy Absorption Systems, Inc.
SCI14	CushionWall II	1	Energy Absorption Systems, Inc.
SCI15	EASI-Cell Cluster	1	Energy Absorption Systems, Inc.
SCI16a	REACT 350 (36) Wide	1	Energy Absorption Systems, Inc.
SCI16b	REACT 350 (60/96/120) Wide	1	Energy Absorption Systems, Inc.
SCI16c	REACT 350 II	1	Energy Absorption Systems, Inc.
SCI19	Stop Gate	1	Energy Absorption Systems, Inc.
SCI20	Quest Crash Cushion	1	Energy Absorption Systems, Inc.
SCI24	ACZ 350 TL-2 Crash Cushion	1	Energy Absorption Systems, Inc.
SCI26a	Quadguard M10 Narrow Family	1	Energy Absorption Systems, Inc.
SCI26b	Quadguard M10 Narrow Family	1	Energy Absorption Systems, Inc.
SCI27	Quadguard M10 Wide Family	1	Energy Absorption Systems, Inc.
SCI30	Quadguard M10 Narrow Family TL-2	1	Energy Absorption Systems, Inc.
SCI31	Quadguard M10 Wide Family TL-2	1	Energy Absorption Systems, Inc.
SCI33	QuadGuard Elite 8 Bay M10	1	Energy Absorption Systems, Inc.
SCI34	QuadGuard Elite 8 Bay Wide M10	1	Energy Absorption Systems, Inc.
SCI35	QuadGuard Elite 4 Bay M10	1	Energy Absorption Systems, Inc.
SCI36	QuadGuard Elite 4 Bay Wide M10	1	Energy Absorption Systems, Inc.
SCT02a	QuadGuard (24, 30, or 36)	1	Energy Absorption Systems, Inc.
SCT02b	QuadGuard CZ	1	Energy Absorption Systems, Inc.
SCT02c	QuadGuard CZ on a Plate	1	Energy Absorption Systems, Inc.
SCT02d	QuadGuard High Speed	1	Energy Absorption Systems, Inc.
SCT02e	QuadGuard Elite	1	Energy Absorption Systems, Inc.
SCT02f	QuadGuard LMC	1	Energy Absorption Systems, Inc.
SCT02g	QuadGuard CEN	1	Energy Absorption Systems, Inc.
SCT02h	QuadGuard (69 or 90)	1	Energy Absorption Systems, Inc.
SER02	Triton Barrier CET	1	Energy Absorption Systems, Inc.
SET01	Trend System	1	Energy Absorption Systems, Inc.
SET02	Quadtrend 350	1	Energy Absorption Systems, Inc.
SEW06	Brakemaster 350	1	Energy Absorption Systems, Inc.
SEW13	Sentre System	1	Energy Absorption Systems, Inc.
SGM20	BarrierGate	1	Energy Absorption Systems, Inc.

DESIGNATOR	TITLE	company_id	company_name
SWM01	Triton Barrier	1	Energy Absorption Systems, Inc.
SWM03a	Triton Barrier	1	Energy Absorption Systems, Inc.
SWM03b	Triton Barrier	1	Energy Absorption Systems, Inc.
SWM04	Vulcan Barrier	1	Energy Absorption Systems, Inc.
SWM15	Vulcan Barrier Gate	1	Energy Absorption Systems, Inc.
SCI11	ABSORB 350	2	Barrier Systems, Inc.
SCI23	X-Tenuator Crash Cushion	2	Barrier Systems, Inc.
SCI25	Raptor Crash Cushion TL-1	2	Barrier Systems, Inc.
SCT01a	Universal TAU II	2	Barrier Systems, Inc.
SCT01b	Universal TAU II	2	Barrier Systems, Inc.
SCT01c	TAU IIR/Universal TL-2 & TL-3	2	Barrier Systems, Inc.
SEW19	X-TENSION GUARDRAIL TERMINAL - TANGENT	2	Barrier Systems, Inc.
SEW20	X-TENSION GUARDRAIL TERMINAL - FLARED	2	Barrier Systems, Inc.
SEW21	X-TENSION MEDIAN GUARDRAIL TERMINAL (XMAS)	2	Barrier Systems, Inc.
SGM22	Reactive Tension Movable Barrier,TL-3	2	Barrier Systems, Inc.
SGM22b	Quickchange Reactive Tension Movable Barrier, TL-4	2	Barrier Systems, Inc.
SGM23	ArmorGuard Gate	2	Barrier Systems, Inc.
SGR15	Safe-T-Curve Barrier	2	Barrier Systems, Inc.
SWC01	Quickchange Movable Barrier	2	Barrier Systems, Inc.
SWM06	BarrierGuard 800	2	Barrier Systems, Inc.
SWM07	ARMORGUARD BARRIER	2	Barrier Systems, Inc.
SCI17a	SCI100GM Impact Attenuator	3	Work Area Protection Corporation
SCI17b	SCI70GM Impact Attenuator	3	Work Area Protection Corporation
SCI12	BEAT-BP (Bridge Pier)	4	Road Systems, Inc.
SCI13a	BEAT-SSCC (Single-Sided Crash Cushion)	4	Road Systems, Inc.
SCI13b	BEAT-SSCC (Single-Sided Crash Cushion)	4	Road Systems, Inc.
SEB05	Box Beam BEAT	4	Road Systems, Inc.
SEB06	Box Beam BEAT-MT (Median)	4	Road Systems, Inc.
SEW14a	FLEAT	4	Road Systems, Inc.
SEW14b	FLEAT	4	Road Systems, Inc.
SEW15	FLEAT - MGS System	4	Road Systems, Inc.
SEW16a	FLEAT-MT (Median)	4	Road Systems, Inc.
SEW16b	FLEAT-MT (Median)	4	Road Systems, Inc.
SEW17a	Sequential Kinking Terminal (SKT)	4	Road Systems, Inc.
SEW17b	Sequential Kinking Terminal (SKT)	4	Road Systems, Inc.

DESIGNATOR	TITLE	company_id	company_name
SEW17c	Sequential Kinking Terminal (SKT)	4	Road Systems, Inc.
SEW18a	Sequential Kinking Terminal (SKT) - MGS System	4	Road Systems, Inc.
SEW18b	Sequential Kinking Terminal (SKT) - MGS System	4	Road Systems, Inc.
SGM15a	Visi-Barrier, F-Shape, 32" High	5	Transpo Industries, Inc.
SGM15b	Visi-Barrier, F-Shape, 42" High	5	Transpo Industries, Inc.
SGM15c	Visi-Barrier, NJ-Shape, 32" High	5	Transpo Industries, Inc.
SGM15d	Visi-Barrier, NJ-Shape, 42" High	5	Transpo Industries, Inc.
SGM15e	Visi-Barrier, Single-Slope, 32" High	5	Transpo Industries, Inc.
SGM15f	Visi-Barrier, Single-Slope, 42" High	5	Transpo Industries, Inc.
SER01	Low-Profile Construction-Zone End Treatment	7	Texas A&M Transportation Institute
SGR40	T-Intersection, Short Radius W Beam	7	Texas A&M Transportation Institute
SWC03	Low Profile Construction Zone Barrier	7	Texas A&M Transportation Institute
SEC09	Safence Cable End Terminal	8	Gregory Highway Products
SGM26a	GMS GUARDRAIL: 27" MEDIAN W-BEAM	8	Gregory Highway Products
SGM26b	GMS GUARDRAIL: 27" MEDIAN W-BEAM	8	Gregory Highway Products
SGM26c	GMS GUARDRAIL: 27" MEDIAN W-BEAM	8	Gregory Highway Products
SGM26d	GMS GUARDRAIL: 27" MEDIAN W-BEAM	8	Gregory Highway Products
SGM27a	GMS GUARDRAIL: 31" MEDIAN W-BEAM	8	Gregory Highway Products
SGM27b	GMS GUARDRAIL: 31" MEDIAN W-BEAM	8	Gregory Highway Products
SGM27c	GMS GUARDRAIL: 31" MEDIAN W-BEAM	8	Gregory Highway Products
SGM27d	GMS GUARDRAIL: 31" MEDIAN W-BEAM	8	Gregory Highway Products
SGM28	Safence Cable Median Barrier	8	Gregory Highway Products
SGM32	SAFENCE Cable Barrier 4:1	8	Gregory Highway Products
SGM35	GMS GUARDRAIL: 39" MEDIAN THRIE-BEAM	8	Gregory Highway Products
SGR34a	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR34b	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR34c	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR34d	GMS GUARDRAIL: 27" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR35a	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR35b	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR35c	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR35d	GMS GUARDRAIL: 31" ROADSIDE W-BEAM	8	Gregory Highway Products
SGR43	GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM	8	Gregory Highway Products
SGR46	NatureRail Wood SYP TL-2	8	Gregory Highway Products
SCI09	ADIEM Energy Absorbing End Treatment	11	Trinity Highway Products, LLC

DESIGNATOR	TITLE	company_id	company_name
SCI18a	TRACC Crash Cushion Family (Narrow)	11	Trinity Highway Products, LLC
SCI18b	TRACC Crash Cushion Family	11	Trinity Highway Products, LLC
SCI21	HEART Crash Cushion	11	Trinity Highway Products, LLC
SEB03	WY-BET Wyoming Box Beam End Terminal	11	Trinity Highway Products, LLC
SEB04	WY-BET Wyoming Box Beam End Terminal (Median)	11	Trinity Highway Products, LLC
SEC07a	CCT (Trinity CASS End Terminal)	11	Trinity Highway Products, LLC
SEW07	ET-2000 Guardrail Extruder Terminal	11	Trinity Highway Products, LLC
SEW08	C-A-T Crash-Cushion/Attenuating Terminal	11	Trinity Highway Products, LLC
SEW11	Slotted Rail Terminal (SRT-75)	11	Trinity Highway Products, LLC
SEW12a	Slotted Rail Terminal (SRT-350)(SRT-31)	11	Trinity Highway Products, LLC
SEW12b	Slotted Rail Term(SRT-350)(SRT-31)	11	Trinity Highway Products, LLC
SEW22	Soft Stop End Terminal	11	Trinity Highway Products, LLC
SEW25	TREND End Terminal, Tangent/Flared	11	Trinity Highway Products, LLC
SEW26	TREND End Terminal, Median	11	Trinity Highway Products, LLC
SGM36a	CASS System S3 Post, 4:1, TL-3	11	Trinity Highway Products, LLC
SGM36b	CASS System S3 Post, 4:1, TL-4	11	Trinity Highway Products, LLC
SGR07a	Trinity CASS (Cable safety system)	11	Trinity Highway Products, LLC
SWM11	YODOCK Rail Kit for Barrier Wall	11	Trinity Highway Products, LLC
SWM18	TRACC/VULCAN Transition	11	Trinity Highway Products, LLC
SEC10	Cable End Terminal Low Tension	16	Midwest Roadside Safety Facility
SET03a	Thrie Beam Bull Nose, Wood Post	16	Midwest Roadside Safety Facility
SET03b	Thrie Beam Bull Nose, Steel Post	16	Midwest Roadside Safety Facility
SGM29	Midwest Guardrail System Median Barrier	16	Midwest Roadside Safety Facility
SGM34	Rough Stone Masonry Guardrail TL-2	16	Midwest Roadside Safety Facility
SGR20a	Midwest Guardrail System (6'-3")	16	Midwest Roadside Safety Facility
SGR20b	Midwest Guardrail System (6'-3")	16	Midwest Roadside Safety Facility
SGR20c	Midwest Guardrail (6'-3") (White Pine)	16	Midwest Roadside Safety Facility
SGR21a	MGS (3'-1 1/2")	16	Midwest Roadside Safety Facility
SGR21b	MGS (3'-1 1/2")	16	Midwest Roadside Safety Facility
SGR22a	MIDWEST GUARDRAIL SYSTEM WITH 1/4 POST SPACING	16	Midwest Roadside Safety Facility
SGR22b	MGS (1'-6 3/4")	16	Midwest Roadside Safety Facility
SGR23a	MGS (6'-3") used with curb	16	Midwest Roadside Safety Facility
SGR23b	MGS (6'-3") used with curb	16	Midwest Roadside Safety Facility
SGR24a	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	16	Midwest Roadside Safety Facility
SGR24b	Reduced Spacing,Strong Post,W-Beam G-rail on a Slope	16	Midwest Roadside Safety Facility

DESIGNATOR	TITLE	company_id	company_name
SGR25	Reduced Spacing, W-Beam G-rail on Concrete Box Culvert	16	Midwest Roadside Safety Facility
SGR26a	Nested Strong Post, W-Beam G-Rail with 4" Curb	16	Midwest Roadside Safety Facility
SGR26b	Nested Strong Post, W-Beam G-Rail with 4" Curb	16	Midwest Roadside Safety Facility
SGR27a	Strong Post, W-Beam G-Rail, Post Placed in Rock	16	Midwest Roadside Safety Facility
SGR27b	Strong Post, W-Beam G-Rail, Post Placed in Rock	16	Midwest Roadside Safety Facility
SGR28a	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR28b	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR28c	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR28d	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR28e	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR28f	MGS With Round Posts	16	Midwest Roadside Safety Facility
SGR29a	25' Long-Span, W-Beam with 100' Nested Rail	16	Midwest Roadside Safety Facility
SGR29b	25' Long-Span, W-Beam with 100' Nested Rail	16	Midwest Roadside Safety Facility
SGR30	Timber Guardrail System for Attachment to Noise Wall	16	Midwest Roadside Safety Facility
SGR31	Low Profile Concrete Barrier	16	Midwest Roadside Safety Facility
SGR37	Rough Stone Masonry Guardrail TL-2	16	Midwest Roadside Safety Facility
SGR38a	MGS Adjacent to 2:1 Fill Slope	16	Midwest Roadside Safety Facility
SGR38b	MGS Adjacent to 2:1 Fill Slope	16	Midwest Roadside Safety Facility
SGR39	Non-Blocked MGS Adjacent to 3:1 Fill Slope on Top of Wire-Faced, MSE	16	Midwest Roadside Safety Facility
SGR41	MGS without Block Outs	16	Midwest Roadside Safety Facility
SWC09	Temporary F-Shape Concrete Barrier Element	16	Midwest Roadside Safety Facility
SWC10	Tie Down Strap System For F-Shape Concrete Barrier	16	Midwest Roadside Safety Facility
SWC11	Bolted-Down Temporary F-Shape Concrete Barrier	16	Midwest Roadside Safety Facility
SWC12	Driven Pins Through Asphalt For F-Shape Concrete Barriers	16	Midwest Roadside Safety Facility
SWC15	Temporary Concrete Barrier (Pinned)	16	Midwest Roadside Safety Facility
SWC16	Portable Concrete Barrier Transition	16	Midwest Roadside Safety Facility
SWC17	Portable Concrete Barrier Termination	16	Midwest Roadside Safety Facility
SWM08	Free Standing, H-Pile, Steel Temporary Barrier System	16	Midwest Roadside Safety Facility
SWM09	Bolted-Down, H-Pile, Steel Temporary Barrier System	16	Midwest Roadside Safety Facility
SEC07e	NUCOR Cable End Terminal	1001	Nucor Steel Marion, Inc.
SGM07e	NUCOR HT Barrier TL-3	1001	Nucor Steel Marion, Inc.
SGM07f	NUCOR HT Barrier TL-4	1001	Nucor Steel Marion, Inc.
SGM24	NU-GUARD-27	1001	Nucor Steel Marion, Inc.
SGM25	NU-GUARD-31	1001	Nucor Steel Marion, Inc.
SGR07e	NU-CABLE TL-3 ROADSIDE	1001	Nucor Steel Marion, Inc.

DESIGNATOR	TITLE	company_id	company_name
SGR07f	NU-CABLE TL-4 ROADSIDE	1001	Nucor Steel Marion, Inc.
SGR32	NU-GUARD-27	1001	Nucor Steel Marion, Inc.
SGR33	NU-GUARD-31	1001	Nucor Steel Marion, Inc.
SCI29	ArmorZone End Terminal TL-2	1002	Armorflex
SEC08	ArmorWire End Terminal TL-3	1002	Armorflex
SEW23	X-LITE SYSTEM, TANGENT	1002	Armorflex
SEW24	X-LITE SYSTEM, FLARED	1002	Armorflex
SGM33a	ArmorWire Cable Barrier TL-3	1002	Armorflex
SGM33b	ArmorWire Cable Barrier TL-4	1002	Armorflex
SWM16a	Orion Portable Steel Barrier TL-3	1002	Armorflex
SWM16b	Orion Portable Steel Barrier TL-3	1002	Armorflex
SWM17	ARMORZONE , BARRIER, TL-2, MASH	1002	Armorflex
SCI22	SLED Sentry Longitudinal Energy Dissipater	1003	Traffix Devices, Inc.
SCI28	Compressor Crash Cushion	1003	Traffix Devices, Inc.
SCI32	CrashGard Sand Barrel System	1004	Plastic Safety Systems, Inc.
SWM10	ZONEGUARD PORTABLE STEEL BARRIER	1005	Hill & Smith, Inc.
SGM07a	Gibraltar TL-3 Cable Barrier	1006	Gibraltar
SGM07b	Gibraltar TL-4 Cable Barrier	1006	Gibraltar
SGM13	3N Median Barrier	1007	Fracasso, S.p.A.
SGR13	3N Guardrail	1007	Fracasso, S.p.A.
SGM31	Emergency Median Access Barrier	1009	Cumberland Barrier, Inc.
SGR08a	Ironwood Aesthetic Guardrail	1010	The Atlanticum Bridge Corporation
SGR36	Formet Strong Post Thrie Beam	1011	Formet, Inc.
SGR44	Ezy-Guard Heavy Duty MASH	1012	Ingal Civil Products
SWC02	J-J Hooks Portable Concrete Barrier	1013	Easi-Set Industries
SWC08	Removable Temporary Work Zone Barrier Anchors	1014	Clamp Crete Corporation
SWM02	Dragnet Vehicle Arresting Barrier	1015	Impact Absorption
SEC07b	Brifen Wire Rope End Treatment	1016	Brifen USA
SGR07b	BRIFEN 3- rope WRSF	1016	Brifen USA
SGR07c	BRIFEN 4-rope WRSF, TL-3 ; TL-4	1016	Brifen USA
SGR07d	BRIFEN 4-rope WRSF, TL-4	1016	Brifen USA
SGR45	Combo Steel/Concrete Barrier TL-2	1017	California Department of Transportation
SCI07	Connecticut Impact Attenuation System	1018	Connecticut Department of Transportation
SCI08	Narrow Connecticut Impact Attenuation System	1018	Connecticut Department of Transportation
SED01	Steel Backed Timber Guardrail Tangent End Terminal	1019	Eastern Federal Lands Highway Division

DESIGNATOR	TITLE	company_id	company_name
SEC01	Cable Guardrail Anchor	1020	Federal Highway Administration
SGM01a	Weak-Post Cable Median Barrier	1020	Federal Highway Administration
SGM01b	Weak Post HT Cable Median Barrier	1020	Federal Highway Administration
SGM02	Weak-Post W-Beam Median Barrier	1020	Federal Highway Administration
SGM03	Weak-Post Box-Beam Median Barrier	1020	Federal Highway Administration
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	1020	Federal Highway Administration
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	1020	Federal Highway Administration
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	1020	Federal Highway Administration
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	1020	Federal Highway Administration
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	1020	Federal Highway Administration
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	1020	Federal Highway Administration
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	1020	Federal Highway Administration
SGM10a	F-Shape Median Barrier	1020	Federal Highway Administration
SGM10b	F-Shape Median Barrier	1020	Federal Highway Administration
SGM11a	Safety-Shape Median Barrier	1020	Federal Highway Administration
SGM11b	Safety-Shape Median Barrier	1020	Federal Highway Administration
SGM12	Tall-Wall Median Barrier	1020	Federal Highway Administration
SGR01a	Weak-Steel Post Cable Guardrail	1020	Federal Highway Administration
SGR01b	Weak-Steel Post Cable Guardrail	1020	Federal Highway Administration
SGR01d	Weak Post Cable HT Guardrail	1020	Federal Highway Administration
SGR02a	Weak-Post W-Beam Guardrail	1020	Federal Highway Administration
SGR02b	Weak-Post W-Beam Guardrail	1020	Federal Highway Administration
SGR03	Weak-Post Box-Beam Guardrail	1020	Federal Highway Administration
SGR04a	Strong-Post W-Beam Guardrail	1020	Federal Highway Administration
SGR04b	Strong-Post W-Beam Guardrail	1020	Federal Highway Administration
SGR04c	Strong-Post W-Beam Guardrail	1020	Federal Highway Administration
SGR05	Culvert Mounted W-Beam Guardrail	1020	Federal Highway Administration
SGR09a	Strong-Post Thrie-Beam Guardrail	1020	Federal Highway Administration
SGR09b	Strong-Post Thrie-Beam Guardrail	1020	Federal Highway Administration
SGR09c	Strong-Post Thrie-Beam Guardrail	1020	Federal Highway Administration
SWC04	Pin & Rebar Portable Concrete Barrier	1020	Federal Highway Administration
SER04	Florida Low-Profile Barrier Terminal	1021	Florida Department of Transportation
SWC14	Temporary Concrete Barrier TL-3 (Florida)	1021	Florida Department of Transportation
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	1022	South Carolina Department of Transportation
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	1023	Texas Department of Transportation

DESIGNATOR	TITLE
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3
SGM30	VarioGuard Barrier
SGR48	TIMBARRIER STREETGUARD PLUS RAIL SYSTEM

company_id	company_name
1024	Washington State Department of Transportation
1025	Volkmann and Rossbach
1026	S.I. Storey Lumber Company, Inc.

Appendix H: Status of Non-Proprietary Systems / Consolidated Ranks from Panel

GREEN rows indicate those drawings that have been created & published to PDF.

BLUE rows received some source file – but are incomplete.

RED rows, are those where the Project Team was unable to locate appropriate source files.

DESIGNATOR	TITLE	PDF?	PANEL RANKING
SEC01	Cable Guardrail Anchor	2005	21
SGR04a	Strong-Post W-Beam Guardrail	2005	21
SGR04b	Strong-Post W-Beam Guardrail	2005	21
SGR04c	Strong-Post W-Beam Guardrail	2005	21
SGM01a	Weak-Post Cable Median Barrier	2005	20
SGM02	Weak-Post W-Beam Median Barrier	2005	20
SGM09b	Strong-Post Thrie-Beam Median Barrier Modified Steel Post	2005	20
SGM10a	F-Shape Median Barrier	2005	19
SGM10b	F-Shape Median Barrier	2005	19
SGM11a	Safety-Shape Median Barrier	2005	19
SGM11b	Safety-Shape Median Barrier	2005	19
SGR47	31" W-Beam Guardrail with 8" Offset Blocks	2013	19
SED01	Steel Backed Timber Guardrail Tangent End Terminal	2013	18
SGR03	Weak-Post Box-Beam Guardrail	2005	18
SGR40	T-Intersection, Short Radius W Beam	2013	18
SGM04a	Strong-Post W-Beam Median Barrier Steel Post	2005	17
SGM04b	Strong-Post W-Beam Median Barrier Wood Post	2005	17
SGM12	Tall-Wall Median Barrier	2005	17
SGR02a	Weak-Post W-Beam Guardrail	2005	17
SGR05	Culvert Mounted W-Beam Guardrail	N	17
SGM03	Weak-Post Box-Beam Median Barrier	2005	16
SGR01a	Weak-Steel Post Cable Guardrail	2005	16
SGR42	Single Slope Conc. Barrier@Steep Slope MASH-3	2013	16
SGM09c	Strong-Post Thrie-Beam Median Barrier Wood Post	2005	15
SGR01b	Weak-Steel Post Cable Guardrail	2005	15
SGR01d	Weak Post Cable HT Guardrail	N	15
SWC03	Low Profile Construction Zone Barrier	N	15
SER04	Florida Low-Profile Barrier Terminal	2013	14
SGM01b	Weak Post HT Cable Median Barrier	N	14
SGR02b	Weak-Post W-Beam Guardrail	2005	14
SWC04	Pin & Rebar Portable Concrete Barrier	2013	14
SGM09a	Strong-Post Thrie-Beam Median Barrier Steel Post	2005	13
SGR45	Combo Steel/Concrete Barrier TL-2	SOURCE	13
SER01	Low-Profile Construction-Zone End Treatment	N	12
SWC13	Temporary Concrete Barrier TL-3 (S. Carolina)	2013	12
SWC14	Temporary Concrete Barrier TL-3 (Florida)	SOURCE	12
SGM06a	Strong-Post Median Barrier with Rubrail Steel Post	2005	11
SGM06b	Strong-Post Median Barrier with Rubrail Wood Post	2005	11
SCI07	Connecticut Impact Attenuation System	2013	9
SCI08	Narrow Connecticut Impact Attenuation System	2013	9

Appendix I: Suggested Descriptor Fields for System Designators in TF13 Guides

For ALL Systems

Designator (alphanumeric code/link).

Function (Bridge Rail, Crash Cushion, End Terminal, Guardrail, Luminaire Support, Sign Support, Transition, Work Zone).

Description (text/link).

Photos (thumbnail image/link).

Drawings (text/links).

FHWA Acceptance Letter ID (text/link).

Impact Performance Criteria (text) (NCHRP 230, NCHRP 350, or MASH).

Test Level (text) (TL-1, TL-2, TL-3, TL-4, TL-5, or TL-6).

Originator (company or agency name/link).

Proprietary or Non-proprietary (text).

Potential Supplier(s) for Non-proprietary Designators (company name(s)/links).

CRASH CUSHION Systems (SC)

Type (currently Independent, Thrie-Beam, W-Beam. Could be improved).

Functional Category (Non-Gating, Gating, or Non-Redirectional).

Maintenance Category (Reusable, Low Maintenance, or Sacrificial).

Minimum Length (inches [mm]).

Maximum Length (inches [mm]).

Minimum Width at Rear (inches [mm]).

Maximum Width at Rear (inches [mm]).

Minimum Top Height (inches [mm]).

Maximum Top Height (inches [mm]).

Permanent Application (Y or N).

Temporary Application (y or N).

END TERMINAL Systems (SE)

Type (Box Beam, Cable, Rigid, Thrie-Beam, W-Beam).

Functional Category (Non-Gating, Gating, or Non-Redirectional).

Alignment (Tangent, or Flared).

Functional Category (Energy Absorbing, or Non-Energy Absorbing).

Minimum Length (inches [mm]).

Maximum Length (inches [mm]).

Minimum Top Height (inches [mm]).

Maximum Top Height (inches [mm]).

GUARDRAIL (LONGITUDINAL) Barrier Systems (SGM, SGR)

Type (Median Barrier, Roadside Barrier).

Nominal Top Height (inches [mm]).

Deflection Category (Rigid, Semi-Rigid, or Flexible).

Dynamic Lateral Deflection (inches [mm]).

WORK ZONE Systems (SW)

Type (currently Concrete, Miscellaneous. Could be expanded.).

Purpose (Barricade, Crash Cushion, Drum, End Terminal, Lighting, Longitudinal Barrier, Sign, Transition, Truck-Mounted Attenuator).

The following designator categories are not included in the scope of NCHRP 20-07 Task 328. However, they may be useful in an effort to unify all TF13 guides to one database format, website, and user interface.

Some descriptor fields were obtained from the Roadsafe, LLC TF13 Guide website, and others are suggested for consideration.

BRIDGE RAILING Systems (SB)

Type (Aluminum, Steel Tube, Other Steel, Steel Thrie Beam, Steel W-Beam, Cast-in-Place Concrete, Precast Concrete, Wood, Other Material).

Mounting Type (Deck, Side, Curb/Sidewalk, Parapet, Median, Box Culvert, Other).

Aesthetic (Yes or No).

See-Through (Yes or No).

Retrofit (Yes or No).

Combo Traffic/Pedestrian (Yes or No).

SIGN SUPPORT Systems (SS)

Type (Coupling, Fracture/Frangible, Slipbase, Splice, Mailbox, Other).

Multi-Directional or Uni-Directional (text).

Maximum Leg within 7 ft [2.1m] Path (1, 2, 3).

LUMINAIRE SUPPORT Systems (SL)

Type (Aluminum, Steel, Composite, Wood, Other).

Base Component Designator (alphanumeric code/link).

TRANSITION Systems (ST)

Type (Guardrail to Bridge Rail, Guardrail to Guardrail).

Leading End Type (Vertical Concrete Wall, NJ-Shape Concrete, F-Shape Concrete, W-Beam, Thrie-Beam, Others as identified, Other).

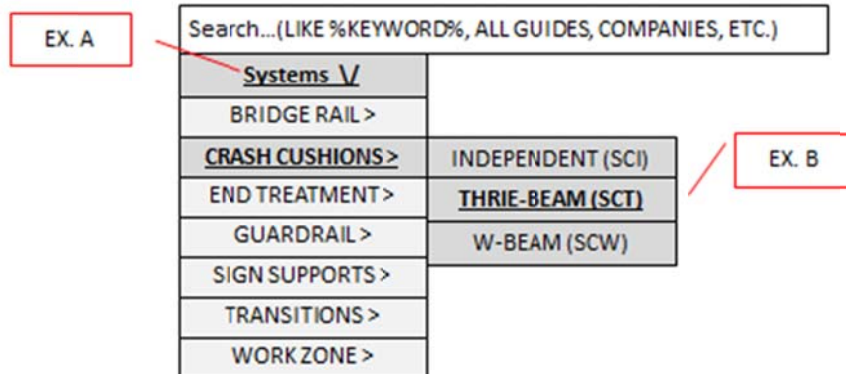
Trailing End Type (Vertical Concrete Wall, NJ-Shape Concrete, F-Shape Concrete, W-Beam, Thrie-Beam, Others as identified, Other).

Appendix J: Suggested Website User Interface Controls and Input Fields

NCHRP Project 20-07 Task 328
UPDATE OF THE AASHTO GUIDE TO STANDARDIZED
HIGHWAY BARRIER HARDWARE ONLINE GUIDE

Suggested Website User Interface Controls
And Input Fields

Chad Heimbecker
Swiftwater Solutions, LLC
www.swiftwater-solutions.com



EXAMPLE A

HIERARCHY LINKS

Barrier Guide > Systems

Search...

For All Systems:

Keyword or Designator

Function BRIDGE RAIL
 CRASH CUSHIONS
 ...

MULTISELECT LIST/CHECKBOXES

Impact Performance Criteria

NCHRP-230
 NCHRP-350
 MASH

MULTISELECT LIST/CHECKBOXES

Test Level TL-1 TL-2 TL-3 ...

Originator:

Proprietary/Non-Proprietary Yes No All

Supplier Names

EXAMPLE B

HIERARCHY LINKS

Barrier Guide > Systems > Crash Cushions > Thrie-Beam

Search...

CRASH CUSHION Systems (SC)

SAME AS "ALL SYSTEMS" PLUS FOLLOWING:

Type (currently Independent, Thrie-Beam, W-Beam. Could be improved).

Functional Category (Non-Gating, Gating, or Non-Redirectional).

Maintenance Category (Reusable, Low Maintenance, or Sacrificial).

Minimum Length (inches [mm]).

Maximum Length (inches [mm]).

Minimum Width at Rear (inches [mm]).

Maximum Width at Rear (inches [mm]).

Minimum Top Height (inches [mm]).

Maximum Top Height (inches [mm]).

Permanent Application (Y or N).

Temporary Application (y or N).

END TERMINAL Systems (SE)

SAME AS "ALL SYSTEMS" PLUS FOLLOWING:

Type (Box Beam, Cable, Rigid, Thrie-Beam, W-Beam).

Functional Category (Non-Gating, Gating, or Non-Redirectional).

Alignment (Tangent, or Flared).

Functional Category (Energy Absorbing, or Non-Energy Absorbing).

Minimum Length (inches [mm]).

Maximum Length (inches [mm]).

Minimum Top Height (inches [mm]).

Maximum Top Height (inches [mm]).

GUARDRAIL (LONGITUDINAL) Barrier Systems (SGM, SGR)

SAME AS "ALL SYSTEMS" PLUS FOLLOWING:

Type (Median Barrier, Roadside Barrier).

Nominal Top Height (inches [mm]).

Deflection Category (Rigid, Semi-Rigid, or Flexible).

Dynamic Lateral Deflection (inches [mm]).

WORK ZONE Systems (SW)

SAME AS "ALL SYSTEMS" PLUS FOLLOWING:

Type (currently Concrete, Miscellaneous. Could be expanded).

Purpose (Barricade, Crash Cushion, Drum, End Terminal, Lighting, Longitudinal Barrier, Sign, Transition, Truck-Mounted Attenuator).

Appendix K: Device Owners

id	company_name
1	Energy Absorption Systems, Inc.
2	Barrier Systems, Inc.
3	Work Area Protection Corporation
4	Road Systems, Inc.
5	Transpo Industries, Inc.
7	Texas A&M Transportation Institute
8	Gregory Highway Products
9	Highway Safety Corporation
10	R.G. Steel Corporation
11	Trinity Highway Products, LLC
12	Universal Industrial Sales, Inc.
14	Non-Proprietary
15	E-TECH Testing Services, Inc.
16	Midwest Roadside Safety Facility
1001	Nucor Steel Marion, Inc.
1002	Armorflex
1003	Traffix Devices, Inc.
1004	Plastic Safety Systems, Inc.
1005	Hill & Smith, Inc.
1006	Gibraltar
1007	Fracasso, S.p.A.
1009	Cumberland Barrier, Inc.
1010	The Atlanticum Bridge Corporation
1011	Formet, Inc.
1012	Ingal Civil Products
1013	Easi-Set Industries
1014	Clamp Crete Corporation
1015	Impact Absorption
1016	Brifen USA
1017	California Department of Transportation
1018	Connecticut Department of Transportation
1019	Eastern Federal Lands Highway Division

id	company_name
1020	Federal Highway Administration
1021	Florida Department of Transportation
1022	South Carolina Department of Transportation
1023	Texas Department of Transportation
1024	Washington State Department of Transportation
1025	Volkmann and Rossbach
1026	S.I. Storey Lumber Company, Inc.

Appendix L: Guide Files & Data Transfer Summary

A) Guide Files & Data Transfer Summary

File Naming & Dating Conventions

File Contents:

- Each Designator is paired to a separate folder, containing all related information for that Designator only.
- Some folders for similar Designators may contain duplicate copies of the same Detail, or other files such as the FHWA letter.
- However, all redundant or old versions of any file type (PDF/CAD/IMG) have been removed for clarity.
- If a source CAD file has been made obsolete by a later version of a Guide formatted PDF, that CAD file is still retained if it is the only CAD file available.
- The most current version Guide formatted PDF, should always be named the same as the Designator with no further text in the filename. Any folder which contains multiple PDF's, the one named the same as the Designator, is the Guide formatted details. Other PDF files, such as source plots, product literature, or technical documentation have each been retained.

Data Contents:

- There are data files provided for two tables. COMPANY & DESIGNATOR.
- Both tables have been exported to CSV, XLSX, and SQL formats. The CSV & XLSX files contain the full set of fields and rows collected in the course of this project.
- The SQL files, contain exclusively those fields pertinent to implementation of the Online Guide, and do not contain the full set of status identifiers.
- The two SQL files are provided as "COMPANY_IMPORT" and "DESIGNATOR_IMPORT". These files contain both the structure and data contents for each table named the same as their respective file name. These table names were used, in an attempt to reduce conflict with any existing table names on the system being imported into. However, these can be adjusted in any way deemed necessary to fit the particular installation.

Designator Schema

The final Designator spreadsheet table consists of the following fields.

Id * (A new unique identifier generated by this project)

DESIGNATOR *

TITLE *

REVIEW COMPLETE?

SOURCE

PROPRIETARY? *

REVISIONS?

ARCHIVE *

DELETE *

DEFER *

COMMENTS

TTI DATABASE ID * (An identifier from the source data provided to our project, however it is no longer unique, due to shared Designators having been split into separate rows)

OLD TITLE

OWNER? *

company_id * (This shares commonality with the existing 14 companies in the Online Guide, and can be recycled. However, there are 20+ new "company_id" records that must appended to the existing Company table. In which case, care must be taken to properly reference these associations where the new insertion company id, may not be the same as our Project company id.)

SYSTEM/COMPONENT *

PDF? *

DWG? *

DOC? *

IMG? *

FHWA? *

TF13 APPROVED *

TEST SPECIFICATION *

TEST LEVEL *

* The final SQL export, to enable importing into a new data table for processing, has exclusively the abridged fields noted above.