# Exchange Requirement

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| Name | Final design output |

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| --- | --- |
| Identifier | ER.G.101 |

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| --- | --- | --- |
| Change Log | | |
| 2016-08-05 | draft | ttle@iastate.edu |

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| --- | --- | --- | --- |
| Project Stage | 0 | Planning & Programming |  |
| 1 | Design | **✓** |
| 2 | Letting |  |
| 3 | Construction |  |
| 4 | Operation and maintenance |  |
| 5 | Disposal |  |

**General Description**

**Exchange disciplines**

* ***Sender:*** Office of Design
* ***Receiver:*** Office of Contracts

**Information to be exchanged**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data attribute group** | **Data attribute** | **Description** | **Comments** |
| Project identification | Project ID |  | Who create this group of information? |
| Project location-District |  |  |
| Schedule-start/finish |  |  |
|  |  |  |
|  |  |  |
| Guardrail-Steel Beam | Location-direction | Direction of traffic (WB, EB, etc.) | Guardrail detailed information in both plans, tabulations and Microstation files |
| Location – side | Side of guardrail (outside, median) |  |
| Location – offset | Offset of guardrail to reference station? |  |
| Location - station | Is the location as identified in the standard drawings as a point of reference from which all measurements are made. |  |
| Length | Lengths include several things. It includes the overall layout length of the installation and the length of the individual bid items for the rail installation. |  |
| Grading | Grading is the detailed layout of the grading required for each installation of rail to function properly. |  |
| Long-span system -location | Is the location as identified in the standard drawings as a point of reference from which all measurements are made. |  |
| Long-span system - type | Defines the length of the post gap for the installation for example a type I installation allows a post gap of no greater than 10 feet. |  |
| Delineators-type | Is the type of delineator required by Road Standard SI-211. This varies depending on the shoulder and bridge width. |  |
| Object marker –type | Is the type of object marker required by Road Standard SI-211. This varies depending on the shoulder and bridge width. |  |
| Bolted end anchor type | This defines the end anchorage used when connecting the steel beam rail to a concrete barrier or wall. See Standard BA-202 as an example |  |
|  | Post adapter | Defines what type of post adapter to use when connecting posts to a concrete surface. See Standard BA-210. |  |
|  | Steel beam type | This defines if the rail is W-beam or Thrie-beam |  |
|  | Barrier transition section type | Is the count of the number of transitions sections to concrete rail. See BA-201 for details |  |
|  | End terminal type | Defines which end terminal was selected: BA-205, BA-206, LS-625, LS-626 |  |
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| Cable guardrail | Direction | Lane to which the traffic is adjacent. For example Northbound. |  |
|  | Station | Location Station as it relates to the standard drawing. See BA-351 for details |  |
|  | Side | Side of the roadway for the installation Left/Right or Median/Outside |  |
|  | Offset | Offset from the edge of the pavement |  |
|  | Dimensions- approach | See tab 108-9A and standard BA-351 |  |
|  | Obstacle | See tab 108-9A and standard BA-351 |  |
|  | Trailing | See tab 108-9A and standard BA-351 |  |
|  | Protection length | See tab 108-9A and standard BA-351 |  |
|  | End anchor No | See tab 108-9A and standard BA-351 |  |
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|  |  |  |  |
|  |  |  |  |
| Crash cushion | Direction | Direction of traffic lane for example Northbound |  |
|  | Location –station | Station location as it relates to standard drawing BA-500 |  |
|  | Side | Left (LT), right (RT) |  |
|  | Obstacle width | Width of the obstacle being protected |  |
|  | Temporary | Boolean value, yes or no |  |
|  | Sand barrel – V length | See standard road plan BA-500 |  |
|  | Sand barrel – W length | See standard road plan BA-500 |  |
|  | San barrel – X length | See standard road plan BA-500 |  |
|  | Sand barrel – Y length | See standard road plan BA-500 |  |
|  | San barrel – Z length | See standard road plan BA-500 |  |
|  | Excavation volume | In cubic yard |  |
|  | Embankment volume | In cubic yard |  |
|  | No. spare parts kit | How many spare parts kits would the maintenance shop like |  |
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|  |  |  |  |
| Temporary barrier rail | Start station | Beginning Station for placement of temporary barrier rail. |  |
|  | End station | End Station for placement of temporary barrier rail. |  |
|  | Length | Length of the installation required |  |
|  | Material | Steel or concrete |  |
|  | Type | You must select either BA-400 or BA-401 |  |
|  | Anchored | Yes or no |  |
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|  |  |  |  |
| Safety closure | Station | Not related to longitudinal barriers |  |
|  | Closure type |  |  |
|  |  |  |  |
|  |  |  |  |
| Concrete barrier | Begin Station | Beginning station for placement of concrete barrier | From tab [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |
|  | End Station | Ending station for placement of concrete barrier | From tab [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |
|  | Standard Road Plan | Provides reference to standard road plan which contains design information | From tab [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |
|  | Bid Items | Provides linear foot or count of type specified | From tab [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |
|  | Expansion Joints | Provides location and side of joint if joint is required | From tab [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |
|  | Direction of Traffic | Direction of traffic lane | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Station to Station | Beginning and ending station for placement | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Side | Location of barrier in the direction of traffic | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Offset | Offset from edge of shoulder | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Barrier Type | Provides reference to standard road plan which contains design information | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Length of Barrier | Provides length of barrier in LF | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Transition Section | Provides number of BA-105 transition sections | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | End Section | Provides number of BA-107 end sections | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Reinforced Paved Shoulder | Indicates if shoulder needs to be reinforced per BA-106 | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
|  | Expansion Joints | Provides location and side of joint if joint is required | From tab [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |
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| References |  | Specification Section [2505](http://www.iowadot.gov/erl/current/GS/content/2505.htm) |  |
|  | Specification Section [2513](http://www.iowadot.gov/erl/current/GS/content/2513.htm) |  |
|  |  | Materials IM [455](http://www.iowadot.gov/erl/current/IM/content/455.htm) |  |
|  |  | Materials IM [455.01](http://www.iowadot.gov/erl/current/IM/content/455.01.htm) |  |
|  |  | Materials IM [455.02](http://www.iowadot.gov/erl/current/IM/content/455.02.htm) |  |
|  |  | Materials IM [571](http://www.iowadot.gov/erl/current/IM/content/571.htm) |  |
|  |  | Standard Road Plans – [BA Series](http://www.iowadot.gov/design/stdplne_ba.htm) |  |
|  |  | Standard Road Plans – [LS Series](http://www.iowadot.gov/design/stdplne_ls.htm) |  |
|  |  | Standard Road Plan [EW-301](http://www.iowadot.gov/design/SRP/IndividualStandards/eew301.pdf) |  |
|  |  | Standard Road Plan [EW-302](http://www.iowadot.gov/design/SRP/IndividualStandards/eew302.pdf) |  |
|  |  | Standard Road Plan [SI-211](http://www.iowadot.gov/design/SRP/IndividualStandards/esi211.pdf) |  |
|  |  | Standard Road Plan [TC-061](http://www.iowadot.gov/design/SRP/IndividualStandards/etc061.pdf) |  |
|  |  | Standard Road Plan [TC-217](http://www.iowadot.gov/design/SRP/IndividualStandards/etc217.pdf) |  |
|  |  | Standard Road Plan [TC-421](http://www.iowadot.gov/design/SRP/IndividualStandards/etc421.pdf) |  |
|  |  | Tabulation [108-08A](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-08A.PDF) |  |
|  |  | Tabulation [108-08B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-08B.PDF) |  |
|  |  | Tabulation [108-08C](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-08C.PDF) |  |
|  |  | Tabulation [108-08D](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-08D.PDF) |  |
|  |  | Tabulation [108-09A](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-09A.PDF) |  |
|  |  | Tabulation [108-18](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18.PDF) |  |
|  |  | Tabulation [108-18B](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-18B.PDF) |  |
|  |  | Tabulation [108-20](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-20.pdf) |  |
|  |  | Tabulation [108-30](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-30.pdf) |  |
|  |  | Tabulation [108-33](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0108-33.pdf) |  |
|  |  | Tabulation [112-09](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0112-09.pdf) |  |
|  |  | Road Design Detail [8208](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e8208.PDF) |  |
|  |  | Road Design Detail [8210](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e8210.PDF) |  |
|  |  | Road Design Detail [8212](http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e8212.PDF) |  |
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