Index 460-252 Access Door Assembly for Steel Box Sections

Design Criteria

Structures Design Guidelines (SDG) 5.6.2

Design Assumptions and Limitations

This Access Door Assembly standard is intended for use inside steel box girders to restrict access at end bents and to restrict ingress of birds and bats at end bents and between the ends of adjacent box girders at expansion joint locations.

The Access Door Assembly attaches and closes against the bearing or jacking stiffeners closest to the access opening in the diaphragm. Horizontally oriented plates that are the same depth as the bearing or jacking stiffeners are required adjacent to the top and bottom of the access opening. These plates, in combination with the adjacent stiffeners, complete the rectangular enclosure around the diaphragm access opening that the Access Door fits against. Use this standard as a basis for developing custom project specific Access Door Assemblies if the diaphragm and stiffener configurations are not compatible with those shown on the standard.

The Access Door swings to the inside of the box girder which allows for the door to be completely opened. The Access Door can be opened from both sides which is required between the ends of adjacent box girders at expansion joint locations. When located at end bents, the Access Door can be locked with a padlock located on the inside of the box girder so as to restrict access from the outside.

The size of the openings in the expanded metal mesh was specifically selected to exclude the Brazilian Free-tailed Bat, Tadarida brasiliensis, but the small mesh size will also exclude other species of bats found in Florida and most, if not all, birds.

Plan Content Requirements

In the Structures Plans:

On the Diaphragm Detail sheets, show the Access Door Assembly on the inside of the interior diaphragm and include a cross reference to Standard Plans Index 460-252. Show top and bottom plates adjacent to the diaphragm access opening consistent with the details shown on the standard. Show top and bottom plates to be the same width as the adjacent bearing or jacking stiffeners that they connect to.

Complete the following data table and include it in the plans, preferably on the Diaphragm Detail sheets.

ACCESS DOOR ASSEMBLY FOR STEEL BOX GIRDERS INDEX 460-252 - DATA TABLE		Table Date 07-01-15
ACCESS DOOR ASSEMBLY LOCATION	DIM. H	DIM. W

Specify Access Door Assemblies at both ends of simple span box girders and at both ends of continuous box girder units. Include both the unit number and bent or pier number in the location callout.

Dimension "H" is measured from the top of the top plate to the bottom of the bottom plate. Dimension "W" is measured from the outside surfaces of the bearing or jacking stiffeners that are located closest to the diaphragm access opening. A 1" minimum space is recommended between the edges of the access opening and the inside faces of the top and bottom plates and adjacent stiffeners. See SDG 5.6 for minimum access opening dimensions.

Coordinate the details and locations of adjacent structural members, drain pipes, conduits, lights, etc., within the box girder so as to allow the Access Door to be opened a minimum of 90 degrees from its closed position.

Payment

The cost of Access Door Assemblies is incidental to the cost of the steel box girders they are used with. No separate payment is made.

Example

ACCESS DOOR ASSEMBLY FOR STEEL BOX GIRDERS INDEX 460-252 - DATA TABLE		Table Date 07-01-15
ACCESS DOOR ASSEMBLY LOCATION	DIM. H	DIM. W
Unit 1 - End Bent 1	4'-0 5/8"	3'-1 7/8"
Unit 1 - Pier 4	4'-0 5/8"	3'-1 7/8"
Unit 2 - Pier 4	4'-0 5/8"	3'-1 7/8"
Unit 2 - End Bent 7	4'-0 5/8"	3'-1 7/8"