WG4 - Sub group A

Guide for Documenting Bridge Data

Summary: This document details the method for documenting bridge data for COST TU1406 WG4 sub group A. The document defines the formats for filling in the candidate Bridges data excel tables.

Version 1.0 - 2017

Guide for Documenting Bridges Data

Authorizations and Updates

Role	Title	Name	Date	Signature
Author:	Consultant	Amos Duke Kimron Engineers Ltd	14/01/2017	
Checked by:	Consultant	Amir Kedar Kedmor Engineers Ltd	18/01/2017	

Date	Number	Changes Made	Authorizer	Signature

Contents:

Chapter 0 – General

00.01 Document Purpose

The purpose of this document is to define a standard format for documenting the identifying data for COST TU1406 WG4 candidate bridges. The document details the contents of the various data items to be filled by the members of the task group in the relevant excel file. This guide contains detailed explanation on the different types of data and instructions for documenting them.

Chapter 1 – General Identification Data

1.01 Country name

The country full name where the bridge is located.

1.02 Region

Determination of the Region/district/county as defined by the National Roads Authority of the country where the bridge is located

1.03 Structure Identification Code

The bridge identification code as defined in the relevant BMS or national/regional inventory.

1.04 Bridge Name

The bridge name as defined in the relevant BMS or national/regional inventory

1.05 General Description (text)

Will include a short description of the structure, its main components and the surroundings.

For example:
"A 3 span composite deck bridge over the Jordan river near Jericho carrying dual carriageway road number 1 between Jerusalem and Amman.

1.06 Road Number

The road (or ramp) number to which the bridge belongs as in the BMS or other relevant database.

For example:

Bridge located on Road no.1	→ to be filled as :	0001
A bridge located on ramp HL01	→ to be filled as :	HL01

1.7.1 Belong to street name

If a bridge is located in a municipality road/street and the road/street has a name, the name will be filled as text.

For example:

A bridge located on 'national boulevard'	→ to be filled as :	National boulevard
A bridge located on 'Tramp street'	→ to be filled as :	Tramp street

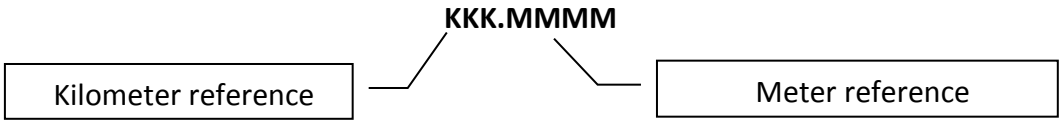
1.7.2 Near building number

If a bridge is located in a municipality road/street the nearest building number should be filled in as a number.

For example:
A bridge located near 'number 1324 national boulevard' → to be filled as : 1324

1.08 Linear reference point

The linear reference location of a bridge will composed of the following fields:



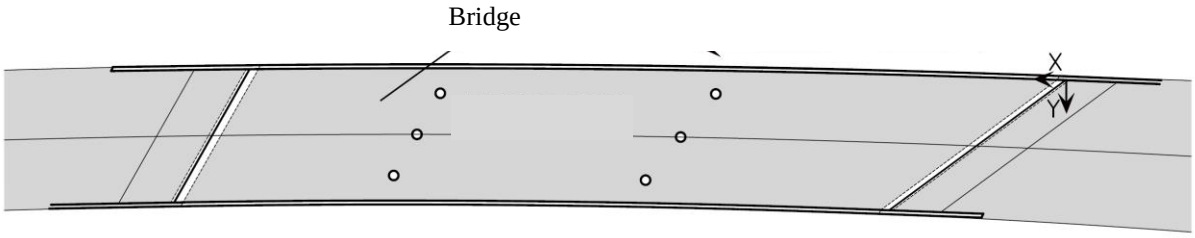
The exact location of the structure on the roadway (or ramp) to which it belongs. The distance refers to the coordinate origins of the structure.

For example:
If a bridge is located on road no. 1 at kilometer 79 + 540 meters the form will be filled In as: 79.0540

Note:
The meter notation in each kilometer is written in four digits. For example: kilometer 120 and 657 meters will be written: 120.0657. This is for cases where the distance between two milestones is greater than 1000 meters (as a result of changes in the route, etc.).

1.9.1 Latitude (N - DDD°MM'ss.mm")

The latitude of the bridge grid axis origin location as defined in the BMS or other database. If no such data exist the value can be taken from any map. For example 'google earth' system.



For example: N 31°48'45.36"

1.9.1 Longitude (E - DDD°MM'ss.mm")

The longitude of the bridge grid axis origin location as defined in the BMS or other database. If no such data exist the value can be taken from any map. For example 'google earth' system.

For example: E 31°48'45.36"

Chapter 2 – General Classification Data

2.01 Bridge Primary Use

The bridge main use selected from the following list:

- Vehicle Bridge
- Train Bridge
- Light Train Bridge
- Pedestrian Bridge
- Utilities Bridge
- Other*

* If the selection is 'Other', details are required in the defined location for comments

2.02 Road Classification

Documentation of the type of road the structure is associated with.
The value will be chosen from the following list:

- Highway
- 4-lane or more main road
- 2-lane main road
- 4-lane or more regional road
- 2-lane regional road
- Single lane regional road
- Local road
- Interchange road (ramp)
- 4 lane or more Municipal road
- 2 lane Municipal road
- Single lane Municipal road
- Other*

* If the selection is 'Other', details are required in the defined location for comments

2.03 Emergency Classification

Documentation describing whether the road is defined for use by security forces during emergencies:

- Emergency road
- Non-emergency road

Details:
Emergency road – a road intended to serve the various emergency forces in times of emergency for transferring aid and rescuing victims, and which was defined as such by the Roads Authority
Non-emergency road – any other road.

2.4.1 Built by

Description of the name of the authority who built the Bridge.
For example: 'Japan national road administration'

2.4.1 Built by – type of authority

Description of the type of the authority who built the Bridge. Will be chosen from the following list:

- Federal road authority
- State road authority
- Railways Authority
- Local authority**
- Ministry of Defense
- Government Companies
- Public infrastructure companies
- Other private entities
- Municipality
- Unknown
- Other*

* If the selection is 'Other', details are required in the comments column.

2.5.1 Ownership

Description of the name of the authority that owns the Bridge.
For example: 'Highways Agency'

2.5.2 Ownership – type of authority

Description of the type of the authority who owns the Bridge. Will be chosen from the following list:

- Federal road authority
- State road authority
- Railways Authority
- Local authority**
- Ministry of Defense

- Government Companies
- Public infrastructure companies
- Other private entities
- Municipality
- Unknown
- Other*

* If the selection is 'Other', details are required in the comments column.

2.6.1 Maintenance Responsibility

Description of the name of the authority who maintain the Bridge.
For example: 'City of Budapest'

2.6.2 Maintenance Responsibility – type of authority

Description of the type of the authority who maintain the Bridge. Will be chosen from the following list:

- Federal road authority
- State road authority
- Railways Authority
- Local authority**
- Ministry of Defense
- Government Companies
- Public infrastructure companies
- Other private entities
- Municipality
- Unknown
- Other*

* If the selection is 'Other', details are required in the comments column.

2.07 Toll Road Indication

Documentation describing whether the road is a toll road.
Will be chosen from the following list:

- yes
- no

Details:
yes - A road requiring payment for all use by a private user.
no - Any other road.

2.08 Abnormal Loads Route

Documentation describing whether the Bridge is a part of Abnormal load route.
Will be chosen from the following list:

- yes
- no

2.09 Historical Significance

Documentation describing whether the Bridge has historical value:

- A Bridge with historical value
- A Bridge without historical value

Details:
A Bridge with historical value – A Bridge defined as having historical value and intended for conservation.
A Bridge without historical value – Any other structure.

2.10 Temporary Structure

Documentation describing whether the Bridge is a temporary structure:

- A Temporary Bridge
- Not a temporary Bridge

Details:
A temporary Bridge – A Bridge intended for temporary use.
Not a temporary structure – Any other structure.

Chapter 3 –Service Data

3.01 Year Built (YYYY)

Documentation of the year, in four digits, the construction of the structure was completed.

For example: 1968

3.02 Year of Rehabilitation (YYYY)

Documentation of the year, in four digits, when the most recent rehabilitation work on the Bridge was completed.

For example: **1985**

3.03 Main Use on (over) the Bridge

Documentation of the main use the Bridge is intended for.

For example: The main use of the bridge carrying road number 2 is carrying vehicle.

Will be chosen from the following list:

- Vehicle
- Railroad
- Pedestrian
- Utilities
- Drainage/Water channel
- Other*

* If the selection is “other”, details are required in the defined location for comments.

3.04 Secondary Use on (over) the Bridge

Documentation of additional use beyond the main use the Bridge is intended for.

For example: The main use of the bridge carrying road number 2 is vehicle, and the secondary use can be pedestrian (when there is a proper sidewalk for this).

Will be chosen from the following list:

- Vehicle
- Railroad
- Pedestrian
- Utilities
- Drainage/Water channel
- Other*

* If the selection is “other”, details are required in the defined location for notes. If there is no secondary use beyond the main use, or if the secondary use is indeterminable, this section will not be completed.

3.05 Number of Carriageways or Railroad Tracks on (over) the Bridge

Documentation of the number of carriageways and/or railroad tracks that the bridge carries:

For example:

a) Dual carriageway road → **2**
b) One carriageway and two railroad track → **3**, in this case the number of railroad tracks will be written in the comments section.
c) Two carriageways and nine railroad tracks → **11**, in this case the number of railroad tracks will be written in the comments section.

3.06 Number of Lanes on (over) the Bridge

Documentation of the total number of vehicle lanes that exist on the road the structure carries.

For example: five lanes → **5**

3.07 Direction of Traffic on the Bridge

Documentation of traffic direction on the Bridge.

- One-way
- Two-way

3.08 Main Use Under the Bridge

Documentation of the main use under the Bridge.

For example: For bridge over road no. 5, the main use under the bridge (on road 5) is vehicle.

Will be chosen from the following list:

- Vehicle
- Railroad
- Pedestrian
- Utilities
- Drainage/Water channel
- River/Stream
- Other*

* If the selection is “other”, details are required in the defined location for comments.

3.09 Secondary Use Under the Bridge

Documentation of secondary use beyond the main use under the Bridge.

For example: For the bridge over road 5, the main use under is vehicle and a secondary use can be drainage channel.

Will be chosen from the following list:

- Vehicle
- Railroad
- Pedestrian
- Utilities
- Drainage/Water channel
- River/Stream
- Other*

* If the selection is “other”, details are required in the defined location for comments. If there is no secondary use beyond the main use, or if the secondary use is indeterminable, this section will not be completed.

3.10 Number of Carriageways or Railroad Tracks Under the Bridge

Documentation of the number of carriageways and/or railroad tracks that exist in the area under the Bridge. The number will be written in two digits:

For example:

a) Dual carriageway road → **2**
b) One carriageway and two railroad track → **3**, in this case the number of railroad tracks will be written in the comments section.
c) Two carriageways and nine railroad tracks → **11**, in this case the number of railroad tracks will be written in the comments section.

3.11 Number of Lanes Under the Bridge

Documentation of the number of vehicle lanes that exist on the road in area under the Bridge. The number will be written in two digits.

For example: Two lanes → **2**

3.12 Direction of Traffic Under the Bridge

Documentation of the direction of traffic on the road in the area under the bridge:

- One-way
- Two-way

3.13 A.A.D.T Annual Average Daily Traffic

A numerical value describing the Annual Average Daily Traffic in a particular road section, the number will refer to the most current data available.

For example: A.A.D.T. = 98,000

3.14 Year of last A.A.D.T. measurement (YYYY)

Documentation of the year, in four digits, of the recent Annual Average Daily Traffic measurement.

For example: 2005

3.15 A.A.D.T.T. Annual Average Daily Truck Traffic out of all traffic

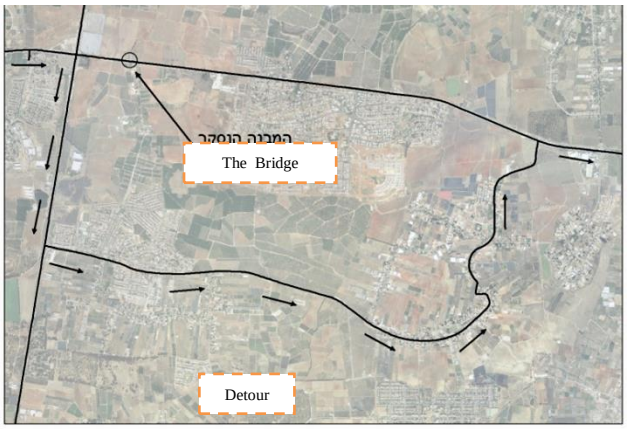
A numerical value describing the volume of truck traffic out of the annual average daily traffic in percentile, in a particular road section.

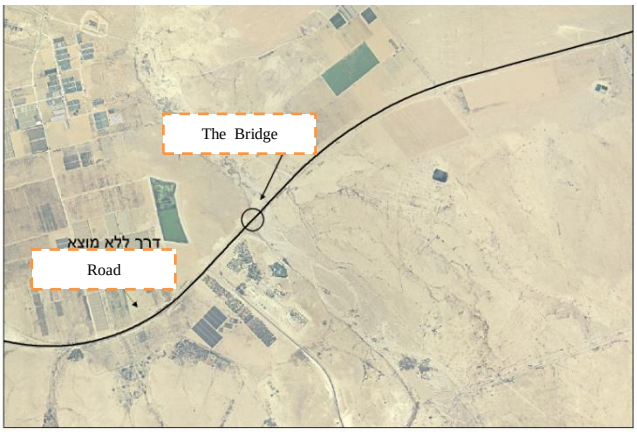
For example A.A.D.T.T. = 5%

3.16 Detour on Existing Roads

A description detailing whether the Bridge can be detoured by using existing roads. The detour on existing roads section will be defined impossible when the Bridge is on a single existing road end.

- Possible
- Impossible





3.17 Detour Length (KKK km)

A three digit numerical value. The length of the detour is the number of additional kilometers added to the road user as a result of performing the detour.

For example: length of detour: 4.44km

3.18 Local Detour

A description detailing whether there exists a detour on-site or whether one can be made adjacent to the structure using simple means, such as: earth works, temporary paving, laying pipes, etc.:

- local detour exists or can be made
- local detour does not exist and cannot be made

3.19 Method of Performing Local Detour

A description of the method of performing the possible local detour.

This section will be completed only if the description completed in section 3.18 is "local detour exists or can be made".

Will be chosen from the following list:

- local detour exists on-site
- traffic arrangements required only
- earth works required only
- earth works and paving required
- drainage, earth works and/or paving required
- other*

* If the selection is "other", details are required in the defined location for comments.

Details:
Local detour exists – there is a paved road or dirt track that can serve as a local detour for the Bridge, which can be used for private, commercial and truck traffic without performing any work.
Traffic arrangements – a local detour of the Bridge can be created using traffic arrangement only, by temporarily diverting traffic parallel to the Bridge.
Earth works – limited earth works must be performed in order to create a local detour.
Earth works and paving – earth works alone are insufficient for creating a local detour, and paving is also necessary.
Drainage, earth works and/or paving – a local detour of the Bridge will be possible only following detailed design of drainage, pipe-laying and paving the route.

3.20 Designed by (Designer name)

The name of the company/firm that designed the Bridge.

For example: **"Kedmor Engineers Ltd."**.

3.21 Rehabilitation or Widening Designed by (Designer name)

The name of the company/firm that designed the rehabilitation or widening of the structure.

For example: **"Manam Engineers Ltd."**.

Chapter 4 – Geometrical Data

4.01 Number of Spans

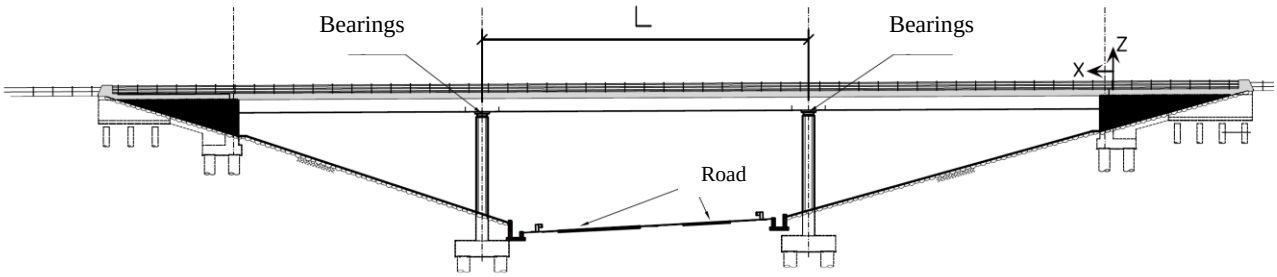
The total number of Bridge spans

For example: number of spans: 3

4.02 Length of Maximal Span (XXX.X m)

The length of the maximal span will be measured in parallel to the axis of the bridge.

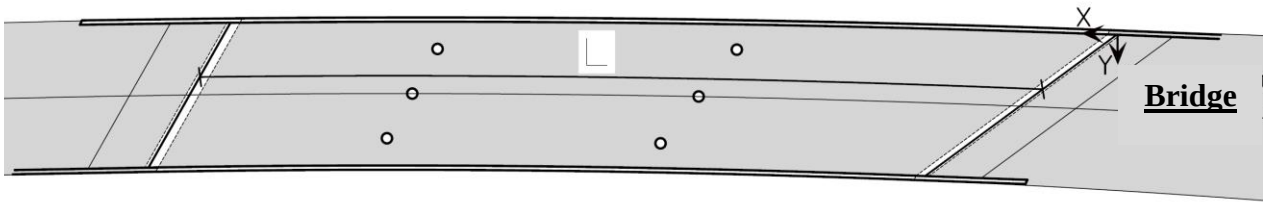
For example: span length – 34.3m

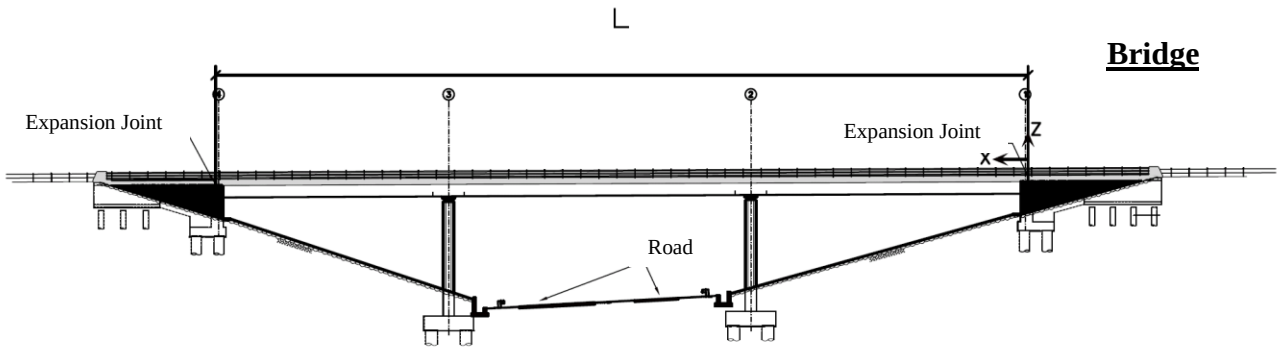


4.03 Total Length of Structure (XXXX.X m)

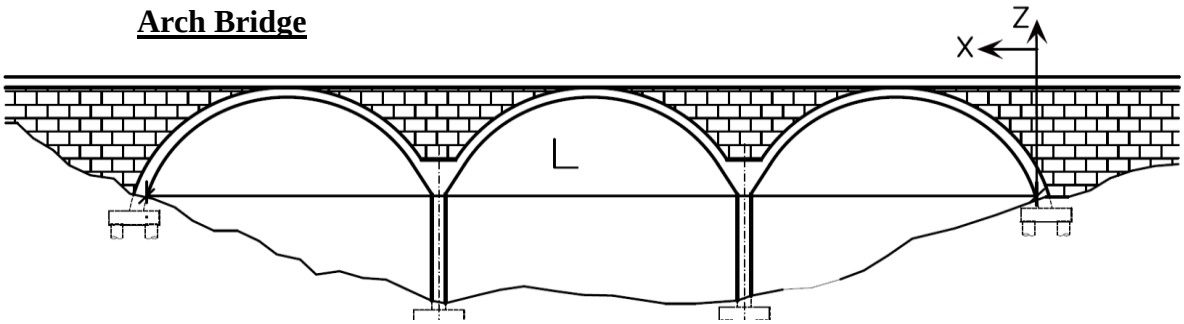
Total length of the supported route over the bridge. The length is measured between external joints, or if there are no joints, between the gridlines of the abutments.

For example: structure length – 86.47m





Arch Bridge

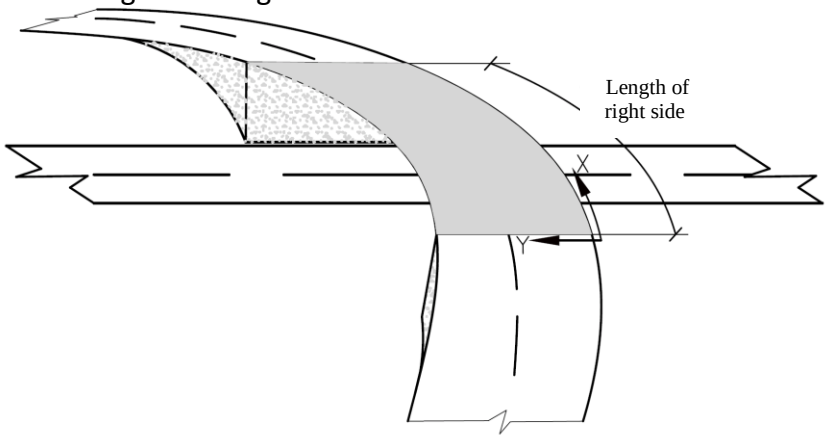


4.04 Length of Right Side (XXXX.X m)

Valid for bridges whose length measurements are different on the two sides of the road.

The length measurement of the structure, on the right-side of the road, along the X-axis of the structure – as shown in the diagram.

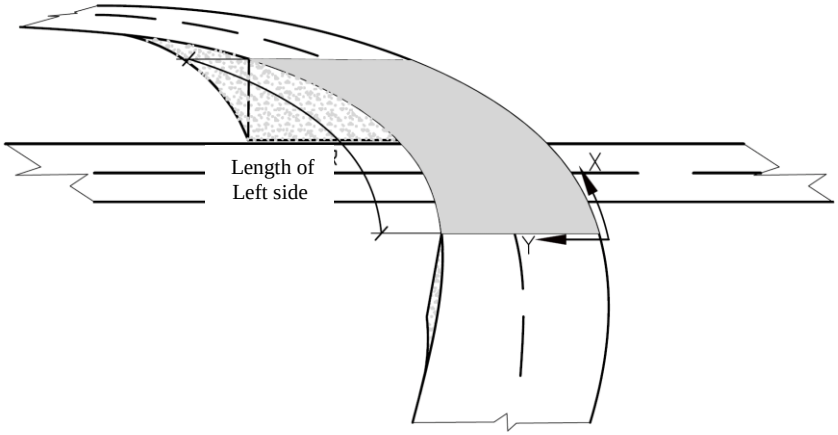
For example: The length of the bridge on its right-side – 42.62m



4.05 Length of Left Side (XXXX.X m)

Valid for bridges whose length measurements are different on the two sides of the road only.
The length measurement of the bridge, on the left-side of the road, along the X-axis of the structure – as described in the diagram.

For example: The length of the bridge on its left- side – 38.63

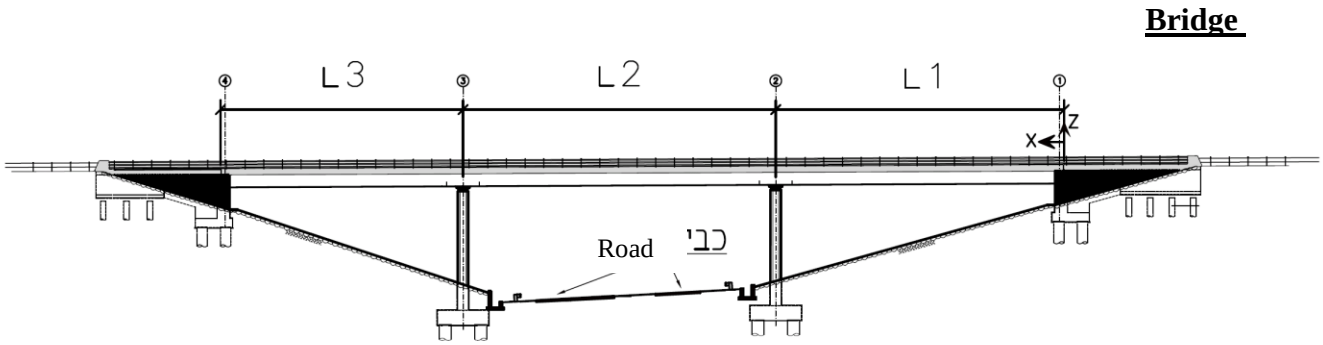


4.06 Span Lengths (XXX.X m * No. of spans)

The span measurement will be written as a text with a star (*) separating each span length.

For bridges, the length is in parallel with the axis of the bridge between the axis of the center of the bearings. If there are no bearings the length wil be between the centerlines of the bridge abutments and piers. It will be written according to the order of the span – along the X-axis of the structure – as described in the diagram.

For example: span 1 =15.40m, span 2 =24.80m, span 3= 15.38 →the text value will be: **15.4 * 24.8 * 15.4**



4.07 Existing Change of Width

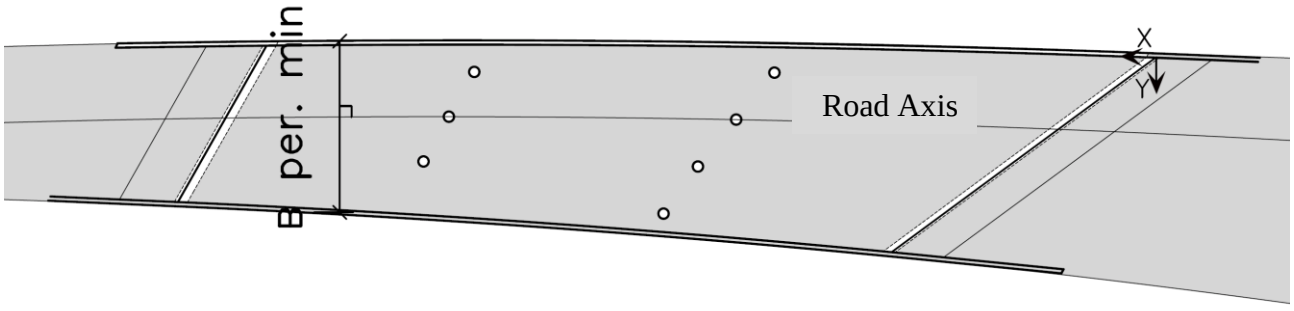
Documentation determining whether there is a change in width along the Bridge:

- exists
- doesn't exist

4.08 Minimal External Width perpendicular to Road Center Line (XXX.X m)

The distance between the outer sides of the parapets or railings (external-external measurements), **perpendicular to the road center line ,** at the narrowest point of the bridge – as detailed in the diagram.

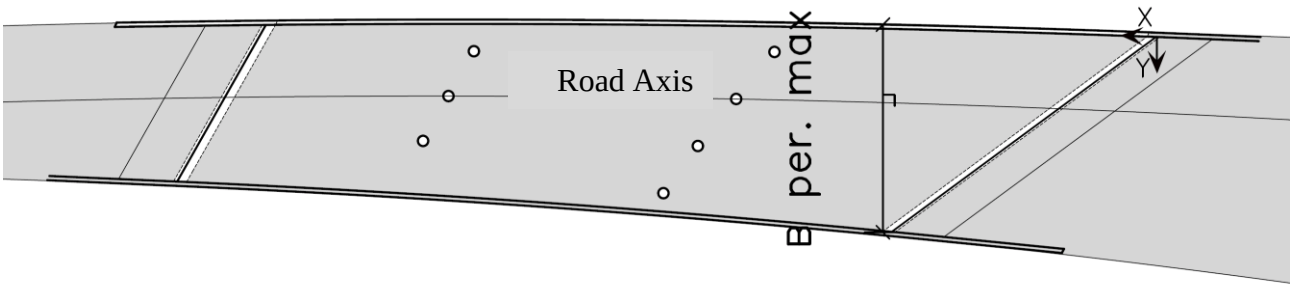
For example: external width perpendicular to the road center line = 14.4m



4.09 Maximal External Width Perpendicular to Road Center Line(XXX.X m)

The distance between the outer sides of the parapets or railings (external-external measurements), **perpendicular to the road center line**, at the widest point of the bridge – as detailed in the diagram.

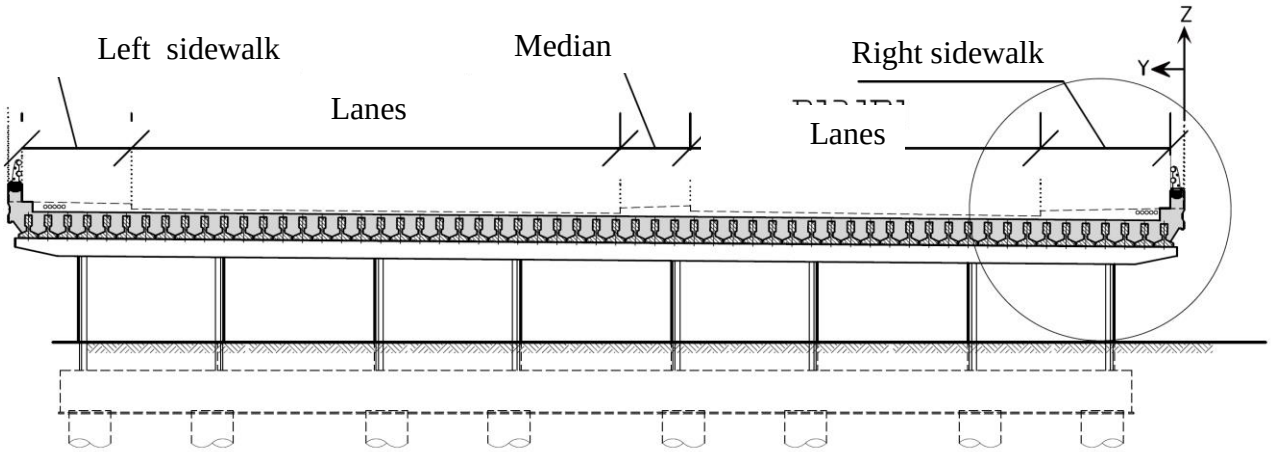
For example: external width perpendicular to the road center line = 16.6m



4.10 Curb or Sidewalk Width – Right (XX.XX m)

The distance from the beginning of the right-hand sidewalk or curb (according to the X-axis direction of the bridge) to its end, will be measured along the Y-axis of the bridge – as described in the diagram.

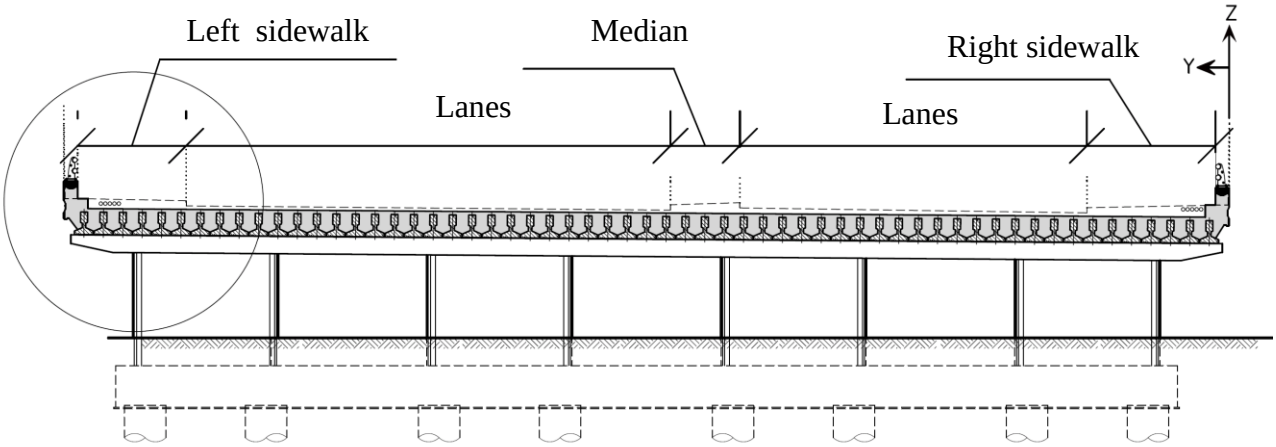
For example: width of right-hand sidewalk = 3.53m



4.11 Curb or Sidewalk Width – Left (XX.XX m)

The distance from the beginning of the left-hand sidewalk or curb (according to the X-axis direction of the bridge) to its end, will be measured along the Y-axis of the bridge – as described in the diagram.

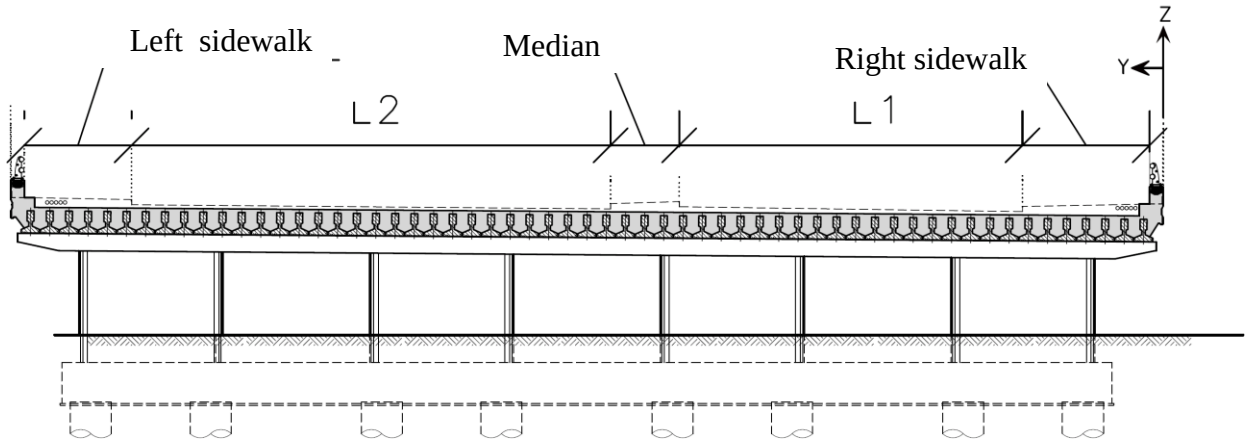
For example: width of left-hand sidewalk = 2.38m



4.12 Minimum Carriageway Width (between curbs) (XX.XX m)

The minimal existing width between curbs within the surfacing, will be measured along the Y-axis of the structure – as described in the diagram.

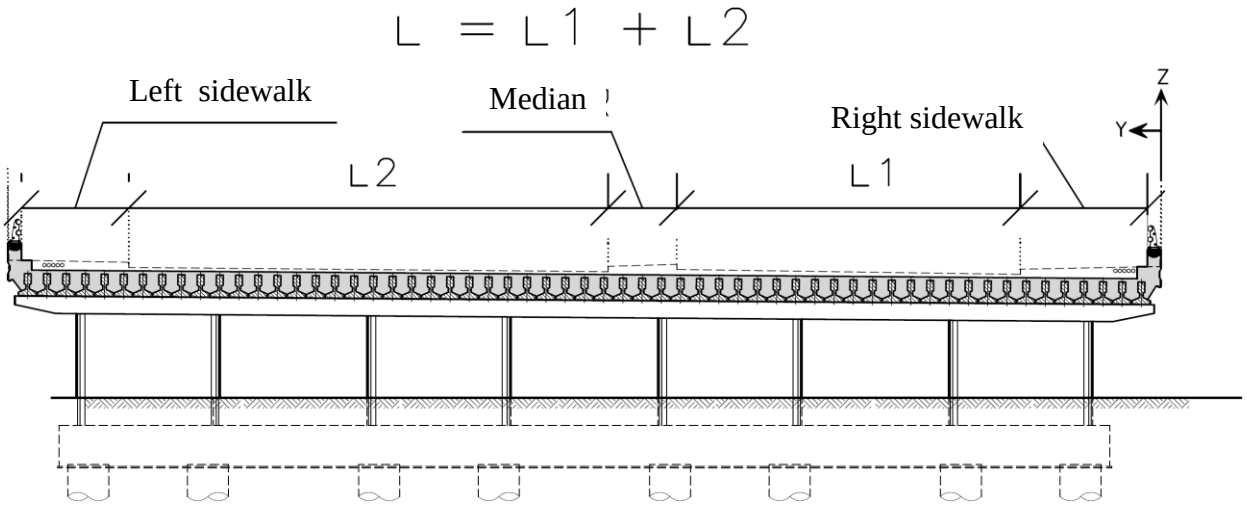
For example: minimum width = 7.13m



4.13 Total Carriageway Width (curb to curb) (XX.XX m)

The total of the width of all the lanes between curbs without the median (the sum of the width of the surfacing used for driving), will be measured along the Y-axis of the structure – as described in the diagram.

For example: width of right lane – 7m, width of left lane – 8.28m → the value will be: **15.25**



4.14 Median type

Documentation of the type of median on the Bridge. Refers to a Bridge defined as one structure for inspection purposes and not to an existing state between two separate structures.

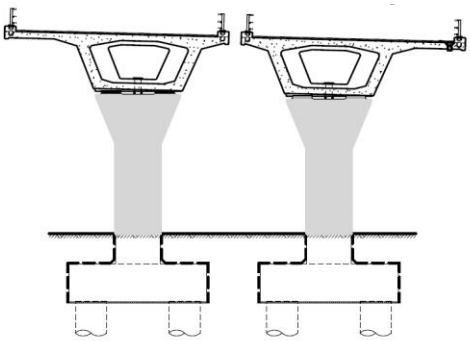
Will be chosen from the following list and according to the diagram:

- without median
- open median
- closed median
- closed median with permanent safety barrier
- other*

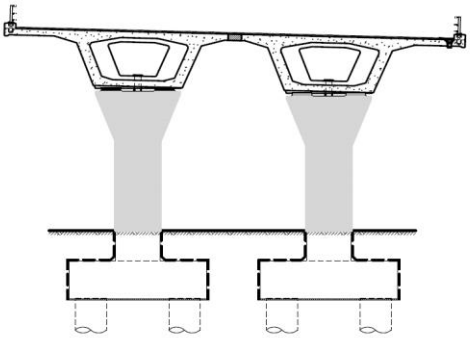
*If the selection is “other”, details required in the comments section.

Note: The Median type is related to the road itself and not to the bridge or the bridge scheme

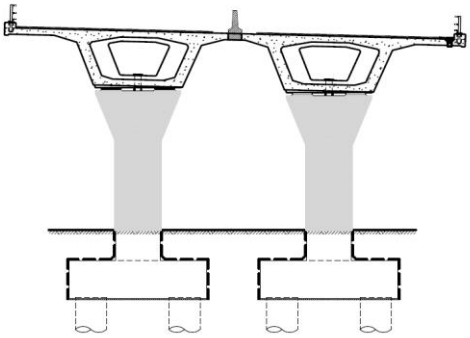
Open Median



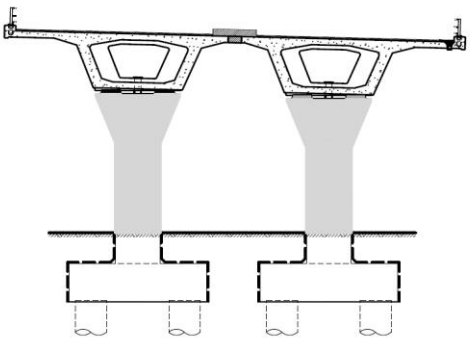
Without Median



Close Median with permanent safety barrier



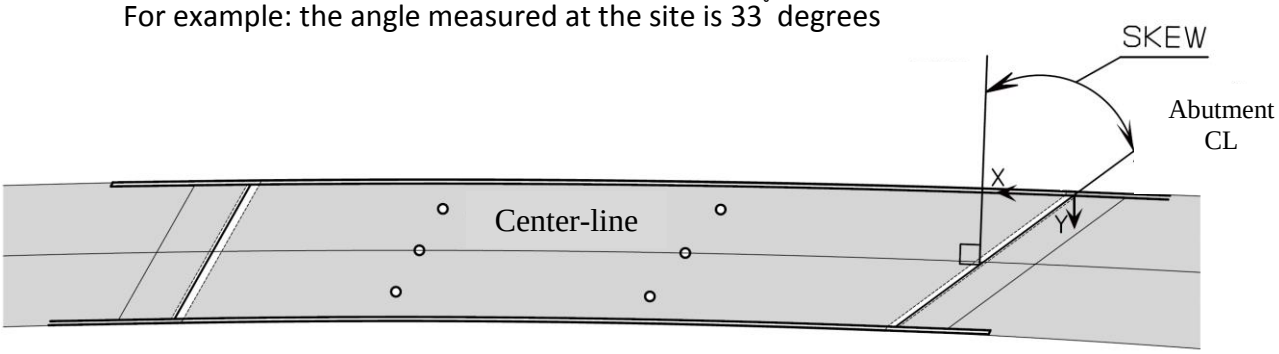
Closed Median



4.15 Skew angle (XX degrees)

Refers to the pier/Abutment with the greatest skew angle relative to the road center line. Documents the angle between the axis of the pier/abutment and the **perpendicular** to the road center line, as described in the diagram.

For example: the angle measured at the site is 33° degrees

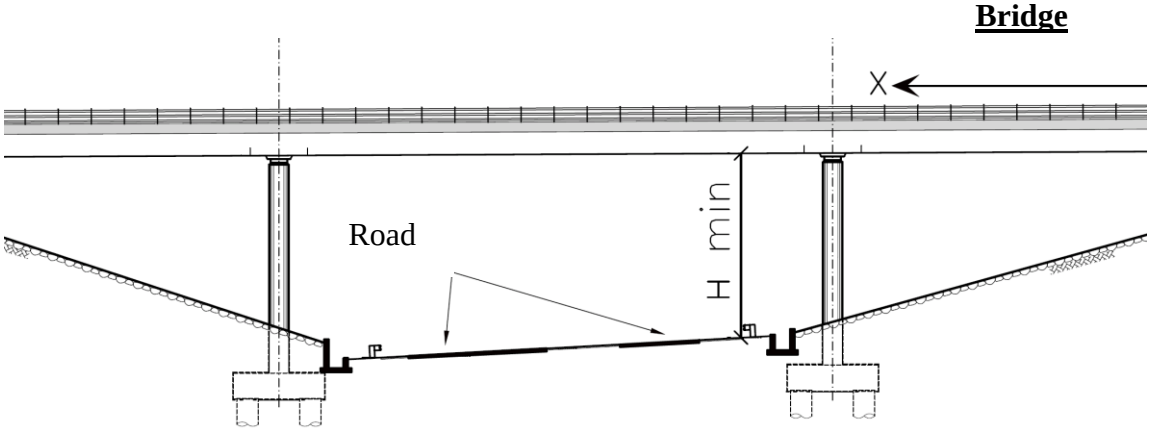


4.16 Minimum Vertical clearance in the Traffic Area* (XX.XX m)

The minimal vertical clearance existing between the bottom of the bridge structure and the layer of asphalt, shoulders or earth of the road beneath the bridge, in the area of traffic – as described in the diagram. The measurement will be accurate to 5cm rounded down.

For example: measured vertical clearance = 6.47m → the value will be: **06.45**

***If this measurement does not exist (a bridge that is not over a road, culvert, etc.) – this section will not be completed.



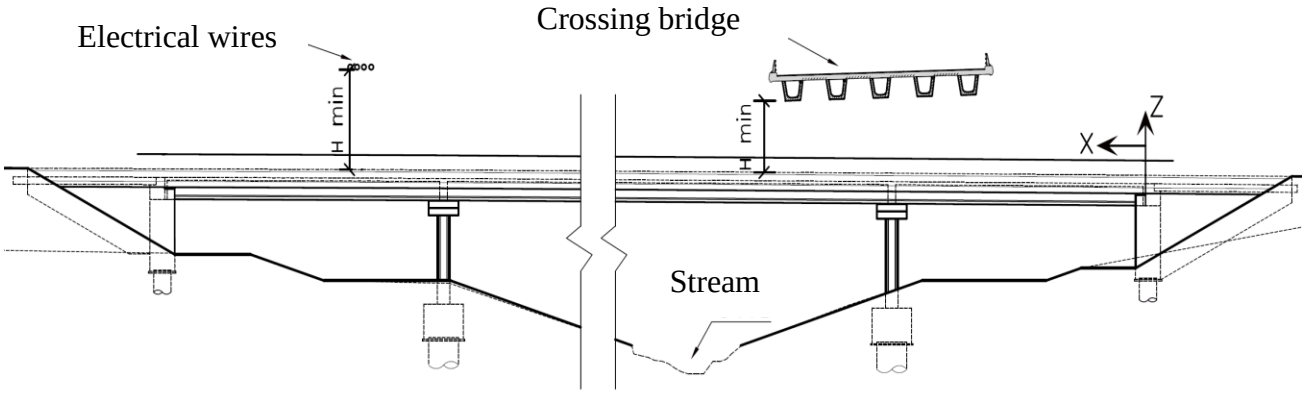
Note:
Care must be taken in cases where the road is inclined both lengthwise and widthwise and the bottom of the top structure is also inclined. In these cases the minimal value of all values is required.

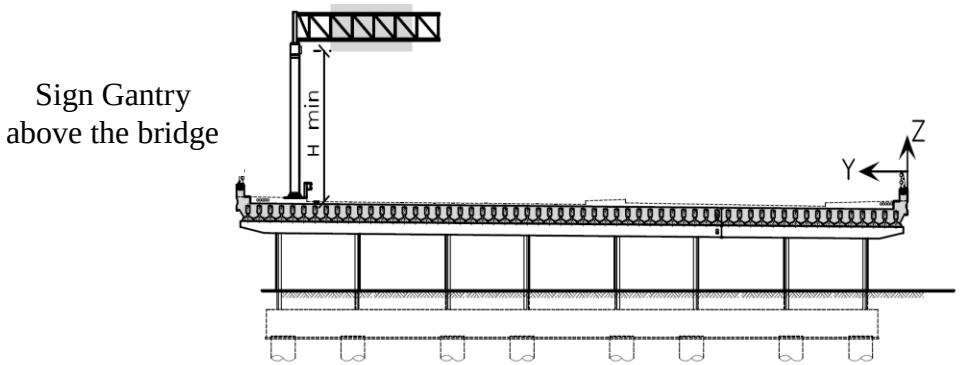
4.17 Minimal Vertical Over-clearance Above the Bridge* (XX.XX m)

The minimal vertical upper clearance, in the traffic area, that exists between the surfacing of the bridge and the bottom of another structure passing above it or any other obstacle (power lines, etc.) – as described in the diagram. The measurement will be accurate to 5cm rounded down, written in four digits.

For example: Vertical upper clearance = 4.23m → the value will be: **04.20**

***If there is no structure above the bridge – this section will not be completed.





4.18 Existing vertical clearance Restriction Sign Value (XX.XX m)

The actual measurement appearing on the height restriction sign on the Bridge. If there are a number of signs – the lowest value will be documented,

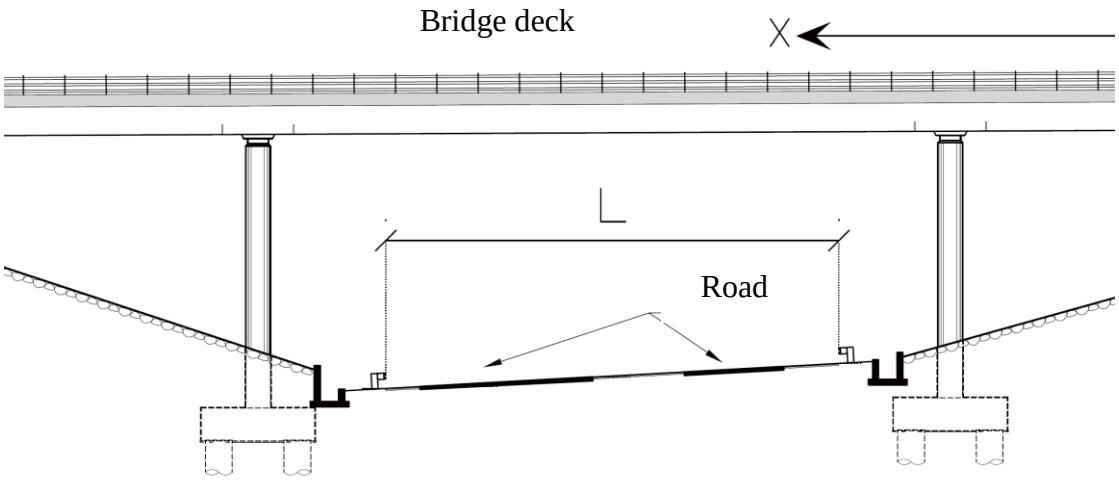
For example: written on the sign = 5.60m

4.19 Minimal Lateral Clearance (XX.X m)

This section will be completed only if there is a road (paved or unpaved) that passes under the bridge.

This value describes the minimal lateral clearance that exists under the bridge between fixed barriers (piers, walls, abutments, railroad track, concrete separations, safety railings, inclines at a ratio greater than 1:3, etc.) – as described in the diagram.

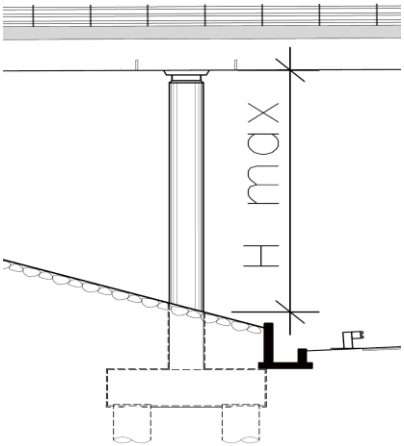
For example: lateral clearance = 12.68m



4.20 Maximal pier/Abutment Height (XX.XX m)

The height of the highest abutment or pier. The measurement is taken from the ground level of the surfacing adjacent to the abutment/pier. The height of the bearings is included in this measurement – as described in the diagram.

For example: the height of the abutment including bearings = 5.77m



4.21 Deck Surface area (m^2)

The total Bridge deck surface area measured in square meters. The surface area will be calculated based on the relevant length and width data for each structure type as per chapter 4 of this document.

For example: Deck Area = 3423.2m^2

4.22 Bridge Drawings

- Yes = Original set of bridge drawings exist
- No = Drawings do not exist

4.23 Bridge Rehabilitation Drawings

- Yes = Original set of bridge rehabilitation drawings exist
- No = Drawings do not exist

Chapter 5 – Structural Classification Data

5.01 Number of Deck Types

The number of different types of decks in one Bridge.

For example: On a bridge that was expanded and is considered as bridge without joints, where part of the deck is a U shape Girder and part of it is a cast in situ slab.

In this case → the value will be: **2**

5.2.1 (5.2.2, 5.2.3) Deck Classification

All types of Deck that exists in the bridge will be documented. If there are a number of types of Deck, the different types (no more than 3 types) will be documented one above the other (in separate cells).

Deck type will be chosen from the following list:

- Cast In-Situ slab
- Cast in situ Girders and Slab
- Precast AASHTO Girders (or similar) & Planks with in situ topping
- Precast AASHTO Girders (or similar) with in situ top Slab
- Precast U shape Girders & Planks with in situ topping
- Precast U shape Girders with in situ Slab
- Invert T precast Girders with cast in situ topping
- Invert double T/inverted π precast Girders plus cast in situ topping
- Precast Segmental Deck
- Cast In-Situ Segmental Deck(Launching Included)
- Precast Elements with in situ topping
- Steel Girders with cast in situ Slab
- Steel Box Girder deck with cast in situ Slab
- Steel Box Girder deck with orthotropic deck
- Masonry deck
- Stone deck
- other*

*If the selection is “other”, details are required in the defined location for comments.

5.3.1 (5.3.2) Abutment Classification

Documentation of the type of the abutment of the bridge

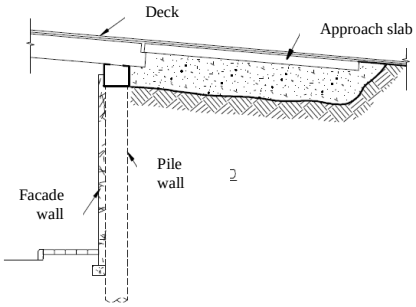
Will be chosen from the following list:

- Gravity Abutment
- U shaped gravity abutment
- U Abutment
- Cantilever Abutment (can be with anchor or not)
- Full Height Abutment
- Stub Abutment
- Semi-Stub Abutment
- Stub Abutment with cantilever Retaining Wall façade
- Stub Abutment with Reinforced-Earth Wall façade
- Counterfort Abutment
- Spill-through Abutment
- Pile Bent abutment
- other*

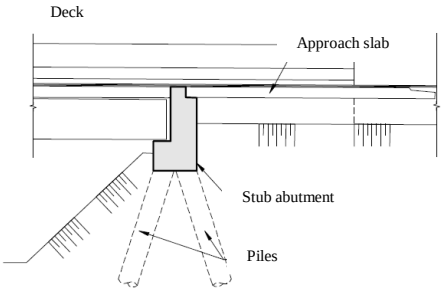
*If the selection is “other”, details are required in the defined location for comments.

Abutment classification – some optional schemes

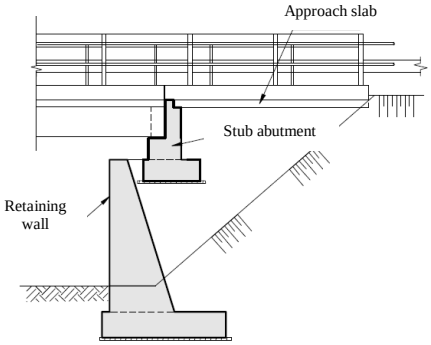
Embedded cantilever wall with or without Anchors



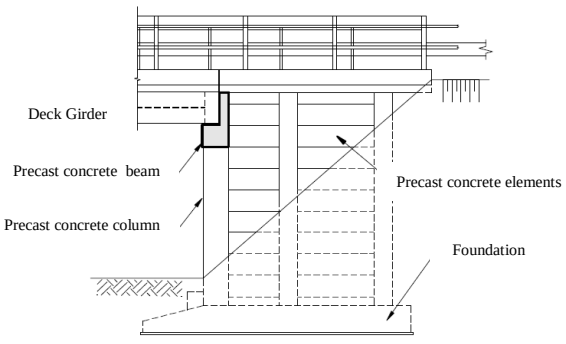
Stub Abutment



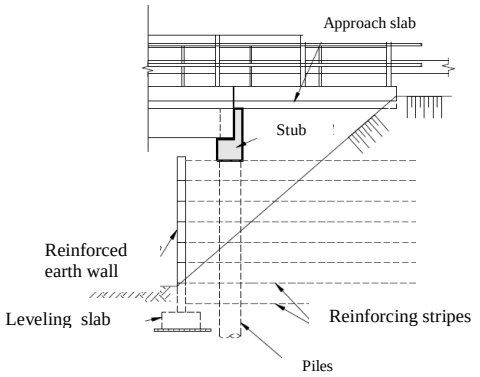
Stub Abutment with cantilever Retaining Wall façade



Precast concrete Abutment



Stub Abutment with Reinforced-Earth Wall façade



5.04 Number of Pier Types

Documentation of the number of different pier types in the bridge.

For example: On a bridge where part of the piers are solid walls and some are transverse frames the value will be: **2**

5.5.1 (5.5.2, 5.5.3) Pier Classification

The types of piers in the bridge will be documented. In case there are a number of types of piers, the different types will be documented one above the other (in separate cells).

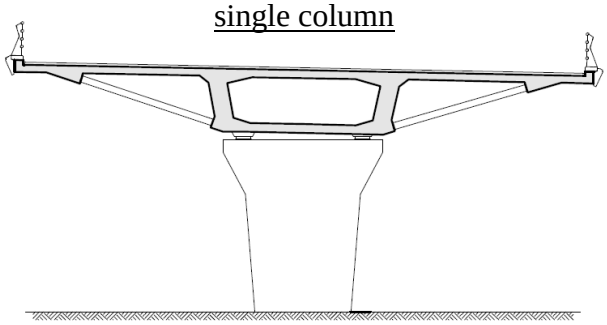
Will be chosen from the following list:

- Solid/Wall type pier
- Cellular type pier
- Transversal frame
- Trestle type pier
- Multiple columns pier
- Hammer head type pier
- Single column pier
- other*

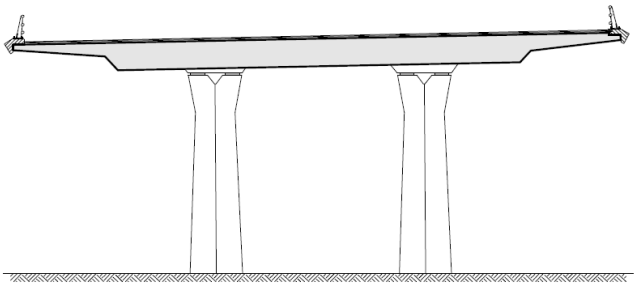
*If the selection is “other”, details are required in the defined location for comments.

Pier classification – some typical schemes

single column

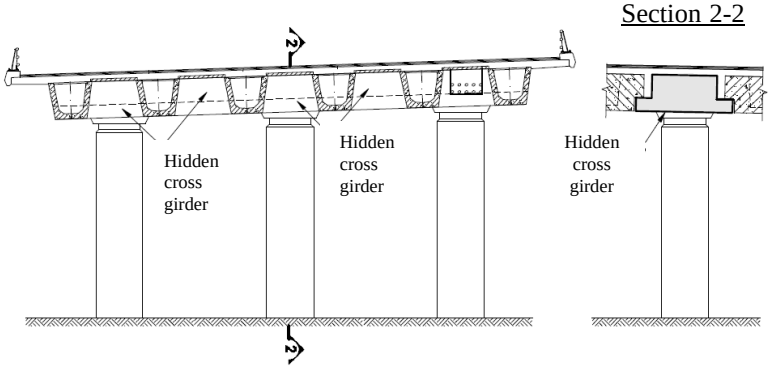


Multiple column pier

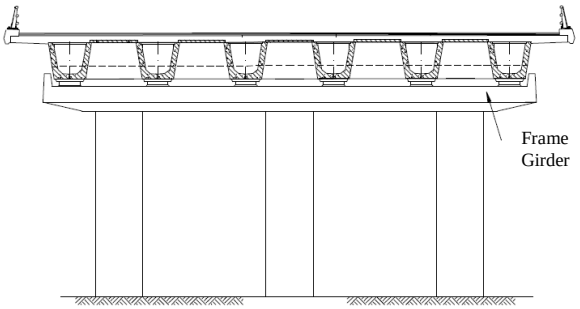


Transversal frame with hidden cross girder

Section 2-2



Transversal frame



5.06 Prestressing type

Documentation of the types of Prestressing in use in the bridge.

Will be chosen from the following list:
- Pre-tensioning Only
- Post-tensioning Only
- Pre & Post-tensioning
- External Post-tensioning
- External Post-tensioning combined with other methods
- other*

*If the selection is “other”, details are required in the defined location for comments.

5.7.1 (5.7.2, 5.7.3, 5.7.4) Bearings Type

Documentation of the types of bearings that exist in the bridge. If there are a number of types of bearings, the different types will be documented one above the other (in separate cells). In bridges without bearings this section will not be completed.

Will be chosen from the following list:
- Elastomeric Bearings
- Pot bearings
- Spherical bearings
- Disk Bearings
- Roller Bearings
- Rocker Bearings
- other*

*If the selection is “other”, details are required in the defined location for comments.

5.8.1 (5.8.2, 5.8.3, 5.8.4) Joints type

Documentation of the types of joints that exist in the bridge. If there are a number of types of joints the different types will be documented one above the other (in separate cells). In bridges without joints this section will not be completed.

Will be chosen from the following list:
- Open Joint
- Rubber Cushion Seals
- Compression Seals
- Modular Strip Seals
- Buried Joints
- Asphalt Plug Joints
- Finger Joints
- Other*

Chapter 6 – Materials Classification Data

This chapter classifies the different elements in the structure according to the materials from which they are made. If an element is made of several materials, the description of each material will be written one above the other (in the allotted cells).

Material classification should be made for the following elements of the bridge

6.01 Bridge Deck, Top Slab
6.02 Super structure
6.03 Abutments/walls
6.04 Piers
6.05 slope protection
6.06 Vehicle Safety barriers
6.07 Pedestrian safety railing
6.08 Deck surface cover
6.09 Deck waterproofing
6.10 Parapets

The following is a list of the materials, If the selection is “other”, details are required in the defined location for comments.

- Unreinforced Concrete
- Reinforced concrete
- Prestressed Concrete
- Water washed stone Aggregate (granolith)
- Stone
- Concrete pavers
- Bricks
- Steel
- Galvanized Steel
- Painted Steel
- Galvanized & Painted Steel
- Weathering Steel
- wood
- fiberglass
- Polycarbonate
- Acryl
- Glass
- Asphalt
- Bituminous seal (Hot/Cold)
- Bituminous Membrane
- Cement based waterproofing
- Metylmetacrilate based waterproofing membrane
- Slope stabilizing metal wire mesh
- Slope stabilizing Cellular synthetic mesh

- Aluminum
- Plastic (different types)
- **Other***

Chapter 7 – Loading Data

7.01 Load Rating Method

Documentation of the load rating method and detailing of the relevant professional document. If load rating do not exist for this bridge, this section will not be completed.

7.02 Load Rating actual value

Documentation of the load rating result for the specific bridge including the Load Class and the numerical value. If load rating do not exist for this bridge, this section will not be completed.

7.03 Year of Last Load Rating

Documentation of the year, in four digits, of the recent load rating of the bridge. If load rating do not exist for this bridge, this section will not be completed.

7.04 Load Restriction Sign (XXX)

Refers to the actual load restriction signage on the bridge, if exists, that restricts the maximal allowed load on the Bridge. If such signage exists, the value in it will be documented.

For example: the caption in the sign = 60 ton
Note:
If there is no load restriction signage, this field will be left empty.

7.05 Seismic Load Rating Method

Documentation of the Seismic load rating method and detailing of the relevant professional document. If Seismic load rating do not exist for this bridge, this section will not be completed.

7.06 Seismic Load Rating value

Documentation of the Seismic load rating result for the specific bridge including the Load Class and the numerical value. If Seismic load rating do not exist for this bridge, this section will not be completed.

7.07 Year of Last Seismic Load Rating

Documentation of the year, in four digits, of the recent Seismic load rating of the bridge. If Seismic load rating do not exist for this bridge, this section will not be completed.

7.08 (07.09) Other loading classification

Documentation of other loading classification methods for the specific bridge

Chapter 8 – Hydraulic Data

This chapter is designated for documentation of hydraulic data regarding Bridges which underneath or inside of there is water flow.

8.01 Maximal Designed Relative Water Level (XX.X m)

Documentation of the maximal designed relative water level in the flowing section underneath the bridge and relative to the bridge deck soffit.

For example: A designed value of +2.47m meaning that the designed vertical gap between the maximum water level and the soffit of the bridge deck is 2.47 meters.
A negative value means that the water are designed to go over the soffit of the deck.

8.02 Hydraulic Design Return Period (YYY years)

Documentation of the maximal designed hydraulic return period, according to which the maximal designed relative water level is determined.

For example: The maximal design return period for the bridge is 50 years

8.03 Hydraulic Performance Indicator

Documentation of the hydraulic performance indicator value (if exist) calculated for the Bridge. The applied calculation method and the relevant professional document should be referred to at the comments field.

Chapter 9 –Bridge Performance Indicators

9.1.1 Bridge Condition Performance Indicator – Description*

Documentation of the Bridge Condition Performance Indicator in use for the bridge and the relevant professional documents describing the methodology.

For example:
Bridge Condition PI_{Av} and $BCPI_{crit}$ are based on the following formula:

Average Condition PI for an Individual Structure

$$\text{Condition } PI_{Av} = 100 - 2\left((SCS_{Av})^2 + (6.5 \times SCS_{Av}) - 7.5\right)$$

Equation 5

Critical Condition PI for an Individual Structure

$$\text{Condition } PI_{Crit} = 100 - 2\left((SCS_{Crit})^2 + (6.5 \times SCS_{Crit}) - 7.5\right)$$

Equation 6

The mythology is described in the document 'Guidance Document for Performance Measurement of Highway Structures' Part B1: Condition Performance Indicator' Version 1.3, CSS- Highway agency 2005.

Please fill in the data at the marked field.

*If Bridge condition indicator do not calculated for this bridge please leave this field empty.

9.1.2 Bridge Condition Performance Indicator – Value*

Documentation of the result of calculating the value of Bridge Condition PI_{Av} and $BCPI_{crit}$

For example:
Bridge Condition PI_{Av} = 76
Bridge Condition PI_{Ctit} =58

*If Bridge condition indicator do not calculated for this bridge please leave this field empty.

9.2.1 Bridge Availability Performance Indicator - Description

Documentation of the Bridge Availability Performance Indicator in use for the bridge and the relevant professional documents describing the methodology.

9.2.2 Bridge Availability Performance Indicator - Value

Documentation of the result of calculating the value of Bridge Availability Performance Indicator.

9.3.1 Bridge Reliability Performance Indicator - Description

Documentation of the Bridge Reliability Performance Indicator in use for the bridge and the relevant professional documents describing the methodology.

9.3.2 Bridge Reliability Performance Indicator - Value

Documentation of the result of calculating the value of Bridge Reliability Performance Indicator.

9.4.1 Bridge Safety Performance Indicator - Description

Documentation of the Bridge Safety Performance Indicator in use for the bridge and the relevant professional documents describing the methodology.

9.4.2 Bridge Safety Performance Indicator - Value

Documentation of the result of calculating the value of Bridge Safety Performance Indicator.

9.5.1 (9.6.1, 9.7.1) Other Bridge Performance assessment Indicator- Description

Documentation of Other Bridge Performance assessment Indicator in use for the bridge and the relevant professional documents describing the methodology.

9.5.2 (9.6.2, 9.7.2) Other Bridge Performance assessment Indicator - Value

Documentation of the result of calculating the value of Other Bridge Performance assessment Indicator.

Chapter 10 – Quality control plan

10.01 Quality control plan for the Bridge

Documentation whether a Quality Control plan exist for the bridge.

- Quality control plane already exist for the Bridge
- QC Plan do not exist

10.02 Quality control plan documentation

Short description of the quality control plan for the bridge and the relevant professional documentation.

Chapter 11 – Inspections Data

11.01 Number of already performed Inspections

The number of already performed inspections,

For example: A bridge with total of 12 documented inspections → **12**

11.02 Year of Initial (first) Inspection

The year of performance of the initial (first) documented inspection in the bridge. will be written in the following format: YYYY.

For example: 1988

11.03 Year of Last Inspection

The date of performance of the last inspection, will be written in the following format: YYYY.

For example: 2014

11.04 Frequency of Routine Inspection (months)

The approved frequency for the time interval between routine inspections, stated in months.

For example: For an interval of two years between routine inspections → the value will be: **24**

11.05 Year of last Damage Control Inspection

The year of the most recent Damage Control Inspection. Will be written in the following format: YYYY.

For example: 2002

*If no damage control inspection was performed for the structure this section will not be completed.

11.06 Year of last Underwater Inspection

The most recent year an underwater inspection was performed. Will be written in the following format YYYY.

For example: 2007

*If no underwater inspection of the structure was performed this section will not be completed.

11.07 Year of the last In-depth Inspection

The most recent year an in-depth inspection was performed. Will be written in the following format: YYYY.

For example: **2012**

*If no in-depth inspection of the structure was performed this section will not be completed.

11.08 Year of the last Special Inspection

The most recent year a Special inspection was performed. Will be written in the following format: YYYY.

For example: **2006**

*If no special inspection of the structure was performed this section will not be completed.

11.09 Inspection equipment mounted on the Bridge

Description of the Inspection permanent equipment mounted on the bridge

For example: 'Life saving cable system mounted along the outer sides of the bridge deck and steel walkways are connected to the top of bridge piers and Abutments enabling inspection and maintenance of the bearings'

*If no special inspection of the structure was performed this section will not be completed.