Bridge Assets - Support Information

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What data should be collected for bridges?

The Bridge Data Dictionary outlines the data that must be collected and provided by suppliers carrying out activities that affect the Bridge table. This data is required to ensure that the objectives of the Bridge table can be met.

How long does a bridge need to be before in should be entered into the Bridge database?

All bridges need to be added to the bridge table, irrespective of their length.

Kerb Heights

The height of the kerbs should be measured from the top of the carriageway sealed surface to the top of the kerb.

Different Deck and/or Beam Constructions

For different deck and/or beam construction types, individual br_deck and/or br_beam table(s) should be recorded with associated data under the br_bridge table.

Measurement between Rail to Rail and Kerb to Kerb

The measurements to be taken at the NARROWEST width between each side of the railing or kerb.

Width of the Deck

The overall width of the deck should be measured as the outer edge of deck to the outer edge of deck. This width is often different from rail to rail, but should record the overall useable width of the deck for the road users.

Structural Rating/Restrictions

Any associated data in relation to structural rating and/or restrictions should be recorded following a structural review and assessment and should be populated by a CPEng Structural Engineer.

Moment/Shear/VAI

Any associated data in relation to moment/shear/VAI should be calculated/supplied by a CPEng Structural Engineer.

Plate Year

Where a plate is not available, a best guess is to be recorded with Guess recorded in status. When estimating dates based on a field inspection, use the format "01/01/YYYY" which shows that the date is estimated. Construction dates should never be estimated without going on site.

Beam, span, deck and pier numbering

This numbering should be as per requirements outlined in the database dictionary. Essentially, the numbering system for all elements increases in the increasing direction, and from left to right when looking at the bridge in the increasing direction.

Typical numbering and component identification are shown in the below figure.
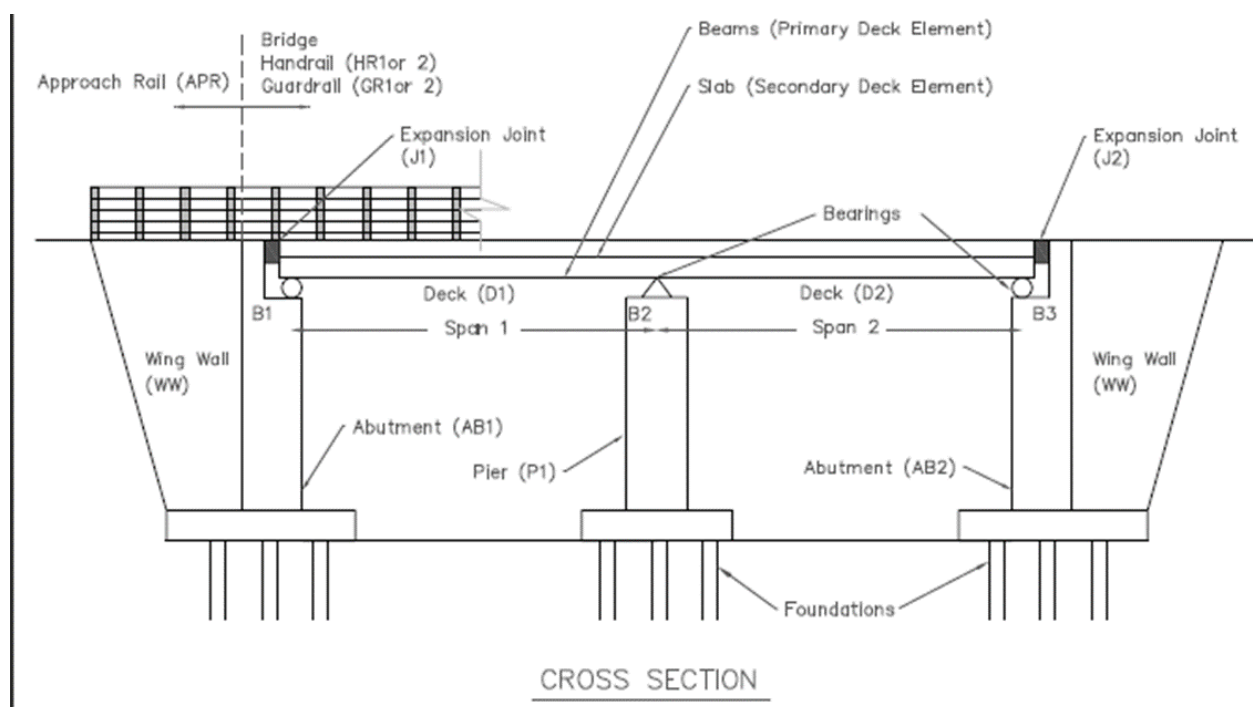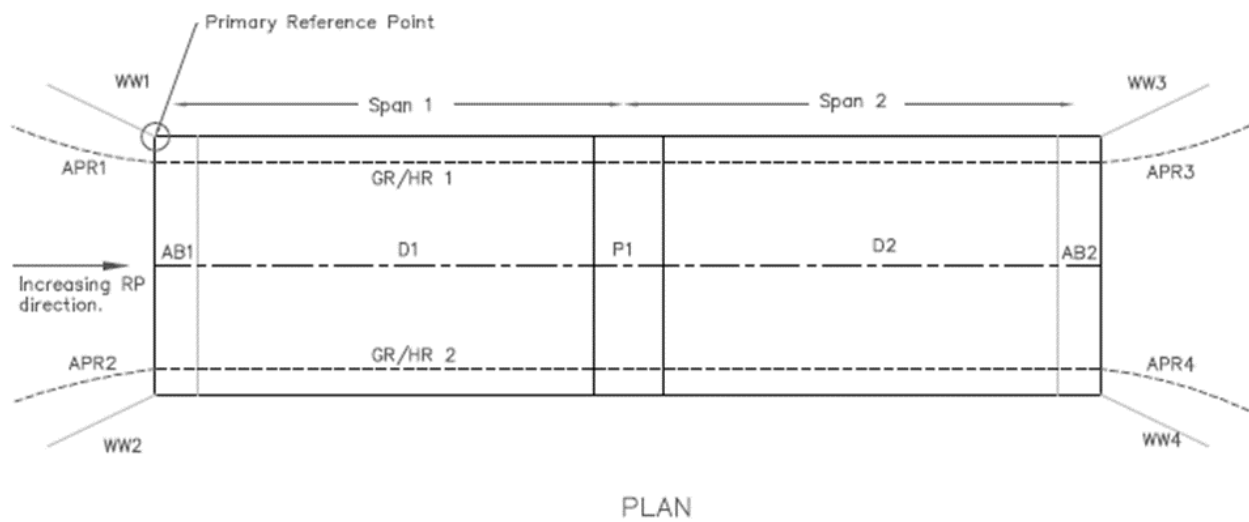
Cross Section and Plan Component Numbering for Bridges (Source: Inspection Manual for Highways Structures, Volume 1, reference Manual may 2007)

We can see from the data there has not been a consistent approach with this numbering. We have included figure 4.2.1 for consideration, which should be consulted with the bridge consultants etc to ensue a consistent approach.

Where do I record railings that are associated with bridges?

All railings need to be collected and entered into the railings table. The bridge id should be entered into the railings record so that the railing record is linked to the bridge asset.

How do I collect footpaths on bridges?

⚠️ A decision will need to be made as to whether the footpath should be attached to the bridge, or just be included as part of the footpath table??? There are pros and cons for both, with a mix in the database.

When entering a bridge into the database a number of components can be added including a footpath. When entering a new bridge, and using the bridge wizard, the footpath table needs to be checked to see if an entry already exists for the footpath over the bridge. If one does exist, then a split will need to be created for the length to be associated with the bridge. Once the split has been created, the footpath can be added through the bridge wizard as a component for a new bridge. This footpath will then be inserted into the footpath table as part of the wizard process.

For an existing bridge that has a physical footpath, but it is not recorded as a component under the bridge the following steps should be undertaken:
- Select the bridge through RAMM
- Above the bridge name, in the left hand window, after the collapse all icon is the show all detached footpath/ railing. Once selected it will show all existing footpaths, and state whether they are detached to the bridge.
- You can then attach an existing footpath to the bridge by right clicking on the required section
- If a footpath does not exist, then one can be added, through the add component process

It should be noted the linking of footpaths works when adding it through the bridge table, however the reverse is

not true when adding a footpath in the footpath table. The footpath will not automatically be linked to an existing bridge, through entering it via the footpath table.

How do I collect streetlights on bridges?

All streetlights (and their respective component data) need to be collected and entered into the streetlight table.

A bridge asset is typically composed of the following parts:

- ....

By definition, a bridge is a structure carrying a road, footpath, or canal across a river, ravine, road, railroad, or other obstacle. Auckland Transport categorise their bridges as follows (link terminology to ATCOP which links to the AMP. Can we get this information to ensure that we are being consistent):

Road Bridges – The road is carried over a river, estuary, waterway, railway line, other road, or other obstacle, by a bridge composing of one or more clear spans.

Major Culverts – One or many adjacent pipes or enclosed channels (with a combined cross sectional area > 3.4m², as defined by NZTA) for conveying surface water, or a stream below formation level (Define data collection for the culvert, and how best the data is inputted into RAMM-think culvert/drainage table/bridges). Enter into drainage table first and then activate button to automatically upload into Bridge Table. Check this in the drainage table).

Footbridges – Typically passes over a road, but may also run parallel to the road. Footbridges may also carry bicycles as well as pedestrians. Note that footbridges are not designed for traffic.

Underpasses – A structure that can sometimes be similar to a major culvert (except that it does not carry water), constructed to permit the safe passage of pedestrians or stock beneath a road.