CULVERT

Design of precast reinforced concrete culverts

Main Features

- Bridge design codes - AUSTROADS 1992, SM1600, AS1597.2 (2013) and user-specific methods.
- Culvert types - crown units (with/without base slabs), closed box sections, inverted "U" shapes and boxes with pinned top/bottom slabs and for two fill types - embankment or trench.
- Live load wheel distribution options - overlapping cones or the more accurate Boussinesque method
- Analysis options - analyse as a single unit, external unit or as an internal unit in multi-unit runs for both ultimate and serviceability conditions.
- Sway & DLA options - allow or suppress sway plus apply DLA for various codes. A lateral support will be inserted into the structural model in the plane of the top slab if there is no sway.
- Design points - define the number of nodes along the legs, base and top slab at which an analysis is performed, the sections at which detailed design is required and the sections for critical shear check.
- Reinforcement – specify the number of bars, bar diameter and bar spacing at each design section (for both faces of the culvert unit) or let the program select these parameters automatically.
- Shear and cracking - define critical sections for shear, perform the shear check to a range of codes and perform a full crack control check.
- Construction layers - Define multiple layers and vehicle-specific DLA values.
- Fatigue check to AS1597 (2013) for both road and railway vehicles.
- Comprehensive loading combinations for railway, vehicle, ultimate and serviceability modes.