D.3.14 Twin Bridges over Water Course and Fauna Crossing – Station
81km880

These bridges carry the highway over a water course and fauna crossing. They are on a curved horizontal alignment and comprise four equal spans of 15.60m. The superstructure utilises thirteen 600mm deep pre-stressed concrete planks per span for the northbound bridge and fifteen 600mm deep planks for the southbound bridge. The width of the bridge deck for the northbound carriageway is 11.05m and for the southbound carriageway 12.86m. Spill through abutments are adopted with a slope of 1.5H:1V. The substructure comprises reinforced concrete headstocks supported on 1000mm diameter circular concrete piers.

The parapets are medium performance level barriers comprising a 650mm high precast concrete barrier / parapet surmounted by twin steel rails, providing an overall height of 1300mm above road surface level. A single conduit is located in each barrier. For each bridge, a longitudinal drainage pipe is located between the outermost and second planks, concealing the drainage pipe when the bridge is viewed in elevation.

The abutment slopes are treated with stone boulders as they are potentially susceptible to scour.

Changes since 15% DCD
- Number of concrete planks in northbound bridge reduced from 14 to 13.

Urban Design Comments on 85% PDD to be incorporated in 100% SDD
- None.
Figure D.3.14.2  Twin Bridges over Water Course and Fauna Crossing: Cross Sectional Elevation

Drawings are for illustrative purposes only. For dimensions and extent of works refer to Engineers Drawings. For Landscape types and extents refer to Landscape Drawings.
E.3.15 Twin Bridges over Flow Balancing Water Course and Fauna Crossing

– Station 82km420

These bridges carry the highway over a water course and fauna crossing. They are on a curved horizontal alignment and comprise a single span of 18.37m. The northbound bridge includes a deceleration lane and the southbound bridge an onramp for the Waterfall Way interchange. The superstructure utilises seventeen 700mm deep pre-stressed concrete planks per span for the northbound bridge and twenty one 700mm deep planks per span for the southbound bridge. The width of the bridge deck for the northbound carriageway is 14.55m and for the southbound carriageway a maximum of 18.67m. Spill through abutments are adopted with a slope of 1.5H:1V.

The parapets are medium performance level barriers comprising a 650mm high precast concrete barrier / parapet surmounted by twin steel rails, providing an overall height of 1300mm above road surface level. A single conduit is located in each barrier. For each bridge a longitudinal drainage pipe is located between the outermost and next planks, concealing the drainage pipe when the bridge is viewed in elevation.

The abutment slopes are treated with stone boulders as they are potentially susceptible to scour.

Changes since 15% DCD

– Number of spans reduced from two to one (central piers and headstock deleted).
– Span length increased slightly.
– Number of concrete planks in southbound bridge reduced from 27 to 21.
– Maximum width of southbound carriageway reduced from 23.82m to 18.67m.
– Longitudinal drainage pipe added to each bridge.

Urban Design Comments on 85% PDD to be incorporated in 100% SDD

– None.
Figure D.3.15.2  Twin Bridges over Water Course and Fauna Crossing: Cross Sectional Elevation

Drawings are for illustrative purposes only.
For dimensions and extent of works refer to Engineers Drawings.
For Landscape types and extents refer to Landscape Drawings.
D.4 LOCAL ACCESS ROAD BRIDGES

D.4.1 Service Road Bridge over Boggy Creek – Station 62km750

This bridge carries a local service road over Boggy Creek. It is on a curved horizontal alignment and comprises two equal spans of 27.0m with four 1200mm deep Super-T girders. The width of the bridge deck is 9.0m from barrier to barrier. Spill through abutments are adopted with a slope of 1.5H:1V. The abutment structures comprise reinforced concrete beams with wing walls and are supported on piles. The parapets are medium performance level barriers comprising a 650mm high precast concrete parapet with twin steel rails providing an overall height of 1300mm above road surface level. A single conduit is provided in each barrier. The abutments are potentially subject to scour and are treated with stone boulders.

Changes since 15% DCD
- Number of spans increased from one to two.
- Central piers and headstock added.
- Single span of 30.0m replaced with two equal spans of 27.0m.
- Super-T girder depth reduced from 1500mm to 1200mm.

Urban Design Comments on 85% PDD to be incorporated in 100% SDD
- None.

Figure D.4.1.1 Service Road Bridge over Boggy Creek: Elevation

Drawings are for illustrative purposes only.
For dimensions and extent of works refer to Engineers Drawings.
For Landscape types and extents refer to Landscape Drawings.
D.4.2 Service Road Bridge over Cow Creek – Station 63km650

This bridge provides a new crossing for the existing Pacific Highway over Cow Creek. It is on a straight horizontal alignment and comprises a single span of 35.0m with five 1800mm deep Super-T girders. The width of the bridge deck is 11.4m from barrier to barrier. Spill through abutments are adopted with a slope of 1.5H:1V. The abutment structures comprise reinforced concrete beams with wing walls and are supported on piles.

The parapets are medium performance level barriers comprising a 650mm high precast concrete parapet with twin steel rails providing an overall height of 1300mm above road surface level. A single conduit is provided in each barrier. A longitudinal drainage pipe is located between the parapet skirt and outermost Super-T. The skirt extends downwards sufficiently to conceal the drainage pipe when the bridge is viewed in elevation.

The abutments are potentially subject to scour and are treated with stone boulders.

Changes since 15% DCD
- Span increased from 32.0m to 35.0m.
- Super-T girders depth increased from 1500mm to 1800mm.
- Width of deck increased from 11.0m to 11.4m.

Urban Design Comments on 85% PDD to be incorporated in 100% SDD
- None.

Figure D.4.2.1 Service Road Bridge over Cow Creek - Elevation
Drawings are for illustrative purposes only. For dimensions and extent of works refer to Engineers Drawings. For Landscape types and extents refer to Landscape Drawings.

Figure D.4.2.2  Service Road Bridge over Cow Creek: Cross Sectional Elevation
D.4.3 Service Road Bridge over Flow Balancing Water Course and Fauna Crossing – Station 82km420

This bridge provides a new crossing for the existing Pacific Highway over a water course and fauna crossing. It is on a straight horizontal alignment and comprises a single span of 18.37m with thirteen 700mm deep pre-stressed concrete planks. The width of the bridge deck is 11.0m from barrier to barrier. Spill through abutments are adopted with a slope of 1.5H:1V. The abutment structures comprise reinforced concrete beams with wing walls and are supported on piles.

The parapets are medium performance level barriers comprising a 650mm high precast concrete parapet with twin steel rails providing an overall height of 1300mm above road surface level. A single conduit is provided in each barrier. A longitudinal drainage pipe is located between the outermost and second planks, concealing the drainage pipe when the bridge is viewed in elevation. The abutment slopes are treated with stone boulders as they are potentially susceptible to scour.

Changes since 15% DCD
- Number of spans reduced from 2 to 1 (Central piers and headstock deleted).
- Length of span increased from 17.0m to 18.37m.

Urban Design Comments on 85% PDD to be incorporated in 100% SDD
- None.

Figure D.4.3.1 Service Road Bridge over Water Course and Fauna Crossing - Elevation

Drawings are for illustrative purposes only.
For dimensions and extent of works refer to Engineers Drawings.
For Landscape types and extents refer to Landscape Drawings.
Figure D.4.3.2  Service Road Bridge over Water Course and Fauna Crossing: Cross Sectional Elevation

Drawings are for illustrative purposes only. For dimensions and extent of works refer to Engineers Drawings. For Landscape types and extents refer to Landscape Drawings.
D.5 UNDERPASS BOX CULVERTS – TYPICAL ELEVATIONS AND CROSS SECTIONAL ELEVATIONS

The Upgrade includes box culverts at seventeen locations which serve as fauna underpasses, drainage underpasses or both:

Table E.5.1 Box Culvert Locations

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The box culvert structures comprise crown units ranging from 3.0m x 0.9m to 3.6m x 3.6m with fill heights ranging 1.3m to 12.8m. Crown units sit on cast in-situ base slabs. Wingwalls have heights ranging from a minimum of 1.6m to a maximum of 4.3 metres. Where required, light wells are provided to support fauna crossing.

The culverts are generally of low visibility and the wingwalls are cast in-situ concrete with an off form finish.

A typical culvert is illustrated in Figures D.5.1.1 and D.5.1.2.
Drawings are for illustrative purposes only.
For dimensions and extent of works refer to Engineers Drawings.
For Landscape types and extents refer to Landscape Drawings.

Figure D.5.1.2  Typical Culvert: Section