

A challenge for you

PERRAN WHARF BRIDGE

Perran Wharf Bridge



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With thanks to Cornwall Council and Cormac Solutions Ltd for permission to use this example.

Perran Wharf Bridge carries a minor road over the river Kennal, near the site of the Perran Foundry and Wharf.

Site information



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- Road runs on causeway across floodplain from A39 to bridge
- Then climbs sharply to south, and continues to climb round sharp left bend
- River flows to east
- River somewhat tidal; Perran Wharf for Perran Foundry was upriver of bridge
- Wadeable around low tide

Contains OS data © Ordnance Survey (2020)

Grade II listed



Road bridge over river Kennal. Circa early-mid C19. Shale rubble with dressed granite plinth, quoins, arch stones and parapet copings. Single span with unequal segmental arch springing from vertical abutments over tall plinth. Rockfaced parapet, possibly later replacement.





Basic dimensions



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Distance between springings 6000mm	Rise ~3000mm	Width 5630mm
Expressed ring	Cover over crown	Abutment height
350mm	~300mm	just under 3m

Borehole data



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Uphill abutment:

- 4.8m various *fill*
- 0.7m transition to weathered metamorphic bedrock
- End: 5.5m

All depths from **road surface**

Downhill abutment:

- 3.7m various fill
- 5m alluvium
- 1m extremely weak *metamudstone*
- Medium strong *metasiltstone*
- End: 13.7m

3D Model



- Clear from issues identified at past inspections that a detailed photogrammetric model was more than justified
- Built from 2900 photographs
 - Hand held and with cameras on poles
 - From ~2-3m range with wide angle lens
 - >2/3 overlap in each direction
- Control survey using targets and total station
 - High quality scale and vertical
 - Don't get this from photos alone

Orthophotos



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- We get the model itself, which is invaluable, but also:
 - Synthetic orthophotos
 - Unrolled views
- All images in this section are to same scale
- Zoom PDF to see image detail
- Elevations are accurately levelled
 - Check relative levels using a horizontal line on the screen – like a window border or screen edge













Plan

Upriver at bottom, uphill/southeast to right





Downhill abutment

Upriver to right





Uphill abutment

Upriver to left





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Upward view of soffit

Upriver at top, uphill/southeast to right

