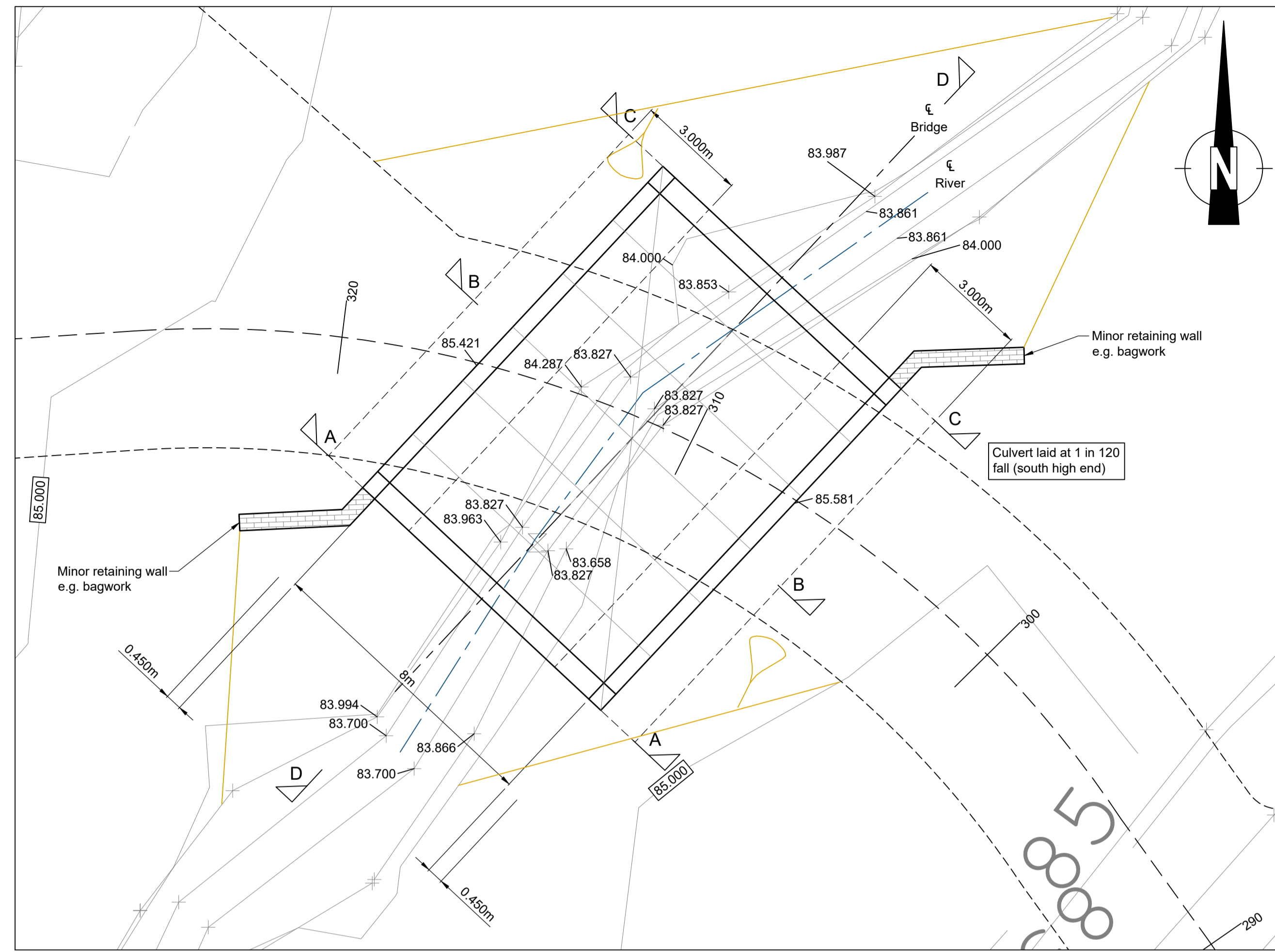
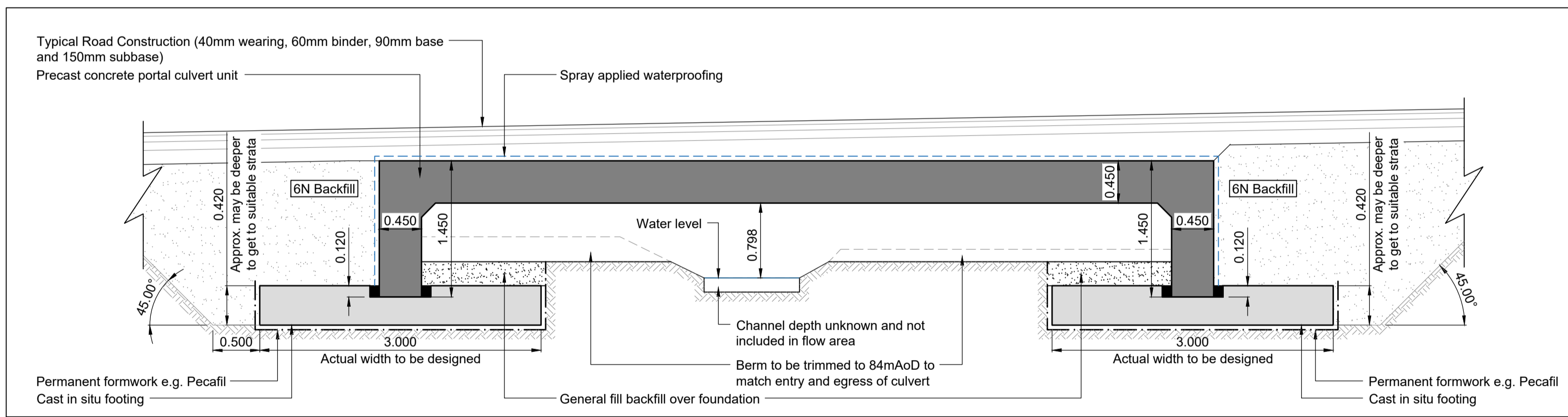


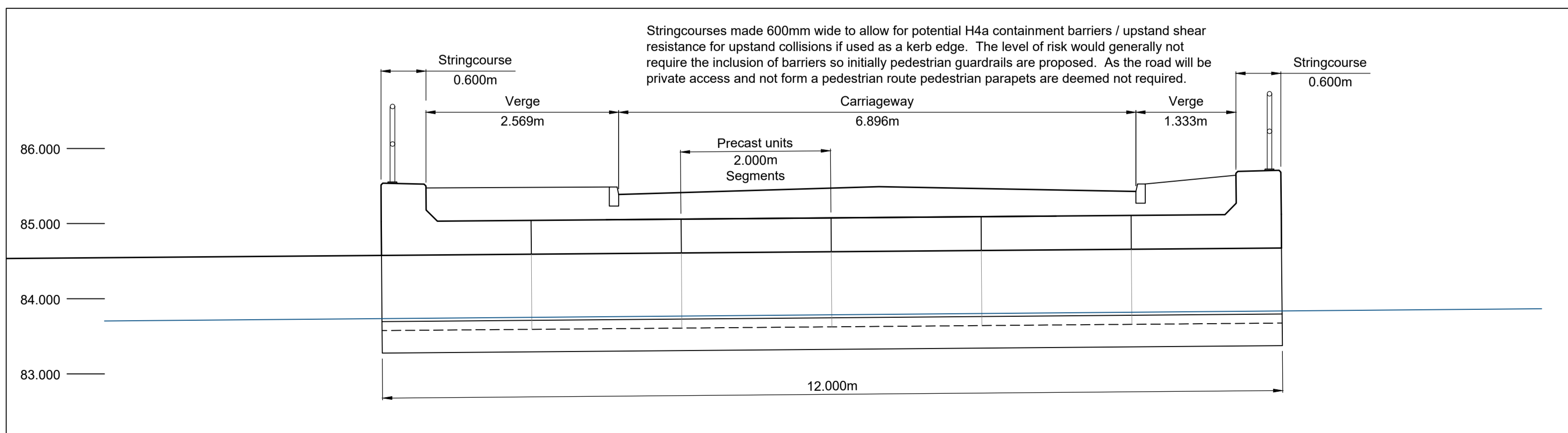
Location Plan
Scale 1:500



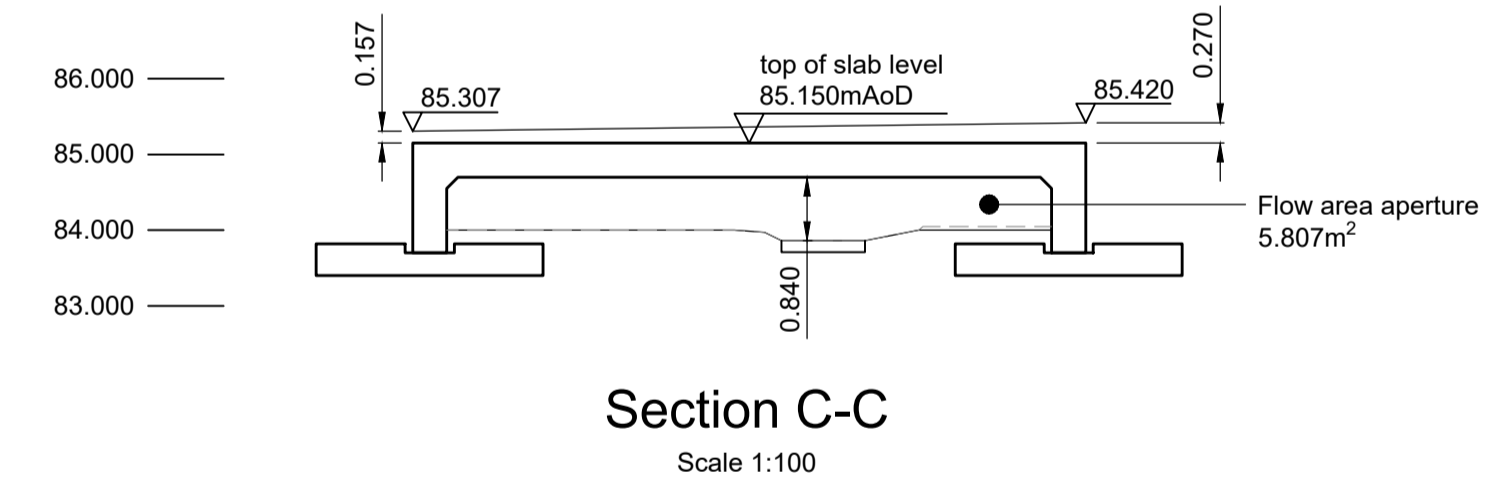
Proposed Structure Plan
Scale 1:100



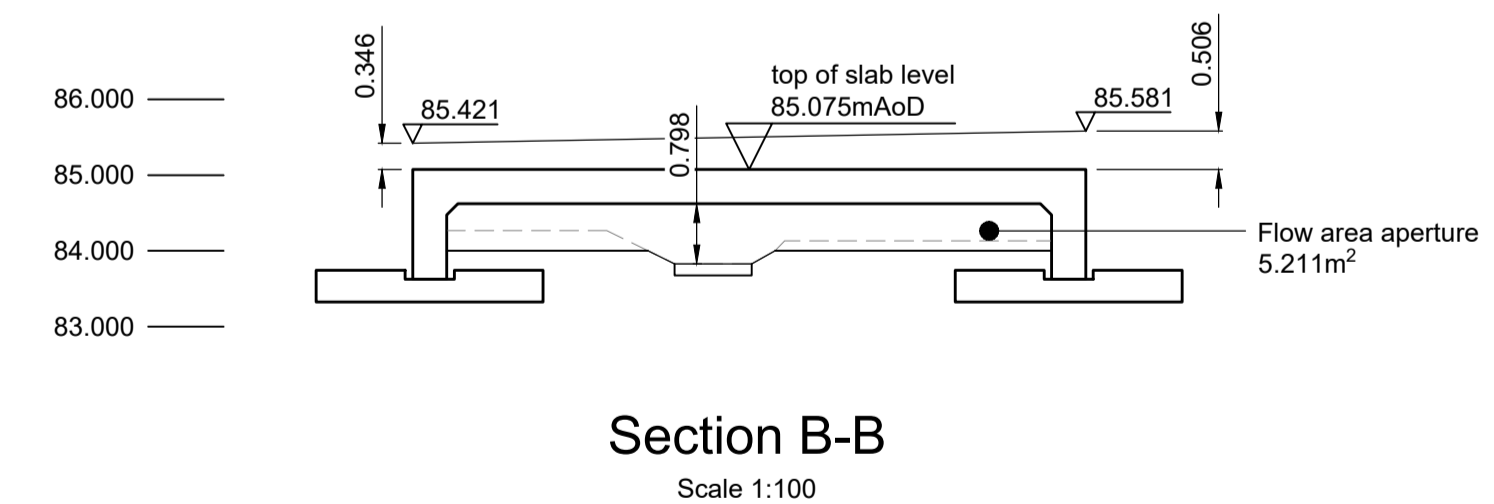
Typical Cross Section
Scale 1:40



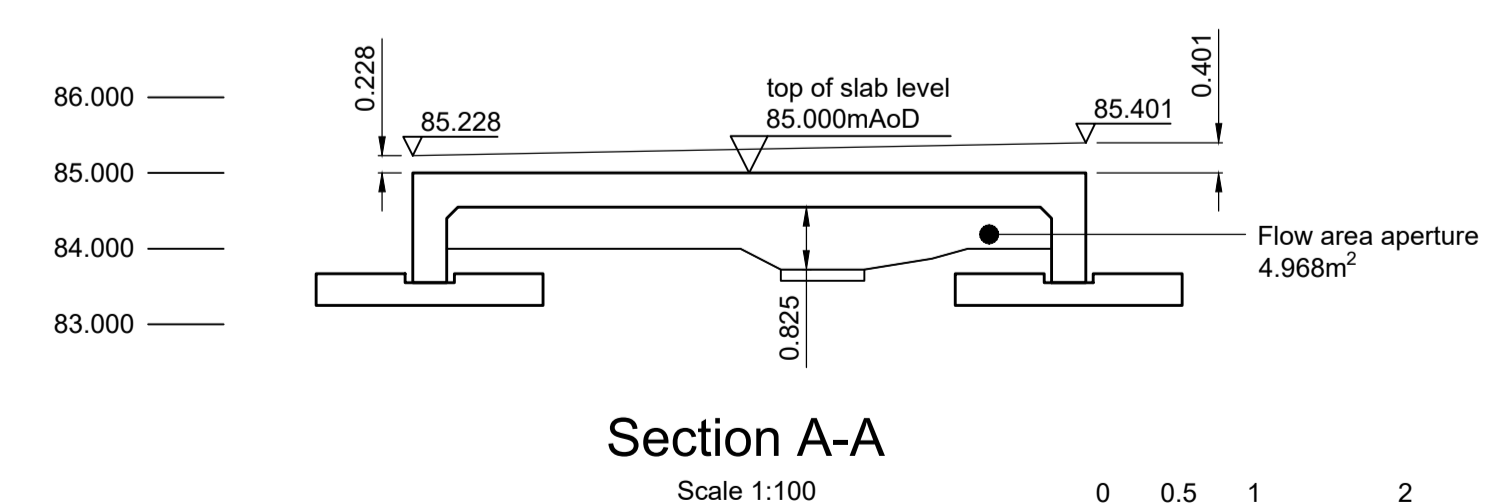
Section D-D
Scale 1:50



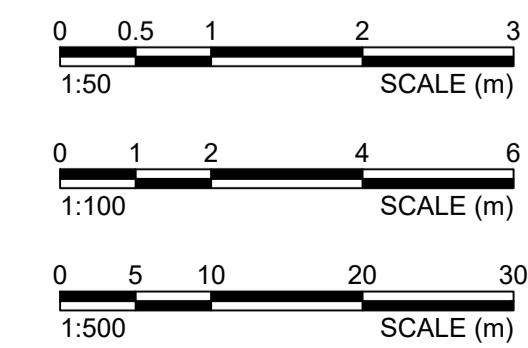
Section C-C
Scale 1:100



Section B-B
Scale 1:100



Section A-A
Scale 1:100



Notes:

- All dimensions and levels are in metres unless otherwise stated.
- Non structural departures:
- The structure's headroom is less than the CD 529 required 1.2m for a greater than 12m wide structure.
Mitigation
- The structure is a temporary with an anticipated design life of 15 years, as such long term maintenance is not required.
- The interior of the box can still be inspected via a confined space diving inspection
- Reinforced concrete does not require long term durability treatment regimes (e.g. painting)
- The walls and soffit can be videoed via remote operated vehicle (ROV) using the wide dry banks around the channel.

The culvert may be made compliant by raising the road by approximately 400mm over the river or locally dredging the watercourse to deepen the water channel under the structure.

Structural departures

None

Assumed construction sequence

- Excavate ground in plan area of structure to 84m AoD.
- Excavate trenches for the culvert footings
- Test founding material to ensure it meets the required California Bearing Ratio CBR values.
- Remove any soft spots and replace with 6N fill / mass concrete
- Line excavations with Permanent formwork or lay 50mm of ST2 concrete blinding
- Lay reinforcement for footings and box outs for footing recesses.
- Pour footing concrete.
- Deliver precast portal culvert units.
- Lay first portal unit (2m wide), pack recess with high strength cementitious grout in line with culvert suppliers installation guide and lay general fill over footing under the culvert.
- Prepare the joint for second portal unit.
- Lay second unit and repeat steps 9-10. Continue until all units are laid
- Construct cast in situ headwall if not already cast with the portal units.
- Lay spray applied waterproofing.
- Backfill structure with 6N fill and lay surfacing.
- Prepare ground at the entry and egress to ensure it is compatible with flood modeling.
- Any minor retaining walls required will be either concrete bagwork or modular blocks.

Assumed demolition

- As the structure is considered temporary (approx 15 years) the structure is proposed to be readily removable
- Remove wing walls. Crush the concrete for use in recycled aggregate.
 - Remove surfacing and backfill. Any excavated fill to be reused where possible.
 - Remove general fill over footing under first 2m wide portal unit.
 - Saw cut high strength cementitious grout at first 2m wide unit to dislodge the unit.
 - Remove first unit and take away for reuse / recycling.
 - Repeat steps 19-21 for all other units as required.
 - Bury foundation footings leaving them in situ.
 - Re-landscape as required.

APPENDIX 5A

3	Bridge length reduced to suit narrower road	AC	CE	AC	01/23
2	Anticipated design life updated	AC	PFM	PFM	09/21
1	For comment and flood risk review	AC	PFM	PFM	08/21

Rev	Details	Drawn	Checked	Auth	Date
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Client: **M7 PLANNING**

Project Title: **Chipping Sodbury Culvert Concept Design**

Drawing Title: **CONCEPT CULVERT ADJACENT BRINSHAM LANE PRECAST REINFORCED CONCRETE PORTAL**

Scale: **As Shown** | Designed: **AC** | Drawn: **AC** | Checked: **PFM** | Authorised: **PFM**

Original Size: **A1** | Date: **25/08/21** | Date: **25/08/21** | Date: **27/08/21** | Date: **27/08/21**

Drawing Number: **VD21534-VEC-00-XX-SK-S-0001** | Project Ref. No: **VD21534** | Revision: **3.0**