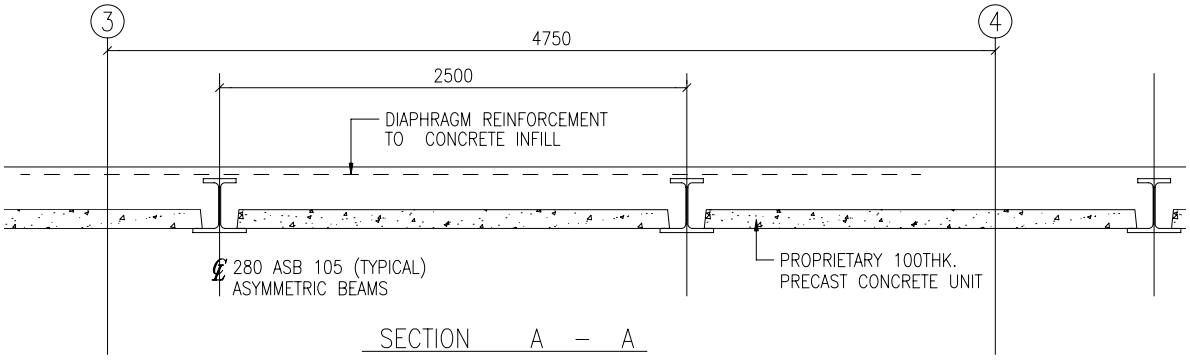
Steel Beam & Precast Units
Permanent Formwork

The roof slab of a concrete box cell structure had to be constructed once the plant and equipment had been lifted into place. No propping or formwork could be constructed within the cell beneath, due to the confined spaces and difficult working conditions. The concrete cell structure houses storage tanks containing potentially radioactive sludge. To provide the necessary shielding against radiation a certain thickness of concrete (or steel) is required.



This detail eliminated the need for propping by using precast concrete (PC) units spanning between asymmetric beams, to support *in situ* concrete.

Metal decking would have required propping and the uneven soffit reduces the shielding provided long spans (6m) and heavy loading prevented use of a beam and block system.

The Steel/ precast deck junction is sealed to contain any spillage during the pouring of the concrete,

Benefits: -

- Asymmetric beams provide suitable bearing for the PC units with little additional fabrication required.
- Savings in time and so cost when working to a tight programme.
- The flush surface of the PC units provided better shielding than the equivalent metal decking would have.
- The PC units were able to span between the beams without propping eliminating work in the confined space of the cell.
- Outstand of bottom flange of beams is sufficient to allow PC units to be lifted in to place and provide the minimum bearing of 75mm required.

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