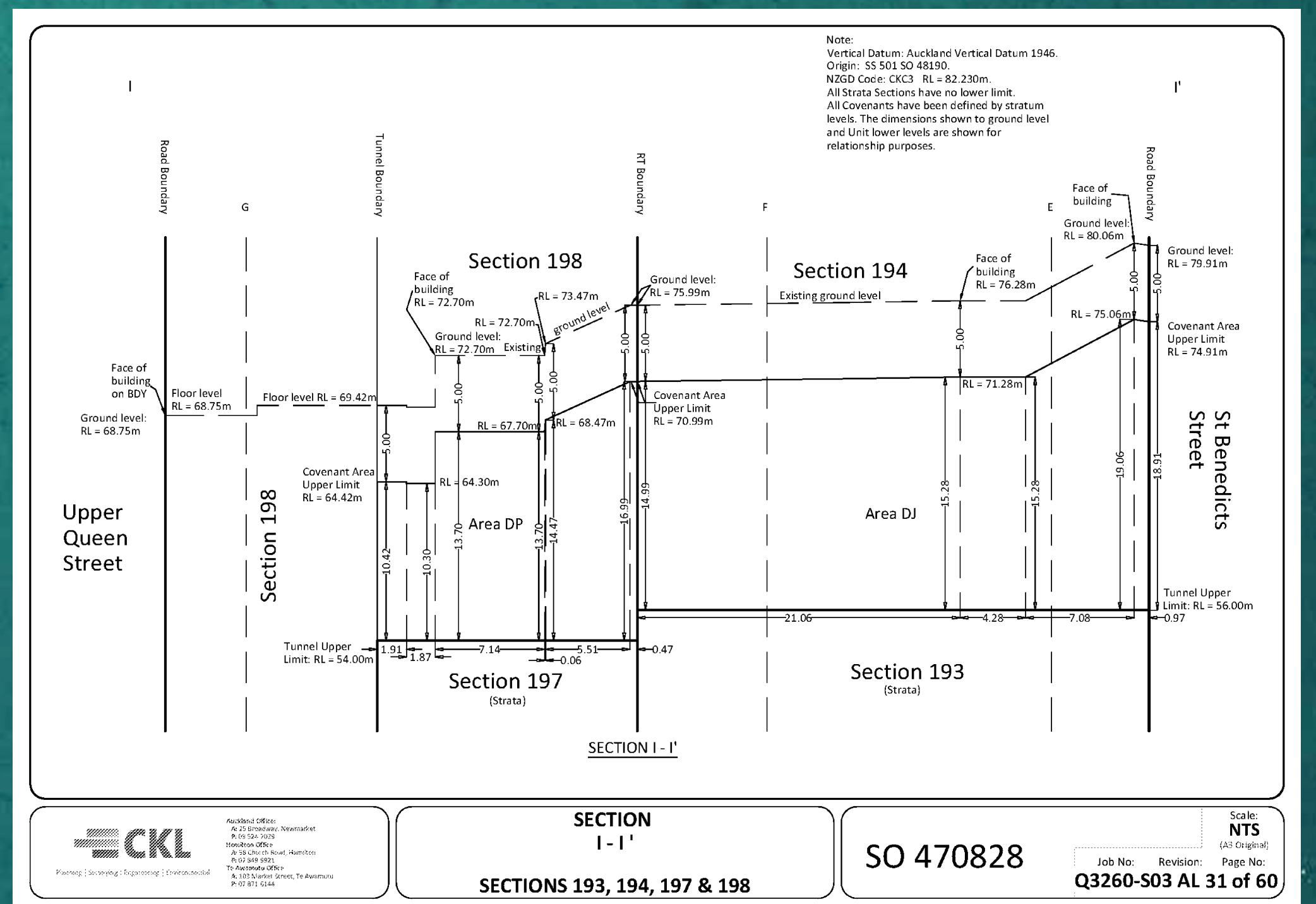
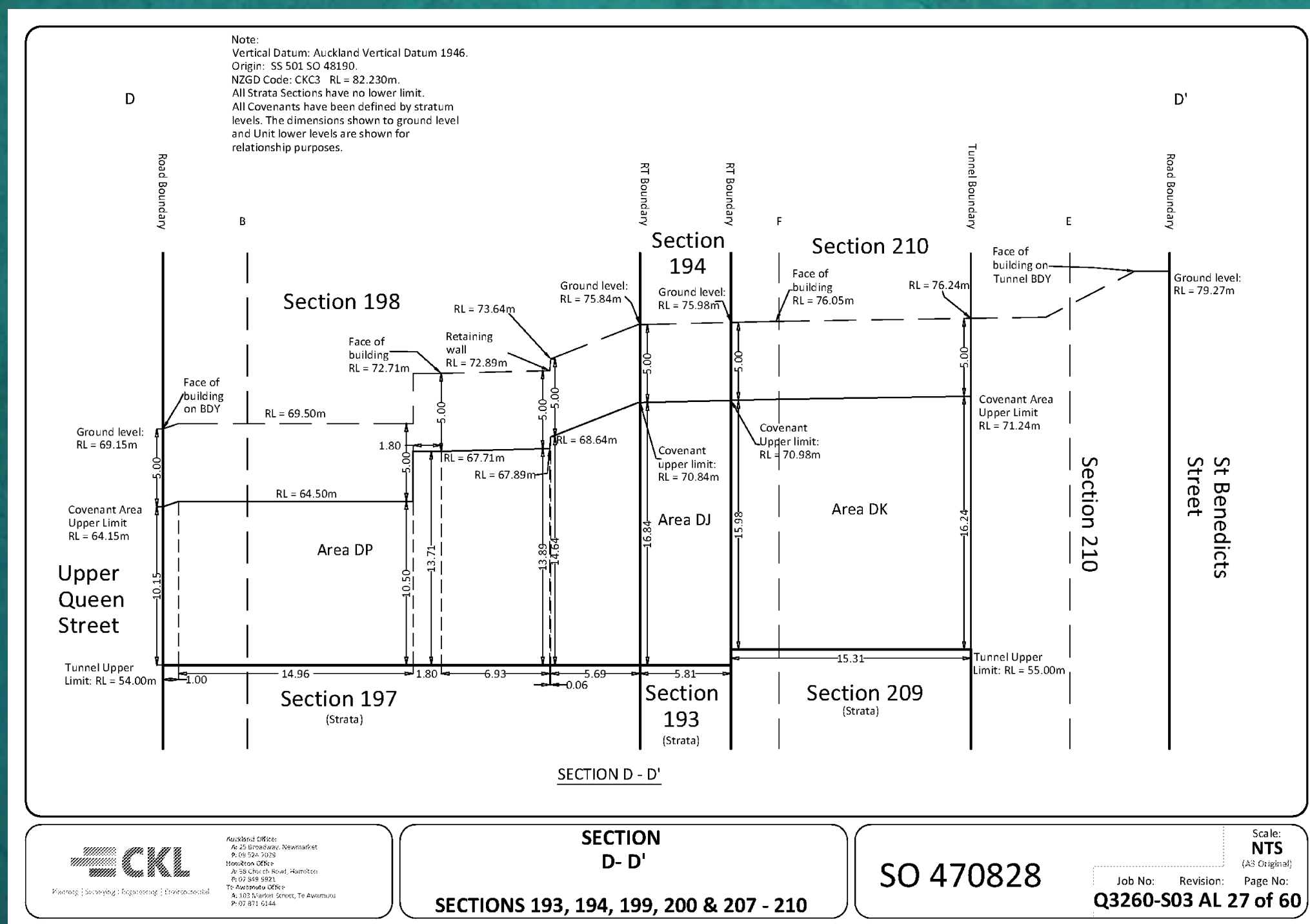
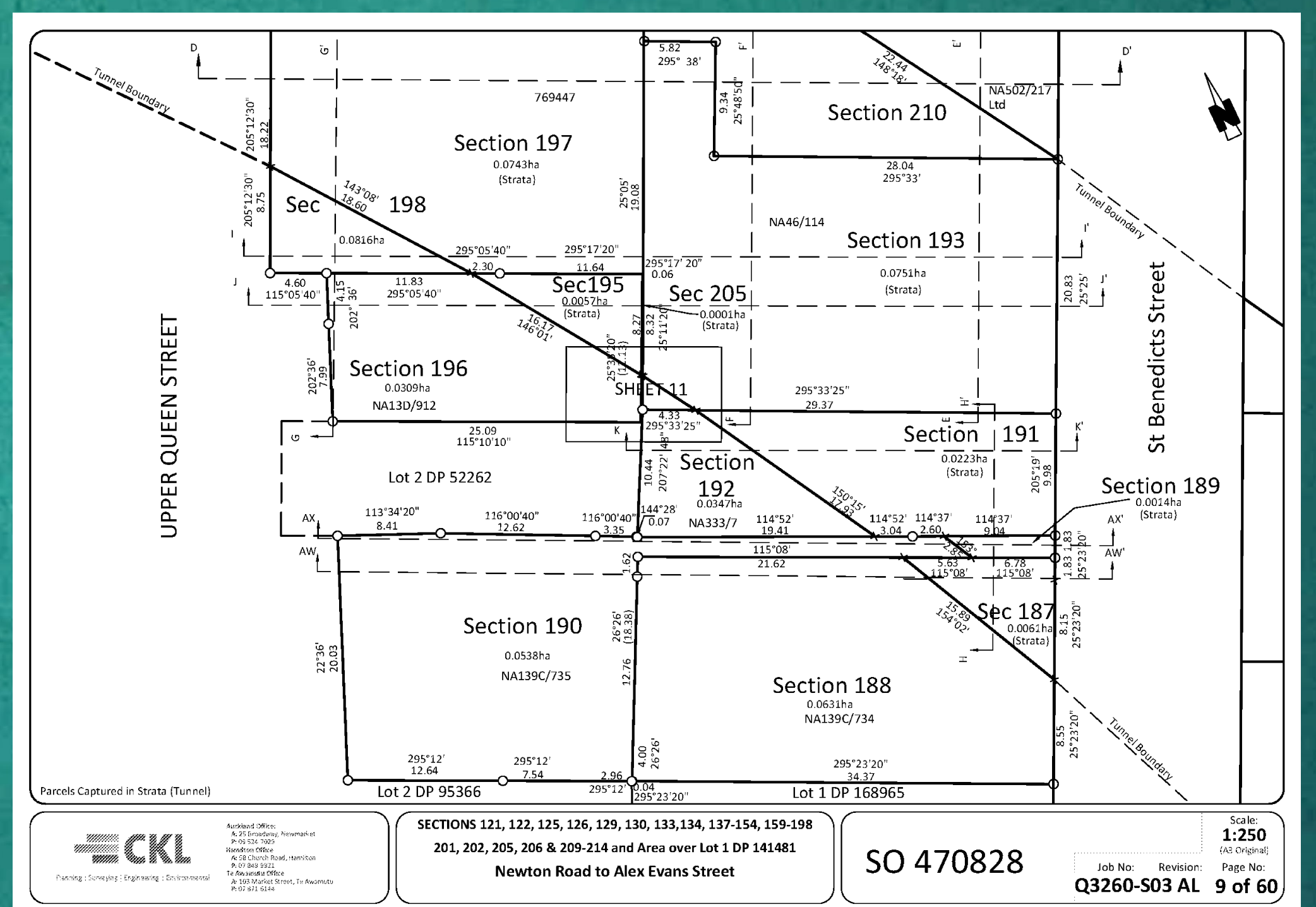
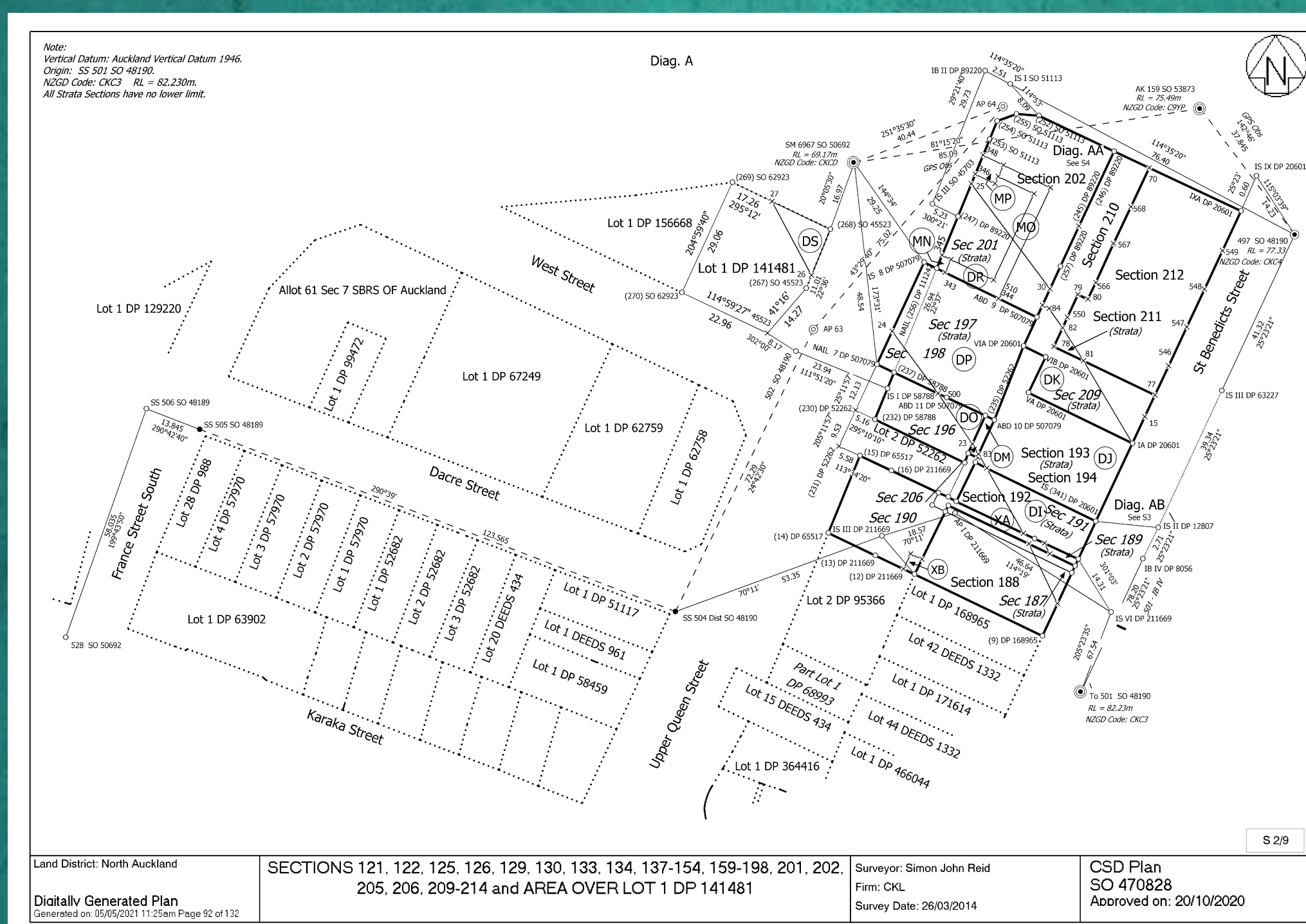


FINALIST : SIMON REID – CITY RAIL LINK TUNNEL SURVEYS Defining horizontal and vertical boundaries of strata boundaries for tunnels

We have been working on the Land Take/Land to be Acquired plans for the Central Rail Link since 2012, when the first Land Requirement Plans were drawn up, and this looks like it will be ongoing until at least the likely opening of the Rail Tunnel in 2024. The bulk of the work has been centered around the main alignment of the tunnel starting at Britomart Station through to Mt Eden Station. The main purpose of our surveys is to define the horizontal and vertical extents of the land to either be acquired or taken for the purposes of Railway. With the Railway being subterranean most of the upper and lower limits for individual parcels have been determined by the Link Alliance designers. Whilst the horizontal locations were determined by the Designation for Railway.



Generally, the horizontal parcel definition was relatively simple, however there were several Limited Titles that the tunnel ran under that needed to be dealt with, thus adding to the complexity of parcel definition. In particular; Sections 209, 210, 211 and 212 on SO 470828 was a large block of limited titles (being owned by the Catholic Church) that added to the complexity of the survey.

The tunnel upper limit has been determined by design levels supplied to us. This level was not plane across the length of the tunnel and at various positions either stepped up or down at certain chainages along the length. The change in level did not always coincide with the existing parcel boundaries. This upper limit of the tunnel parcels was also the lower limit of the covenants on each parcel.

These surveys were complex in terms of capturing data in terms of strata, limited titles and existing easements. As well as not being a common form of survey. It was a continual learning process from the Waterview Tunnel to creating these plans and continuing now with the change in the survey rules and adaptive thinking.