Our Ref NA49913151-020

Contact Andrew Reid

13 April 2015

Bunnings Group Limited
Locked Bag 30
GRANVILLE NSW 2142

Attention Philip Drew

Via email – pdrew@bunnings.com.au

Cardno (NSW/ACT) Pty Ltd
ABN 95 001 145 035

Level 9, The Forum
203 Pacific Highway
St Leonards New South Wales 2065
PO Box 19
St Leonards New South Wales 1590
Australia

Telephone: 02 9496 7700
Facsimile: 02 9439 5170
International: +61 2 9496 7700

Web: www.cardno.com.au

Dear Phil,

FLOOD IMPACT ASSESSMENT FOR PROPOSED EXTENSION TO BUNNINGS WAREHOUSE, PENRITH

Bunnings Group Limited is proposing to extend the existing warehouse at Penrith located at 301-355 Mulgoa Road, Jamisontown. Proposed works on the site include facilities on both the eastern and western sides of the existing building:

- East – outdoor nursery, bagged goods canopy, and garden centre entry; and
- West – timber trade sales, building materials and landscape yard, and revised roadway.

A proposed site plan by Michael Carr Architect showing the general layout is attached as Figure 1. This letter is an assessment of the potential flood inundation and flood impact for the proposed development.

Penrith City Council Pre-Lodgement Advice

Council in its letter of 14 January 2015 provided information for the future development application following a pre-lodgement meeting. Matters related to this flood impact assessment included:

- Site is identified as being affected by mainstream flooding from Peachtree Creek;
- Council records indicate that the 1% AEP flood level for the site is 27.3m AHD;
- The application shall be accompanied by a flood report;
- All floor levels shall be a minimum of RL 27.8m AHD (1% AEP flood level plus 0.5m freeboard);
- No retaining walls or filling is permitted for this development which will impede, divert or concentrate stormwater run-off passing through the site.

Previous Flood Studies

The Peach Tree Creek Flood Study was completed in 1994 by NSW Public Works for the watercourse which is located to the west of the site. A peak 1% AEP flood level of 27.3m AHD is listed in the report, as noted in Council's pre-lodgement advice.

The Penrith Overland Flow Flood "Overview Study" was prepared by Cardno Lawson Treloar in 2006 for Penrith City Council. It is a preliminary assessment of the flood behaviour in the LGA based on broadscale flood modelling as a precursor to more detailed overland flood studies. An extract of the report (attached as Figure 2) shows the site is estimated within the extent of the probable maximum flood (PMF) event.

Council Conditions

Clause 6.3 of Penrith Local Environmental Plan 2010 relates to flood planning. The site is not identified as within the Flood Planning Area on the LEP map (attached as Figure 3), however it does includes land below the Flood Planning Level (1% AEP + 0.5m freeboard) at the north-western corner.

The Penrith Development Control Plan 2010 states requirements for similar developments in Section C3 Water Management - 3.5. Flood Liable Lands. Relevant clauses include:

- 7. Industrial/Commercial - Extensions and Infill Development;
- 14. Overland Flow Flooding; and
- 15. Filling of Land Below the Flood Planning Level.

Development conditions are reviewed as follows:

Floor Level

The floor level of the existing warehouse is 30.02m AHD and the proposed floor level of the building extension is also at 30.02m AHD. Thus all floor levels are above the required minimum of RL 27.8m AHD (1% AEP flood level plus 0.5m freeboard).

Overland Flow Flooding

The proposed works are not located within the 1% AEP overland flood extent estimated in the 2006 Study (refer to Figure 2).

Filling of Land Below the FPL

Figure 4 shows the extent of the 1% AEP flood (27.3m AHD, blue line) at the existing site. Figure 5 shows the extent of the proposed road and associated filling (orange line) which is not within the 1% AEP flood extent (blue line). Figure 6 is an extract of the proposed works drawing showing the 1% AEP flood level (red line) and the FPL (1% AEP + 0.5m, magenta line).

The extent of fill is shown on Figure 6 as the retaining wall (yellow line) is located outside the 1% AEP flood extent. A relatively minor extent of fill within the FPL extent is noted.

The proposed development is therefore expected to have negligible impact on the 1% AEP flood behaviour in the vicinity of the site.

Evacuation

The site is shown within the PMF extent in the 2006 Overland Flow Study and is also within the extent of a PMF flood event from the Nepean River. Carspaces on the site will be revised, for example removing carspaces on the western side of the site, but it is noted that all carspaces are located at an elevation above 29m AHD. Proposed development results in a net reduction of total carspaces provided on the site, thus existing flood emergency evacuation procedures would be applicable. The primary evacuation route from the site which heads eastwards is unaffected by the proposed development works.

Please contact me if you would like to clarify details of this letter.

Yours faithfully

Andrew Reid
Senior Engineer
for **Cardno (NSW/ACT) Pty Ltd**

Attachments - Figures (6 pages).

Figure 1 - Proposed Site Plan by Michael Carr Architect

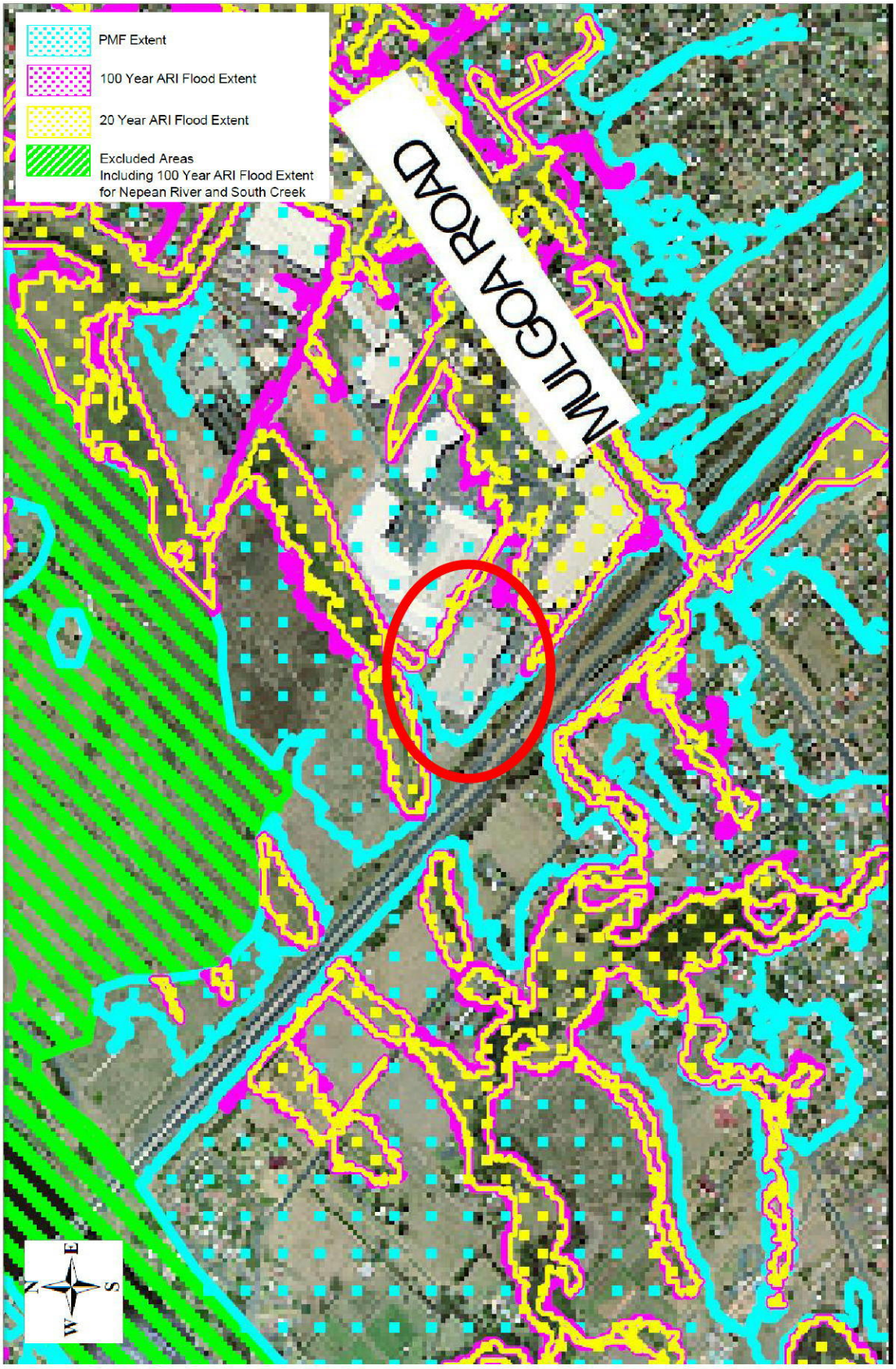

Figure 2 - Extract of Penrith Overland Flow Flood "Overview Study" (2006)

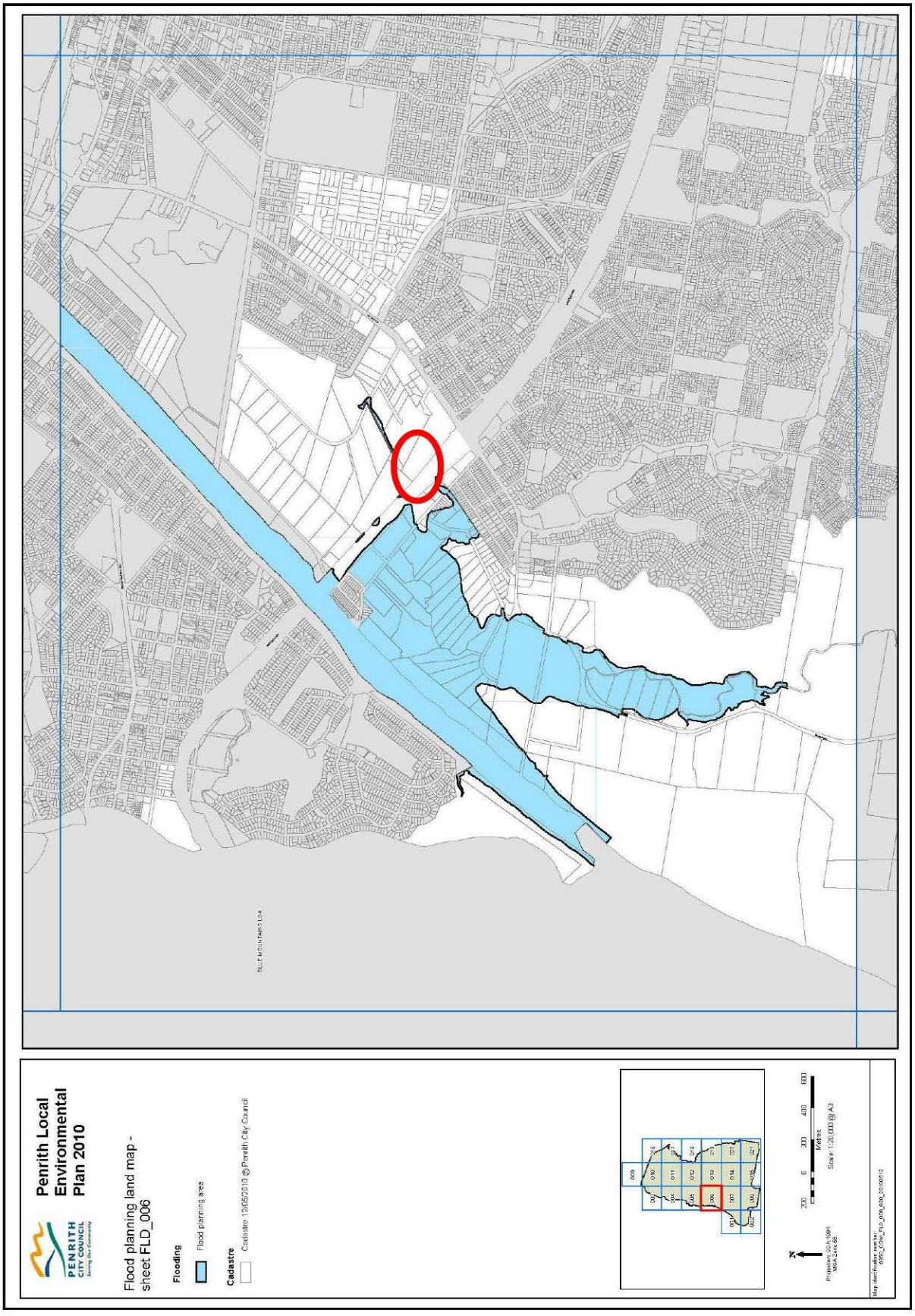

Figure 3 - Extract of Penrith Local Environmental Plan 2010 – Flood Planning Land Map

Figure 4 – Detailed Site Survey and 1% AEP Flood Level (Base drawing by Landpartners)

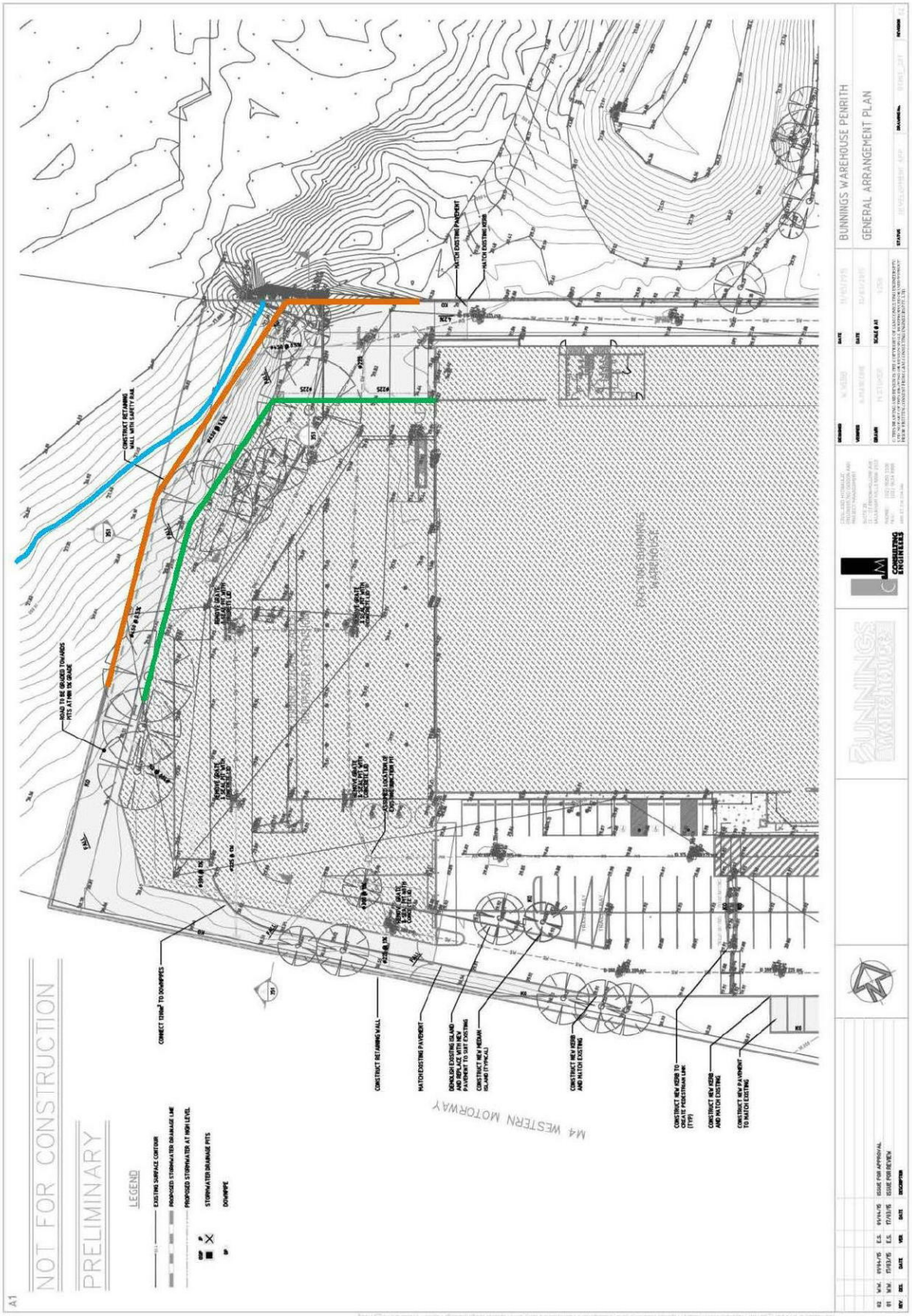

Figure 5 – Proposed Site Development and 1% AEP Flood Level (Base drawing by C&M Consulting Engineers)

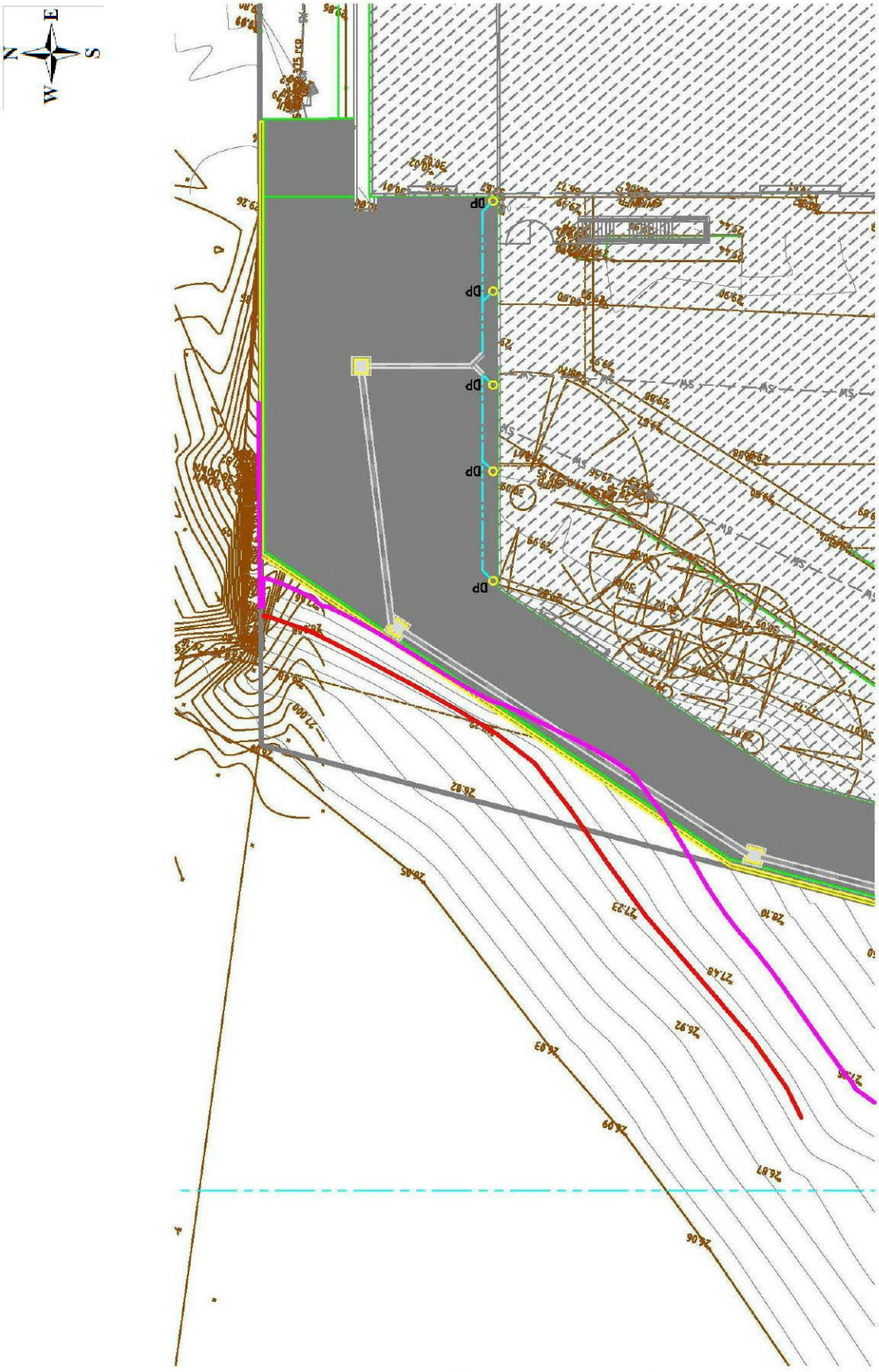

Figure 6 – Extract Proposed Site Development and 1% AEP Flood Level (Base drawing by C&M Consulting Engineers)