LAMBCON ASSOCIATES

ENVIRONMENTAL CONSULTANTS
LANDSCAPE ASSESSMENT
VISUAL IMPACT
VISUAL RESOURCES
LANDSCAPE HERITAGE

Director: Dr Richard Lamb BSc, PhD, CBiol, MIBiol

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Alan Stasiukynas,
Planning Resources Manager
Shoahaven City Council
PO Box 42
Nowra NSW 2541

DRAFT

Dear Alan,

ASSESSMENT OF POTENTIAL VISUAL IMPACTS ARISING FROM REZONING OF LAND OFF SEASPRAY STREET, NARRAWALLEE

PRELIMINARY REPORT

This is a preliminary report to our first draft concerning the assessment of the visual impacts which could arise from the above proposal. We wish to report progress on the work and to highlight certain deficiencies in the background information which we need to complete our assessment.

We intended, as indicated in our proposal to undertake the study, to proceed from direct observation of the site to the production of photomontages which would show any likely impacts, in particular those which could be caused by site clearance. However, we consider at this stage that this course would not produce a result of sufficient accuracy to be of value in decisions about the merits of the proposal.

The reason that proceeding to photomontages has not been undertaken is because of uncertainties which arise as to the precise height and location of trees on the margins and also in the interior of the western part of the site, which could have the effect either of screening the site from view or alternatively exposing it, following clearing.

An assessment of tree height in critical view lines is necessary before any accurate representation of the visual impacts of development can be made. We note that the Applicant, in making an assessment of the visual impact of various scenarios of clearing on the site, did not undertake such a tree survey. That assessment made assumptions about the canopy height both within and outside the site, in effect that a height of 30m or more could be assumed for the entire site.

While we have not made any accurate assessments of our own, this being outside our brief and expertise, based on experience we consider that the canopy surface height of the west facing slope of the site in particular, and part of the western margin, is likely to be 20m or less. Many trees there appear to be in the range of 12-18m, although there are some individuals above this height. Tree height is generally greater along the creek line where there are some trees which may be 25-30m in height.

The question of tree height in view lines which could be affected is critical, because the view angles to the site from these places are quite low and 10m difference in tree height estimated could make the difference between exposure of some of the cleared land and buildings there to view, and complete, or near-complete, screening.

It also needs to be pointed out that the important tree height value is the height of the top of the general canopy, ignoring isolated taller trees which may exceed this value. The average tree height is not a relevant, because trees below the average have no screening effect and those above it may provide only partial screening.

In considering the need for more accurate base information we should also point out that we do not have an accurate map of the location of the eastern boundary of the site, nor accurate topography for that area. At this stage we have re-scaled from various other maps to get a reasonable representation.

We consider that the provision of this information is the responsibility of the Applicant and is beyond our expertise and resources. A full tree survey of the site is not necessary, but sufficient accurate information regarding tree heights on some view lines likely to be affected is required. The location of these is indicated later in this preliminary report. It is also necessary to have better information as to the location and topography of the eastern boundary of the site.

Notwithstanding this problem, we have made a direct empirical assessment of the visibility of the site, examined the visual constraints on development, and assessed the sketch proposals and visual assessment carried out for the Applicant, including the three land clearing scenarios which the latter contains. We consider that, irrespective of the findings which relate to tree height, there are constraints to development which need to be better acknowledged than is indicated by the visual analysis and the sketch subdivision layout done for the Applicant.

A brief statement of findings and some of the critical evidence on which it is based follows.

1.0 FINDINGS

1.1 Direct observation and interpretation.

- We took both a direct observation assessment of the site and an assessment of view lines, rather than carry out a theoretical assessment only, like the one that was carried out for the Applicant.

- We marked out the main corners of the site with the assistance of helium filled balloons and located the others by reference to landmark objects, in this case prominent trees.

- We observed, photographed and sketched views to the site from a variety of locations. These were chosen on the basis of topography and having clear view lines to the site. They included views on the highway, the village and rural areas.

- The main view points are indicated on draft Figure 1a, by numbers within circles. Numbers within triangles indicate approximate viewing places used in a visual assessment for the Applicant.

- The photographs we took at each viewing place were enlarged and overdrawn by hand with the observed locations of the boundary markers. Other observed information was also added to the photographs as explanatory material.

- The views represented were then examined to establish to what degree elements on the site were visible.

- Three examples of this material are enclosed with the hard copy of this preliminary report, (Figures 4a, b and c) showing the view available from V3 (near "Englemere"), V8 (point where the Princes Highway intersects with the unformed extension of Garrads Lane) and V9 (retirement village on the eastern fringe of Milton) respectively.

- The tree canopy on the western slope of the site, on the western boundary and the ridge line at the eastern margin of the land is prominent in some views.

- The middle distance part of the views are dominated by vegetation to the west of the site and by an indistinct low ridge close to and to the west of the site boundary.

- The horizon of views is frequently formed by vegetation on the site. In most views this is the ridge crest vegetation. Higher viewing places have views over the ridge to high parts of Narrawallee, where the crowns of trees are most obvious elements. This is evident in views from V3 and V9 and from others further to the west in Milton.

- We consider that the maintenance of the natural appearance of the slope and ridge is a top priority in scenic conservation for the Milton landscape. Despite its proximity, at present there is no visual evidence Narrawallee residential development.

- No evidence of development should impinge on this view, including views of clearing or the effects of it, buildings, night lighting, infrastructure, hard clearing edges, texture contrasts etc.

- The accurate observations we made showed that the main areas which are likely to be affected by visual impacts are on the eastern side of the village of Milton and from nearby rural land.

- View points on the Princes Highway would generally not be so significantly affected. This can be seen in the photograph from V8, where the site is effectively over the visual horizon.

- We established that viewing places closest to the site and to the east of Milton would be most affected. This is because they have higher viewing angles to the site.

- Locations which may be higher in relative elevation, but are further away, for example on the western fringe of Milton on the Highway, are less, or not, affected.

1.2 View line sections.

- We then examined the likely effect of clearing the site, by drawing sections of the view lines from the locations we had identified as potentially affected. We adopted two assumptions concerning canopy height (see above), viz. 30m (the same height assumed by the

Applicant's consultants) and 20m, which we estimated to be closer to the height of the majority of trees.

- Our sections were drawn without any vertical exaggeration.
- We used a considerably more accurate topography (derived from the 1:4000 orthophoto) and site boundary than used by the Applicant's consultant in their assessment.
- We drew and assessed a great number of sections, however we have presented here a sample only, including views from two kinds of locations which could be affected.
- These sections indicate that views from the eastern fringe of Milton and the rural landscape at similar elevations in the vicinity would experience some visual impacts of the clearing of the site (ie. from viewing places V9 and V3 shown on Figure 1b).
- The sections relevant to these view lines are shown on Figure 2a. The lines were drawn to the same terminus points used in the assessment carried out for the applicant previously.
- Briefly, it can be seen in Section V3-L and V3-I that an 8m high structure would be either visible or very near visible assuming 20m canopy height. Structures above that height would be visible on both view lines.
- Section V9-H again indicates that an 8m high structure would be barely out of view, whereas V9-L indicates that such a structure would be visible.
- Each of the sections also indicates that, even if structures were not visible, the view line intersects the canopy of trees below their mid-level, or lower. In this case, a hard edge would be produced by clearing, which would be highly visible because of the shadow line caused, by colour and texture contrasts and by the exposure of branches and trunks to view, particularly in afternoon light.
- Some of the latter effects would exist for the clearing scenarios suggested, even if the tree canopy is generally of 30m in height.
- In the event that the canopy height is less than 30m, the effect would be greater. In the case of V9-L it can be seen that the view line would intersect either the bare ground, understorey, or the lower canopy, depending on where the canopy height fell in the range of 20-30m.
- Sections relating to Viewing Point 8 (V8-K and V8-L) indicate that the clearing of the site would not be visible. This principle applies to several of the view points used by us and the Applicant's consultant.
- The area over which there would be any visual effect would be small in comparison to the overall view field. However, the effect would be out of proportion to the extent of the effect in the sense that the effect would change the visual character of an essentially natural horizon and could expose existing development in Narrawallee to view.
- We have drawn a plan of the site, which shows the visual constraints to clearing and general principles which should apply to development, which we identified using the sections and

direct observation. A draft indicating these principles of accompanies this brief report (Figure 6).

- We consider that any buffer zone which is retained with natural vegetation would have to be located so as to retain the vegetation of the entire visual horizon, which is in effect the ridge and upper slope of the site.
- The southern boundary should also have a buffer zone to prevent views in from location to the south west and from the cleared land immediately south of the site.
- The applicant suggested a buffer on the western boundary in one possible scenario and this may be sufficient to achieve this last effect.

1.3 Comparison of our findings with the assessment carried out for the Applicant.

- We are in agreement with the principle that has been adopted in that report. ie. that there is the potential for screening of development by topography and vegetation from many viewing places to the north west, west and south west of the site.
- We also agree as to the potential for the approach taken to be relatively objective. However, we point out that for the assessment to have this kind of objectivity, it needs to be based on accurate assessment of vegetation height and the RLs of the locations where trees have been measured. We do not consider that this has been achieved.
- We did not replicate the viewing places nominated in the report because our empirical observations indicated that most of them would not be significantly affected, as the report shows.
- However, we did identify some viewing locations which would be more affected than those in the report.
- We note that the report does not accurately represent either the topography or the location of the site and there is doubt as to the accuracy of the findings as a result.
- We do not however claim to have definitive proof as to the exact level of increase in the visual impacts predicted by us, compared to the report's findings, because this depends on more accurate tree height information.
- We compared our observations and the conclusions which arise from these, and also our view line sections, with those of the Applicant's consultants.
- We more accurately re-drew some of the sections from the report, where we considered that the view shown may in fact experience greater impacts than were indicated.
- We also re-drew these sections, including estimation of a lesser average tree height, ie. 20m rather than the 30m adopted in the report. Some of the sections from that report are re-drawn as Figure 3.

- It can be seen by inspection of Sections A-I, B-H and B-I, which include the location of the site more accurately represented than in the original report, that if the canopy is less than the 30m estimated, there are site lines which would experience impacts. For example, section B-H would exhibit the hard canopy edge and clearing effect discussed above, even if the canopy was a minimum 30m in height. If the canopy were nearer 20m, the sight line would intersect with the ground and structures and clearing would be evident. This is confirmed in our sections from the nearby view point at a similar elevation, View Point 9.

- We also assessed the likely visual effects of the three clearing scenarios which were suggested in the report, in the light of our findings. This analysis is shown in draft plan form in Figures 5a and 5b.

- Our evidence is that there would be visual impact effects, contrary to the report's findings of there being none.

- In assessing the scenarios of clearing in the report we became aware that Scenario 3, which would involve clearing to the 43m contour, would have the effect of clearing right to the ridge crest in the north eastern part of the site. It cannot be stated categorically in the absence of data on tree height on the view line as to whether this would expose development to view.

- The down slope extent of the effect of Scenario 2 is less clear and would depend on more accurate data on tree heights. Some of the site and buildings on it are likely to be visible, in the north east and east centre of the site.

- We also examined the proposed subdivision plan for the land. We propose to supply detailed comments on this with our final draft of the report. Briefly however, we consider clearing of the north eastern corner of the site may be visible and buildings on the land could also be visible.

- Clearing up to the 42m contour could expose existing development in Narrawallee to view, as well as some buildings on the proposed subdivision.

- If clearing scenario 3 was literally applied to the land, there would be many lots in the eastern part of the site which would be unable be built on, or others where considerably less than half of the lot would be useable.

- Setting the limit to clearing by reference to a contour, particularly on the eastern side of the site, would not be sufficiently sensitive to visual impacts and would need to be revised.

- A buffer should be provided on the southern side of the site.

- Alternative configurations and lot sizes will be suggested.

- Measures should be put in place to protect the visual integrity of the ridge vegetation and a wide down slope vegetated buffer provided, consistent with the visual sensitivity of the site.

- Because there will be residual error in the estimations of visibility, even with better data, a precautionary principle should be applied. In effect this means establishing a lower limit for any clearing which could be carried out on the western slope of the site that is conservative

and takes into account error and contingencies which could increase visibility, such as fire control measures, fire itself, crown die back, and changes to land uses around the site.

1.4 Summary

- To make more definitive assessment of the potential visual effects of clearing, there needs to be a survey carried out of the heights of trees on selected view lines.
- The evidence from our own work and that of the applicant's own consultants on a nearby viewing place, indicates that the most relevant viewing place, which is indicative of others nearby, is View Point 9, the vicinity of the retirement village east of Gordon Street, Milton, at approx. 60mAHD.
- Tree heights should be assessed on the part of the transects which pass through the site, from there to the following points, indicated on Figure 1b: Points L, I and H, ie. on section lines V9-L, V9-I, V9-H..
- Bands of trees in an line crossing the transect at right angles should be assessed. A sample of say 10-12 trees, that have crowns that are part of the general canopy surface, would be sufficient for each sample. Isolated taller trees should be ignored, or measured in addition to the sample. The samples should be taken to represent the canopy height at the highest point immediately west of the western boundary of the site (generally about 50m west of the western edge of the site), just inside the western boundary, the floor of the gully, a point 100m east of the gully floor sample, and the eastern margin of the site.
- The number of trees sampled can be decreased for the sample at the eastern margin of the site. Five trees, provided they appear to be representative of the general canopy surface height, would be sufficient.
- The accuracy of this work would be further improved if the RL of each sample place was established.

I trust this brief report is of value in demonstrating our progress to date and the need for more accurate information to be supplied, so that our report is not subjected to unwarranted criticism.

Should it be necessary, I am willing to talk to the Applicant's surveyors and explain anything which may not be clear.

Yours truly,

Dr Richard Lamb

LAMBCON ASSOCIATES Pty Ltd 8 Southern Cross Way, Allambie, NSW 2100 ACN 066 286 824
(02) 351 4114 W Fax (02) 9401 0832 (02) 9401 0832 H Mobile 015 101458

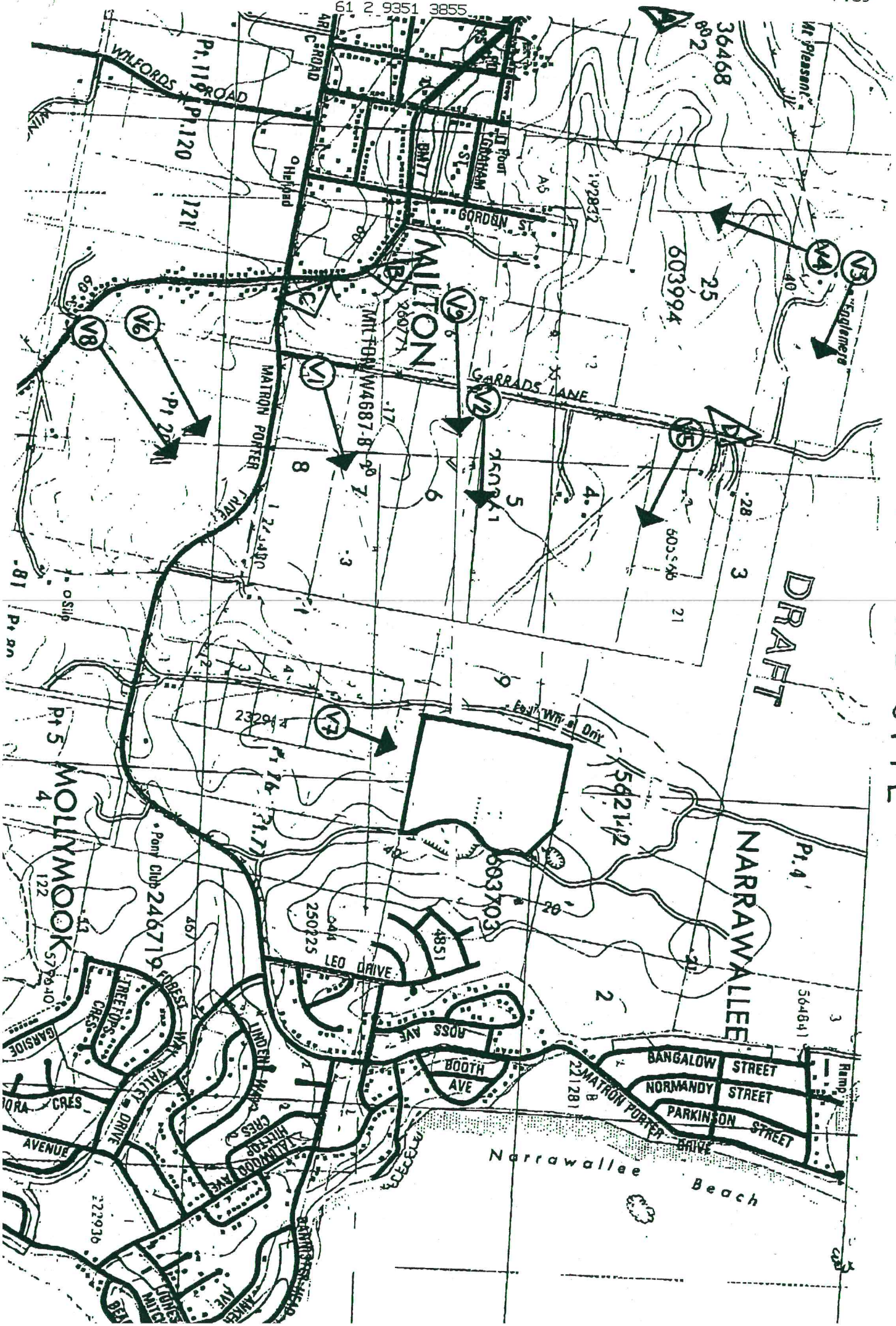


FIG 1a VIEWS OF THE SITE

FIG 16 SECTIONS THROUGH THE SITE

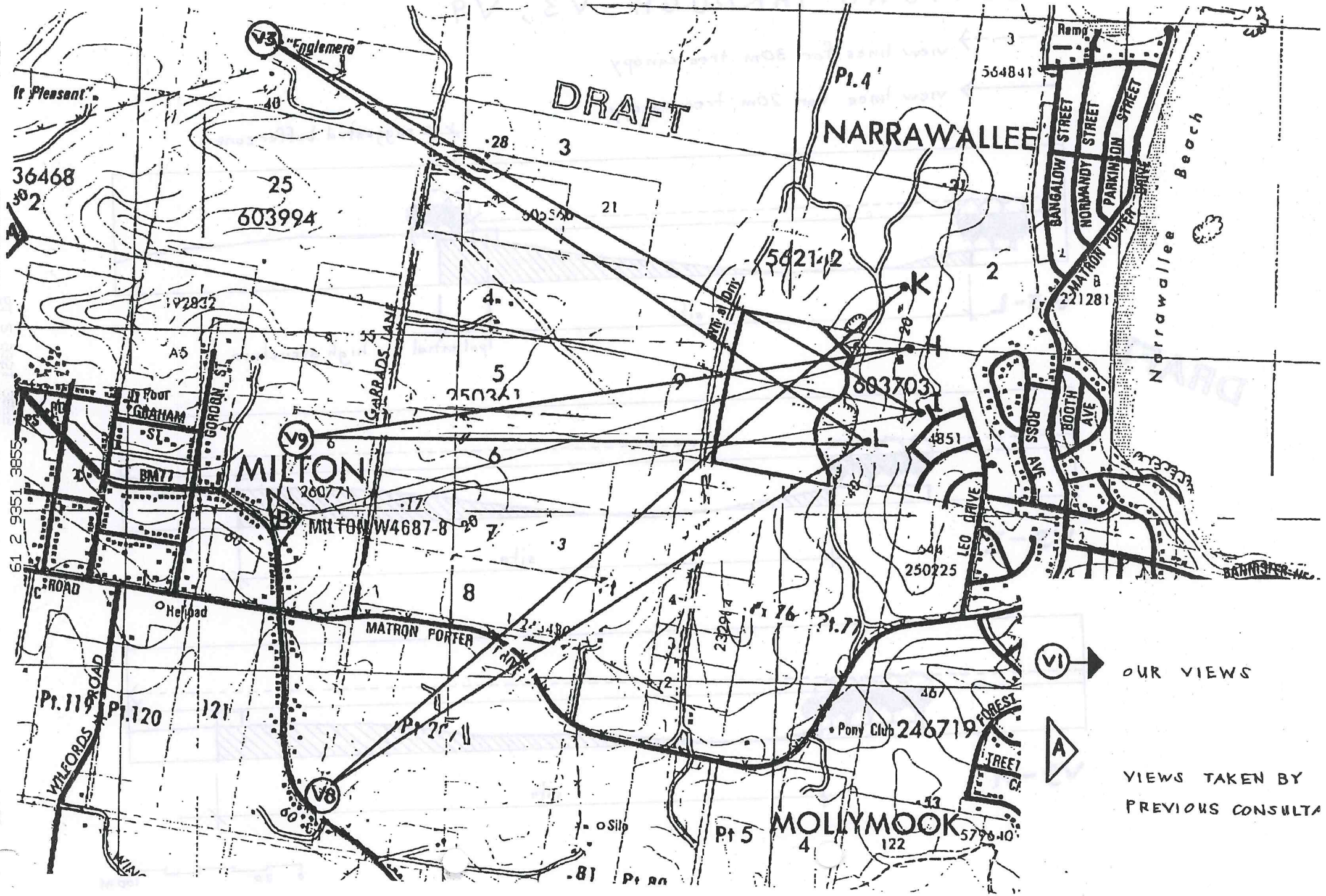


FIG 2a SECTIONS THROUGH V3, V9

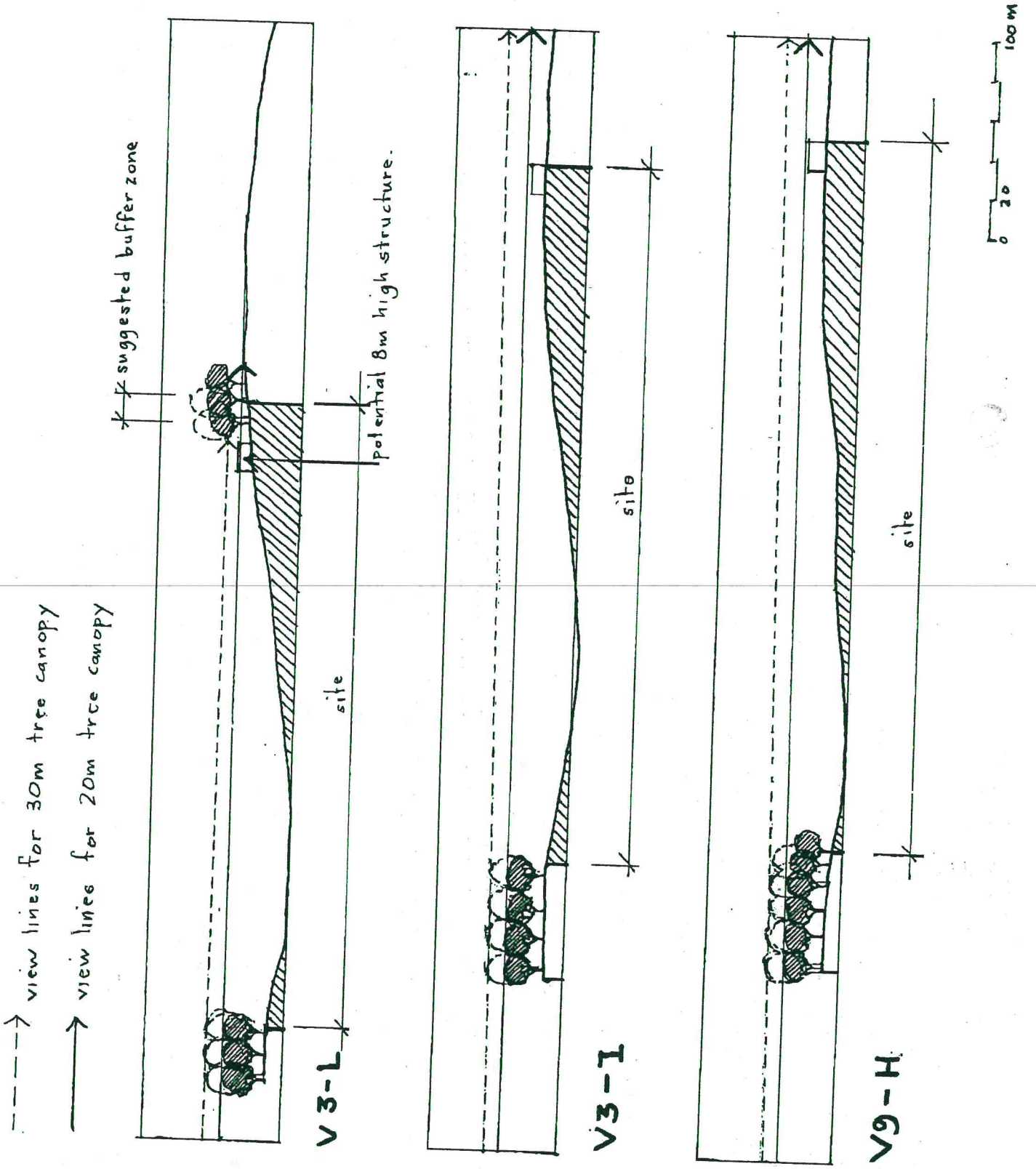


FIG 2b SECTIONS THROUGH V8, V9

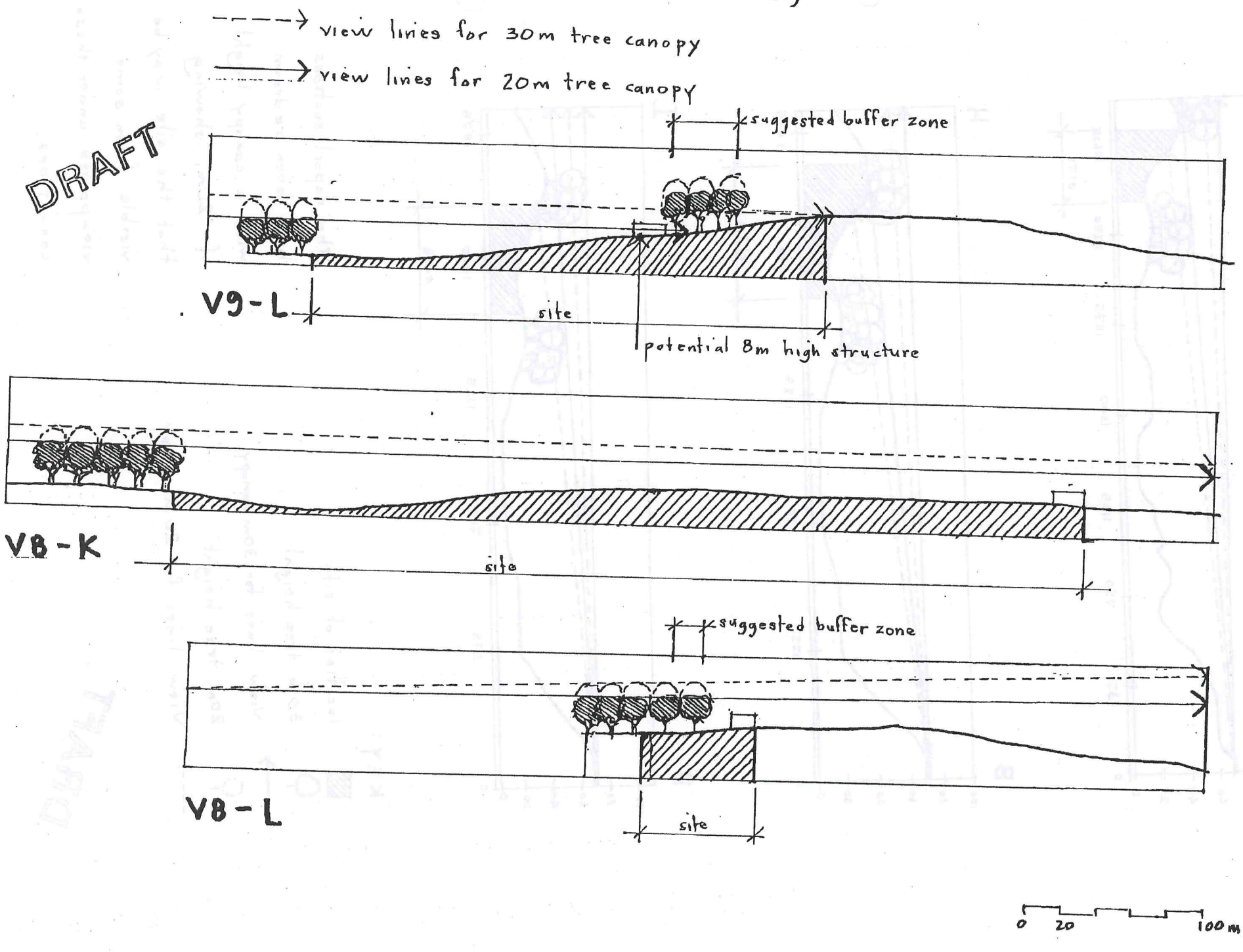
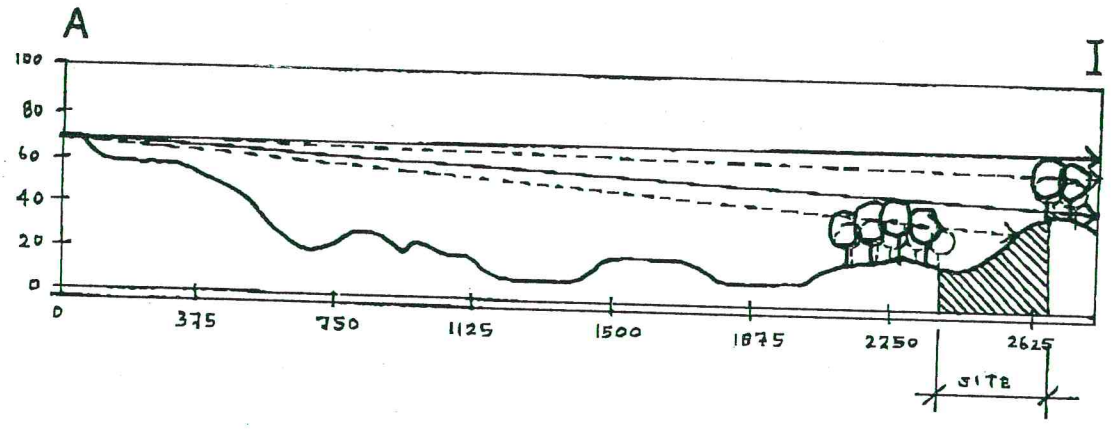
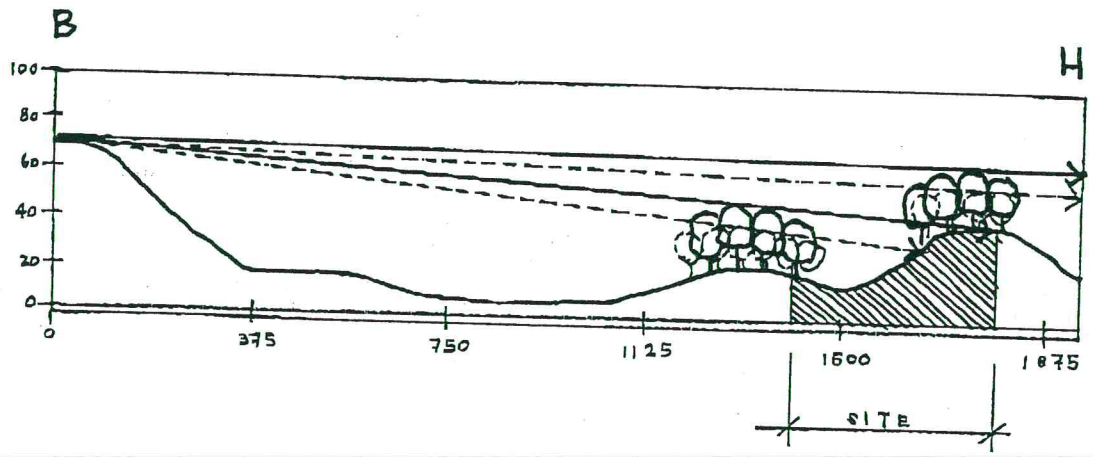
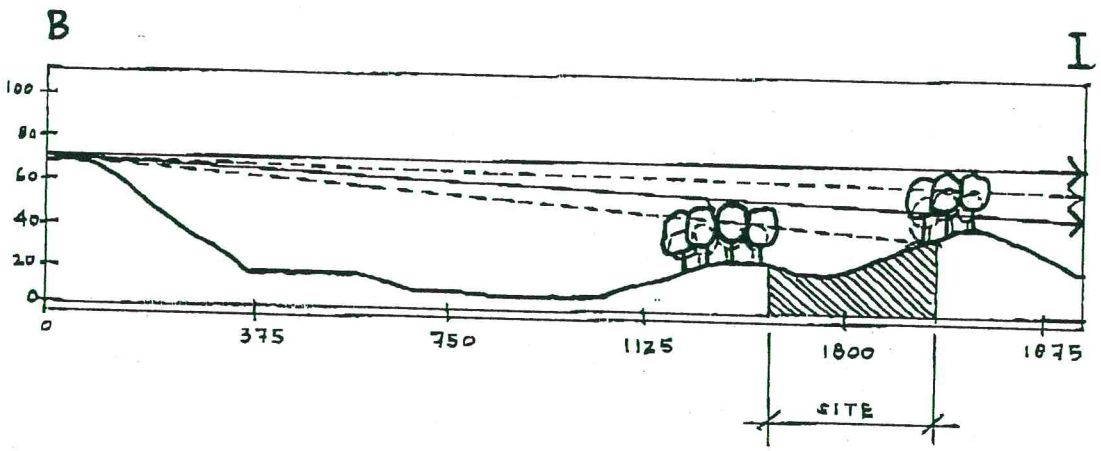


FIG 3 ANALYSIS OF ORIGINAL SECTIONS







KEY:

- location of site
- 30 m tree height
- View lines for 30m canopy
- 20m tree height
- View lines for 20m canopy

The report sections have been redrawn with a canopy height of 20m, showing that the site may be visible from some viewpoints under these conditions.

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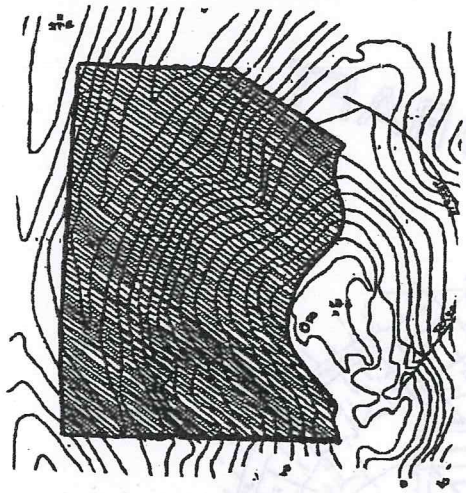
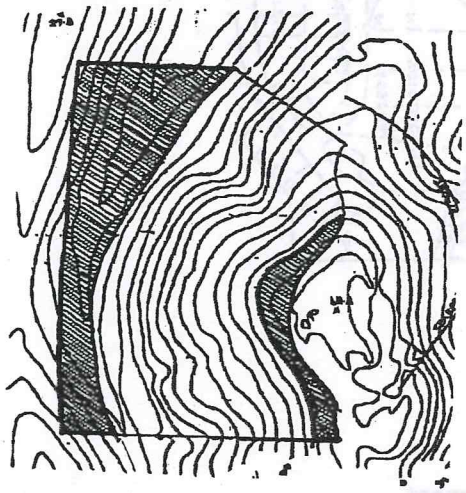
FIG. 5a SCENARIO MAPS

Three scenarios for the site proposed by New Lands Consulting have been shown in diagram form.

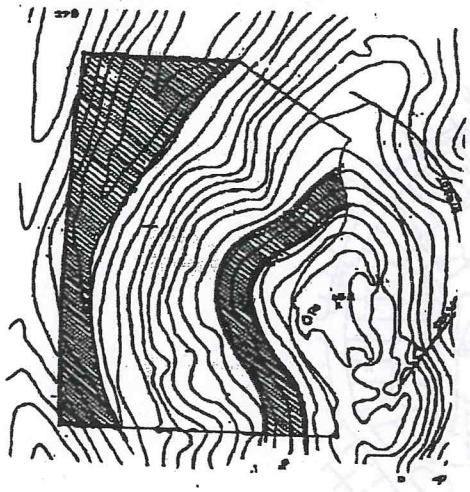
1. Preservation of existing forest cover.



2. Removal of vegetation on the Western slope of the property between the 18 and 42 metre contours.



3. The removal of vegetation on the western slope of the property between the 18 an 38m contours while maintaining tree cover as a visual zone between the 38 and 42m contours.



Possible forest cover maintained

FIG. 5b ASSESSMENT OF CURRENT SUBDIVISION PLAN

These diagrams point out potential conflicts between the two development scenarios proposed by New Lands Consulting and the current subdivision proposal.

SCENARIO 2

⟶ Potential for visible development

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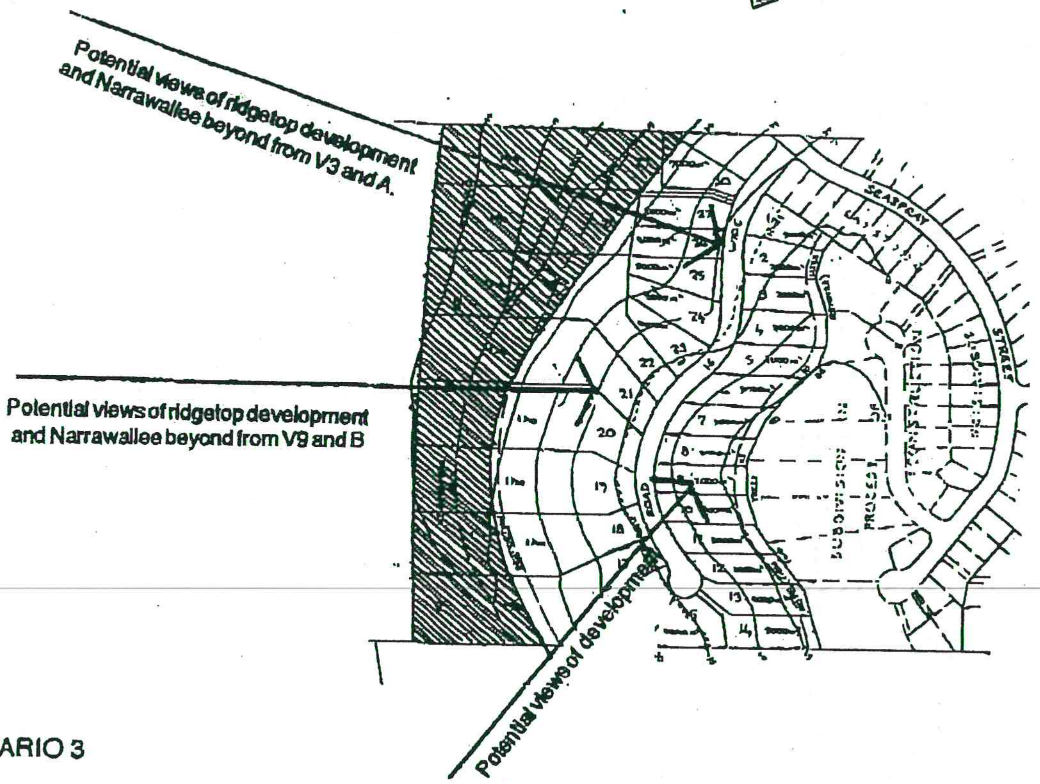

SCENARIO 3

⟶ Potential for visible development

▭ Unusable sites; around 50% of the land not available for development

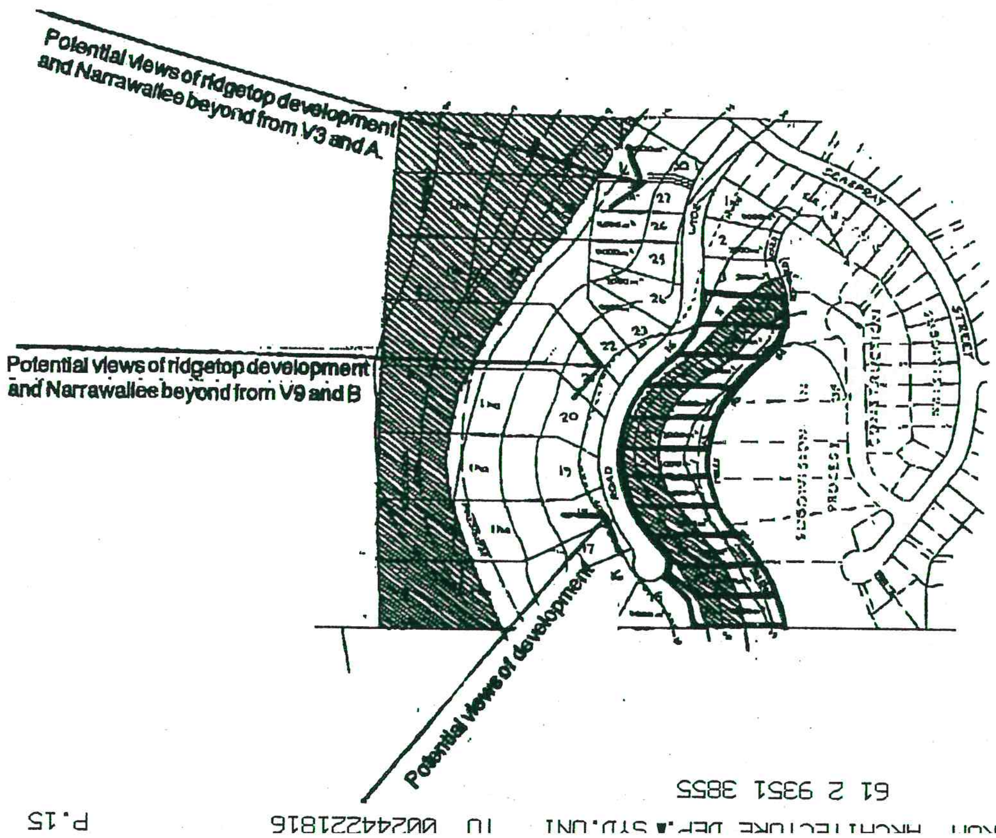

FIG. 6 VISUAL QUALITY PRINCIPLES

1. VISIBILITY

Lower Visibility

Intermediate Visibility to be more accurately established

High Visibility

2. VEGETATION BUFFER

Vegetation Buffer required of sufficient width to be sustainable