JENTECH CONSULTANTS LIMITED

Our Ref.2008/572/B
Foreman, Chung & Sykes
FLORENCE HALL HOUSING DEVELOPMENT
Trelawny

Resistivity Report – Cave #1

Preamble

Electrical Resistivity was requested as a means of establishing the presence of caves and cavities on site. It was eventually agreed to establish the extent of known caves by the use of this method. The areas surrounding eight (8) caves that had been visually identified on site were to be explored by this method. Unfortunately our resistivity equipment (SAS 300 Terrameter) malfunctioned after the completion of the investigation of one such area. This report then relates the results obtained for the single region explored on site.

Methodology

In our estimation, significant cavities within six metres (20 feet) from the ground surface may be hazardous to structures on site. We therefore proposed to carry out an electrical profiling survey in the areas adjacent to the caves with electrode spacing kept at a constant 6 metres (20 feet), which theoretically investigates the entire depth from surface to a depth of 6 metres , and moved along a grid of points also spaced 6m (20 feet) apart. See figure 2. Electrodes would be arranged in the Wenner configuration which is most useful in detecting lateral changes in the ground surface. An iso-resistivity profile would then be generated and anomalous regions, if any, identified.

Because of a wide range of influencing factors, using resistivity as a means of identifying soil type and in-situ condition is not attempted without intensive data reduction. However, for the intent of this investigation, large drops in resistivity values across the site would indicate the presence of ground water (more saline would have even lower apparent resistivity values) and very high resistivity values would indicate the presence of cavities.

Discussion

The iso-resistivity mapping of the site (See Figure 3), where the apparent resistivity was measured, essentially refers to the top 6.1 metres (20 feet) layer of the soil profile. Measured values indicated soil electrical resistivity in the range of 66 – 693 ohm-metres with an average value of 373 ohm-metres. The relatively low values (66 – 110 ohm-metres) could possibly be the result of thicker soil cover, increased moisture due to surface wetting or malfunctioning of the resistivity equipment. There were also some negative values returned, that were obviously malfunctions and these were omitted in the resulting analyses. For the most part, the values returned indicated moist to dry silty and sandy soils or well fractured bedrock with moist soil filled cracks and there was no indication that caverns existed beyond what was seen at surface. The measured values and calculated apparent resistivity are presented in Table 1 in the Appendices to this report.

Conclusion

The results obtained from the Electrical Resistivity Survey have not indicated that the observed cave structure extends beyond the original surface mapping.

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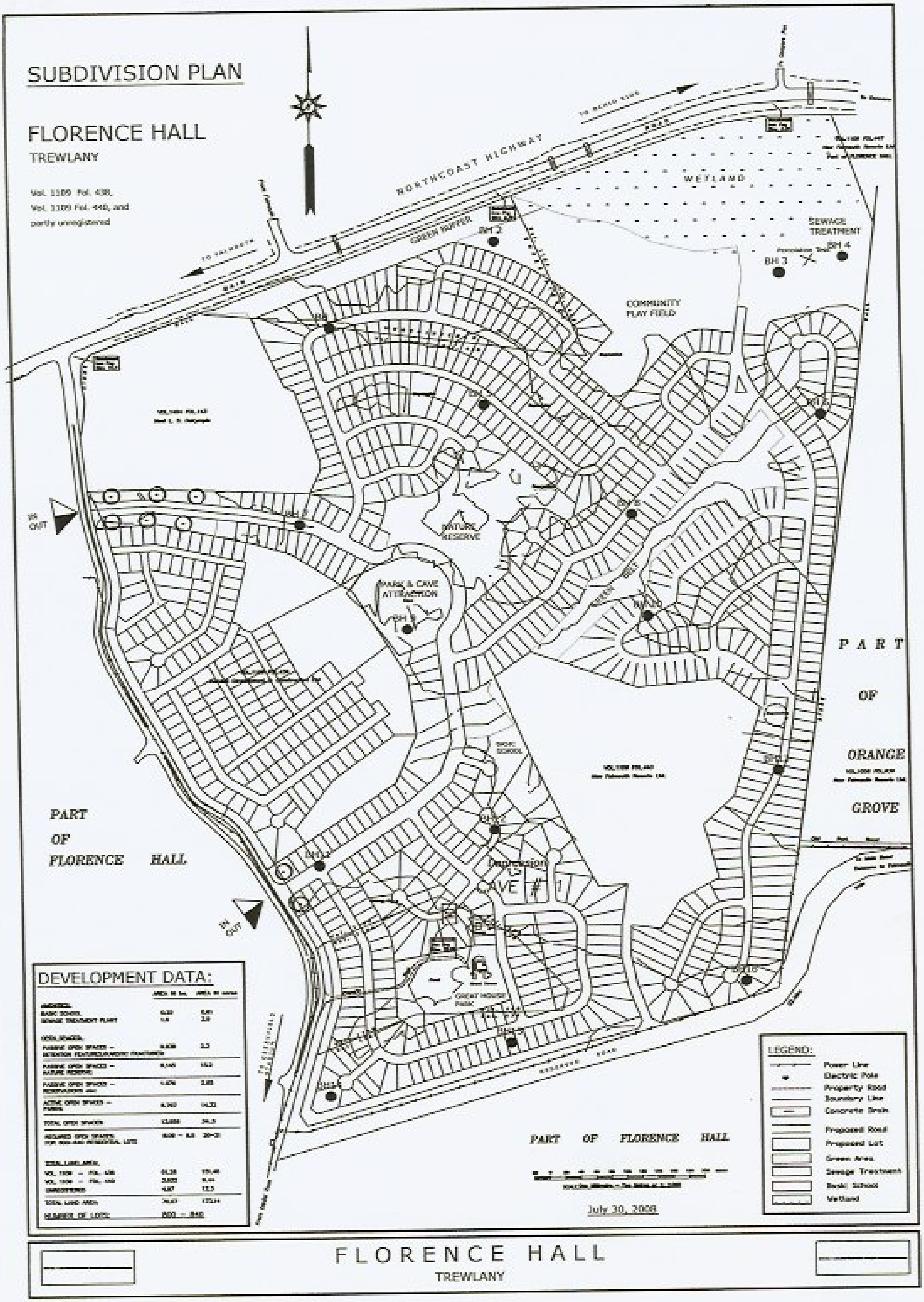
SUBDIVISION PLAN
FLORENCE HALL
TREWLANY
Vol. 1109 Fol. 438,
Vol. 1109 Fol. 440, and
partly unregistered
NORTHCOAST HIGHWAY
WETLAND
SEWAGE
TREATMENT
COMMUNITY
PLAY FIELD
NATURE
RESERVE
PARK & CAVE
ATTRACTION
PART
OF
ORANGE
GROVE
PART
OF
FLORENCE HALL
CAVE # 1
GREAT HOUSE
PARK
IN
OUT
DEVELOPMENT DATA:
PART OF FLORENCE HALL
July 30, 2008
LEGEND:
Power Line
Electric Pole
Property Road
Boundary Line
Concrete Drain
Proposed Road
Proposed Lot
Green Area
Sewage Treatment
Basic School
Wetland
FLORENCE HALL
TREWLANY

FIGURE 1

FLORENCE HALL, TREGAWNY

ER SURVEY AROUND CAVES

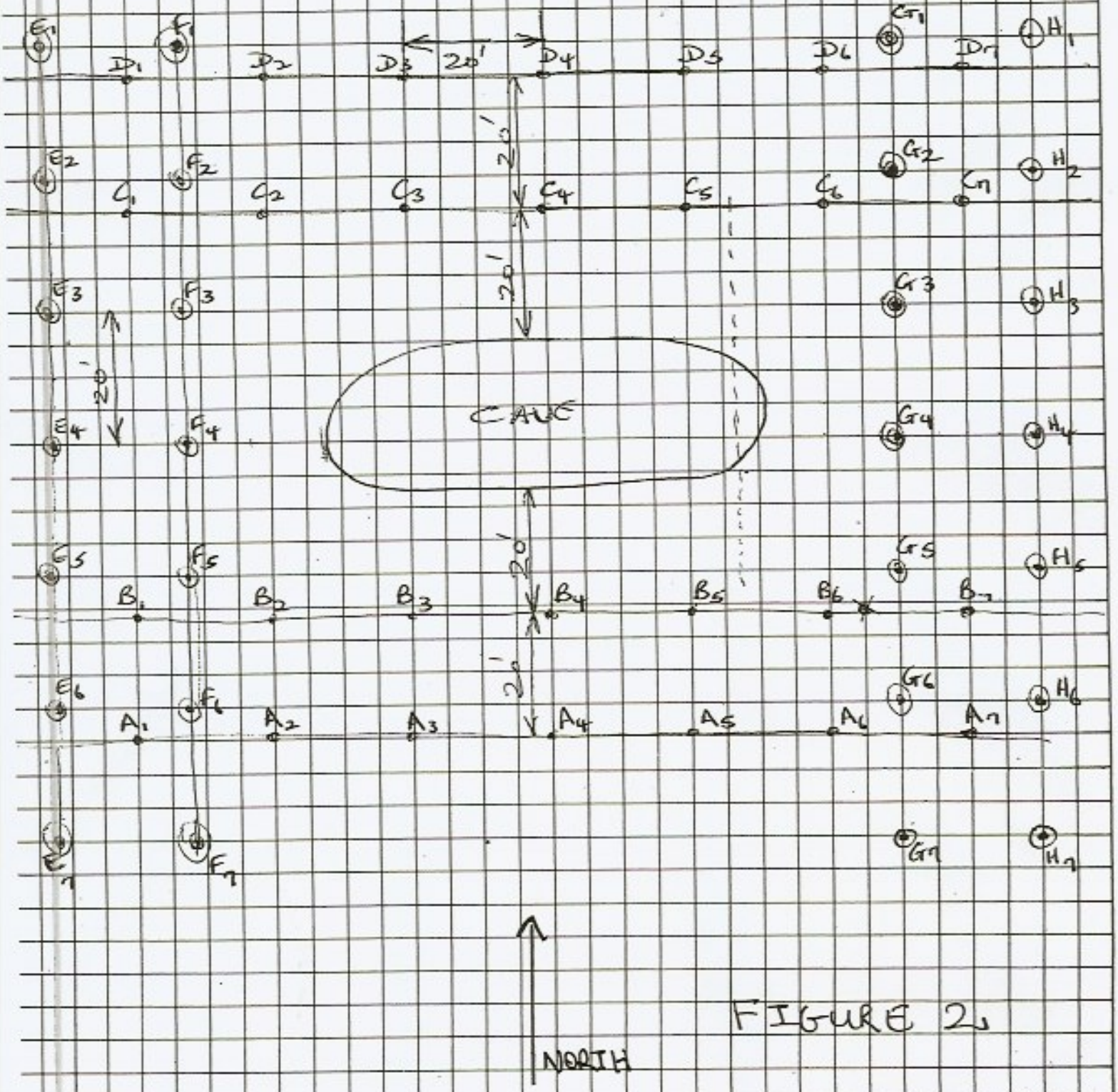

FIGURE 2.

LIMITED

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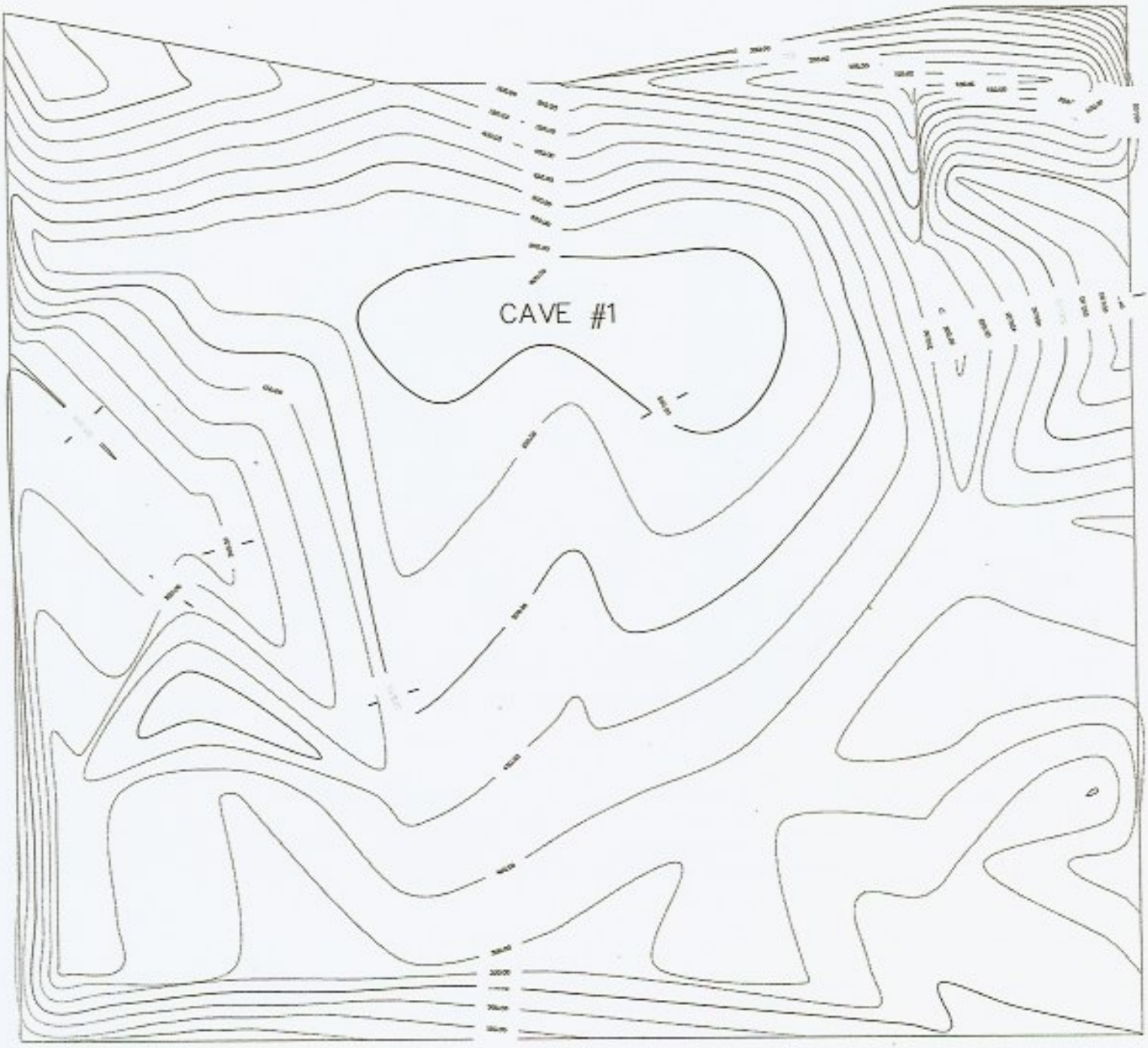
Florence Hall Housing Development – C



APPENDICES