

# HIGHBARNS – HEMEL HEMPSTEAD

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Stuart Chandler – Associate



# INTRODUCTION

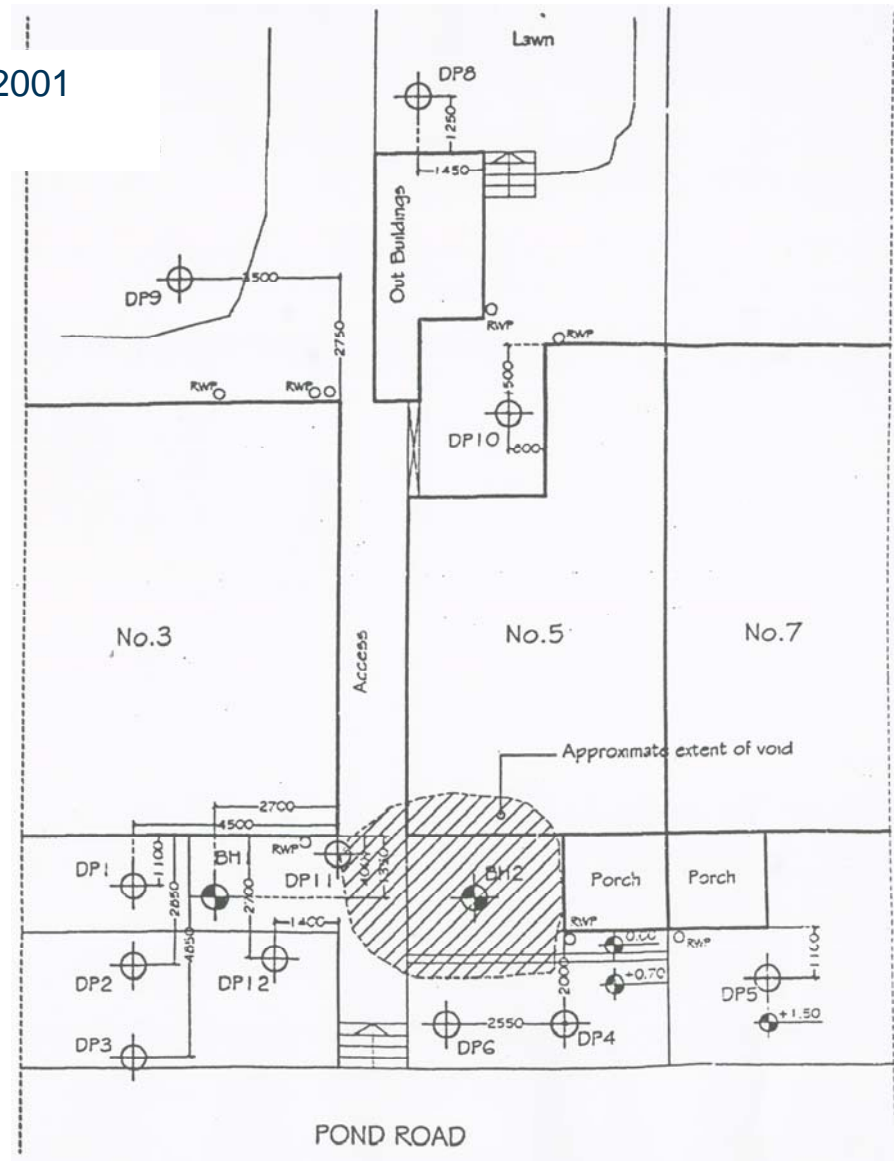
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- BACKGROUND TO INVESTIGATIONS
- RESULTS OF RECENT INVESTIGATIONS
- REMEDIAL GROUTING WORKS
- FURTHER STUDY

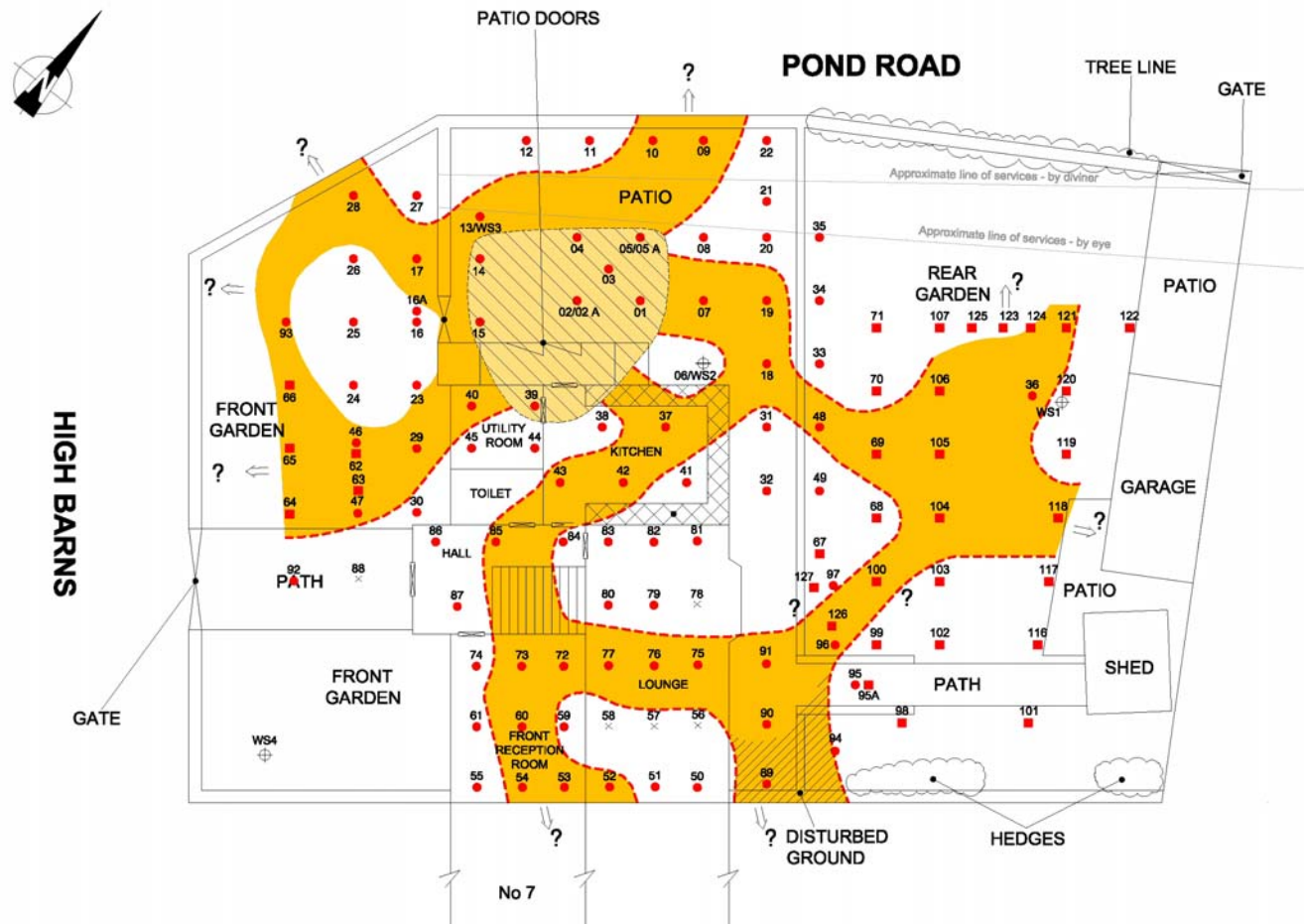
# BACKGROUND

- FAILURE AT NO. 5 POND ROAD IN NOVEMBER 2001
- STABILISED BY GROUTING IN MAY 2003



# BACKGROUND

- FAILURE AT NO. 5 Highbarns in June 2007
- INVESTIGATION THROUGH June 2007 to March 2008
- STABILISATION WORKS FROM 4<sup>TH</sup> August 2008 to 17<sup>TH</sup> October 2008



# RECENT INVESTIGATIONS

- INVESTIGATIONS PROPOSED AROUND POND ROAD/HIGHBARNNS/EAST GREEN JUNCTION



# RECENT INVESTIGATIONS

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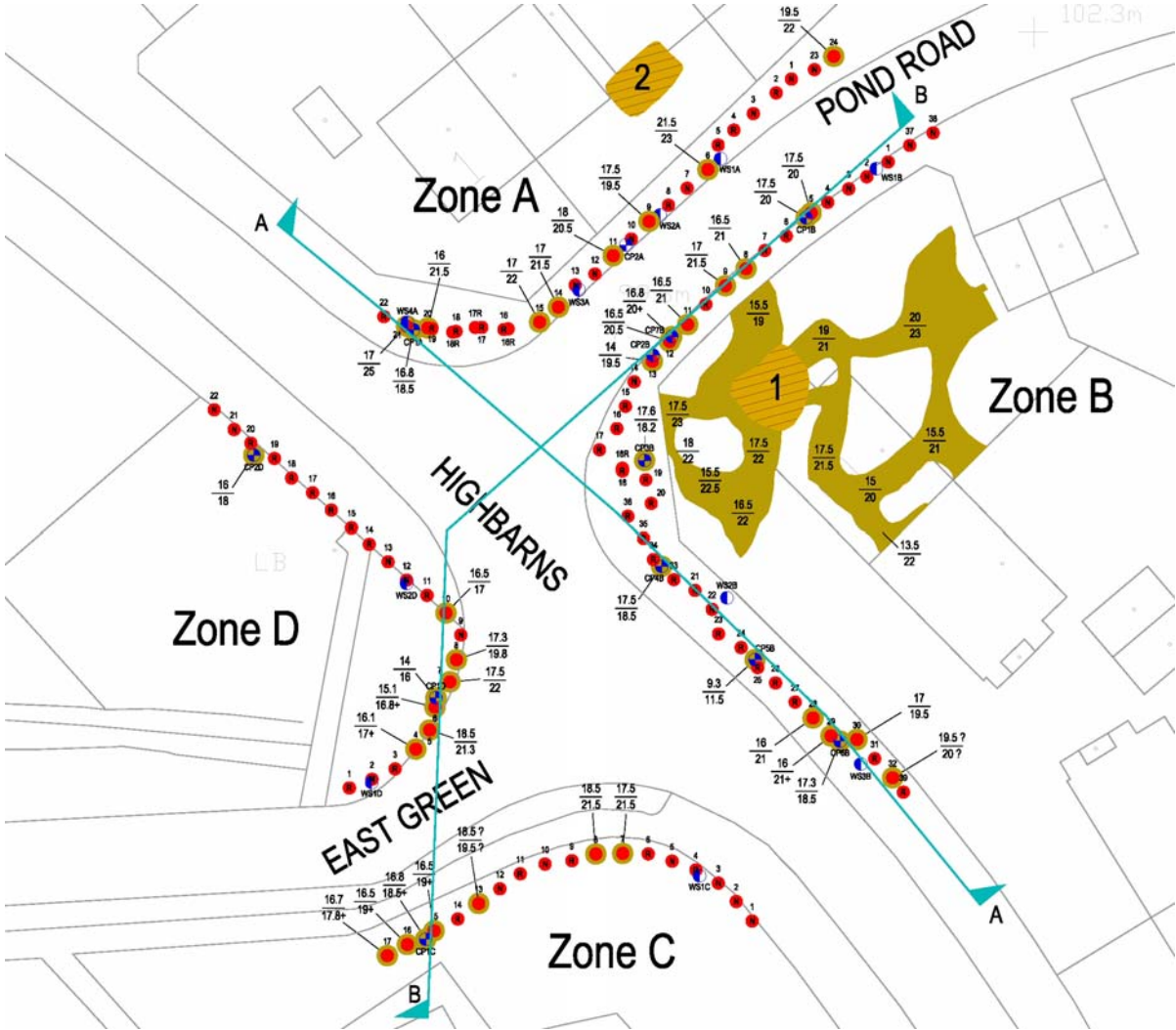
INVESTIGATIONS BEGAN ON 2<sup>ND</sup> JUNE 2008 AND COMPLETED ON 15<sup>TH</sup> JULY 2008. THESE INCLUDED:

- SUPERHEAVY DYNAMIC PROBING – 102 no.
- WINDOW SAMPLE BOREHOLES – 11 no.
- CABLE PERCUSION BOREHOLES – 12 no.
- MICRO CCTV CAMERA SURVEYS – 31 hrs
- STANDARD CCTV CAMERA SURVEYS – 9 hrs
- HIGH RESOLUTION CAMERA SURVEYS – 1 no.
- CAVITY AUTOSCANNING LASER SURVEYS – 8 no.

# RECENT INVESTIGATIONS



## INTRUSIVE INVESTIGATIONS LEAD TO DEVELOPMENT OF INITIAL INTERPRETIVE PLAN



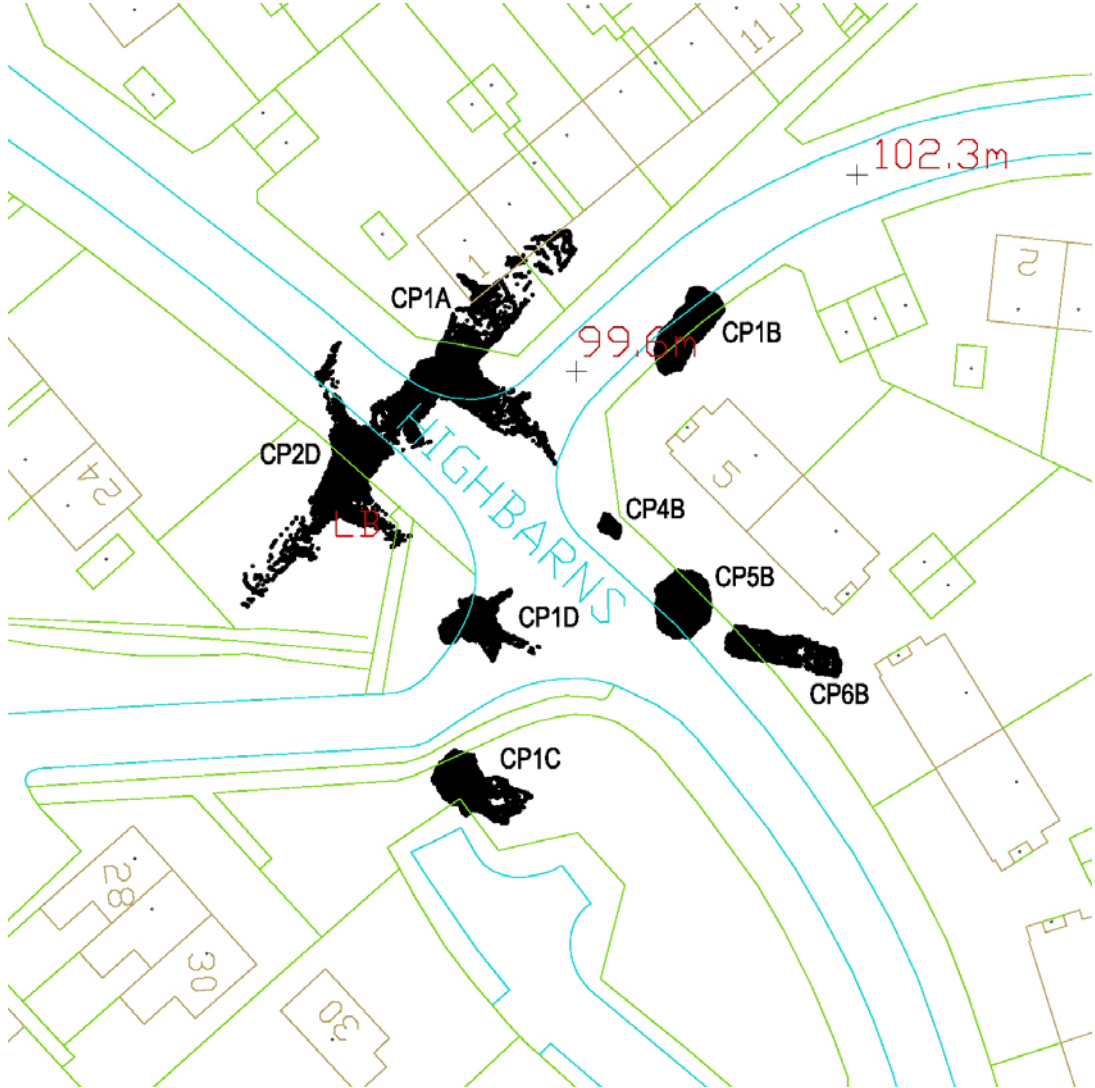
# CCTV SURVEY AT BOREHOLE CP1A





# RECENT INVESTIGATIONS

EARLY RESULTS PROMOTED APPLICATION OF LASER SURVEY TECHNIQUES

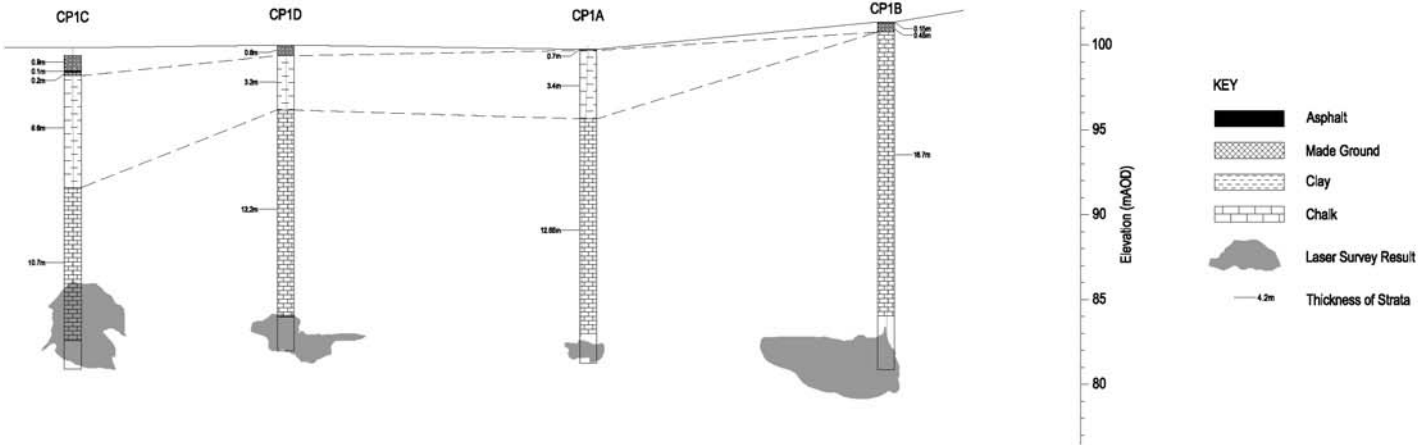




# RECENT INVESTIGATIONS



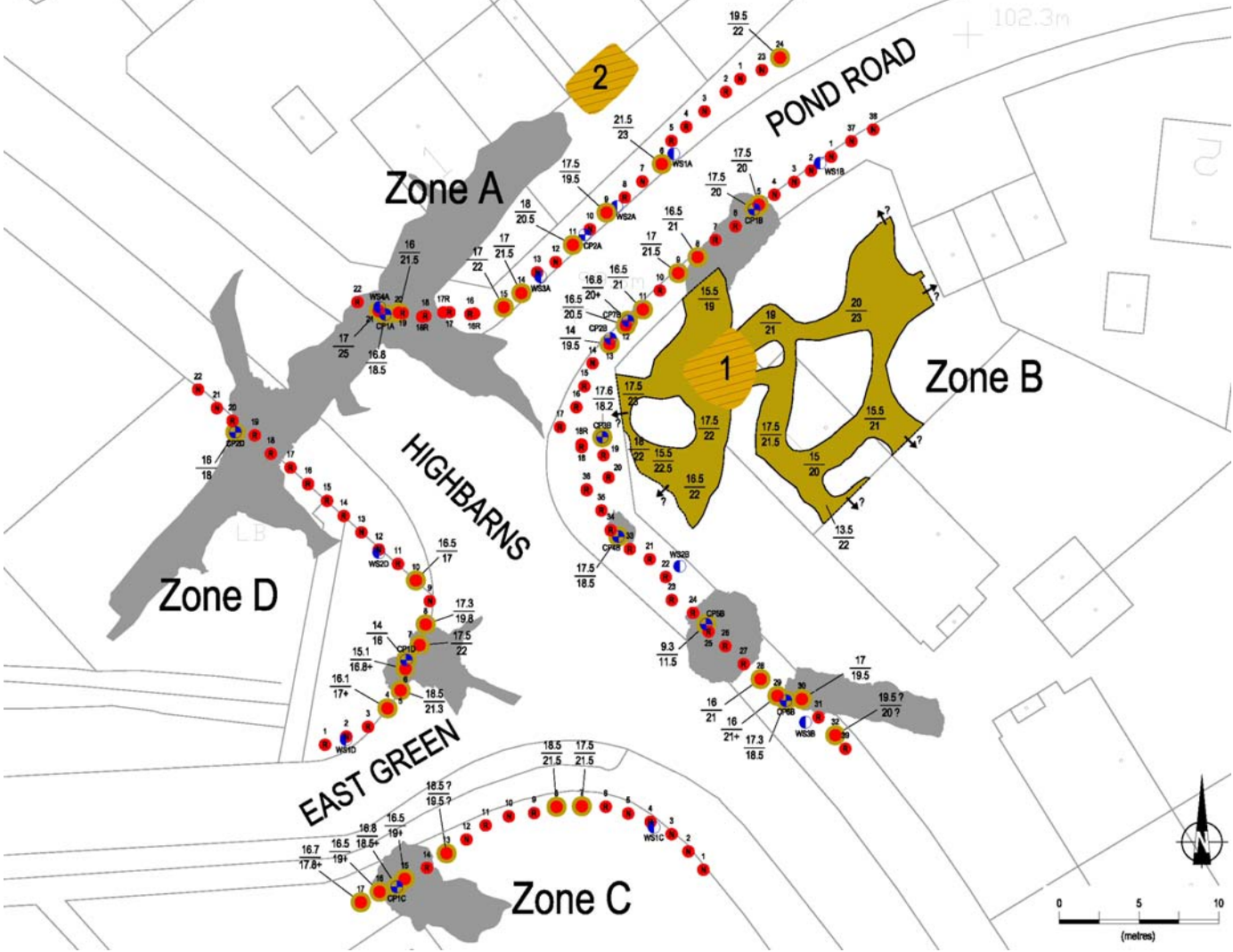
## CROSS SECTION B-B



# RECENT INVESTIGATIONS



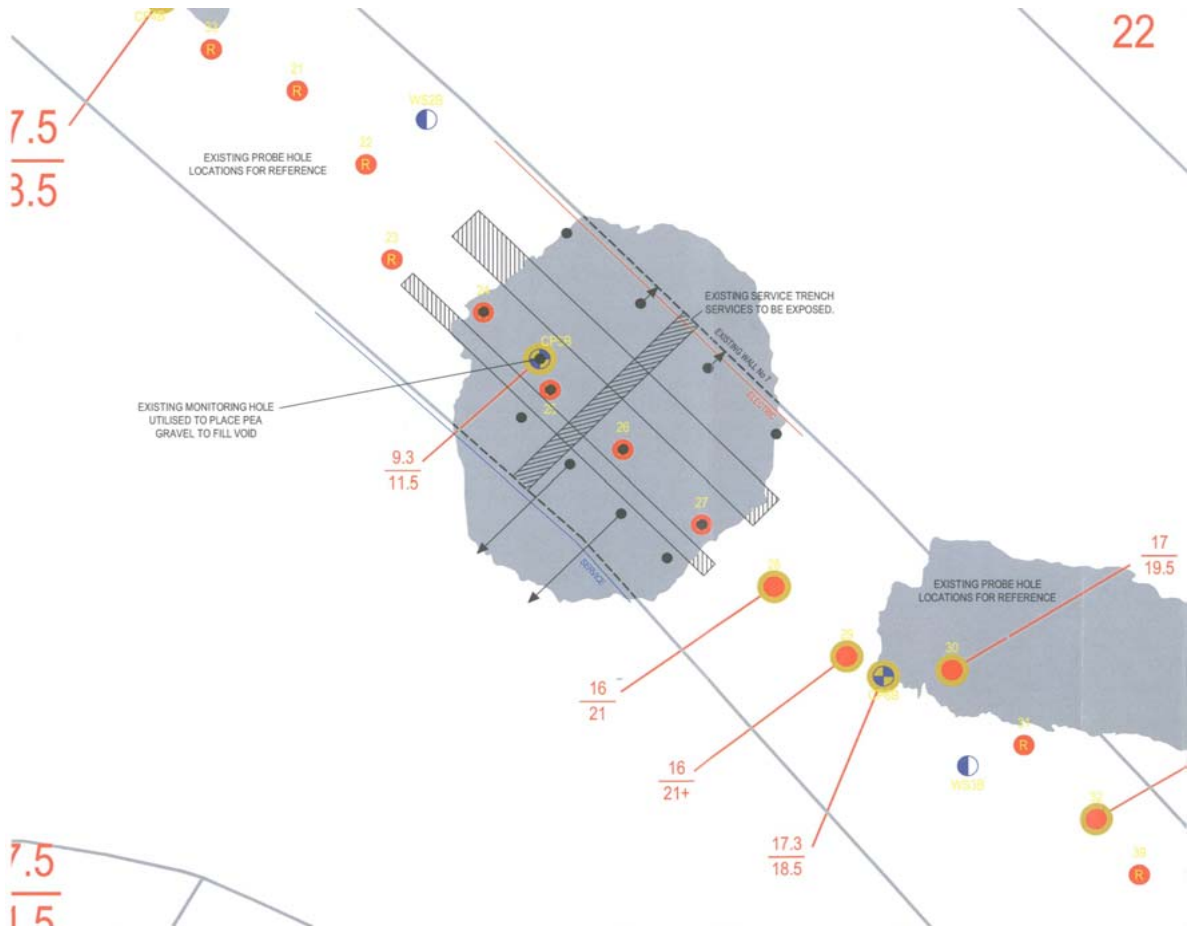
## COMBINED INTERPRETIVE PLAN OF MINE WORKINGS



# REMEDIAL WORKS



## REMEDIAL GROUTING WORKS AT CP5B



# REMEDIAL WORKS

## REMEDIAL GROUTING WORKS AT CP5B



# FURTHER WORK



## PROPOSED GEOMORPHOLOGICAL MAPPING

