

Spa Building, Walled Garden, Tottenham House, Wiltshire SN8 3BE

Structural Engineer’s Ground Movement Monitoring proposal

August 2026



Status	Revision	Issued For	Date	Author
PLANNING	P1	Planning Information	13 Aug 2026	TH

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1 PREAMBLE

This report has been prepared by Michael Barclay Projects Ltd (MBP) on the instructions of, and for the sole use and benefit of, the Client.

MBP shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared and provided. If the Client wishes to pass copies of the report to other parties for information, the whole of the report should be copied. No professional liability or warranty is extended to other parties by MBP as a result of permitting the report to be copied or by any other cause without the express written agreement of MBP.

2 INTRODUCTION

Please note that this movement monitoring report is an extension of the previously prepared and approved movement monitoring report which regarded the works to the Pool House and which covered monitoring of the historic East Wall up to and including position O67 (refer to MBP's document '10442-MBP-XX-XX-RP-S-GMM-P2 - Monitoring proposal for Gound and Wall Movements - REVISION P02', which is also appended in this report as Appendix B). The same monitoring principles are followed and extended as required and described in this report to cover the works to the proposed adjacent Spa Building.

As an extension to the Pool House works, MBP has been appointed by the owners of Tottenham House (TH) to undertake the design and site monitoring of the proposed adjacent Spa Building within the Walled Gardens at Tottenham House. The works involve the following key activities in the ground:

- a. Sequential installation of piling mats and piled walls around the perimeter of the new Spa Building complex
- b. Sequential excavation of the soil within the piled walls, allowing the piled walls to act as cantilevering retaining walls.
- c. Installation of local piling mats inside the excavation area for the further installation of internal isolated bearing piles.
- d. Installation of a permanent reinforced concrete structure (including a pool, connection tunnels and the main building structure), with liner walls and floors to occupy the excavated space within the perimeter piled walls.
- e. Hard landscaping activities, forming and improving pathways in the vicinity of the perimeter piled walls.

3 SITE LOCATION

Tottenham House is in a rural location in Wiltshire to the NE of Durley.

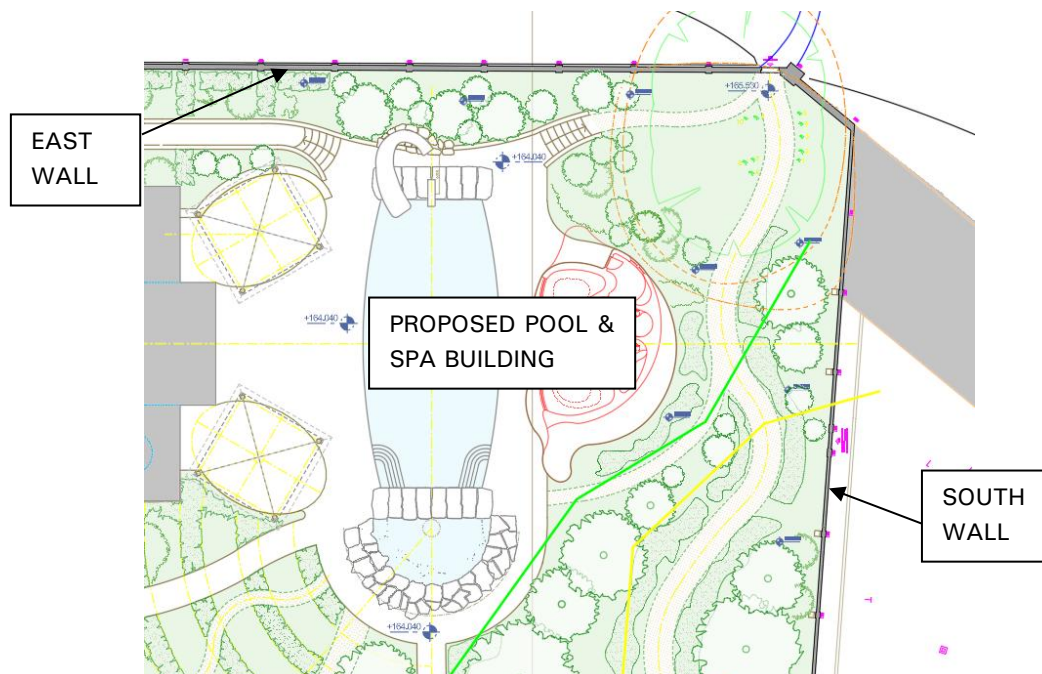
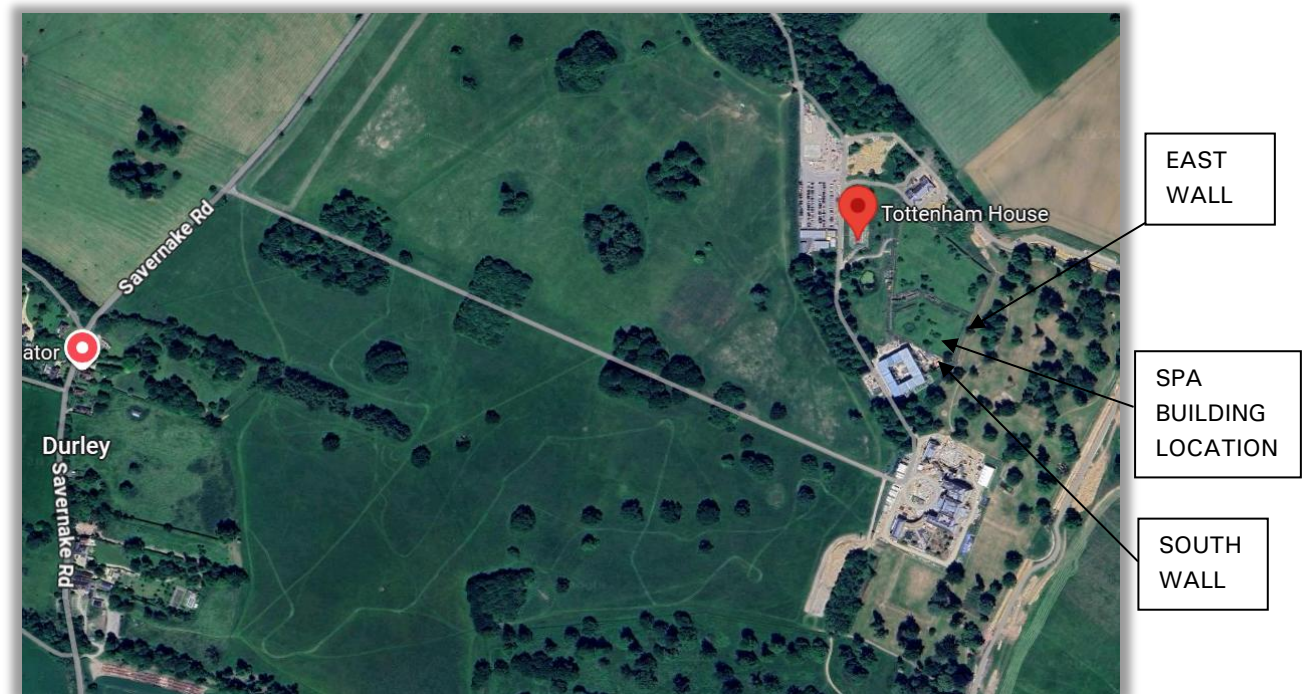


Figure 1: Map showing the Spa Building location, the two adjacent historic masonry walls the and surrounding area of the property and architect's layout showing the proposed Spa Building in relation to the adjacent historic walls



Figure 2: Land photograph showing the location of the East Wall and the South Wall in relation to the proposed Spa Building.



Figure 3: Land photograph showing the South Wall in relation to the proposed Spa Building.

4 MONITORING PROPOSAL

The objective of the monitoring of the walls is to ensure that the planned works do not adversely impact the condition or stability of the walls.

There are two walls of key interest that are adjacent to the proposed Spa Building site. We have simplified their naming on Figure 1 and Figure 2 as “East Wall” and “South Wall”, this is an indication of the boundary on which the wall lies.

Both the East Wall and the South Wall are boundary walls to the walled garden and their height varies along the length of the wall. The walls have piers at regular spacing and these piers are numbered. The numbering has been transferred on to MBP’s monitoring drawings for ease of reference. Both of the walls will be visually monitored during the works, and will have 3D monitoring targets fixed to them along their length. Figure 4 gives examples of 3D self-adhesive targets that would be used. We propose to monitor each wall pier along the zone of interest (vicinity of construction/excavation), from pier 067 (note that the piers up to and including 067 are already monitored for the construction of the Pool House) to pier 081, and midway on each of the wall panels between these piers. The extent of the monitoring is indicated on MBP’s drawings appended to this document. Please note that at each pier and wall position two level of targets will be installed, the low level, L/L, at 0.5m above ground level, and the high level, H/L, at 2.0m above ground level. The targets indicated in Figure 4, when read, will give levels as well as eastings and northings. The targets are read using industry standard equipment such as the Leica TPS1200+ series indicated in Figure 5.

This will give us a very good indication of how the wall is behaving in all three directions during the works

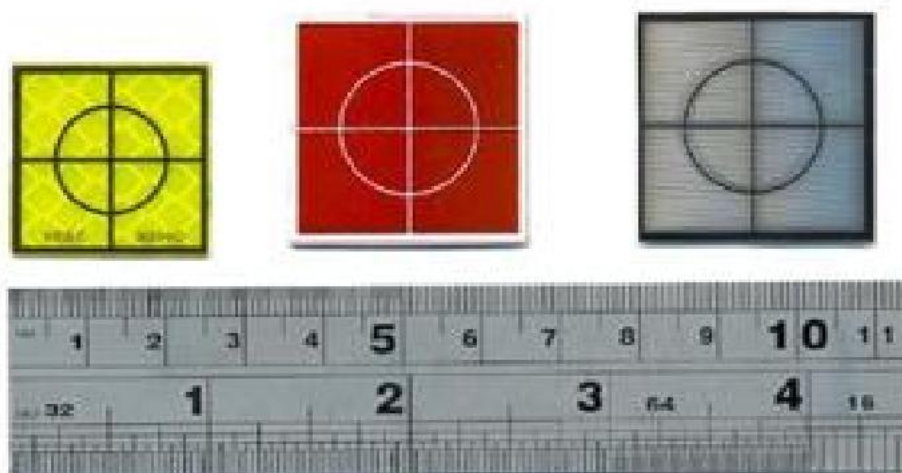


Figure 4: Examples of self-adhesive targets to be fixed to the wall at monitoring positions.

Leica TPS1200+ Series



Figure 5: Image of Leica TPS1200+ Series monitoring equipment.

The contractor's RAMS will have to incorporate monitoring proposals in line with this document. For this element a professional surveying company will have to be appointed to monitor the historic wall during the five key stages of construction identified in Section 2 above: 2a; 2b; 2c; 2d, and 2e. The monitoring will remain active until a period of two months after the completion of these structural works to ensure that any movement associated with the works has stopped.

These will be prepared by a professional monitoring surveying company be reviewed by the team prior to any works commencing on site.

Monitoring and reporting will take place at the intervals set out in Figure 6:

Activity	Frequency of monitoring
Site set up	Bi-Weekly
Piling and Excavation	Weekly
Installation of substructures up to Ground Floor level	Weekly
Run off after completion of structural works	Weekly for 2 months.

Figure 6: Monitoring interval periods during primary activities.

Elevations of the wall with proposed location of the targets for the walls are appended to this report.

5 CONTROL MEASURES

We will, via the contractor, monitor the historic walls for movements throughout the principal piling, excavation and construction works.

The monitoring regime and frequency proposed is set out in the previous Section 4 on table in Figure 6.

Target monitoring will monitor rear facades with an accuracy of $\pm 2\text{mm}$. The results of the monitoring will be collated within a report and published at the frequency stated above. These will be issued by email to the project engineer and the rest of the team, on the day that the results are taken. The results are to be presented both in table and graphical form with the graphs for each point plotting the readings taken against time. Each report will also include the following:

- A. Date of Survey
- B. Conditions at time of survey
- C. Eastings, northings and level information for each target
- D. Movements in mm, of the eastings, northings, and levels
- E. Movements in mm relative to the Baseline readings
- F. Movements in mm relative to the last readings.

These results will be interrogated and measured against the agreed trigger levels:

- The Green/Amber trigger level will be 6mm
- The Amber/Red trigger level will be 10mm

In the event of any movements exceeding the agreed target levels the method of works will be reviewed and altered as necessary.

These actions are set out below in Figure 7.

Trigger Level	Action
Green/Amber	Immediately notify the engineers.
	Review the situation on site and report back to the team.
Amber/Red	Contractor to stop all works and immediately notify the engineers.
	Contractor and project engineer to put forward proposals, such as additional propping, to limit further movement to an acceptable level.

Figure 7: Triggers and Actions during monitoring.

5.1 LOCATION OF THE TARGETS

Appended to this report are a set of two drawings that set out the location of the proposed works, the proximity of these works to the historic walls, and the proposed locations of the monitoring regime. Extracts of these drawings are given on Figure 8 and Figure 9.

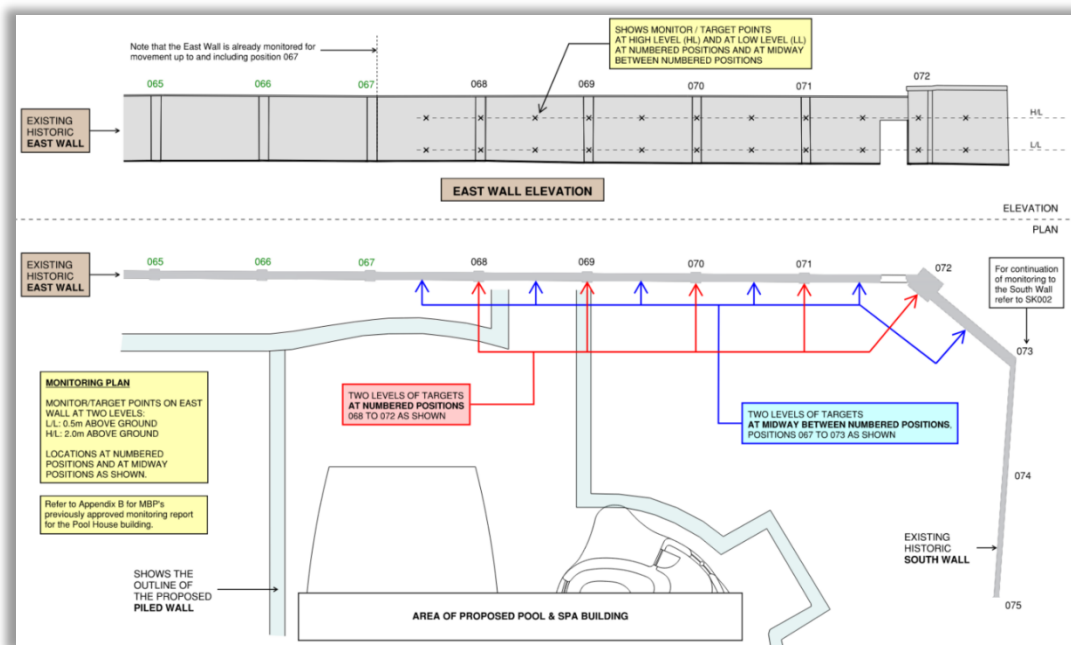


Figure 8: Extract of 10442-MBP-SPA-XX-SK-S-0001

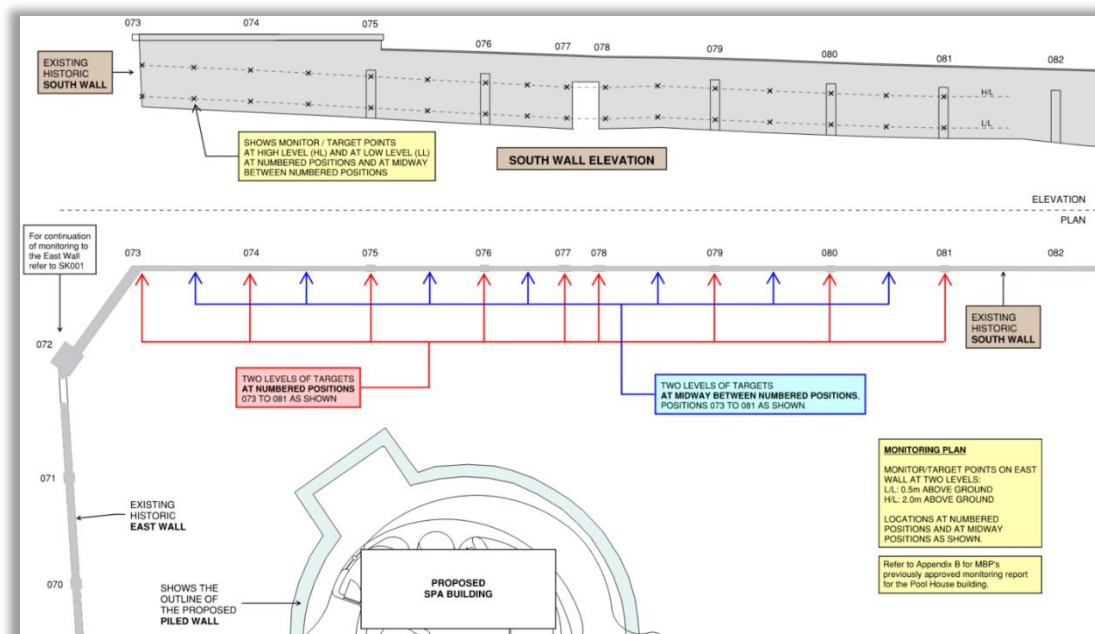


Figure 9: Extract of 10442-MBP-SPA-XX-SK-S-0002

All of the above is to be agreed with the team, installed on site, and base readings taken prior to the commencement of the piling enabling works on site.

6. CONCLUSION

With the monitoring and control measures outlined in this report the works at the Spa Building can be executed in a safe and controlled manner with minimum impact on the adjacent historic walls.

Report Prepared by:



Name: Tony Hayes BSc (Hons) CEng MStructE
Principal Engineer, for MBP Ltd
Date: 13 Aug 2026

Spa Building, Walled Garden, Tottenham House, Wiltshire SN8 3BE

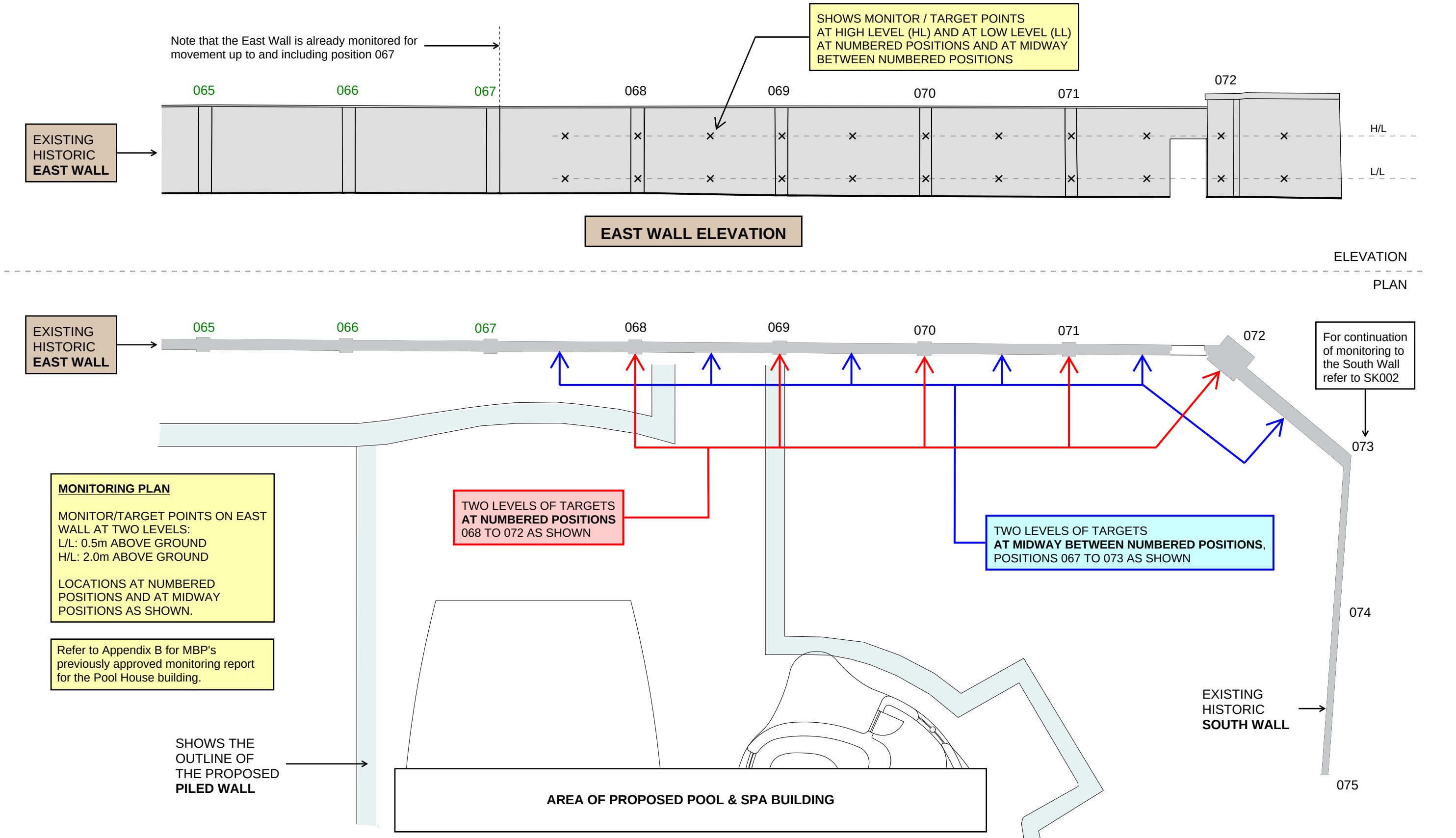
Structural Engineer's Ground Movement Monitoring proposal

August 2026

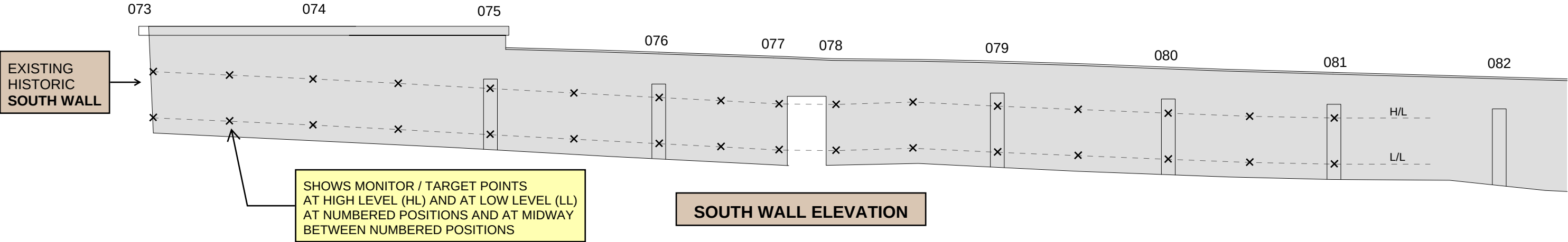
Appendix A – MBP Drawings

10442-MBP-SPA-XX-SK-S-0001 (EAST WALL)

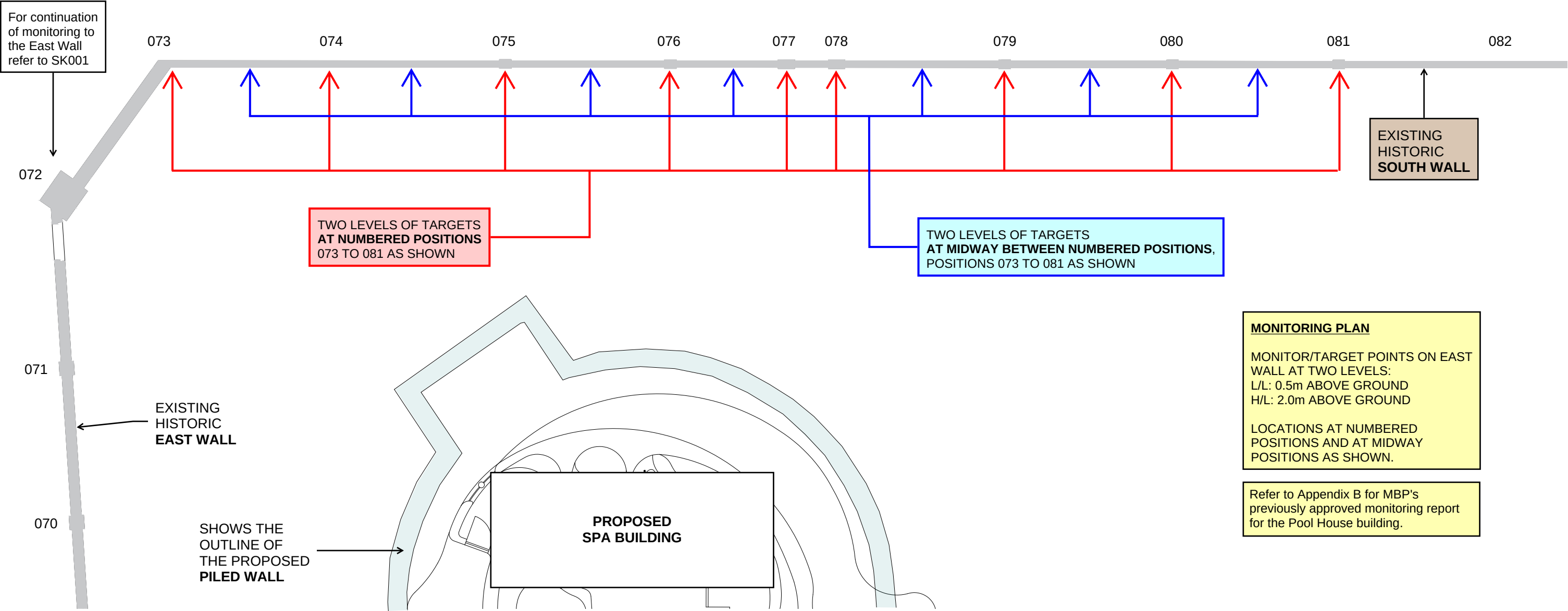
10442-MBP-SPA-XX-SK-S-0002 (SOUTH WALL)



NOTES - Drawing to be read in conjunction with all relevant architect's and engineer's drawings and specifications - For setting out refer to architect's drawings - All dimension are in millimeters (mm) U.N.O. - Do not scale from this drawing - Print in colour					Project Title				Scale @ A3		Date		Drawn		Checked		MBP	Consulting Engineers							
					SPA BUILDING, TOTTENHAM HOUSE & ESTATE, WILTSHIRE				-		AUG '26		MD		TH										
					Drawing Title				Drawing Status				Revision												
					EXISTING WALLS MONITORING PROPOSALS - EAST WALL				SO - WORK IN PROGRESS				P01												
									Project Drawing ID				10442-MBP-SPA-XX-SK-S-0001												
												Project		Originator		Volume		Level		Type		Role		Number	
				P01		13/08/26		PRELIMINARY ISSUE				MD													
				Rev		Date		Description				By													



ELEVATION
PLAN



MONITORING PLAN

MONITOR/TARGET POINTS ON EAST WALL AT TWO LEVELS:
L/L: 0.5m ABOVE GROUND
H/L: 2.0m ABOVE GROUND

LOCATIONS AT NUMBERED POSITIONS AND AT MIDWAY POSITIONS AS SHOWN.

Refer to Appendix B for MBP's previously approved monitoring report for the Pool House building.

- NOTES**
- Drawing to be read in conjunction with all relevant architect's and engineer's drawings and specifications
 - For setting out refer to architect's drawings
 - All dimension are in millimeters (mm) U.N.O.
 - Do not scale from this drawing
 - Print in colour

P01	13/08/26	PRELIMINARY ISSUE	MD
Rev	Date	Description	By

Project Title
SPA BUILDING,
TOTTENHAM HOUSE & ESTATE,
WILTSHIRE

Drawing Title
EXISTING WALLS MONITORING
PROPOSALS - SOUTH WALL

Scale @ A3	Date	Drawn	Checked
-	AUG '26	MD	TH
Drawing Status			Revision
SO - WORK IN PROGRESS			P01
Project Drawing ID			
10442-MBP-SPA-XX-SK-S-0002			
Project	Originator	Volume	Level
Type	Role	Number	

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Spa Building, Walled Garden, Tottenham House, Wiltshire SN8 3BE

Structural Engineer's Ground Movement Monitoring proposal

August 2026

Appendix B – Previously approved monitoring report:

10442-MBP-XX-XX-RP-S-GMM-P2 - Monitoring proposal for Gound and Wall Movements -
REVISION P02

Pool House, Walled Garden, Tottenham House, Wiltshire SN8 3BE

Structural Engineer’s Ground Movement Monitoring proposal

September 2025



Status	Revision	Issued For	Date	Author
PLANNING	P2	Planning Conditions Update	25:09:30	TH
PRELIMINARY	P1	Planning Information	25:07:10	TH

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1 PREAMBLE

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2 INTRODUCTION

MBP has been appointed by the owners of Tottenham House (TH) to undertake the design and site monitoring of the new Pool House building within the Walled Gardens at Tottenham House. The works involve the following key activities in the ground:

- a. Installation of a piling mat
- b. Installation of a piled wall around the perimeter of the new Pool House
- c. Sequential excavation of the soil within the piled wall, providing temporary propping at three levels.
- d. Installation of a new permanent reinforced concrete structure with liner walls and floors to provide the permanent propping to the perimeter walls.
- e. Hard landscaping activities, forming and improving pathways within 4m of the walls.

3 SITE LOCATION

Tottenham House is in a rural location in Wiltshire to the NE of Durley.

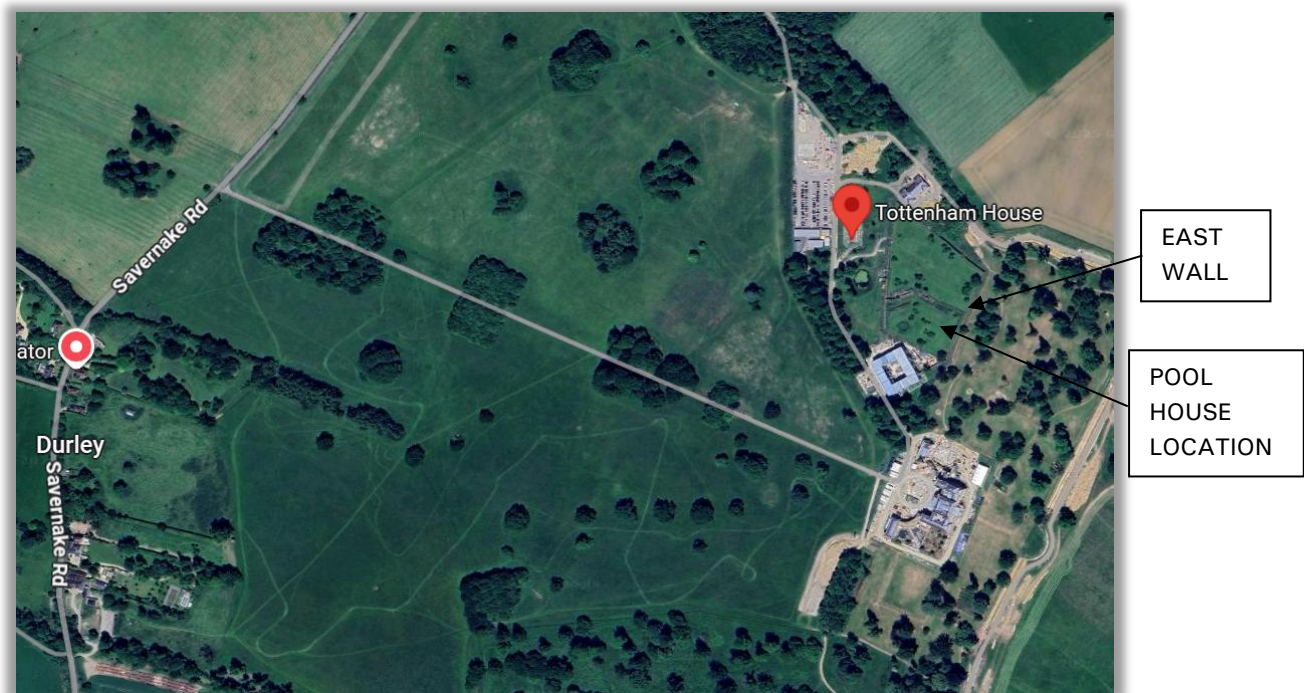


Figure 1: Map showing the Pool House location and surrounding area of the property.

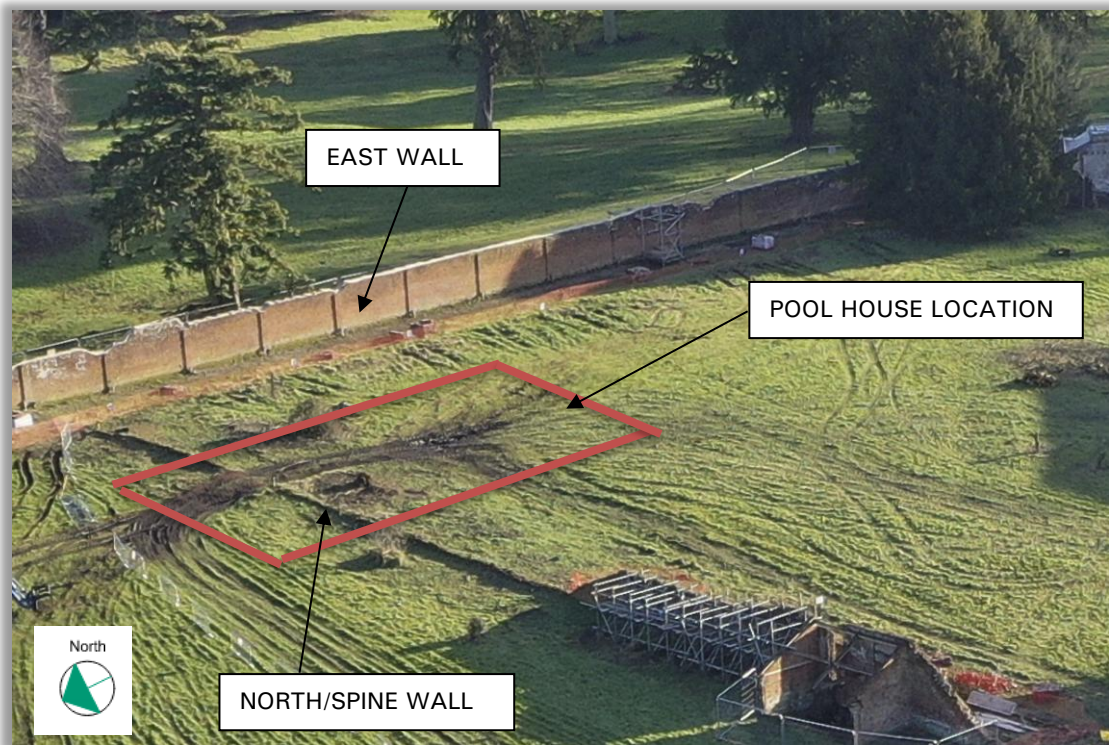


Figure 2: Ariel photograph showing the location of the proposed Pool House within the walled gardens.



Figure 3: Land photograph showing the extent and scale of "North/Spine Wall" within the walled gardens.

4 MONITORING PROPOSAL

The objective of the monitoring of the walls is to ensure that the planned works do not adversely impact the condition or stability of the walls.

There are two walls of key interest that are adjacent to the proposed Pool House site. We have simplified their naming on Figure 2 as “East Wall” and “North/Spine Wall”, this is an indication of the boundary on which the wall lies.

The North/Spine Wall is an internal wall within the walled garden and its height has been significantly reduced height, this can be seen in Figure 2, and Figure 3. This wall will be visually monitored during the works but there is not enough wall to affix targets to it. The scale of the remaining wall is such that the risk of any instability as a direct consequence of the proposed works is very low.

The East Wall is a boundary wall to the walled garden and its height varies along the length of the wall. The wall has piers at approximately 4.8m spacing and these piers are numbered. The numbering has been transferred on to MBP’s monitoring drawings for ease of reference. The “East Wall” can be seen in Figure 2, and in the background in Figure 3. This wall will be visually monitored during the works, and will have 3D monitoring targets fixed to it along its length. Figure 4 gives examples of 3D self-adhesive targets that would be used. The wall is long and over 5m from the planned piling and excavation of the Pool House, however we are proposing to monitor each of the piers along the zone of interest, piers 057 to 067, and midway on each of the wall panels between these piers. The extent of the monitoring is indicated on MBP’s drawings appended to this document. Please note that at each pier and wall position two level of targets will be installed, the low level, L/L, at 0.5m above ground level, and the high level, H/L, at 2.0m above ground level. The targets indicated in Figure 4, when read, will give levels as well as eastings and northings. The targets are read using industry standard equipment such as the Leica TPS1200 + series indicated in Figure 5.

This will give us a very good indication of how the wall is behaving in all three directions during the works

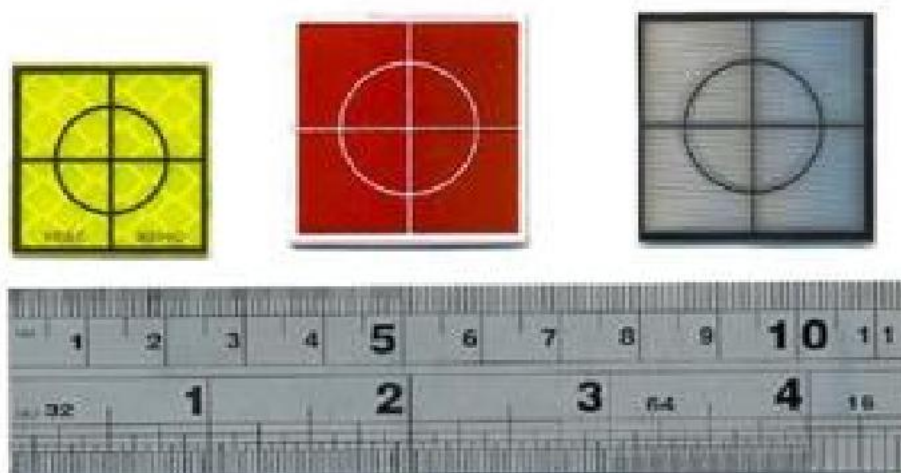


Figure 4: Examples of self-adhesive targets to be fixed to the wall at monitoring positions.

Leica TPS1200+ Series



Figure 5: Image of Leica TPS1200+ Series monitoring equipment.

Once the contractor for the construction of the proposed works has been appointed, their RAMS will be prepared, and will incorporate monitoring proposals in line with this document. For this element they will appoint a professional surveying company to monitor the nearby walls during the five key stages of construction identified in Section 2 above: 2a; 2b; 2c; 2d, and 2e. The monitoring will remain active until a period of two months after the completion of these structural works to ensure that any movement associated with the works has stopped.

These will be prepared by a professional monitoring surveying company be reviewed by the team prior to any works commencing on site.

Monitoring and reporting will take place at the intervals set out in Figure 6:

Activity	Frequency of monitoring
Site set up	Bi-Weekly
Piling and Excavation	Weekly
Installation of substructures up to Ground Floor level	Weekly
Run off after completion of structural works	Weekly for 2 months.

Figure 6: Monitoring interval periods during primary activities.

Elevations of the wall will proposed location of the targets for the walls will be agreed before works start on site and appended to this report.

5 CONTROL MEASURES

We will, via the contractor, monitor the historic walls for movements throughout the principal piling, excavation and construction works.

The monitoring regime and frequency proposed is set out in the previous Section 4 on table in Figure 6.

Target monitoring will monitor rear facades with an accuracy of $\pm 2\text{mm}$. The results of the monitoring will be collated within a report and published at the frequency stated above. These will be issued by email to the project engineer and the rest of the team, on the day that the results are taken. The results are to be presented both in table and graphical form with the graphs for each point plotting the readings taken against time. Each report will also include the following:

- A. Date of Survey
- B. Conditions at time of survey
- C. Eastings, northings and level information for each target
- D. Movements in mm, of the eastings, northings, and levels
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- F. Movements in mm relative to the last readings.

These results will be interrogated and measured against the agreed trigger levels:

- The Green/Amber trigger level will be 6mm
- The Amber/Red trigger level will be 10mm

In the event of any movements exceeding the agreed target levels the method of works will be reviewed and altered as necessary.

These actions are set out below in Figure 7.

Trigger Level	Action
Green/Amber	Immediately notify the engineers.
	Review the situation on site and report back to the team
Amber/Red	Contractor to stop all works and immediately notify the engineers.
	Contractor and project engineer to put forward proposals, such as additional propping, to limit further movement to an acceptable level.

Figure 7: Triggers and Actions during monitoring.

5.1 LOCATION OF THE TARGETS

Appended to this report are a set of three drawings that set out of location of the proposed works, the proximity of these works to the historic walls, and the proposed locations of the monitoring regime. Extracts of these drawings is given on Figure 8, Figure 9, and Figure 10.

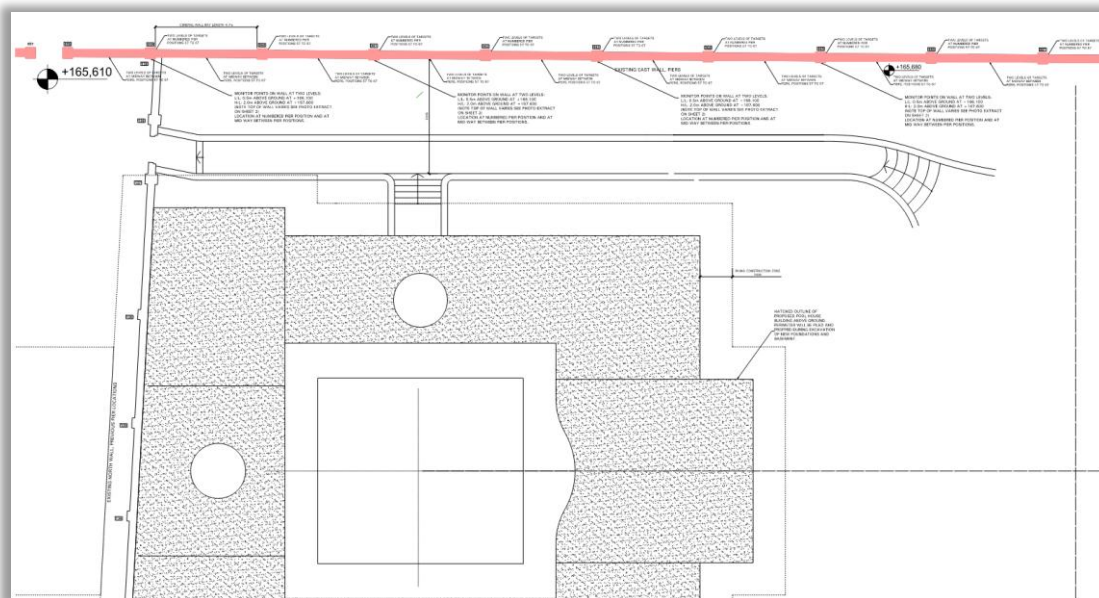


Figure 8: Extract of 10442-MBP-PH-00-DR-S-03-0001.



Figure 9: Extract of 10442-MBP-PH-XX-DR-S-03-0002.

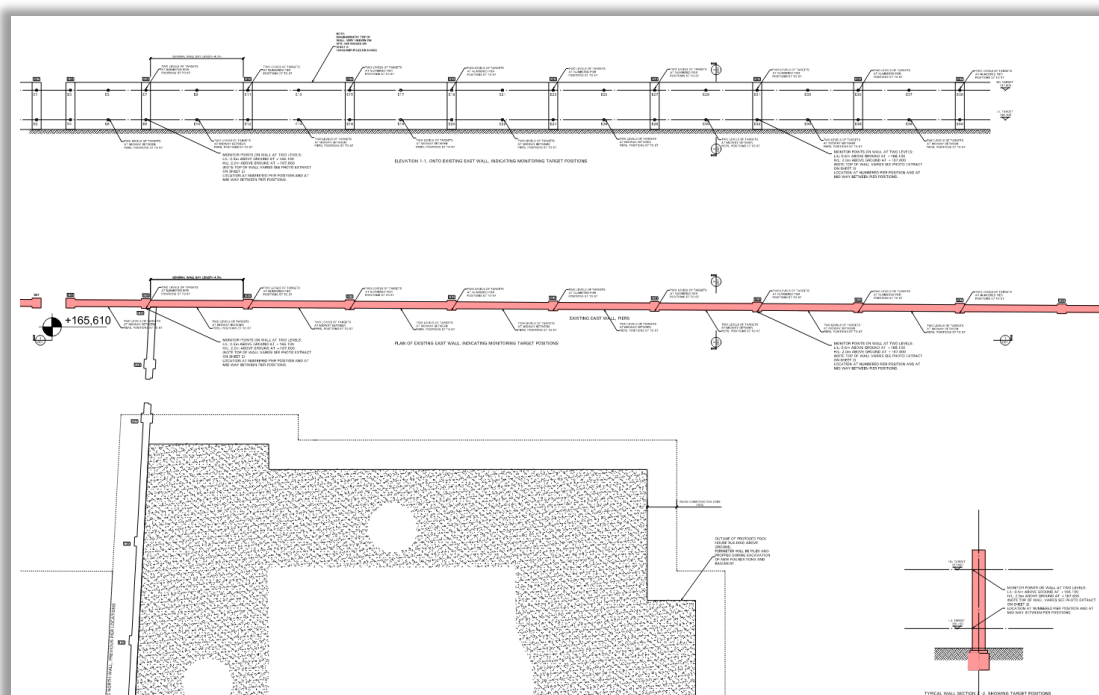


Figure 10: Extract of 10442-MBP-PH-XX-DR-S-03-0003.

All of the above is to be agreed with the team, installed on site, and base readings taken prior to the commencement of the piling enabling works on site.

6. CONCLUSION

With the monitoring and control measures outlined in this report the works at the Pool House can be executed in a safe and controlled manner with minimum impact on the adjacent historic walls.

Report Prepared by:

Name: Tony Hayes BSc (Hons) CEng MStructE
Principal Director, for MBP Ltd
Date: 25:09:30

Pool House, Walled Garden, Tottenham House, Wiltshire SN8 3BE

Structural Engineer's Ground Movement Monitoring proposal

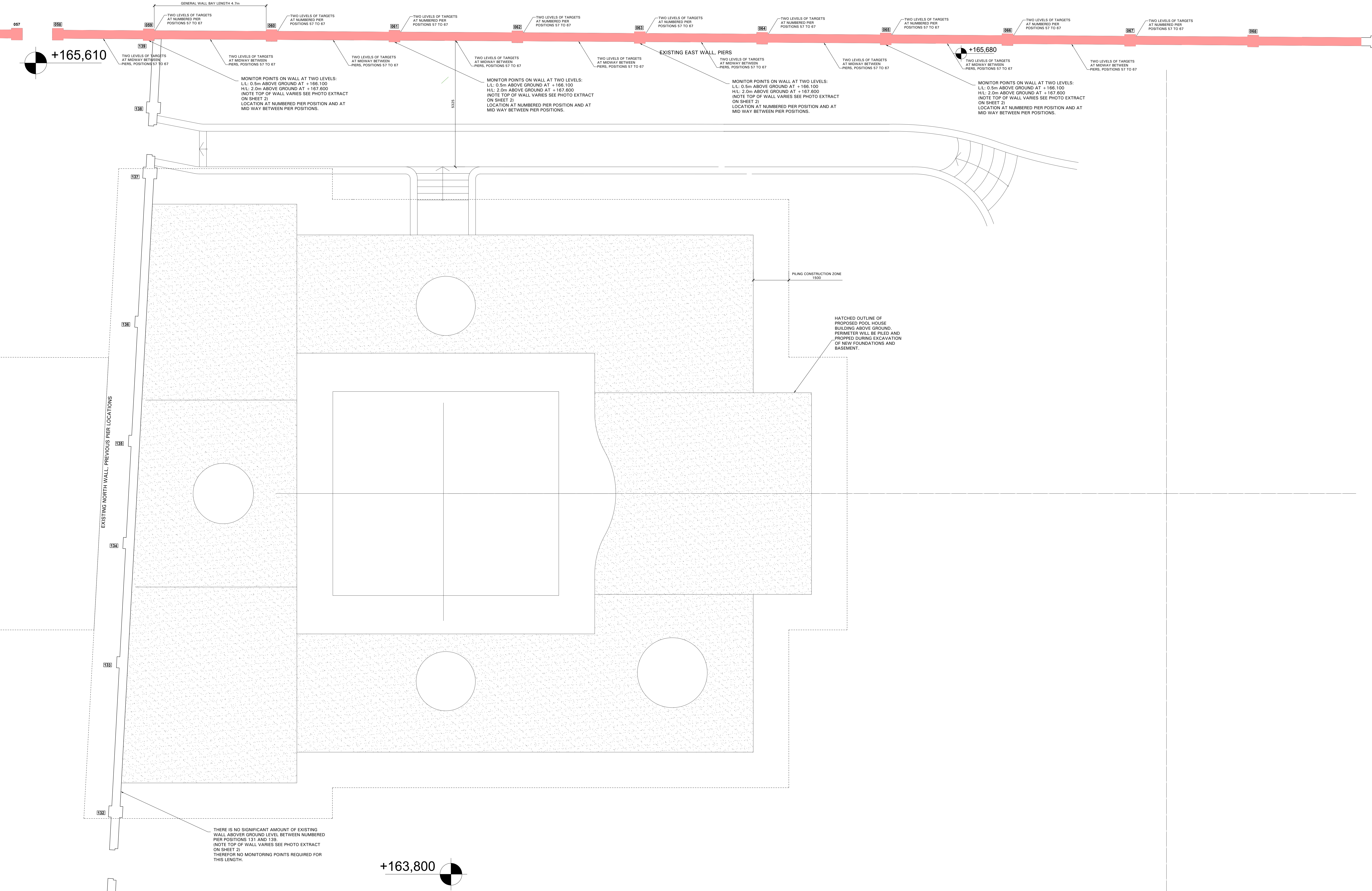
September 2025

Appendix A – MBP Drawings

10442-MBP-PH-00-DR-S-03-0001-P1

10442-MBP-PH-ZZ-DR-S-03-0002-P1

10442-MBP-PH-ZZ-DR-S-03-0003-P1



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Project Title

POOL HOUSE,
TOTTENHAM HOUSE &
ESTATE, WILTSHIRE

Drawing Title

SITE PLAN
EXISTING WALLS
MONITORING PROPOSALS-SHT 1

Scale @ A0

1:50

Date

25/09

Drawn

TH

Checked

KG

MBP

Consulting Engineers

Drawing Status

SD - WORK IN PROGRESS

Revision

P01

Project Drawing ID

10442-MBP-PH-00-DR-S-0001

Project

Originator

Volume

Level

Type

Pier

Number

Rev

Date

Description

BY

Rev

Date

Description

BY

Rev

Date

Description

BY

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Project Title

POOL HOUSE, TOTTENHAM HOUSE & ESTATE, WILTSHIRE

Scale @ A0

1:50

Date

25/09

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TH

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KG

MBP

Consulting Engineers

Drawing Status

SO - WORK IN PROGRESS

Revision

P01

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London WC2B 6AA

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W mbp-uk.com

Drawing Title

SITE PLAN EXISTING WALLS MONITORING PROPOSALS-SHT 2

Project Drawing ID

10442-MBP-PH-XX-DR-S-0002

Rev

1/1/18

PRELIMINARY ISSUE

BY

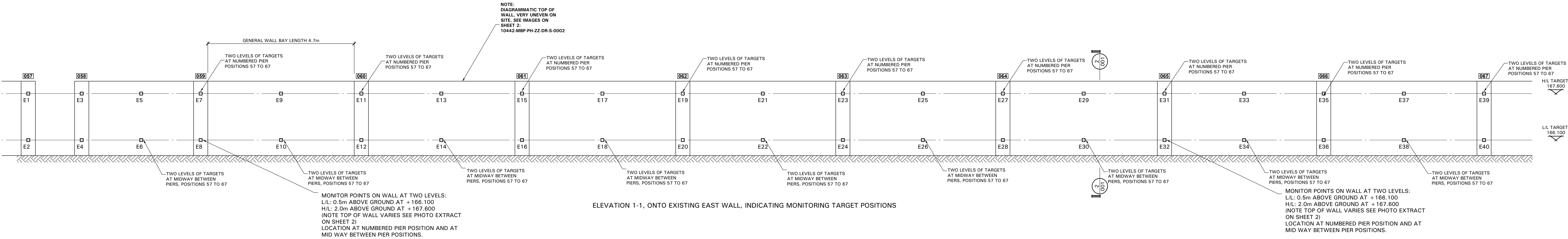
Rev

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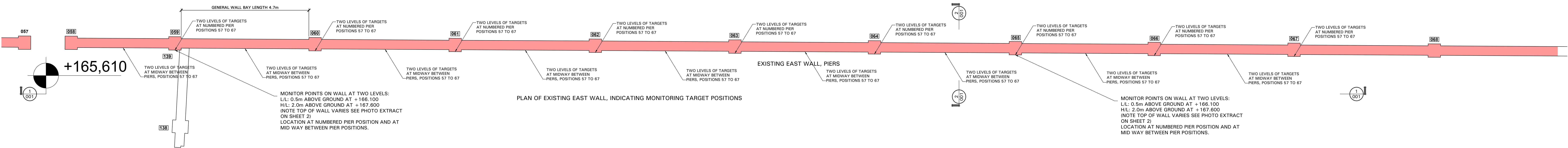
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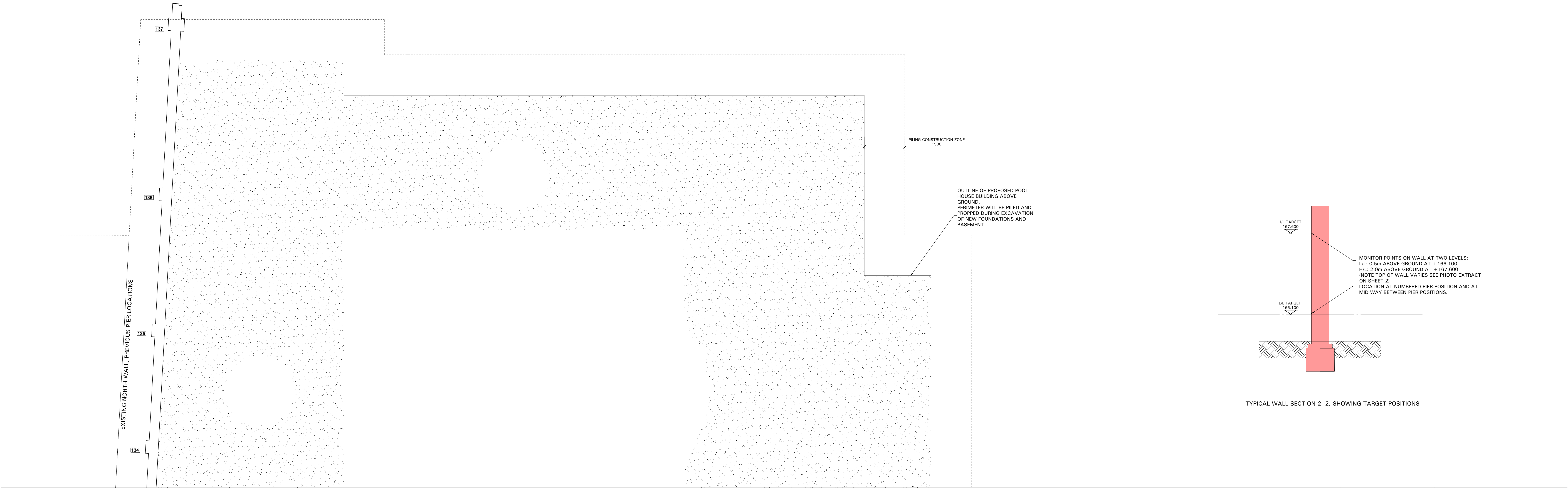
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ELEVATION 1-1, ONTO EXISTING EAST WALL, INDICATING MONITORING TARGET POSITIONS



PLAN OF EXISTING EAST WALL, INDICATING MONITORING TARGET POSITIONS



TYPICAL WALL SECTION 2 - 2, SHOWING TARGET POSITIONS

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Project Title		Scale @ A0	Date	Drawn	Checked	MBP	Consulting Engineers
POOL HOUSE, TOTTENHAM HOUSE & ESTATE, WILTSHIRE		1:50	25/09	TH	KG		
Drawing Status		Revision					
SD - WORK IN PROGRESS		P01			88 Kingsway London WC2B 6AA T 020 7240 1191 E london@mbp-uk.com W mbp-uk.com		
Project Drawing ID		10442-MBP-PH-XX-DR-S-0003					
Drawing Title		SITE PLAN EXISTING WALLS MONITORING PROPOSAL-SHT 3					
Project		Originator	Volume	Level	Type	Pack	Number