

# PIXB – West Didsbury

## Drainage Statement

Doc Ref: 15094-BKP-XX-XX-RP-C-0001

Date: 03.09.2024 – Rev A



boothking



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| -          | First Issue                                   |          | 12.06.24     |
| A          | Revised layout/option                         |          | 03.09.24     |

## 1.0 INTRODUCTION & SCOPE

### 1.1 – Scope

Our client Whitbread PLC has requested Booth-King Partnership Ltd. to undertake a scheme drainage design and provide this drainage statement for the purposes of planning permission with Manchester City Council for the demolition of the existing restaurant and subsequent replacement with a new hotel annex building of 30No. new bedrooms and a smaller breakfast room, shown in blue on Figure 1 below.

## 2.0 EXISTING SITE

### 2.1 – Location

The site is located off the A5145, address Premier Inn Manchester West Disbury, Christie Fields Business Park, Derwent Avenue, Manchester, M21 7QS. The overall site covers an area of approximately 0.70ha.



Figure 1.  
Existing Site

## 2.2 – Existing Foul Network

The existing foul network for the hotel is private and falls under gravity to the west of the site. The majority of the network appears to be 150mm UPVC or Vitrified clay pipes, noted brown on Figure 2. below. Refer to Appendix A for existing site survey with drainage layout.

With reference to the obtained United Utilities drawings, provided in Appendix B, the foul currently discharges to the United Utilities combined sewer under Christie Way, shown black on Figure 2 below.

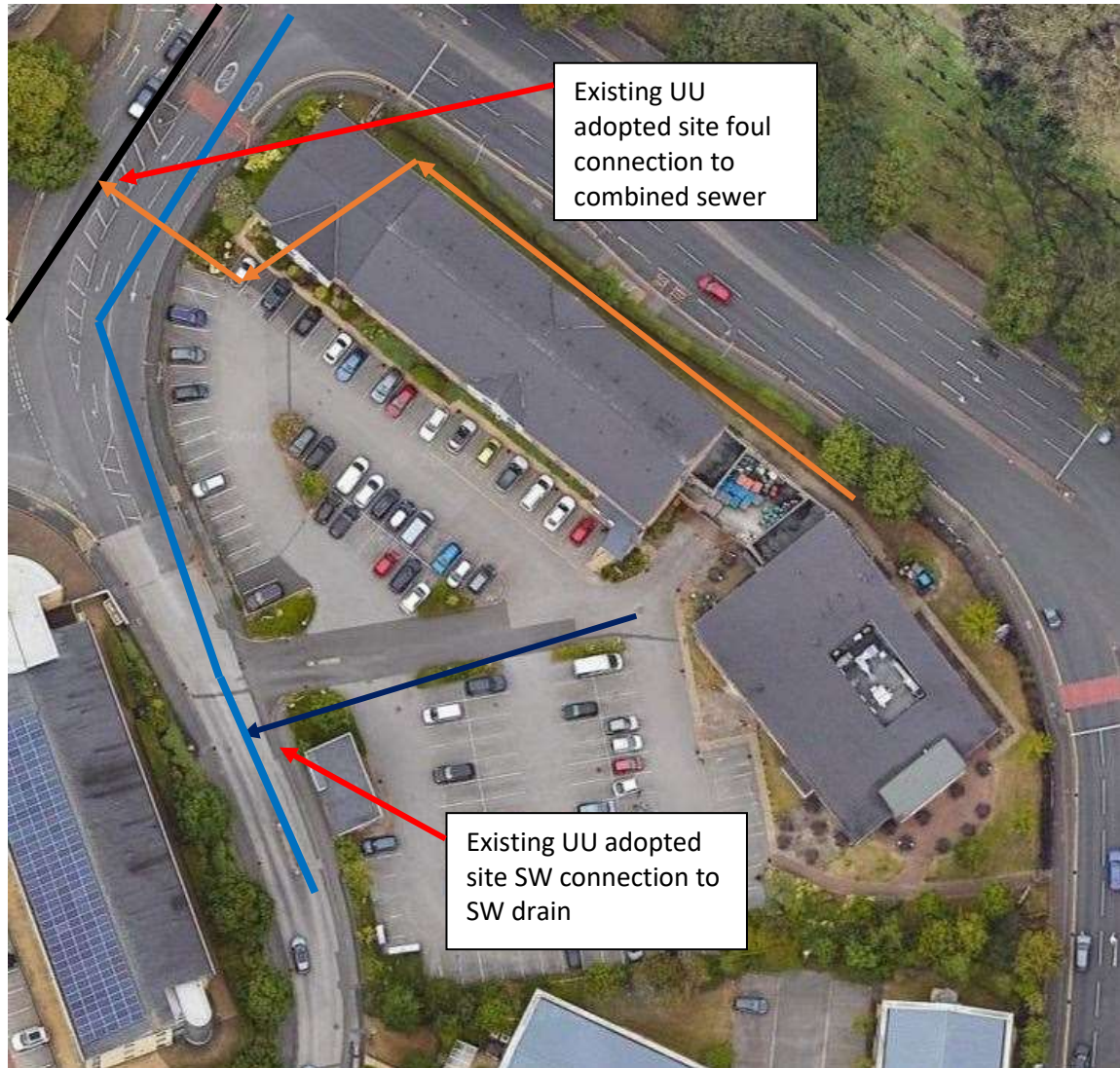


Figure 2.  
United Utilities connection points

## 2.3 – Existing Surface Water

The existing surface water network for the hotel appears to be 150/225mm UPVC or Vitrified clay pipes and falls under gravity to the southwest of the site, as shown in dark blue on Figure 2. above. The surface water drains all the hardstanding roof and car park areas and discharges into the existing United Utilities surface water drain on Christie Way also. There does not appear to be any current attenuation, flow control or Suds systems on site at present.

## 2.4 – Flooding

From review of the local flood maps there is no noted residual risk of flooding on site from river, coastal water or surface water flooding. The site is in a flood zone 1 area and is considered very low risk of flooding.

### 3.0 – SITE DRAINAGE PROPOSALS

#### 3.1 – Proposal

It is proposed to demolish the existing restaurant building and construct a new 2 storey annex hotel extension with 30No. additional bedrooms and a smaller breakfast room, as per proposed layout provided in Appendix D.

#### 3.2 – Proposed Foul Network

It is proposed to install a new gravity system local to the new annex and tie into the existing network under gravity, the runs will be kept to a minimum depth and concrete encased (if required) so as to allow connection into the closest existing foul manhole. With reference to British Water Flows and Loads 4, due to the removal of the larger restaurant and bar the overall site foul discharge will remain the same at 2.22 l/s as per calculation below in Figure 3.

| British Water - Flows and Loads 4             |                     |     |                                 |       |           |
|-----------------------------------------------|---------------------|-----|---------------------------------|-------|-----------|
| Hotel - Total - EXSITING                      | Rooms<br>(2 person) | No. | FLOW (L)                        |       |           |
| Hotel Guests (3*)                             | 112                 | 224 | 250                             | 56000 |           |
| Hotel full time day staff                     |                     | 4   | 90                              | 360   |           |
| Hotel part time staff                         |                     | 8   | 45                              | 360   |           |
| Restaurant (full meals) covers twice per day  | 207                 | 2   | 30                              | 12420 |           |
| Drinkers (allow)                              | 207                 | 1   | 12                              | 2484  |           |
| Toilets (WC) per use - allow 1 per cover      | 207                 | 2   | 10                              | 4140  |           |
| Toilets (Urinal) per use, allow 2 per drinker | 207                 | 2   | 5                               | 2070  |           |
| Restaurant full time day staff (per day)      |                     | 16  | 90                              | 1440  |           |
| Restaurant part time staff (per day)          |                     | 16  | 45                              | 720   |           |
|                                               |                     |     | Total                           | 79994 | litre/day |
|                                               |                     |     | Peak flow (total/10hr/60/60)    | 2.22  | l/s       |
|                                               |                     |     | Average flow (total/24hr/60/60) | 0.93  | l/s       |

| Hotel - Total - PROPOSED                      | Rooms<br>(2 person) | No. | FLOW (L)                        |       |           |
|-----------------------------------------------|---------------------|-----|---------------------------------|-------|-----------|
| Hotel Guests (3*)                             | 142                 | 284 | 250                             | 71000 |           |
| Hotel full time day staff                     |                     | 4   | 90                              | 360   |           |
| Hotel part time staff                         |                     | 10  | 45                              | 450   |           |
| Restaurant - Breakfast/Lunch only             | 90                  | 2   | 30                              | 5400  |           |
| Drinkers (allow)                              | 90                  | 1   | 12                              | 1080  |           |
| Toilets (WC) per use - allow 1 per cover      | 90                  | 1   | 10                              | 900   |           |
| Toilets (Urinal) per use, allow 1 per drinker | 90                  | 1   | 5                               | 450   |           |
| Restaurant full time day staff (per day)      |                     | 3   | 90                              | 270   |           |
| Restaurant part time staff (per day)          |                     | 3   | 45                              | 135   |           |
|                                               |                     |     | Total                           | 80045 | litre/day |
|                                               |                     |     | Peak flow (total/10hr/60/60)    | 2.22  | l/s       |
|                                               |                     |     | Average flow (total/24hr/60/60) | 0.93  | l/s       |

Figure 3.  
Site Foul Flow Comparison

From the above, the development will not alter or cause any additional flows to the current network. Other than local authority approvals, no further permissions will be sought.

### 3.3 – Proposed Surface Water

The removal of the restaurant and creation of the new annex extension requires a small extension to the existing car park area. With reference to Appendix C a comparison of proposed hardstanding area shows that there is a nominal increase of 69m<sup>2</sup>.

Due to this it is proposed to install an element of betterment to the existing hotel surface water system.

It is proposed to drain the new area of car parking and a section of the existing car parking with a new surface water system which will include attenuation and controlled discharge.

It is proposed that the remaining majority of the existing car park and roof drain system is unaltered.

The new area of car parking to be attenuated has an area of 1245m<sup>2</sup>.

It is proposed to limit the discharge from this area to a reasonable flow rate of 5.0 l/s through a hydro brake of minimum 75mm diameter to mitigate any risk of blockage and subsequent flooding issues.

As required for a storm event of 1:100 years and with an allowance of 40% for climate change, the new network attenuation is required to be a minimum of 49.3m<sup>3</sup> in accordance with the Wallingford Procedure storage calculator noted below.

|                                                     |      |                                   |      |             |           |       |         |                    |                                               |
|-----------------------------------------------------|------|-----------------------------------|------|-------------|-----------|-------|---------|--------------------|-----------------------------------------------|
| Site Location :                                     |      | PIXB - Didsbury                   |      |             |           |       |         |                    |                                               |
|                                                     |      | Overall Site Area, A =            |      | 0.1245 ha   |           |       |         |                    |                                               |
|                                                     |      | M5-60 (Fig. 1) =                  |      | 20 mm       |           |       |         |                    |                                               |
|                                                     |      | r (Fig. 2) =                      |      | 0.35        |           |       |         |                    |                                               |
|                                                     |      | Impermeable Area, Ai =            |      | 140%        | 0.1743 ha |       |         |                    |                                               |
|                                                     |      | Permeable Area, Ap =              |      | 0%          | 0 ha      |       |         |                    |                                               |
|                                                     |      | Run-off Co-efficient, Cv =        |      | 0.9         |           |       |         |                    |                                               |
|                                                     |      | Routing Co-efficient, Cr =        |      | 1.3 (fixed) |           |       |         |                    |                                               |
|                                                     |      | Required Return Period, T Years = |      | 100         |           |       |         |                    |                                               |
| Duration                                            | Z1   | M5-D                              | Z2   | MT-D        | Q in      | Q out | Storage | Point Intensity, I | Q <sub>peak</sub> (3.61*Cv*I*A <sub>i</sub> ) |
| mins                                                |      | mm                                |      | mm          | m3        | m3    | m3      | mm/hour            | l/s                                           |
| 5                                                   | 0.35 | 7.0                               | 1.86 | 13.0        | 22.7      | 1.5   | 21.2    | 156.2              | 88.5                                          |
| 10                                                  | 0.51 | 10.2                              | 1.97 | 20.1        | 35.0      | 3     | 32.0    | 120.6              | 68.3                                          |
| 15                                                  | 0.62 | 12.4                              | 1.97 | 24.4        | 42.6      | 4.5   | 38.1    | 97.7               | 55.3                                          |
| 30                                                  | 0.79 | 15.8                              | 1.98 | 31.3        | 54.5      | 9     | 45.5    | 62.6               | 35.4                                          |
| 60                                                  | 1.00 | 20.0                              | 1.93 | 38.6        | 67.3      | 18    | 49.3    | 38.6               | 21.9                                          |
| 120                                                 | 1.25 | 25.0                              | 1.89 | 47.3        | 82.4      | 36    | 46.4    | 23.6               | 13.4                                          |
| 240                                                 | 1.55 | 31.0                              | 1.85 | 57.4        | 100.0     | 72    | 28.0    | 14.3               | 8.1                                           |
| 360                                                 | 1.72 | 34.4                              | 1.85 | 63.6        | 110.9     | 108   | 2.9     | 10.6               | 6.0                                           |
| 600                                                 | 2.00 | 40.0                              | 1.77 | 70.8        | 123.4     | 180   | -56.6   | 7.1                | 4.0                                           |
| 1440                                                | 2.60 | 52.0                              | 1.72 | 89.4        | 155.9     | 432   | -276.1  | 3.7                | 2.1                                           |
| 2880                                                | 3.30 | 66.0                              | 1.72 | 113.5       | 197.9     | 864   | -666.1  | 2.4                | 1.3                                           |
|                                                     |      | Allowable Discharge Flow:         |      | 5.00 l/s    |           |       |         |                    |                                               |
|                                                     |      | Required Storage for given flow:  |      | 49.3 m3     |           |       |         |                    |                                               |
| References - The Wallingford Procedure, Volumes 1-4 |      |                                   |      |             |           |       |         |                    |                                               |

### 3.4 – Proposed Surface Water (cont.)

This will be provided within the car park, using 'Polystorm PSM1' grates by 'Polypipe' (or equal approved) to allow for the required minimum cover depth of 0.6m. It will be 15x4.5x0.8m dp., providing 51m<sup>3</sup>. From the technical data below the crates are suitable for lightly trafficked areas such as the car park.

## Polystorm Modular Cell

Data Sheet

### PRODUCT INFORMATION

ISSUE 3 - JAN 2016

Product code: PSM1

The Polystorm cell made of virgin material, has a 44 tonnes/m<sup>2</sup> compressive strength. It is ideally suited for retention, attenuation or infiltration under trafficked or loaded areas at greater depths, such as car parks, housing and commercial developments. An efficient and versatile solution for SuDS compliance, it is hard-wearing, lightweight and provides a 95% void ratio for maximum water capture.



Refer drawings in Appendix D for proposed layout and drainage details. These improvements on the drainage with attenuation of existing surfacing will provide a betterment in overall site discharge rates. Approval will be sought with the local authority and Untied Utilities for this adjustment.

APPENDIX A  
EXISTING SITE TOPOGRAPHICAL & SERVICES LAYOUT



APPENDIX B  
UNITED UTILITES DRAWINGS

# Extract from Map of Public Sewers

The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available.

The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded.

United Utilities will not accept any liability for any damage caused by the actual positions being different from those shown.

United Utilities 2001  
The plan is based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office.Crown and United Utilities copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

## LEGEND

|  |               |
|--|---------------|
|  | Water Course  |
|  | Overflow Pipe |
|  | Sludge Main   |
|  | Highway Drain |
|  | Combined      |
|  | Surface Water |
|  | Foul          |
|  | Abandoned     |
|  | Public Sewer  |
|  | Private Sewer |
|  | Section 104   |
|  | Rising Main   |

**Premier Inn  
Derwent Avenue  
Manchester  
Chorlton Cum Hardy  
M21 7QS**

Printed By : Rachel Acton      Date: 06/03/2015

**DO NOT SCALE**  
Approximate Scale: 1:2500



APPENDIX C  
HARDSTANDING COMPARISON

TOPOGRAPHICAL NOTES:



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DRAINAGE AREAS KEY:

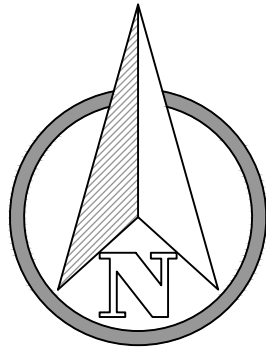
| REF. | DESCRIPTION                      |
|------|----------------------------------|
|      | Indicates soft landscaping area. |
|      | Indicates hard landscaping area. |

DRAINAGE AREA CALCULATIONS:

Existing soft landscaping area = 546m²  
Existing hard landscaping area = 1241m²  
  
Proposed soft landscaping area = 477m²  
Proposed hard landscaping area = 1310m²

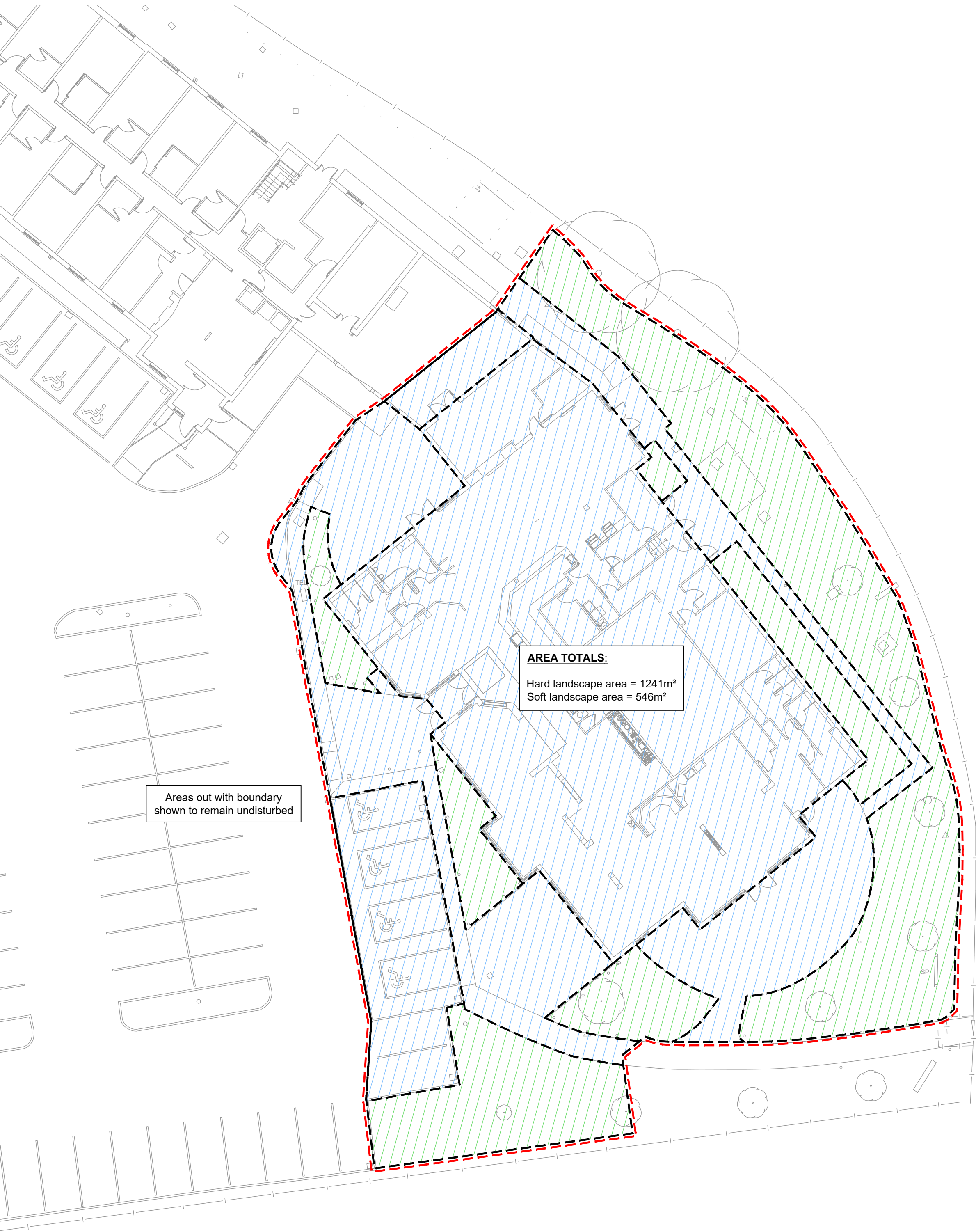
Net values:

Increased hard landscaping area = **69m²**

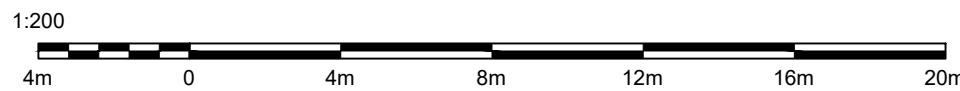
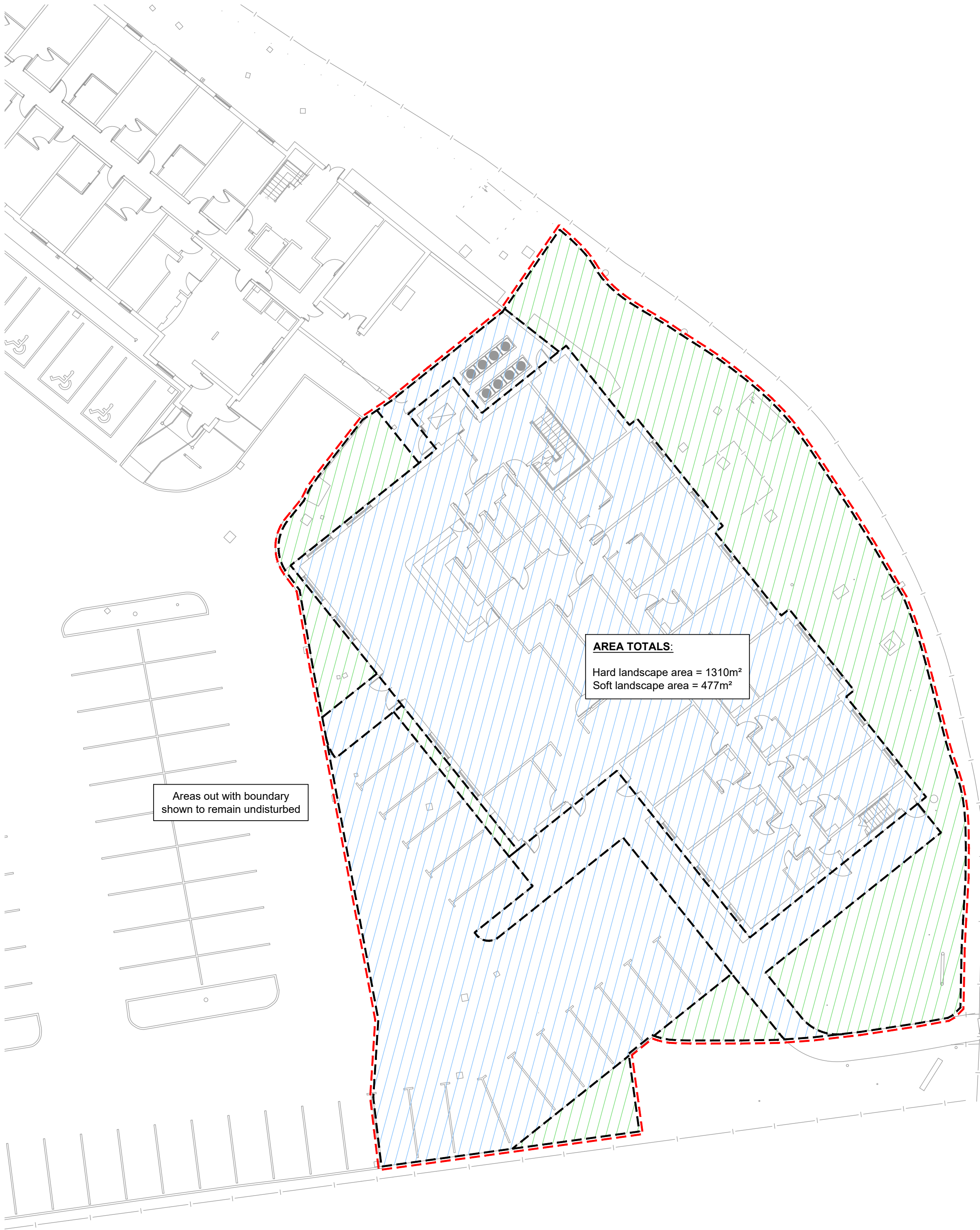


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Shared (non-contractual):  
S1 - Coordination, S2 - Information, S3 - Review, S4 & S5 - Approval.  
Published (contractual):  
A1, An, etc. (where "n" relates to the project stage)
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4.5 - Production Design, 5 - Construction, 6 - Handover.
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Documents with status code A5 indicate final construction ONLY.  
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EXISTING DRAINAGE AREAS GA  
SCALE 1:200



PROPOSED DRAINAGE AREAS GA  
SCALE 1:200

|                                      |          |                             |          |
|--------------------------------------|----------|-----------------------------|----------|
| C02                                  | 03.09.24 | STAGE 3 - PLANNING APPROVAL | PA       |
| C01                                  | 12.06.24 | STAGE 3 - PLANNING APPROVAL | CM       |
| REV.                                 | DATE     | REVISION DETAILS            | INITIALS |
| CURRENT DRAWING REVISION CHECKED BY  |          |                             | SP       |
| CURRENT DRAWING REVISION APPROVED BY |          |                             | AI       |
| DRAWING STATUS:                      |          | PROJECT STAGE:              |          |
| A3                                   |          | STAGE 3                     |          |

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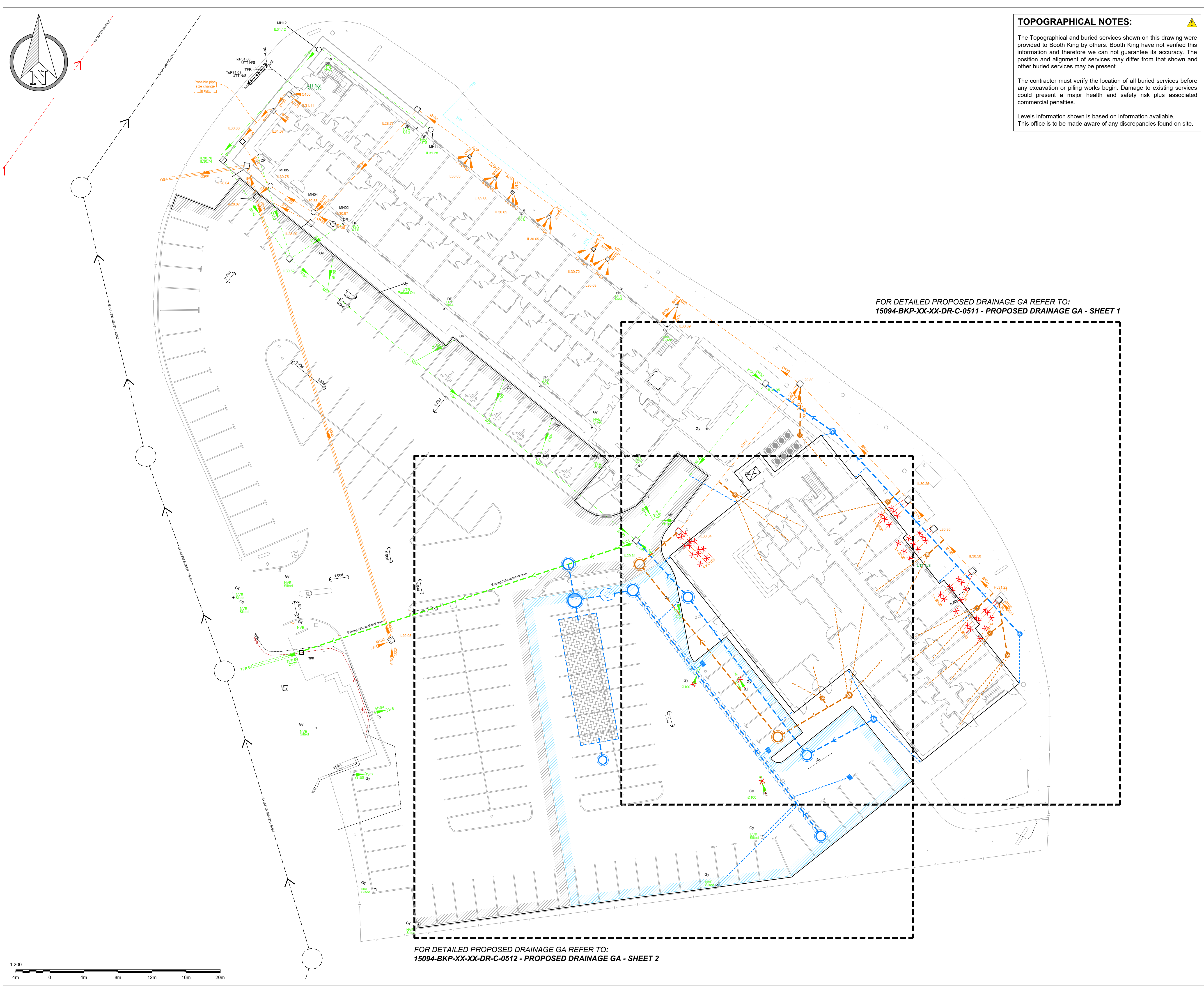
PROJECT:  
**Premier Inn Extension  
Manchester West Didsbury**

TITLE:  
**Drainage Areas GA**

|            |        |         |          |          |
|------------|--------|---------|----------|----------|
| SCALE (A1) | AUTHOR | DATE    | REVISION | BKPL No. |
| As noted   | CM     | June 24 | C02      | 15094    |

DRAWING REF:  
**15094-BKP-XX-XX-DR-C-0501**

APPENDIX D  
PROPOSED DRAINAGE LAYOUT & DETAILS



**TOPOGRAPHICAL NOTES:**

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FOR DETAILED PROPOSED DRAINAGE GA REFER TO:  
15094-BKP-XX-XX-DR-C-0511 - PROPOSED DRAINAGE GA - SHEET 1

FOR DETAILED PROPOSED DRAINAGE GA REFER TO:  
15094-BKP-XX-XX-DR-C-0512 - PROPOSED DRAINAGE GA - SHEET 2

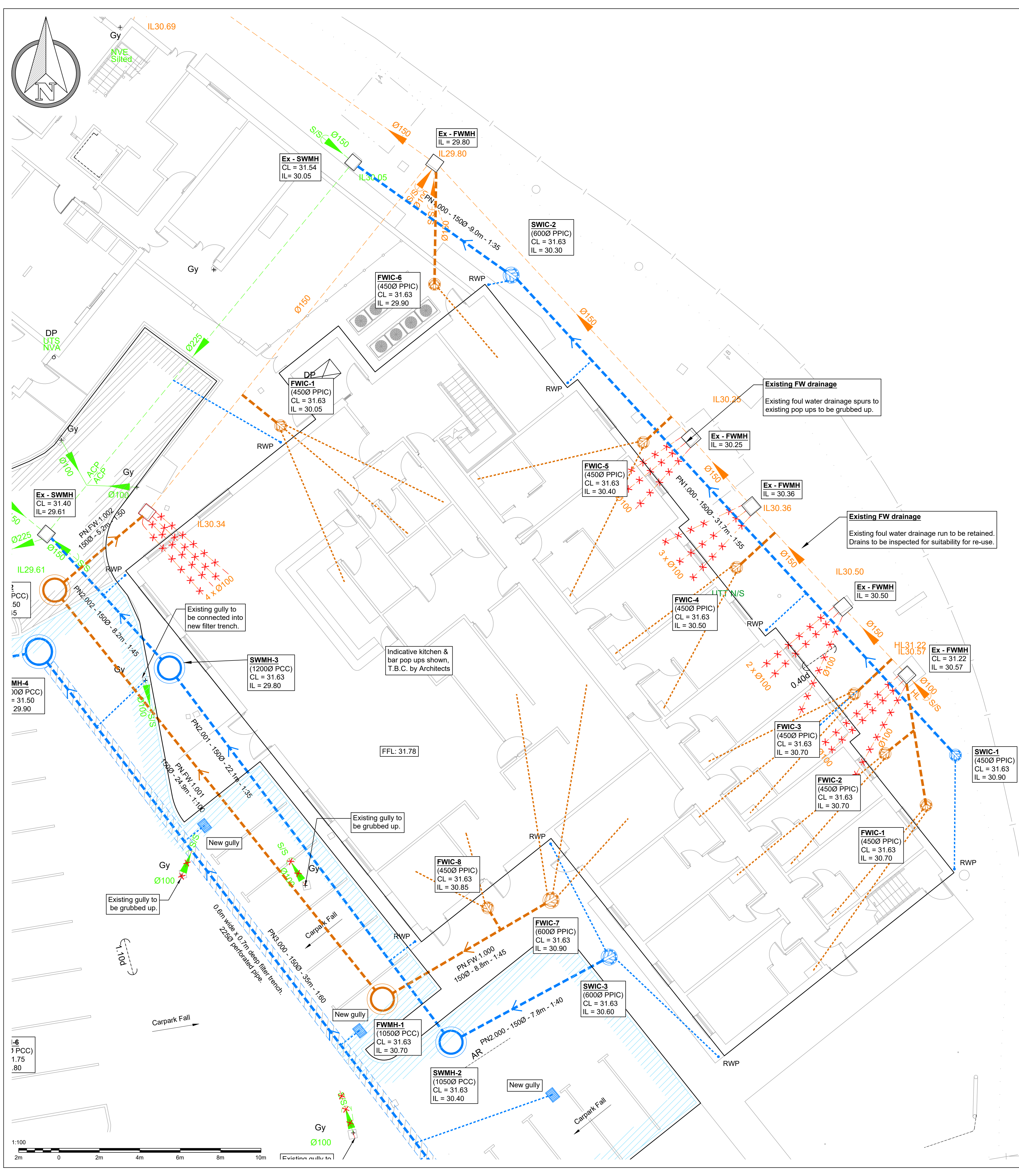
|                                      |          |                             |          |
|--------------------------------------|----------|-----------------------------|----------|
| C02                                  | 03.09.24 | STAGE 3 - PLANNING APPROVAL | PA       |
| C01                                  | 12.06.24 | STAGE 3 - PLANNING APPROVAL | CM       |
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| CURRENT DRAWING REVISION CHECKED BY  |          |                             | SP       |
| CURRENT DRAWING REVISION APPROVED BY |          |                             | AI       |
| DRAWING STATUS:                      |          | PROJECT STAGE:              |          |
| A3                                   |          | STAGE 3                     |          |

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|                                                               |        |         |          |          |
|---------------------------------------------------------------|--------|---------|----------|----------|
| PROJECT:<br>Premier Inn Extension<br>Manchester West Didsbury |        |         |          |          |
| TITLE:<br>Drainage Key Plan                                   |        |         |          |          |
| SCALE (A1)                                                    | AUTHOR | DATE    | REVISION | BKPL No. |
| 1:200                                                         | PA     | June 24 | C02      | 15094    |
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DRAINAGE NOTES:

- All adoptable works to be in accordance with SSG appendix C where applicable.
- All manhole cover levels to be confirmed by Architect.
- Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
- Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
- Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
- All surface water pipes to be laid at a gradient no flatter than 1:80 (UNO).
- All foul water pipes to be laid at a gradient no flatter than 1:40 (UNO).
- For minimum depths requiring pipe protection refer to drainage details drawings.
- Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
- Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
- Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
- All Manholes should be concrete manhole rings (UNO).
- All SVP & RWP positions TBC by Architect.
- Rodding access is to be provided at all pop-ups.
- For setting out of all pop-up positions refer to Architect's details.
- Civil engineering contractor to arrange for:
  - Own services and temporary supplies.
  - Pathway & partial closure as deemed required by their method statement. Including costs.
  - Temporary adequate over pumping as deemed required by civil engineers method of construction.
- The contractor should confirm the locations for existing services prior construction.

DRAINAGE ANNOTATION KEY:

| REF. | DESCRIPTION                      |
|------|----------------------------------|
| SW   | Surface water drainage           |
| FWC  | Foul water drainage              |
| W    | Combined water drainage          |
| MH   | Manhole                          |
| IC   | Inspection chamber               |
| PCC  | Precast concrete chamber         |
| PPIC | Polypropylene inspection chamber |
| GU   | Gully                            |
| CL   | Cover level (m)                  |
| IL   | Invert level (m)                 |
| SVP  | Soil vent pipe                   |
| PU   | Pop up                           |
| RWP  | Rainwater downpipe               |

DRAINAGE LINE TYPES KEY:

| REF.          | DESCRIPTION                        |
|---------------|------------------------------------|
| ---           | Existing FW network                |
| ---           | Existing SW network                |
| - x x x x x - | Existing drainage to be grubbed up |
| ---           | Proposed FW network                |
| ---           | Proposed SW network                |

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2 - Concept, 3 - Coordination, 4 - Technical Design, 4.5 - Production Design, 5 - Construction, 6 - Handover.
- Only documents with a revision code C# (where "F" relates to a revision number) and status code A5 are suitable for construction. Documents with status code A5 indicate final construction ONLY. Any deviations to that which is on site is not the liability of BKPL.

|                                         |          |                             |          |
|-----------------------------------------|----------|-----------------------------|----------|
| C02                                     | 03.09.24 | STAGE 3 - PLANNING APPROVAL | PA       |
| C01                                     | 12.06.24 | STAGE 3 - PLANNING APPROVAL | CM       |
| REV.                                    | DATE     | REVISION DETAILS            | INITIALS |
| CURRENT DRAWING REVISION CHECKED BY SP  |          |                             |          |
| CURRENT DRAWING REVISION APPROVED BY AI |          |                             |          |
| DRAWING STATUS: A3                      |          | PROJECT STAGE: STAGE 3      |          |

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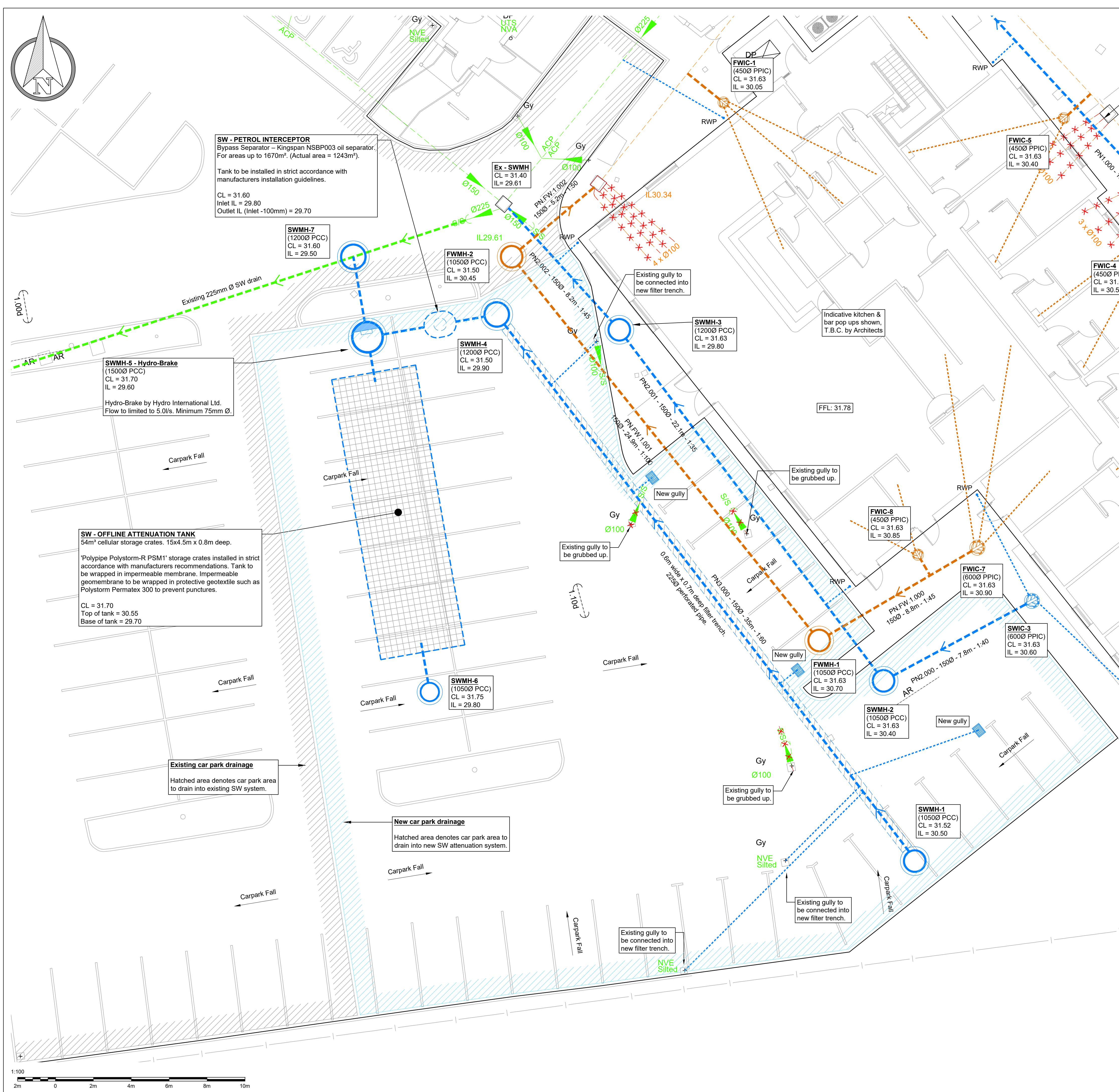
**RAMSBOTTOM** | **MANCHESTER** | **EDINBURGH**  
Tel: 01706 822 022 Tel: 0161 694 7087 Tel: 0131 229 1547

PROJECT: Premier Inn Extension Manchester West Didsbury

TITLE: Proposed Drainage GA Sheet 1

|            |        |         |          |          |
|------------|--------|---------|----------|----------|
| SCALE (A1) | AUTHOR | DATE    | REVISION | BKPL No. |
| 1:100      | PA     | June 24 | C02      | 15094    |

DRAWING REF: 15094-BKP-XX-XX-DR-C-0511



- TOPOGRAPHICAL NOTES:**
- The Topographical and buried services shown on this drawing were provided to Booth King by others. Booth King have not verified this information and therefore we can not guarantee its accuracy. The position and alignment of services may differ from that shown and other buried services may be present.
- The contractor must verify the location of all buried services before any excavation or piling works begin. Damage to existing services could present a major health and safety risk plus associated commercial penalties.
- Levels information shown is based on information available. This office is to be made aware of any discrepancies found on site.
- DRAINAGE NOTES:**
- All adoptable works to be in accordance with SSG appendix C where applicable.
  - All manhole cover levels to be confirmed by Architect.
  - Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
  - Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
  - Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
  - All surface water pipes to be laid at a gradient no flatter than 1:80 (UNO).
  - All foul water pipes to be laid at a gradient no flatter than 1:40 (UNO).
  - For minimum depths requiring pipe protection refer to drainage details drawings.
  - Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
  - Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
  - Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
  - All Manholes should be concrete manhole rings (UNO).
  - All SVP & RWP positions TBC by Architect.
  - Rodding access is to be provided at all pop-ups.
  - For setting out of all pop-up positions refer to Architect's details.
  - Civil engineering contractor to arrange for:
    - Own services and temporary supplies.
    - Pathway & partial closure as deemed required by their method statement. Including costs.
    - Temporary adequate over pumping as deemed required by civil engineers method of construction.
  - The contractor should confirm the locations for existing services prior construction.

| DRAINAGE ANNOTATION KEY: |                                  |
|--------------------------|----------------------------------|
| REF.                     | DESCRIPTION                      |
| SW                       | Surface water drainage           |
| FWC                      | Foul water drainage              |
| W                        | Combined water drainage          |
| MH                       | Manhole                          |
| IC                       | Inspection chamber               |
| PCC                      | Precast concrete chamber         |
| PPIC                     | Polypropylene inspection chamber |
| GU                       | Gully                            |
| CL                       | Cover level (m)                  |
| IL                       | Invert level (m)                 |
| SVP                      | Soil vent pipe                   |
| PU                       | Pop up                           |
| RWP                      | Rainwater downpipe               |

| DRAINAGE LINE TYPES KEY: |                                    |
|--------------------------|------------------------------------|
| REF.                     | DESCRIPTION                        |
| ---                      | Existing FW network                |
| ---                      | Existing SW network                |
| - x x x x x -            | Existing drainage to be grubbed up |
| ---                      | Proposed FW network                |
| ---                      | Proposed SW network                |

- NOTES:**
- Do not scale from this drawing.
  - This drawing is copyright and is sent to you in confidence. It must not be copied, used or disclosed, in whole or in part, to third parties without written permission. It remains the property of Booth King Partnership Ltd. (BKPL) and must be returned on request.
  - This drawing is to be read in conjunction with all relevant contractual documents.
  - Anyone using this drawing must be aware of their legal duties under the CDM Regulations 2015, refer to the HSE website for further information. BKPL are not Principal Designers.
  - All dimensions shown on this drawing are in millimeters unless noted otherwise.
  - If the Contractor consider that they do not have sufficient information to safely complete the works detailed on this drawing, they should contact the Engineer.
  - This document uses revision codes in accordance with ISO EN 19650:  
P, Preliminary (non-contractual) - review, comment or approval.  
C, Contractual - Approved for stage completion.
  - This document uses status codes in accordance with ISO EN 19650:  
Work in progress:  
S0 - WIP  
Shared (non-contractual):  
S1 - Coordination, S2 - Information, S3 - Review, S4 & S5 - Approval.  
Published (contractual):  
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| C02                                  | 03.09.24       | STAGE 3 - PLANNING APPROVAL | PA       |
|--------------------------------------|----------------|-----------------------------|----------|
| C01                                  | 12.06.24       | STAGE 3 - PLANNING APPROVAL | CM       |
| REV.                                 | DATE           | REVISION DETAILS            | INITIALS |
| CURRENT DRAWING REVISION CHECKED BY  |                |                             |          |
| CURRENT DRAWING REVISION APPROVED BY |                |                             |          |
| DRAWING STATUS:                      | PROJECT STAGE: |                             |          |
| A3                                   | STAGE 3        |                             |          |

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PROJECT:  
**Premier Inn Extension  
Manchester West Didsbury**

TITLE:  
**Proposed Drainage GA  
Sheet 2**

|            |        |         |          |          |
|------------|--------|---------|----------|----------|
| SCALE (A1) | AUTHOR | DATE    | REVISION | BKPL No. |
| 1:100      | PA     | June 24 | C02      | 15094    |

DRAWING REF:  
**15094-BKP-XX-XX-DR-C-0512**