



- Do not scale this drawing. All dimensions must be checked / verified on site. If in doubt ask.
- This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialist drawings and specifications.
- All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
- Any discrepancies noted on site are to be reported to the Engineer immediately.
- The site specification for drainage works shall be the Water Authority Association 'Sewers for Adoption' (7th Edition).
- For details of ground conditions refer to the Ground Investigation Report.
- The following pipe strengths shall be adopted unless noted otherwise:
  - Pipes over 300mm diameter to be concrete to BS 5911 Class M.
  - Pipes 150mm diameter to be steel rodding 200mm to the crown to BS EN 256 Class 100.
- All pipes entering and exiting manholes are to be connected with pipe socket level unless noted otherwise.
- Bedding and surround to be as follows:
 

| Location                  | Cover to SUFF | Bedding                             |
|---------------------------|---------------|-------------------------------------|
| Roads                     | +1.2m         | Class 'S' granular bed surround     |
|                           | +1.2m         | Class 'X' Concrete surround         |
| Hard and soft landscaping | +0.6m         | Class 'S' granular bed and surround |
|                           | +0.6m         | Class 'X' Concrete surround         |
- The following concrete mixes are to be used (all in accordance with BS 5885):
 

| Location                               | Mix Reference |
|--|---------------|
| Concrete surround to pipes             | St1           |
| Concrete base and surround to manholes | St1           |
- The above concrete mixes have been selected for BS 5885 Class 2 sulphates.
- All precast concrete products (ie pipes, manholes rings etc) shall be of suitable concrete mix to class 2 sulphates.
- Pre-formed channels are to be used in manholes where applicable.
- Granular concrete bedding to be steel rodding to a dense smooth form neatly shaped and finished to all branch connections and laid in accordance with the Specification.
- All connections to be level in direction of flow using pipe beds.
- Manhole covers and frames to be ductile iron medium duty Grade D400 circular or rectangular to BS EN124 positions inside wherever indicated areas.
- First flexible joint in pipes adjacent to a manhole shall be a maximum of 600mm from inside face of manhole, connecting to rockier soil.
- The length of rockier pipe is as follows:
 

| Pipe Diameter | Length of Rockier pipe |
|---------------|------------------------|
| 150mm-400mm   | 600mm                  |
- Manholes with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other safety devices.
- The Project Contractor shall be responsible for checking the existing base and invert levels of any connection points for both the foul and surface water systems, prior to undertaking installation of any new drainage works. Any deviation to the levels and positions indicated on the drawing should be brought to the immediate attention of the Project Engineer.
- All inverts specified are outgoing (except backing). All pipes are to be laid to sufficient U.N.O.
- All connections to be made by purpose made manhole junctions as far as practicable.
- Manhole covers on block paved areas to be replaced to receive required surface finish.

**KEY**

- PROPOSED STORM
- PROPOSED CHANNEL DRAINAGE
- PROPOSED PERMEABLE PAVING
- PROPOSED PERFORATED LAND DRAINAGE
- PROPOSED TUBESIDER ATTENUATION SYSTEM
- PROPOSED FOUL
- PROPOSED LEVELS
- PROPOSED PETROL INTERCEPTOR
- PROPOSED RAIN WATER PIPE - TBC
- PROPOSED SYNCHRONIC RAINWATER PIPE - TBC
- PROPOSED SOIL VENT PIPE - TBC

ALL MANHOLES RECEIVING SYNCHRONIC FLOW TO HAVE VENTED COVER  
 ALL MANHOLES WITHIN AREA OF BLOCK PAVING FINISH TO BE SECURED  
 SRWP, RWP AND SVP POSITIONS TO BE CONFIRMED

ANY PROPOSALS WITHIN PUMPING STATION IS IN ABYEMANCE AND IS TO BE AGREED WITH THAMES WATER AND UK POWER NETWORKS. EASEMENT DETAILED ON DRAWING 12690 / 103

EXISTING FOUL PUMPING STATION AND EASEMENT TO REMAIN AND BE PROTECTED

PERMEABLE PAVING FINISH WITHIN AREA OF PUMPING STATION TO BE CONFIRMED BY THAMES WATER

TRAVELER BUND AT BOUNDARY TO BE REMOVED TO ELIMINATE THE NEED FOR RETAIN.

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SMH5 CL:75.450 IL: 73.840 (225) IL: 73.765 (300)

SMH6 -V CL:75.400 IL: 73.656

SMH7 -V CL:75.325 IL: 73.440

SMH8 -V CL:75.160 IL: 73.860

SMH9 -V CL:74.965 IL: 73.125

SMH10 -V CL:75.190 IL: 72.895 (300) IL: 72.820 (375) IL: 72.745 (450)

SMH11 -V CL:75.415 IL: 74.300 IL: 73.305 (375)

SMH12 -V CL:75.250 IL: 73.695

SMH13 -V CL:74.900 IL: 73.814

SMH14 -V CL:74.875 IL: 73.945 (600)

SMH15 -V CL:74.800 IL: 73.385

SMH16 -V CL:74.700 IL: 72.715 (450)

SMH17 -V CL:74.625 IL: 73.195

SMH18 -V CL:74.550 IL: 72.675

SMH19 -V CL:74.475 IL: 72.155

SMH20 -V CL:74.400 IL: 71.635

SMH21 -V CL:74.325 IL: 71.115

SMH22 -V CL:74.250 IL: 70.595

SMH23 -V CL:74.175 IL: 70.075

SMH24 -V CL:74.100 IL: 70.555

SMH25 -V CL:74.025 IL: 70.035

SMH26 -V CL:73.950 IL: 70.515

SMH27 -V CL:73.875 IL: 70.995

SMH28 -V CL:73.800 IL: 71.475

SMH29 -V CL:73.725 IL: 71.955

SMH30 -V CL:73.650 IL: 72.435

SMH31 -V CL:73.575 IL: 72.915

SMH32 -V CL:73.500 IL: 73.395

SMH33 -V CL:73.425 IL: 73.875

SMH34 -V CL:73.350 IL: 74.355

SMH35 -V CL:73.275 IL: 74.835

SMH36 -V CL:73.200 IL: 75.315

SMH37 -V CL:73.125 IL: 75.795

SMH38 -V CL:73.050 IL: 76.275

SMH39 -V CL:72.975 IL: 76.755

SMH40 -V CL:72.900 IL: 77.235

SMH41 -V CL:72.825 IL: 77.715

SMH42 -V CL:72.750 IL: 78.195

SMH43 -V CL:72.675 IL: 78.675

SMH44 -V CL:72.600 IL: 79.155

SMH45 -V CL:72.525 IL: 79.635

SMH46 -V CL:72.450 IL: 80.115

SMH47 -V CL:72.375 IL: 80.595

SMH48 -V CL:72.300 IL: 81.075

SMH49 -V CL:72.225 IL: 81.555

SMH50 -V CL:72.150 IL: 82.035

SMH51 -V CL:72.075 IL: 82.515

SMH52 -V CL:72.000 IL: 82.995

SMH53 -V CL:71.925 IL: 83.475

SMH54 -V CL:71.850 IL: 83.955

SMH55 -V CL:71.775 IL: 84.435

SMH56 -V CL:71.700 IL: 84.915

SMH57 -V CL:71.625 IL: 85.395

SMH58 -V CL:71.550 IL: 85.875

SMH59 -V CL:71.475 IL: 86.355

SMH60 -V CL:71.400 IL: 86.835

SMH61 -V CL:71.325 IL: 87.315

SMH62 -V CL:71.250 IL: 87.795

SMH63 -V CL:71.175 IL: 88.275

SMH64 -V CL:71.100 IL: 88.755

SMH65 -V CL:71.025 IL: 89.235

SMH66 -V CL:70.950 IL: 89.715

SMH67 -V CL:70.875 IL: 90.195

SMH68 -V CL:70.800 IL: 90.675

SMH69 -V CL:70.725 IL: 91.155

SMH70 -V CL:70.650 IL: 91.635

SMH71 -V CL:70.575 IL: 92.115

SMH72 -V CL:70.500 IL: 92.595

SMH73 -V CL:70.425 IL: 93.075

SMH74 -V CL:70.350 IL: 93.555

SMH75 -V CL:70.275 IL: 94.035

SMH76 -V CL:70.200 IL: 94.515

SMH77 -V CL:70.125 IL: 94.995

SMH78 -V CL:70.050 IL: 95.475

SMH79 -V CL:69.975 IL: 95.955

SMH80 -V CL:69.900 IL: 96.435

SMH81 -V CL:69.825 IL: 96.915

SMH82 -V CL:69.750 IL: 97.395

SMH83 -V CL:69.675 IL: 97.875

SMH84 -V CL:69.600 IL: 98.355

SMH85 -V CL:69.525 IL: 98.835

SMH86 -V CL:69.450 IL: 99.315

SMH87 -V CL:69.375 IL: 99.795

SMH88 -V CL:69.300 IL: 100.275

SMH89 -V CL:69.225 IL: 100.755

SMH90 -V CL:69.150 IL: 101.235

SMH91 -V CL:69.075 IL: 101.715

SMH92 -V CL:69.000 IL: 102.195

SMH93 -V CL:68.925 IL: 102.675

SMH94 -V CL:68.850 IL: 103.155

SMH95 -V CL:68.775 IL: 103.635

SMH96 -V CL:68.700 IL: 104.115

SMH97 -V CL:68.625 IL: 104.595

SMH98 -V CL:68.550 IL: 105.075

SMH99 -V CL:68.475 IL: 105.555

SMH100 -V CL:68.400 IL: 106.035

**FOR CONSTRUCTION**

| Rev | Date       | Description   | By | Chkd |
|-----|------------|---|----|------|
| C10 | 09/08/2021 | 3 NO. CONNECTIONS ADDED TO WEST SHOWROOM. GULLIES AT SITE ENLARGED CHANGED INTO PERMEABLE PAVING AS OPPOSED TO SMH23. | JH | G.L. |
| C09 | 14/07/2021 | FOUL WITHIN WEST SIDE OF WEST SHOWROOM AMENDED TO AVOID UTILITIES.  | JH | G.L. |
| C08 | 15/06/2021 | EAST SHOWROOM DRAINAGE POP-UPS UPDATED. FOUL DRAINAGE AMENDED TO AVOID SITE OFFICE.                                   | JH | G.L. |
| C07 | 04/06/2021 | AMENDED TO FOUL CHANGES.  | JH | G.L. |
| C06 | 22/05/2021 | AMENDED TO SUIT LIFE COMMENTS.  | JH | G.L. |
| C05 | 23/04/2021 | LAYOUT UPDATED.   | GH | G.L. |
| C04 | 13/04/2021 | AMENDED TO SUIT SITE TEAM COMMENTS.   | JH | G.L. |
| C03 | 26/03/2021 | AMENDED TO SUIT SITE TEAM COMMENTS.   | JH | G.L. |
| C02 | 24/03/2021 | AMENDED TO SUIT SITE TEAM COMMENTS.   | JH | G.L. |
| C01 | 17/03/2021 | AMENDED TO SUIT SITE TEAM COMMENTS.   | JH | G.L. |
| P01 | 22/02/2021 | FIRST ISSUE.  | JH | G.L. |

Project Title  
**PLOT 5000A HATFIELD BUSINESS PARK**

Drawing Title  
**PROPOSED LEVELS & DRAINAGE PLAN**

**P21001 - BMP - ZZ - ZZ - DR - C - 0104**

Client Project # / Originator Ref / Plot / Level / Info Type / Discipline / Drawing #

Drawn by **J.H.** Checked by **G.L.** Project Engineer **G.L.**

Date **FEB 2021** Scale @ A0 **1 : 250** Project No **12690** Rev **C10**

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