

Site Location Plan  
Scale 1:10000

- Cover levels are approximate only and may vary on site. Covers to suit finished levels.
- Contractor is responsible for positioning MHS so they do not compromise line or level of kerbing or other delineation at the juncture of two surface materials.
- PPIC manhole diameters may vary and are dependant on manufactures specification and diameter of incoming / outgoing pipes.
- Concrete manhole diameters are dependant on nominal internal diameter of largest pipe in manhole. See Table A on Typical Manhole Details drawing.

| Surface Water Drainage Manhole Schedule |             |                                    |       |         |            |   |
|---|-------------|------------------------------------|-------|---------|------------|---|
| MH Ref.                                 | Cover Level | Invert Level                       | Type  | MH Dia. | Cover Type | Comments                                |
| S1                                      | 80.725      | 79.200                             | Conc. | 1200    | D400       |   |
| S2                                      | 80.725      | 77.780                             | Conc. | 1500    | D400       |   |
| S3                                      | 80.725      | 77.615                             | Conc. | 1200    | D400       |   |
| S4                                      | 80.725      | 77.450 (Inlet)<br>77.400 (Outlet)  | Conc. | 2100    | D400       | Hydrobrake Flow Control set at 15.0 l/s |
| S5                                      | 80.725      | 76.500 (TBC prior to construction) | Conc. | 1500    | D400       | BD = 77.340                             |
| S6                                      | 81.000      | 79.280                             | Conc. | 1200    | D400       |   |
| S7                                      | 81.750      | 80.400                             | Conc. | 1200    | D400       |   |
| S8                                      | 80.850      | 79.500                             | Conc. | 1200    | D400       |   |
| S9                                      | 81.250      | 79.000                             | Conc. | 1500    | D400       | MH to serve future development          |

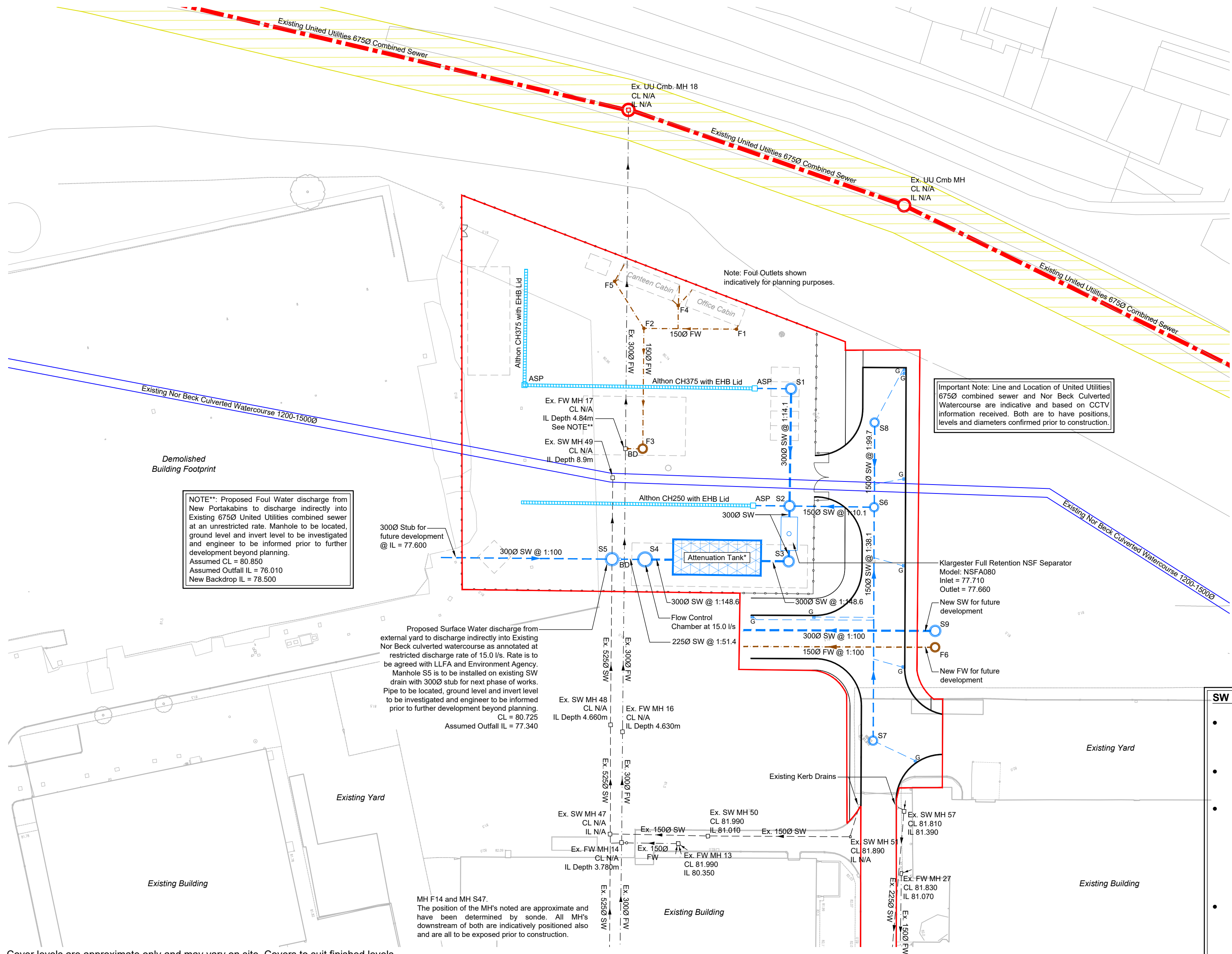
| Foul Water Drainage Manhole Schedule |             |              |       |         |            |                                |
|--------------------------------------|-------------|--------------|-------|---------|------------|--------------------------------|
| MH Ref.                              | Cover Level | Invert Level | Type  | MH Dia. | Cover Type | Comments                       |
| F1                                   | 80.750      | 79.600       | PPIC  | 450     | D400       |                                |
| F2                                   | 80.700      | 79.075       | PPIC  | 450     | D400       |                                |
| F3                                   | 80.700      | 78.725       | Conc. | 1200    | D400       |                                |
| F4                                   | 80.750      | 79.600       | PPIC  | 450     | D400       |                                |
| F5                                   | 80.750      | 79.600       | PPIC  | 450     | D400       |                                |
| F6                                   | 81.250      | 79.250       | Conc. | 1200    | D400       | MH to serve future development |

**BOC Yard Reference Drawings**  
CMIQ-BGP-04-XX-DR-C-52-04101 - Impermeable Areas Plan  
CMIQ-BGP-04-XX-DR-C-52-04102 - Flood Exceedance Flow Route  
CMIQ-BGP-04-XX-DR-C-90.4-04110 - Externals Plan  
CMIQ-BGP-04-XX-DR-C-52-04130 - Drainage Plan

**Manhole S4 Flow Control Details**  
Hydro-Brake® Optimum Flow Control - Surface/Storm Drainage System  
1Nr 160mm Type SH (MD5) Hydro-Brake® Flow Control (Horizontal Discharge)  
Technical Criteria: Design / Duty Point Flow = 15,000 l/s  
Head = 2.000m  
Flush-Flow™ Point Flow = 15,000 l/s Head = 0.582m  
Kick-Flow™ Point Flow = 11,900 l/s Head = 1.216m  
Reference: MD-SHE-0160-1500-2000-1500

\*NOTE: 180m³ Storage required based on 1 in 100 year storm + 40% climate change and 15.0 l/s discharge rate.  
Tank Depth = 2.0m / Tank Base = 77.550  
Tank Dimensions = 6.0m x 15.0m  
Vent pipe & access points TBC by Manufacturer.

- SW Drainage Philosophy - BOC Yard**
- The proposals comprise the construction of an external yard for storage and distribution purposes on land previously occupied by a service yard.
  - The surface water flows are to be restricted to a brownfield discharge rate of 15.0 l/s.
  - The surface water drainage design for the new yard ais based on 1 in 100 year storm + 40% climate change and SW flows restricted in accordance with brownfield discharge rate noted above which is to be agreed with the LLFA and Environment Agency. The location of SW discharge is to Nor Beck culverted watercourse.
  - Surface Water Attenuation has been located prior to the final connection in line with good practice. The attenuation is provided in the form of an attenuation tank which requires an approximate volume of 180m³.
  - Surface Water run off from the yard area and access road is to be treated by a petrol interceptor.



DO NOT SCALE

## Notes

- All works to be carried out in accordance with:
  - Design and Construction Guidance (DCG) and Sewerage Sector Guidance (SSG) for all sewers proposed to be offered for adoption. (note - the SSG replaces Sewers for Adoption (SfA) for all new developments)
  - BS EN 752 - 'Drain and Sewer Systems Outside Buildings'
  - Current applicable Building Regulations
  - BGP Specifications
  - Manufacturer installation guidance and requirements
- All levels shown are in metres and are relative to ordnance datum (m AOD).
- Invert levels of all existing chambers and connection points are to be confirmed and engineer advised prior to commencement of any Drainage Works.
- Where proposed sewers connect into existing sewers, the existing sewers must to be checked for line, level and condition preferably by a CCTV survey
- Concrete bed and surround is required to all gully leads and to all pipes in highways/hardstanding where cover to pipe <1200mm
- All pipes to be either extra strength V.C. to BS 65 or PVC certified to WIS 4-35-01 and BS/EN13476 'UPONOR ULTRARIB' or concrete pipes Class 120 to BS/EN 1916/BS5911-1 2002.
- Existing sewer positions are indicative and are not to be used in conjunction with design. Contractor to confirm location.
- Contractor is responsible for positioning MHS so they do not compromise line or level of kerbing or other delineation at the juncture of two surface materials.
- Cover levels shown are indicative and may vary on site. The contractor should adjust levels to suit site conditions
- Other services are not shown on this drawing, however their presence must be anticipated. The contractor is to confirm prior to commencing any works, the location and depth of all services that may affect the works the manufacturers requirements and recommendations.
- All Information provided is for planning purposes only and should not be relied upon for either costing or construction.
- All drainage outfall levels are to be investigated and confirmed prior to detailed design. Engineer to be informed of findings. Current design shown is indicative.
- All Surface water discharge rates and methods of discharge are to be agreed with the Lead Local Flood Authority and Environment Agency.

S.H.E.  
Do not excavate until all underground services have been identified and marked out. Refer to service providers drawings and to the utilities survey drawings. Unknown underground services may exist. Check for services by carrying out a scan with a cable avoidance tool.

## Legend

|                            |     |
|----------------------------|-----|
| Proposed SW Sewer          | --- |
| Proposed FW Sewer          | --- |
| Nor Beck (Culverted)       | --- |
| Existing SW Sewer          | --- |
| Existing FW Sewer          | --- |
| Existing UU Combined Sewer | --- |
| BOC Yard Redline Boundary  | --- |
| Existing UU Sewer Easement | --- |
| Proposed Attenuation Tank  | --- |

## Additional Notes

Proposed Impermeable Area = 4470m² (0.4470Ha.)

Brownfield Discharge Rate = 15.0 l/s

Storage Required = 180m³

See Drawing CMIQ-BGP-01-XX-DR-C-52-01901 for Discharge Rate Calculations.

|                     |     |     |     |            |
|---------------------|-----|-----|-----|------------|
| Issued for Planning | JJH | P02 | JC  | 04.03.2022 |
| FIRST DRAFT         | JJH | P01 | JK  | 11.01.2022 |
| AMENDMENT           | BY  | REV | CHK | DATE       |

Rev P = Preliminary T = Tender C = Construction LCI = Last Construction Issue

In instances where this drawing completes or partly completes a contract, Billingham George & Partners will consider that it's product has been validated, unless in a period not exceeding 90 working days, the client advises to the contrary.



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|---|-------------------------------|
| <b>Client</b><br>Copeland Borough Council | <b>Project No.</b><br>21T2034 |
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|  |                               |
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| <b>Project</b><br>Cleator Moor Innovation Quarter - BOC Yard | <b>Project No.</b><br>21T2034 |
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|                                       |                               |
|---------------------------------------|-------------------------------|
| <b>Drawing Title</b><br>Drainage Plan | <b>Project No.</b><br>21T2034 |
|---------------------------------------|-------------------------------|

| Drawn | Date     | Checked | Date     | Size | Scale | Class. | Rev. |
|-------|----------|---------|----------|------|-------|--------|------|
| JJH   | Jan 2022 | JC      | Jan 2022 | A1   | 1:500 | 52     | P02  |

| Location | Originator | Volume | Level | Type | Role | Unique No. |
|----------|------------|--------|-------|------|------|------------|
| CMIQ     | BGP        | 04     | XX    | DR   | C    | 04130      |

|   |
|---|
| <b>File Reference</b><br>CMIQ-BGP-04-XX-DR-C-52-04130 |
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