

18th May 2023

FAO. Ms. C. Campbell
Senior Land Manager
Wain Homes North West
Kelburn Court
Daten Park
Warrington
WA3 6UT

DINTING VALE, GLOSSOP

TECHNICAL NOTE 001 – RESPONSE TO PLANNING APPLICATION CONSULTATION COMMENTS FROM DCC HIGHWAY AUTHORITY AND LEAD LOCAL FLOOD AUTHORITY

Dear Claire,

This technical note has been prepared to respond to the planning application comments received from DCC as the local Highway Authority and as the Lead Local Flood Authority (LLFA). In relation to highways, this note responds specifically to the discrete comments about the access gradient. A separate response from SCP deals with the highways comments as a whole.

Highways Comments (1st December 2022)

Site Access Comment

- The topographic survey and Geo-Environmental report confirm significant gradient at the site access of between 1 in 3 and 1 in 5. The DSP remains the Local design guide and requires 1 in 30 for the first 10m for a priority junction, it also applies different gradient for footways and cycleways, but in summary says 1 in 12 maximum. The applicant also needs to consider “Inclusive mobility” and “LTN 1/20” both of which address key considerations to promote active travel and ensure that persons with protected characteristics are catered for.
- The applicant has not provided a long section of the proposed estate road and in the circumstance of such significant land challenges it must be provided.
- The initial evidence suggests that the application is not complying with the local or national considerations which would conflict with NPPF 110.
- The access should provide an implied side road priority crossing for pedestrians.

Whilst it is desirable to achieve certain vertical alignment characteristics this is not always feasible due to site specific constraints, particularly topography. When the initial application information was submitted no longsection drawing was provided, this has now been (refer to HYD712-016-RevP02-Longsection-A1L as enclosed), and it is clear as to why it is necessary to have certain road gradients.

This is not an unusual situation, and the planning consultant has provided a similar example of a scheme for 107no. dwellings located off Linglongs Road in Whaley Bridge (Planning Reference: HPK/2017/0247) where this approach was advocated. The extract shown overleaf includes the Local Highway Authority’s comments for this application, and this Reserved Matters Application was approved by the Council on the 3rd of October 2018. We have followed this approach in this instance with the main access road (Road 1).



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There is a single length of road at a gradient of 1:10 from CH-20m to CH-176.226m (156.266m) with no accesses or junctions on this length. This road also has an initial gradient of 1:30 for 10m from the junction with Dinting Vale in accordance with the 6C's Highway Design guide. All other gradients of roads across the site are a max. gradient of 1:20.

466/ED/12 Rev B – Engineering Long Section – Road 1

The topography of the site is challenging in terms of levels and will result in some streets being steeper than what the County Council's design guide normally recommends for public highway users – the 6C's design guide recommends 1 in 20 for adoptable estate streets to encourage walking / cycling for all future highway users. However, this would clearly not be achievable on some parts of this site.

It is however noted, from the long section provided for road 1, that the chosen alignment results in a considerable amount of excavation between chainage 65 m and chainage 200m – up to 3 m in parts – this results in a street gradient of 1 in 10. Whilst not ideal for new estate street design the Highway Authority would find it difficult to resist given the general highway network topography in the vicinity.

466/ED/13 Rev B – Engineering Long Sections – Roads 2-4

Whilst 1 in 10 gradient streets may be accepted on parts of the site, this should not form the benchmark for all other streets within the development and as highlighted above lesser gradients should wherever possible be incorporated to encourage cycling and walking for all highway users. With this in mind it is considered a better vertical highway alignment could be achieved on road 4, particularly between chainage 0m and chainage 210m - given the amount of excavation taking place on other areas of the site some addition excavation, certainly between chainages 65m and 210m, would reduce estate street gradients in this area.

The main reason why a gradient of 1:10 is necessary for a portion of Road 1 is that it must tie-in to the existing private access road serving the current dwellings and also the level must remain the same as there is a gas main running adjacent to this access. This gradient also reduces any excessive cut requirement.

Even at a gradient of 1:10 there is significant cut, but there is sufficient cover to the gas main; it should also be noted that at 1:10 the back of footway can be battered at 1:3 to existing levels within the site avoiding the need for any adoptable highway retaining structures. A Longsection of Road 1 has been prepared and is enclosed to provide a better understanding of the proposals (HYD712-016-RevP02-Longsection-A1L).

We consider it to be reasonable that DCC would find the approach acceptable in this specific instance in view of the similar circumstances, design constraints and existing adoptions.



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LLFA Comments (5th January 2023)

Thank you for providing additional information (Preliminary Drainage Design Drawing) to the Lead Local Flood Authority (LLFA) in relation to the above planning application.

We are unable to provide an informed comment until the applicant has provided further information:

- Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate (as per National Planning Policy Framework 169). A range of sustainable drainage techniques must be considered prior to or in conjunction with the planning layout.
- How the sustainable drainage systems integrate with the open space and green infrastructure should be described and what multifunctional benefits they provide should be stated, as per paragraph 59 of planning practice guidance (Aug 2022).
- The total discharge rate from the 3 outfall points into the watercourse to the east is greater than the calculated Q_{bar} rate given in section 7 of the report RSK. (August 2022). Flood Risk Assessment, 680312-R1(01)-FRA. The total discharge rate should either be Q_{bar} or a variable rate according to the 1% and 100% probability annual rainfall events.
- Evidence of permission for the 2 discharge points into the culvert within third party land.
- An indication of the condition and capacity of the open watercourse on north eastern boundary of the site
- An indication of the proposed impermeable area
- A quick storage estimate to show the required storage volume of surface water on site and an indication of the likely location. Calculations should include allowances for the current Environment Agency guidance for climate change and urban creep.

Sustainable Drainage Systems (SuDS) have been utilised where practical. Due to the underlying ground conditions, an infiltration drainage solution for the surface water cannot be achieved. In addition, the very significant topographic gradients on the site mean that some SuDS solutions are not feasible with slope stability of surface features being of serious concern; however, there is a swale along the western boundary, and a series of linked drainage basins designed to slow the flow, improving water quality by helping deal with the first 5mm of rainfall runoff and allowing time for natural losses to occur such as evaporation and infiltration (albeit limited). Tree pits are also proposed onsite, to provide opportunities for biofiltration and to create ecological corridors through the site.

It is also proposed that there be some areas of permeable paving (lined), adoption criteria mean these will remain private and gradients mean that these might not be site-wide but where feasible they will provide some water quality improvement and will again, slow the rate of runoff.

Due to the very steep topography, there is a need for the majority of stormwater storage to be below ground within over-sized stormwater storage pipes. The current drainage design provides stormwater storage for rainfall events up to and including the 100 year return period with a 45% allowance for climate change.



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The surface water discharge rate has been re-calculated to reflect the current favoured greenfield runoff methodologies and has been updated on both the Preliminary Drainage Layout and the Flood Risk Assessment by RSK.

The outfalls have been rationalised with the northern outfall being located within the application site and the other two outfalls consolidated into one – this is within Council owned land, and it is understood that Wain Homes are liaising with High Peak on this connection.

The FRA confirms there to be sufficient capacity within the receiving watercourse for a connection at QBar, although no detailed hydraulic modelling of the culvert capacity has been undertaken in terms of the impact of climate or potential for blockage.

The Landscape Plan indicates the permeable and impermeable surfaces, and has been enclosed for completeness.

The current drainage design proposals on the Preliminary Drainage Strategy drawing have been sized and detailed based using Microdrainage software and include appropriate allowances for both climate change (45% increase in peak rate of rainfall) and urban creep (10%).

I trust the above is clear, however should you have any queries or require clarification please do not hesitate to contact me to discuss further.

Yours sincerely,

Richard Nicholas BEng(Hons) MSc MBA GMICE MCIWEM
Director
BETTS HYDRO

Enc. –

Drg. HYD712-016-RevP02-Longsection-A1L
Drg. HYD712-001-G-Main Drainage-A1P
Drg. 4263 101C Landscape Masterplan



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- NOTES**
- Drainage design and construction is in accordance with Sewerage Guidance and any additional requirements of United Utilities.
 - All SVP, RWP and BIG connections are indicative and must be cross referenced with architect's block plans.
 - Pipe gradients out of building to connecting manhole to be laid on 1:40 in accordance with Part H of the 2015 Building Regulations. All inverts to SVP within 3 storey buildings must be 750mm in accordance with Building Regulations.
 - Tolerances to be in accordance with SSG Clause E5.9.
 - All rock pipes to be in accordance with SSG Clause E6.6.2 and Table E13.
 - Engineering bricks shall not contain frogs or holes.
 - Brickwork to manholes to be English Bond.
 - Where pipes surrounded in concrete, flexibility to be maintained at pipe joints by the use of suitable compressible material eg. "flexcell" or "fibreboard".
 - All manhole covers and frames must comply with BS EN124. Covers in roads to be Grade D400 and be 150mm deep. Manhole covers in car parking areas and drives to be Grade B125, whilst landscaped areas may be Grade A15. All to be sited in accordance with Part H of Building Regulations 2015.
 - All incoming pipes shall be surrounded with 150mm of concrete to the face of the collar of the first flexible joint and the outgoing pipe shall also be surrounded to within 50mm of the first flexible joint and a compressible filler used as a former between the concrete surround and downstream pipe collar.
 - All underground services to be confirmed by contractor prior to commencement on site. Any discrepancies to be reported to engineer.
 - Private sewers not located in roads to be Class F granular bed and surround as per standard details.
 - Sewers located under adopted roads to be Class S granular bed and surround (more than 1.2m cover).
 - Sewers located under private roads and car parking bays to be Class F granular bed and surround as per standard details unless adopted, then provide class S (if more than 1.2m cover)
 - Private sewers with less than 0.6m of cover to be concrete surrounded as class Z on standard details.
 - Adopted sewers with less than 1.2m cover, provide Class Z concrete bed and surround. Concrete haunching may be suitable for large diameter storage sewers, guidance must be sought from adopting authority prior to use.
 - No deep or wide routed trees to be planted within close proximity of the proposed and existing public sewer system.

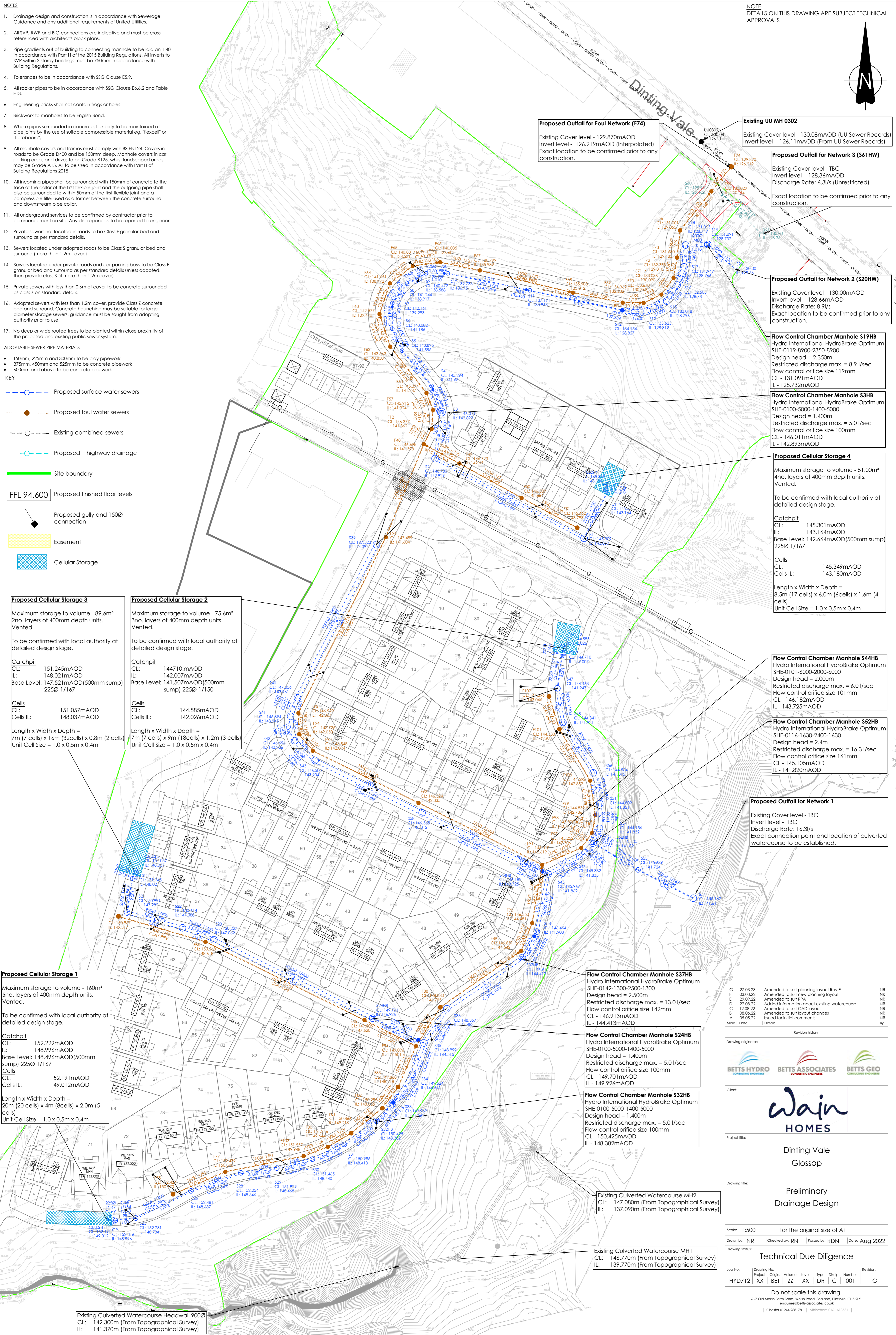
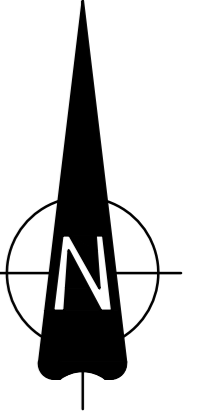
ADOPTABLE SEWER PIPE MATERIALS

- 150mm, 225mm and 300mm to be clay pipework
- 375mm, 450mm and 525mm to be concrete pipework
- 600mm and above to be concrete pipework

KEY

- Proposed surface water sewers
- Proposed foul water sewers
- Existing combined sewers
- Proposed highway drainage
- Site boundary
- Proposed finished floor levels (FFL 94.600)
- Proposed gully and 150Ø connection
- Easement
- Cellular Storage

NOTE
DETAILS ON THIS DRAWING ARE SUBJECT TECHNICAL APPROVALS



Proposed Outfall for Foul Network (F74)
Existing Cover level - 129.870m AOD
Invert level - 126.219m AOD (Interpolated)
Exact location to be confirmed prior to any construction.

Existing UU MH 0302
Existing Cover level - 130.08m AOD (UU Sewer Records)
Invert level - 126.11m AOD (From UU Sewer Records)

Proposed Outfall for Network 3 (S61HW)
Existing Cover level - TBC
Invert level - 128.66m AOD
Discharge Rate: 6.3l/s (Unrestricted)
Exact location to be confirmed prior to any construction.

Proposed Outfall for Network 2 (S20HW)
Existing Cover level - 130.00m AOD
Invert level - 128.66m AOD
Discharge Rate: 8.9l/s
Exact location to be confirmed prior to any construction.

Flow Control Chamber Manhole S19HB
Hydro International HydroBroke Optimum SHE-0119-8900-2350-8900
Design head = 2.350m
Restricted discharge max. = 8.9 l/sec
Flow control orifice size 119mm
CL - 131.091m AOD
IL - 128.732m AOD

Flow Control Chamber Manhole S3HB
Hydro International HydroBroke Optimum SHE-0100-5000-1400-5000
Design head = 1.400m
Restricted discharge max. = 5.0 l/sec
Flow control orifice size 100mm
CL - 146.011m AOD
IL - 142.893m AOD

Proposed Cellular Storage 4
Maximum storage to volume - 51.00m³
4no. layers of 400mm depth units.
Vented.
To be confirmed with local authority at detailed design stage.
Catchpit
CL: 145.301m AOD
IL: 143.164m AOD
Base Level: 142.664m AOD (500mm sump)
225Ø 1/167
Cells
CL: 145.349m AOD
Cells IL: 143.180m AOD
Length x Width x Depth = 8.5m (17 cells) x 6.0m (6 cells) x 1.6m (4 cells)
Unit Cell Size = 1.0 x 0.5m x 0.4m

Flow Control Chamber Manhole S44HB
Hydro International HydroBroke Optimum SHE-0101-6000-2000-6000
Design head = 2.000m
Restricted discharge max. = 6.0 l/sec
Flow control orifice size 101mm
CL - 146.182m AOD
IL - 143.725m AOD

Flow Control Chamber Manhole S52HB
Hydro International HydroBroke Optimum SHE-0116-1630-2400-1630
Design head = 2.4m
Restricted discharge max. = 16.3 l/sec
Flow control orifice size 161mm
CL - 145.105m AOD
IL - 141.820m AOD

Proposed Outfall for Network 1
Existing Cover level - TBC
Invert level - TBC
Discharge Rate: 16.3l/s
Exact connection point and location of culverted watercourse to be established.

Proposed Cellular Storage 3
Maximum storage to volume - 89.6m³
2no. layers of 400mm depth units.
Vented.
To be confirmed with local authority at detailed design stage.
Catchpit
CL: 151.245m AOD
IL: 148.021m AOD
Base Level: 147.521m AOD (500mm sump)
225Ø 1/167
Cells
CL: 151.057m AOD
Cells IL: 148.037m AOD
Length x Width x Depth = 7m (7 cells) x 1.6m (32 cells) x 0.8m (2 cells)
Unit Cell Size = 1.0 x 0.5m x 0.4m

Proposed Cellular Storage 2
Maximum storage to volume - 75.6m³
3no. layers of 400mm depth units.
Vented.
To be confirmed with local authority at detailed design stage.
Catchpit
CL: 144.710m AOD
IL: 142.007m AOD
Base Level: 141.507m AOD (500mm sump)
225Ø 1/150
Cells
CL: 144.585m AOD
Cells IL: 142.026m AOD
Length x Width x Depth = 7m (7 cells) x 9m (18 cells) x 1.2m (3 cells)
Unit Cell Size = 1.0 x 0.5m x 0.4m

Proposed Cellular Storage 1
Maximum storage to volume - 160m³
5no. layers of 400mm depth units.
Vented.
To be confirmed with local authority at detailed design stage.
Catchpit
CL: 152.229m AOD
IL: 148.996m AOD
Base Level: 148.496m AOD (500mm sump)
225Ø 1/167
Cells
CL: 152.191m AOD
Cells IL: 149.012m AOD
Length x Width x Depth = 20m (20 cells) x 4m (8 cells) x 2.0m (5 cells)
Unit Cell Size = 1.0 x 0.5m x 0.4m

Flow Control Chamber Manhole S37HB
Hydro International HydroBroke Optimum SHE-0142-1300-2500-1300
Design head = 2.500m
Restricted discharge max. = 13.0 l/sec
Flow control orifice size 142mm
CL - 146.913m AOD
IL - 144.413m AOD

Flow Control Chamber Manhole S24HB
Hydro International HydroBroke Optimum SHE-0100-5000-1400-5000
Design head = 1.400m
Restricted discharge max. = 5.0 l/sec
Flow control orifice size 100mm
CL - 149.701m AOD
IL - 149.926m AOD

Flow Control Chamber Manhole S32HB
Hydro International HydroBroke Optimum SHE-0100-5000-1400-5000
Design head = 1.400m
Restricted discharge max. = 5.0 l/sec
Flow control orifice size 100mm
CL - 150.425m AOD
IL - 148.382m AOD

Existing Culverted Watercourse MH2
CL: 147.080m (From Topographical Survey)
IL: 137.090m (From Topographical Survey)

Existing Culverted Watercourse MH1
CL: 146.770m (From Topographical Survey)
IL: 139.770m (From Topographical Survey)

Existing Culverted Watercourse Headwall 9000
CL: 142.300m (From Topographical Survey)
IL: 141.370m (From Topographical Survey)

Rev	Date	Details	By
G	27.03.23	Amended to suit planning layout Rev E	NR
F	03.03.22	Amended to suit new planning layout	NR
E	29.09.22	Amended to suit RPA	NR
D	22.08.22	Added information about existing watercourse	NR
C	12.08.22	Amended to suit CAO layout	NR
B	08.06.22	Amended to suit layout changes	NR
A	05.05.22	Issued for initial comments	NR

Drawing originator:
BETTS HYDRO CONSULTING ENGINEERS
BETTS ASSOCIATES CONSULTING ENGINEERS
BETTS GEO CONSULTING ENGINEERS

Client:
Wain HOMES
Dinting Vale
Glossop

Drawing title:
Preliminary
Drainage Design


















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Drawing status:
Technical Due Diligence
Job No: HYD712 | Drawing No: XX | BET | ZZ | XX | DR | C | 001 | Revision: G





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enquiries@betts-associates.co.uk
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LEGEND

SOFT LANDSCAPE

-  Existing Trees and Hedges to be Retained
-  Existing Trees and hedges to be Removed
-  **Proposed Spine Road Trees**
Trees to be planted as 20-25cm girth, Semi-Mature, 6-7m high with 2m clear stem. Trees to be secured with underground guying system.
-  **Proposed Medium Size Ornamental Trees**
Trees to be planted as 14-16cm girth, Extra Heavy Standard, 3.5-4m high. Trees to be staked and secured with suitable rubber ties.
-  **Proposed Small Ornamental Trees and Back Garden Fruit trees**
Trees to be planted as 10-12cm girth or 50L containers, 2-3m high and secured with single stake and suitable rubber ties.
-  **Proposed POS Trees**
Trees to be planted as 16-18cm, Extra Heavy Standard, 4.5-6m high with 2m clear stem. Trees to be secured with underground guying system.
-  **Proposed Ornamental Hedgerows**
Evergreen hedgerows to be planted in 10L containers at a rate of 3-4 per lin. metre.
-  **Proposed Native Hedgerows**
Evergreen hedgerows to be planted in 10L containers, double staggered, 300mm centres, at a rate of 5 per lin. metre.
-  **Proposed Shrub Planting**
Ornamental shrub planting, to be planted in 3-4L containers at 3-4 p/m², and enhanced by feature specimens in 10-20L pots.
-  **Proposed Woodland Planting Mix**
Broadleaved woodland planting mix including Oak, Sycamore, Birch, Rowan and Hawthorn. Trees planted as 8-10cm girth, half standard. To be planted as whips with selected standards at 1p/m².
-  **Proposed Woodland Understorey Mix (Native)**
To be planted as bare root stock, 60-80cm, at 2p/m², and protected with spiral guards. To be planted in groups of 3-5 plants.
-  **Proposed Grass POS and Verges**
-  **Proposed Bulbs**
-  **Proposed Wildflower Meadow**
To be Emorsgate EM8 Meadow Mixture, supplied by Emorsgate or similar approved. Including 80% of ornamental grasses and 20% of wildflowers. Sowing rate 4/gm².
-  **Proposed Grass - Gardens**
Front gardens to be turfed with a general amenity grass from a local supplier.
-  **Proposed Wildflower Meadow Attenuation Pond**
To be Emorsgate EM8 Meadow Mixture for Wetland, supply by Emorsgate or similar approved. Sowing rate 4/gm².
-  **Pond Edge Mixture EP1**,
Wildseed or similar approved.
4g/m².
Proposed Aquatic and Marginal Planting Aquatic and marginal species to be planted 1m from the waters edge directly into the Greenfix Covamat surfacing on the banks immediately adjacent to the watercourse. Pond edge mixture EP1 contains wild flowers and grasses suitable for sowing at the wet margins of ponds, streams and ditches.

HARD LANDSCAPE

-  **Proposed Footpath**
Coloured Tarmac in Buff colour.
-  **Shared Surface**
To be laid in a high quality Block Paving or Coloured Tarmac. Detail to be confirmed.
-  **Gas Main Easement**
6m offset from gas main
-  **Proposed Gravel area**
1m offset between housing plots and native Hedgerow



- GENERAL NOTES**
1. This drawing is the copyright of tpm landscape Ltd and cannot be reproduced in any form without the consent of the company.
 2. This drawing is to be read in conjunction with detail landscape drawings, details and specification.
 3. This drawing is to be read in conjunction with all relevant Architects', Engineers', Specialists, Bills of Quantities and Specifications.
 4. The insertion of any firm or proprietary brand on this drawing is an indication of the class or quality required and does not exclude the use of alternative materials that are equal in performance, quality and appearance, provided that they have been approved in writing by the Landscape Architect.
 5. The Contractor is responsible for accurately ascertaining the position of underground services and responding to all relevant service easement requirements.
 6. All dimensions are in millimetres unless stated otherwise, for the purposes of construction this drawing must not be scaled and only written dimensions used. Written and scaled dimensions to be checked on site, any discrepancies reported prior to work commencing. IF IN DOUBT PLEASE ASK.
 7. All work and materials are to be in accordance with the relevant British Standards and Code of Practice.
 8. All Proprietary products are to be used strictly in accordance with the manufacturer's instructions and details.

Client
Wain Homes

Project
Dinting Vale, Glossop

Description
Landscape Masterplan

Status
For Approval

Scale @ A1
1:500

Job number
4263

Drawn
TS

Drawing number
101

Checked
CT

Date
17.02.23

Revision
C

REVISION NOTES

Rev	By	Description	Date
C	TS	Updated in line with Architect's layout	21.04.23
B	TS	Updated the latest red-line boundary	04.04.23
A	TS	Updated in line with Architect's layout and Tree survey layout	27.03.23