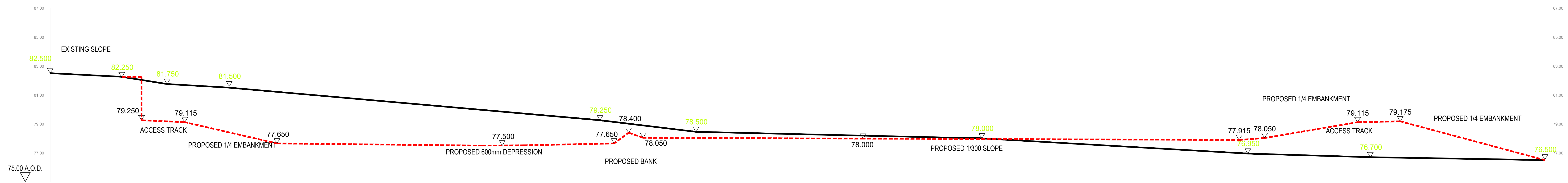
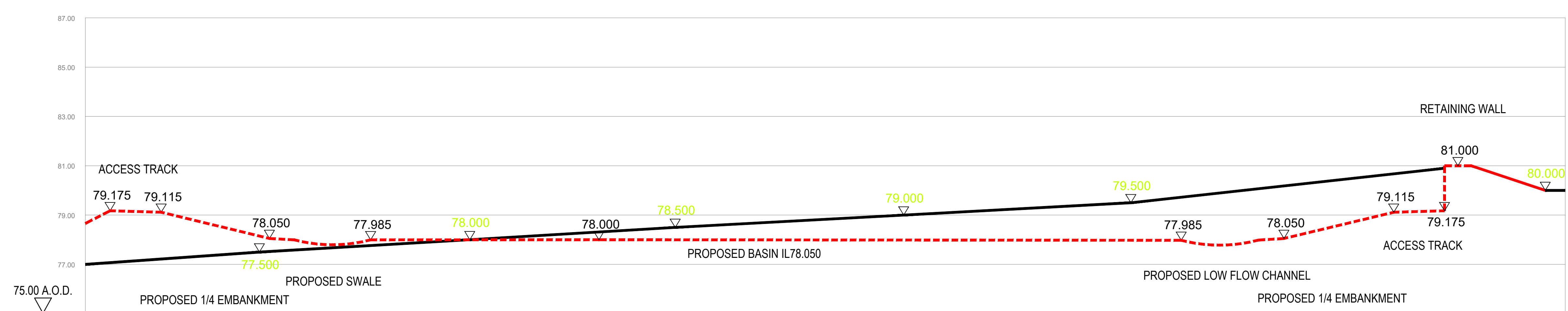


Notes:
 The drawing is copyright and must not be copied in whole or in whole unless agreed with Ave Consulting Ltd.
 All dimensions are in millimetres unless stated otherwise.
 DO NOT SCALE THIS DRAWING - IF IN DOUBT ASK
 1. All dimensions & levels to be checked by the contractor prior to commencement of work, any discrepancy shall be reported immediately to Ave Consulting Ltd.
 2. All work shall be carried out in accordance with Local Authority, statutory authority, health & safety requirements and regulations.
 3. The drawings shall be read in accordance with all other contract documents relevant at the time of issue and during the period of the contract.
 4. The contractor must ensure the overall stability of the works is adequate at all stages of the construction.
 5. No allowance has been made for cutfalls, holes, voids, etc. for services. All of these are to be agreed prior to the start of the works.



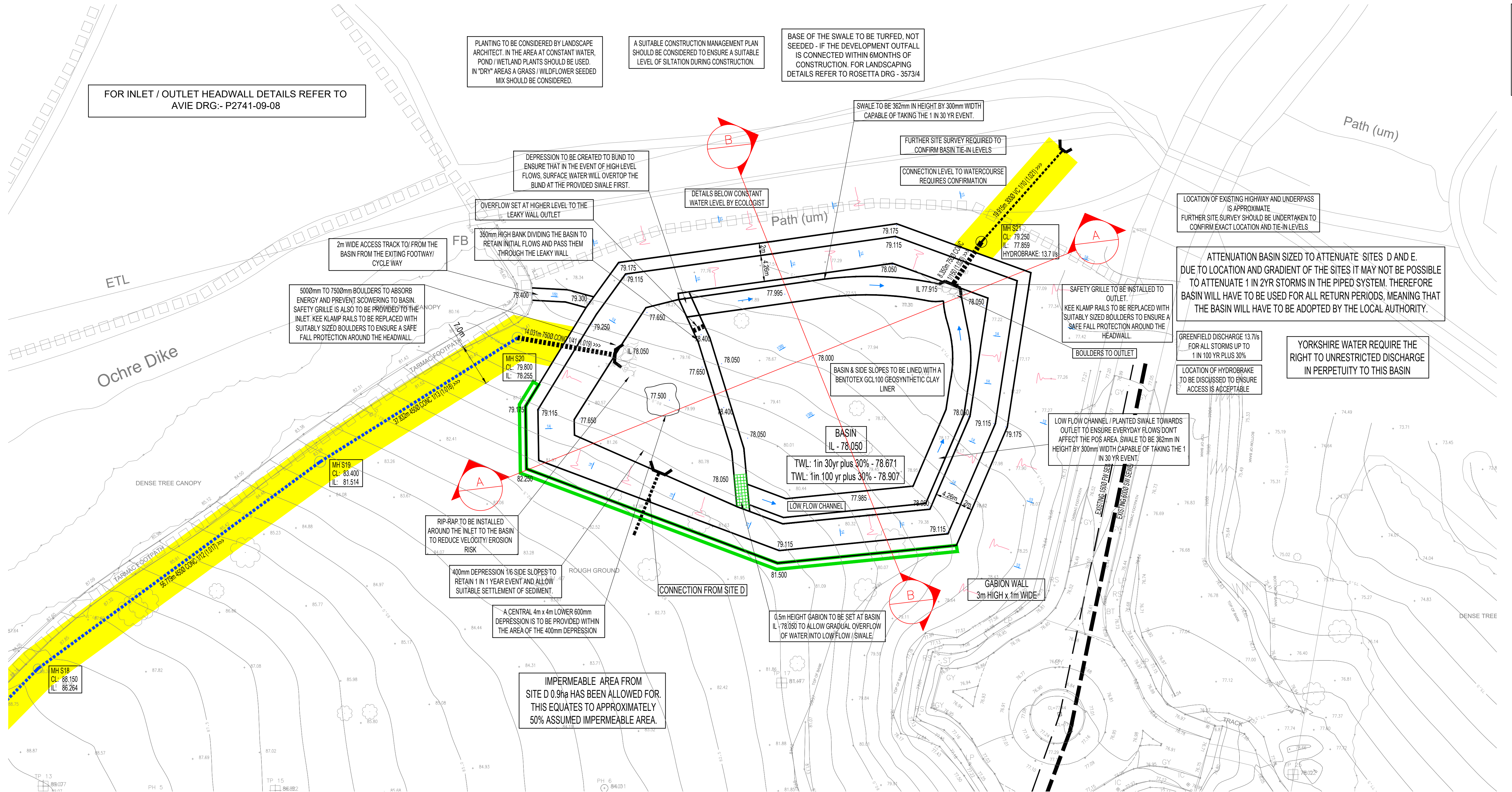
SECTION A-A
 Horiz. 1:100 Vert. 1:100



SECTION B-B
 Horiz. 1:100 Vert. 1:100

BASIN & SIDE SLOPES TO BE LINED WITH A BENTOTEX GCL100 GEOSYNTHETIC CLAY LINER INSTALLED TO MANUFACTURES DETAILS

- PROPOSED GROUND LEVEL
- EXISTING GROUND LEVEL
- ▽ EXISTING SPOT GROUND LEVEL
- ▽ PROPOSED SPOT GROUND LEVEL



FOR INLET / OUTLET HEADWALL DETAILS REFER TO AVIE DRG:- P2741-09-08

PLANTING TO BE CONSIDERED BY LANDSCAPE ARCHITECT IN THE AREA AT CONSTANT WATER POND / WETLAND PLANTS SHOULD BE USED. IN 'DRY' AREAS A GRASS / WILDFLOWER SEEDED MIX SHOULD BE CONSIDERED.

A SUITABLE CONSTRUCTION MANAGEMENT PLAN SHOULD BE CONSIDERED TO ENSURE A SUITABLE LEVEL OF SILTATION DURING CONSTRUCTION.

BASE OF THE SWALE TO BE TURFED, NOT SEEDED - IF THE DEVELOPMENT OUTFALL IS CONNECTED WITHIN 6 MONTHS OF CONSTRUCTION, FOR LANDSCAPING DETAILS REFER TO ROSETTA DRG - 357314

SWALE TO BE 382mm IN HEIGHT BY 300mm WIDTH CAPABLE OF TAKING THE 1 IN 30 YR EVENT.

FURTHER SITE SURVEY REQUIRED TO CONFIRM BASIN TIE-IN LEVELS.

CONNECTION LEVEL TO WATERCOURSE REQUIRES CONFIRMATION.

DEPRESSION TO BE CREATED TO BOND TO ENSURE THAT IN THE EVENT OF HIGH LEVEL FLOWS, SURFACE WATER WILL OVERTOP THE BUND AT THE PROVIDED SWALE FIRST.

DETAILS BELOW CONSTANT WATER LEVEL BY ECOLOGIST

OVERFLOW SET AT HIGHER LEVEL TO THE LEAKY WALL OUTLET

300mm HIGH BANK DIVIDING THE BASIN TO RETAIN INITIAL FLOWS AND PASS THEM THROUGH THE LEAKY WALL

2m WIDE ACCESS TRACK TO THE BASIN FROM THE EXISTING FOOTWAY / CYCLEWAY

5000mm TO 10000mm BOULDERS TO ABSORB ENERGY AND PREVENT SCOURING TO BASIN. SAFETY GRILLE IS ALSO TO BE PROVIDED TO THE INLET. KEEP KLAMP RAILS TO BE REPLACED WITH SUITABLY SIZED BOULDERS TO ENSURE A SAFE FALL PROTECTION AROUND THE HEADWALL.

ATTENUATION BASIN SIZED TO ATTENUATE SITES D AND E. DUE TO LOCATION AND GRADIENT OF THE SITES IT MAY NOT BE POSSIBLE TO ATTENUATE 1 IN 2 YR STORMS IN THE PIPED SYSTEM. THEREFORE BASIN WILL HAVE TO BE USED FOR ALL RETURN PERIODS. MEANING THAT THE BASIN WILL HAVE TO BE ADOPTED BY THE LOCAL AUTHORITY.

GREENFIELD DISCHARGE 13.7% FOR ALL STORMS UP TO 1 IN 100 YR PLUS 30%

YORKSHIRE WATER REQUIRE THE RIGHT TO UNRESTRICTED DISCHARGE IN PERPETUITY TO THIS BASIN

SAFETY GRILLE TO BE INSTALLED TO OUTLET. KEEP KLAMP RAILS TO BE REPLACED WITH SUITABLY SIZED BOULDERS TO ENSURE A SAFE FALL PROTECTION AROUND THE HEADWALL.

BOULDERS TO OUTLET

LOW FLOW CHANNEL PLANTED SWALE TOWARDS OUTLET TO ENSURE EVERYDAY FLOWS DON'T AFFECT THE POS AREA. SWALE TO BE 382mm IN HEIGHT BY 300mm WIDTH CAPABLE OF TAKING THE 1 IN 30 YR EVENT.

BASIN & SIDE SLOPES TO BE LINED WITH A BENTOTEX GCL100 GEOSYNTHETIC CLAY LINER

BASIN IL - 78.050
 TWL: 1 in 30yr plus 30% - 78.671
 TWL: 1 in 100 yr plus 30% - 78.907

LOW FLOW CHANNEL

CONNECTION FROM SITE D

GABION WALL 3m HIGH x 1m WIDE

RP-RAP TO BE INSTALLED AROUND THE INLET TO THE BASIN TO REDUCE VELOCITY EROSION RISK

400mm DEPRESSION 1% SIDE SLOPES TO RETURN 1 IN 1 YEAR EVENT AND ALLOW SUITABLE SETTLEMENT OF SEDIMENT

A CENTRAL 4m x 4m LOWER 600mm DEPRESSION IS TO BE PROVIDED WITHIN THE AREA OF THE 400mm DEPRESSION

IMPERMEABLE AREA FROM SITE D 0.9ha HAS BEEN ALLOWED FOR. THIS EQUATES TO APPROXIMATELY 50% ASSUMED IMPERMEABLE AREA.

The proposed attenuation basin is to incorporate 1/4 slopes to the external sides and 1/6 slopes internally. Allowance has been made for a 2m wide access track around the perimeter of the basin for future maintenance. It is proposed that this is accessed from the West of the basin, off the existing footpath/cycleway. An allowance of 0.9 ha of impermeable area has also been made within the volume, to incorporate Site D.

General Notes

All adoptable sewer works and material to be in accordance with Sewers for Adoption (6th Edition), the relevant British/European and Yorkshire Water's standards/requirements/standards and standards.
 Manhole covers shall have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
 Where a 615mm cover and frame has been approved, this must not be casted in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Some cover covers are not acceptable.
 Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
 Yorkshire Water is not obliged to accept filter drain/drainage run-off into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the local authority, local drainage authority with regard to the disposal of the filter drain/drainage run-off.
 Cover slabs must carry the BS1380 or will be rejected by Yorkshire Water's inspectors. Where the clear opening of the adoptable product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the cover to 600mm x 600mm to the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), Technical Bulletin issued autumn 2004 for standard cover slab opening sizes.
 Sulphate resistant cement (SR3-SC2) and precast concrete products must be used or a laboratory report proving that such products are not necessary.
 The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
 Sewers must have 5 metres distance from trees and hedgerows (please also refer to Figure 2.3 on page 23 in Sewers for Adoption (6th Edition) for restrictions on tree planting adjacent to sewers).
 Sewers to be laid in Class 2 bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 800mm in non-vehicular access areas), there a concrete slab should be provided above granular bed and surround.
 Bedding and backfill material to conform to the requirement of Water Industry Specification Code of Practice (WIS 71-02).
 The chamber size of manholes with more than one connection in them may need to be increased to accommodate the connections and bends.
 Yorkshire Water policy is not to accept Type C block manholes and 1000mm dia manhole rings. Instead it is preferred that you use Type C manholes with 1200mm dia or 1000mm dia rings, with the opening also over the channel where depth of cover to top of pipe is 0.75m to 1.5m.
 Adoptable plastic sewer pipes to be BS1380 (conform to WIS 71-02) and 1000mm dia. Adoptable plastic sewers to be laid maximum 1 metre lengths unless there is a specific operational need for longer lengths. Flexible channel sections in manholes are not acceptable and Yorkshire Water will order clayware channel sections in manholes. We have found that plastic channels are difficult to lay in concrete because they do not have a satisfactory friction on the bedding.

ADOPTABLE DRAINAGE KEY:

—	PROPOSED SURFACE WATER SEWER/MANHOLE
—	PROPOSED ADOPTABLE FOUL WATER SEWER/MANHOLE
—	NON ADOPTABLE FOUL LATERAL CONNECTION FROM DEMARCATION MH
—	NON ADOPTABLE SURFACE WATER LATERAL CONNECTION FROM DEMARCATION MH
—	EXISTING FOUL WATER
—	EXISTING SURFACE WATER
—	PROPOSED GULLY WITH 1500 CONNECTION PIPE
—	PROPOSED S104 BOUNDARY
—	PROPOSED GROUND FLOOR SLAB LEVELS
—	EASEMENT FOR PUBLIC SEWERS

Rev	Desc	By	CHK	Date
1	Issue	J.J.B.	J.J.B.	12/05/2020
2	Revised to include comments	J.J.B.	J.J.B.	01/06/2020
3	Revised to include comments	J.J.B.	J.J.B.	04/06/2020
4	Updated in line with WIS 71-02	J.J.B.	J.J.B.	19/03/2020
5	Updated to latest design	J.J.B.	J.J.B.	03/03/2020
6	Updated to latest comments	J.J.B.	J.J.B.	13/02/2020
7	Updated to latest comments	J.J.B.	J.J.B.	06/02/2020
8	Initial issue	J.J.B.	J.J.B.	23/01/2020

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Client: **Avant Homes**
 Project: **Mosborough**
 Title: **Proposed Basin Strategy**

Drawn	Checked	Date	Scale	Original by
J.J.B.	J.J.B.	Jan 2020	1:500	AO
Drawn Number	P2741-01-02		Rev	G