

**NOTE:-**  
THE USE OF PRECAST RECTANGULAR CONCRETE MANHOLE UNITS WITH 150mm GRADE GEN3 CONCRETE SURROUND (DESIGNED TO BRE SPECIAL DIGEST 1 CONCRETE IN AGGRESSIVE GROUND) IS PERMITTED.

**TYPICAL MANHOLE DETAIL – TYPE S**  
(DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE <1.0m)

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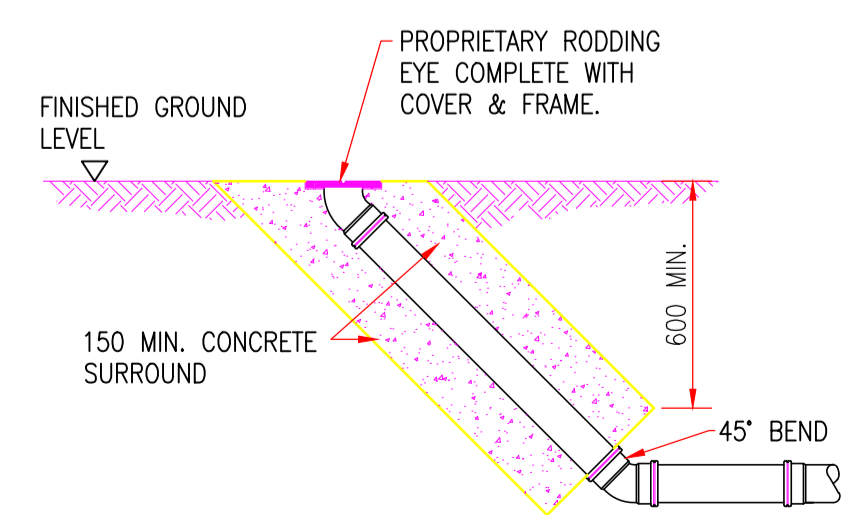
**MANHOLE DIAMETERS:-**

DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE
LESS THAN 375	1200
375-700	1500
750-900	1800
GREATER THAN 900	CONSULT UNDERTAKER

**TYPICAL MANHOLE DETAIL – TYPE B**

(MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3.0m)

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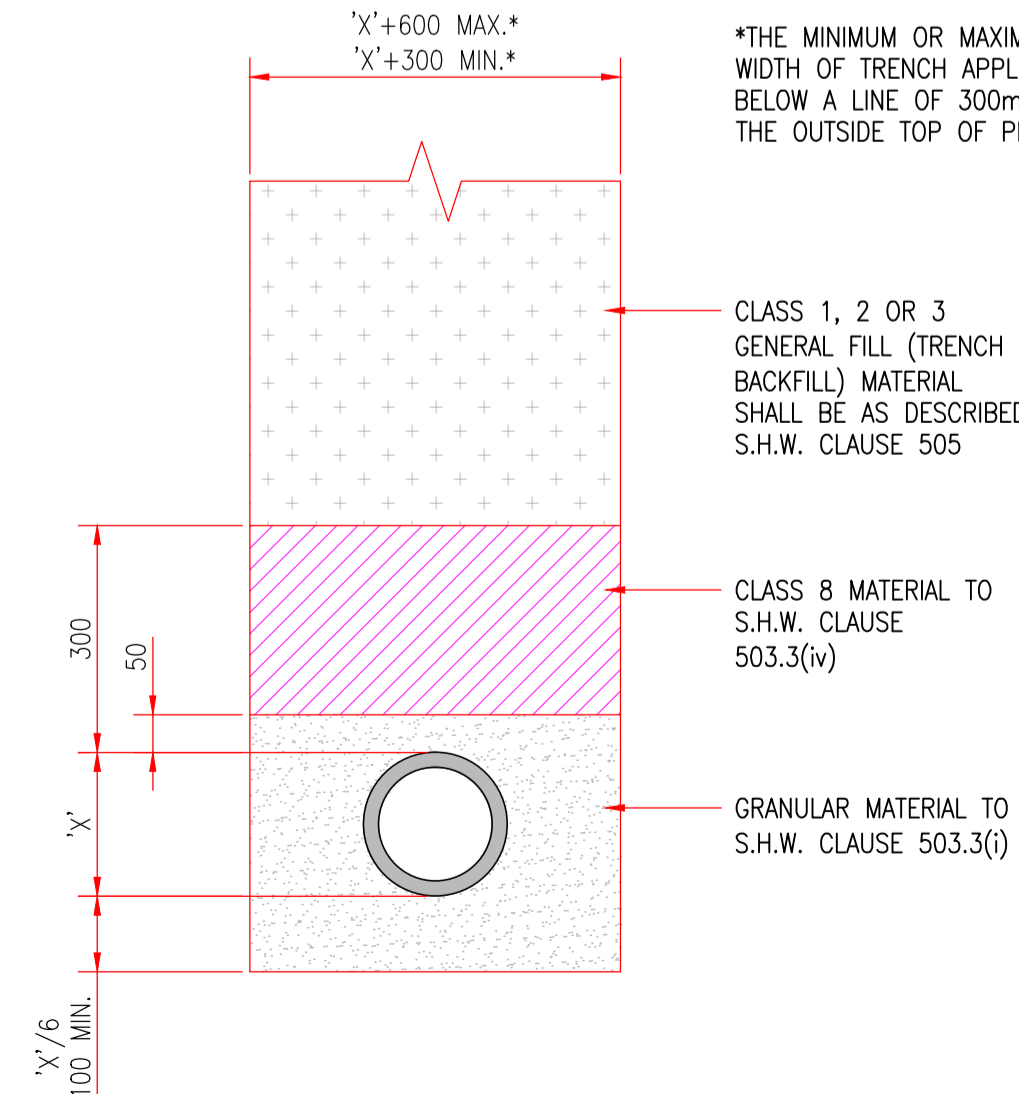
**TYPICAL RODDING EYE DETAIL**

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**YORKSHIRE WATER NOTES:-**

- ALL ADAPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION" 6TH EDITION, THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
- MANHOLE COVERS SHALL HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAY.
- 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/LAND DRAINAGE RUNOFF INTO PUBLIC SEWER NETWORK OR ADAPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LAISE WITH LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUNOFF.
- COVER SLABS MUST CARRY THE BSI KITEMARK OR WILL BE REJECTED BY YORKSHIRE WATER INSPECTOR. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING TO SIZE DOWN TO 600mm x 600mm FOR YORKSHIRE WATER SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (CPSA), 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
- SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING SUCH PRECAUTIONS ARE NOT NECESSARY.
- THE ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
- "SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 2.3 ON PAGE 33 IN "SEWERS FOR ADOPTION" 6TH EDITION FOR RESTRICTIONS ON TREE PLANTING ADJACENT TO SEWERS)".
- SEWERS TO BE LAID IN CLASS "S" BEDDING (150mm GRANULAR BEDDING AND SURROUND). WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
- BEDDING AND BACKFILL MATERIAL TO CONFORM TO REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
- THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
- YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE "C" BRICK MANHOLES AND 1050mm DIA MANHOLE RINGS. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200mm DIA OR 1500mm DIA RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1-1.5m.

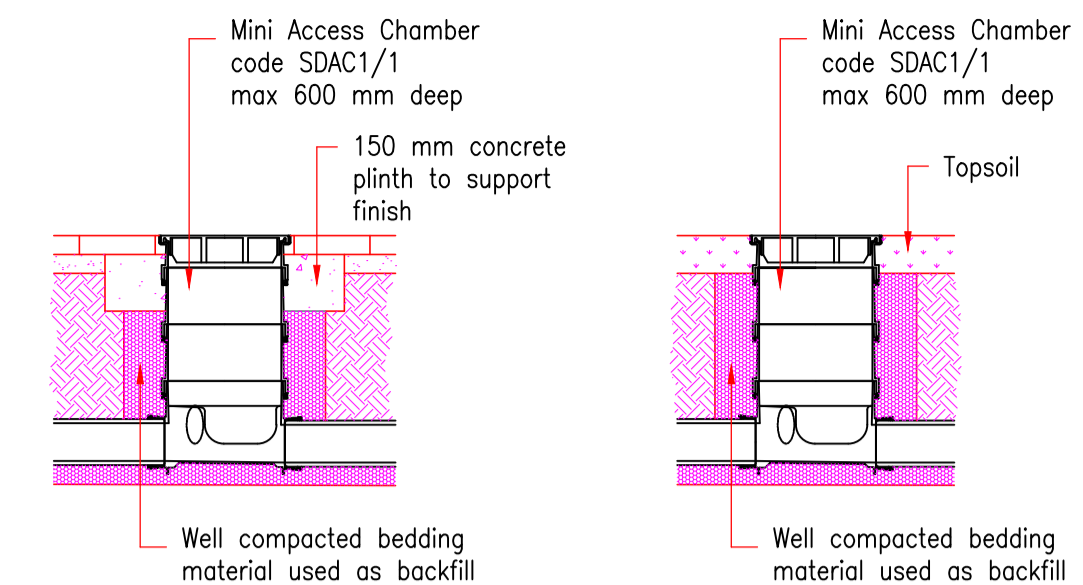
'X' = EXTERNAL DIAMETER OF PIPE



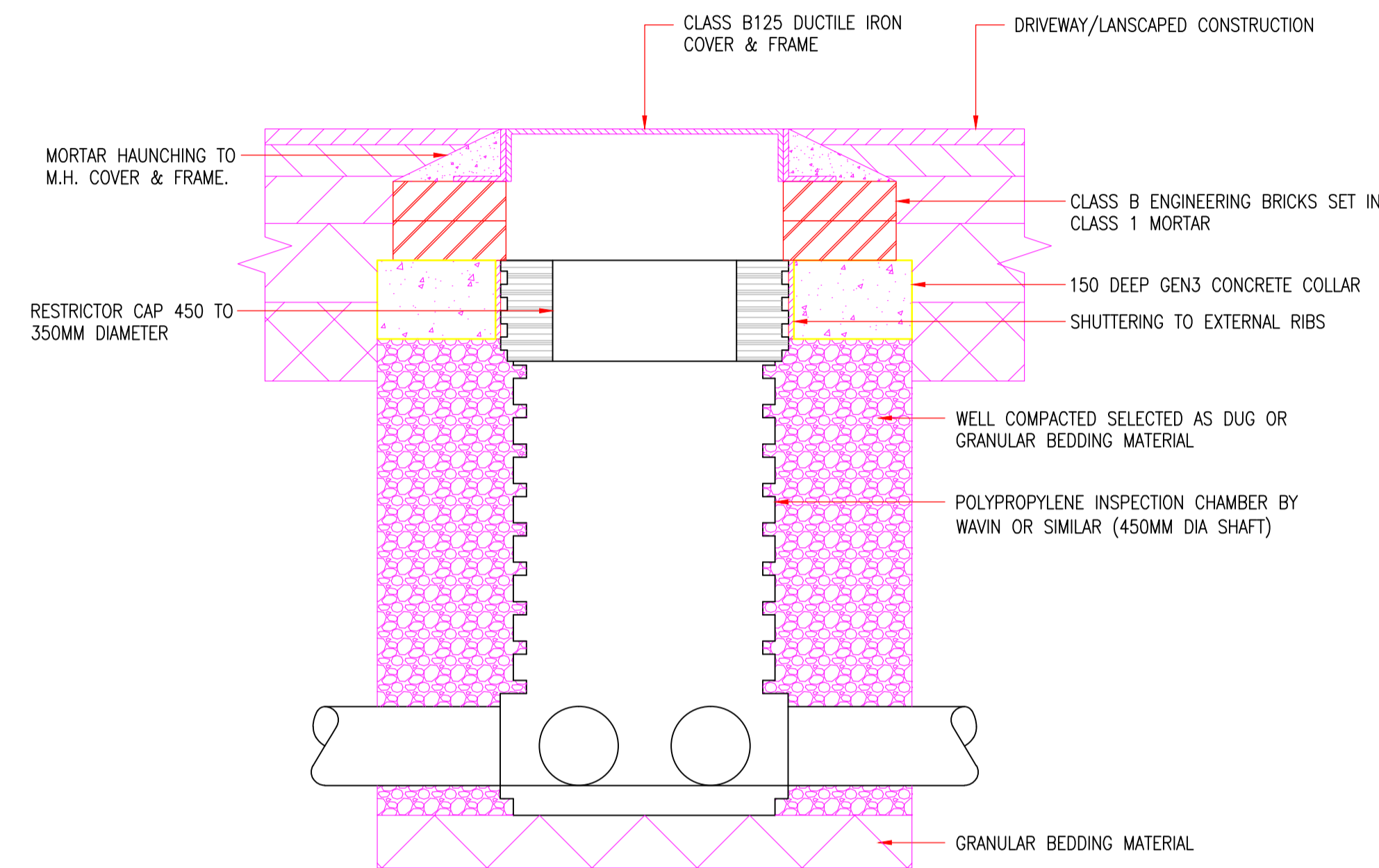
**CLASS S PIPE BEDDING DETAIL**

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Rev B:- Concrete Slab Protect\_07.04.17  
Rev A:- Type S Manhole added\_28.03.17



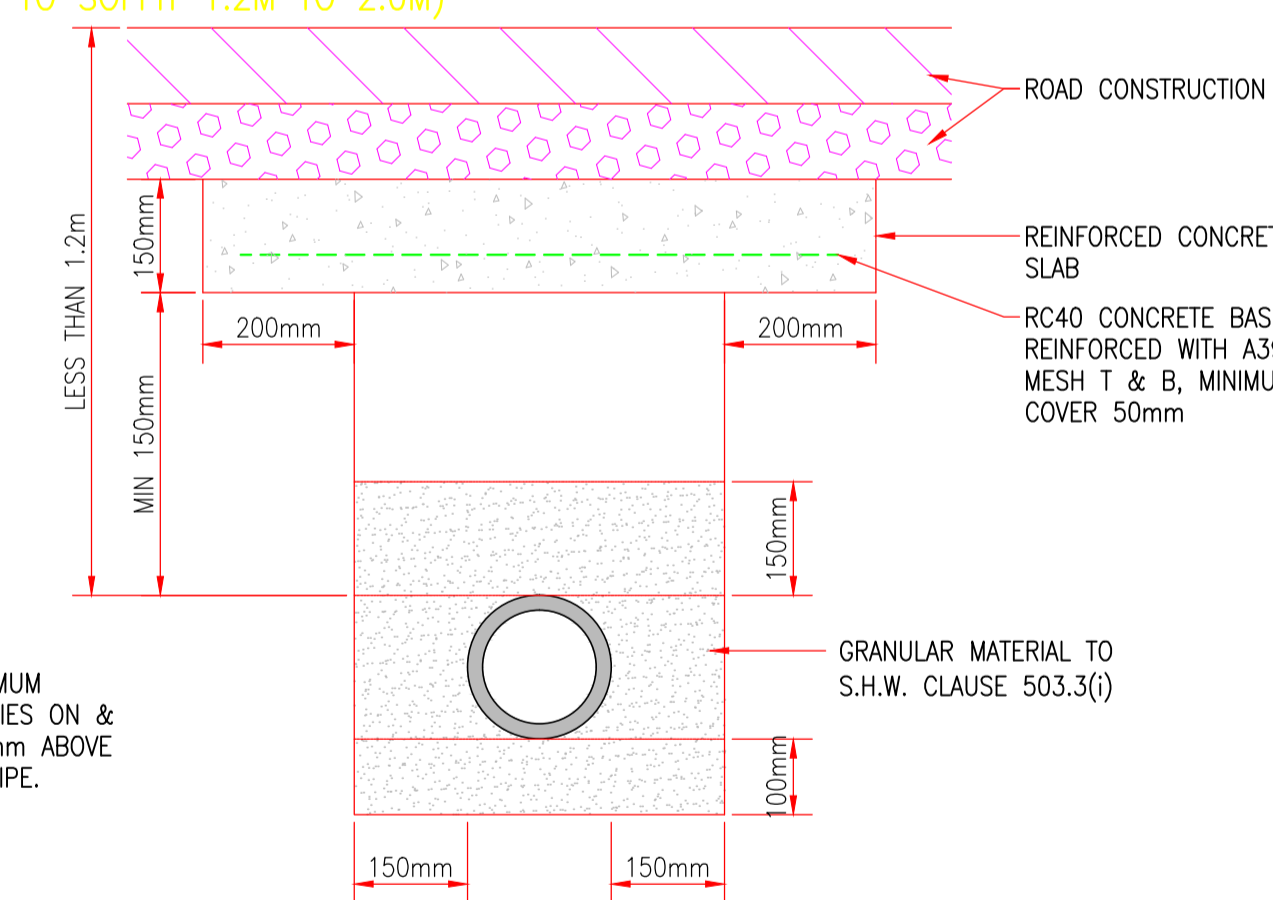
**MINI ACCESS CHAMBER DETAILS (MAC)**



**POLYPROPYLENE INSPECTION CHAMBER DETAILS (PPIC)**

(DEMARICATION CHAMBER DEPTH TO SOFFIT 1.2M TO 2.0M)

1:20



**CONCRETE PROTECTION SLAB**

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**3D INFRASTRUCTURE**

D Noble Limited

Proposed Housing Development Park Avenue, Royston, Barnsley, S71 4AD

TYPICAL DRAINAGE DETAILS

1:200 FT 22/01/2017

1000 05 REV B

**SAFETY HEALTH AND ENVIRONMENTAL INFORMATION**

RISKS LISTED HERE ARE NOT EXHAUSTIVE.

DEMOLITION
CONSTRUCTION DEPTH OF DRAINAGE, EXISTING DRAINAGE DITCH, SERVICES
ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, TO AN APPROVED METHOD STATEMENT.