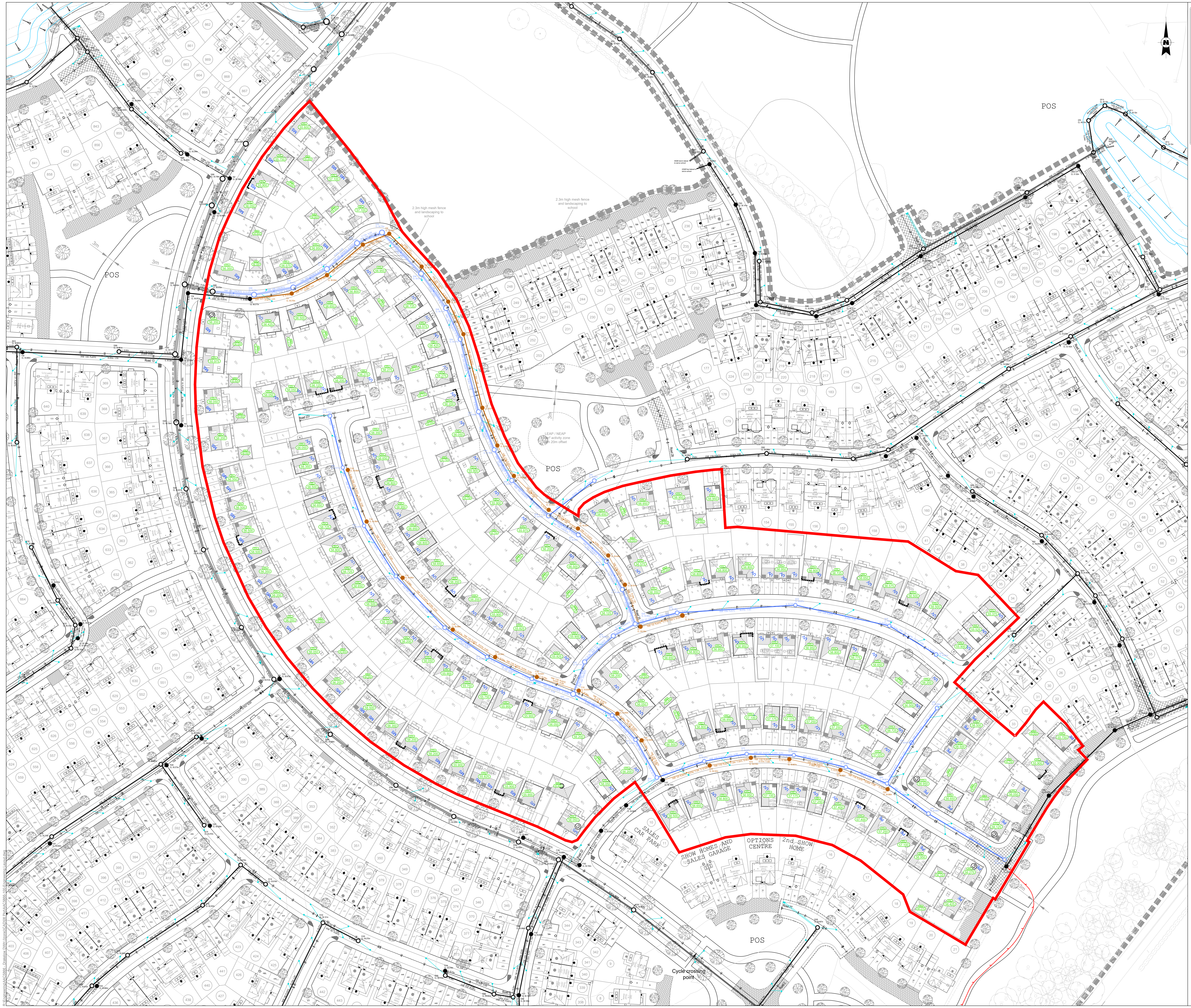
POS
POS
POS
POS
2.3m high mesh fence and landscaping to school
2.3m high mesh fence and landscaping to school
3m
3m
LEAP / NEAP
SALES CAR PARK
SHOW HOMES AND SALES GARAGE
OPTIONS CENTRE
2nd SHOW HOME
Cycle crossing point
N

MINIMUM DIMENSIONS FOR MANHOLES

Type	Size of largest pipe (DN)	Min internal dimensions¹		Min clear opening size¹	
		Rectangular length and width	Circular diameter	Rectangular length and width	Circular diameter
Manhole < 1.5m deep to soffit	≤ 150 225 300 >300	750 x 675⁷ 1200 x 675 1200 x 750 1800 x (DN+450)	1000⁷ 1200 1200 The larger of 1800 or (DN+450)	750 x 675² 1200 x 675²	na³
> 1.5m deep to soffit	≤ 225 300 375-450 >450	1200 x 1000 1200 x 1075 1350 x 1225 1800 x (DN+775)	1200 1200 1200 The larger of 1800 or (DN+775)	675 x 675	600
Manhole⁴ > 3.0m deep to soffit	Steps	1050 x 800	1050	675 x 675	600
	Ladder⁵	1200 x 800	1200		
	Winch⁶	900 x 800	900	675 x 675	600

NOTES:

1) LARGER SIZES MAY BE REQUIRED FOR MANHOLES ON BENDS OR WHERE THERE ARE JUNCTIONS.
2) MAY BE REDUCED TO 675 BY 675 WHERE REQUIRED BY HIGHWAY LOADING CONSIDERATIONS, SUBJECT TO A SAFE SYSTEM OF WORK BEING SPECIFIED.
3) NOT APPLICABLE DUE TO WORKING SPACE NEEDED.
4) MINIMUM HEIGHT OF CHAMBER IN SHAFTED MANHOLE 2M FROM BENCHING TO UNDERSIDE OF REDUCING SLAB.
5) MIN CLEAR SPACE BETWEEN LADDERS OR STEPS AND THE OPPOSITE FACE OF THE SHAFT SHOULD BE APPROXIMATELY 900MM.
6) WINCH ONLY - NO STEPS OR LADDERS, PERMANENT OR REMOVABLE
7) THE MINIMUM SIZE OF ANY MANHOLE SERVING A SEWER (I.E ANY DRAIN SERVING MORE THAN ONE PROPERTY) SHOULD BE 1200 MM X 675 MM RECTANGULAR OR 1200 MM DIAMETER

SEVERN TRENT WATER MANHOLE REQUIREMENTS FOR DESIGN AND CONSTRUCTION GUIDANCE

GENERAL REQUIREMENTS

COPIES OF DELIVERY NOTES FOR CONCRETE AND PIPE BEDDING WILL BE REQUIRED INTERMITTENTLY AS THE JOB PROGRESSES. ALL OTHER COMPONENT UNITS MUST BE KITE-MARKED.

CHANNELS AND BENCHING

ALL CHAMBERS WITH PIPE SIZES 150MM, 225MM, 300MM MUST HAVE SWEPT BENDS AND CHANNELS. ALL BENCHING TO BE A *MINIMUM 40MM THICK* GRANOLITHIC CONCRETE *TROWELLED TO A SMOOTH FINISH.*

IRONWORK IN MANHOLES

IF THE CHAMBER IS LESS THAN 3M DEEP WE REQUIRE DOUBLE ENCAPSULATED STEP RUNGS UNLESS OTHERWISE APPROVED. IF THE CHAMBER IS OVER 3M DEEP WE REQUIRE *HOT DIPPED GALVANISED MILD STEEL LADDERS*. THERE MUST BE 900MM BETWEEN LADDER AND BACK OF SHAFT. DEPTH IS MEASURED FROM FINISHED COVER LEVEL TO THE TOP OF THE BENCHING. THE MAXIMUM DISTANCE BETWEEN COVER LEVEL AND THE FIRST STEP MUST BE 675MM.

BRICKWORK

MIN 2 MAX 4 COURSES UNDER FRAME AND MUST BE SOLID CLASS B ENGINEERING BRICKS OR CONCRETE SPACING RINGS NEATLY POINTED UP. ENGLISH BOND TO BE USED ON ALL BRICKWORK. SULPHATE RESISTING CEMENT MUST BE USED IN ALL LOCATIONS.

COVER AND FRAMES

COVER SLAB OPENING, COVER AND FRAMES MUST BE 675 X 675 *UNLESS OTHERWISE APPROVED*.
DN400 SHALL BE USED AT ALL LOCATIONS. ON SPINE ROADS MUST BE 150MM DEEP. ON RESIDENTIAL CUL-DE-SACS 100MM MAY BE USED SUBJECT TO APPROVAL. FRAMES FOR MANHOLE COVERS SHOULD BE BEDDED IN A POLYESTER RESIN BEDDING MORTAR IN ALL SITUATIONS WHERE COVERS ARE SITED IN NRSWA ROAD CATEGORIES I, II OR III.

'INFILL' TYPE COVERS SHOULD NOT BE USED.

IN BLOCK PAVED AREAS 150MM DEEP FRAMES MUST BE USED (IN ACCORDANCE WITH DESIGN AND CONSTRUCTION GUIDANCE P22)

LATERALS

THEY SHOULD BE LAID TO THE SAME STANDARD AS PUBLIC SEWERS. THEY SHOULD HAVE NO CHANGES OF LINE OR GRADIENT BETWEEN THE SEWER AND THE DEMARCATION CHAMBER. THEY SHOULD HAVE AN ADOPTABLE MANHOLE AS THE DEMARCATION CHAMBER UNLESS THERE IS ONLY ON PROPERTY WHEN A PLASTIC CHAMBER TO BS EN 13598-2:2009 IS ALLOWED. LOCKABLE B125 AND A15 COVERS MAY BE ALLOWED IN CERTAIN LOCATIONS SUBJECT TO APPROVAL. THE DEMARCATION SHOULD BE INSIDE THE BOUNDARY OF THE PROPERTY, NO MORE THAN 1M INSIDE THE BOUNDARY, PREFERABLY IN THE DRIVEWAY AND NOT IN THE WHEEL TRACKS OF VEHICLES.

PUBLIC DRAINAGE

FOUL WATER	
MANHOLE	●
PIPE LINE	—
DIRECTION ARROW	◁
SURFACE WATER	
MANHOLE	○
PIPE LINE	═
DIRECTION ARROW	◁
HIGHWAY DRAINAGE	
MANHOLE	○
GULLY	■
HIGHWAY DRAIN / GULLY CONNECTION	—

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Notes

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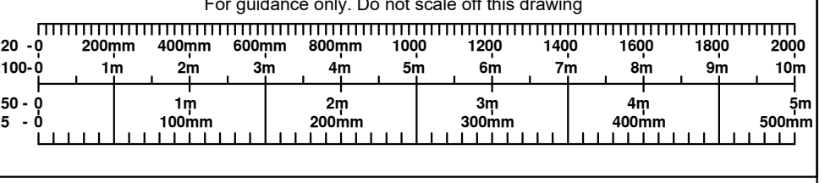

PRELIMINARY
SUBJECT TO SECTION 38 & 104 APPROVAL

HEADWALLS TO BE PRE-CAST CONCRETE. REFER TO ALTHON DRAWINGS FOR DETAILS

ANY POND BED LINING OR BANK STABILISATION METHODS REQUIRED FOR BALANCING POND TO BE ASSESSED BY STRUCTURAL ENGINEER

IMPORTANT: HEADWALLS WILL REQUIRE THE ENVIRONMENT AGENCY'S PRIOR WRITTEN CONSENT UNDER SECTION 109 OF THE WATER RESOURCES ACT 1991 BEFORE ANY CONSTRUCTION TAKES PLACE

POLISHED STONE VALUES, AGGREGATE SIZES, AGGREGATE ABRASION VALUES AND PENETRATION VALUES OF ALL SURFACE COURSE MATERIALS MUST BE CHECKED WITH HIGHWAY AUTHORITY AND COMPLY WITH ALL CODES OF PRACTICE PRIOR TO ORDERING AND LAYING OF MATERIALS

S106 APPLICATION

A SECTION 106 APPLICATION TO SEVERN TRENT WATER MUST BE COMPLETED FOR THE RE USE OF ANY EXISTING CONNECTION INTO THE EXISTING PUBLIC SEWERAGE SYSTEM OR THE CONSTRUCTION OF A NEW CONNECTION.

AN APPLICATION WILL BE REQUIRED FOR THE FOUL AND SURFACE WATER DRAINAGE ARRANGEMENTS AND THIS SHOULD BE COMPLETED BY THE CONTRACTOR.

ALL SEWERS ARE TO COMPLY WITH THE DESIGN AND CONSTRUCTION GUIDE AND SEVERN TRENT WATER REQUIREMENTS

FOUNDATIONS FOR PLOTS ADJACENT TO ADOPTABLE SEWERS LESS THAN 5m AWAY FROM PLOT WALL TO BE LOWER THAN THE INVERT LEVELS OF SEWER TO PREVENT ANY LOADING FORCES ON THE PIPEWORK

LEVEL OF EXISTING ROAD AT POINT OF TIE IN WITH PROPOSED SITE ROAD MUST BE CHECKED BEFORE COMMENCEMENT OF WORKS AND ANY DISCREPANCIES REPORTED IMMEDIATELY.

A SCREEN AND SUMP IS TO BE FITTED OVER THE OUTGOING PIPE TO THE LAST NEW SURFACE AND FOUL MANHOLES BEFORE ENTERING THE EXISTING SEWERS IN ACCORDANCE WITH SEWERS FOR ADOPTION 6. THE SCREEN SHALL ONLY BE REMOVED ONCE ON SITE CONSTRUCTION WORKS HAVE BEEN COMPLETED

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGN DRAWINGS AND OTHER INFORMATION

ALL EXISTING SEWER LEVELS AND LOCATIONS TO BE CHECKED AND VERIFIED PRIOR TO ANY CONSTRUCTION WORKS AND ANY DISCREPANCIES REPORTED IMMEDIATELY.

MANHOLE RINGS SHALL NOT BE CUT

SURFACE WATER SEWER NETWORK DESIGNED IN ACCORDANCE WITH ROADS IDENTIFIED ON ORIGINAL DRAINAGE AND LEVELS CONCEPT LAYOUT AND POSITIONS ARE SUBJECT TO CHANGE

Rev	Description	By	Ckd	Date
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MAKING COMPLEX EASY

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