



**SECTION 38  
SURFACE WATER**  
Impermeable area breakdown:  
Tank 1 = 0.600 ha

**S38 Area 8000m<sup>2</sup>**  
Impermeable Areas: 6000m<sup>2</sup>  
Perneable Landscaped Areas 2000m<sup>2</sup>

**PHASE 1 - RESIDENTIAL  
SURFACE WATER**  
Impermeable area breakdown:  
Tank 1 = 0.962 ha  
Tank 2 = 1.562 ha

**PHASE 1 - RESIDENTIAL  
SURFACE WATER**  
Phase Area 6.3088 ha  
40% density factor for  
Impermeable Areas: 2.524 ha  
Discharge Rate: 61.715 l/s

**PHASE 1 - FOUL WATER**  
Total Dwellings: 152  
Peak Flow: 7.04 l/s  
Dry Weather Flow: 2.35 l/s

**PHASE 1**

PHASE 1 HAS 4 STUBS FOR FOUL DRAINAGE. CALCULATIONS ARE SPLIT EQUALLY BY 4 (152 / 4 = 38 DWELLINGS INTO EACH STUB [NOT FIXED AND CAN BE ALTERED TO SUIT PHASE 1 PARCEL DEVELOPMENT])

**NOTES**

- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
- ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS AND LOCAL AUTHORITY GUIDANCE.
- THIS DRAWING IS TO AID THE S104, S102, AND S106 APPLICATION TO SEVERN TRENT WATER.
- UNDERGROUND SERVICES ARE PRESENT IN THE AREA. CONTRACTOR IS TO CONFIRM THE PRECISE LINE AND DEPTH OF ANY SERVICES PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION WORKS.
- ACCESS TO EXISTING PROPERTIES TO BE RETAINED AT ALL TIMES.
- NO WORK SHOULD COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE CONTRACTORS RISK.
- ALL INVERT LEVELS OF EXISTING FOUL AND SURFACE WATER SYSTEMS ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS. ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO SCP.
- FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A ROCKER PIPE.
- DRAWINGS ARE NUMBERED AS FOLLOWS: PHASE 1 17109-0500-101 PHASE 2 17109-0500-201 S106/S102 SURFACE WATER 17109-0500-301 S106/S102 FOUL WATER 17109-0500-302
- ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
- COVER SLABS MUST CARRY THE BSI KITEMARK AND SHALL COMPLY WITH BS 5911 PART 3 / BS EN 1917:2000. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600MM X 600MM. PLEASE REFER TO CONCRETE PIPE ASSOCIATION (CPA) '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 TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
- ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS, UNLESS OTHERWISE AGREED WITH THE SEWERAGE UNDERTAKER.
- SEWERS MUST HAVE 5M CLEARANCE FROM TREES AND HEDGES WHERE POSSIBLE.
- ALL PIPES TO HAVE CLASS "S" GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WIS 4.08-02 (TABLE A2), WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES (OR LESS THAN 0.9M IN NON VEHICULAR ACCESSED AREAS), THEN A 150MM THICK ST4 CONCRETE BED AND SURROUND SHALL BE PROVIDED.
- ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.
- ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
- THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS - REFER TO MANHOLE SCHEDULE AND DETAILS FOR PIPEWORK ARRANGEMENT.
- ALL ADOPTABLE SEWERS, UNLESS OTHERWISE STATED, SHALL BE UPVC PLASTIC PIPE.
- FOR SURFACE WATER MANHOLE SCHEDULE REFER TO DRAWING 17109-0500-504.
- FOR ATTENUATION POND DRAWINGS REFER TO DRAWING 17109-0500-506 AND 17109-0500-507.
- ANY DISCREPANCIES WITHIN THIS DRAWING PACKAGE ARE TO BE BROUGHT TO THE ATTENTION OF SCP TRANSPORT.
- ALL DRAWINGS TO BE CHECKED BEFORE COMMENCEMENT OF WORK ON SITE.
- PROPOSED DRAINAGE TO HAVE TREE ROOT BARRIER PROTECTION MEMBRANE.
- ALL SURFACE AND FOUL WATER DRAINAGE IS DESIGNED AND TO BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 7th EDITION.
- EXISTING SURFACE WATER NETWORK TO BE UTILISED.
- EXISTING SURFACE MANHOLE TO BE UTILISED.
- PROPOSED SURFACE WATER NETWORK TO BE UTILISED.
- INFILL COVERS AND FRAMES IN BLOCK PAVED AREAS ARE NOT TO BE USED (SEE 2.9.6 SFA6 P 25).
- CATCHPITS SHALL NOT BE ADOPTED.
- WHERE PIPE CROSSING, PLASTIC MEMBRANE TO BE USED FOR PROTECTION TO ELIMINATE ANY CHANCES OF CROSS CONTAMINATION.
- NO BACKDROPS TO BE USED, STEEPER GRADIENTS ARE PREFERRED TO THE USE OF BACKDROPS.
- PRECAST CONCRETE MANHOLE RINGS WILL NOT BE CUT UNDER ANY CIRCUMSTANCES. OTHER OPTIONS ARE PREFERRED, MANHOLE BUILT UP WITH CONCRETE OR BRICK WORK TO THE TOP OF THE PIPE.
- PROTECTIVE CONCRETE COVER SLABS TO BE USED ON PIPES IN NON TRAFFIC AREA WHICH DOES'NT ACHIEVE 0.9m/900mm COVER LEVEL AND 1.2m/1200mm COVER IN TRAFFIC AREA.
- PIPES OF DIFFERENT DIAMETERS ENTERING MANHOLES SHOULD BE INSTALLED WITH SOFFITS AT THE SAME LEVEL.
- ALL PROPOSED MANHOLE COVERS & FRAMES AT A MINIMUM OF 675mm x 675mm TO MAINTAIN CLEAR OPENING AND TO COMPLY WITH SEVERN TRENT WATER LTD CURRENT HEALTH AND SAFETY STANDARDS.
- THE MATERIALS TO BE USED ARE SUITABLE FOR THE GROUND CONDITIONS.
- IN SITUATIONS WHERE TRAFFIC LOADING IS ANTICIPATED TO BE HEAVIER THAN WOULD OCCUR ON A TYPICAL RESIDENTIAL ESTATE DISTRIBUTOR ROAD (IE BRAKING OR TURNING NEAR A JUNCTION) A HIGHER SPECIFICATION COVER (E600) SHOULD BE USED.
- PIPES DO NOT RECEIVE ANY EXERTED LOADS. DISTANCE TO ANY BUILDING SHOULD BE MINIMUM 1.2m IN ANY CASE.
- TEMPORARY SCREEN TO BE FITTED DURING CONSTRUCTION WORKS TO AVOID DEBRIS GOING INTO THE EXISTING NETWORK.

**KEY**

- EXISTING FOUL WATER SEWER TO BE UTILISED
- EXISTING FOUL WATER MANHOLE TO BE UTILISED
- PROPOSED FOUL WATER SEWER
- PROPOSED FOUL WATER MANHOLE
- SEVERN TRENT WATER EASEMENT <300mm - 2.5m EASEMENT BOTH SIDES (5m) >300mm - 5m EASEMENT BOTH SIDES (10m)
- EXISTING SURFACE WATER NETWORK TO BE UTILISED
- EXISTING SURFACE MANHOLE TO BE UTILISED
- PROPOSED S38 HIGHWAY SURFACE WATER DRAINAGE PIPE
- PROPOSED S38 HIGHWAY SURFACE WATER MANHOLE
- EXISTING SURFACE WATER NETWORK TO BE ABANDONED
- EXISTING SURFACE MANHOLE TO BE ABANDONED
- PROPOSED SURFACE WATER TO BE ADOPTED BY SEVERN TRENT WATER
- PROPOSED SURFACE WATER MANHOLE
- THORNSBY DEVELOPMENT SITE BOUNDARY
- S1.001 PIPE REFERENCE NUMBER FROM MICRO-DRAINAGE
- HYDROBRAKE
- ADOPTABLE BOUNDARY

PLANNING APPROVED  
800 DWELLINGS + COMMERCIAL / OFFICES AND PRIMARY SCHOOL

THE SCP DESIGN COVERS THE INFRASTRUCTURE SURFACE WATER AND FOUL WATER DRAINAGE DESIGNS, FOR PHASE 1 AND 2 ONLY, WITH STUB PROVISIONS FOR FUTURE PHASES

HOUSE BUILDERS WILL DESIGN AND SUBMIT THEIR OWN SEPARATE PHASING SECTION 104 SUBMISSIONS, FOR SURFACE WATER AND FOUL WATER DRAINAGE DESIGNS, WHICH WILL NOT INCLUDE ANY UPSTREAM STORAGE SYSTEMS AND DISCHARGE/CONNECT INTO THE PHASING INFRASTRUCTURE SECTION 104 STORAGE TANKS AND POND SYSTEMS.

MASTERPLAN NOT FIXED  
PHASE 1 APPROXIMATELY 152 DWELLINGS

**REVISIONS**

REV	DESCRIPTION	DATE	BY
A	S104 DRAINAGE AMENDMENTS	19.07.18	CW

**SCP**  
Transportation Planning : Infrastructure Design  
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Client Name: HARWORTH ESTATES LTD

Project Title: THORNSBY INFRASTRUCTURE DETAILED DESIGN

Drawing Title: PHASE 1 PROPOSED SURFACE WATER DRAINAGE

Date: 18.04.2018	Drawn By: CW
Scale: 1:500 @ A1 1:1000 @ A3	Checked: WJ
Status: DESIGN	Approved: UNAPPROVED

Drawing No: 17109-0500-101 Rev: A