



**LEGEND**

- 1200mmØ MANHOLE & DRAIN RUN
- FOUL WATER - RED
- CLEAN SURFACE WATER - BLUE
- DIRTY SURFACE WATER - GREEN
- 1500mmØ MANHOLE & DRAIN RUN
- COLOURS AS ABOVE
- 1800mmØ MANHOLE & DRAIN RUN
- COLOURS AS ABOVE
- SURFACE WATER MANHOLE WITH HYDROBRAKE
- SOIL & VENT PIPE/STUB STACK WITH AAV
- POP-UP WASTE
- RODDABLE TRAPPED FLOOR GULLY
- RODDABLE TRAPPED YARD GULLY (1500 OUTLET)
- RAIN WATER PIPE
- TRAPPED ROAD GULLY
- DRAINAGE CHANNEL
- CLASS 1 BY PASS PETROL INTERCEPTOR
- REFERENCES AS CONDR

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

IN ACCORDANCE WITH THE HAZARDOUS SUBSTANCES ACT 2002, THIS DRAWING IS NOT TO BE REPRODUCED, DISCLOSED OR COPIED WITHOUT WRITTEN CONSENT.

**CONSTRUCTION**

IT IS CONSIDERED THAT THE PROPOSED WORKS ARE WITHIN THE SCOPE OF A COMPETENT CONTRACTOR AND AS SUCH NO UNUSUAL HAZARDS HAVE BEEN IDENTIFIED, WITH THE EXCEPTION OF THE FOLLOWING:-

THE CONTRACTOR TO PROVIDE METHOD STATEMENTS TO HIGHLIGHT AND MINIMIZE RISKS FOR ELEMENTS OF WORK INDICATED ON THIS DRAWING WHILE WORKING AT DEPTH & THE REQUIRED TEMPORARY SUPPORT FOR EXCAVATIONS

**MAINTENANCE/CLEANING/OPERATION**

SETTING OF PIPES/MANHOLES TO BE BY UNDERTAKEN AT REGULAR INTERVALS (APPROX 6 MONTHS) BY SPECIALIST

**DECOMMISSIONING/DEMOLITION**

NO SPECIAL REQUIREMENTS

- DRAINAGE NOTES**
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
  - ALL DRAINAGE WORK TO BE CARRIED OUT IN ACCORDANCE WITH BS 5393, BS 590 AND THE BUILDING REGULATIONS. DETAILS, UNLESS NOTED OTHERWISE.
  - ALL PIPES ARE TO HAVE SURROUND IN ACCORDANCE DRAINAGE DETAILS, REFER TO ARCHITECTS DRAWINGS.
  - FOR EXACT LOCATION OF RAIN WATER AND FOUL WATER OUTLETS, REFER TO ARCHITECTS DRAWINGS.
  - SURFACE WATER DRAINS SHALL BE EITHER H.D.P.E. RIDGEDRAIN TWINWALL CARRIER PIPE BY 'POLYPIPE PLC' (OR SIMILAR APPROVED) TO B.S EN 1401-1 OR P.C.C. PIPES TO B.S 5911 (Part 100 - CLASS H) OR VITRIFIED CLAY TO B.S 295 CLASS 120
  - FOUL WATER DRAINS SHALL BE VITRIFIED CLAY TO B.S. EN 295 CLASS 200
  - ALL GRP UNDERGROUND TANKS ARE TO BE BEDDED ON AND ENCASED IN 225mm R20 30mm AGG. CONCRETE STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
  - ROAD GULLY OUTLET PIPE INVERT LEVELS TO BE 600mm BELOW TOP OF GRATING LEVEL.
  - ALL MANHOLE AND INSPECTION CHAMBER COVERS, FRAMES AND DRAINAGE CHANNELS IN TRAFFICED AREAS SHALL COMPLY TO EITHER B.S. 487 - PART 1 HEAVY DUTY COVERS TO MANH. OR B.S. EN 124 GRADE 4/00 (11.5 TONNE WHEEL LOADING).
  - FOR DRAINAGE CONSTRUCTION AND PIPE BED DETAILS REFER TO DRAWING No. 3514/S1 & S2
  - ALL DRAINAGE BRANCHES TO BE 100mm FOR FOUL WATER & 150mm FOR SURFACE WATER UNLESS MARKED OTHERWISE.
  - ALL SOIL & VENT STACKS TO HAVE RODDABLE ACCESS 150mm ABOVE GROUND FLOOR SLAB LEVEL WITH REMOVABLE ACCESS PLATES.
  - ALL DRAINAGE CHANNELS TO HAVE ACCESS CHAMBER AT ENDS OF RUNS & BE RODDABLE EVERY 30m THEREAFTER.
  - ALL SHALLOW DRAINAGE (<900mm COVER) AND DRAINAGE BELOW FLOOR SLAB TO BE INCASD IN MIN 150mm CONCRETE SURROUND.
  - ALL CONCRETE SURROUNDS FOR THE DRAINAGE TO BE CLASS D22 (SULPHATE RESISTING) OR COMPLY WITH THE SOIL INVESTIGATION

**DRAINAGE LAYOUT**  
Scale 1:250

**SURFACE WATER DESIGN CRITERIA**  
On - Site Crated Attenuation  
designed for 1:100 year return storm  
+ 20% climate change  
Discharge Based on Greenfield Run-Off of  
5ltrs/sec/hectare

	IMPERMEABLE AREA	DISCHARGE RATE	TANK VOLUME
UNIT 3	4850 m <sup>2</sup>	2.4 ltrs/sec	320 m <sup>3</sup>
UNITS 4-8 WEST	3975 m <sup>2</sup>	2.0 ltrs/sec	274 m <sup>3</sup>
UNITS 4-8 EAST	4975 m <sup>2</sup>	2.5 ltrs/sec	328 m <sup>3</sup>

**FOUL WATER MANHOLE SCHEDULE**

MANHOLE REF.	COVER LEVEL	INVERT LEVEL	PIPE Ø	EASTING	NORTHING	MANHOLE Ø	COVER TYPE	COMMENTS
FW 01	-	-	-	-	-	-	-	-
FW 02	83.000	81.400	150	524221.485	213178.550	1200	D400	-
FW 03	82.800	82.250	150	524233.086	213176.195	1200	D400	-
FW 04	82.625	82.725	150	524240.608	213076.163	1200	D400	-
FW 05	82.860	81.860	150	524258.297	213128.237	1200	D400	-
FW 06	82.575	81.600	150	524268.195	213141.046	1200	D400	-
FW 07	82.180	81.350	150	524162.223	213162.223	1200	D400	BACKDROP
FW 08	82.550	79.875	150	524337.894	213141.438	1200	D400	-
FW 07A	82.100	80.375	150	524300.578	213153.813	1200	D400	-
FW 04A	83.650	82.825	100	524240.149	213068.115	1200	D400	-

**SURFACE WATER MANHOLE SCHEDULE**

MAN HOLE REF.	COVER LEVEL	INVERT LEVEL	PIPE Ø	EASTING	NORTHING	MANHOLE Ø	COVER	COMMENTS
SW01	-	-	-	-	-	-	-	-
SW02	83.055	81.785	225	524216.650	213132.264	1500	D400	-
SW03	83.055	81.500	300	524220.575	213144.099	1500	D400	-
SW04CP	83.055	81.450	300	524224.550	213156.084	1500	D400	CATCH PIT
SW05	-	-	-	-	-	-	-	-
SW06	83.525	82.550	225	524239.170	213075.119	1500	D400	-
SW07	83.525	82.225	300	524239.559	213091.011	1500	D400	-
SW08	83.400	82.075	300	524247.105	213113.763	1500	D400	-
SW09CP	82.700	81.775	300	524255.980	213140.525	1500	D400	CATCH PIT
SW10CP	82.275	81.200	150	524270.338	213154.644	1500	D400	CATCH PIT
SW11	83.750	82.550	225	524294.881	213061.290	1500	D400	-
SW12	83.800	82.225	300	524302.976	213079.909	1500	D400	-
SW13	83.450	82.075	300	524310.338	213068.338	1500	D400	-
SW14 CP	83.000	81.925	300	524317.066	213112.366	1500	D400	CATCH PIT
SW15CP	82.120	81.300	150	524317.221	213139.665	1500	D400	CATCH PIT
SW16	82.000	79.900	150	524269.088	213167.163	1500	D400	HYDROBRAKE
SW17	82.250	79.700	150	524336.973	213146.050	1500	D400	-
SW18	82.625	80.100	150	524333.291	213134.336	1500	D400	HYDROBRAKE
SW19	82.625	80.000	150	524248.636	213168.779	1500	D400	-

**DIRTY SURFACE WATER MANHOLE SCHEDULE**

MANHOLE REF.	COVER LEVEL	INVERT LEVEL	PIPE Ø	EASTING	NORTHING	MANHOLE Ø	COVER TYPE	COMMENTS
DSW 01	82.625	81.450	300	524246.267	213170.296	1500	D400	CATCH PIT
DSW 02	82.170	81.350	300	524262.862	213165.327	1500	D400	CATCH PIT
DSW 03	82.125	81.300	450	524234.903	213144.378	1500	D400	CATCH PIT

**EXISTING SURFACE WATER MANHOLE SCHEDULE**

MANHOLE REF.	COVER LEVEL	INVERT LEVEL	PIPE Ø	EASTING	NORTHING	MANHOLE Ø	COVER TYPE	COMMENTS
EX. SW 01	82.255	79.655	400	524339.201	213147.250	-	-	-

**EXISTING FOUL WATER MANHOLE SCHEDULE**

MANHOLE REF.	COVER LEVEL	INVERT LEVEL	PIPE Ø	EASTING	NORTHING	MANHOLE Ø	COVER TYPE	COMMENTS
EX. FW 01	82.320	79.320	150	524340.976	213146.251	-	-	-

NOTE: Where a "P" revision applies, this drawing is NOT to be used for construction.

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PROJECT  
**BESSEMER ROAD  
WELWYN GARDEN CITY**

TITLE  
**UNIT 3-8 (PHASE 2)  
DRAINAGE LAYOUT**

ARCHITECT  
**LDA LAYERED ARCHITECTS**

DRAWN: CE DESIGNED: TC CHECKED: DOB  
DATE: Oct 2015 SCALE: 1:250 STATUS: Construction

3514/150

