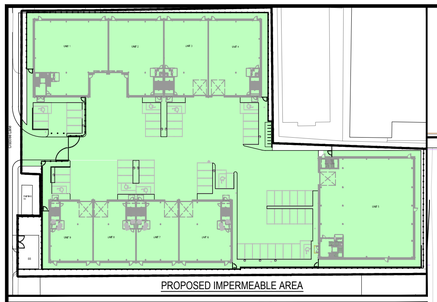
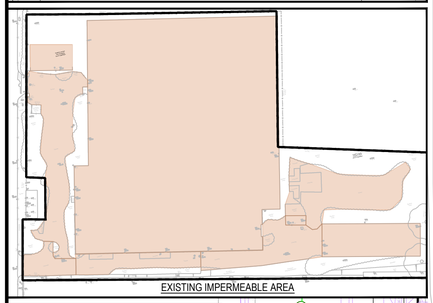



AREAS:

| | |
|---|---|
| SITE AREA | 0.910 ha |
| EXISTING IMPERMEABLE AREA | 0.703 ha |
| PROPOSED IMPERMEABLE AREA | 0.832 ha |

EXCEEDANCE ROUTE IN THE EVENT OF A FAILURE OF THE DRAINAGE SYSTEM OR STORM EVENT IN EXCESS OF THE 1 IN 100 + 45%CC

COMBINED DISCHARGE

- FORM NEW Ø225 CONNECTIONS TO EXISTING PUBLIC MANHOLE.
- LOCATION AND LEVEL OF CONNECTION POINT BASED ON UNDERGROUND SURVEY REFER TO 47333_T_UG DATE 30/06/2023.
- INVERT LEVEL OF CHAMBER TO BE CONFIRMED.
- S106 REQUIRED FOR DIRECT CONNECTION PRIOR TO MAKING CONNECTION.

EXISTING Ø300 PUBLIC COMBINED PIPE

Crabtree Lane

EX. PUBLIC MH
CL= 83.65(TBC)
IL = 79.14 (TBC)

EX. PUBLIC MH
CL= 83.39
IL = 79.16

EXISTING Ø225 COMBINED RUN
CAP OFF AT BOUNDARY AND BREAK OUT EXISTING UPSTREAM DRAINAGE. SUBJECT TO DIVESTMENT APPROVAL - IN PROGRESS APR 2024.

EX. PUBLIC MH
(TAKEN FROM RECORDS, RUN UNDER CCTV INVESTIGATION-MARCH 2024)

CL= 83.65 (TBC)
IL = TBC

EXISTING Ø225 PUBLIC COMBINED PIPE (TFR)

EXISTING SS

SS

OB1
CL:84.202
IL:83.706
L2.67m Ø150 @ 1:7 (1.000 )

LINEAR DRAINAGE CHANNEL A

L75.00m Ø225 @ 1:150 (1.001)

S101 Ø1.20
CL:84.225
IL:83.225

S102 Ø1.20
CL:84.225
IL:82.725

UNIT 1 | UNIT 2 | UNIT 3 | UNIT 4

SSL/FFL = 84.250

Canopy Rwp

F103A Ø0.45
CL:84.224
IL:83.024

L5.74m Ø100 @ 1:12

F103 Ø1.20
CL:84.174
IL:82.526

BACKFLOW VALVE

L53.90m Ø150 @ 1:80

F102A Ø0.45
CL:84.233
IL:83.138

F102 Ø0.45
CL:84.233
IL:83.138

F101 Ø1.20
CL:84.218
IL:83.200

L73.16m Ø225 @ 1:150 (2.000)

L29.97m Ø225 @ 1:111 (1.002)

OB2
CL:84.203
IL:83.706

L5.76m Ø150 @ 1:5 (3.000)

IL 82.454

S103 Ø1.35
CL:84.125
IL:82.942

S104 Ø1.20
CL:84.293
IL:82.379

L20.22m Ø150 @ 1:21

1:80

OB6
CL:84.083
IL:83.333

L4.62m Ø300 @ 1:5 (11.000)

LINEAR DRAINAGE CHANNEL I @ 84.083

L7.38m Ø150 @ 1:12 (9.000)

L15.09m Ø300 @ 1:150 (1.003)

S117 Ø1.20
CL:83.828
IL:82.600

L32.00m Ø225 @ 1:150 (10.001)

L32.60m Ø300 @ 1:41 (8.002)

OB4
CL:84.641
IL:83.891

S118 Ø1.35
CL:84.125
IL:82.237

L2.31m Ø375 @ 1:150 (8.003)

S119 Ø1.35
CL:84.195
IL:82.102

S116 Ø1.20
CL:84.233
IL:83.104

IL 83.254

IL 82.279

L3.00m Ø375 @ 1:150 (8.004)

S109 Ø1.35
CL:84.583
IL:82.204

L15.63m Ø225 @ 1:12 (4.002)

IL 82.354

L10.04m Ø225 @ 1:105 (10.900)

LDC 1 @ 83.517/83.446

1:17

1:20

1:40

OB5
CL:83.446
IL:82.696

S121 Ø1.20
CL:83.584
IL:79.790

S120 Ø1.20
CL:84.350
IL:81.503

LINEAR DRAINAGE CHANNEL H@ 84.270/84.264

L2.50m Ø375 @ 1:150 (8.005)

IL 82.085

S114 Ø1.35
CL:84.352
IL:82.142

IL 82.142

L9.27m Ø375 @ 1:150 (8.001)

L8.45m Ø375 @ 1:148 (1.005)

L8.10m Ø225 @ 1:150 (6.002)

L8.63m Ø225 @ 1:15 (1.009)

BD IL 81.392

L16.61m Ø225 @ 1:150 (1.008)

L4.50m Ø225 @ 1:150 (1.007)

HB

IL 81.550

L2.50m Ø375 @ 1:150 (1.006)

ATTENUATION TANK - 1

1:40

BD IL 82.969

BD IL 82.899

LDC F @ 84.675/84.641

S108 Ø1.20
CL:85.022
IL:83.632

S106 Ø1.20
CL:85.076
IL:83.872

L35.37m Ø225 @ 1:147 (4.001)

EXISTING Ø225 PUBLIC COMBINED PIPE (TFR)

S112 Ø1.20
CL:84.520
IL:83.320

L7.21m Ø150 @ 1:80

L54.77m Ø225 @ 1:149 (7.000)

L57.00m Ø150 @ 1:80

S113 Ø1.20
CL:84.525
IL:82.953

F107 Ø1.20
CL:84.557
IL:83.772

1:41

F112 Ø1.20
CL:84.544
IL:83.059

F111 Ø0.45
CL:84.572
IL:83.505

F110 Ø1.20
CL:84.572
IL:83.372

F109 Ø1.20
CL:84.578
IL:83.478

F108 Ø0.45
CL:84.589
IL:83.590

S115 Ø1.20
CL:84.517
IL:83.306

L4.53m Ø225 @ 1:12 (8.000)

L23.86m Ø150 @ 1:80

L1.900m Ø225 @ 1:150 (5.000)

L29.80m Ø225 @ 1:150 (4.000)

L30.90m Ø225 @ 1:150 (4.000)

OB3
CL:84.445
IL:83.692

L24.50m Ø225 @ 1:142 (6.001)

KERB DRAIN E @ 84.445/84.442

F106 Ø0.45
CL:85.062
IL:84.070

UNIT 5
SSL/FFL = 85.100

UNIT 9 | UNIT 8 | UNIT 7 | UNIT 6

SSL/FFL = 84.600

LINEAR DRAINAGE CHANNEL C @ 84.525

NEW LANDRAIN CONNECTION TO EXISTING MH(TBC)

EX. SWMH(UG SURVEY)
CL: 83.35 (TBC)
BL: 80.57 (TBC)
(MH UNDER CCTV INVESTIGATION-APRIL 2024)

EX. MH(UG SURVEY)
CL: 84.55 (TBC)
BL: 81.03(TBC)
(MH UNDER CCTV INVESTIGATION-APRIL 2024)

S107 Ø1.20
CL:85.022
IL:83.831

Canopy Rwp

S105 Ø1.20
CL:85.078
IL:84.078

S110 Ø1.20
CL:84.529
IL:83.529

L60.40m Ø225 @ 1:150 (6.000)

LINEAR DRAINAGE CHANNEL D @ 84.527

LINEAR DRAINAGE CHANNEL B @ 85.056/85.020

S111 Ø1.20
CL:84.608
IL:83.126

L103m LAND DRAIN

## DRAINAGE

1. REFER TO CIVIL AND STRUCTURAL SPECIFICATION REPORT - PART R.
2. CONTRACTOR SHOULD ENSURE THE LOCAL PLANNING AUTHORITY HAVE APPROVED THE DRAINAGE PROPOSALS PRIOR TO ORDERING MATERIAL OR INSTALLATION.

HYDRAULIC DESIGN:

3. THE SURFACE WATER NETWORK, FLOW CONTROL AND ATTENUATION HAS BEEN DESIGNED USING MICRODRAINAGE SOFTWARE WITH FSR RAINFALL DATA.

STRATEGY:

4. DISCHARGE RATE RESTRICTED AT 20.20 l/s SUBJECT TO LLFA APPROVAL.THIS IS BASED ON 50% REDUCTION OF THE EXISTING M1-30 STORM EVENT.
5. TOTAL ATTENUATION FOR 100YR+45% CLIMATE CHANGE BELOW GROUND = 353m³

FINAL DRAINAGE CONNECTIONS:

6. WHERE THIRD PARTY APPROVAL IS REQUIRED THESE ARE NOTED AGAINST EACH DISCHARGE POINT ON THE DRAWING.
7. NO CONNECTION OR DISCHARGE SHOULD BE MADE UNTIL APPROVAL HAS BEEN RECEIVED. CHECK STATUS OF APPLICATION WITH ENGINEER.
8. CONTRACTOR SHOULD INVESTIGATE AND INSTALL FINAL DRAINAGE CONNECTIONS PRIOR TO INSTALLING ANY UPSTREAM DRAINAGE TO AVOID POTENTIAL LEVEL ISSUES.
9. EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE INFORMATION. HOWEVER, THE CONTRACTOR IS ADVISED TO CHECK ACTUAL CONDITIONS. I.E. THE LOCATION, ACCESSIBILITY, UNDERGROUND ROUTE, LEVELS, SIZES, CONDITION OF EXISTING SEWERS TO BE RE-USED AND/OR CONNECTED INTO.

GENERALLY:

10. DO NOT SCALE FROM THIS DRAWING, WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED.
11. REPORT CONFLICTS TO ENGINEER IMMEDIATELY.
12. EVERY EFFORT HAS BEEN MADE TO ASCERTAIN TYPE, LOCATION AND DEPTH OF BURIED SERVICES AND/OR OBSTRUCTIONS. HOWEVER, THE CONTRACTOR IS ADVISED TO CARRY OUT OWN INVESTIGATIONS TO ENSURE THERE ARE NO CLASHES WITH THE PROPOSED WORKS.
13. CONTRACTOR IS RESPONSIBLE FOR PROTECTING RETAINED SERVICES AND MAKING CONTACT WITH OWNERS OF APPARATUS TO OBTAIN NECESSARY CONSENT FOR EXCAVATION, PROTECTION AND/OR DIVERTING.
14. BURIED OBSTRUCTIONS ENCOUNTERED DURING EXCAVATION THAT CONFLICT WITH PROPOSED WORKS SHOULD BE BROKEN OUT AND REMOVED. RESIDUAL VOIDS TO BE BACKFILLED AND COMPACTED AS PER SPECIFICATION.

NEW DRAINAGE:

15. INTERNAL FOUL POINTS ARE LOCATED AND SET OUT BY THE ARCHITECT.
16. TRADITIONAL RAINWATER DOWNPIPES ARE PROVIDED BY THE CLADDING CONTRACTOR AND COORDINATED WITH THE ARCHITECT.
17. DESIGN ASSUMES THAT ALL WORKS ARE NOT TO BE ADOPTED.
18. GRADIENTS OF PIPES ARE AVERAGED. PIPE CONNECTIONS SHOULD BE INSTALLED TO THE STATED INVERT LEVELS.
19. COVER LEVELS OF THE MANHOLES ARE AVERAGED. COVER AND FRAME SHOULD BE SET TO SUIT FINISHED GROUND LEVELS.
20. ALL PIPEWORK WITHIN MANHOLES ARE TO BE LAID SOFFIT TO SOFFIT (U.N.O), INCLUDING BACKDROP PIPEWORK, WHERE THE RODDING ACCESS LEVEL IS SPECIFIED.
21. FLAT LATERAL CONNECTION TO BE 135° 'Y' JUNCTIONS (IE 45° OBLIQUE JUNCTIONS) RELATIVE TO MAIN RUN. TO BE USED ON FOUL OR SURFACE WATER RUNS. 90° OR 87½° SQUARE JUNCTIONS SUITABLE FOR SURFACE WATER CONNECTIONS ONLY.
22. SADDLE CONNECTIONS TO LARGER PIPES SHOULD BE MADE SO THAT THE INVERT LEVEL OF THE SMALLER PIPE DOES NOT ADJOIN BELOW MID HEIGHT OF THE LARGER PIPE.
23. PIPES CROSSING WITHIN 200MM OF EACH OTHER ARE TO BE ISOLATED BY CONCRETE FOR A MINIMUM DISTANCE OF 1M BEYOND CROSSING POINT IN ALL DIRECTIONS.
24. A CCTV DRAINAGE SURVEY TO BE CARRIED OUT ON COMPLETION TO PROVE THE INTEGRITY OF THE AS-BUILT DRAINAGE SYSTEMS.

ANCILLARY ITEMS:

25. WHERE PROPOSED CONTRACTOR MUST PROVIDE PROPOSALS FOR SUPPLY OF LINEAR DRAINAGE CHANNELS, KERB DRAINS, INTERCEPTORS, ATTENUATION, PUMPS, HYDROBRAKE, FILTER UNITS.
26. WHERE PROPOSED ALLOWANCE SHOULD BE MADE FOR POWER SUPPLY TO INTERCEPTORS AND PUMPS AND FOR INSTALLING CONTROL PANELS.

## LEGEND

- NEW FOUL WATER PIPE
- IC 0.45 — NEW FOUL WATER INSPECTION CHAMBER
- F000 1.20 — NEW FOUL WATER MANHOLE
- EXISTING COMBINED WATER PIPE
- NEW STORM WATER PIPE
- S000 0.45 — NEW STORM WATER INSPECTION CHAMBER
- S000 1.20 — NEW STORM WATER MANHOLE
- S000 1.35 (CP) — NEW STORM WATER CATCHPIT MANHOLE
- (HB) — NEW HYDROBRAKE
- (PI) — PETROL INTERCEPTOR
- AB/OB — LINEAR DRAINAGE CHANNEL (ACCESS BOX/ OUTLET BOX)
- AB/OB — KERB CHANNEL (ACCESS BOX/ OUTLET BOX)
- LAND DRAIN
- PROPOSED CELLULAR STORAGE
- SITE BOUNDARY

### LINEAR DRAINAGE CHANNEL (LDC) SCHEDULE

CHANNELS TO BE DESIGNED BY SPECIALIST BASED ON 50mm/hr RAINFALL INTENSITY, A 5yr RETURN PERIOD AND THE FOLLOWING PARAMETERS:

| CHANNEL REFERENCE | LOCATION | AREA DRAINED | LENGTH | GROUND LEVEL BOX | OUTLET | PIPE | DUTY | PREFERENCE |
|---|---|---|---|---|---|---|---|---|
| A | FOOTPATH | 259m² | 130.00m | 84.206 | 2NO. | 150Ø | B125 | NARROW |
| B | FOOTPATH | 214m² | 99.00m | 85.056/85.020 | 1NO. | 150Ø | B125 | NARROW |
| C | FOOTPATH | 43m² | 20.00m | 84.525 | 1NO. | 150Ø | B125 | NARROW |
| D | FOOTPATH | 123m² | 57.00m | 84.527 | 2NO. | 150Ø | B125 | NARROW |
| E | ACCESS ROAD | 712m² | 26.00m | 84.445/84.442 | 2NO. | 225Ø | D400 | KERB DRAIN |
| F | SERVICE YARD | 235m² | 14.00m | 84.675/84.641 | 1NO. END | 150Ø | D400 | SLOT |
| G | ACCESS ROAD | 448m² | 10.00m | 83.517/83.446 | 1NO. END | 225Ø | D400 | SLOT |
| H | ACCESS ROAD | 336m² | 20.50m | 84.270/84.264 | 1NO.END | 150Ø | D400 | SLOT |
| I | ACCESS ROAD | 1766m² | 49.50m | 83.432 | 2NO. | 300Ø | D400 | SLOT |

NUMBER & SPACING OF ACCESS BOXES TO BE SPECIFIED BY SUPPLIER OUTLET BOXES TO BE SILT TRAP DEEP HEAVY DUTY. OUTFALL BOXES TO HAVE SUMP AS FIRST STAGE OF TREATMENT

### PETROL INTERCEPTOR 1 (PI)

CONTRACTOR TO OBTAIN DESIGN/QUOTE FROM SUPPLIER BASED ON FOLLOWING PARAMETERS

| | PETROL INTERCEPTOR - 1 |
|---|---|
| AREA DRAINED | 3,398m² |
| MAX FLOW RATE | 45.4 l/s |
| IL IN | Ø375 @ 82.222m |
| IL OUT | Ø375 @ 82.122m |

ALLOW FOR CONCRETE SURROUND, POWER SUPPLY, CONTROL PANEL, VENTING AND HIGH LEVEL ALARM.

### ATTENUATION TANK - 1

CONTRACTOR TO OBTAIN DESIGN/QUOTE FROM SUPPLIER BASED ON FOLLOWING PARAMETERS

| | TANK - 1 |
|---|---|
| AREA DRAINED | 8,324m² |
| SIZE | 36.5 x 8.5 x 1.2m (372m³) |
| WATER VOLUME | 353m³ (95% POROSITY) |
| GROUND LEVEL | 84.263m-84.464m |
| TANK TOP | 82.750m |
| TANK BASE | 81.550m |

ALLOW FOR VENTING, BEDDING & SURROUND, MEMBRANE WITH WELDED JOINTS
ALL CONNECTIONS INTO TANKS TO BE VIA MANIFOLD/REDUCERS TO SUIT MIN. 150 PIPE CONNECTION.
HIGH GROUND WATER LEVEL NOTED. DEWATERING MEASURE MAYBE REQUIRED DURING INSTALLATION.
FLOATATION CALCULATIONS FOR PERMANENT CASE CHECKED.

### HYDROBRAKE - 1 (HB)

| | |
|---|---|
| SUPPLIER | HYDRO INT OR SIMILAR APPROVED |
| | HB1 |
| CHAMBER DIA | Ø1.50m |
| CHAMBER CL | 84.449m |
| CHAMBER IL | 81.533m |
| DESIGN FLOW | 20.20 l/s |
| DESIGN HEAD | 1.20m |

| Rev. | Date | Description | Technician | Reviewer |
|---|---|---|---|---|
| P3 | 15.05.24 | UPDATED TO SUIT LATEST SITE LAYOUT | NM | IL |
| P2 | 18.09.24 | UPDATED TO SUIT LATEST SITE LAYOUT | SH | IL |
| P1 | 12.12.23 | PRELIMINARY ISSUE | RM | IL |

N

I&L CONSULTING Ltd
projects@il-consultants.com

Project: CRABTREE LANE, CLAYTON
Drawing: DRAINAGE PLANNING STRATEGY

| Drawing Set | Drawing Status | Scale | Project Number | Drawing Number | Revision |
|---|---|---|---|---|---|
| DRAINAGE | PRELIMINARY | 1:200 @ A1<br>1:400 @ A3 | 23-026-I&L | D00 | P3 |