

TENDER RISKS:

1. SITE HAS BEEN CLASSED AS 'MEDIUM' RISK IN RELATION TO HISTORICAL UNEXPLODED ORDINANCE. CONTRACTOR TO ALLOW FOR UXO RISK MANAGEMENT PLAN, ON-SITE SUPPORT & MAGNETOMETER SURVEY IN PILE LOCATION.
2. GROUNDWATER RESTING LEVELS RECORDED BETWEEN 2.20m & 6.48m BGL. ALLOWANCE TO BE MADE FOR DEWATERING MEASURES.
3. EXISTING FOUNDATIONS / OBSTRUCTIONS. WHERE THESE SHOULD BE GRUBBED OUT PRIOR TO CONSTRUCTION.
4. LOOSE SANDS NOTED (REFER TO TRC SI REPORT). FOR EXCAVATIONS ALLOWANCE TO BE MADE FOR BATTERING BACK FACES TO A SAFE ANGLE OF REPOSE OR PROVIDE SHUTTERING.
5. REMNANTS OF DEEP BURIED STRUCTURES.

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 AN URBAN RATE CALCULATED USING ICP SUDS
5. TOTAL ATTENUATION FOR 100YR+45% CLIMATE CHANGE BELOW GROUND = 372m³

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 87° 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
F000 1.20
EXISTING COMBINED WATER PIPE
NEW STORM WATER PIPE
S000 0.45
S000 1.20
S000 1.35
NEW FOUL WATER INSPECTION CHAMBER
NEW FOUL WATER MANHOLE
NEW STORM WATER INSPECTION CHAMBER
NEW STORM WATER MANHOLE
NEW STORM WATER CATCHPIT MANHOLE
NEW HYDROBRAKE
PETROL INTERCEPTOR
LINEAR DRAINAGE CHANNEL (ACCESS BOX/ OUTLET BOX)
KERB CHANNEL (ACCESS BOX/ OUTLET BOX)
LAND DRAIN
PROPOSED CELLULAR STORAGE
SITE BOUNDARY

- 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 Ø225 COMBINED RUN
CAP OFF AT BOUNDARY AND BREAK OUT EXISTING UPSTREAM DRAINAGE.
UU APPROVAL 05665445-S116 SEWER ABANDONMENT
REQUIRES SEWER TO BE EXPOSED TO ALLOW INSPECTOR TO CHECK NO LIVE CONNECTIONS.

- EX. PUBLIC MH
CL= 83.65 (TBC)
IL = 79.14 (TBC)
- EX. PUBLIC MH
CL= 83.39
IL = 79.16
- EX. PUBLIC MH
CL= 83.65 (TBC)
IL = TBC

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	OUTLET	PIPE	DUTY	PREFERENCE
A	FOOTPATH	259m ²	130.00m	84.206	2NO.	1500	B125	NARROW
B	FOOTPATH	214m ²	99.00m	85.056/85.020	1NO.	1500	B125	NARROW
C	FOOTPATH	43m ²	20.00m	84.525	1NO.	1500	B125	NARROW
D	FOOTPATH	123m ²	57.00m	84.527	2NO.	1500	B125	NARROW
E	ACCESS ROAD	712m ²	26.00m	84.445/84.442	2NO.	2250	D400	KERB DRAIN
F	SERVICE YARD	235m ²	14.00m	84.675/84.641	1NO. END	1500	D400	SLOT
G	ACCESS ROAD	448m ²	10.00m	83.517/83.446	1NO. END	2250	D400	SLOT
H	ACCESS ROAD	336m ²	20.50m	84.270/84.264	1NO. END	1500	D400	SLOT
I	ACCESS ROAD	1766m ²	49.50m	83.432	2NO.	3000	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

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

AREA DRAINED	PETROL INTERCEPTOR - 1
SIZE	3.398m ²
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

AREA DRAINED	TANK - 1
SIZE	8.324m ²
WATER VOLUME	36.5 x 8.5 x 1.2m (372m ³)
GROUND LEVEL	353m ³ (95% POROSITY)
TANK TOP	84.263m-84.464m
TANK BASE	82.750m

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.
FLOTATION CALCULATIONS FOR PERMANENT CASE CHECKED.

HYDROBRAKE - 1

SUPPLIER HYDRO INT OR SIMILAR APPROVED

CHAMBER DIA	HB1
CHAMBER CL	Ø1.50m
CHAMBER IL	84.449m
DESIGN FLOW	81.533m
DESIGN HEAD	20.20 l/s



Project
CRABTREE LANE, CLAYTON

PROPOSED DRAINAGE PLAN

Drawing Set
DRAINAGE

Drawing Status
TENDER

Scale
1:200 @ A1
1:400 @ A3

Project Number
23-026-I&L

Drawing Number
D01

Revision
T2

Rev.	Date	Description	Technician	Reviewer
T2	12.06.24	TENDER ADDENDUM	SH	IL
T1	26.04.24	TENDER ISSUE	SH	IL
P1	05.04.24	PRE TENDER REVIEW	SH	IL