	KEY	DES	DESIGN NOTE				
	SITE BOUNDARY.		EXISTING SITE	PROPOSED SITE			
47.155+	PROPOSED LEVELS.	TOTAL SITE AREA (m²)	1422	1422			
17 155+		IMPERMEABLE AREA (m ²)	638	802			
47.100+	EXISTING LEVELS.	PERMEABLE AREA (m ²)	784	620			
47,155+	FORMATION LEVELS (SUB BASE).	PEAK RATE RUN OFF (I/s)	17	0			
		NUMBER OF UNITS	1	0			
	SURFACE WATER SEWER.	GREENFIELD RUN-OFF (I/s)	0	0			
		BROWNFIELD RUN-OFF (I/s)	17	0			
-	FOUL WATER SEWER.	RESTRICTED SURFACE WATER PEAK DISCHARGE RATE (I/s)	0	5			
-	COMBINED WATER SEWER.	ATTENUATION FOR 100YS + 40% REQUIRED (m ³)	0	74			
	SURFACE WATER MANHOLE.	EXISTING SURFACE WATER DISCH 193219-FRA	IARGE AS AGREED II	N THE FRA REPORT REF:			

FW 225Ø INSPECTION CHAMBER 600mm PIPE TO BE ENCASED IN CONCRETE. **HANDER** RISING MAIN. EXISTING FOUL WATER SEWER. EXISTING SURFACE WATER SEWER.

FOUL WATER MANHOLE.

SW 225Ø INSPECTION CHAMBER 600mm

COMBINED WATER MANHOLE.

DEEE

unnunnun Ornunnunnun

SVP SS WP

YG

RWP SP

EXISTING COMBINED WATER SEWER. **EXISTING SEWERS & MANHOLES TO BE** ABANDONED TO BE BROKEN OUT TO X X X - BED/BASE LEVEL AND VOID BACKFILLED WITH GRANULAR MATERIAL, COMPACTED IN LAYERS NOT EXCEEDING 250mm. ROOT PROTECTION ZONE.

> RAIN WATER PIPE, SOIL PIPE, SOIL & VENT PIPE, STUB STACK & WASTE PIPE CONNECTIONS. CHANNEL DRAIN (ACO CHANNEL OR SIMILAR APPROVED).

THRESHOLD DRAIN (HEPWORTH OR SIMILAR APPROVED). YARD GULLY.

183860.000 N

183840.000 N

NONE RETURN VALVE. INLET AND OUTLET BOX.

RODDING EYE

LINED POROUS PAVING REFER TO DETAILS SHEET.

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/	MH REF.	MH DIA.	MH TYPE	DETAILS	NOTES		MH REF.	MH DIA.	MH TYPE	DETAILS
			MANHC	COVER	DULE		N 41		MAN	HOLE SCHEDU
		/								
				/						
						. / /				
				\langle		\square				- //
0.670						\bigwedge				
C.L: 45.810 LL: 45.140 D: 0.670					$\overline{\mathcal{A}}$	P.				
No the the second secon	•									/
	1	D: 0.690	~						TA	7
		F3 C.L: 45.750 I.L: 45.060								
A CONTRACTOR OF THE REAL PROPERTY OF THE REAL PROPE		U.L: 45.750 I.L: 45.095 D: 0.655								
THE REPAIR	- 4 ⁹⁵	S2						71		\sim
		THET	I.L. 45.700 I.L.: 45.020 D: 0.680		(PLUS 40% CLIMATE CHANGE) RAINFALL EVENT .	L I				4
* * * * * * *			F4	C.L: 45.650 I.L: 44.970 D: 0.680	RESTRICTING SURFACE WATE DISCHARGE TO 5.0 LITRES / SE WHEN SUBJECTED TO A 1:100	ER ECOND -YEAR	~			
YG				Setts D: 1.1	50 HYDROBRAKE (OR SIMILAR FL CONTROL DEVICE) MANHOLE	.OW S3	[]	Z	\square	
				Brick S3 C.L: 45.6 I.L: 44.5		si c	EWERS, INV	ERT LEVEL TO BE		
				45.1 ⁵			ONFIRMED E	BEFORE ANY DRA PLACE. NEW MA	NHOLES	
			NRV	AL TO	HAVE A NONE RETURN VALVE.		IPORTANT N DCATION OF	IOTE: EXISTING SEWE	R TO BE	
					320 PORTANT NOTE:	1	>			
		****	X	C1 C.L: 45. I.L: 44.	530	\mathcal{F}				
					CTION WORK TAKE PLACE.		TO COM WORKS.	MENCING ANY DF	RAINAGE	
					VEL OF C1 HAS BE AND WILL NEED TO BE		IMPORTA SECTION APPROV	ANT NOTE: I 106 CONNECTIC ED BY THAMES V	ON ITO BE VATER PRIOR	
OUTLET OVERFLOW		979 · · · · · · · · · · · · · · · · · ·			APPROVED MEANS.				IUNS ATTACH	ו עשר U ANY CONSEN
					BE CLEANED AND INSPECTED. ANY STRUCTURAL DEFECTS SHALL BE REPAIRED USING APPROPRIATE AN	D	OFFICE	D ON THIS DRAN D ON THIS DRAN R) TO ENSURE	ITE SPECIFIC WING WILL BI COMPLIANC	E SUBMITTED TO THE E WITH RELEVANT
	AN		N.		ANY PART OF THE EXISTING DRAINAGE SYSTEM TO BE RETAINE AS PART OF THE NEW SCHEME SHA		TRADITI	ONAL OPEN TR ARY BY THE APP	ENCHING ME POINTED ARB	THODS) WILL BE U
	RĒ	FER TO M&E FOR	R RWHT SIZE				OF UTII DRILLING	LITY APPARATUS G (A TECHNIQ BING THE GROU	S IN PROXIN QUE BY WHI ND SURFACE	MITY TO TREES. IN CH PIPE CAN BE II AND THERERY AV
445.86 /					K V	<	RETAINE ACCORI BS5837	ED BOTH AT AN DANCE WITH T 2005 AND VOLUM	ND ADJACEN HE PRINCIPI E4: NJUG GUI	IT TO THE SITE W LES FOR TREE PR IDELINES FOR PLANN
	CATERS		AREA OF:				IMPORT	ANT NOTE: CAVATIONS WITH	IN THE ROOT	PROTECTION AREAS
	POROUS	PAVING STORAG		$\Box \nearrow$						
	Натон р	ENOTESETENT								
			BEFORE DIS SEWERS OF ENTERING	SCONNECTING R DRAINAGE W	ANY ORKS D SITE.					EVERY TWO WEEKS.
			IMPORTANT CONTRACTO LIVE FLOWS	NOTE: OR TO CHECK S FROM ADJACI	FOR ANY ENT SITES					POROUS SURFACES TO TO REMOVE THE SILT. INSPECTED/EMPTIFIC A
15.93				5						FREQUENCY FOR THE FREQUENCY CAN BE R BE INSPECTED AND M/ RECOMMENDATIONS
				\square					6.	ALL PIPEWORK, SILT T ATTENUATION TANKS INSPECTED EVERY TH
N N				Ś					5.	THE GROUND PRIOR T THE CONTRACTOR MU SECURE.
Π			$\sum_{i=1}^{n}$							EXISTING SERVICES W AND ENSURE THESE A OF THE WORKS. ALL U
									4.	SAFE HANDLING PROC TO ALL OPERATIVES. THE CONTRACTOR WI
		\sim							3.	AND THE POLICE DEPA HAZARDOUS MATERIA MATERIALS ARE SPEC
	\wedge		L							TRAFFIC HAZARDS AN INCLUDING BARRIERS, THE APPROVAL OF TH
				CHAMBER	DETRITUS AS REQUIRED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS	6 MON	ITHS. ALSO STORM	AFTER A MAJOR EVENT	2.	STATUTORY SERVICE WORKS COMMENCE. WORKS WITHIN AND A
				IYDROBRAKE	INSPECT HYDROBRAKE AND ITS FUNCTIONALITY- REMOVE	MONTHL	Y FOR 3 MO	NTHS THEN EVER	N- RY 1.	WORKS IN THE VICINIT
			ļ	ATTENUATION TANK	DETRITUS - REMOVE AS REQUIRED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS	6 MON	ITHS. ALSO STORM	AFTER A MAJOR EVENT	THE COI FOL	ATTENTION OF THE CL NTRACTOR, DESIGNERS LOWING POTENTIAL RIS SITE AND OFE SITE WO
\backslash				NIERCEPTOR	SYSTEMS ARE WORKING CORRECTLY CHECK FOR SILT BUILD-UP &	MONITI				DM NOTES:
			F	PETROL	CHECK SILT & OIL LEVELS - EMPTY AS REQUIRED. CHECK ALARM	EVERY 6	MONTHS AN		1N	SUITABLE TO ACCEPT SIMILAR APPROVED).
			F	CATCHPITS	REMOVE SILT & DETRITUS	EVERY 6	MONTHS AN LEAF I	ND AFTER AUTUM FALL	1N 6. 7.	WHERE REQUIRED EXI OUT & REFORMED TO D/S INDICATES BOLT-D
			R	OAD GULLIES	REMOVE SILT & DETRITUS	EVERY 6	MONTHS AN LEAF I	ND AFTER AUTUM FALL	4. 1N 5.	EXISTING MANHOLE CO INCLINATION ADJUSTE LEVELS SHOWN IN BOI BE CONFIRMED BY SIT
				POROUS PAVING	JETTING OR BRUSHING TO UNCLOG BLOCKED PORES KEEP JOINTS AND VOIDS CLEAR, - AS REQUIRED	EVERY 6	MONTHS AN LEAF I	ND AFTER AUTUM	1N 3.	LEVEL DEDUCT 300mm COVER LEVELS ARE IN INCLINATION SHALL M
			D P/	RAINS, YARD & AVED GULLIES	FREE OF LEAVES & DETRITUS - REMOVE AS REQUIRED	EVERY 6	MONTHS AN LEAF I	ND AFTER AUTUN FALL	1N 2.	RE = RODDING EYE RC = INSITU RC MANHO CATCHPIT INVERT LEV
				PRODUCT	REQUIRED ACTION	RECO	MMENCE	D FREQUENCY		BD = BACKDROP MANH HB = HYDROBRAKE MA CP = CATCHPIT MANHO
			1	_						

MAINTENANCE SCHEDULE

MH REF.	MH DIA.	MH TYPE	COVER DETAILS	NOTES	
SURFAC	E WATER DR	AINAGE			
S1	450Ø	PPIC	B125		
S2	450Ø	PPIC	B125	MIN 500mm SUMP	
S3	1200Ø	PC RING	D400	5L/S MAX FLOW HYDROBRAKE TO BE INSTALLED	
S4	450Ø	PPIC	B125		
S5	450Ø	PPIC	D400		
S6	450Ø	PPIC	D400	MIN 500mm SUMP	

MANHOLE SCHEDULE								
MH REF.	MH DIA.	MH TYPE	COVER DETAILS	NOTES				
FOUL WAT	FOUL WATER DRAINAGE							
F1	450Ø	PPIC	B125					
F2	450Ø	PPIC	B125					
F3	450Ø	PPIC	B125					
F4	450Ø	PPIC	D400					
F5	450Ø	PPIC	D400					
F6	450Ø	PPIC	D400					
F7	450Ø	PPIC	D400					

MANHOLE NOTES

BACKDROP MANHOLE HYDROBRAKE MANHOLE (SEE HYDROBRAKE SCHEDULE) = CATCHPIT MANHOLE = RODDING EYE

= INSITU RC MANHOLE (CAST INTEGRAL WITH GF SLAB) CHPIT INVERT LEVELS REFER TO OUTGOING PIPE - FOR SUMP 'EL DEDUCT 300mm (TYPE 3 or 4 MH) OR 600mm (TYPE 5 MH) VER LEVELS ARE INDICATIVE ONLY - ACTUAL COVER LEVELS & LINATION SHALL MATCH THE FINISHED GROUND LEVEL STING MANHOLE COVERS SHALL BE RAISED / LOWERED & LINATION ADJUSTED TO SUIT THE FINISHED GROUND LEVEL 'ELS SHOWN IN BOLD ITALICS ARE ASSUMED/INTERPOLATED - TO CONFIRMED BY SITE SURVEY IERE REQUIRED EXISTING MANHOLE BENCHING SHALL BE BROKEN T & REFORMED TO SUIT NEW CONNECTIONS INDICATES BOLT-DOWN DOUBLE-SEAL RECESSED COVER ITABLE TO ACCEPT FLOOR FINISHES (HOWE GREEN VISEDGE OR

NOTES:

ENTION OF THE CLIENT, PRINCIPAL DESIGNER, PRINCIPAL CTOR, DESIGNERS AND CONTRACTORS IS DRAWN TO THE VING POTENTIAL RISKS IN CONJUNCTION WITH THE PROPOSED AND OFF-SITE WORKS AS DESIGNED FOR THIS PROJECT:

ORKS IN THE VICINITY OF LIVE SERVICES INCLUDING GAS. CTRICITY AND BT WILL BE NECESSARY AND THE ADVICE OF ALL TUTORY SERVICE COMPANIES MUST BE SOUGHT BEFORE ANY RKS COMMENCE.

ORKS WITHIN AND ABUTTING THE EXISTING HIGHWAY WILL ENTAIL AFFIC HAZARDS AND ALL APPROPRIATE SAFETY MEASURES LUDING BARRIERS, SIGNS AND LIGHTING MUST BE UNDERTAKEN TO E APPROVAL OF THE LOCAL AUTHORITY, THE HIGHWAY AUTHORITY D THE POLICE DEPARTMENT.

ZARDOUS MATERIALS INCLUDING CEMENT AND BITUMINOUS TERIALS ARE SPECIFIED AND THE MANUFACTURERS ADVICE ON E HANDLING PROCEDURES MUST BE OBTAINED AND MADE CLEAR ALL OPERATIVES.

CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING ALL STING SERVICES WITHIN THE VICINITY OF THE WORKS HAND DUG D ENSURE THESE ARE PROTECTED THROUGHOUT THE DURATION THE WORKS. ALL UTILITY PLANT SHOULD BE CLEARLY MARKED ON E GROUND PRIOR TO COMMENCEMENT OF THE WORKS. CONTRACTOR MUST ENSURE ALL WORKING AREAS ARE FULLY

. PIPEWORK, SILT TRAPS, CATCHPITS, TRAPPED GULLIES, ENUATION TANKS AND PUMP CHAMBERS TO BE REGULARLY SPECTED EVERY THREE MONTHS AND CLEARED OUT ON A REGULAR EQUENCY FOR THE FIRST NINE MONTHS. AFTER THIS PERIOD THE EQUENCY CAN BE REDUCED TO EVERY SIX MONTHS. PIMP SETS TO INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE COMMENDATIONS OF THE MANUFACTURER/PUMP PROVIDER. ROUS SURFACES TO BE REGULARLY SWEPT THREE TIMES A YEAR REMOVE THE SILT. GREASE TRAPS/INTERCEPTORS ARE TO BE PECTED/EMPTIED AT LEAST ONCE A MONTH AND PREFERABLY, RY TWO WEEKS.



THIS DRAWING IS COPYRIGHT OF FORM. DO NOT SCALE FROM THIS DRAWING WORK ONLY TO FIGURED DIMENSIONS.

THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK. ALL ERRORS AND OMISSIONS ARE TO BE REPORTED TO THE ENGINEER. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SERVICES ENGINEERS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

NOTES: ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS

Notes

- OTHERWISE STATED. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE
- . NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS PERMITTED WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
- ANY WORKS OUTSIDE RED SITE BOUNDARY ARE FOR INFORMATION PURPOSES ONLY. UNLESS SPECIFICALLY NOTED, ALL WORKS OUTSIDE THE SITE BOUNDARY WILL BE UNDERTAKEN BY OTHERS UNDER A SEPARATE CONTRACT.
- ALL PRIVATE DRAINAGE IS TO COMPLY AND BE LAID IN ACCORDANCE WITH CURRENT PART H OF BUILDING REGULATIONS , BS 8301 AND BS ALL WORKS FOR ADOPTION UNDER A SECTION 104, 185 OR 98
- AGREEMENT SHALL BE CARRIED OUT TO THE NATIONAL WATER COUNCIL GUIDE "SEWERS FOR ADOPTION" 6TH EDITION AND THAMES WATER'S REQUIREMENTS. 8. REFER TO ARCHITECT'S HOUSE TYPE (WORKING) DRAWINGS FOR
- EXACT POSITION OF DRAINAGE POINTS. POSITION & INVERT LEVELS OF ALL EXISTING MANHOLES, SEWERS AND LATERALS TO BE CONFIRMED PRIOR TO CONSTRUCTION & ANY DISCREPANCIES REPORTED TO THE ENGINEER.
- 10. ALL DRAIN AND SEWER PIPES ARE TO BE LAID SOFFIT TO SOFFIT, UNLESS SHOWN OTHERWISE (SEE ALSO MANHOLE SCHEDULE
- 1. ALL PLOT DRAINAGE TO BE 100mm Ø UNLESS SHOWN OTHERWISE, LAID IN ACCORDANCE WITH BS 8301.
- 2. ALL MATERIALS SHALL COMPLY TO THE BSI KITE MARK CERTIFICATION SCHEME AND MUST BE MARKED ACCORDINGLY. 13. COVER AND FRAMES TO MANHOLES/INSPECTION CHAMBERS TO
- COMPLY WITH BS EN124. REFER TO PRIVATE DRAINAGE CONSTRUCTION DETAILS DRAWING.
- 14. WHERE FINISHED GROUND LEVELS FALL TOWARDS BUILDING, AN OPEN GULLY IS TO BE PROVIDED AT THE FOOT OF ALL RAINWATER PIPES. ALL RAINWATER PIPES TO HAVE RODDING ACCESS.
- 15. FINAL POSITIONS OF INSPECTION CHAMBERS WITHIN PRIVATE AREAS ARE SUBJECT TO CONFIRMATION ON SITE TO SUIT PIPE CONFIGURATIONS AND CHAMBER INLET POSITIONS.
- 16. WHERE A DRAIN RUN PASSES THROUGH A WALL OR FOUNDATION IT IS NECESSARY TO: 17. FORM AN OPENING USING A CONCRETE LINTEL WITH AT LEAST 50mm CLEARANCE AROUND THE PIPE AND THE OPENINGS MASKED WITH RIGID SHEET MATERIAL TO PREVENT ENTRY OF FILL OR VERMIN, OR: 18. BUILD IN A LENGTH OF PIPE WITH ITS JOINTS AS CLOSE AS POSSIBLE
- TO THE WALL FACES (150mm MAXIMUM) AND CONNECTED ON EACH SIDE TO 600mm LONG ROCKER PIPES WITH FLEXIBLE JOINTS. 19. PLOT DRAINAGE TO BE BEDDED ON GRANULAR MATERIAL AND
- BACKFILLED WITH SUITABLE CLEAN MATERIAL, AS DESCRIBED ON THE PRIVATE DRAINAGE CONSTRUCTION DETAILS DRAWINGS, SEE ALSO SHALLOW DRAINAGE TRENCH DETAIL AND PIPE RUNS NEAR BUILDINGS DETAIL FOR CONCRETE BED AND SURROUND PIPE PROTECTION MEASURES WHERE APPLICABLE.
- 20. BACKFILL SHOULD BE PLACED IN LAYERS NOT EXCEEDING 300mm (UNCOMPACTED THICKNESS), EACH LAYER BEING WELL COMPACTED. MECHANICAL COMPACTION EQUIPMENT SHOULD NOT BE USED UNTIL THERE IS A MINIMUM OF 450mm OF COMPACTED MATERIAL ABOVE THE CROWN OF THE PIPE.
- 21. ALL DRAIN CONNECTIONS BENEATH THE HIGHWAY ARE TO HAVE MINIMUM 150mm CONCRETE BED AND SURROUND, WHERE COVER IS LESS THAN 1.2m.
- 22. FOR SETTING-OUT DIMENSIONS OF SVP'S, RWP'S ETC, REFER TO ARCHITECT'S OR MECHANICAL ENGINEER'S DRAWINGS. POSITIONS SHOWN ARE INDICATIVE AND SUBJECT TO FINAL DESIGN.
- 23. ALL INTERNAL INSPECTION CHAMBERS TO BE RECESSED, DOUBLE SEALED WITH SCREW DOWN COVERS.
- 24. ALL PRIVATE DRAINAGE TO BE LAID TO LEVELS SHOWN USING FLEXIBLY JOINTED PIPES. TO BE VITRIFIED CLAYWARE DUE TO CONTAMINATED GROUND
- 25. ANY NEW UNDERGROUND SERVICES NEAR TO TREES WILL HOWEVER NEED TO BE INSTALLED IN ACCORD WITH THE GUIDANCE GIVEN IN BS5837 TOGETHER WITH THE NATIONAL JOINT UTILITIES GROUP BOOKLET 4: 2007 GUIDELINES FOR THE PLANNING, INSTALLATION AND MAINTENANCE OF UTILITY SERVICES IN PROXIMITY TO TREES (NJUG4). WHEN WITHIN THE RPA OF ANY RETAINED TREE, ANY NEW SERVICE TRENCHES SHOULD BE EXCAVATED USING AN AIRSPADE TO AVOID ANY DAMAGE TO ROOTS. CARE MUST THEN BE TAKEN TO ENSURE THE NEW SERVICES ARE INSTALLED SO AS TO AVOID ANY ROOTS PRESENT.
- 26. HEALTH AND SAFETY: THE WORKS SHALL BE CARRIED OUT BY SPECIALIST COMPETENT AND EXPERIENCED CONTRACTORS WHO ARE MEMBERS OF A RECOGNISED NATIONAL ORGANISATION. OPERATIVES SHALL HAVE RECEIVED FULL AND APPROPRIATE TRAINING FOR THE OPERATIONS THEY ARE TO UNDERTAKE. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL PERTINENT HEALTH AND SAFETY REGULATIONS.

NOT FOR CONSTRUCTION

P2	15.02.20	RWHT UPDATED	MA							
P1	12.12.19	PRELIMINARY ISSUE	MA							
Rev.	Date	Amendment	Drawn	Chkd						
Draw	Drawing Status PRELIMINARY ISSUE									
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Jo 1	^{b No.} 93219	Drawing No. 1000	Revisio P2	n 2						