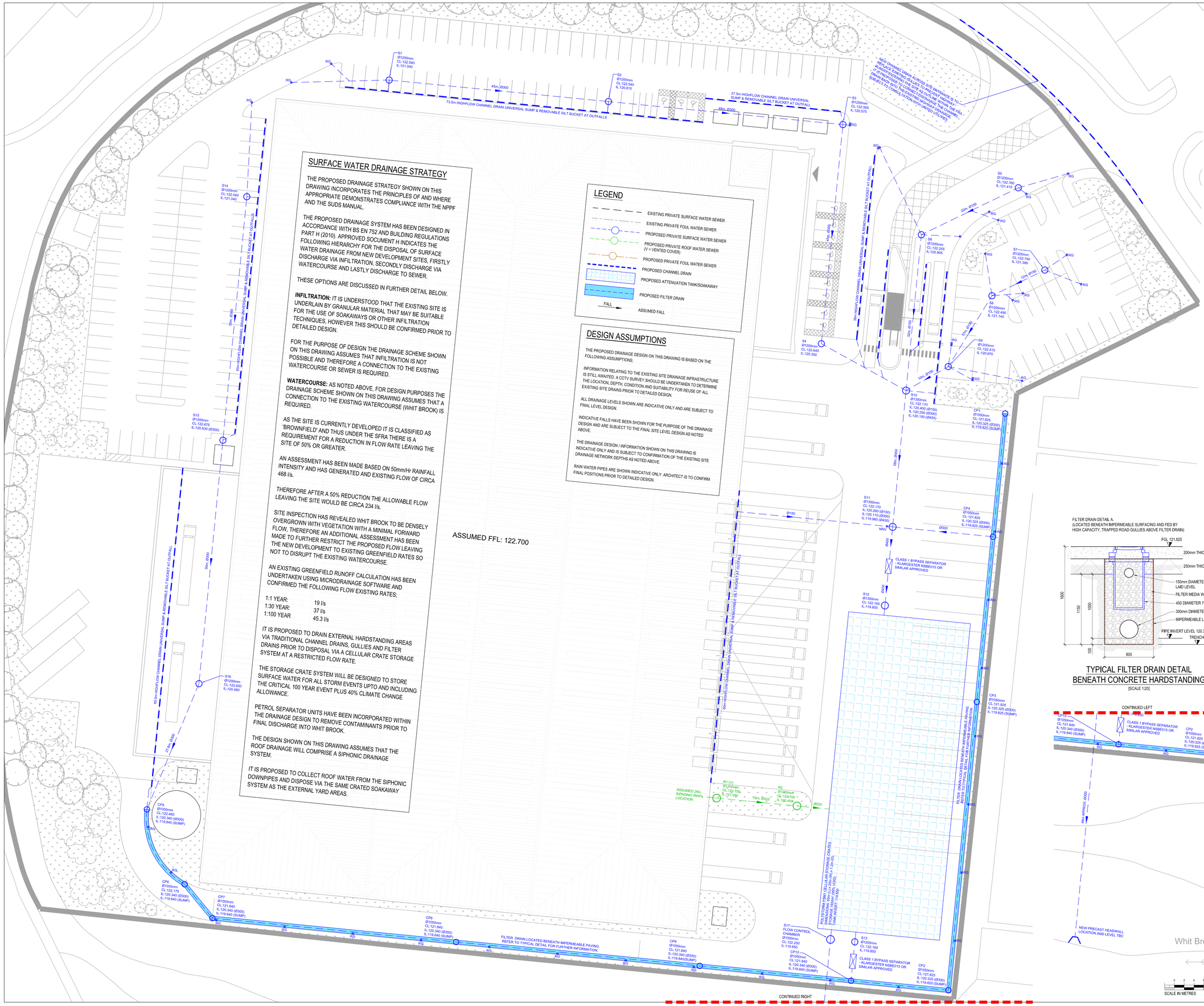

SURFACE WATER DRAINAGE STRATEGY

THE PROPOSED DRAINAGE STRATEGY SHOWN ON THIS DRAWING INCORPORATES THE PRINCIPLES OF AND WHERE APPROPRIATE DEMONSTRATES COMPLIANCE WITH THE NPPF AND THE SUDS MANUAL.

THE PROPOSED DRAINAGE SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH BS EN 752 AND BUILDING REGULATIONS PART H (2010). APPROVED SOCUMENT H INDICATES THE FOLLOWING HIERARCHY FOR THE DISPOSAL OF SURFACE WATER DRAINAGE FROM NEW DEVELOPMENT SITES, FIRSTLY DISCHARGE VIA INFILTRATION, SECONDLY DISCHARGE VIA WATERCOURSE AND LASTLY DISCHARGE TO SEWER.

THESE OPTIONS ARE DISCUSSED IN FURTHER DETAIL BELOW.

INFILTRATION: IT IS UNDERSTOOD THAT THE EXISTING SITE IS UNDERLAIN BY GRANULAR MATERIAL THAT MAY BE SUITABLE FOR THE USE OF SOAKAWAYS OR OTHER INFILTRATION TECHNIQUES, HOWEVER THIS SHOULD BE CONFIRMED PRIOR TO DETAILED DESIGN.

FOR THE PURPOSE OF DESIGN THE DRAINAGE SCHEME SHOWN ON THIS DRAWING ASSUMES THAT INFILTRATION IS NOT POSSIBLE AND THEREFORE A CONNECTION TO THE EXISTING WATERCOURSE OR SEWER IS REQUIRED.

WATERCOURSE: AS NOTED ABOVE, FOR DESIGN PURPOSES THE DRAINAGE SCHEME SHOWN ON THIS DRAWING ASSUMES THAT A CONNECTION TO THE EXISTING WATERCOURSE (WHIT BROOK) IS REQUIRED.

AS THE SITE IS CURRENTLY DEVELOPED IT IS CLASSIFIED AS 'BROWNFIELD' AND THUS UNDER THE SFRA THERE IS A REQUIREMENT FOR A REDUCTION IN FLOW RATE LEAVING THE SITE OF 50% OR GREATER.

AN ASSESSMENT HAS BEEN MADE BASED ON 50mm/Hr RAINFALL INTENSITY AND HAS GENERATED AND EXISTING FLOW OF CIRCA 468 l/s.

THEREFORE AFTER A 50% REDUCTION THE ALLOWABLE FLOW LEAVING THE SITE WOULD BE CIRCA 234 l/s.

SITE INSPECTION HAS REVEALED WHIT BROOK TO BE DENSELY OVERGROWN WITH VEGETATION WITH A MINIMAL FORWARD FLOW, THEREFORE AN ADDITIONAL ASSESSMENT HAS BEEN MADE TO FURTHER RESTRICT THE PROPOSED FLOW LEAVING THE NEW DEVELOPMENT TO EXISTING GREENFIELD RATES SO NOT TO DISRUPT THE EXISTING WATERCOURSE.

AN EXISTING GREENFIELD RUNOFF CALCULATION HAS BEEN UNDERTAKEN USING MICRODRAINAGE SOFTWARE AND CONFIRMED THE FOLLOWING FLOW EXISTING RATES;

1:1 YEAR:	19 l/s
1:30 YEAR:	37 l/s
1:100 YEAR	45.3 l/s

IT IS PROPOSED TO DRAIN EXTERNAL HARDSTANDING AREAS VIA TRADITIONAL CHANNEL DRAINS, GULLIES AND FILTER DRAINS PRIOR TO DISPOSAL VIA A CELLULAR CRATE STORAGE SYSTEM AT A RESTRICTED FLOW RATE.

THE STORAGE CRATE SYSTEM WILL BE DESIGNED TO STORE SURFACE WATER FOR ALL STORM EVENTS UPTO AND INCLUDING THE CRITICAL 100 YEAR EVENT PLUS 40% CLIMATE CHANGE ALLOWANCE.

PETROL SEPARATOR UNITS HAVE BEEN INCORPORATED WITHIN THE DRAINAGE DESIGN TO REMOVE CONTAMINANTS PRIOR TO FINAL DISCHARGE INTO WHIT BROOK.

THE DESIGN SHOWN ON THIS DRAWING ASSUMES THAT THE ROOF DRAINAGE WILL COMPRISE A SIPHONIC DRAINAGE SYSTEM.

IT IS PROPOSED TO COLLECT ROOF WATER FROM THE SIPHONIC DOWNPIPES AND DISPOSE VIA THE SAME CRATED SOAKAWAY SYSTEM AS THE EXTERNAL YARD AREAS.

LEGEND

- EXISTING PRIVATE SURFACE WATER SEWER
- EXISTING PRIVATE FOUL WATER SEWER
- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PRIVATE ROOF WATER SEWER (V = VENTED COVER)
- PROPOSED PRIVATE FOUL WATER SEWER
- PROPOSED CHANNEL DRAIN
- PROPOSED ATTENUATION TANK/SOAKAWAY
- PROPOSED FILTER DRAIN
- FALL — ASSUMED FALL

DESIGN ASSUMPTIONS

THE PROPOSED DRAINAGE DESIGN ON THIS DRAWING IS BASED ON THE FOLLOWING ASSUMPTIONS:

INFORMATION RELATING TO THE EXISTING SITE DRAINAGE INFRASTRUCTURE IS STILL AWAITED. A CCTV SURVEY SHOULD BE UNDERTAKEN TO DETERMINE THE LOCATION, DEPTH, CONDITION AND SUITABILITY FOR REUSE OF ALL EXISTING SITE DRAINS PRIOR TO DETAILED DESIGN.

ALL DRAINAGE LEVELS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO FINAL LEVEL DESIGN.

INDICATIVE FALLS HAVE BEEN SHOWN FOR THE PURPOSE OF THE DRAINAGE DESIGN AND ARE SUBJECT TO THE FINAL SITE LEVEL DESIGN AS NOTED ABOVE.

THE DRAINAGE DESIGN / INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE ONLY AND IS SUBJECT TO CONFIRMATION OF THE EXISTING SITE DRAINAGE NETWORK DEPTHS AS NOTED ABOVE.

RAIN WATER PIPES ARE SHOWN INDICATIVE ONLY. ARCHITECT IS TO CONFIRM FINAL POSITIONS PRIOR TO DETAILED DESIGN.

FILTER DRAIN DETAIL A.
(LOCATED BENEATH IMPERMEABLE SURFACING AND FED BY HIGH CAPACITY, TRAPPED ROAD GULLIES ABOVE FILTER DRAIN)

TYPICAL FILTER DRAIN DETAIL BENEATH CONCRETE HARDSTANDING

[SCALE 1:20]

GENERAL NOTES

DO NOT SCALE FROM THIS DRAWING WORK TO FIGURED DIMENSIONS ONLY.

NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS ALLOWED WITHOUT PRIOR PERMISSION IN WRITING.

ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.

THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH WML DRAINAGE DETAIL DRAWINGS FOR DETAILS OF MATERIALS AND WORKMANSHIP REFER TO THE SPECIFICATION.

THE CONTRACTOR IS RESPONSIBLE FOR CHECKING INVERT LEVELS AND POSITIONS OF ALL EXISTING DRAINS, SEWERS, INSPECTION CHAMBERS AND MANHOLES SHOWN ON THIS DRAWING IMMEDIATELY ON SITE ESTABLISHMENT. ANY DISCREPANCIES MUST BE REPORTED TO WML CONSULTING IMMEDIATELY.

WHERE THE NEW SITE DRAINAGE CONNECTS IN TO EXISTING MANHOLES IN CARRIAGEWAYS AND/OR EXISTING ADOPTED SEWERS, THE CONTRACTOR IS RESPONSIBLE FOR ALL LIAISON WITH THE RELEVANT STATUTORY UNDERTAKER AND LOCAL AUTHORITY WITH REGARD TO ROAD CLOSURES, TRAFFIC MANAGEMENT, PERMITS TO WORK, SUBMISSION OF CONTRACTORS METHOD STATEMENTS AND RISK ASSESSMENTS AND OTHER DOCUMENTATION AND CORRESPONDENCE ASSOCIATED WITH THE SITE STAGE (PART 2) ELEMENT OF THE WORKS.

ROCKER PIPES TO BE PROVIDED AT ALL CONCRETE CASED INTERFACES.

PROVIDE ADEQUATE PROTECTION TO MAINTAIN MINIMUM COVER TO DRAINS DURING THE CONSTRUCTION PERIOD.

COVER LEVELS ON THIS DRAWING ARE APPROXIMATE AND INDICATIVE ONLY ARCHITECT TO CONFIRM COVER LEVELS TO ALL MANHOLES AND GULLIES PRIOR TO CONSTRUCTION.

THE LAYOUT OF DRAINAGE ON THIS DRAWING IS INDICATIVE ONLY ARCHITECT TO CONFIRM EXACT LOCATION OF MANHOLES AND GULLIES.

U.N.O SURFACE WATER DRAINAGE PIPES OVER Ø100mm TO BE TWIN WALLED STRUCTURED PLASTIC APPROVED BY THE ENGINEER.

U.N.O FOUL WATER DRAINAGE PIPES TO BE SUPERSLEVE VITRIFIED CLAY PIPES OR SIMILAR.

ALL COVERS AND RODDING ACCESS POINTS TO BE SEALED AND SCREWED TIGHT.

ALL INTERNAL MANHOLE COVERS TO BE DOUBLE SEALED, LOCKABLE AND RECESSED TO ACCEPT FLOOR FINISHES WHERE APPLICABLE.

SETTING OUT OF ALL INTERNAL GULLY/PLUMBING CONNECTIONS TO BE CO-ORDINATED BETWEEN THE SERVICE ENGINEERS AND THE ARCHITECT.

ALL INTERNAL GULLIES, PLUMBING CONNECTIONS, SOIL STACKS, SVPS AND ALL OTHER CONNECTIONS OF FOUL AND SURFACE WATER DRAINS TO BELOW GROUND TO BE FITTED WITH ACCESSIBLE RODDING POINTS ABOVE SLAB LEVEL.

ALL SURFACE WATER CONNECTIONS TO BE 100mm DIAMETER AT MINIMUM FALLS OF 1:100 UNLESS NOTED OTHERWISE.

ALL FOUL WATER CONNECTIONS TO BE 100mm DIAMETER AT MINIMUM FALLS OF 1:40 UNLESS NOTED OTHERWISE.

ALL CONNECTIONS TO BE MADE IN ACCORDANCE WITH STANDARD DETAIL DRAWINGS.

ALL PIPEWORK TO BE INSTALLED WITH SOFFITS LEVEL (E.G. AT CHANGES IN PIPE SIZE) U.N.O.

FOR DETAILS OF GREASE TRAP/MACERATOR REQUIREMENTS ASSOCIATED WITH KITCHENS REFER TO SERVICE ENGINEER.

ON COMPLETION OF DRAINAGE WORKS, THE NEW DRAINAGE SYSTEM IS TO BE THOROUGHLY CLEANED AND A CCTV SURVEY CARRIED OUT TO CONFIRM NO CONSTRUCTION DEBRIS OR BLOCKAGES REMAIN.

CONNECTIONS TO CARRIER DRAINS ARE TO BE 'Y' JUNCTIONS.

ALL PRIVATE DRAINAGE IS TO COMPLY WITH BS EN 752 AND BUILDING REGS. PART H.

PIPE GRADIENTS ARE INDICATIVE MINIMUMS.

SURFACE CHANNEL DRAINS TO BE ACO MULTIDRAIN OR SIMILAR.

MANHOLES:

ALL PROPOSED NEW MANHOLES TO BE PRECAST RING MANHOLES TYPE B UNLESS NOTED OTHERWISE. INTERNAL DIAMETERS OF MANHOLES TO BE 1050mm WHERE DEPTH TO PIPE SOFFIT IS LESS THAN 1.5m, AND 1200mm Ø ELSEWHERE UNLESS NOTED OTHERWISE. IC - DENOTES POLYPROPYLENE INSPECTION CHAMBER BY 'HEPWORTH' OR SIMILAR APPROVED INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

MANHOLE COVERS:

CARRIAGEWAYS GENERAL - EN124 CLASS D400
CARRIAGEWAYS WITHIN 0.5m OF KERB - EN124 CLASS C250
SLOW MOVING HGV [38t] - EN 124 CLASS B125 SLOW MOVING GLV [10t] - EN 124 CLASS B125 SLOW MOVING PRIVATE CARS - EN124 CLASS B125.

INTERNAL - JONES OF OSWESTRY - SUPRASTEEL DOUBLE SEALED WITH NEOPRENE GASKET AND COVER GREASE OR SIMILAR APPROVED.

REFER TO ARCHITECTS DRAWINGS FOR DETAILS OF ANY MANHOLE COVERS WHICH REQUIRE INSET PANELS.

SUBJECT TO APPROVAL FROM LOCAL PLANNING AUTHORITY AND UNITED UTILITIES

Rev.	Amendment	Date	By	Chkd
P03	REVISED TO SUIT UPDATED SITE LAYOUT.	13.11.20	DB	LoG
P02	REVISED TO SUIT FINDINGS OF FRA.	28.10.20	DB	LoG
P01	ISSUED FOR INFORMATION/COMMENT ONLY.	23.10.20	DB	LoG

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ARCH/CLIENT
PATRICK PROPERTIES

Title
PROPOSED SURFACE WATER DRAINAGE PLAN OPTION 2

WML Job No.	Drawn	Checked	Date	Scale
9547	DB	LoG	OCT 2020	1:200 @ A0

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Drawing No.

Project	Originator	Volume	Level	Type	Role	Number	Rev
9547	- WML -	ZZ -	XX -	DR -	C -	1002	P03