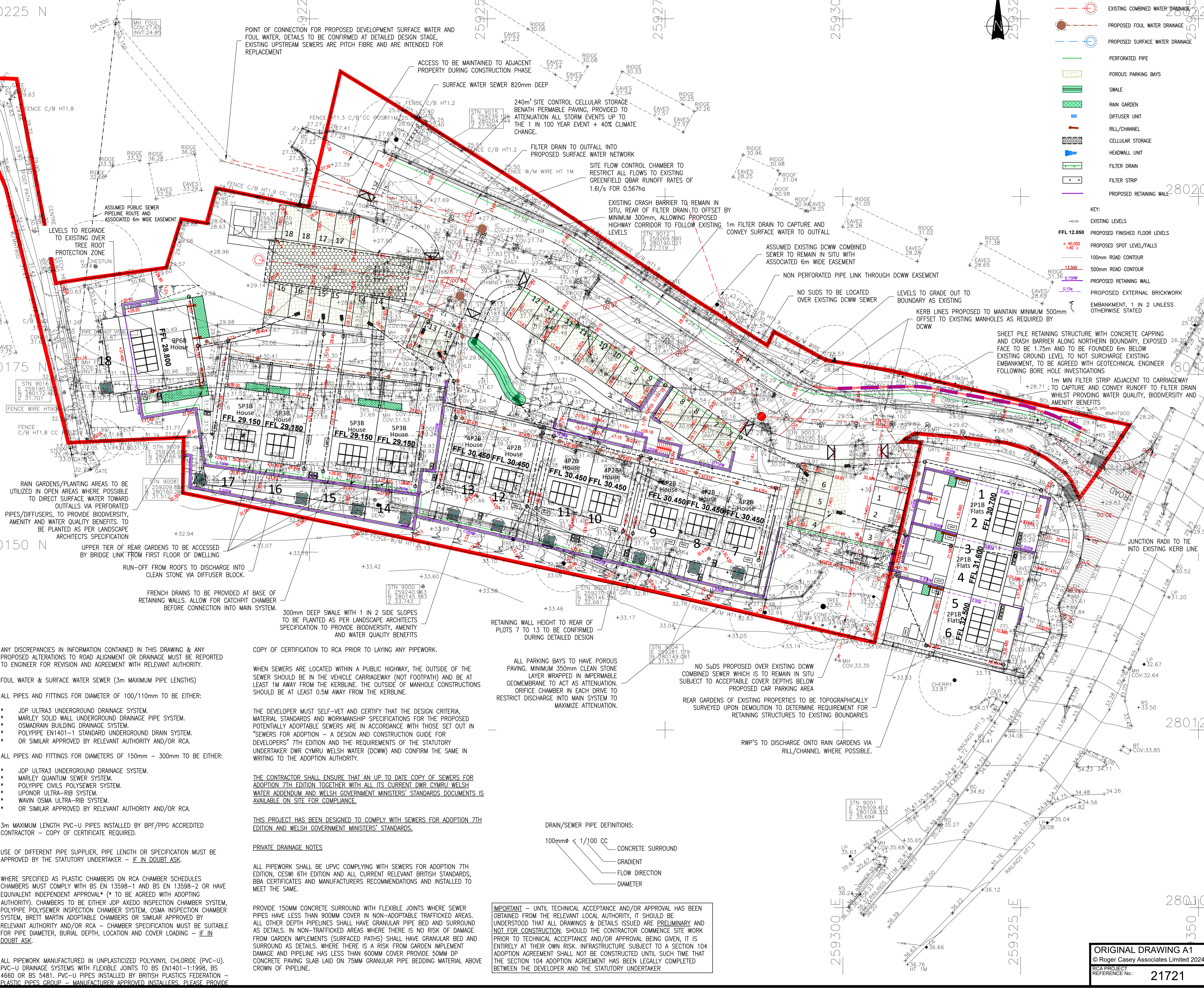


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RCA Document Reference: RCA_A1 Landscape Version 1
RCA Job File: 21721-01-XX-DR-C-03-04
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DO NOT SCALE



NOTES:

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THE CONTRACTOR IS TO CHECK ALL LEVELS AND DIMENSIONS BEFORE WORK COMMENCES, AND ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE CONSULTANTS.

WORK TO FIGURED DIMENSIONS IN PREFERENCE TO SCALING.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ROGER CASEY ASSOCIATES DRAWINGS AND SPECIFICATIONS AND ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS RELATING TO THIS PROJECT.

THE CONTRACTOR IS EXPECTED TO SUPPLY AND DO EVERYTHING NECESSARY FOR THE PROPER EXECUTION OF THE WORKS THAT MAY BE REASONABLY INFERRED FROM THE DRAWINGS AND SPECIFICATION, WHETHER REFERRED TO IN DETAIL OR NOT, WITHOUT EXTRA PAYMENT IN RESPECT THEREOF.

NOTES (CONTINUED)

ALL FIGURED LEVELS ARE RELATED TO LAND SURVEY DATUM AS RCA DRAWING NUMBER JOB NUMBER/01 UNLESS NOTED OTHERWISE.

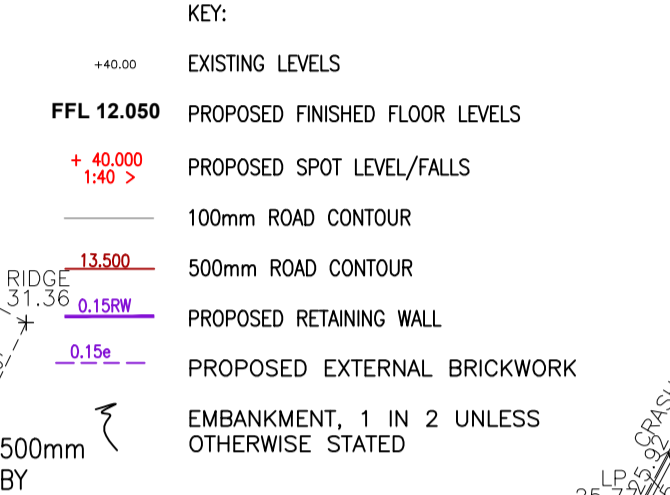
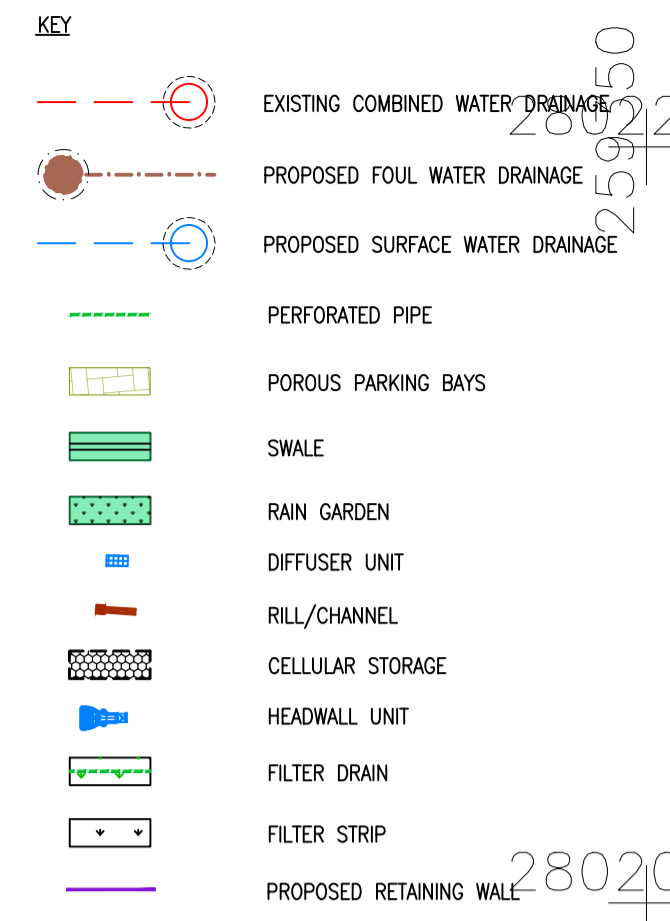
ALL FIGURED DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL WORKS SHALL BE IN ACCORDANCE WITH CURRENT RELEVANT SECTIONS OF:

- * SPECIFICATION FOR HIGHWAY WORKS
- * DESIGN MANUAL FOR ROADS AND BRIDGES
- * LOCAL AUTHORITY HIGHWAY ADOPTION REQUIREMENTS
- * LOCAL AUTHORITY SAB APPROVAL AND REQUIREMENTS
- * SEWERS FOR ADOPTION 7TH EDITION
- * BUILDING REGULATIONS
- * NEW ROADS AND STREET WORKS ACT
- * HEALTH AND SAFETY REGULATIONS
- * GOOD PRACTICE

IT IS KNOWN THAT EXISTING UTILITY COMPANY UNDERGROUND SERVICES AND APPARATUS IS PRESENT WITHIN THE PROPOSED WORKS AREA THE CONTRACTOR SHOULD ALLOW FOR ALL NECESSARY INVESTIGATIVE WORK (CAT DETECTION, TRIAL HOLES, ETC.) TO DETERMINE ROUTE AND DEPTH OF ALL UNDERGROUND SERVICES TO AVOID DAMAGE AND PRESERVE SUPPLIES TO EXISTING DWELLINGS / PREMISES.

ALL REDUNDANT SERVICES AND DRAINAGE INFRASTRUCTURE ARE TO BE GRUBBED UP



REV	DESCRIPTION	DRAWING STATUS	DATE
P03	REVISED TO PLANNING STATUS AND TO LATEST ARCHITECTURAL LAYOUT	EP	PWJL 22/08/23
P02	1 TO 11 REVISED IN LINE WITH LATEST ARCHITECTURAL LAYOUT	EP	PWJL 15/08/23
REV	DESCRIPTION	DRAWING STATUS	DATE

DRAWING STATUS: **PLANNING**

Roger Casey Associates
Consulting Civil & Structural Engineers

Ty Mansel, 6 Mansel Street, Carmarthen, Carmarthenshire SA31 1PX
T: 01267 222 646
Units 10 & 11, Merlin's Court, Winch Lane, Haverfordwest, Pembrokeshire SA61 1SB
T: 01437 762 795
E: office@rca-eng.co.uk
W: www.rca-eng.co.uk

CLIENT: WALES AND WEST HOUSING				
ARCHITECT: RLH ARCHITECTURAL				
PROJECT: RESIDENTIAL DEVELOPMENT AT FORMER BODLONDEB HOME, PENPARCAU, SY23 1SJ				
DRAWING TITLE: ENGINEERING LAYOUT (SURVEY ON)				
ORIGINAL DRAWING A1	DRAWN BY: EP	DESIGN BY: EP	CHECKED BY: PWJL	DATE: AUG 2023
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ANY DISCREPANCIES IN INFORMATION CONTAINED IN THIS DRAWING & ANY PROPOSED ALTERATIONS TO ROAD ALIGNMENT OR DRAINAGE MUST BE REPORTED TO ENGINEER FOR REVISION AND AGREEMENT WITH RELEVANT AUTHORITY.

FOUL WATER & SURFACE WATER SEWER (3m MAXIMUM PIPE LENGTHS)

ALL PIPES AND FITTINGS FOR DIAMETER OF 100/110mm TO BE EITHER:

- * JDP ULTRA3 UNDERGROUND DRAINAGE SYSTEM.
- * MARLEY SOLID WALL UNDERGROUND DRAINAGE PIPE SYSTEM.
- * OSMADRAIN BUILDING DRAINAGE SYSTEM.
- * POLYPIPE EN1401-1 STANDARD UNDERGROUND DRAIN SYSTEM.
- * OR SIMILAR APPROVED BY RELEVANT AUTHORITY AND/OR RCA.

ALL PIPES AND FITTINGS FOR DIAMETERS OF 150mm - 300mm TO BE EITHER:

- * JDP ULTRA3 UNDERGROUND DRAINAGE SYSTEM.
- * MARLEY QUANTUM SEWER SYSTEM.
- * POLYPIPE CIVILS POLYSEWER SYSTEM.
- * UPONOR ULTRA-RIB SYSTEM.
- * WAIN OSMIA ULTRA-RIB SYSTEM.
- * OR SIMILAR APPROVED BY RELEVANT AUTHORITY AND/OR RCA.

3m MAXIMUM LENGTH PVC-U PIPES INSTALLED BY BPF/PPG ACCREDITED CONTRACTOR - COPY OF CERTIFICATE REQUIRED.

USE OF DIFFERENT PIPE SUPPLIER, PIPE LENGTH OR SPECIFICATION MUST BE APPROVED BY THE STATUTORY UNDERTAKER - IF IN DOUBT ASK.

WHERE SPECIFIED AS PLASTIC CHAMBERS ON RCA CHAMBER SCHEDULES CHAMBERS MUST COMPLY WITH BS EN 13598-1 AND BS EN 13598-2 OR HAVE EQUIVALENT INDEPENDENT APPROVAL (* TO BE AGREED WITH ADOPTING AUTHORITY). CHAMBERS TO BE EITHER JDP AXEDO INSPECTION CHAMBER SYSTEM, POLYPIPE POLYSEWER INSPECTION CHAMBER SYSTEM, OSMIA INSPECTION CHAMBER SYSTEM, BRETT MARTIN ADAPTABLE CHAMBERS OR SIMILAR APPROVED BY RELEVANT AUTHORITY AND/OR RCA - CHAMBER SPECIFICATION MUST BE SUITABLE FOR PIPE DIAMETER, BURIAL DEPTH, LOCATION AND COVER LOADING - IF IN DOUBT ASK.

ALL PIPEWORK MANUFACTURED IN UNPLASTICIZED POLYVINYL CHLORIDE (PVC-U). PVC-U DRAINAGE SYSTEMS WITH FLEXIBLE JOINTS TO BS EN1401-1:1998, BS 4660 OR BS 5481. PVC-U PIPES INSTALLED BY BRITISH PLASTICS FEDERATION - PLASTIC PIPES GROUP - MANUFACTURER APPROVED INSTALLERS. PLEASE PROVIDE

COPY OF CERTIFICATION TO RCA PRIOR TO LAYING ANY PIPEWORK.

WHEN SEWERS ARE LOCATED WITHIN A PUBLIC HIGHWAY, THE OUTSIDE OF THE SEWER SHOULD BE IN THE VEHICLE CARRIAGEWAY (NOT FOOTPATH) AND BE AT LEAST 1M AWAY FROM THE KERBLINE. THE OUTSIDE OF MANHOLE CONSTRUCTIONS SHOULD BE AT LEAST 0.5M AWAY FROM THE KERBLINE.

THE DEVELOPER MUST SELF-VET AND CERTIFY THAT THE DESIGN CRITERIA, MATERIAL STANDARDS AND WORKMANSHIP SPECIFICATIONS FOR THE PROPOSED POTENTIALLY ADOPTABLE SEWERS ARE IN ACCORDANCE WITH THOSE SET OUT IN "SEWERS FOR ADOPTION - A DESIGN AND CONSTRUCTION GUIDE FOR DEVELOPERS" 7TH EDITION AND THE REQUIREMENTS OF THE STATUTORY UNDERTAKER DWR CYMRU WELSH WATER (DCWW) AND CONFIRM THE SAME IN WRITING TO THE ADOPTION AUTHORITY.

THE CONTRACTOR SHALL ENSURE THAT AN UP TO DATE COPY OF SEWERS FOR ADOPTION 7TH EDITION TOGETHER WITH ALL ITS CURRENT DWR CYMRU WELSH WATER ADDENDUM AND WELSH GOVERNMENT MINISTERS' STANDARDS DOCUMENTS IS AVAILABLE ON SITE FOR COMPLIANCE.

THIS PROJECT HAS BEEN DESIGNED TO COMPLY WITH SEWERS FOR ADOPTION 7TH EDITION AND WELSH GOVERNMENT MINISTERS' STANDARDS.

PRIVATE DRAINAGE NOTES

ALL PIPEWORK SHALL BE UPVC COMPLYING WITH SEWERS FOR ADOPTION 7TH EDITION, CESWI 6TH EDITION AND ALL CURRENT RELEVANT BRITISH STANDARDS, BBA CERTIFICATES AND MANUFACTURERS RECOMMENDATIONS AND INSTALLED TO MEET THE SAME.

PROVIDE 150MM CONCRETE SURROUND WITH FLEXIBLE JOINTS WHERE SEWER PIPES HAVE LESS THAN 900MM COVER IN NON-ADOPTABLE TRAFFICKED AREAS. ALL OTHER DEPTH PIPELINES SHALL HAVE GRANULAR PIPE BED AND SURROUND AS DETAILS. IN NON-TRAFFICKED AREAS WHERE THERE IS NO RISK OF DAMAGE FROM GARDEN IMPLEMENTS (SURFACED PATHS) SHALL HAVE GRANULAR BED AND SURROUND AS DETAILS. WHERE THERE IS A RISK FROM GARDEN IMPLEMENT DAMAGE AND PIPELINE HAS LESS THAN 600MM COVER PROVIDE 50MM DIP CONCRETE PAVING SLAB LAID ON 75MM GRANULAR PIPE BEDDING MATERIAL ABOVE CROWN OF PIPELINE.

ALL PARKING BAYS TO HAVE POROUS PAVING. MINIMUM 350mm CLEAN STONE LAYER WRAPPED IN IMPERMEABLE GEOMEMBRANE TO ACT AS ATTENUATION. ORIFICE CHAMBER IN EACH DRIVE TO RESTRICT DISCHARGE INTO MAIN SYSTEM TO MAXIMIZE ATTENUATION.

NO SUDS PROPOSED OVER EXISTING DCWW COMBINED SEWER WHICH IS TO REMAIN IN SITU SUBJECT TO ACCEPTABLE COVER DEPTHS BELOW PROPOSED CAR PARKING AREA.

REAR GARDENS OF EXISTING PROPERTIES TO BE TOPOGRAPHICALLY SURVEYED UPON DEMOLITION TO DETERMINE REQUIREMENT FOR RETAINING STRUCTURES TO EXISTING BOUNDARIES.

RWP'S TO DISCHARGE ONTO RAIN GARDENS VIA RILL/CHANNEL WHERE POSSIBLE.

RETAINING WALL HEIGHT TO REAR OF PLOTS 7 TO 13 TO BE CONFIRMED DURING DETAILED DESIGN

300mm DEEP SWALE WITH 1 IN 2 SIDE SLOPES TO BE PLANTED AS PER LANDSCAPE ARCHITECTS SPECIFICATION TO PROVIDE BIODIVERSITY, AMENITY AND WATER QUALITY BENEFITS

RAIN GARDENS/PLANTING AREAS TO BE UTILIZED IN OPEN AREAS WHERE POSSIBLE TO DIRECT SURFACE WATER TOWARD OUTFALLS VIA PERFORATED PIPES/DIFFUSERS, TO PROVIDE BIODIVERSITY, AMENITY AND WATER QUALITY BENEFITS. TO BE PLANTED AS PER LANDSCAPE ARCHITECTS SPECIFICATION

UPPER TIER OF REAR GARDENS TO BE ACCESSED BY BRIDGE LINK FROM FIRST FLOOR OF DWELLING

RUN-OFF FROM ROOFS TO DISCHARGE INTO CLEAN STONE VIA DIFFUSER BLOCK.

FRENCH DRAINS TO BE PROVIDED AT BASE OF RETAINING WALLS. ALLOW FOR CATCHPIT CHAMBER BEFORE CONNECTION INTO MAIN SYSTEM.

300mm DEEP SWALE WITH 1 IN 2 SIDE SLOPES TO BE PLANTED AS PER LANDSCAPE ARCHITECTS SPECIFICATION TO PROVIDE BIODIVERSITY, AMENITY AND WATER QUALITY BENEFITS

RETAINING WALL HEIGHT TO REAR OF PLOTS 7 TO 13 TO BE CONFIRMED DURING DETAILED DESIGN

NO SUDS TO BE LOCATED OVER EXISTING DCWW SEWER

LEVELS TO GRADE OUT TO BOUNDARY AS EXISTING

KERB LINES PROPOSED TO MAINTAIN MINIMUM 500mm OFFSET TO EXISTING MANHOLES AS REQUIRED BY DCWW

NON PERFORATED PIPE LINK THROUGH DCWW EASEMENT

ASSUMED EXISTING DCWW COMBINED SEWER TO REMAIN IN SITU WITH ASSOCIATED 6m WIDE EASEMENT

1m FILTER DRAIN TO CAPTURE AND CONVEY SURFACE WATER TO OUTFALL

EXISTING CRASH BARRIER TO REMAIN IN SITU, REAR OF FILTER DRAIN TO OFFSET BY MINIMUM 300mm, ALLOWING PROPOSED HIGHWAY CORRIDOR TO FOLLOW EXISTING LEVELS

SHEET PILE RETAINING STRUCTURE WITH CONCRETE CAPPING AND CRASH BARRIER ALONG NORTHERN BOUNDARY, EXPOSED FACE TO BE 1.75m AND TO BE FOUNDED 6m BELOW EXISTING GROUND LEVEL TO NOT SURCHARGE EXISTING EMBANKMENT, TO BE AGREED WITH GEOTECHNICAL ENGINEER FOLLOWING BORE HOLE INVESTIGATIONS

1m MIN FILTER STRIP ADJACENT TO CARRIAGEWAY TO CAPTURE AND CONVEY RUNOFF TO FILTER DRAIN WHILST PROVIDING WATER QUALITY, BIODIVERSITY AND AMENITY BENEFITS

240m² SITE CONTROL CELLULAR STORAGE BENEATH PERMEABLE PAVING, PROVIDED TO ATTENUATION ALL STORM EVENTS UP TO THE 1 IN 100 YEAR EVENT + 40% CLIMATE CHANGE.

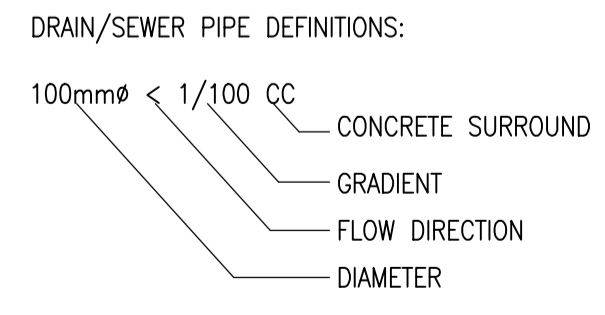
FILTER DRAIN TO OUTFALL INTO PROPOSED SURFACE WATER NETWORK

SITE FLOW CONTROL CHAMBER TO RESTRICT ALL FLOWS TO EXISTING GREENFIELD OBAR RUNOFF RATES OF 1.6l/s FOR 0.567ha

ACCESS TO BE MAINTAINED TO ADJACENT PROPERTY DURING CONSTRUCTION PHASE

SURFACE WATER SEWER 820mm DEEP

POINT OF CONNECTION FOR PROPOSED DEVELOPMENT SURFACE WATER AND FOUL WATER, DETAILS TO BE CONFIRMED AT DETAILED DESIGN STAGE, EXISTING UPSTREAM SEWERS ARE PITCH FIBRE AND ARE INTENDED FOR REPLACEMENT



IMPORTANT - UNTIL TECHNICAL ACCEPTANCE AND/OR APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITY, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS & DETAILS ISSUED ARE PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO TECHNICAL ACCEPTANCE AND/OR APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK. INFRASTRUCTURE SUBJECT TO A SECTION 104 ADOPTION AGREEMENT SHALL NOT BE CONSTRUCTED UNTIL SUCH TIME THAT THE SECTION 104 ADOPTION AGREEMENT HAS BEEN LEGALLY COMPLETED BETWEEN THE DEVELOPER AND THE STATUTORY UNDERTAKER

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