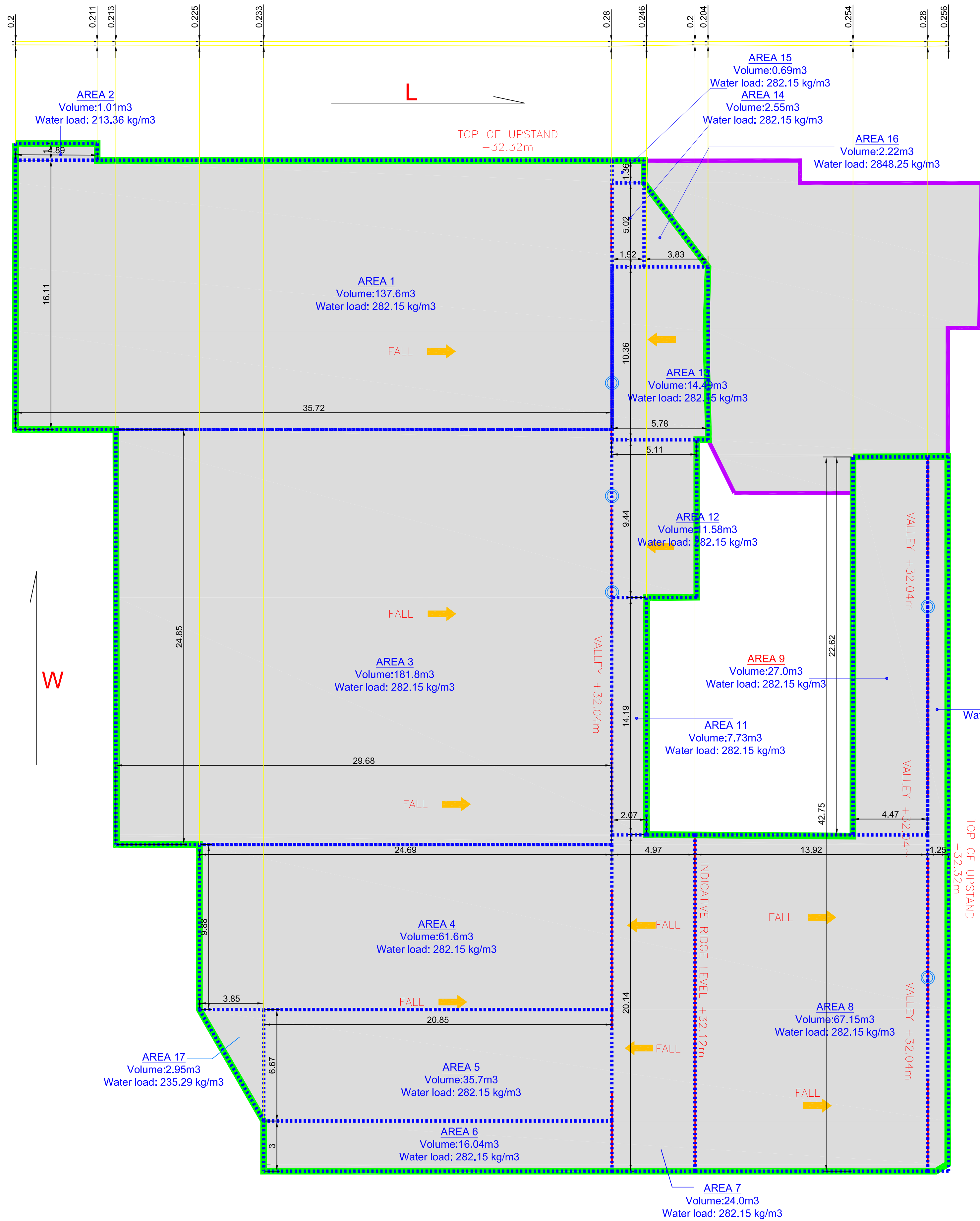




SIMPLIFIED BLUE ROOF ZONE AND AREA CALCULATIONS

SPECIFICATION NOTES

GENERAL REQUIREMENTS

- THE WATERSHED BLUE ROOF DESIGN DEMONSTRATES THE PERFORMANCE REQUIREMENTS. THE BLUE ROOF CONTRACTOR WILL BE REQUIRED TO ADOPT DESIGN RESPONSIBILITY AND TO DEVELOP THE DESIGN WITH INSTALLATION DRAWINGS AND DETAILS BASED UPON THEIR OWN PRODUCTS BUT MAINTAINING ALL ASPECTS OF THE DESIGN WATERSHED ENGINEERING DESIGN REQUIREMENTS UNLESS AGREED IN WRITING AT THE TIME OF TENDER.
- THE BLUE ROOF SPECIALIST CONTRACTOR IS TO PROVIDE A MINIMUM OF £1m PROFESSIONAL INDEMNITY INSURANCE COVERING THE DESIGN DEVELOPMENT AND CALCULATION OF THE SYSTEM UNLESS AGREED OTHERWISE IN WRITING AT THE TIME OF TENDER.

APPROVALS

- THE BLUE ROOF SPECIALIST CONTRACTOR IS TO SUBMIT FULL CALCULATIONS DETAILING THE ACTUAL VOID RATIOS AND AREAS.
- ANY DEVIATIONS FROM THE WATERSHED ENGINEERING OUTLINE DESIGN ARE TO BE IDENTIFIED AT THE TIME OF TENDER
- TECHNICAL SUBMISSIONS ARE REQUIRED FOR ALL SYSTEM COMPONENTS AND CONFIGURATIONS PRIOR TO WORK COMMENCING.

ATTENUATION CELLS

- THE ATTENUATION LAYER IS TO BE LAYED UPON A DRAINAGE BOARD OF AT LEAST 6mm DEPTH TO FACILITATE THE FREE FLOW OF WATER BENEATH THE GEOCELLULAR STRUCTURE. THIS IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 800kN/m2
- FLOW CONTROL OUTLETS ARE TO BE SUPPLIED FREE ISSUE TO THE MAIN CONTRACTOR FOR INSTALLATION BY THE WATERPROOFING CONTRACTOR. FLOW CONTROL DEVICES (eg ORIFICE PLATES) SHALL BE INSTALLED BY THE BLUE ROOF CONTRACTOR
- GEOCELLULAR ATTENUATION VOID FORMERS MAY BE MULTIPLES OF DEPTHS AS SELECTED BY THE BLUE ROOF CONTRACTOR TO ACHIEVE THE REQUIRED OVERALL DEPTHS. WHERE NECESSARY, THE UNITS ARE TO BE INTERLINKED TO PREVENT SLIPPAGE
- GEOCELLULAR ATTENUATION UNITS ARE TO HAVE A MINIMUM VOID RATIO OF 94%
- STRUCTURAL CAPACITY OF ATTENUATION COMPONENTS IS TO BE SELECTED BY THE BLUE ROOF SPECIALIST CONTRACTOR TO SUIT THE ENVIRONMENT OF THE INSTALLATION. ATTENUATION GRATES TO BE CAPABLE OF VEHICULAR LOADING UP TO FIRE TENDER.
- A MINIMUM FREEBOARD OF 30mm IS TO BE MAINTAINED FROM THE OVERFLOW (H-MAX) LEVEL TO THE UNDERSIDE

OF THE UPPER GEOCELLULAR UNIT TO FACILITATE FREE FLOW INTO THE OVERFLOWS.

FILTER GEOTEXTILES

- NON-WOVEN GEOTEXTILE FILTERS TO BE PROVIDED TO CONTINUOUSLY ENCAPSULATE THE ENTIRE ATTENUATION ZONE EXCEPT ENTRY TO OUTLET / OVERFLOW BOXES. ROBUST GEOTEXTILE REQUIRED. CAPABLE OF WITHSTANDING TEMPORARY CONSTRUCTION TRAFFIC AS WELL AS PERMANENT STATE, INCLUDING TREE ROOT INGRESS DETAILS TO BE AGREED.
- JOINTS TO BE OVERLAPPED (150mm MIN) AND HELD IN PLACE TO PREVENT LIFTING AFTER INSTALLATION AND PRIOR TO COVERING OVER BY NEXT TRADE
- GEOTEXTILE TO BE ADHERED TO FILTER BOXES ETC

AGGREGATE INFILL

- AGGREGATE INFILLS AROUND PENETRATIONS AND ABUTTING ARE PERMITTED BUT SHOULD BE KEPT TO A MINIMUM. NO MORE THAN 50% OF ANY GEOCELLULAR UNIT IS TO BE INFILLED WITH MARGINS BEING A MAXIMUM OF 150mm.
- AGGREGATES USED WITHIN THE ATTENUATION ZONE ARE TO BE WASHED PEBBLES GRADED 20-40mm UNLESS REQUIRED FOR FIRE SPREAD PURPOSES

SURFACE PREPARATION

- PRIOR TO STARTING WORK THE BLUE ROOF CONTRACTOR IS TO UNDERTAKE A FULL LEVEL SURVEY OF THE ROOF SURFACE TO ENSURE A CONTINUOUS FALL TO THE DESIGNATED LOW POINTS.
- ENSURE WATERPROOFING SYSTEMS ARE TESTED AND CERTIFIED PRIOR TO STARTING WORK. VISUALLY INSPECT AND REPORT ANY DAMAGE. ENSURE ALL SURFACES ARE CLEAN AND FREE OF DEBRIS BOTH PRIOR TO STARTING WORK AND THROUGHOUT THE WORKS.

PROTECTION LAYER

- A 75mm LAYER OF AGGREGATE (SPECIFICATION TO BE CONFIRMED) IS TO BE OVERLAYED ACROSS THE COMPLETED SYSTEM IN ORDER TO PROVIDE PROTECTION UNTIL SURFACE FINISHES ARE APPLIED.

COMPLETION

- UPON COMPLETION, THE BLUE ROOF SPECIALIST CONTRACTOR IS TO UNDERTAKE A CCTV SURVEY OF THE RECEIVING DRAINAGE WITHIN THE CAR PARK TO RECEIVING DRAINAGE TO CONFIRM IT IS IN A FREE FLOWING CONDITION PRIOR TO HANDOVER.
- PRIOR TO HANDOVER, ENDOSCOPE INSPECTION CAMERA IMAGES ARE TO BE TAKEN IN EACH DIRECTION FROM EVERY ACCESS BOX

MAINTENANCE

- THE BLUE ROOF CONTRACTOR IS TO PROVIDE A MINIMUM OF 12 MONTHS MAINTENANCE FOLLOWING COMPLETION (CONTRACT PRELIMS PROVIDED BY RENAKER WILL TAKE PRECEDENT IN THE EVENT OF ANY DUPLICATION

DESIGN CRITERIA

- TOTAL DRAINED IMPERMEABLE AREA - 6965 m2 (EXCLUDING AREA BETWEEN TOWER C4 AND SCHOOL. TOTAL PLAN AREA AVAILABLE FOR BLUE ROOF ATTENUATION ZONE = 2400 m2
- DESIGN OUTFLOW = 2 L/S USING 6 No. FLOW CONTROL POINTS
- MAXIMUM HALF DRAIN TIME =12 HOURS
- BLUE ROOF TO PROVIDE SUFFICIENT SURFACE WATER ATTENUATION FOR 100 YR STORM EVENT PLUS A 40% ALLOWANCE FOR CLIMATE CHANGE USING FSR DATA

COVER AND FRAME TO BS EN 124 AS DETAILED ON MANHOLE SCHEDULE

BED AND HAUNCH COVER AND FRAME WITH 3:1 CEMENT MORTAR TO SUIT

REGULATING COURSES IN CLASS B ENGINEERING BRICKWORK, MINIMUM 2 COURSES, MAXIMUM 4 COURSES

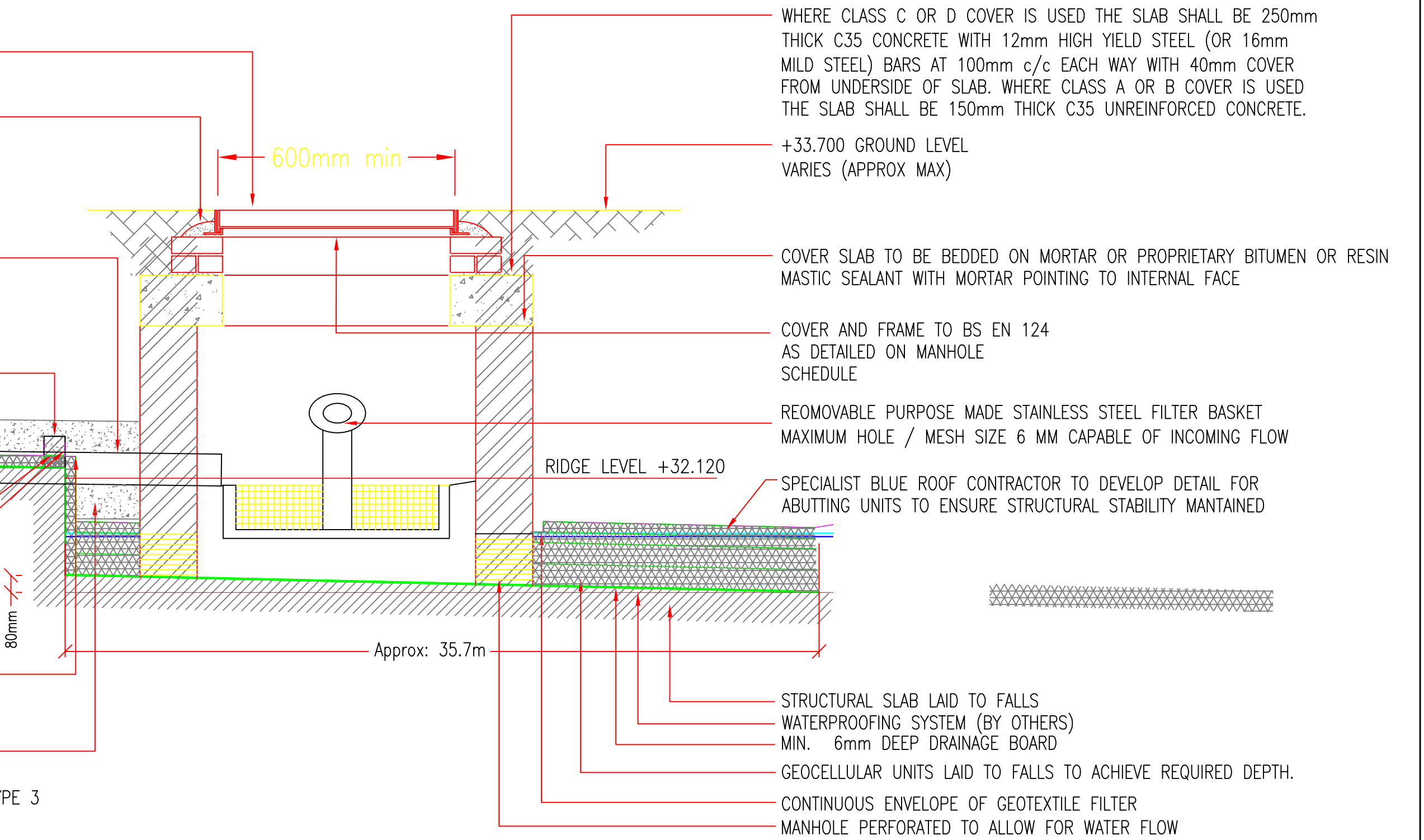
INCOMING RWP. RWP FROM SCHOOL IS RUNNING WITHIN A SLAB RECESS (IL TO BE CONFIRMED) AND PROVIDED WITH 150mm CONCRETE BED AND HAUNCH  
HIT AND MISS UPSTAND TO RETAIN UPPER DRAINAGE LAYER  
HIT +32.628 TOP OF UPSTAND VARIES (32.600 @ D-D)

AGGREGATE INFILL TO 150mm 'MOUSEHOLES' @ 150mm INTERVALS TO ALLOW FREE PASSAGE OF WATER

GEOTEXTILE LAPPED UP STRUCTURE AND ADHERED

MINIMUM 50mm GEOCELLULAR UNIT VERTICAL TO FACILITATE CASDCADE OF WATER FROM UPPER SLAB

MINIMUM 400mm AGGREGATE COVER TO ATTENUATION UNITS TO PROVIDE TEMPORARY FLAT SURFACE.  
AGGREGATE TYPE TO BE CONFIRMED (ASSUME MOT TYPE 3 FOR TENDER PURPOSES)



Notes

TENDER

Revision

Date

Drawn By

Checked

Revised

00 Draft Issue For Comments  
T01 TENDER

Date

Drawn By

Checked

Date: March 2021

Client: RENAKER

Drawn: CDH

Project: Crown Street Phase 2

Check:

Title: Blue Roof Detail

Scale: 1:150 @ A1

Dwg No. Z1-WTE-G770-PL-XX-PH02

Revision: P01