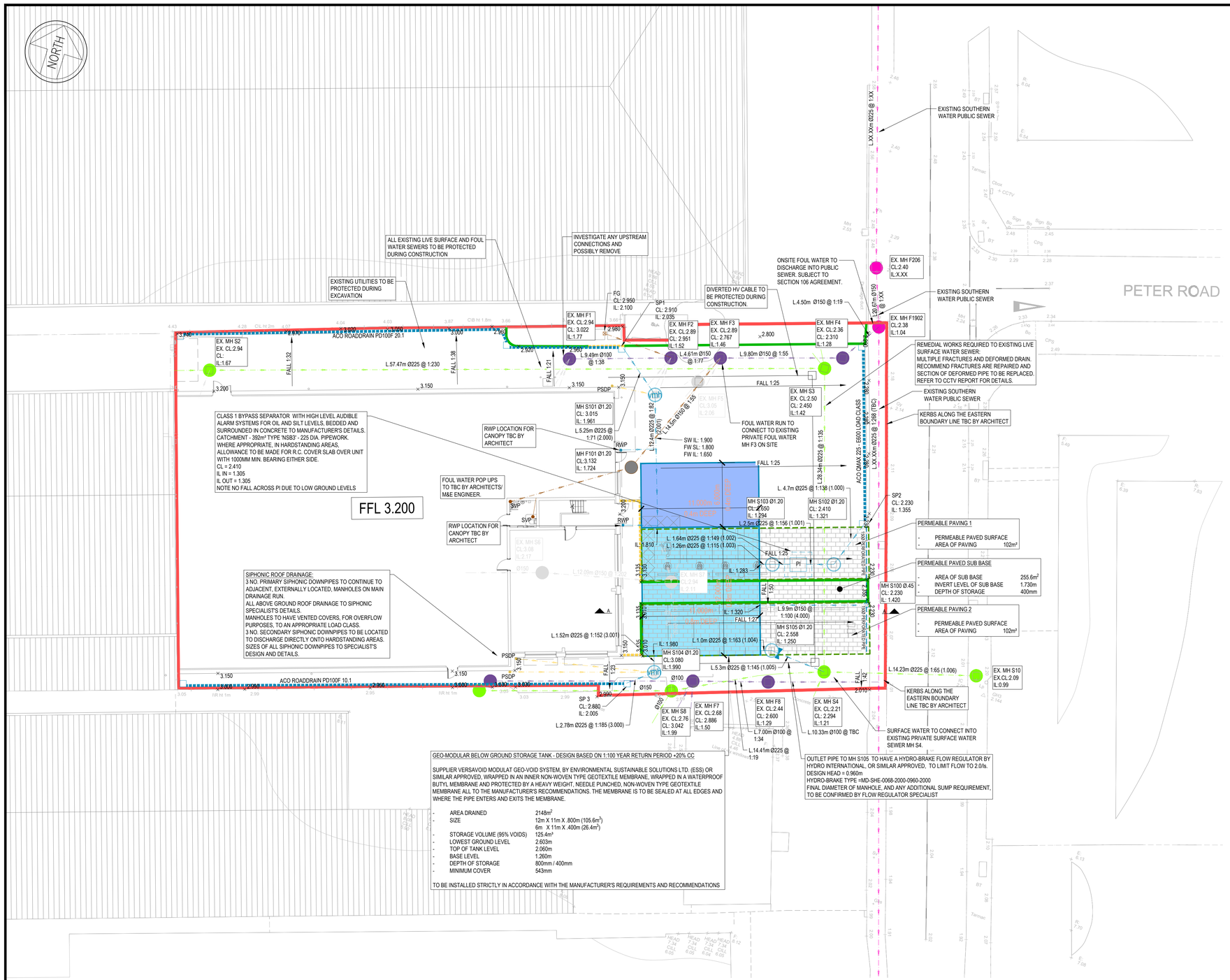
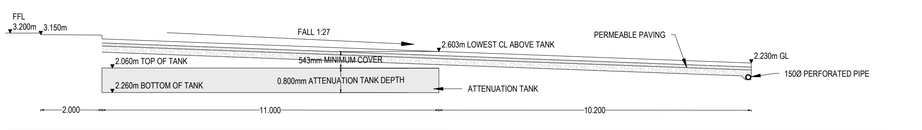
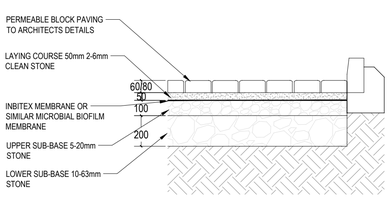




SECTION A - A

SCALE 1:100



PERMEABLE PAVING

SCALE 1:20

SURFACE WATER DRAINAGE STRATEGY:

SURFACE WATER DRAINS VIA GRAVITY THROUGH PETROL INTERCEPTORS PRIOR TO ENTERING BELOW GROUND ATTENUATION TANK.

RUNOFF FROM THE CAR PARKING BAY AREA WILL DRAIN VIA PERMEABLE BLOCK PAVING PRIOR TO ENTERING THE TANK.

RUNOFF FROM THE ROOFS WILL DISCHARGE THROUGH VENTED MANHOLES AND DIRECTLY TO BELOW GROUND STORAGE TANK.

DISCHARGE RATES:
QBAR GREENFIELD RUN OFF RATE = 1.8l/sec/ha
AREA POSITIVELY DRAINED = 2148m²
THEREFORE TOTAL DISCHARGE = 0.4l/s

A MINIMUM DISCHARGE RATE OF 2 L/SEC WILL BE USED DUE TO LIMITED SPACE ON SITE AND TO ENSURE THE FLOW CONTROL DEVICE REMAINS FREE FLOWING AND FREE OF POSSIBLE MAINTENANCE ISSUES.

STORAGE VOLUMES WILL BE DESIGNED TO ENSURE NO ABOVE GROUND PONDING LEAVES THE SITE DURING THE 1 IN 100 YEAR + 20% STORM.

FOUL WATER DRAINAGE STRATEGY:

FOUL WATER DRAINS VIA GRAVITY INTO AN EXISTING PRIVATE FOUL WATER MANHOLE LOCATED ONSITE. FURTHER TO BE CONNECTED INTO EXISTING SOUTHERN WATER PUBLIC SEWER. SUBJECT TO SECTION 106 AGREEMENT.

DRAINAGE NOTES

1. ALL PRIVATE DRAINAGE WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH BS EN 752:2008 AND BUILDING REGULATIONS PART H.
2. ALL DRAINAGE WORKS WITHIN ADOPTABLE AREAS ARE TO COMPLY WITH THE REQUIREMENTS OF THE WATER UK/WATER RESEARCH CENTRE PUBLICATION `SEWERS FOR ADOPTION' (CURRENT EDITION).
3. ALL CONNECTIONS TO EXISTING PUBLIC SEWERS TO BE IN ACCORDANCE WITH AND TO THE SATISFACTION OF THE LOCAL AUTHORITY.
4. CONCRETE PROTECTION (BEDDING CLASS `Z') TO PIPEWORK TO BE PROVIDED AS FOLLOWS; (I) ALL PIPEWORK WITHIN SOFT AREAS WITH A COVER OF LESS THAN 600mm. (II) ALL PIPEWORK BENEATH ROADS, CAR PARKS AND ALL OTHER TRAFFICKED HARDSTANDING AREAS WITH A COVER LESS THAN 1200mm. (III) ALL PIPEWORK ADJACENT TO EXISTING AND PROPOSED TREES/DENSE VEGETATION IN LANDSCAPED AREAS. AN EXPANSION JOINT SHALL BE PROVIDED AT ALL JOINT LOCATIONS.
5. ALL BELOW GROUND FOUL DRAINAGE FROM WITHIN BUILDING FOOTPRINT TO BE 100mm DIA. UNLESS STATED OTHERWISE. REFER TO SEPARATE NOTE FOR RECOMMENDED MINIMUM GRADIENTS. ALL BELOW GROUND SURFACE WATER DRAINAGE FROM RWP LOCATIONS TO MAIN CARRIER DRAINS TO MATCH THE DIAMETER OF THE DOWNPIPE (TO ARCHITECT'S AND SPECIALIST CONTRACTOR'S DETAILS) UNLESS STATED OTHERWISE. ALL BELOW GROUND DRAINAGE FROM ROAD GULLIES TO BE 150mm DIA. UNLESS STATED OTHERWISE.
6. ALL PIPEWORK IN MANHOLES ARE TO BE LAID SOFFIT TO SOFFIT UNLESS NOTED OTHERWISE. ALL CHAMBER INVERT LEVELS, SHOWN ON THE DRAWING, ARE FOR THE OUTGOING PIPE.
7. ALL INTERNAL DRAINAGE TO BE TO THE ARCHITECT'S AND M & E ENGINEER'S DRAWINGS AND DETAILS.
8. THE POSITION AND INVERT LEVELS OF ALL EXISTING DRAINS, SEWERS AND MANHOLES TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE PROPOSED WORKS AND ANY DISCREPANCIES REPORTED IMMEDIATELY TO BRADBROOK CONSULTANTS.
9. ALL PIPES ARE TO HAVE A CLASS `S' BED AND SURROUND UNLESS NOTED OTHERWISE (SEE NOTE 4 ABOVE).
10. ALL CONCRETE PIPES ARE TO BE HIGH STRENGTH AND TO BE IN ACCORDANCE WITH BS EN 1916 AND BS 5911.
11. ALL VITRIFIED CLAY PIPES ARE TO BE IN ACCORDANCE WITH BS EN 295.
12. FOR SETTING OUT OF FOUL AND RAINWATER OUTLETS REFER TO THE ARCHITECT'S DRAWINGS.
13. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.
14. THE CONTRACTOR IS TO ALLOW FOR GREASE TRAPS IN THE KITCHEN AND OTHER APPROPRIATE AREAS.
15. DRAINAGE CHANNELS AND SILT PITS TO BE DESIGNED BY A SPECIALIST MANUFACTURER FOR CRITICAL STORMS OF 1:5 YEAR RETURN PERIOD, TO SUIT SITE CONDITIONS AND IN ACCORDANCE WITH LOAD CLASS REQUIREMENTS AS SHOWN ON THE PLAN. DESIGN TO BE SUBMITTED FOR COMMENT TO PRIOR TO ORDERING.
16. ALL EXTERNAL FINISHED LEVELS AND MANHOLE COVER LEVELS SHOWN ON THIS DRAWING ARE INDICATIVE AND SUBJECT TO ADJUSTMENT ON SITE TO SUIT THE FINISHED GROUND LEVELS. FOR FINAL LEVELS REFER TO THE ARCHITECT'S DRAWINGS.
17. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
18. ANY COORDINATES PROVIDED FOR MANHOLES OR INSPECTION CHAMBERS ARE RELEVANT TO THE MAIN DRAINAGE RUN INTERSECTION AND NOT THE CENTRE OF THE MANHOLE.
19. CHALK AND LIMESTONE ARE NOT TO BE USED AS BEDDING OR BACKFILLING MATERIAL IN SOILS WITH A PH VALUE LESS THAN 7.
20. REFER TO CCTV DRAINAGE SURVEY BY UTILITY SURVEY LTD RE. 071431 FOR CONDITION OF EXISTING DRAIN RUNS. REMEDIAL WORKS TO BE CARRIED OUT ON EXISTING DRAIN RUNS DURING CONSTRUCTION PHASE. AT THE COMPLETION OF THE CONTRACT A NEW CCTV SURVEY IS REQUIRED TO PROVE THE INTEGRITY OF THE AS-BUILT DRAINAGE SYSTEMS AND THE REPAIR WORKS TO THE EXISTING DRAIN RUNS. AT THE COMPLETION OF THE CONTRACT THIS IS TO BE CARRIED OUT PRIOR TO THE ISSUE OF THE PRACTICAL COMPLETION CERTIFICATE.
21. SEWERS, MANHOLES, GULLIES, DRAINAGE CHANNELS AND SILT PITS SHOULD BE INSPECTED AT 6 MONTHLY INTERVALS AND CLEANED OUT AT 12 MONTHLY INTERVALS. A FULL CCTV SURVEY SHOULD ALSO BE CARRIED OUT AT 10 YEARLY INTERVALS. REFER ALSO TO SPECIALIST DRAINAGE CHANNEL AND PETROL INTERCEPTOR MANUFACTURER'S INFORMATION AND MAINTENANCE REQUIREMENTS. IN ALL INSTANCES, INSPECTION AND CLEANING SHOULD BE CARRIED OUT ONLY BY A SPECIALIST CONTRACTOR AND IN ACCORDANCE WITH THE GUIDELINES GIVEN IN `SAFE WORKING IN SEWERS AND AT SEWAGE WORKS' PUBLISHED BY NATIONAL JOINT HEALTH AND SAFETY COMMITTEE FOR THE WATER SERVICES.

REFER TO THE CCTV SURVEY REPORT BY UTILITY SURVEYS LTD. REF: 071431 FOR THE CONDITION OF EXISTING DRAIN RUNS.
REMEDIAL WORKS ARE REQUIRED, AS NOTED ADJACENT, TO THE EXISTING SEWER FROM EX. MH S3 TO EX. MH S4.
LOCALISED PATCH REPAIRS ARE REQUIRED ON ALL FRACTURES AND CRACKS TO EXISTING SEWERS.
IT IS ALSO RECOMMENDED FOLLOWING THE CONSTRUCTION PHASE THE EXISTING AND PROPOSED SURFACE AND FOUL WATER NETWORK ARE FULL HIGH PRESSURE JETTED TO ENSURE DRAINS ARE FREE DRAINING.

ALL EXISTING SURFACE AND FOUL WATER SEWERS PROPOSED TO REMAIN ARE TO BE PROTECTED DURING THE CONSTRUCTION PHASE.

LEGEND

- SITE BOUNDARY
- EXISTING PRIVATE FOUL WATER DRAIN WITH MANHOLE
- EXISTING PUBLIC FOUL WATER DRAIN WITH MANHOLE
- NEW FOUL WATER DRAIN WITH MANHOLE
- EXISTING PRIVATE SURFACE WATER DRAIN WITH MANHOLE. TO BE PROTECTED DURING CONSTRUCTION.
- EXISTING DRAIN AND MANHOLE REDUNDANT. TO BE REMOVED.
- NEW SURFACE WATER DRAIN WITH MANHOLE
- NEW SURFACE WATER MANHOLE WITH VENTED COVER
- PSDP — PRIMARY SIPHONIC DOWNPIPE AND ADJACENT RUN TO SPECIALIST DETAILS
- DRAINAGE CHANNEL
- PERMEABLE PAVED SURFACE
- PERMEABLE PAVED SUB BASE
- BELOW GROUND ATTENUATION TANK
- × 117.25 — SPOT LEVEL
- HB2 KERB
- DROPPED KERB

REFER TO THE ARCHITECT'S DETAILS FOR THE INTERNAL, ABOVE GROUND, DRAINAGE LAYOUT.
RECOMMENDED MINIMUM GRADIENTS FOR BELOW GROUND FOUL DRAINAGE CONNECTIONS:
100 DIA. AT 1:40,
100 DIA. AT 1:80 WITH MIN 1 NO. WC CONNECTION,
150 DIA. AT 1:150 WITH MIN 5 NO. WC CONNECTIONS.
FINAL FOUL DRAINAGE CONNECTIONS TO BE COORDINATED WITH THE ARCHITECT'S INTERNAL DRAINAGE LAYOUT PLANS.

USE OF THERMOPLASTIC PIPES
IF THERMOPLASTIC PIPES ARE TO BE USED THEY ARE TO BE OF THE STRUCTURED WALL TYPE AND SHALL COMPLY WITH WIS 4-35-01 AND BS EN 13476 AND MUST BE BSI KITEMARKED (E.G. POLYSEWER/RIDGISEWER BY POLYPIPE CIVILS, ULTRARIB BY WAVIN OR SIMILAR). PIPES ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. NOTE: ALL INSTALLATION MUST BE IN ACCORDANCE WITH BUILDING REGULATIONS PART: H, BS EN 752:2008, SPECIFICATION FOR HIGHWAY WORKS AND ALL RELEVANT BRITISH AND EUROPEAN CODES OF PRACTICE.

Rev.	Tech	Date	Description
P8	NDH	26.05.22	UPDATED IN LINE WITH COMMENTS RECEIVED FROM LLFA
P7	NDH	05.05.22	PERMEABLE PAVING AMENDED AND REMEDIATION NOTES ADDED. HYDRBRAKE MODEL UPDATED.
P6	JJ	04.04.22	EXISTING MANHOLE COVER LEVELS UPDATED AND KERBS ADDED. DISCHARGE RATE REDUCED AS PER COMMENTS FROM LLFA AND TANK SIZE INCREASED.
P5	JJ	21.02.22	PSDP LOCATION UPDATED.
P4	JJ	18.02.22	MH F100 REMOVED AS PER CLIENT'S REQUEST.
P3	JJ	17.02.22	TANK MOVED TO AVOID CLASH WITH LV CABLE DIVERSION
P2	JJ	16.02.22	PRELIMINARY ISSUE
P1	JJ	25.01.22	WORK IN PROGRESS ISSUE

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Project Title: **5 COMMERCE WAY, LANCING.**

Drawing Title: **DRAINAGE LAYOUT AND EXTERNAL LEVELS**

Purpose of Issue: Information ○ Preliminary ○ Approval ○ Tender ● Construction ○ Record Copy ○

First Issue Date	Drawn By	Scale	Checked
JAN 2022	JJ	1:200 @ A1	NDH

Drawing Number: **21-008D / 300** Rev. **P8**