TAYLOR
CONSULTING
CIVIL & STRUCTURAL ENGINEERS

29 January 2020

General Manager
Northern Beaches Council
725 Pittwater Road
DEE WHY NSW 2099

Dear Sir/Madam,

Re: Stormwater Management Plan – 20 Westminster Avenue, Dee Why

With reference to the Development Application for the above property, please find enclosed copies of the site stormwater management plans and details for your perusal. Description of submitted plans as follows:

Sheet 1 shows collected flows being detained in an above ground stormwater basin before being discharged into a proposed gutter pit which would be tied into the existing street drainage system. The DRAINS hydraulic modelling files for the sizing of the detention tank are attached.

Sheet 2 contains schematic details and long-sections of proposed drainage elements

Sheet 3 is the Soil & Water Management Plan for the temporary control of erosion and sediment transportation during the construction phase of the project.

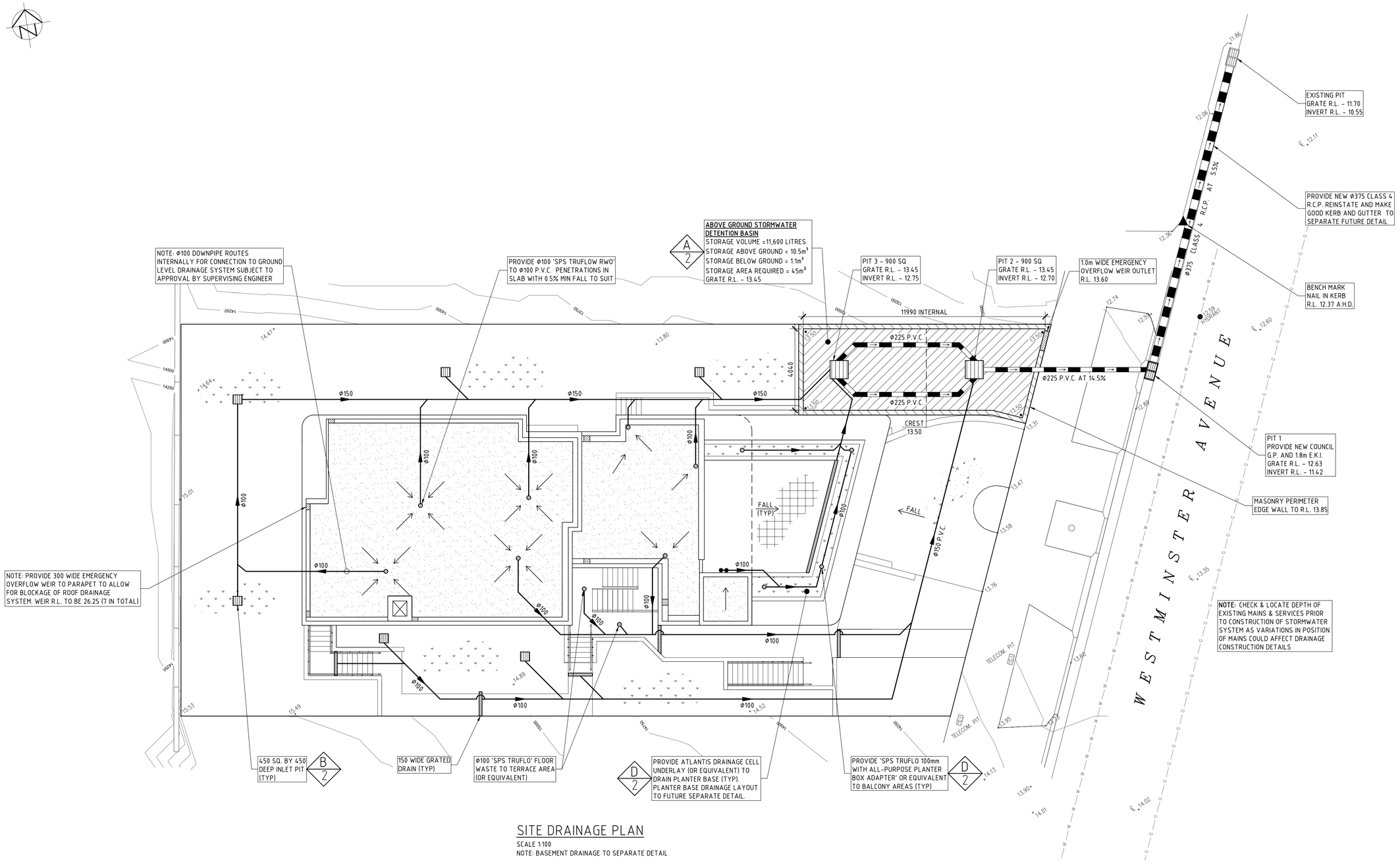
Sheet 4 is the plan of the proposed basement driveway access including long-section.

Note that the DRAINS model used for the design of the stormwater management systems are attached for your reference.

Should you require any further information please contact the undersigned.

Yours faithfully
TAYLOR CONSULTING

D M SCHAEFER - Director
B.E. Civil (Hons) M.I.E. Aust



SITE DRAINAGE PLAN

SCALE 1:100
NOTE: BASEMENT DRAINAGE TO SEPARATE DETAIL

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. • DENOTES PROPOSED GROUND LEVEL
3. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
4. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
5. SURFACE GRATES 450 SQ. UNLESS OTHERWISE NOTED.
6. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
7. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
8. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
9. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
10. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
11. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
12. APPROVED PRE-CAST PITS MAY BE USED.
13. ALL PIPES TO BE LAID ON COMPACTED FINE CRUSHED ROCK OR SAND BEDDING 75mm THICK & PIPES BACKFILLED WITH COMPACTED SAND TO 300mm ABOVE TOP OF PIPE, ELSE ATTACHED TO UNDERSIDE OF STRUCTURE AT 600mm c/c AS NECESSARY
14. PIPE ROUTES SHOWN ARE INDICATIVE ONLY AND SHOULD BE AS NECESSARY ACCORDING TO SITE CONDITIONS, TREE POSITIONS ETC. CONFIRM SIGNIFICANT CHANGES IN PIPES SYSTEM DETAILS WITH SUPERVISING ENGINEER PRIOR TO COMMENCEMENT OF DRAINAGE CONSTRUCTION WORKS.
15. CONTRACTOR SHALL ENSURE THAT SERVICES TO BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS WHERE REQUIRED. ONCE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.
16. STORMWATER SYSTEM REQUIRES SIGNIFICANT MAINTENANCE DUE TO POTENTIAL HIGH POLLUTANT LOAD. FILTERS AND POLLUTANT TRAPS SHOULD BE CHECKED AFTER LARGE STORM EVENTS AND CLEANED EVERY 6 MONTHS.
17. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
18. WHERE POSSIBLE DRAINAGE LINES SHALL BE LAID IN AREAS PREVIOUSLY DISTURBED BY OTHER SITE WORKS AND FOLLOW TOPOGRAPHICAL FEATURES TO REDUCE IMPACT AND AVOID TREE ROOTS
19. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR D.A. SUBMISSION TO COUNCIL AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

OSD SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 786 m²
EXIST. MODELLED IMPERVIOUS AREA = 0% imp.
EXIST. GRASSED FLOW LENGTH = 40m
EXIST. GRASSED SLOPE = 12.5%
DEVELOPED IMPERVIOUS AREA = 70%

EXISTING SITE FLOWS

5 YR ARI = 26 l/s
100 YR ARI = 46 l/s

DEVELOPED SITE FLOWS

5 YR ARI = 22 l/s
100 YR ARI = 26 l/s

STORMWATER DESIGN DATA

TANK 100 YR T.W.L. = 13.68
ORIFICE DIAMETER = 120mm
S.S.R. = 8.4m²

NOTE : AN ADDITIONAL 20% OF THE REQUIRED ABOVE GROUND STORAGE VOLUME ADDED

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 786m² (100%)
PROPOSED IMPERVIOUS AREA = 409m² (52%)
PROPOSED LANDSCAPED AREA = 377m² (48%)
EXISTING IMPERVIOUS AREA = 323m² (42%)
EXISTING LANDSCAPED AREA = 463m² (58%)

ISSUE	DATE	REVISION

TITLE
STORMWATER MANAGEMENT PLAN
20 WESTMINSTER AVENUE, DEE WHY

DRAWN	DATE	CHECKED	SCALE @ A1
JBP	29 JANUARY 2020	BE Civil (Hons) MIE Aust.	1:100

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DRAWING NO. SHEET-1

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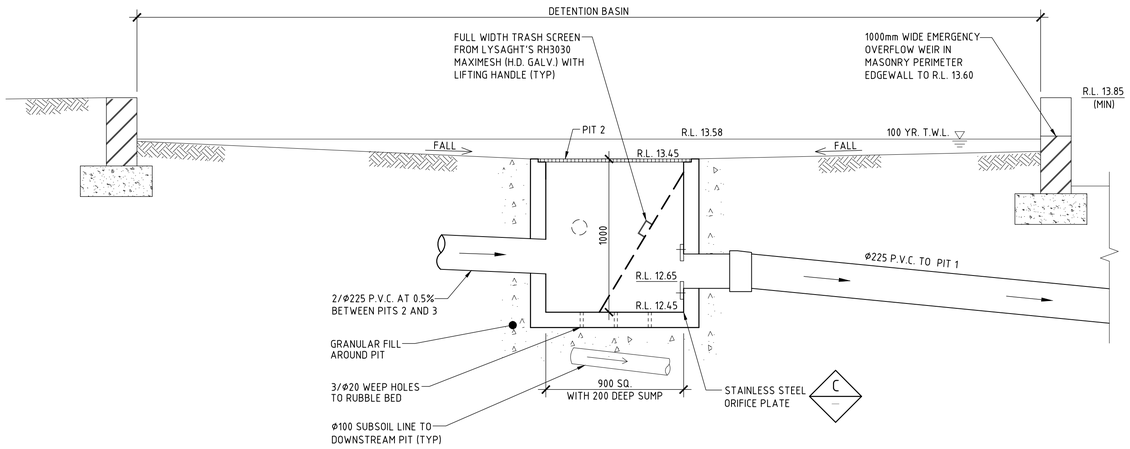
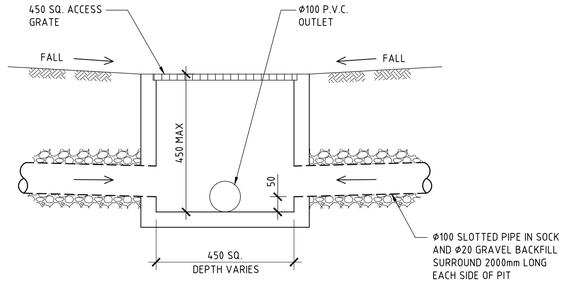


TYPICAL ABOVE GROUND DETENTION BASIN DETAIL A/1

SCALE 1:20

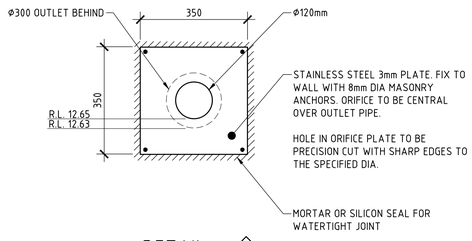
SCHEMATIC OF DETENTION CONTROL PIT ORIENTATION SHOWING ORIFICE OUTLET, TRASHSCREEN, SUMP & OUTLET TO COUNCIL PIT



DETAIL B/1

SCALE 1:10

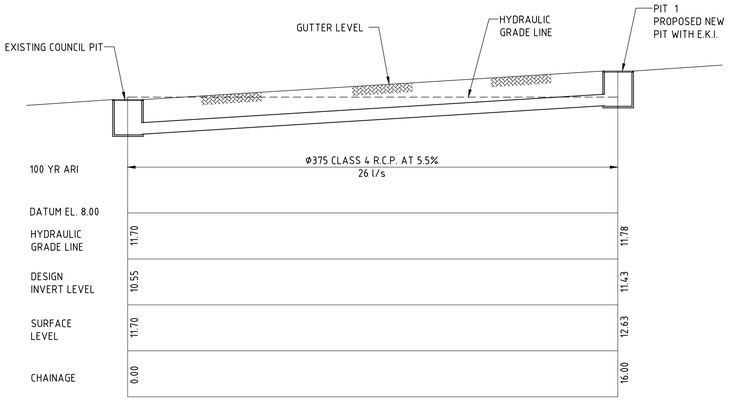
TYPICAL SURFACE INLET PIT DETAIL



DETAIL C/–

SCALE 1:10

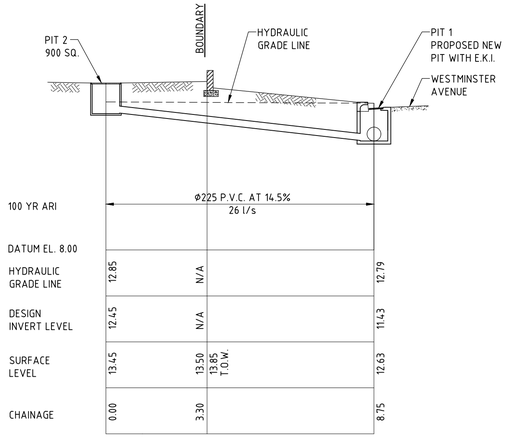
ORIFICE PLATE DETAIL



COUNCIL DRAINAGE LINE LONG-SECTION

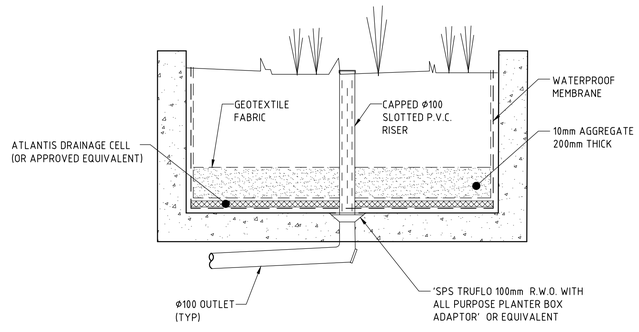
SCALE 1:100 NATURAL

NOTE: CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.



OSD OUTLET DRAINAGE LONG-SECTION

SCALE 1:100 NATURAL



DETAIL D/1

SCALE 1:20

SHOWING TYPICAL PLANTER BOX DETAIL

NOTE: PLAN TO BE READ IN CONJUNCTION WITH STORMWATER MANAGEMENT PLAN – SHEET-1

ISSUE DATE	REVISION

TITLE

STORMWATER MANAGEMENT DETAILS
20 WESTMINSTER AVENUE, DEE WHY

DRAWN	DATE	CHECKED	SCALE @ A1
JBP	29 JANUARY 2020	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

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SCHEDULE OF WORKS

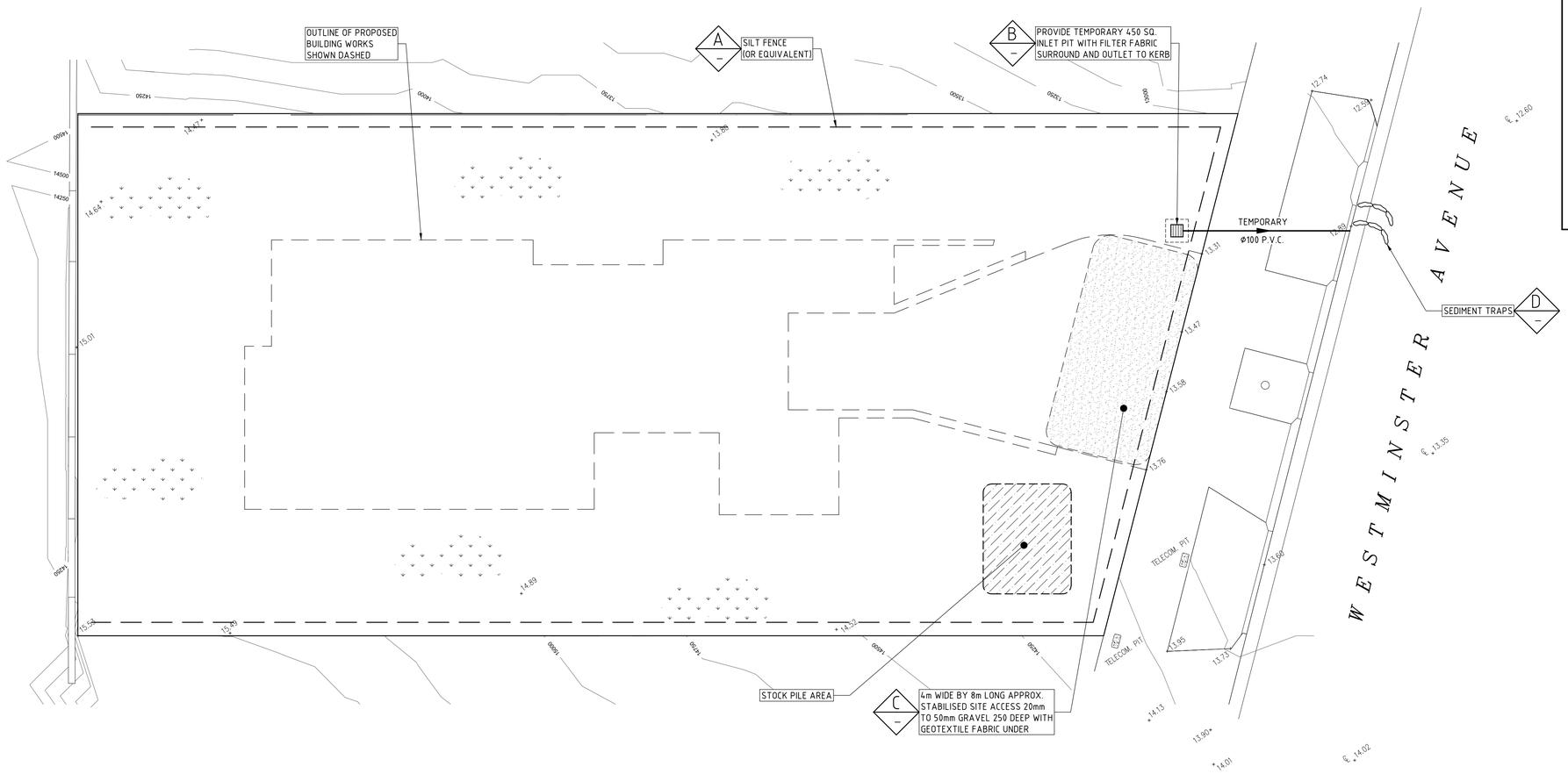
PLAN TO BE READ IN CONJUNCTION WITH DWG SHEET-1 SITE STORMWATER MANAGEMENT PLAN

DESCRIPTION
THE PROJECT IS THE PROVISION OF A NEW MULTI RESIDENTIAL UNIT BUILDING. THE TOTAL DISTURBED AREA IS APPROXIMATELY 0.04 Ha.

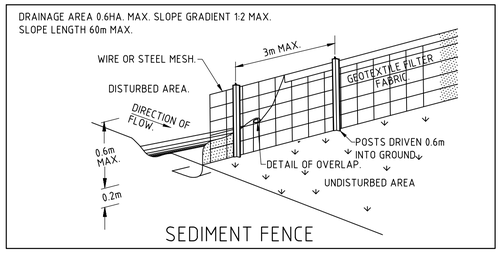
EROSION
NO AREA IS TO BE DISTURBED OTHER THEN THAT DIRECTLY AFFECTED BY ACCESS, SITE REGRADING, SERVICING, ROAD WORKS AND DRAINAGE WORKS. FOR ALL OTHER AREAS ENTRY IS PROHIBITED AND IS TO BE CLEARLY DEFINED WITH THE INSTALLATION OF BARRIER FENCING. UPSTREAM WATER IS TO BE DIRECTED AROUND THE SITE WITHOUT CONTAMINATION.

SEDIMENT CONTROL
CONTROL WILL BE VIA THE INSTALLATION OF SILT FENCES AS SHOWN ON PLAN. STOCK PILES ARE TO BE LOCATED IN AREAS SHOWN ON THE PLAN (CLEAR OF SERVICING, WATERCOURSES, ROAD AND DRAINAGE WORKS) AND PROVIDED WITH SILT FENCES ON THEIR DOWNSTREAM SIDE.

PHASING OF WORKS
1. INSTALL ALL BARRIER AND SILT FENCING. BARRIER FENCING MAY BE ERECTED AND REMOVED AS NECESSARY TO SUIT STAGING OF WORKS.
2. INSTALL ALL TEMPORARY DRAINAGE STRUCTURES AS NECESSARY.
3. STRIP & STOCKPILE TOPSOIL.
4. UNDERTAKE SITE DEVELOPMENT.
5. AS EARTHWORKS ARE COMPLETED THESE AREAS ARE TO BE TOPSOILED, SEEDED AND MULCHED OR PAVED WITHIN 20 WORKING DAYS.
6. ONLY AT THE COMPLETION OF WORKS AND STABILIZATION OF AREAS UPSTREAM ANY CONTROL DEVICES TO BE REMOVED.

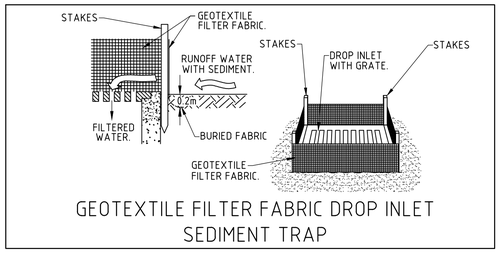


SOIL EROSION & SEDIMENT CONTROL PLAN
SCALE 1:100



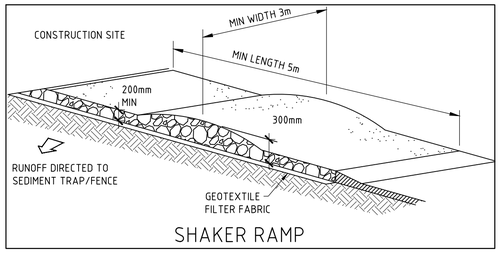
SEDIMENT FENCE

DETAIL A NOT TO SCALE



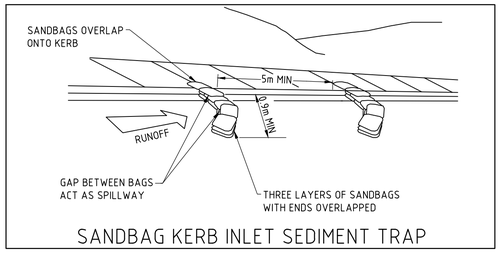
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP

DETAIL B NOT TO SCALE



SHAKER RAMP

DETAIL C NOT TO SCALE



SANDBAG KERB INLET SEDIMENT TRAP

DETAIL D NOT TO SCALE

TITLE
EROSION & SEDIMENT CONTROL PLAN
20 WESTMINSTER AVENUE, DEE WHY

DRAWN	DATE	CHECKED	SCALE @ A1
JBP	29 JANUARY 2020	BE Civil (Hons) MIE Aust.	1:100

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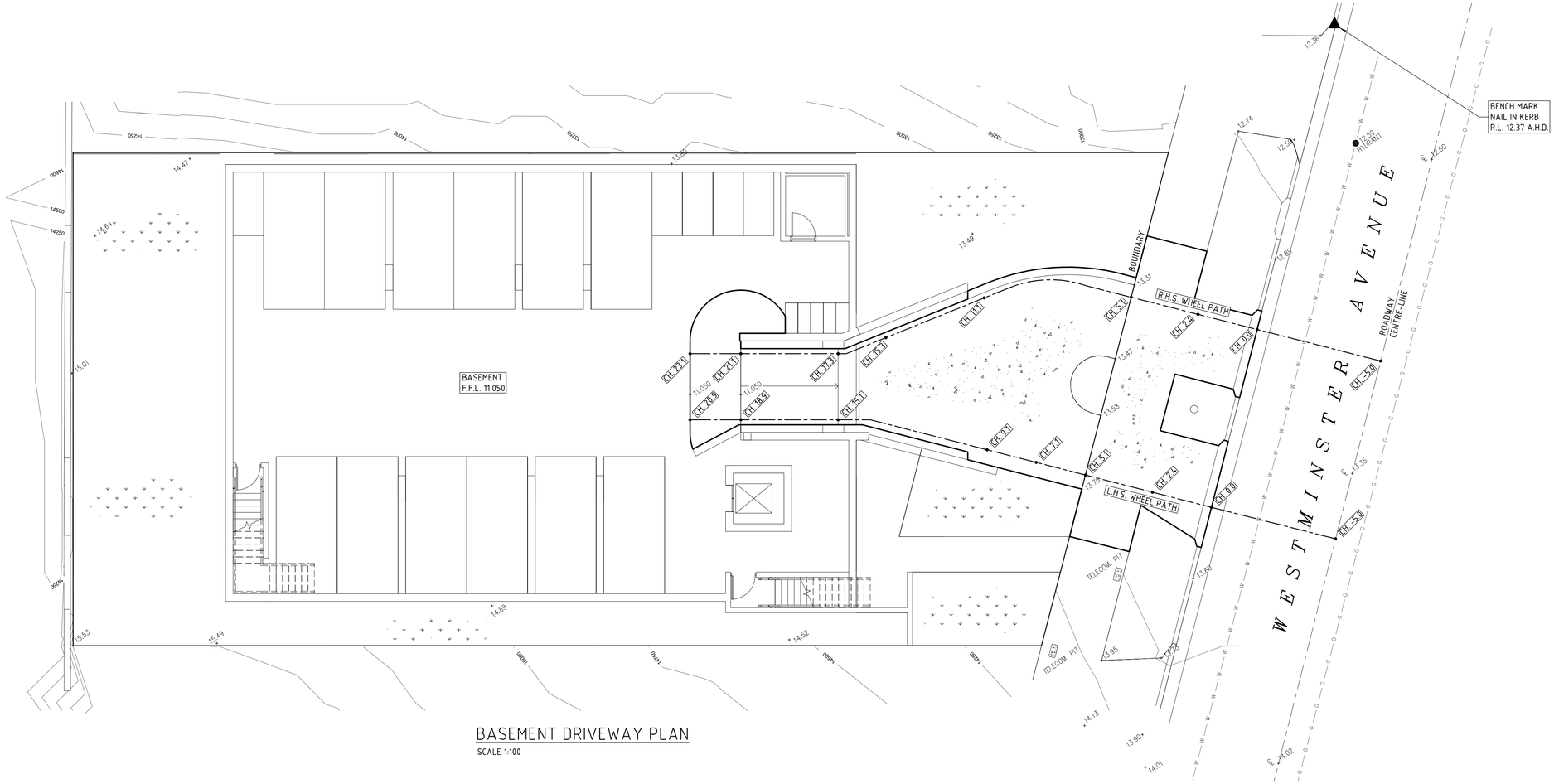
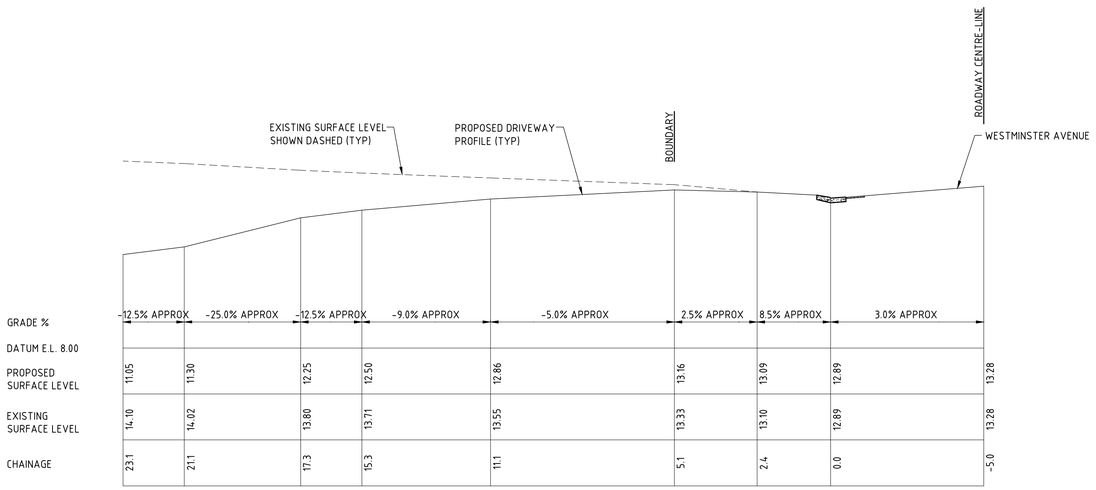


BASEMENT DRIVEWAY PLAN

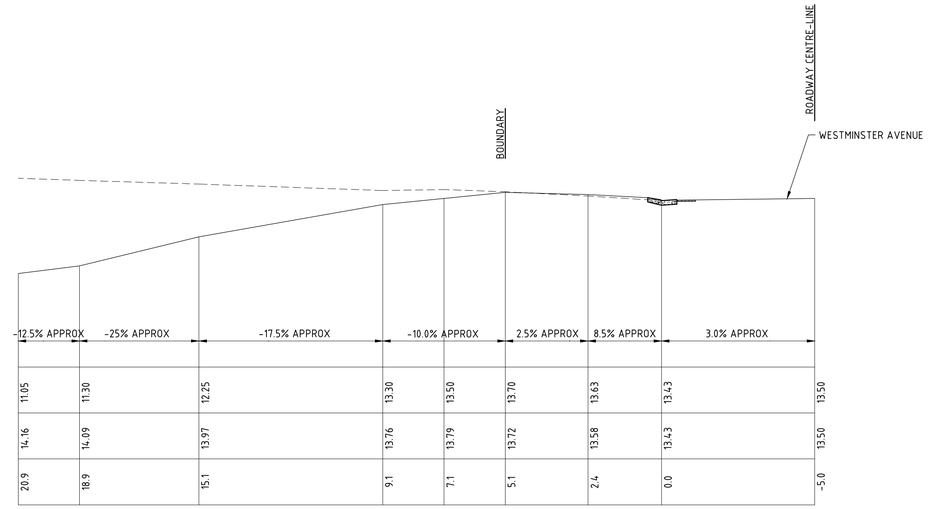
SCALE 1:100



GRADE %	-12.5% APPROX	-25.0% APPROX	-12.5% APPROX	-9.0% APPROX	-5.0% APPROX	2.5% APPROX	8.5% APPROX	3.0% APPROX	
DATUM E.L. 8.00									
PROPOSED SURFACE LEVEL	11.05	11.30	12.25	12.50	12.86	13.16	13.09	12.89	13.28
EXISTING SURFACE LEVEL	14.10	14.02	13.80	13.71	13.55	13.33	13.10	12.89	13.28
CHAINAGE	23.1	21.1	17.3	15.3	11.1	5.1	2.4	0.0	-5.0

RHS WHEEL-PATH LONG-SECTION

SCALE 1:100



GRADE %	-12.5% APPROX	-25% APPROX	-17.5% APPROX	-10.0% APPROX	2.5% APPROX	8.5% APPROX	3.0% APPROX	
DATUM E.L. 8.00								
PROPOSED SURFACE LEVEL	11.05	11.30	12.25	13.30	13.50	13.70	13.63	13.43	13.50
EXISTING SURFACE LEVEL	14.16	14.09	13.97	13.76	13.79	13.72	13.58	13.43	13.50
CHAINAGE	20.9	18.9	15.1	9.1	7.1	5.1	2.4	0.0	-5.0

LHS WHEEL-PATH LONG-SECTION

SCALE 1:100

ISSUE DATE	REVISION

TITLE

DRIVEWAY PLAN AND LONG-SECTIONS 20 WESTMINSTER AVENUE, DEE WHY

DRAWN	DATE	CHECKED	SCALE @ A1
AVW	29 JANUARY 2020	BE Civil (Hons) MIE Aust.	1:100

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