

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.

PROVIDE 150 WIDE GRATED DRAIN ACROSS DRIVEWAY (TYP)



**STORMWATER DETENTION TANK**  
STORAGE VOLUME = 3059 LITRES  
STORAGE LENGTH = 2500mm  
STORAGE WIDTH = 700mm  
STORAGE DEPTH = 1860mm  
TOTAL STORAGE = 6118 LITRES  
TANK FLOOR = R.L. 29.00  
PROVIDE  $\phi 100$  HIGH LEVEL &  $\phi 40$  LOW LEVEL CONNECTIONS BETWEEN TANKS &  $\phi 100$  HIGH LEVEL OVERFLOW OUTLET TO SITE DRAINAGE SYSTEM

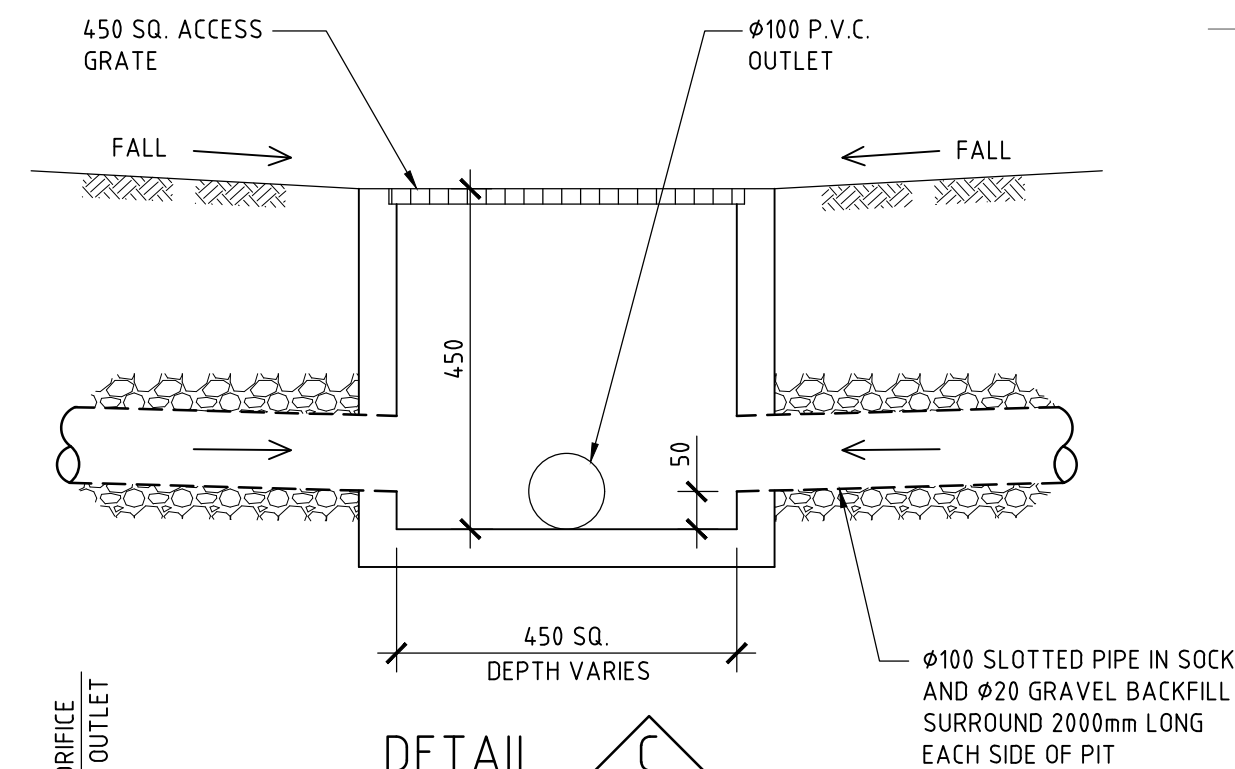
PROVIDE LEVEL SPREADER FOR DISCHARGE OF RUNOFF FROM UPPER TO LOWER ROOF AREA (TYP)

PROVIDE 200 SQ. INLET TRAY WITH TILED FALLS TO SUIT (TYP)

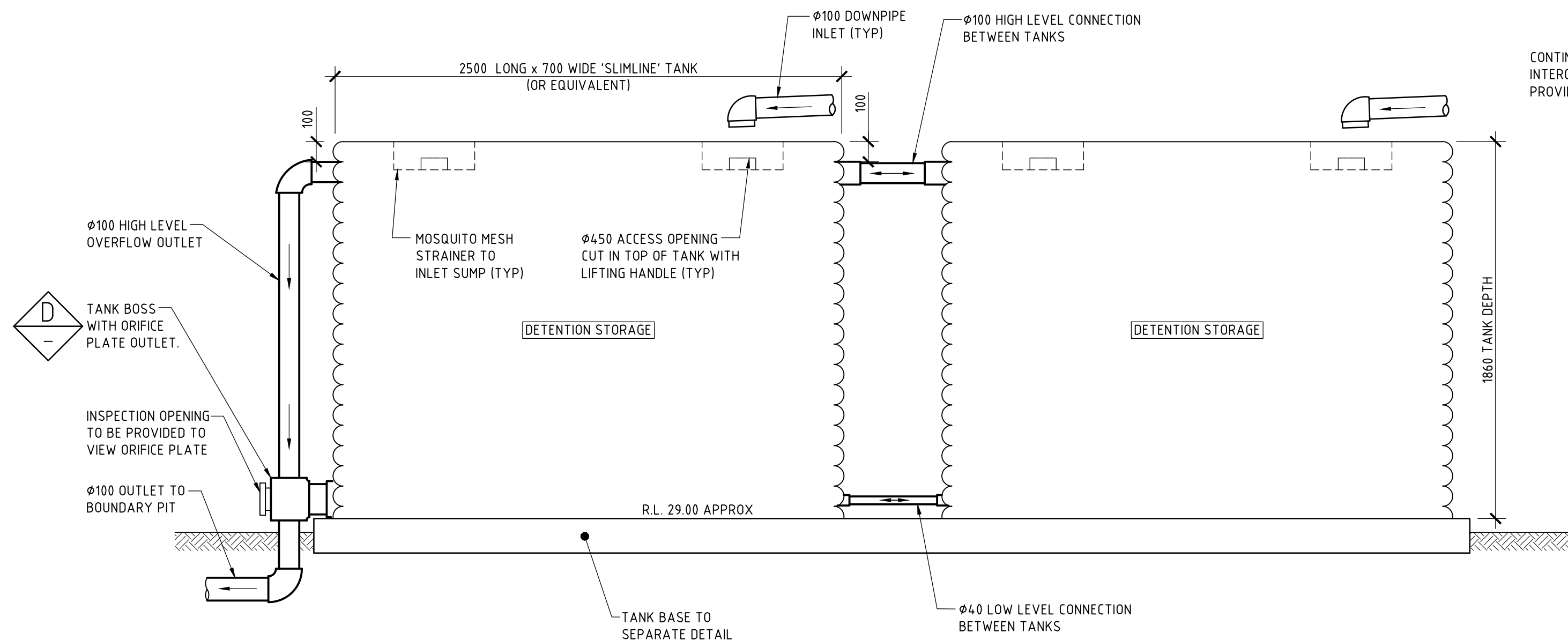
450 SQ. BY 450 DEEP INLET PIT  
NOTE: ALL PITS TO HAVE 2.0m LONG SUB-SOIL TAIL INLET

$\phi 100$  DOWNPIPE (TYP)

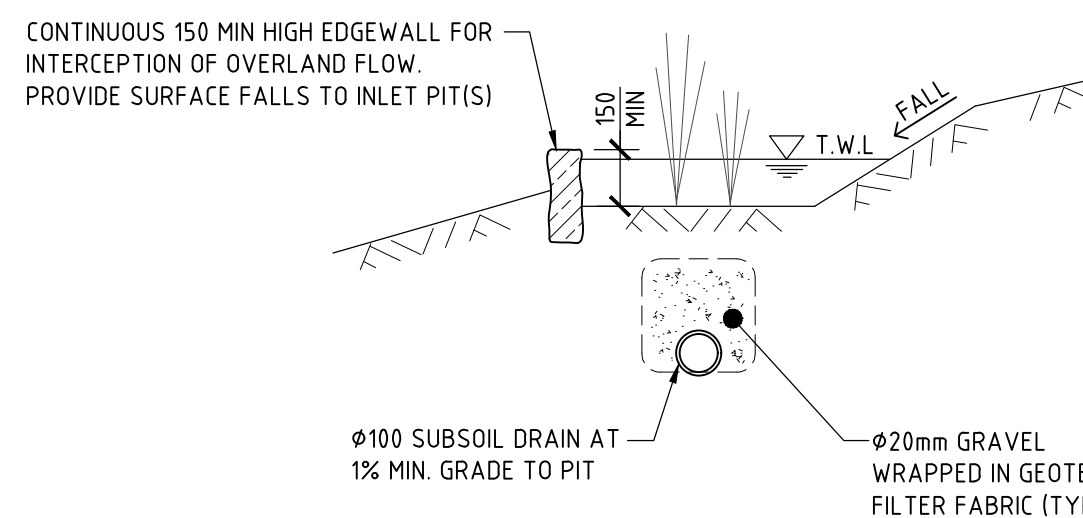
**SITE DRAINAGE PLAN**  
SCALE 1:100



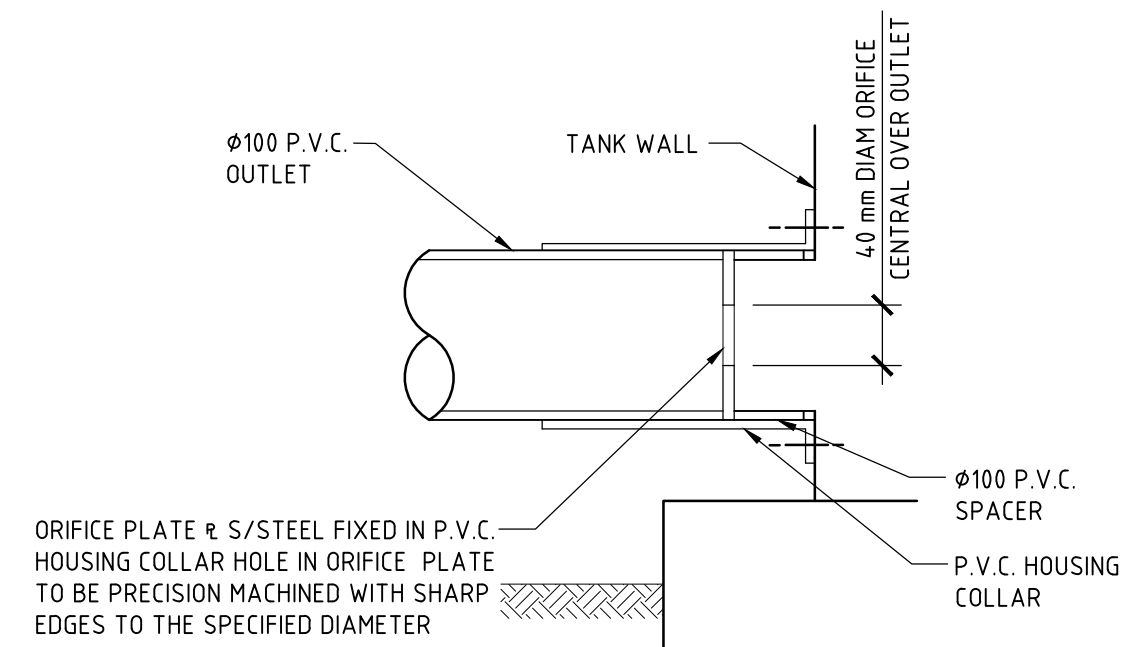
**DETAIL C**  
SCALE 1:10  
TYPICAL SURFACE INLET PIT DETAIL



**DETAIL A**  
SCALE 1:20



**DETAIL B**  
SCALE 1:20



**DETAIL D**  
SCALE 1:5  
DETENTION STORAGE OUTLET

STORMWATER SYSTEM DESIGN DATA	
SITE DATA	
SITE AREA = 1516 m <sup>2</sup> (100%)	
PROPOSED IMPERVIOUS AREA = 369 m <sup>2</sup> (24%)	
PROPOSED LANDSCAPED AREA = 1147 m <sup>2</sup> (76%)	
EXISTING IMPERVIOUS AREA = 0 m <sup>2</sup> (0%)	
EXISTING LANDSCAPED AREA = 1516 m <sup>2</sup> (100%)	

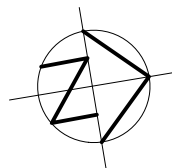
ISSUE DATE	REVISION
18 JUN 2024	UPDATED PLAN TO SUIT LATEST ARCHITECTURAL PLANS

STORMWATER MANAGEMENT PLAN 32 BELLARA AVENUE, NORTH NARRABEEN – HOUSE A			
DRAWN LI	DATE 19 DECEMBER 2023	CHECKED <i>[Signature]</i> BE Civil (Hons) MIE Aust.	SCALE @ A1 1:100 1:20 1:5
ENGINEER RB			



DRAWING NO  
**STORM-1/A**





BELLARA  
AVENUE

600 SQ. INLET PIT  
GRATE R.L. - 27.90  
INVERT R.L. - 27.30

SEE STORM-1 FOR  
CONTINUATION

600 SQ. INLET PIT  
GRATE R.L. 24.70  
INVERT R.L. 23.90

PROPOSED STORMWATER LINE TO COUNCIL  
PIT SPP57424 IN NAREEN PARADE VIA  
APPROVED EASEMENT VIDE DEALING  
AS493623 THROUGH 84 NAREEN PARADE

EXISTING 1000 WIDE  
EASEMENT TO DRAIN WATER  
VIDE DEALING AS493623

600 SQ. INLET PIT  
GRATE R.L. 24.50  
INVERT R.L. 23.60

600 SQ. INLET PIT  
GRATE R.L. 27.00  
INVERT R.L. 26.40

PROPOSED 1000 WIDE  
DRAINAGE EASEMENT

PROVIDE 150 WIDE GRATED  
DRAIN ACROSS DRIVE

HOUSE A

PROVIDE 300 SQ. BY 300 DEEP FLUSH  
PIT WITH Ø100 BRANCH P.V.C.  
CONNECTION WITH SCREW CAP END TO  
PROPOSED CHARGED DRAINAGE LINE TO  
ALLOW FOR FLUSHING & MAINTENANCE

NOTE: TURN Ø100 'CHARGED' P.V.C. DOWNPIPES  
UP WALL SO ARE WATERTIGHT TO 10m ABOVE  
TOP OF DETENTION STORAGE TANK (TYP)

PROVIDE STRAMIT 150 HALF ROUND EAVES  
GUTTERS OR APPROVED EQUIVALENT  
7700mm<sup>2</sup> (MIN) EAVES GUTTER (TYP)

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.

NOTE: PLUMBER TO PERFORM WATER TESTING OF EXISTING  
PIPED SYSTEM TO DETERMINE CAPACITY AND STATE OF  
REPAIR. PLUMBER TO INSPECT & REPAIR DAMAGED SECTIONS  
OF EXISTING PIPE (INCLUDING DOWNPIPES) AS NECESSARY OR  
PROVIDE NEW DRAINAGE LINES WHERE NECESSARY SUBJECT  
TO THE APPROVAL BY THE SUPERVISING ENGINEER.

**STORMWATER DETENTION TANK**  
STORAGE VOLUME = 3059 LITRES  
STORAGE LENGTH = 2500mm  
STORAGE WIDTH = 700mm  
STORAGE DEPTH = 1860mm  
TOTAL STORAGE = 6118 LITRES  
TANK FLOOR = R.L. 31.00  
PROVIDE Ø100 HIGH LEVEL & Ø40 LOW LEVEL  
CONNECTIONS BETWEEN TANKS & Ø100 HIGH LEVEL  
OVERFLOW OUTLET TO SITE DRAINAGE SYSTEM

Ø100 DOWNPIPE  
(TYP)

450 SQ. BY 450 DEEP INLET PIT  
NOTE: ALL PITS TO HAVE 2.0m  
LONG SUB-SOIL TAIL INLET

SITE DRAINAGE PLAN  
SCALE 1:100

#### DRAINAGE NOTES

- + DENOTES EXISTING GROUND LEVEL
- FALL STORMWATER PIPES AT 1% MIN UNLESS OTHERWISE NOTED.
- SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
- SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
- ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
- CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
- INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
- ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
- REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
- PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
- APPROVED PRE-CAST PITS MAY BE USED.
- 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
- 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.
- 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.
- 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.
- PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
- 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.
- THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFIER 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

TOTAL SITE AREA = 1610 m<sup>2</sup>  
AREA TO OSD = 226 m<sup>2</sup> (100% IMPERVIOUS)  
AREA BYPASSING OSD = 1384 m<sup>2</sup> (17% IMPERVIOUS)

#### PRE-DEVELOPED SITE FLOWS

20% AEP = 33 l/s  
1% AEP = 71 l/s

#### DEVELOPED SITE FLOWS

20% AEP = 33 l/s  
1% AEP = 71 l/s

#### DETENTION SYSTEM DATA

TOTAL SSR = 4.8 m<sup>3</sup>  
ORIFICE DIAMETER = 50 mm

#### STORMWATER SYSTEM DESIGN DATA

##### SITE DATA

SITE AREA = 1609m<sup>2</sup> (100%)  
PROPOSED IMPERVIOUS AREA = 482 m<sup>2</sup> (30%)  
PROPOSED LANDSCAPED AREA = 1127 m<sup>2</sup> (70%)  
EXISTING IMPERVIOUS AREA = 0 m<sup>2</sup> (0%)  
EXISTING LANDSCAPED AREA = 1609 m<sup>2</sup> (100%)

ISSUE DATE	REVISION
18 JUN 2024	UPDATED PLAN TO SUIT LATEST ARCHITECTURAL PLANS
12 JULY 2024	AMENDMENTS TO TITLE BLOCK

TITLE STORMWATER MANAGEMENT PLAN 62 & 64 POWDERWORKS ROAD, NORTH NARRABEEN (LOWER SECTION) – HOUSE C			
DRAWN	DATE	CHECKED	SCALE @ A1
LI	19 DECEMBER 2023		1:100
ENGINEER			
RB			

**TAYLOR**  
CONSULTING  
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO  
**STORM-2/B**