TAYLOR
CONSULTING
CIVIL & STRUCTURAL ENGINEERS

WATER CYCLE MANAGEMENT STUDY

‘River Run’ Subdivision

7 Wollondilly Avenue
Goulburn

September 2023

“Seascape” Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

TABLE OF CONTENTS

APPENDICES

1.0 EXECUTIVE SUMMARY

The "River Run" subdivision at 7 Wollondilly Avenue, Goulburn, represents a significant urban development comprising two stages. To address the critical issue of water quality and ensure that it has either a neutral or beneficial effect (NorBE) on the environment, Taylor Consulting Engineers has undertaken a Water Cycle Management Study (WCMS) following the “Neutral or Beneficial Effect on Water Quality Assessment Guideline 2022”. This study aims to provide a comprehensive framework for managing water quality, reducing environmental impact, and enhancing the ecological health of "River Run."

2.0 INTRODUCTION

"River Run" at 7 Wollondilly Avenue, Goulburn, is a two-stage fourteen-lot subdivision designed to accommodate a growing population and foster sustainable urban development. This study, prepared by Taylor Consulting Engineers, focuses on implementing a WCMS approach to ensure that the water quality within the subdivision is either neutral or beneficial to the environment.

The project is to be delivered in two stages. Stage one sets to subdivide the existing property into three lots, two of which have existing dwellings and one super lot, which will be subdivided in stage two. Stage two will see the remaining super lot subdivided into eleven new lots and an additional lot containing a road to be divested to the Goulburn City Council.

2.1 OBJECTIVES

The primary objectives of this WCMS, conducted by Taylor Consulting Engineers, are as follows:

- Evaluate the existing water quality within the "River Run" subdivision;
- Develop strategies to maintain or improve water quality to a neutral or beneficial state;
- Implement measures for sustainable stormwater management that protect water quality;
- Design a wastewater treatment system that maintains or enhances environmental water quality;
- Promote water conservation and reuse practices that contribute to water quality goals; and
- Ensure the long-term resilience of water quality management in "River Run."

3.0 SITE DESCRIPTION

The site is located in the suburb of Goulburn and is situated approximately 6km to the northeast of Goulburn CBD. A site locality map is included in Appendix A.

Wollondilly River is located approximately 100m to the east of the subject property. The Wollondilly River is part of the Sydney Drinking Water catchment.

The site covers an area of 1.30Ha which grades from the west to the eastern boundary. The site currently contains five dwellings. The existing dwellings served as accommodation for the adjacent hospital complex.

3.1 PROPOSED WORKS

The proposed works are summarised as follows:

- Two staged, fourteen-lot subdivisions;
- Reconstruct the road reserve on the northern side of Wollondilly Avenue and provide a new pedestrian walkway;
- Construction of a new Council road to access the proposed lots;
- Construction of access driveways to the existing dwellings;
- Construction of driveways from the new access road;
- Construction of new Council drainage assets; and
- Construction of inter-allotment drainage line for all the new lots.

Architectural and stormwater plans for the proposed works are attached in Appendix B and Appendix C, as is a detailed site survey plan.

3.2 EXISTING WATER QUALITY

Taylor Consulting Engineers conducted a baseline water quality assessment, a comprehensive assessment of the existing water quality at 7 Wollondilly Avenue, Goulburn, and in the vicinity of "River Run", forming this study's basis.

The existing dwellings have sewer connections. These existing connections will be upgraded as part of Stage 1 of the subdivision.

There are no current water quality devices on the site of the subject property. The site is predominantly a “greenfield” site with five dwellings.

3.3 PROPOSED SITE DRAINAGE & WATER QUALITY

Taylor Consulting Engineers has developed strategies to mitigate and control potential sources of water pollution within the subdivision and from the road to be divested to the Council.

The proposed design ensures sustainable stormwater management practices that prevent contamination and enhance the water quality of the Wollondilly River.

The “River Run” development stormwater will be treated by multiple water quality improvement devices, significantly reducing the pollutant loadings post-development.

The system includes seven pit inlet filters and two in-ground proprietary water quality devices. The post-develop site will all have a rainwater tank.

	Inflow	
	Pre	Post
Flow (ML/yr)	1.66	1.85
Total Suspended Solids (kg/yr)	202	36.2
Total Phosphorus (kg/yr)	0.405	0.258
Total Nitrogen (kg/yr)	3.13	2.43
Gross Pollutants (kg/yr)	37.2	111E-6

Image 1 - Pre and Post-Development Water Quality Output from MUSIC Modelling Software

Refer to Appendix D for the development of water quality modelling.

3.4 PROPOSED WASTE-WATER

The existing “River Run” site dwellings are connected to the Goulburn Mulwaree Council sewer infrastructure. The existing connections will

be decommissioned, and a new sewer system will service all proposed lots.

3.5 PROPOSED STAGING SITE DRAINAGE & WATER QUALITY

The proposed staging of the “River Run” subdivision will result in the water quality devices being constructed in two stages, each stage achieving the NorBe water quality requirements.

Each proposed lot will include a new rainwater storage tank for non-potable reuse within the property.

The inlet baskets and offline filter pits on the inter-allotment drainage line will be constructed as part of Stage 1.

The proposed road water quality includes pit baskets within the proposed road and an offline filter pit within the Council road reserve. The construction of these water quality devices will be undertaken in stages. The filter baskets within the proposed road to be divested to the Council will be included in the Stage 2 works.

The Section 138 works within Wollondilly Avenue will include an offline filter pit incorporated into the road reserve on Wollondilly Avenue. Refer to Appendix D for the MUSIC water quality modelling results demonstrating how the proposed system achieves the Water NSW requirement of NorBe.

4.0 WATER CYCLE MANAGEMENT COMPLIANCE

The stages ‘River Run’ subdivision has been designed to meet the objectives of the Council's Water Cycle Management Policy for the project's life.

4.1 SPECIFIC CONTROLS - CONSTRUCTION

Erosion and sediment control plans (ESCP) are a critical component of construction and land management practices to mitigate the adverse environmental impacts of soil erosion and sedimentation.

The measures outlined in the ESCP play a pivotal role in safeguarding the ecological integrity of natural environments, particularly in sensitive areas like drinking water catchments. ESCPs are designed to prevent and manage soil erosion and the subsequent transport of sediments into nearby water bodies, ensuring the preservation of water quality, aquatic ecosystems, and the overall sustainability of the surrounding environment.

By implementing effective ESCP, construction projects can minimise their environmental footprint and maintain compliance with regulatory requirements while contributing to the long-term health and resilience of ecosystems in the region.

4.2 SPECIFIC CONTROLS - ROLES & RESPONSIBILITIES

Implementing an erosion and sediment control plan within a drinking water catchment in WaterNSW catchments is crucial to protecting the water source's quality. Different positions play various roles and responsibilities in ensuring the plan's successful execution. Here are some typical roles and responsibilities for key positions involved:

- **Project Manager**
    - Overall responsibility for the project's success, including erosion and sediment control;
    - Develop and oversee the ESCP;

- Ensure compliance with all relevant laws and regulations
- Allocate resources and budget for erosion control measures;
- Communicate progress to stakeholders and senior management; and
- Report any incidents observed on-site to the site supervisor immediately.

- **Site Supervisor**
  - Implement the ESCP on-site;
  - Ensure all personnel receive proper training in erosion and sediment control;
  - Ensure the proposed ESCP measures are appropriate when works are being carried out across the development site;
  - Ensure any potential or actual pollution issues are reported following the WaterNSW guidelines;
  - Oversee the installation of erosion control measures, such as silt fences, sediment basins, and erosion control blankets;
  - Record dates, required actions and way/how reported for the ESCP measures; and
  - Conduct regular inspections and maintenance of control measures every week, before any predicted significant rainfall event and following any significant storm event.

- **Construction Crews**
  - Follow the ESCP guidelines and instructions provided by the site supervisor;
  - Participate in erosion and sediment control training;
  - Properly install and maintain control measures; and
  - Report any incidents observed on-site to the site supervisor immediately.

- **Environmental Officer/Consultant**
  - Assess the site's environmental conditions and risks;
  - Recommend erosion and sediment control measures specific to the site;
  - Monitor the site's environmental impact throughout construction;
  - Monitor the site regularly to ensure compliance with the ESCP;
  - Document and report any violations or non-compliance issues;
  - Coordinate corrective actions when necessary;
  - Maintain records of inspections and compliance efforts; and

- Report any incidents observed on-site to the site supervisor immediately.

4.3 SPECIFIC CONTROLS - POLLUTION SOURCES

Construction sites, while essential for development, can pose significant environmental challenges, primarily by generating various pollutants. These pollutants originate from a multitude of sources inherent to construction activities and can have adverse impacts on air, water, and soil quality, as well as overall ecosystem health. Understanding and mitigating these pollution sources is paramount for responsible construction management.

Key pollutant sources can be categorised:

- Gross Pollutants - Waste materials, food packaging, shipping packaging.
- Hydrocarbons - Spilling during plant refuelling, poor handling practices for storage and transportation and leakage from site vehicles due to damage or improper maintenance.
- Surfactants - Cleaning products and spill kit.
- Nutrients “Phosphorous and Nitrogen - fertilising stabilisation work, effluent from site ablutions, byproducts of construction materials and stormwater runoff.
- Sediment - Construction material, dust, wind-driven particles and vehicle transportation.

By comprehending the origins of these pollutants, the site manager and site supervisor can implement effective measures to minimise environmental harm and promote sustainable construction practices.

4.4 SPECIFIC CONTROLS - POLLUTION CONTROL

It is proposed to maintain each of the sources of construction pollution by implementing source control. This will be undertaken by the following:

- Gross pollutants - Provide secure bins at material storage areas, staff amenities or site buildings and active work areas.
- Hydrocarbons - Bunded refuelling /maintenance areas, ensure that vehicles are well maintained and that all operators are adequately trained on the plant.
- Surfactants - Maintain the site safety data and provide adequate and compliant storage for cleaning products, paints, oils and lubricants.
- Nutrients - Ensure a controlled approach to application, correct storage and erosion and sediment control measures are implemented as per ESCP.
- Sediment - Control measure to be implemented as specified in the ESCP.

Implementing these source control methods as part of this comprehensive construction pollution prevention plan will significantly reduce the environmental impact of construction activities and promote responsible and sustainable construction practices.

5.0 STAGED CONSTRUCTION

The “River Run” subdivision will be constructed under two stages. Key to the success of the construction will be the sediment and erosion

control measures protecting the water quality devices installed during the Stage 1 works.

Stage two construction involves constructing a road to be divested to the Council and earthworks to augment the form of proposed lots, including a new drainage system.

The ESCP will be implemented, and the site supervisor is to follow the procedures outlined in the previous sections to ensure the protection of the existing infrastructure.

6.0 MAINTENANCE

For the long-term functionality of the “River Run” subdivision water quality system, inspections and maintenance will be scheduled and undertaken on the Atlan Hydrosystems and the Atlan Stormsacks.

Atlan specifies the Hysrosystem 1500 to be inspected every four months and cleaned out when the collected debris has reached the required trigger level. The inspection and maintenance are to be carried out by qualified personnel.

The Atlan Stormsacks are visible through the inlet pit they have been installed within. Maintenance periods are viable depending on the pollutant loading of the catchment. Refer to Appendix G for the Atlan product brochures and service periods.

7.0 SUMMARY

The WCMS for the "River Run" subdivision at 7 Wollondilly Avenue, Goulburn, prepared herein by Taylor Consulting Engineers, outlines a comprehensive approach to managing water quality, reducing environmental impact, and enhancing water quality within the catchment.

Implementing the recommendations presented in this study will help "River Run" achieve its goal of maintaining or improving water quality to a neutral or beneficial state, ensuring the well-being of its residents and the environment. This WCMS serves as a roadmap for the development's water quality objectives.

Should you have any questions or queries, please do not hesitate to contact the undersigned.

TAYLOR CONSULTING

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

Appendix A

Locality Map - 7 Wollondilly Avenue, Goulburn

Site Map - 7 Wollondilly Avenue, Goulburn

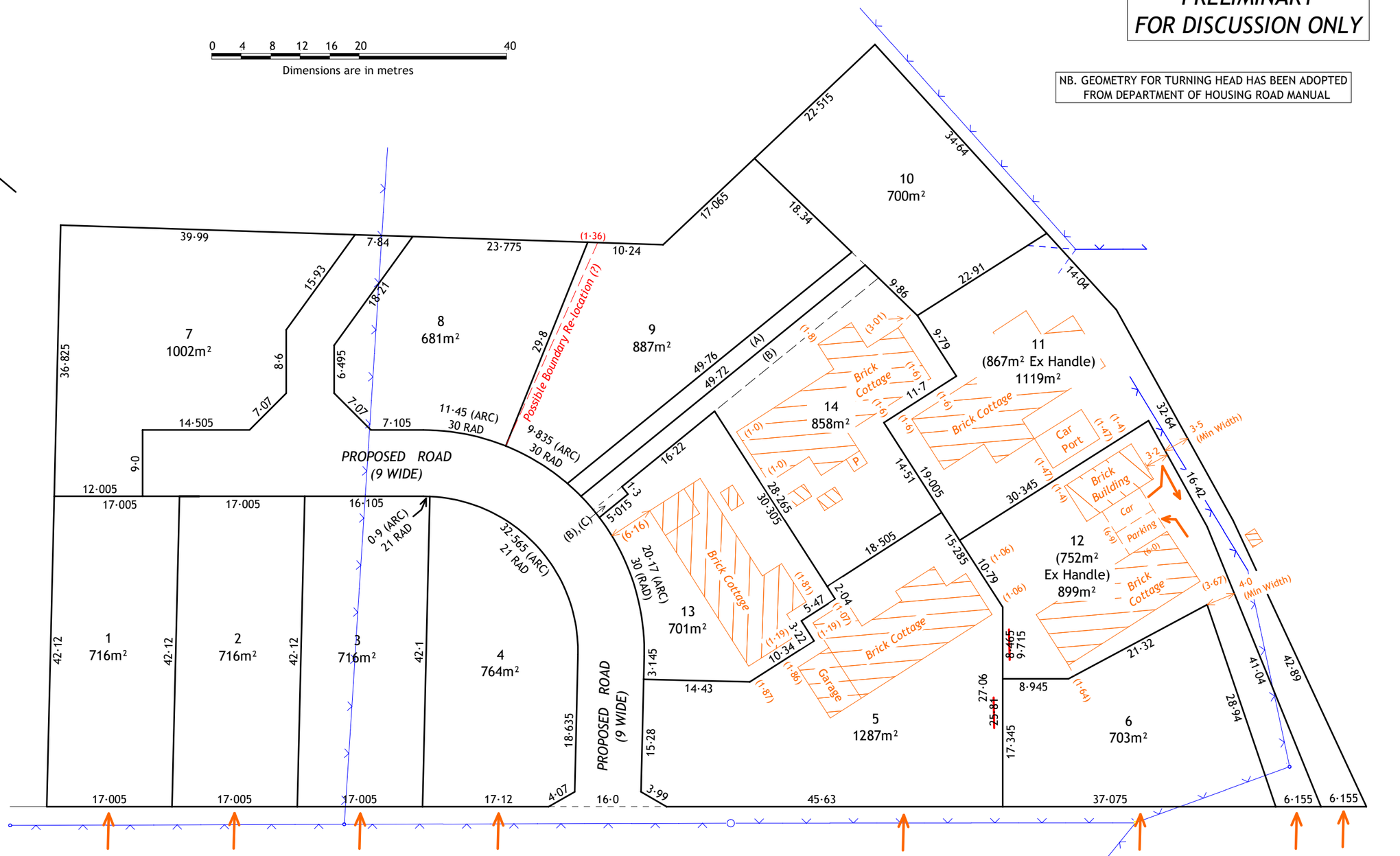
Appendix B

PRELIMINARY
FOR DISCUSSION ONLY

NB. GEOMETRY FOR TURNING HEAD HAS BEEN ADOPTED FROM DEPARTMENT OF HOUSING ROAD MANUAL

MGA

0 4 8 12 16 20 40
Dimensions are in metres



Indicates vehicular access to lot

(A) RIGHT OF CARRIAGEWAY 2·5 WIDE
(B) RIGHT OF CARRIAGEWAY 2·5 WIDE & VARIABLE WIDTH
(C) BIN & LETTERBOX ENCLOSURE

NOTES.
1. *This plan has been prepared to accompany a modification of an existing development consent to be lodged with Goulburn Mulwaree Council and should not be used for any other purpose.*
2. *Areas are approximate and subject to survey and Council requirements.*
3. *Each lot maybe affected by easements - the position of easements has not been finalised.*
4. *No reliance should be placed on this plan for any financial dealing involving the land.*
6. *These notes form an integral part of the plan.*

PLAN OF PROPOSED SUBDIVISION
SITE ADDRESS - WOLLONDILLY AVENUE, GOULBURN
TITLE DETAILS - LOT 2 DP1078852
LGA - GOULBURN MULWAREE

SCALE - 1:400 (A2)
AZIMUTH: DP1078852
CONTOUR INTERVAL - 0·2m
DATUM - AHD
DATE - 7/07/2023
REF - 22584

Premise
3/31 Clinton Street
PO Box 142
GOULBURN NSW 2580
T: 02 4822 1366
Email: goulburn@premise.com.au

Appendix C

WOLLONDILLY AVENUE

INTER-ALLOTMENT DRAINAGE PLAN

SCALE 1:300

NOTE: SEE SHEETS STORM-2 TO STORM-15 FOR DETAILED DRAINAGE FOR EACH LOT.
PLAN TO BE READ IN CONJUNCTION WITH S.R.L.E. ENGINEERING PLANS, PROJECT NO. T01506

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR C.C. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

ON-SITE DETENTION

ON-SITE DETENTION (OSD) HAS NOT BEEN PROVIDED DUE TO THE PROPERTY BEING LOCATED ADJACENT TO WOLLONDILLY RIVER. DRAINS HYDRAULIC MODELING OF THE INTER-ALLOTMENT DRAINAGE SYSTEM HAS BEEN PROVIDED TO THIS REPORT.

ABBREVIATIONS

U.O.N.	UNLESS OTHERWISE NOTED
T	TOP
B	BOTTOM
H.D.	HOT DIPPED
GALV.	GALVANISED
MIN.	MINIMUM
c/c	CENTRE TO CENTRE
SQ.	SQUARE
TYP.	TYPICAL

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

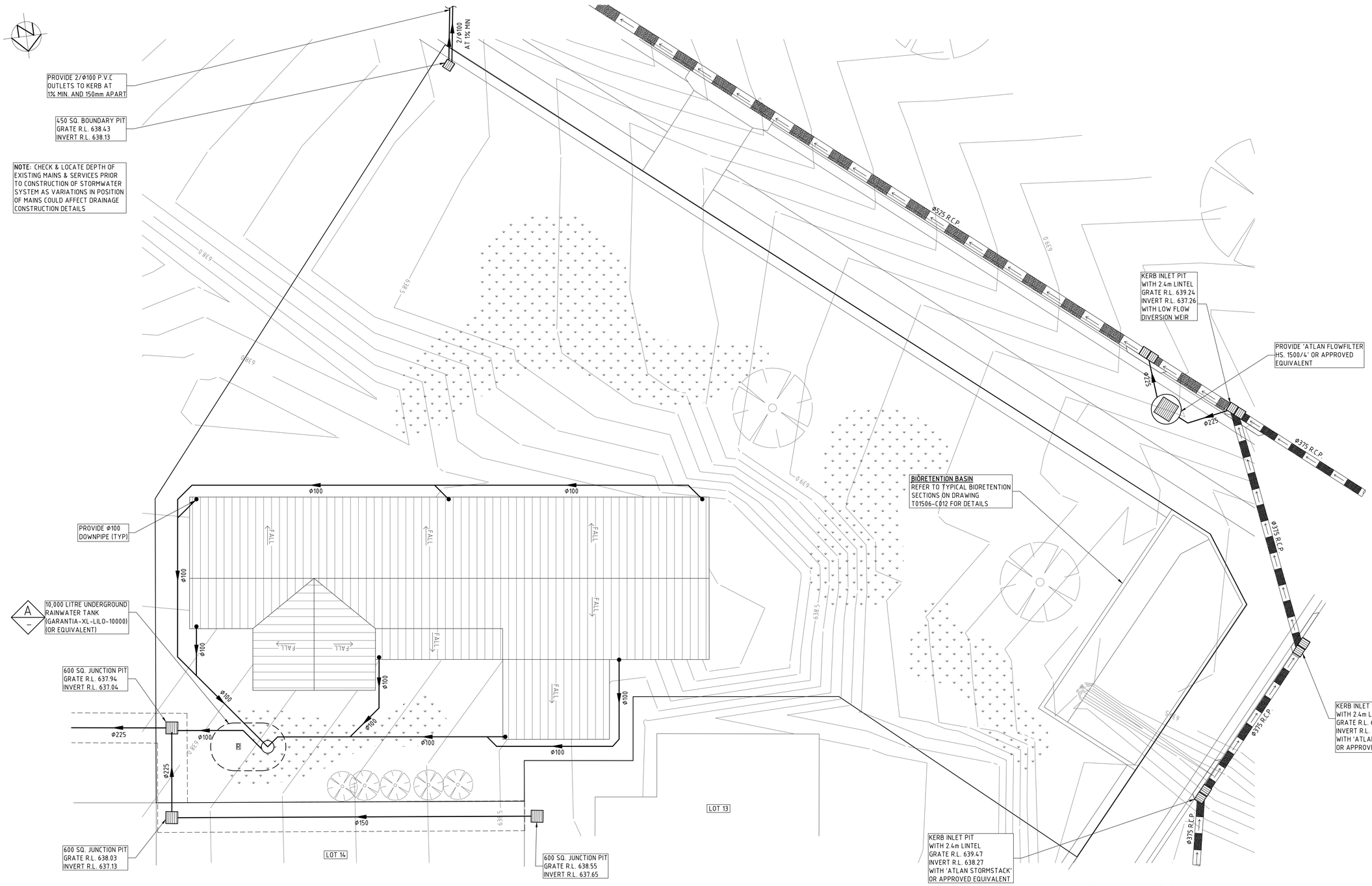
TITLE
INTER–ALLOTMENT DRAINAGE PLAN
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:300

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM–1/B

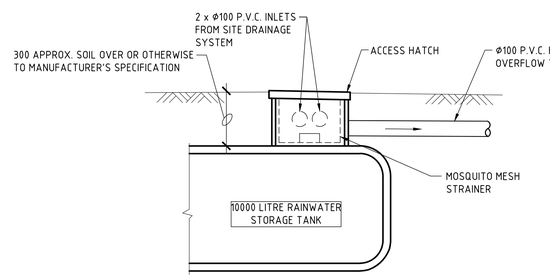
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 1286 m^2 (100%)
PROPOSED IMPERVIOUS AREA = 328 m^2 (26%)
PROPOSED LANDSCAPED AREA = 958 m^2 (74%)
EXISTING IMPERVIOUS AREA = 328 m^2 (26%)
EXISTING LANDSCAPED AREA = 958 m^2 (74%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

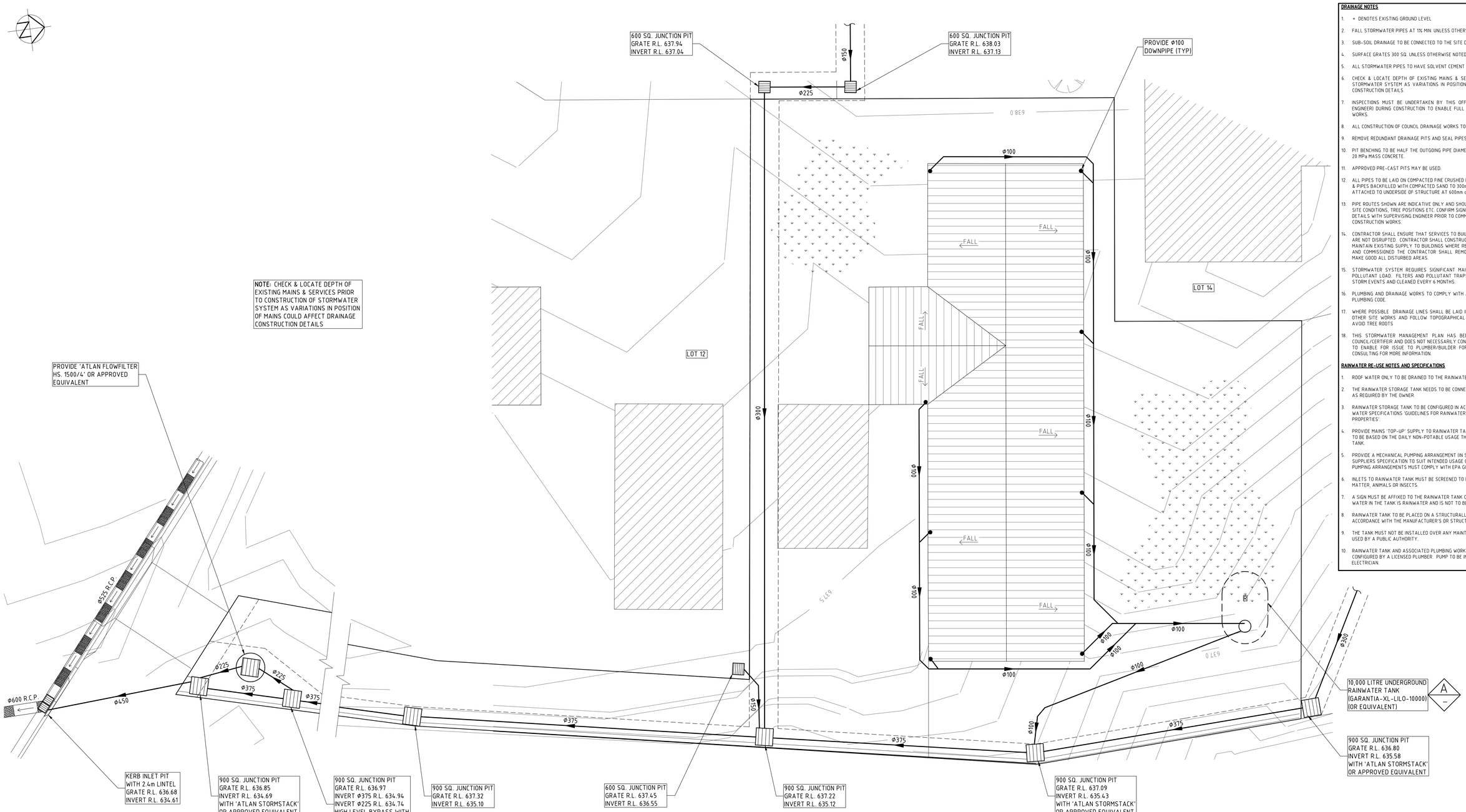
TITLE
STORMWATER MANAGEMENT PLAN
LOT 5, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

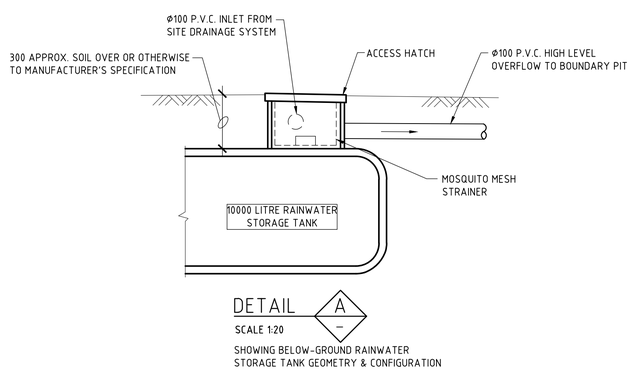
DRAWING NO. STORM-2/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 1



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 1221 m^2 (100%)
PROPOSED IMPERVIOUS AREA = 654 m^2 (54%)
PROPOSED LANDSCAPED AREA = 567 m^2 (46%)
EXISTING IMPERVIOUS AREA = 654 m^2 (54%)
EXISTING LANDSCAPED AREA = 567 m^2 (46%)

STAGE 1 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

TITLE
STORMWATER MANAGEMENT PLAN
LOT 11, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-3/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

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 Φ100 DOWNPIPE (TYP)

900 SQ. JUNCTION PIT
GRATE R.L. 637.00
INVERT R.L. 635.20
WITH 'ATLAN STORMSTACK'
OR APPROVED EQUIVALENT

LOT 6

LOT 5

900 SQ. JUNCTION PIT
GRATE R.L. 637.94
INVERT R.L. 637.04

900 SQ. JUNCTION PIT
GRATE R.L. 638.03
INVERT R.L. 637.13

LOT 11

600 SQ. JUNCTION PIT
GRATE R.L. 637.45
INVERT R.L. 636.55

900 SQ. JUNCTION PIT
GRATE R.L. 637.22
INVERT R.L. 635.12
WITH 'ATLAN STORMSTACK'
OR APPROVED EQUIVALENT

Φ450 TO KERB INLET PIT

900 SQ. JUNCTION PIT
GRATE R.L. 636.85
INVERT R.L. 634.69
WITH 'ATLAN STORMSTACK'
OR APPROVED EQUIVALENT

900 SQ. JUNCTION PIT
GRATE R.L. 636.97
INVERT Φ375 R.L. 634.94
INVERT Φ225 R.L. 634.74
HIGH LEVEL BYPASS WITH
'ATLAN STORMSTACK' OR
APPROVED EQUIVALENT

900 SQ. JUNCTION PIT
GRATE R.L. 637.32
INVERT R.L. 635.10
WITH 'ATLAN STORMSTACK'
OR APPROVED EQUIVALENT

A

10,000 LITRE UNDERGROUND
RAINWATER TANK
(GARANTIA-XL-LILO-10000)
(OR EQUIVALENT)

FALL

Φ100

Φ150

Φ225

Φ300

Φ450

Φ375

6380

6375

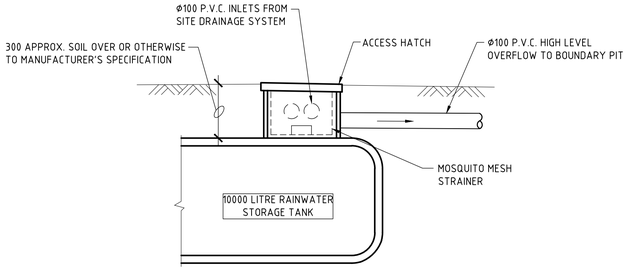
6370

6365

6360

SITE DRAINAGE PLAN

SCALE 1:100
NOTE: WORK TO BE UNDERTAKEN AS PART OF STAGE 1



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 1,060 m² (100%)
PROPOSED IMPERVIOUS AREA = 449 m² (42%)
PROPOSED LANDSCAPED AREA = 611 m² (58%)
EXISTING IMPERVIOUS AREA = 449 m² (42%)
EXISTING LANDSCAPED AREA = 611 m² (58%)

STAGE 1 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

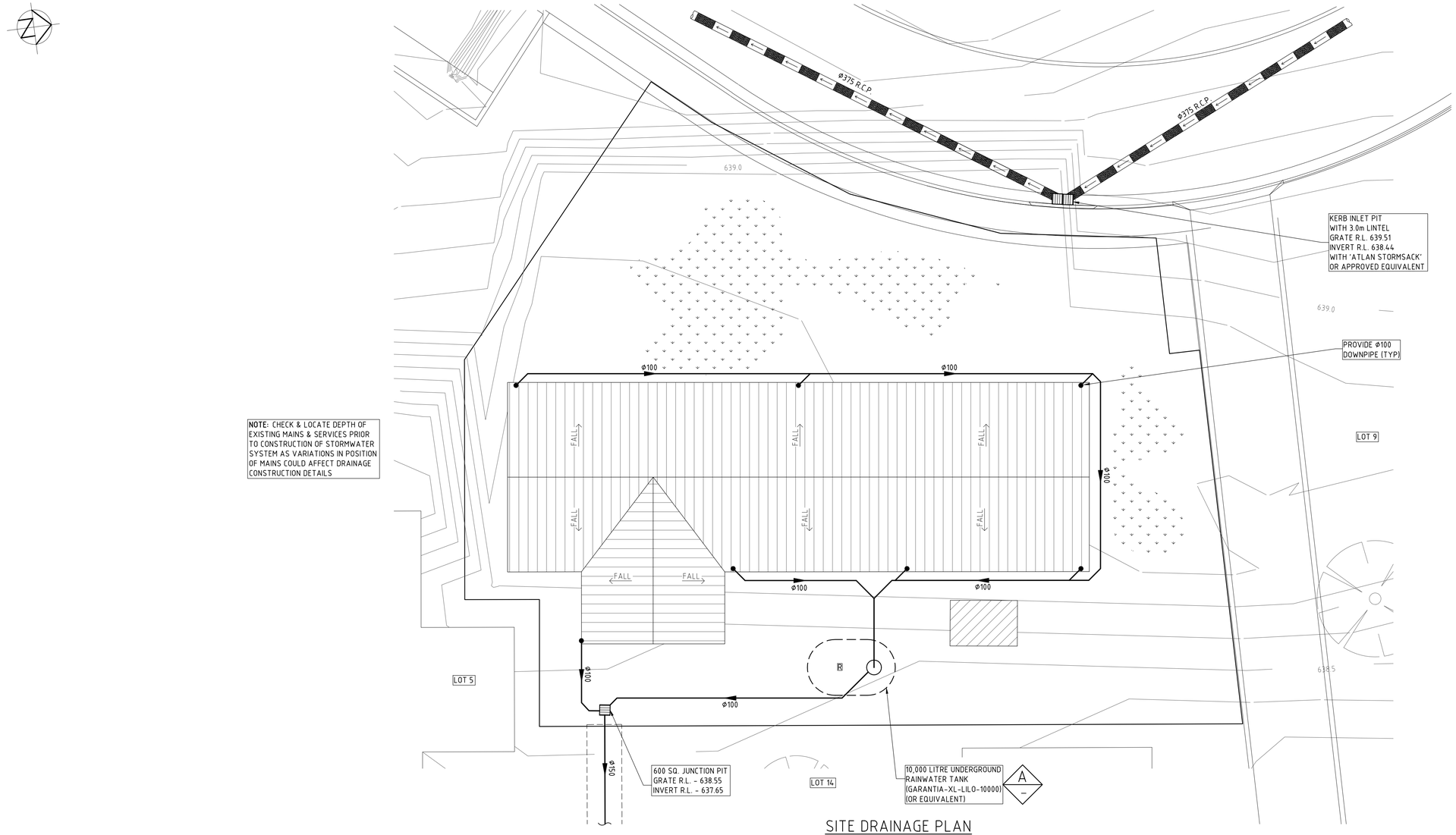
TITLE
STORMWATER MANAGEMENT PLAN
LOT 12, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-4/B

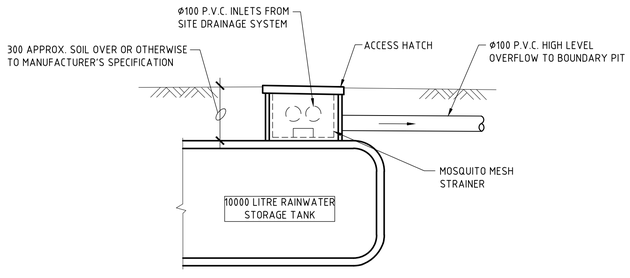
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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.
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 702 m^2 (100%)
PROPOSED IMPERVIOUS AREA = 240 m^2 (33%)
PROPOSED LANDSCAPED AREA = 462 m^2 (66%)
EXISTING IMPERVIOUS AREA = 240 m^2 (33%)
EXISTING LANDSCAPED AREA = 462 m^2 (66%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

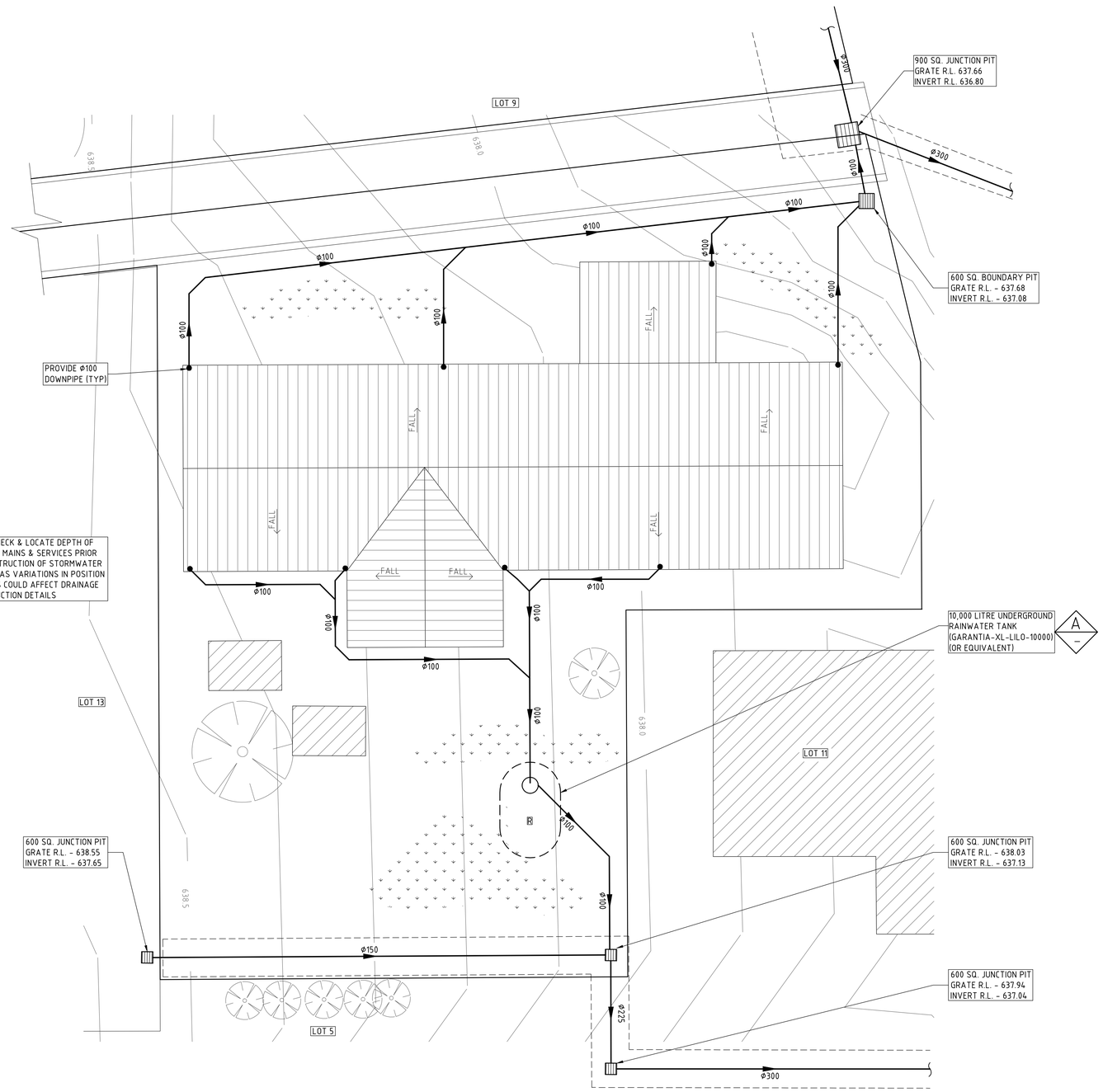
TITLE
STORMWATER MANAGEMENT PLAN
LOT 13, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-5/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

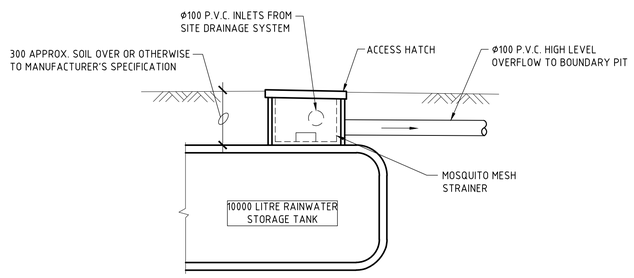
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 728 m^2 (100%)
PROPOSED IMPERVIOUS AREA = 265 m^2 (36%)
PROPOSED LANDSCAPED AREA = 463 m^2 (64%)
EXISTING IMPERVIOUS AREA = 265 m^2 (36%)
EXISTING LANDSCAPED AREA = 463 m^2 (64%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATED PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

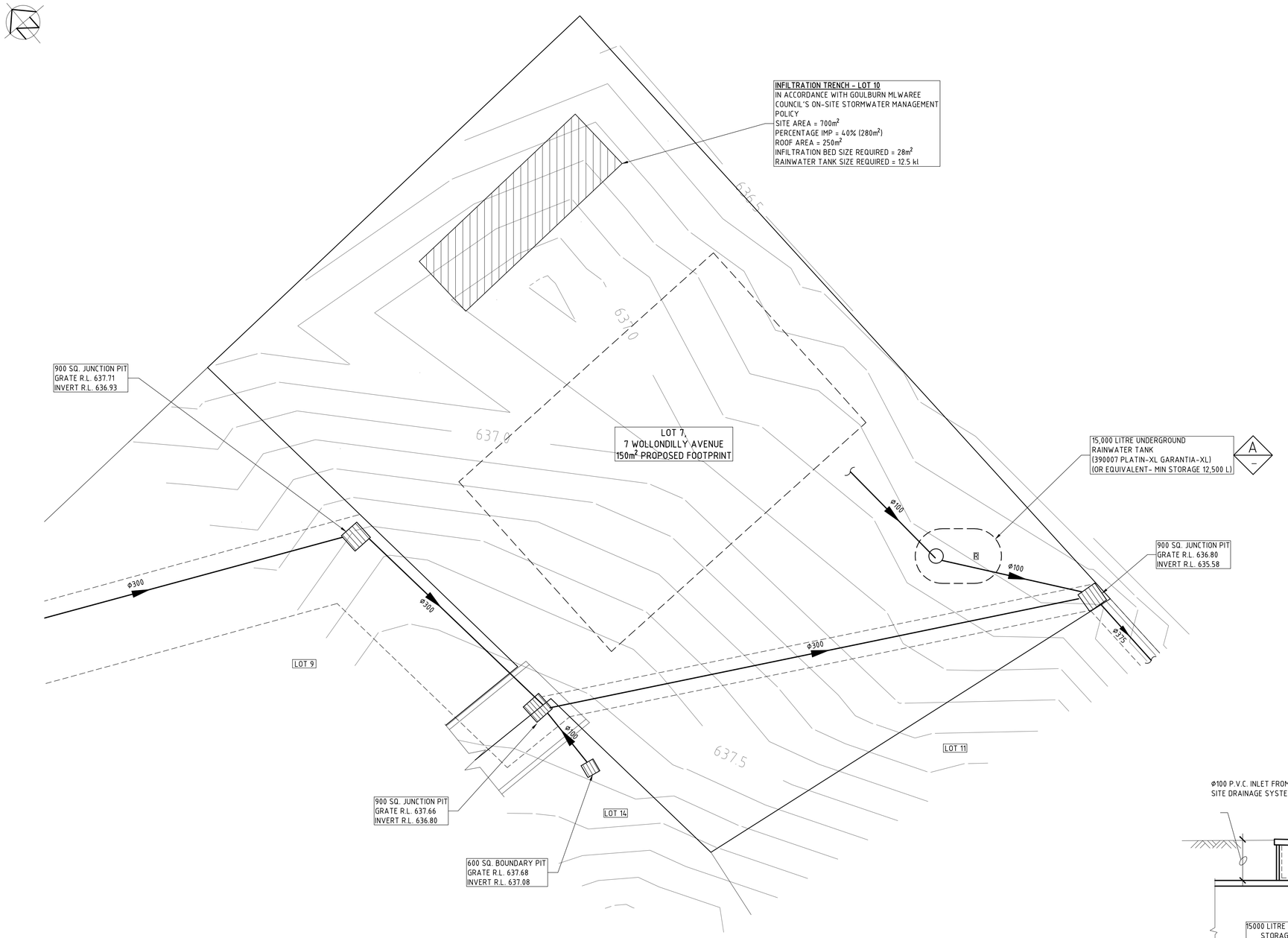
TITLE
STORMWATER MANAGEMENT PLAN
LOT 14, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-6/B

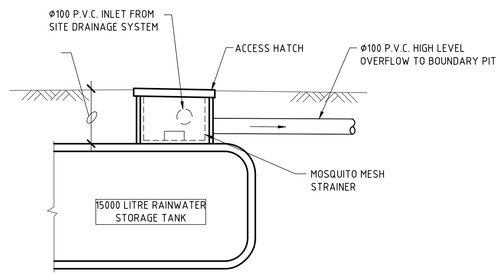
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

NOTE: WORK TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 696 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (22%)
PROPOSED LANDSCAPED AREA = 696m² (78%)
EXISTING IMPERVIOUS AREA = 150 m² (22%)
EXISTING LANDSCAPED AREA = 696 m² (78%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATED PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

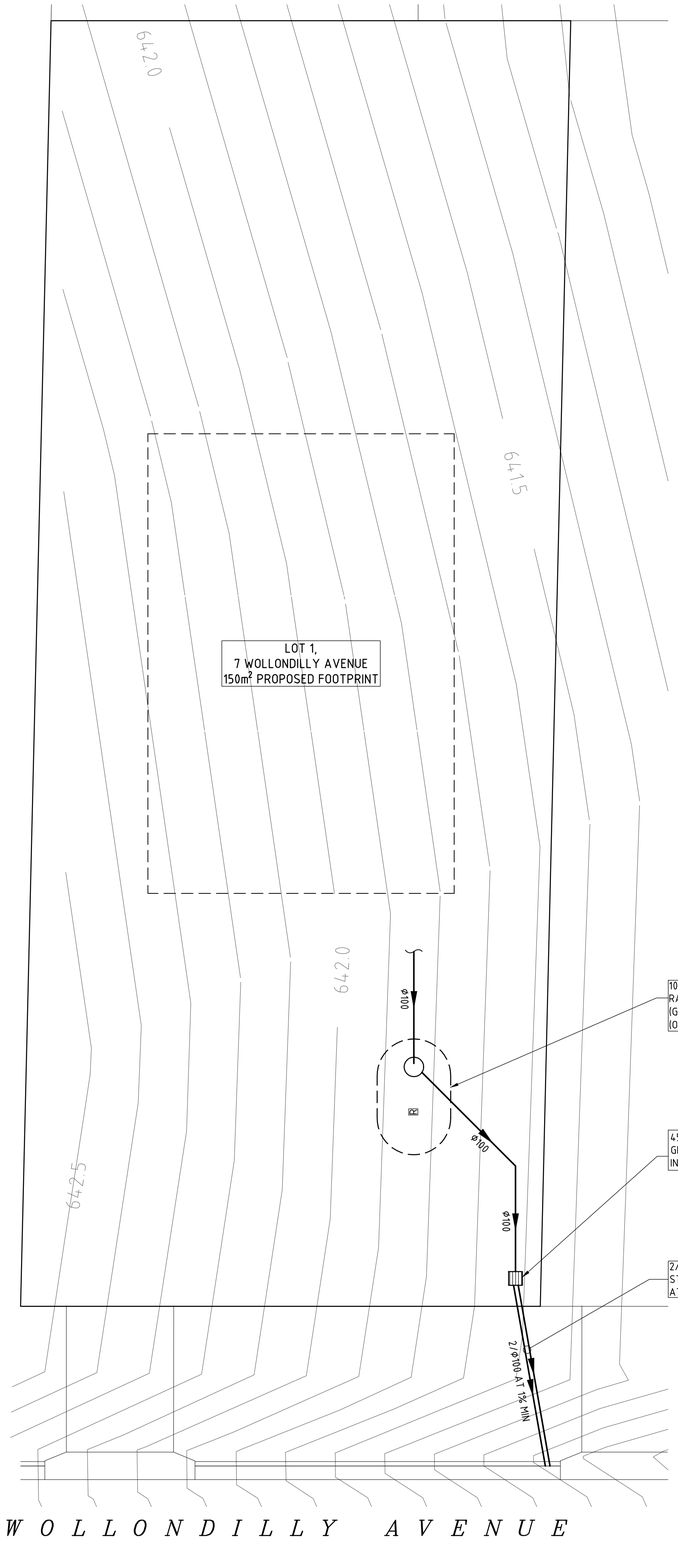
TITLE
STORMWATER MANAGEMENT PLAN
LOT 10, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-7/B

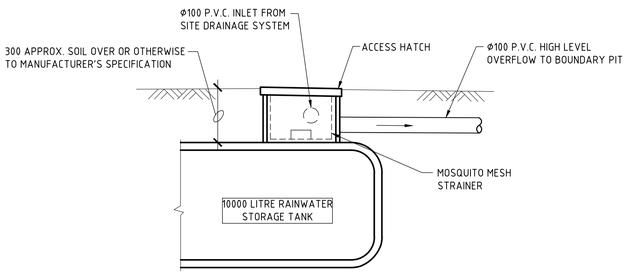
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

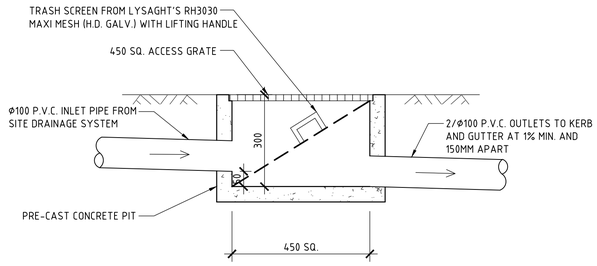
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION



DETAIL B

SCALE 1:10

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 712 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (21%)
PROPOSED LANDSCAPED AREA = 562 m² (79%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 712 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

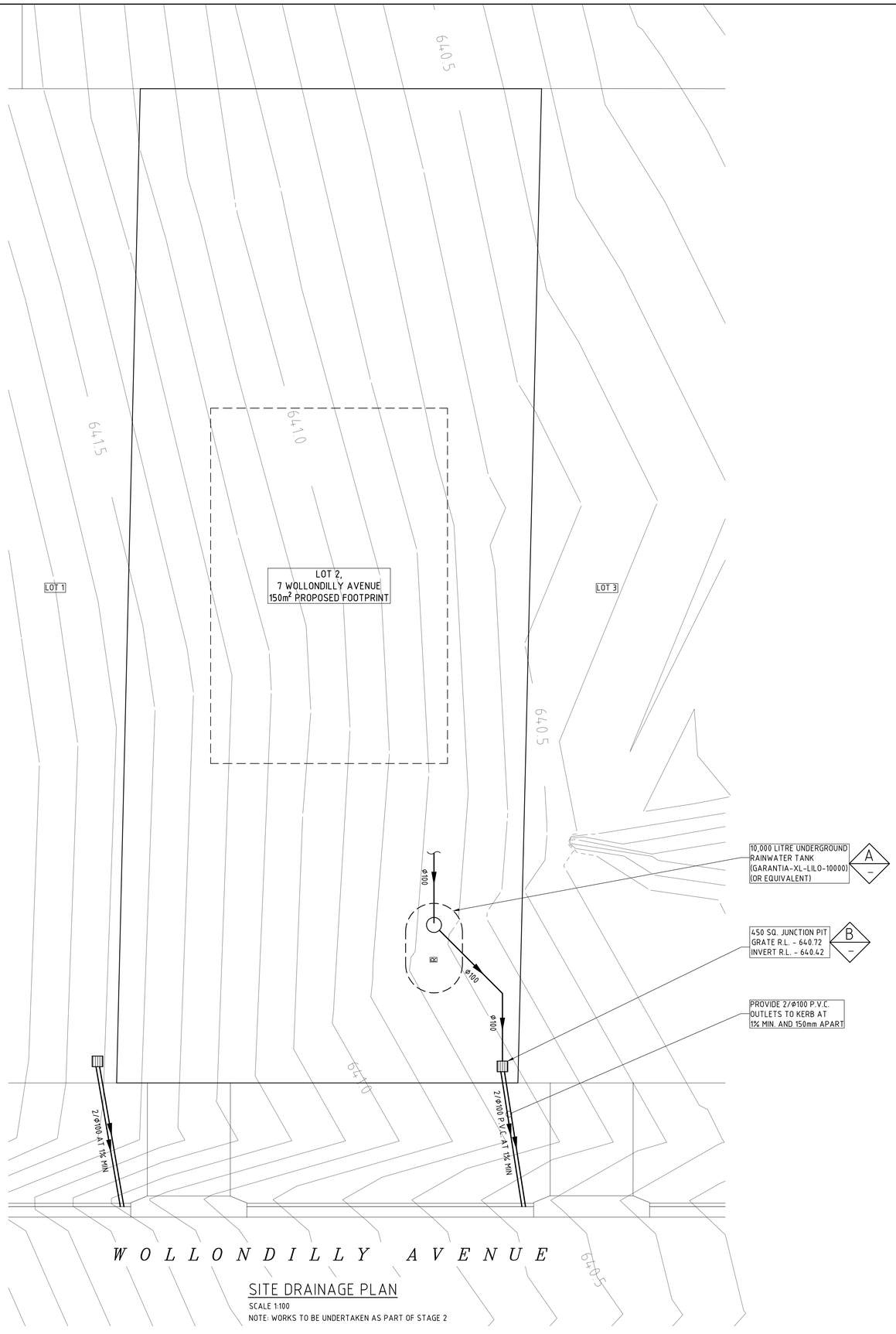
TITLE
STORMWATER MANAGEMENT PLAN
LOT 1, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-8/B

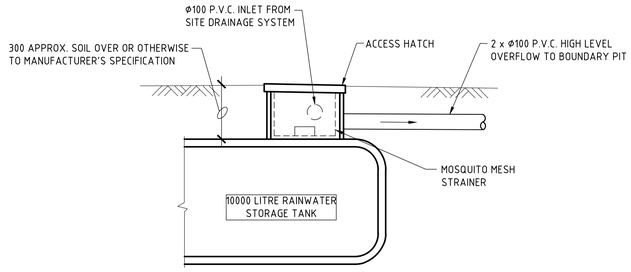
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

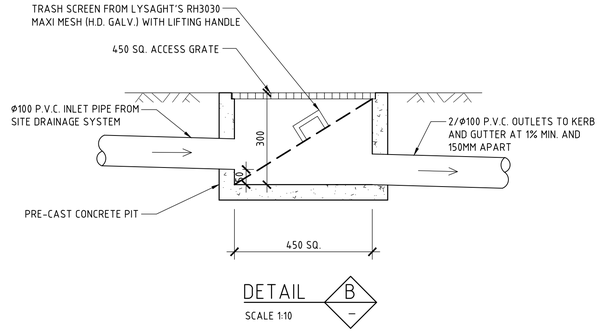
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION



DETAIL B

SCALE 1:10

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 711 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (21%)
PROPOSED LANDSCAPED AREA = 561 m² (79%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 711 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

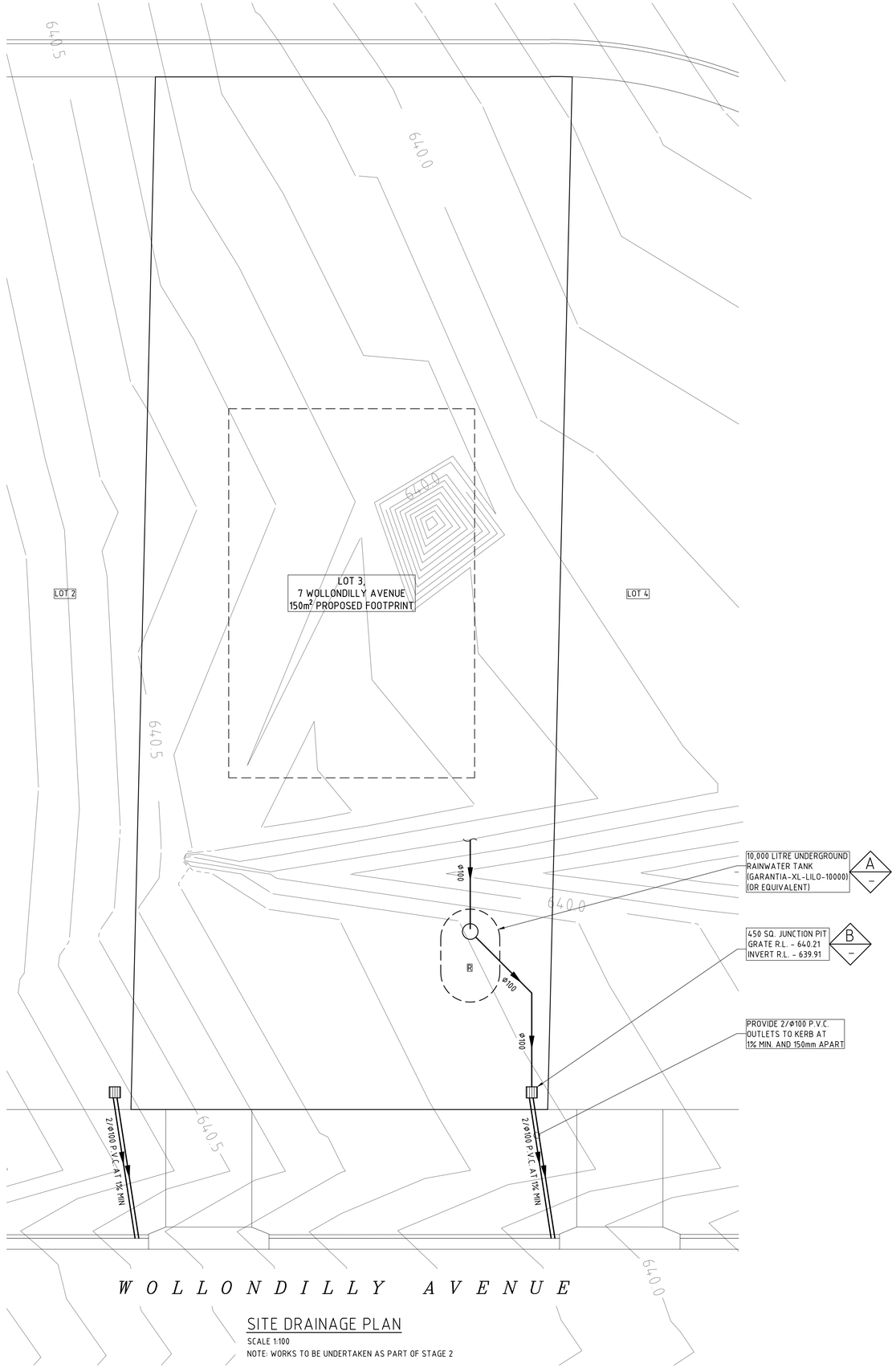
TITLE
STORMWATER MANAGEMENT PLAN
LOT 2, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-9/B

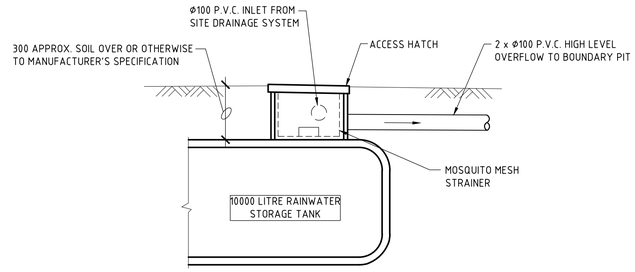
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

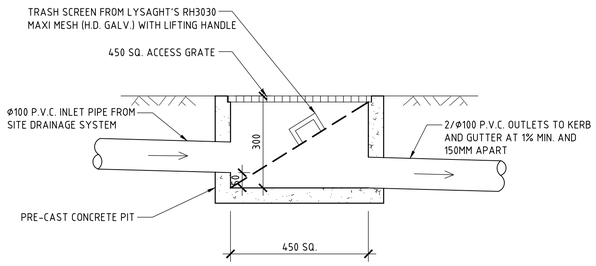
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION



DETAIL B

SCALE 1:10

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 711 m^2 (100%)
PROPOSED IMPERVIOUS AREA = 150 m^2 (21%)
PROPOSED LANDSCAPED AREA = 561 m^2 (79%)
EXISTING IMPERVIOUS AREA = 0 m^2 (0%)
EXISTING LANDSCAPED AREA = 711 m^2 (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

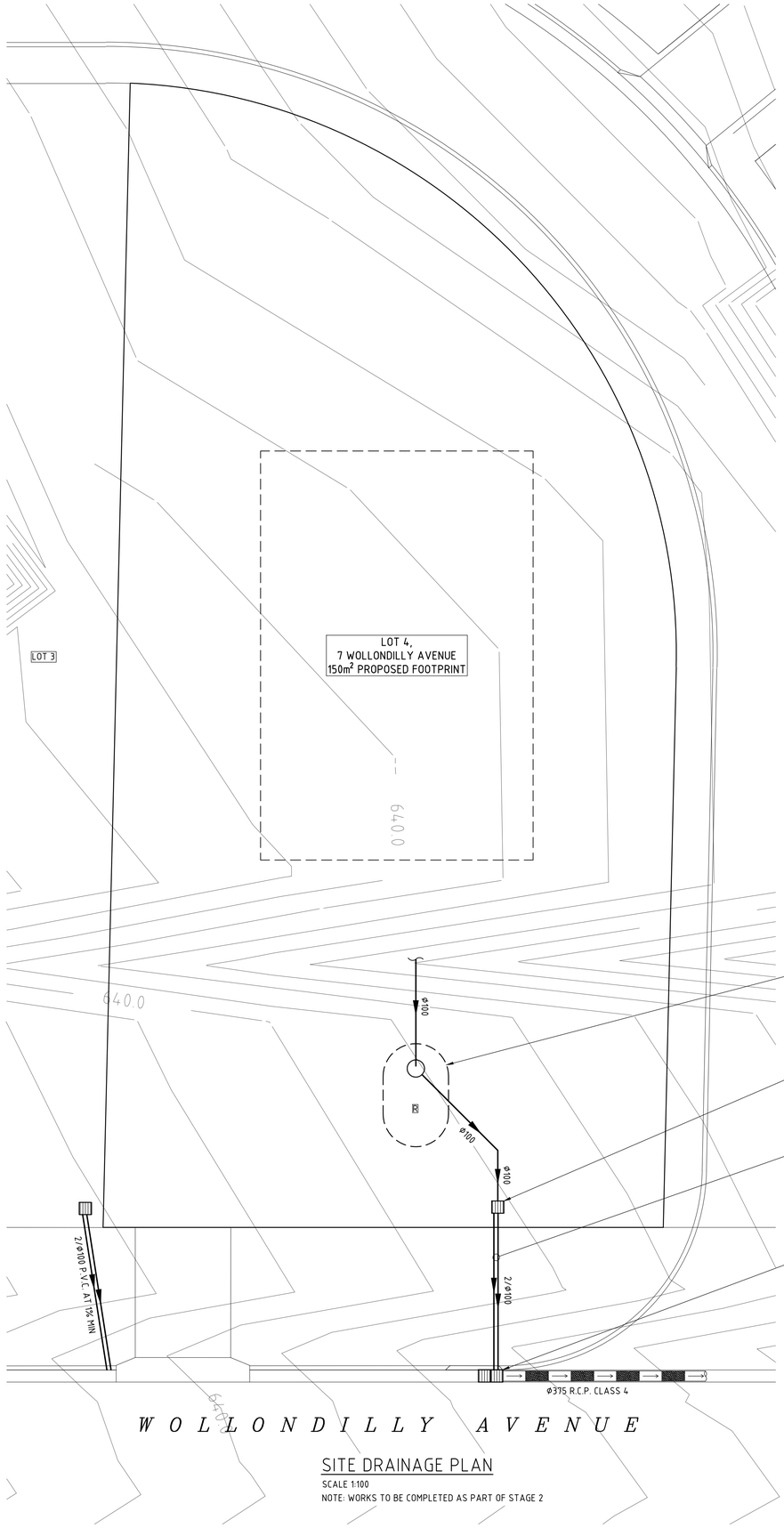
TITLE
STORMWATER MANAGEMENT PLAN
LOT 3, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-10/B

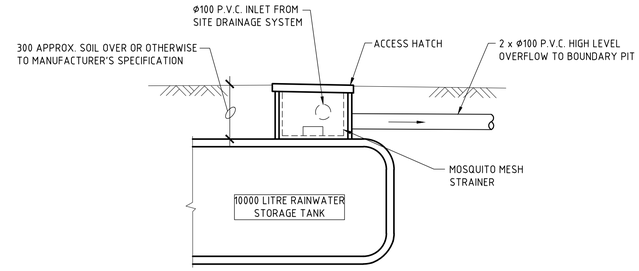
Seascape Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

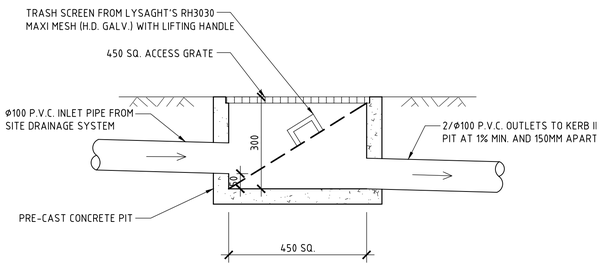
NOTE: WORKS TO BE COMPLETED AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION



DETAIL B

SCALE 1:10

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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.
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 763 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (20%)
PROPOSED LANDSCAPED AREA = 613 m² (80%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 763 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

TITLE

STORMWATER MANAGEMENT PLAN
LOT 4, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

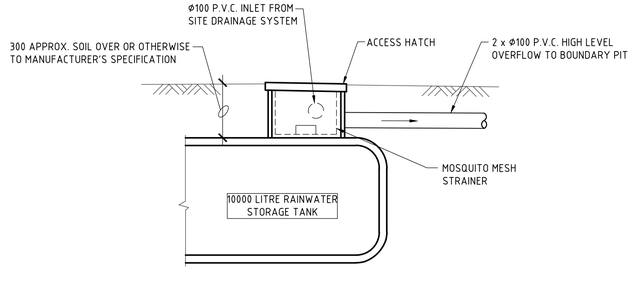
DRAWING NO. STORM-11/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

SITE DRAINAGE PLAN

SCALE 1:100

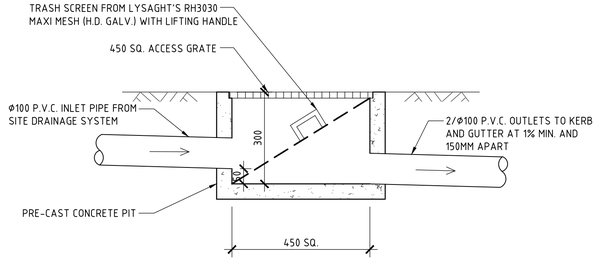
NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 1



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION



DETAIL B

SCALE 1:10

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 763 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (20%)
PROPOSED LANDSCAPED AREA = 613 m² (80%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 763 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

TITLE

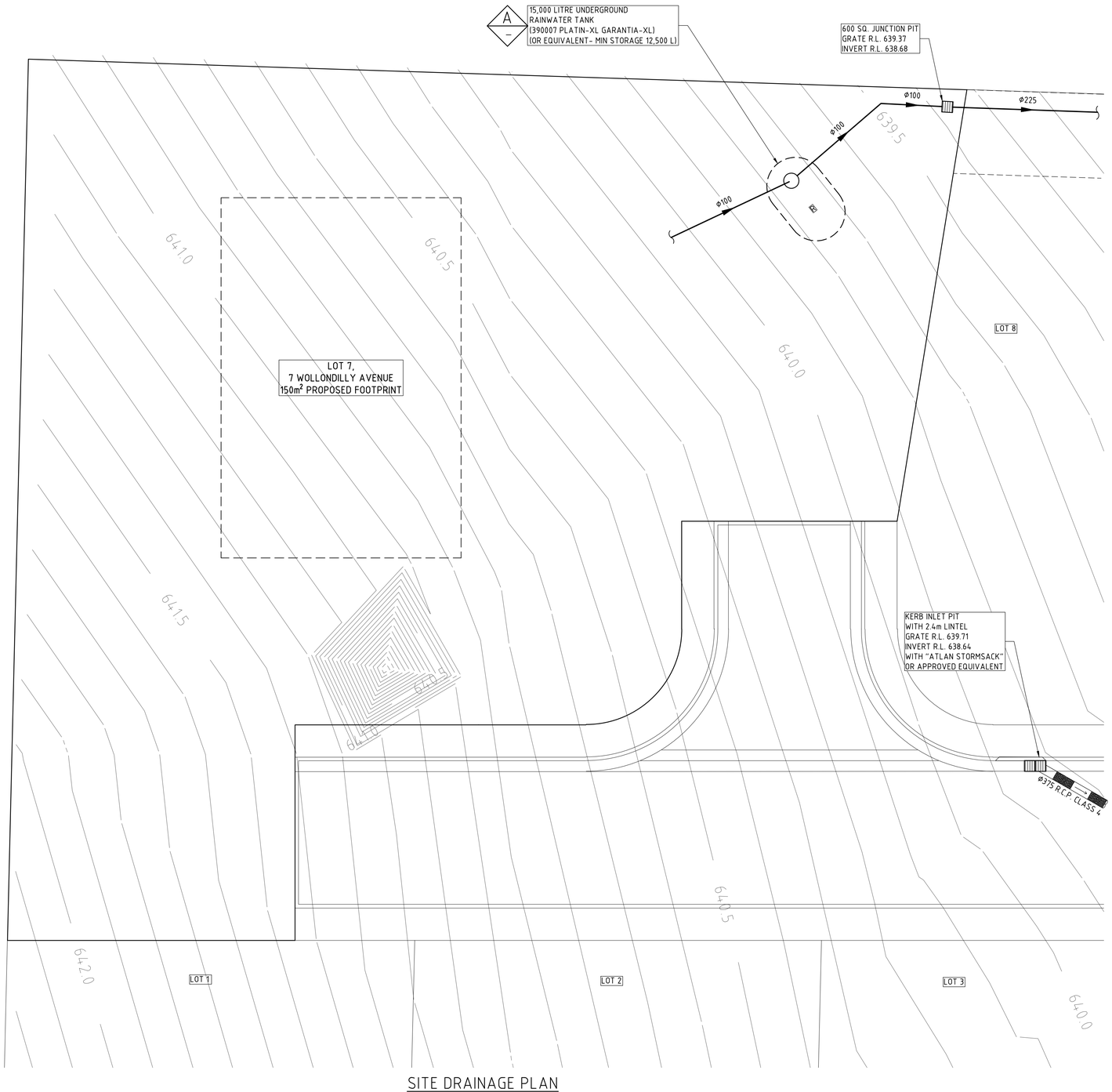
STORMWATER MANAGEMENT PLAN
LOT 6, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20 1:10

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-12/B

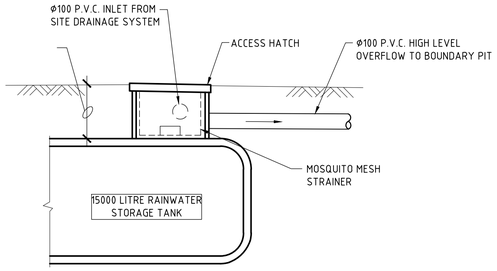
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

NOTE: WORKS TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER
STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 1044 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (14%)
PROPOSED LANDSCAPED AREA = 894 m² (86%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 1044 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

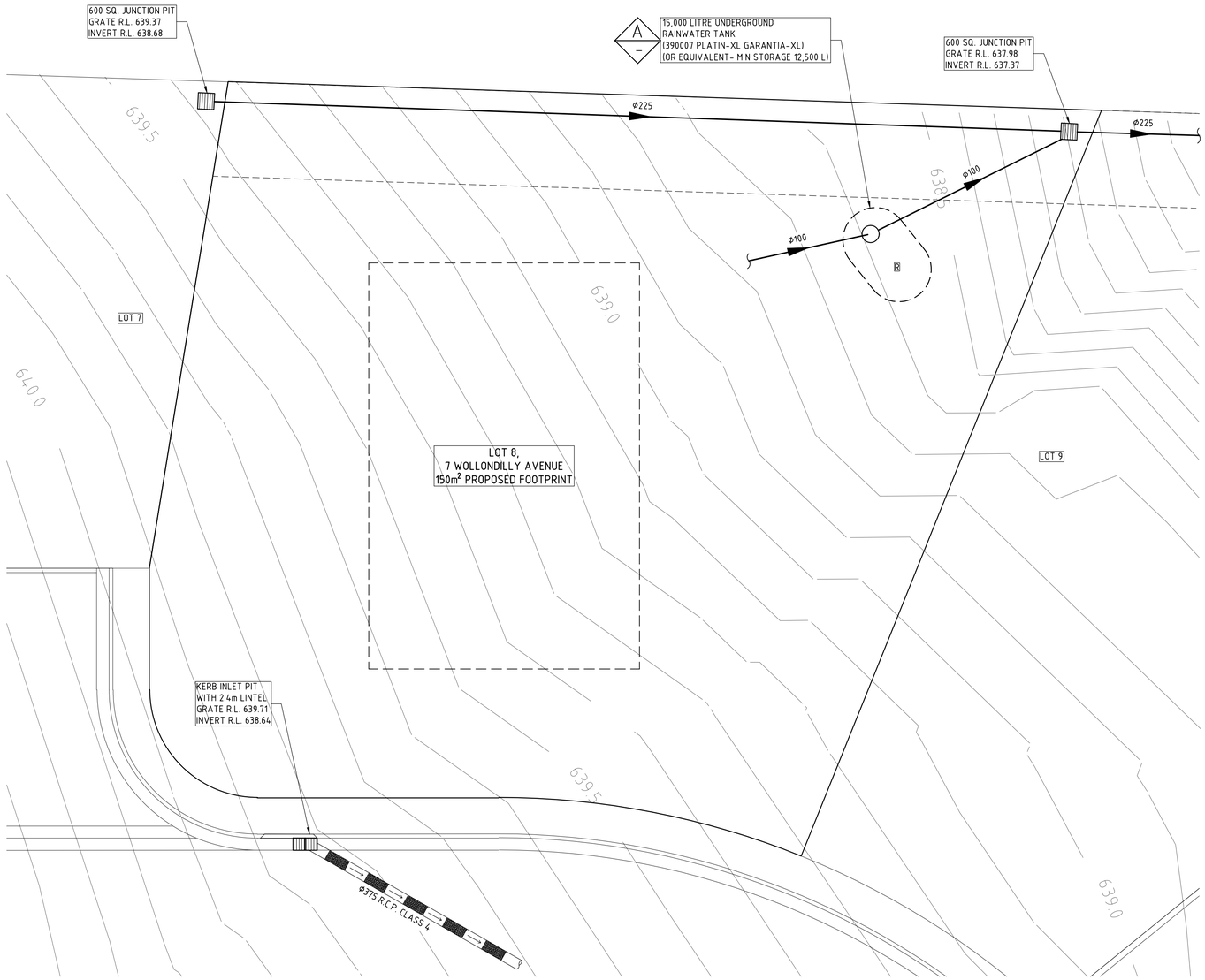
TITLE
STORMWATER MANAGEMENT PLAN
LOT 7, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO
STORM-13/B

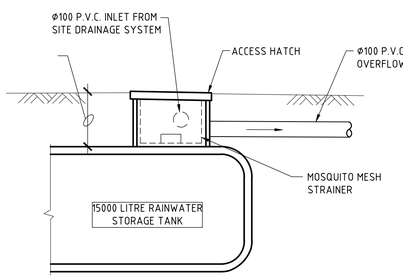
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

NOTE: WORK TO BE UNDERTAKEN AS PART OF STAGE 2



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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.
18. 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.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 762 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (20%)
PROPOSED LANDSCAPED AREA = 612 m² (80%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 762 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

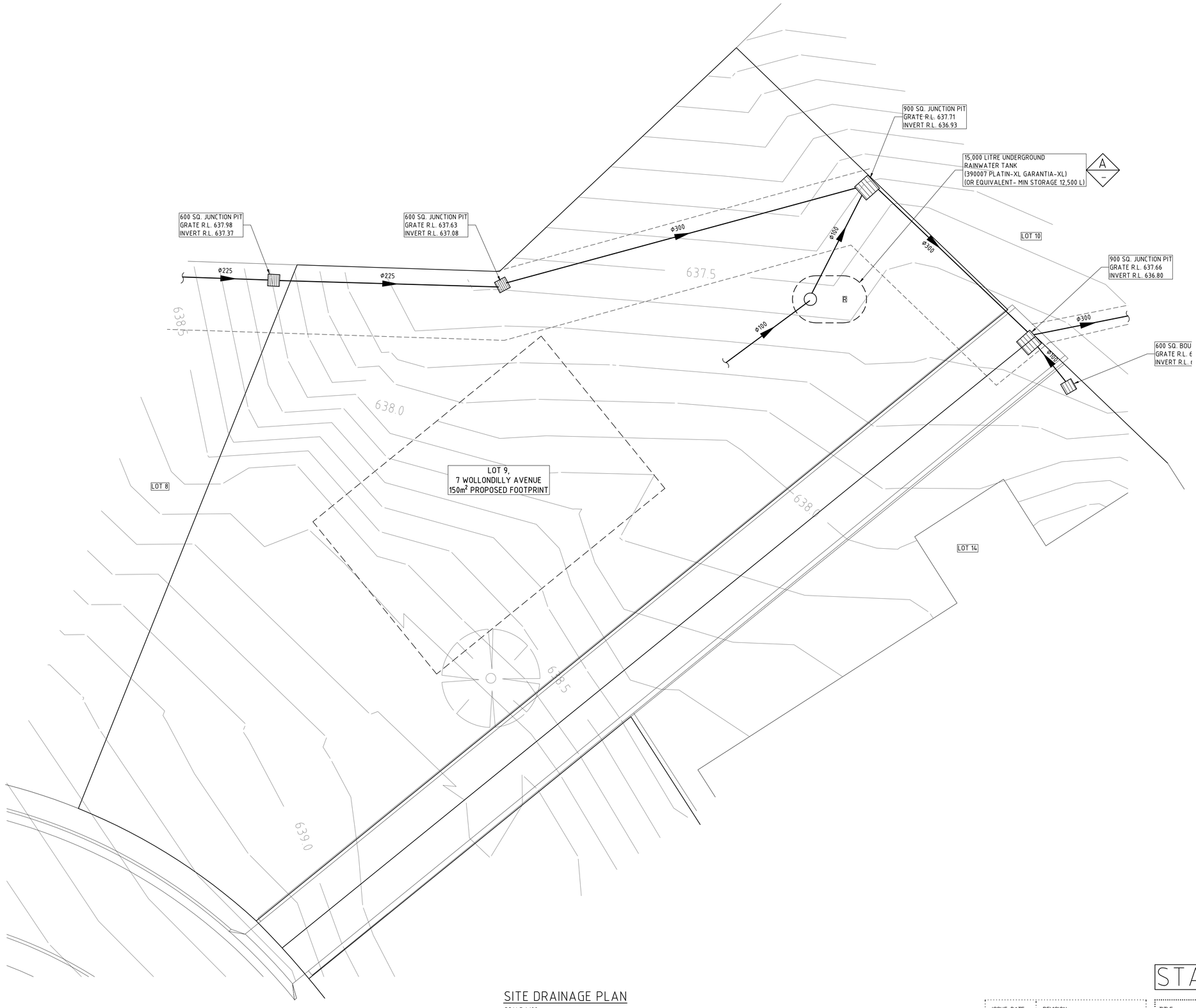
TITLE
STORMWATER MANAGEMENT PLAN
LOT 8, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-14/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



SITE DRAINAGE PLAN

SCALE 1:100

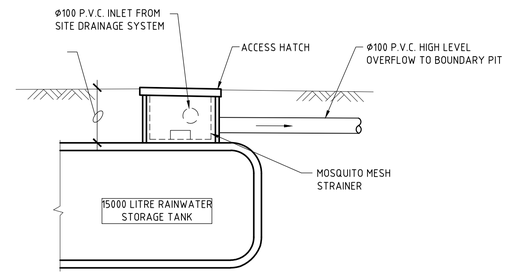
NOTE: WORK TO BE UNDERTAKEN AS PART OF STAGE 2

DRAINAGE NOTES

1. + DENOTES EXISTING GROUND LEVEL
2. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
3. SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4. SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11. APPROVED PRE-CAST PITS MAY BE USED.
12. 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
13. 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.
14. 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.
15. 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.
16. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17. 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
18. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR SUBMISSION TO COUNCIL/CERTIFEIR AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

RAINWATER RE-USE NOTES AND SPECIFICATIONS

1. ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2. THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3. RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4. PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5. PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USAGE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6. INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7. A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8. RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9. THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10. RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.



DETAIL A

SCALE 1:20

SHOWING BELOW-GROUND RAINWATER STORAGE TANK GEOMETRY & CONFIGURATION

STORMWATER SYSTEM DESIGN DATA

SITE DATA

SITE AREA = 931 m² (100%)
PROPOSED IMPERVIOUS AREA = 150 m² (16%)
PROPOSED LANDSCAPED AREA = 781 m² (84%)
EXISTING IMPERVIOUS AREA = 0 m² (0%)
EXISTING LANDSCAPED AREA = 931 m² (100%)

STAGE 2 WORKS

ISSUE DATE	REVISION
19 MAY 2023	UPDATES PER CERTIFIERS COMMENTS
24 AUGUST 2023	UPDATED PROJECT STAGING

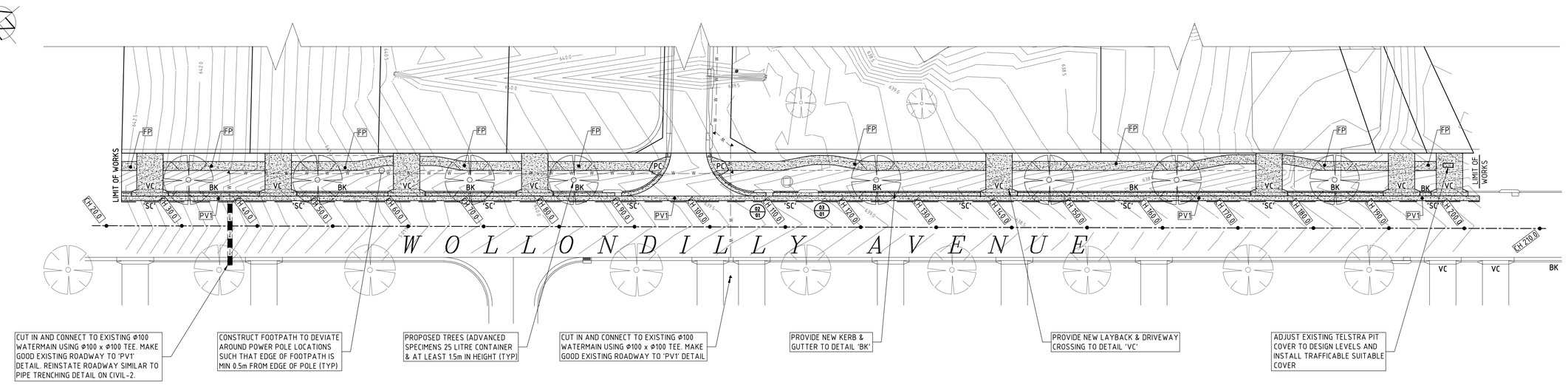
TITLE
STORMWATER MANAGEMENT PLAN
LOT 9, 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:100 1:20

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. STORM-15/B

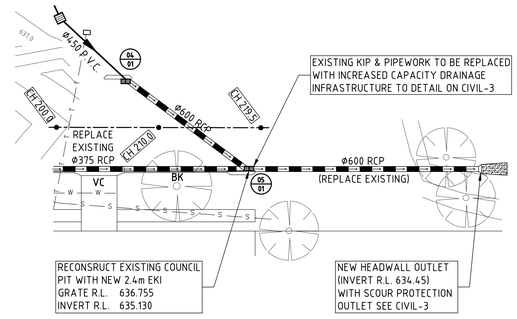
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



PARTIAL SITE PLAN

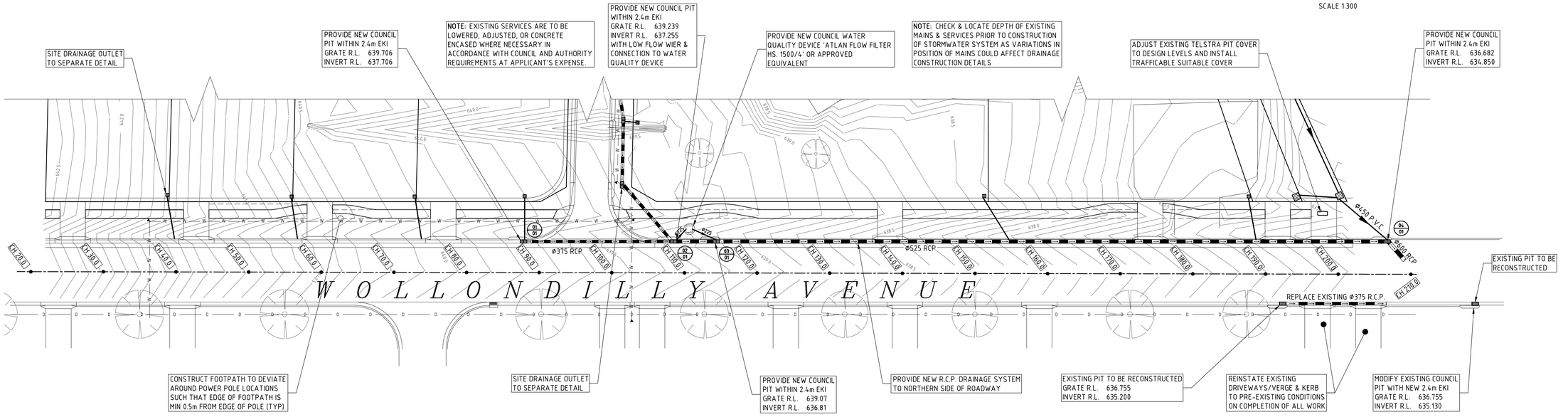
SCALE 1:300

SHOWING CIVIL WORKS



PARTIAL SITE PLAN

SCALE 1:300



PARTIAL SITE PLAN

SCALE 1:300

SHOWING STORMWATER WORKS

ABBREVIATIONS

FP	FOOTPATH
VC	VEHICLE CROSSING
PC	PEDESTRIAN CROSSING
PV1	PAVEMENT TYPE 1
BK	BARRIER KERB
SC	SAW CUT

CONSTRUCTION NOTES

GENERAL

1. These drawings shall be read in conjunction with all architectural and other consultants drawings and specifications and with such other written instructions as may be issued during the course of the contract. All discrepancies shall be referred to the Supervising Officer for decision before proceeding with the work.
2. Dimensions shall not be obtained by scaling the structural drawings.
3. All dimensions shall be verified on site by the Contractor who shall be responsible for their correctness.
4. The contractor shall be responsible for maintaining the structure and neighbouring structures in a safe and stable condition during construction. No part shall be over-stressed.
5. All workmanship and materials shall be in accordance with the requirements of the current SAA Codes and the By-Laws and Ordinances of the relevant Government Authority.

FOUNDATIONS

1. Excavation shall be taken into **firm natural ground** the allowable bearing pressure on this material is assumed to be **150** kPa.
2. Foundation material shall be approved immediately before placing concrete.

CONCRETE

1. All workmanship and materials shall be in accordance with AS 3600, current edition with amendments.
2. Concrete quality: All cement shall be Type A Normal Portland Cement.

Element	Slump mm	Max. Size Agg mm	f'c MPa	Special Requirements
KERB & GUTTER	80	20	25	-
KERB ACCESS RAMP	80	20	25	-
VEHICLE CROSSING	80	20	25	-
FOOTPATH	80	20	25	-
DRAINAGE PITS	80	20	32	-

Strength shall be verified by plant control testing.

3. Clear concrete cover to reinforcement including ties and stirrups shall as follows unless shown otherwise.

Element	Exposure Classification		
	A1 Sheltered locations	B1 External locations over 1km from salt/water shoreline	B2 External locations within 1km of salt/water shoreline
Strip footings	-	50	50
Columns and piers	20	40	50
Beams	20	40	45
Slabs and walls	20	40	45

Note that slabs placed over a membrane on ground are included as A1.

4. Reinforcement symbols:
   - N denotes Grade 500 deformed normal ductility bar to AS 4671.
   - R denotes Grade 250 plain round normal ductility bar to AS 4671.
   - SL denotes Grade 500 low ductility square welded mesh to AS 4671.
   - RL denotes Grade 500 low ductility rectangular welded mesh to AS 4671.
   - denotes direction of main bars of rectangular fabric (main bars down for bottom reinforcement, main bars up for top reinforcement).
   - denotes square fabric.
   - denotes extent of reinforcement.
5. All unsupported bars shall be tied in the transverse direction to unless otherwise noted.
6. Reinforcement is shown diagramatically and is not necessarily shown in the true projection.
7. Splices in the reinforcement shall be made only in the positions shown. The written approval of the Supervising Officer shall be obtained for any other splices. Where the lap length is not shown it shall be sufficient to develop the full strength of the reinforcement.
8. Welding of reinforcement will not be permitted unless shown on the structural drawings.
9. Fabric lap detail: 25 Min. Lap 2 wires
10. Slab reinforcement shall extend at least 65 onto masonry support walls unless shown otherwise.
11. Concrete sizes shown are minimum and no reductions by ducts, pipes, etc. shall be made without the approval of the Supervising Officer. Sizes do not include thickness of applied finishes.
12. Beam depths are written first and do not include slab thickness.
13. Pipes or conduits shall not be placed within the concrete cover to reinforcement without the approval of the Supervising Officer.
14. No holes or chases other than those shown on the structural drawings shall be made in concrete members without the prior approval of the Supervising Officer.
15. Construction joints where not shown shall be located to the approval of the Supervising Officer.
16. The contractor shall notify the Engineer 24 hours before pouring concrete.
17. The concrete shall be compacted using high frequency vibrators.
18. Columns, piers, and pedestals shall be placed 24 hours (min.) before concrete in slabs or beams over.
19. Curing of all concrete surfaces shall commence immediately after surfaces are finished as specified.

BRICK AND CONCRETE BLOCK MASONRY

1. All workmanship and materials shall be in accordance with AS 3700.
2. Two layers of approved metal based slip joint material shall be laid under all slabs where they bear on brickwork.
3. Walls shown on structural drawings are load bearing walls. Non load bearing walls under slabs shall be separated from the concrete by a minimum of 10mm thick compressible material.
4. No brickwork which is supported by the slab shall be erected until formwork has been removed.
5. Brick mortar to be proportions by volume of cement, lime and sand.
6. Brick strength of load bearing brickwork to be a minimum of f'uc = Mpa.

REINFORCED CONCRETE BLOCK MASONRY

1. All concrete masonry units shall conform to the requirements of AS 2733.
2. The design strength of concrete masonry shall be:

Element	Strength Grade of Units	Mortar Mix
		Cement , Lime , Sand

3. Workmanship involved in placing concrete units shall comply with AS 3700 and all units shall be have fully bedded face shells and cross walls.
4. Clean out holes shall be provided at the base of all reinforced cores.
5. Unless noted otherwise the cores of all concrete masonry units shall be filled with concrete having a characteristic strength at 28 days (f'c) of 20 MPa. and a slump of 180mm to 230mm when being placed. the concrete filling shall be thoroughly compacted.
6. Max size of course aggregate in concrete used to fill cores shall be 10mm unless shown otherwise.

STRUCTURAL STEELWORK

1. All workmanship and materials shall be in accordance with AS 4100 and AS 1554 except where varied by the contract documents.
2. Three (3) copies of all shop details shall be submitted to the engineer for approval of structural sufficiency before fabrication.
3. All welds shall be 6mm continuous fillet, all bolts Φ20mm, all gussets plates 10mm thick, unless noted otherwise on the drawing.
4. Concrete encased steelwork shall be wrapped with 3mm wire at 100mm centres and shall have a minimum 50 cover of concrete.
5. Steel beams and trusses with span greater than 6m shall be fabricated with an upwards precamber of 1/500 span in each span unless noted otherwise on the drawings.
6. Structural steelwork is to be wire brushed to remove rust and loose mill scale and coated with one coat of approved primed unless noted otherwise on the drawings.
7. All steelwork cast into brickwork is to be hot dipped galvanised.

TIMBER

1. Timber construction is to be in accordance with AS 1720 and the Timber Framing Code AS 1684.
2. Timber stress grade shall be F7 unless noted otherwise.

NOTE: PLAN TO BE READ IN CONJUNCTION WITH DRAWING CIVIL-2, CIVIL-3, CIVIL-4, CIVIL-5 & CIVIL-6.

ISSUE DATE	REVISION
24 AUGUST 2023	REVISED WATER QUALITY DEVICE LOCATION

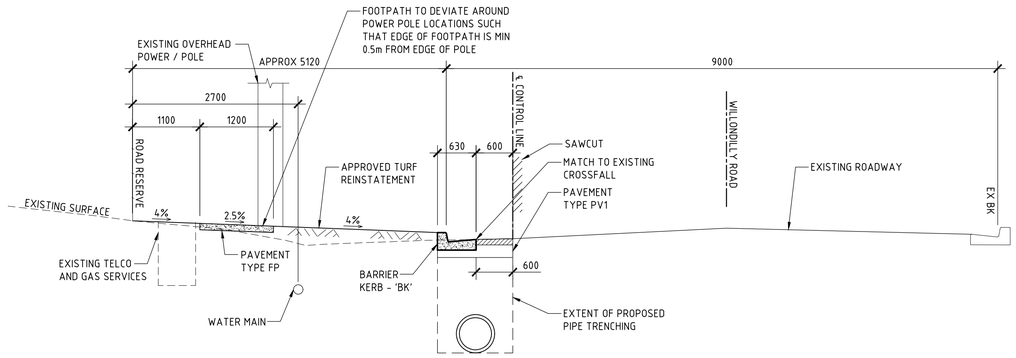
TITLE

ROAD RESERVE CIVIL WORKS PLAN
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:300

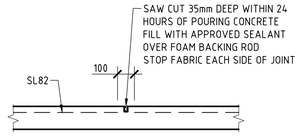
DRAWING NO. CIVIL-1/A

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



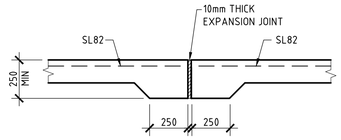
TYPICAL ROAD RESERVE SECTION

SCALE 1:50



SAW CUT JOINT DETAIL ('SC' ON PLAN)

SCALE 1:20



EXPANSION JOINT DETAIL (E.J. ON PLAN)

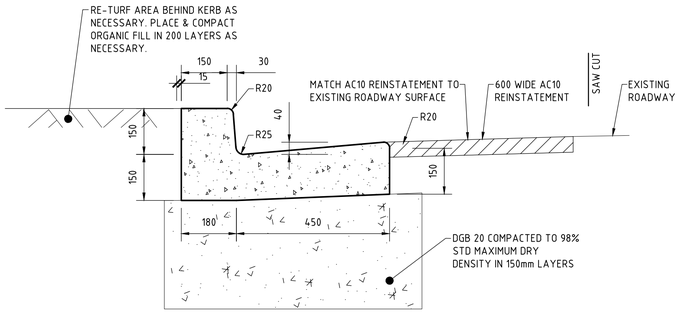
SCALE 1:20

NOTES

1. ROAD AND DRAINAGE WORKS TO BE IN ACCORDANCE WITH COUNCIL'S SPECIFICATION FOR ENGINEERING WORKS - AUS-SPEC#1 AND/OR COUNCIL'S MINOR WORKS SPECIFICATION.
2. VEHICLE CROSSING, ACCESS RAMPS AND GUTTER SHALL BE POURED IN PLAIN CONCRETE AND FINISHED WITH STEEL TROWEL. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 25MPA AT 28 DAYS
3. THE SUBGRADE SHALL BE THOROUGHLY COMPACTED BY THE USE OF VIBRATORY COMPACTION EQUIPMENT UNTIL IT SHOWS NO SIGNS OF MOVEMENT, OR AS DIRECTED BY COUNCIL OR THE SUPERVISING ENGINEER.
4. VEHICLE CROSSING TO BE CONSTRUCTED IN ACCORDANCE WITH APPROVED LEVELS AND SPECIFICATIONS ISSUED BY COUNCIL.
5. NEW KERB & GUTTERING TO BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL SPECIFICATIONS.
6. REINSTATE AND MAKE GOOD ALL LAYBACKS, PATHS AND TURFED AREAS TO SATISFACTION OF SUPERVISING ENGINEER.
7. REGULAR COMPACTION TESTS ARE REQUIRED BY COUNCIL PRIOR TO ADDITION OF EACH LAYER OF SUB-BASE OR WEARING COURSE.
8. COUNCIL'S DEVELOPMENT ENGINEER IS TO BE GIVEN 48 HOURS NOTICE WHEN THE WORKS REACH THE FOLLOWING STAGES:

   (A) INSTALLATION OF SILT AND SEDIMENT CONTROL DEVICES.
   (B) SUBGRADE LEVEL / BASECOURSE LEVEL
   (C) PRIOR TO POURING OF STORMWATER GULLY PITS
   (D) PRIOR TO BACKFILLING OF PIPELINES
   (E) PRIOR TO POURING OF KERB & GUTTER
   (F) PRIOR TO POURING VEHICLE CROSSING
   (G) SEALING ROAD PAVEMENT

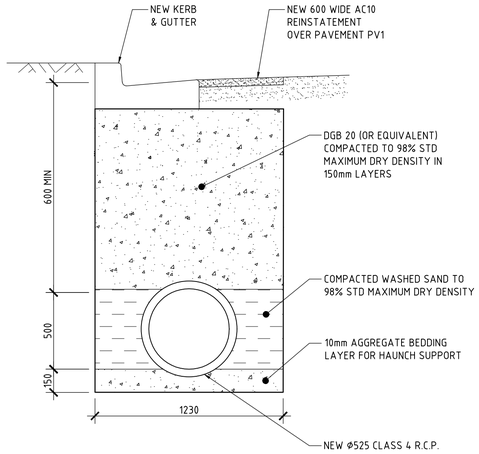
9. ALL STEEL ELEMENTS TO BE STAINLESS GRADE 316 OR EQUIVALENT (MARINE GRADE)
10. BENEATH ALL KERB & GUTTER AND PRAM RAMPS PLACE & COMPACT DGB20 IN 150 LAYERS TO 98% STANDARD DENSITY AS NECESSARY



TYPICAL KERB CROSS-SECTION - 'BK'

SCALE 1:10

TYPICAL 150mm KERB & GUTTER, 1500 WIDE FOOTPATH & LOW LEVEL HEIGHT RETAINING WALL WHERE NECESSARY

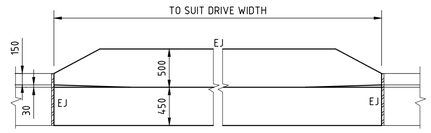


TYPICAL PIPE TRENCHING DETAIL

SCALE 1:20

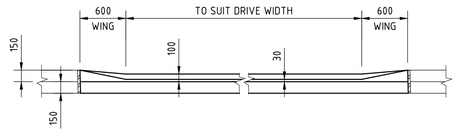
NOTE: PROVIDE STABILISED SAND BACKFILL FOR COVER LESS THAN 600mm

NOTE: PROVIDE TRENCH SHORING TO AS 4744.1-2000



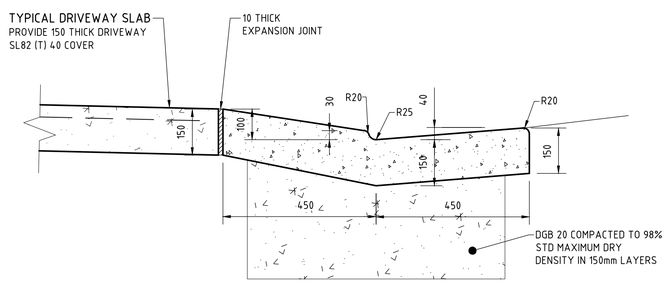
TYPICAL LAYBACK PLAN VIEW - 'VC'

SCALE 1:40



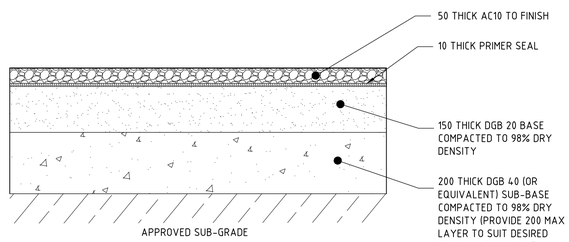
LAYBACK FRONT ELEVATION - 'VC'

SCALE 1:40



TYPICAL LAYBACK CROSS-SECTION - 'VC'

SCALE 1:10



TYPICAL NEW PAVEMENT SECTION TYPE 1 - 'PV1'

SCALE 1:10

NOTE: EXTENT OF ROADWAY RECONSTRUCTION TO BE DETERMINED ON SITE & SUBJECT TO APPROVAL BY SUPERVISING ENGINEER

ISSUE DATE	REVISION

TITLE

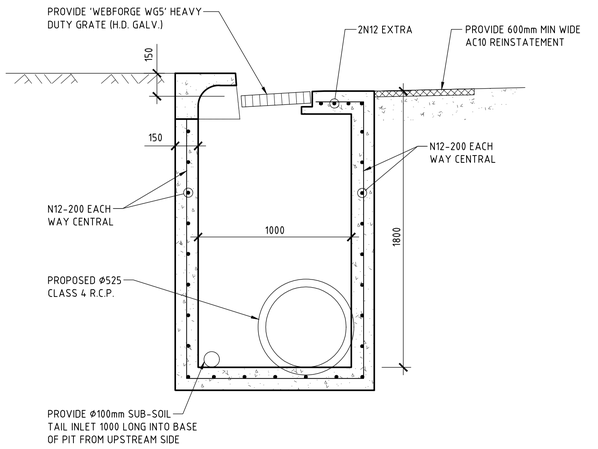
TYPICAL SECTION AND MISCELLANEOUS DETAILS 7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust	1:50 1:20

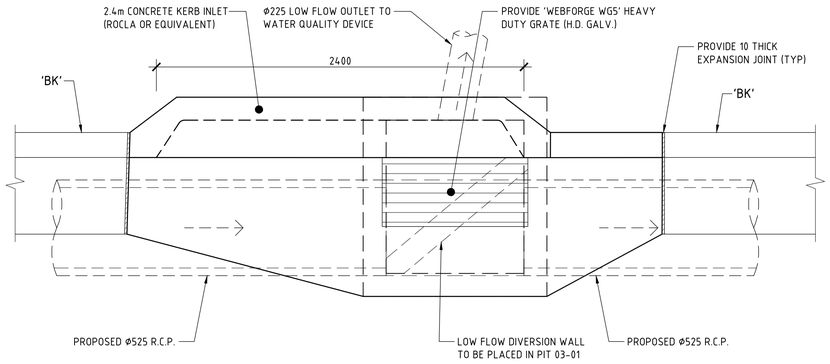
DRAWING NO. CIVIL-2

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

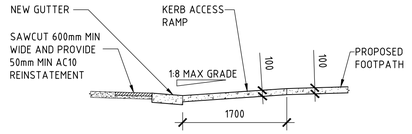
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



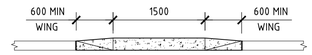
TYPICAL INLET PIT SECTION
SCALE 1:20



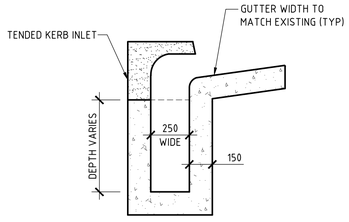
NEW GRATED PIT WITH 2.4m E.K.I. - PLAN VIEW
SCALE 1:20



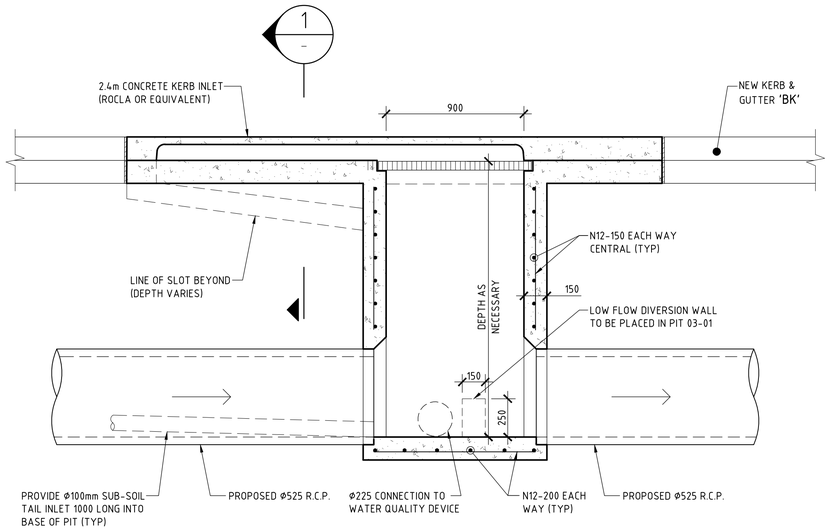
TYPICAL KERB ACCESS RAMP SECTION
SCALE 1:50



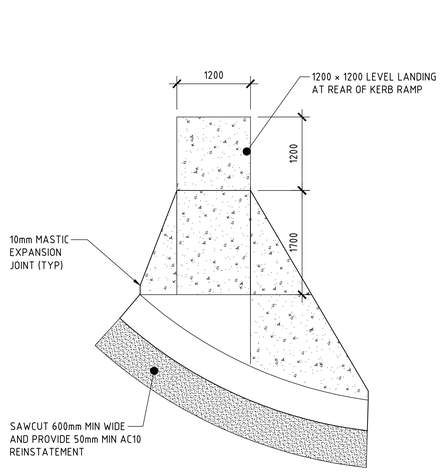
KERB ACCESS RAMP ELEVATION
SCALE 1:50



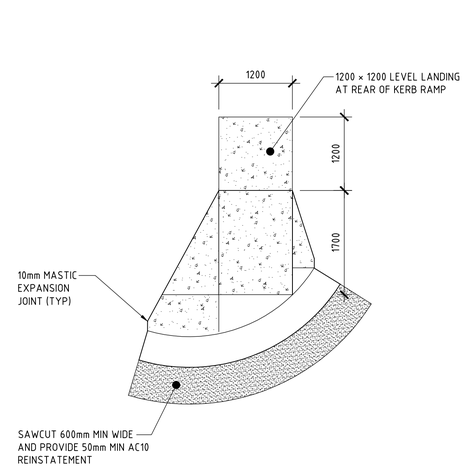
SECTION 1 –
SCALE 1:20
SHOWING SECTION THROUGH INTAKE SLOT



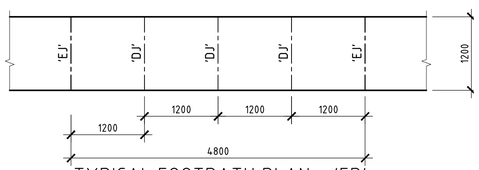
NEW GRATED PIT WITH 2.4m E.K.I. - ELEVATION VIEW
SCALE 1:20



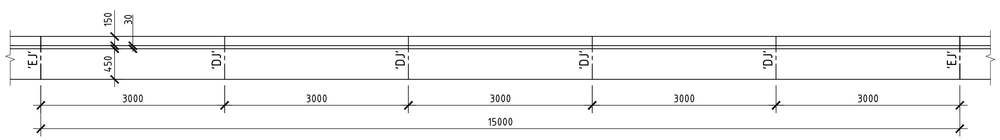
KERB ACCESS RAMP PLAN - L.H.S
SCALE 1:50



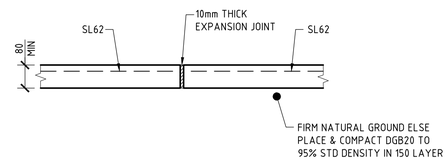
KERB ACCESS RAMP PLAN - R.H.S
SCALE 1:50



TYPICAL FOOTPATH PLAN - 'FP'
SCALE 1:50
'EJ' - EXPANSION JOINT
'DJ' - DUMMY JOINT
NOTE: FOOTPATH MIN 80mm THICK WITH SL62 (T) - 30 MIN COVER



TYPICAL GUTTER PLAN - 'BK'
SCALE 1:50
'EJ' - EXPANSION JOINT
'DJ' - DUMMY JOINT



TYPICAL FOOTPATH 'FP' SECTION & EXPANSION JOINT DETAIL (E.J. ON PLAN)
SCALE 1:20

ISSUE DATE	REVISION
24 AUGUST 2023	REVISED DETAILS

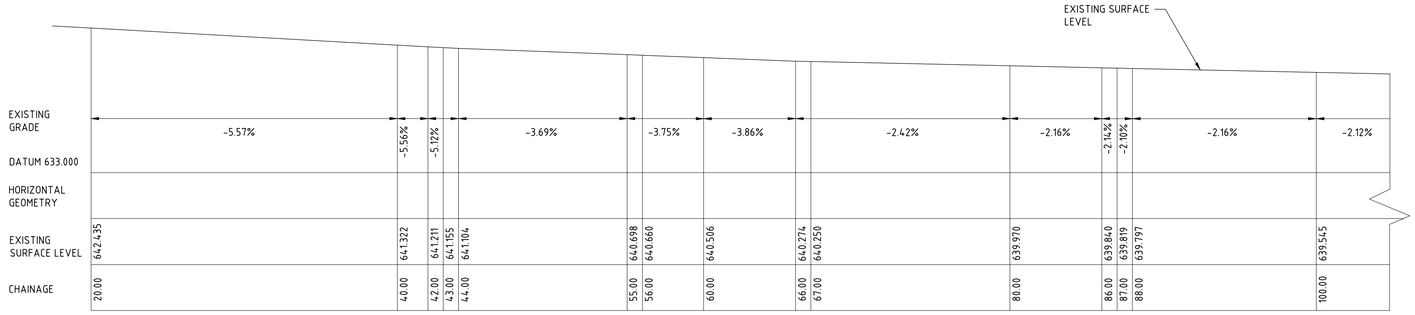
TITLE
TYPICAL CIVIL WORKS DETAILS
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:50 1:40 1:20

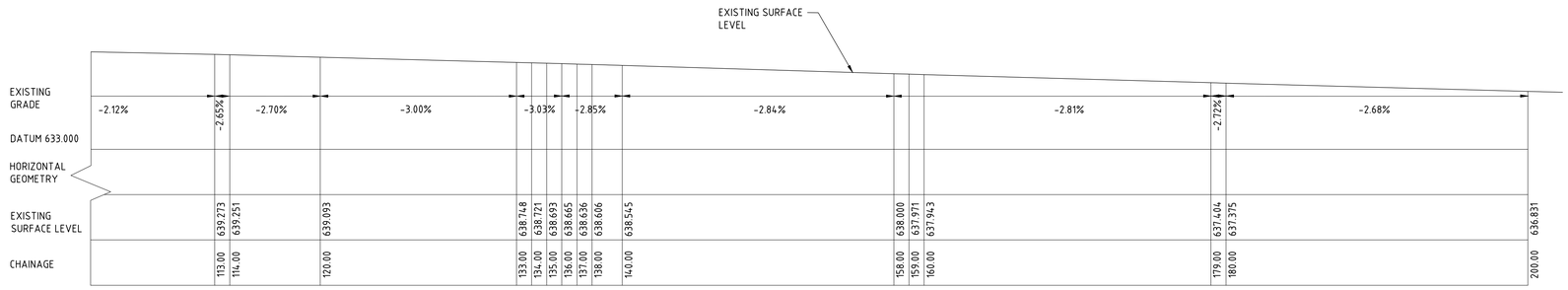
TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO
CIVIL – 3/A

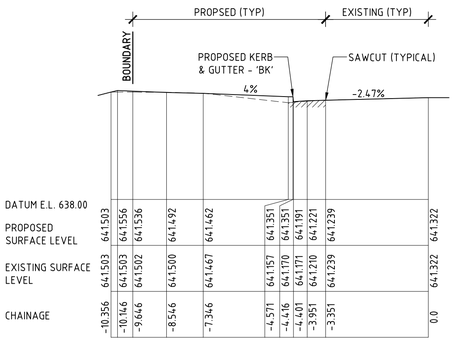
"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



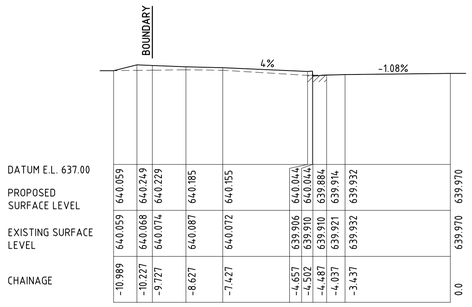
WOLLONDILLY AVENUE CENTRE-LINE LONG-SECTION
SCALE 1:200



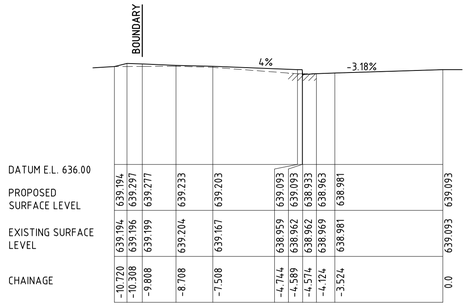
WOLLONDILLY AVENUE CENTRE-LINE LONG-SECTION (CONTINUED)
SCALE 1:200



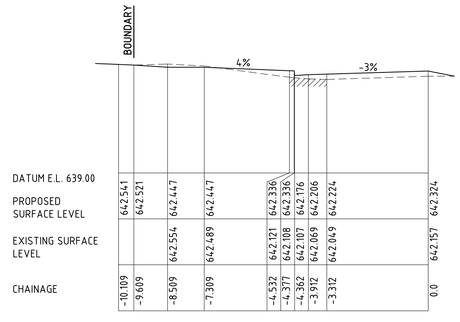
CHAINAGE 40.00
SCALE 1:100



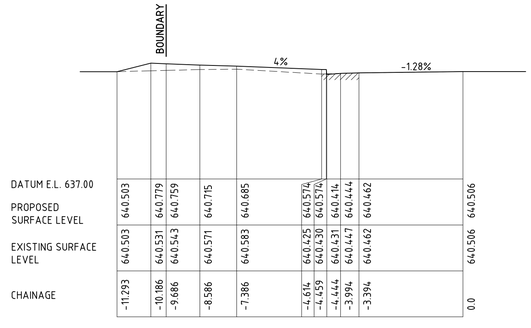
CHAINAGE 80.00
SCALE 1:100



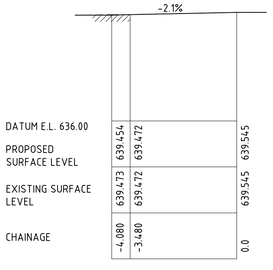
CHAINAGE 120.00
SCALE 1:100



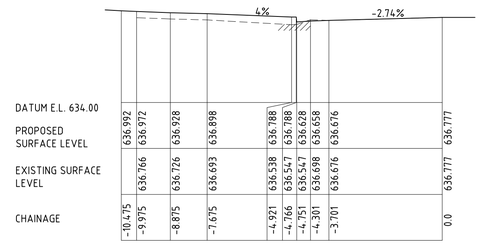
CHAINAGE 22.00
SCALE 1:100



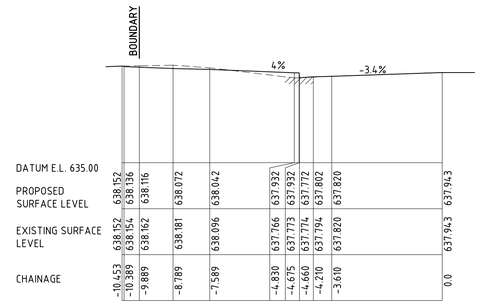
CHAINAGE 60.00
SCALE 1:100



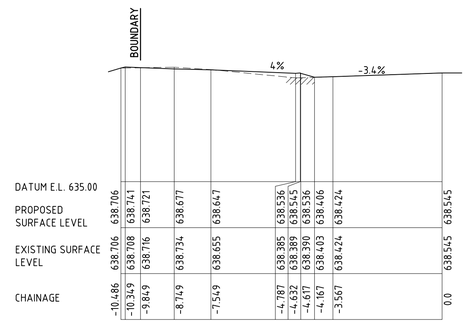
CHAINAGE 100.00
SCALE 1:100



CHAINAGE 202.00
SCALE 1:100



CHAINAGE 160.00
SCALE 1:100



CHAINAGE 140.00
SCALE 1:100

ISSUE DATE	REVISION

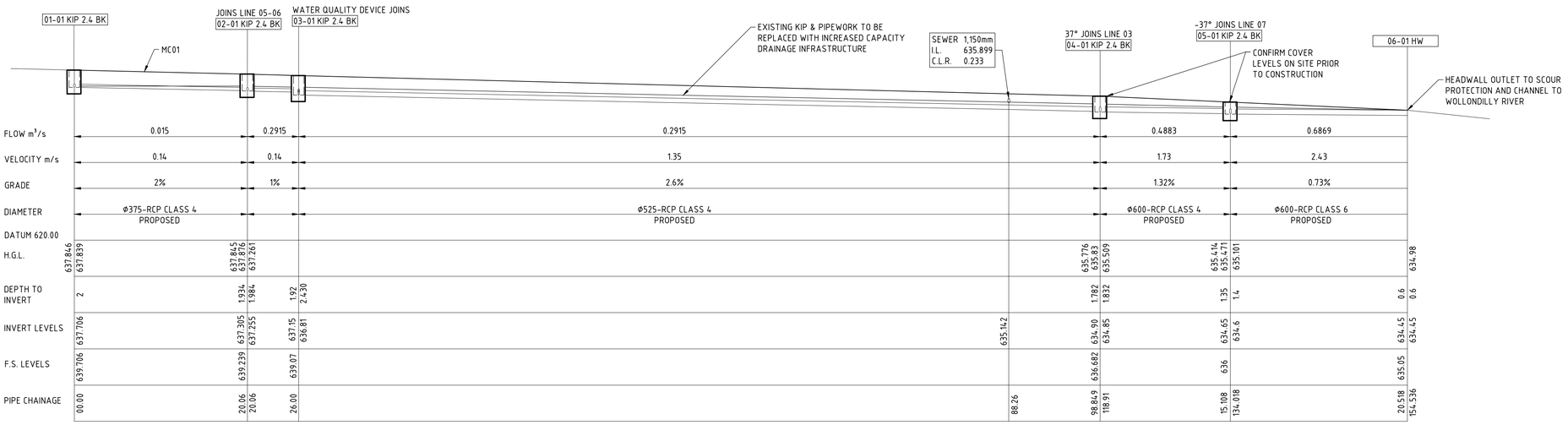
TITLE
ROADWAY LONG & CROSS SECTIONS
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:200 1:100

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO.
CIVIL-4

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



DRAINAGE LONG-SECTION

SCALE 1:300

NORTHERN SIDE OF WOLLONDILLY AVENUE

HEADWALL NOTES:

MATERIALS (ROCK PADS)

- ROCK - HARD, ANGULAR, DURABLE,WEATHER RESISTANT AND EVENLY GRADED WITH 50% BY WEIGHT LARGER THAT THE SPECIFIED NOMINAL ROCK SIZE AND SUFFICIENT SMALL ROCK TO FILL VOIDS BETWEEN THE LARGER ROCK. THE DIAMETER OF THE LARGEST ROCK SIZE SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE. SPECIFIC GRAVITY TO BE AT LEAST 2.5.
- GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH, MINIMUM 'BIDIM' A24 OR EQUIVALENT.

INSTALLATION (ROCK PADS)

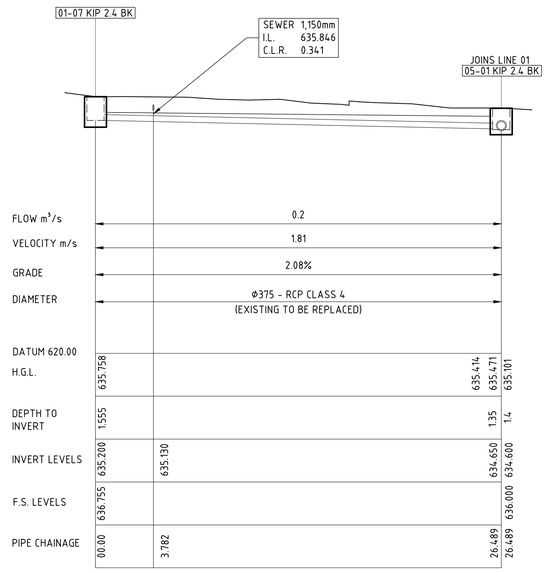
1. REFER TO APPROVED PLANS FOR LOCATION AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSION OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
2. THE DIMENSIONS OF THE OUTLET STRUCTURE MUST ALIGN WITH THE DOMINANT FLOW DIRECTION.
3. EXCAVATE THE OUTLET PAD FOOTPRINT TO THE SPECIFIED DIMENSION SUCH THE WHEN THE ROCK IS PLACED IN THE EXCAVATED PIT THE TOP OF THE ROCKS WILL BE LEVEL WITH THE SURROUNDING GROUND, UNLESS OTHERWISE DIRECTED.
4. IF THE EXCAVATED SOILS ARE DISPERSIVE, OVER-EXCAVATED THE ROCK PAD BY AT LEAST 300MM AND BACKFILL WITH STABLE, NON-DISPERSIVE MATERIAL.
5. LINE THE EXCAVATED PIT WITH GEOTEXTILE FILTER CLOTH, PREFERABLY USING A SINGLE SHEET. IF JOINTS ARE REQUIRED, OVERLAP THE FABRIC AT LEAST 300MM.
6. ENSURE THE FILTER CLOTH IS PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION OF THE FABRIC AND THE ROCK. REPAIR ANY DAMAGE BY REMOVING THE ROCK AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA OVERLAPPING THE EXISTING FABRIC A MINIMUM OF 300MM.
7. ENSURE THERE ARE AT LEAST TWO LAYERS OF ROCKS. WHERE NECESSARY, REPOSITION THE LARGER ROCKS TO ENSURE TWO LAYERS OF ROCKS ARE ACHIEVED WITHOUT ELEVATING THE UPPER SURFACE ABOVE THE PIPE INVERT.
8. ENSURE THE ROCK IS PLACED IN A MANNER THAT WILL ALLOW WATER TO DISCHARGE FREELY FROM THE PIPE.
9. ENSURE THE UPPER SURFACE OF THE ROCK PAD DOES NOT CAUSE WATER TO BE DEFLECTED AROUND THE EDGE OF THE ROCK PAD.
10. IMMEDIATELY AFTER CONSTRUCTION, APPROPRIATELY STABILISE ALL DISTURBED AREAS.

MAINTENANCE

1. WHILE CONSTRUCTION WORKS CONTINUE ON THE SITE, INSPECT THE OUTLET STRUCTURE PRIOR TO FORECAST RAINFALL, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING RAINFALL, AND ON AT LEAST A WEEKLY BASIS.
2. REPLACE ANY DISPLACED ROCK WITH ROCK OF A SIGNIFICANTLY (MINIMUM 110%) LARGER SIZE THAN DISPLACED ROCK.

REMOVAL

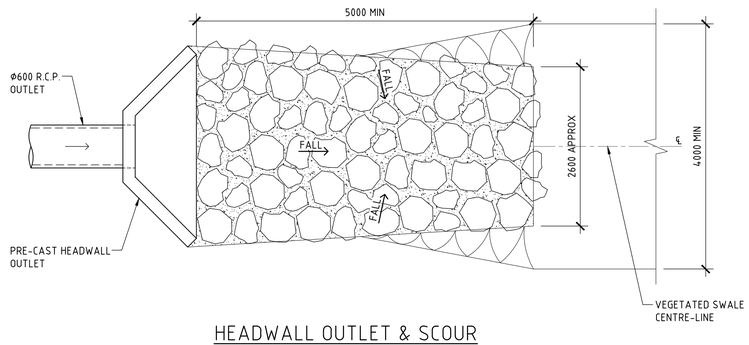
1. TEMPORARY OUTLET STRUCTURES SHOULD BE COMPLETELY REMOVED, OR WHERE APPROPRIATE, REHABILITATED SO AS NOT TO CAUSE ONGOING ENVIRONMENTAL NUISANCE OR HARM.
2. FOLLOWING REMOVAL OF THE DEVICE, THE DISTURBED AREA MUST BE APPROPRIATELY REHABILITATED SO AS NOT TO CAUSE ONGOING ENVIRONMENTAL NUISANCE OR HARM.
3. REMOVE MATERIALS AND COLLECTED SEDIMENTS AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.



DRAINAGE LONG-SECTION

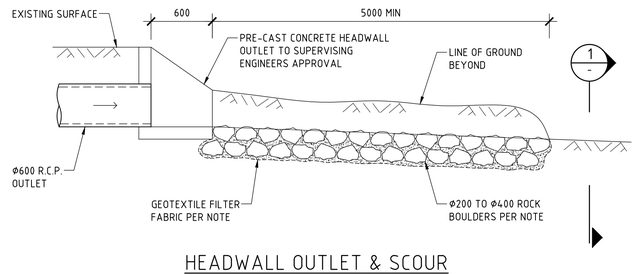
SCALE 1:200

SOUTHERN SIDE OF WOLLONDILLY AVENUE



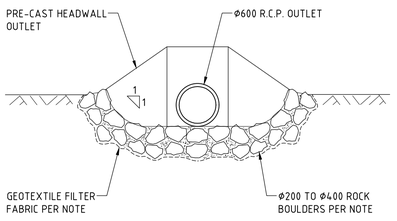
HEADWALL OUTLET & SCOUR PROTECTION - PLAN VIEW

SCALE 1:50



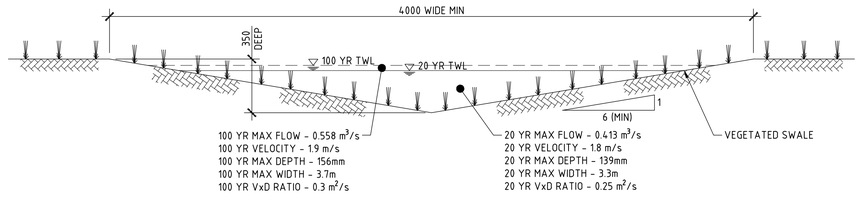
HEADWALL OUTLET & SCOUR PROTECTION - SECTION VIEW

SCALE 1:50



HEADWALL OUTLET & SCOUR PROTECTION

SCALE 1:50



SECTION 1 / -

SCALE 1:20

ISSUE DATE	REVISION
24 AUGUST 2023	REVISED DRAINAGE LONG-SECTION
29 AUGUST 2023	SECTION 1 ADDED

TITLE

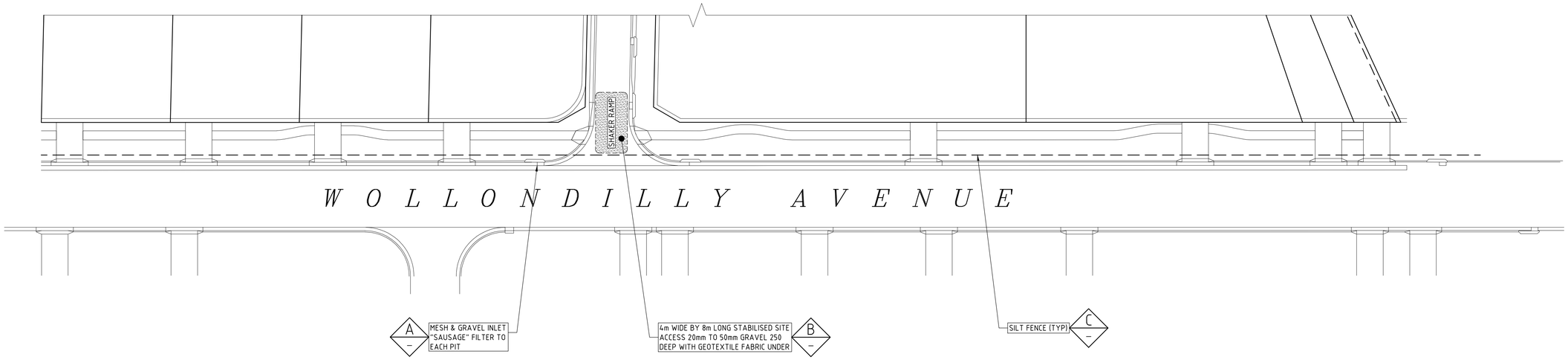
DRAINAGE LONG-SECTIONS
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
MDB	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:300 1:200 1:50

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

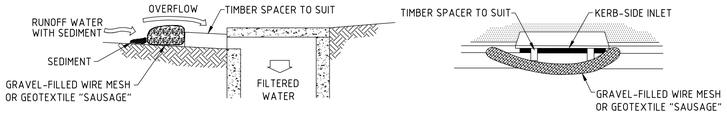
DRAWING NO. CIVIL-5/B

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



EROSION & SEDIMENT CONTROL PLAN

SCALE 1:300

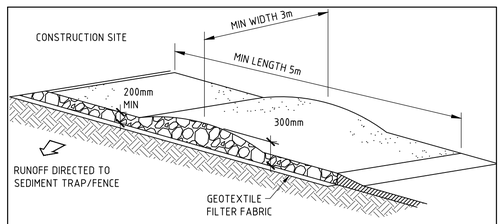


CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLET
2. FABRICATE A SEVE MAD FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM ANELLIPTICAL CROSS-SECTION ABOUT 150m HIGH x 400mm WIDE
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING FILTER.
6. SANDBAGS FILLED T GAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADE WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET "SAUSAGE" FILTER

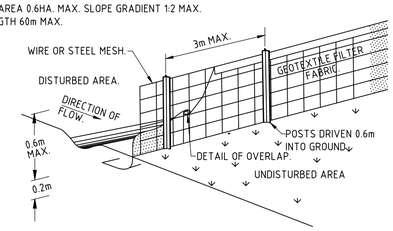
DETAIL A
NOT TO SCALE



SHAKER RAMP

DETAIL B
NOT TO SCALE

DRAINAGE AREA 0.6HA. MAX. SLOPE GRADIENT 1:2 MAX.
SLOPE LENGTH 60m MAX.



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UP-SLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO THE GROUND AT 2.5m INTERVALS (MAX) AT THE DOWN-SLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UP-SLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH THE WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN THE SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE

DETAIL C
NOT TO SCALE

ABBREVIATIONS

FP	FOOTPATH
VC	VEHICLE CROSSING
PC	PEDESTRIAN CROSSING
PV1	PAVEMENT TYPE 1
BK	BARRIER KERB
SC	SAW CUT

ISSUE DATE	REVISION

TITLE
EROSION & SEDIMENT CONTROL PLAN
7 WOLLONDILLY AVENUE, GOULBURN

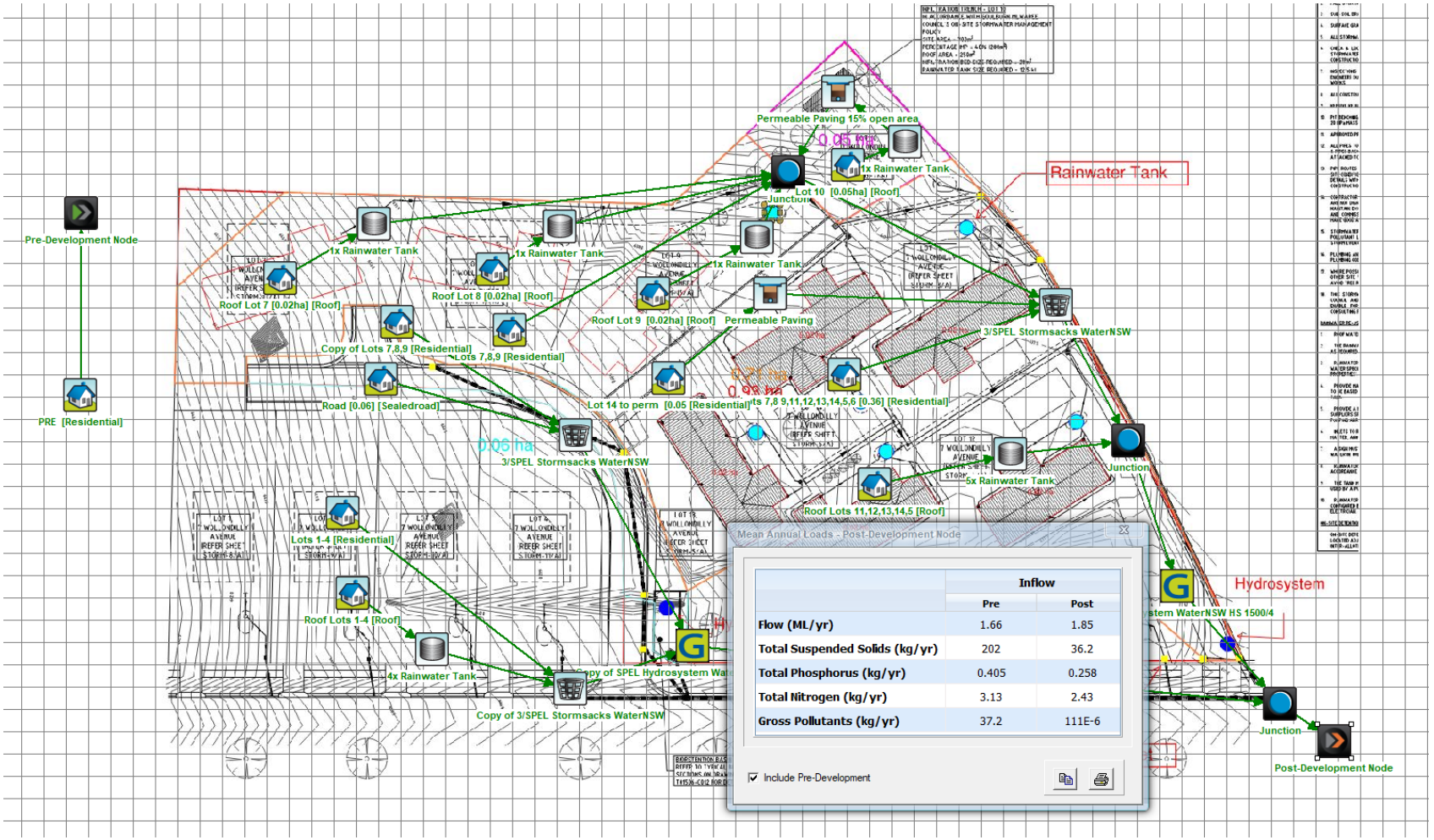
DRAWN	DATE	CHECKED	SCALE @ A1
L I	24 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:300

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. CIVIL-6

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

Appendix D


Pre-Development Node
PRE [Residential]
Permeable Paving 15% open area
0.05 ha
1x Rainwater Tank
Lot 10 [0.05ha] [Roof]
Junction
Rainwater Tank
1x Rainwater Tank
1x Rainwater Tank
1x Rainwater Tank
Roof Lot 7 [0.02ha] [Roof]
Roof Lot 8 [0.02ha] [Roof]
Roof Lot 9 [0.02ha] [Roof]
Permeable Paving
3/SPEL Stormsacks WaterNSW
Copy of Lots 7,8,9 [Residential]
Lots 7,8,9 [Residential]
Road [0.06] [Sealedroad]
Lot 14 to perm [0.05 [Residential]
Lots 7,8 9,11,12,13,14,5,6 [0.36] [Residential]
0.05 ha
3/SPEL Stormsacks WaterNSW
5x Rainwater Tank
Junction
Roof Lots 11,12,13,14,5 [Roof]
Lots 1-4 [Residential]
Roof Lots 1-4 [Roof]
4x Rainwater Tank
Copy of SPEL Hydrosystem Wa
Copy of 3/SPEL Stormsacks WaterNSW
Hydrosystem
stem WaterNSW HS 1500/4
Junction
Post-Development Node
Mean Annual Loads - Post-Development Node
Inflow
Pre
Post
Flow (ML/yr) 1.66 1.85
Total Suspended Solids (kg/yr) 202 36.2
Total Phosphorus (kg/yr) 0.405 0.258
Total Nitrogen (kg/yr) 3.13 2.43
Gross Pollutants (kg/yr) 37.2 111E-6
Include Pre-Development

Appendix E

GOULBURN MULAWAREE COUNCIL

STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580

for

FRAVO CONSTRUCTIONS

Dec, 17

LOCALITY PLAN
SCALE 1:1500 @ A1

DRAWING INDEX	
DRG.No.	**DESCRIPTION**
C000	Cover Sheet & Drawing Index
C001	General Notes and Legend
C002	Typical Sections & Miscellaneous Details
C003	General Arrangement
C004	Earthworks Plan
C005	Longitudinal and Cross Sections - MC01 - Road 01
C006	Longitudinal and Cross Sections - MC02 - ROW
C007	Longitudinal and Cross Sections - MC03 - Wollondilly Ave
C008	Intersection Grading Plans - Wollondilly Ave & Road 01
C009	Intersection Grading Plans - Lip Return Cul01
C010	Drainage Longitudinal Sections
C011	Drainage Longitudinal Section - Miscellaneous Details and Setout Table
C012	Drainage Water Quality Control Basin - Detail Plans and Sections
C013	Sewer Longitudinal Sections
2 C014	Water Reticulation
C015	Erosion and Sediment Control Concept Plan
C016	Erosion and Sediment Control Miscellaneous Details

ISSUED FOR APPROVAL

WARNING
EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

PROJECT NO: T01506

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

E:\CES\170552-STRATHALLAN-SRLE\CIVIL\170552-C000-CS.DWG PLOTTED:6/12/2017

DO NOT SCALE

GENERAL

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH GOULBURN MULWAREE COUNCIL SPECIFICATION DATED 2013 AND CURRENT STANDARD DRAWINGS
2. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT SERVICES DRAWINGS & ALL OTHER DRAWINGS FROM OTHER CONSULTANTS.
3. THE CONTRACTOR SHOULD REPORT ANY DISCREPANCIES ON THE DRAWINGS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN.
4. THE CONTRACTOR SHOULD LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND PROTECT AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE AND/OR ADJUST IF NECESSARY. INFORMATION GIVEN ON THE DRAWINGS IN RESPECT TO SERVICES IS FOR GUIDANCE ONLY AND IS NOT GUARANTEED COMPLETE NOR CORRECT.
5. CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER.
6. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED OR REMOVED FROM SITE.
7. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES AND DEBRIS ETC. TO THE EXTENT SPECIFIED.
9. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED PERSON IN ACCORDANCE WITH RMS REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC ROADS, PLAN TO BE SUBMITTED TO COUNCIL FOR APPROVAL.
10. ALL CONSTRUCTION WORK IS TO BE CARRIED OUT SO THAT AT ANY TIME PROPERTY OWNERS ARE NOT DEPRIVED OF AN ALL - WEATHER ACCESS OR SUBJECTED TO ADDITIONAL STORMWATER RUN-OFF DURING THE PERIOD OF CONSTRUCTION.
11. ALL DISTURBED SURFACES TO BE REINSTATED TO AS NEARLY AS POSSIBLE TO THE PRE-CONSTRUCTED CONDITION.

WATER RETICULATION NOTES

1. WATERMAINS SHALL BE LAID 2.7 METRES FROM PROPERTY BOUNDARY ON WILLONDILLY AVENUE AND 1.0m IN NEW ROAD TO CENTRE OF PIPE UNLESS OTHERWISE SHOWN.
2. WATERMAIN PIPE SHALL BE U.P.V.C. MATERIAL CLASS 16, RUBBER RING JOINTED (WITH COMPATIBLE OUTSIDE DIAMETER A.C., D.I. & C.I. PIPES) IN ALL LOCATIONS EXCEPT UNDER ROADS WHERE PIPES SHALL BE U.P.V.C. CLASS 20.
3. MAXIMUM HYDRANT SPACING SHALL BE 60 METRES.
4. HYDRANTS TO BE PROVIDED AT ALL HIGH AND LOW POINTS ALONG WATERMAINS.
5. MINIMUM TOTAL COVER TO PIPES SHALL BE 750mm IN EMBANKMENTS, 700mm ELSEWHERE.
6. ALL SERVICE CONNECTIONS TO EXTEND 300mm INTO ALLOTMENT AND SHALL INCLUDE STANDARD RISER & A QUARTER TURN ISOLATION COCK HOUSED WITHIN A SURFACE BOX
7. WORK TO BE CARRIED OUT IN ACCORDANCE WITH GOULBURN MULLAWAREE COUNCIL WATER RETICULATION STANDARDS.
8. WATERMAINS WITHIN ROAD CROSSING TO HAVE TRENCH BACKFILL COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL.
11. COMPACTION TESTING OF THE BACKFILL IN ACCORDANCE WITH THE SPECIFICATION, CLAUSE C401.40/4, SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL WATERMAINS LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR ROAD PAVEMENT.
12. THE RATE OF TESTING IS TO BE AT A MINIMUM OF TWO TESTS PER ROAD CROSSING OR AT MAXIMUM 25m INTERVALS PER MAXIMUM 150mm THICK LAYER OF BACKFILL.
13. METERS ARE TO BE GENERALLY LOCATED ON THE OPPOSITE SIDE OF THE LOT TO THE OTHER SERVICES
14. WATER TIES TO BE SINGLE PIECE OF PIPE WITH A JOINT AT EACH END ONLY

DRAINAGE RETICULATION NOTES

GENERAL DRAINAGE INSTALLATION NOTES

1. ENDS OF PIPES AND STUB CONNECTIONS TO BE SEALED WITH AN APPROVED SEALED DISC.
2. MILD STEEL 'STAR' PICKET 1200mm LONG WITH 300mm PAINTED GREEN, EXTENDED ABOVE GROUND LEVEL TO BE PLACED AT EACH INTER-ALLOTMENT DRAINAGE CONNECTION POINT.
3. PROVIDE 90 DIAMETER STUB CONNECTION WHERE SHOWN.
4. BIDUM A14 GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR PROTECTION.
5. ALL BASES OF PITS TO BE BENCHED TO HALF PIPE DEPTH AND PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE.
6. PROVIDE 1m WIDE JUTE MESH ANCHORED ALONG BASE OF SWALES AND SPRAY GRASS SWALE USING A SEED MIX CONSISTING OF:
   - FECUE TYPE TURF
   - RYE CORN (80% STERILE AND ANNUAL)
   - UNHULLE COUCH GRASS.
   - VICTORIAN PERENNIAL RYE GRASS
7. ALL PIPES SHALL BE RUBBER RING JOINTED (RRJ)

RCP CONVENTIONAL INSTALLATIONS & ROAD CROSSINGS

1. SUPPLY & INSTALLATION OF DRAINAGE WORKS TO BE IN ACCORDANCE WITH THESE DRAWINGS, THE COUNCIL SPECIFICATION AND THE CURRENT APPLICABLE AUSTRALIAN STANDARDS.
2. BEDDING OF THE PIPELINES IS TO BE TYPE 'HS2' IN ACCORDANCE WITH THE STANDARDS AND AS FOLLOWS:
   a. BEDDING DEPTH UNDER THE PIPE TO BE 100mm.
   b. BEDDING MATERIAL TO BE EXTENDED FROM THE TOP OF THE BEDDING ZONE UP TO 0.3 TIMES PIPE OUTSIDE DIAMETER. THIS REPRESENTS THE 'HAUNCH ZONE.'
   c. THE BEDDING & HAUNCH ZONE MATERIAL IS TO BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIVENESS MATERIAL.
   d. COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL DRAINAGE LINES LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR PAVEMENT.
3. BACKFILL SHALL BE PLACED & COMPACTED IN ACCORDANCE WITH THE SPECIFICATION. TESTING OF BACKFILL IS TO OCCUR AT THE SAME INTERVALS FOR THE BEDDING AND HAUNCH ZONES.
4. A MINIMUM OF 300mm CLEARANCE IS TO BE PROVIDED BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL.
5. A Ø90 SUBSOIL DRAIN IS TO CONNECT INTO THE BASE OF EACH PIT WITHIN THE ROAD RESERVE & EXTEND 3.0m UPSTREAM OF THE PIT.
6. ALL SERVICE CONNECTIONS SHALL BE Ø100 uPVC STORMWATER CLASSIFICATION TO AS1254 AT 1.0% MIN. GRADE UNLESS NOTED OTHERWISE.
7. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCILS SPECIFICATIONS UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
8. CONTRACTOR IS TO VERIFY THE LEVEL AND ALIGNMENT OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF EXCAVATION FOR DRAINAGE.
9. STORMWATER PIT LOCATIONS & LEVELS MAY BE VARIED TO SUIT SITE CONDITIONS, AFTER CONSULTATION WITH THE ENGINEER.
10. ALL COURTYARD & LANDSCAPE PITS TO BE 450 SQ UNLESS NOTED OTHERWISE. ALL DRIVEWAY & OSD PITS TO BE 600 SQ.
11. HAND EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.

PAVEMENT NOTES

1. ALL SUBGRADES TO BE PROOF ROLLED & APPROVED BY SITE SUPERINTENDENT.
2. ASPHALT MIX TO BE DENSE GRADED MIX FOR ALL ROADS.
3. SUB-BASE & BASECOURSE CAN BE CONSTRUCTED OF APPROVED NGS40 IN LIEU OF DGS AND DGB.
4. DESIGN CBR TO BE CONFIRMED ON SITE BY A MINIMUM OF FOUR DAY SOAKED CBR TESTS DURING THE BOXING OUT FOR THE PAVEMENT. NO PAVEMENT MATERIALS ARE TO BE PLACED UNTIL THE DESIGN CBR IS CONFIRMED AND THE SUBGRADE INSPECTED BY A GEOTECHNICAL ENGINEER TO CONFIRM THE CONSISTENCY OF MATERIALS.
5. PRIOR TO THE PLACEMENT OF THE PRIMERSEAL AND AFTER THE REQUIRED DENSITY IS ACHIEVED, THE PAVEMENT IS TO BE ALLOWED TO DRY BACK TO APPROXIMATELY 60% TO 70% OPTIMUM MOISTURE CONTENT.
6. COMPACTION TESTS ARE TO BE UNDERTAKEN FOR ALL PAVEMENT LAYERS INCLUDING SUBGRADE AT A RATE TO BE DETERMINED BY THE SUPERVISING ENGINEER AND THE RESULTS TO BE SUPPLIED TO THE ENGINEER PRIOR TO PLACEMENT OF THE NEXT PAVEMENT LAYER.

SEWER RETICULATION NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH GOULBURN MULWAREE COUNCIL'S DESIGN AND CONSTRUCTION SPECIFICATIONS.
2. ALL MAINS ARE TO BE 150mm DIAMETER UPVC PIPES. PIPES TO BE CLASS SH FOR MAINS LAID UP TO 3m DEEP AND CLASS SEH FOR MAINS EXCEEDING 3.0 METRES IN DEPTH.
3. MANHOLES, ARE TO BE LOCATED AS INDICATED ON THE PLANS.
4. FOR MAINS EXCEEDING 15% IN GRADE, CONCRETE BULKHEADS AND CONCRETE BEDDING SHALL BE PROVIDED FOR IN ACCORDANCE WITH GOULBURN CITY COUNCIL REQUIREMENTS.
5. FOR MAINS WHERE GRADES ARE BETWEEN 5% AND 15% THE CONTRACTOR IS TO PROVIDE SAND BAG TYPE BULKHEADS, PLACEMENT AT MAXIMUM 10.0 METRE SPACINGS.
6. DURING EXCAVATION ALL SPOIL SHALL BE MOUNDED ON THE UPHILL SIDE OF TRENCHES AND PLACEMENT IS TO COMPLY WITH THE SUPERINTENDENT'S REQUIREMENTS.
7. IMMEDIATELY AFTER TRENCH BACKFILLING AND AT THE END OF EACH DAYS CLOSURE HAY BALE BARRIERS ARE TO BE PLACED ACROSS EACH TRENCH AT MAXIMUM 20.0 METRE SPACINGS. HAY BALES ARE TO REMAIN IN PLACE UNTIL REVEGETATION HAS OCCURRED.
8. SEWERMAINS WITHIN ROAD CROSSING TO HAVE TRENCH BACKFILL COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL.
9. COMPACTION TESTING OF THE BACKFILL IN ACCORDANCE WITH THE SPECIFICATION, CLAUSE C402.48/4, SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL SEWERMAINS LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR ROAD PAVEMENT.
10. THE RATE OF TESTING IS TO BE AT A MINIMUM OF TWO TESTS PER ROAD CROSSING OR AT MAXIMUM 25m INTERVALS PER MAXIMUM 150mm THICK LAYER OF BACKFILL.

SURVEY

1. SRLE IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY SURVEY INFORMATION PROVIDED ON THIS DRAWING.
2. ALL LEVELS ARE TO A.H.D.
3. ALL CHAINAGES AND LEVELS ARE IN METRES, AND DIMENSIONS IN MILLIMETRES.
4. CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.

BIORETENTION BASIN SPECIFICATION NOTES

FILTER BED MEDIA

THE FILTRATION MEDIA SHALL BE A WELL GRADED LOAMY SAND WITH:

- HYDRAULIC CONDUCTIVITY (ASTM F1815-06) BETWEEN 200 AND 300mm/HOUR
- PH BETWEEN 5.5 AND 7.5
- ORGANIC CONTENT LESS THAN 5 PERCENT
- ELECTRICAL CONDUCTIVITY LESS THAN 1.2 DS/M
- ORTHOPHOSPHATE CONTENT LESS THAN 40 mg/kg
- NITROGEN CONTENT <400mg/kg

SUBJECT TO ADEQUATE HYDRAULIC CONDUCTIVITY THE FOLLOWING PARTICLE SIZE DISTRIBUTION IS A GUIDE:

• CLAY AND SILT	< 3% (<0.05mm)
• VERY FINE SAND	5-30% (0.05 - 0.15mm)
• FINE SAND	10-30%(0.15 - 0.25mm)
• MED-COARSE SAND	40-60%(0.25 - 1.0mm)
• COARSE SAND	7-10% (1.0 - 2.0mm)
• FINE GRAVEL	<3% (>2.0mm)

THE FILTRATION MEDIA WILL BE COMPACTED WITH ONE PASS OF A VIBRATORY PLATE COMPACTER OR DRUM ROLLER.

THE TRANSITION LAYER SHALL BE CLEAN, WELL-GRADED SAND CONTAINING LITTLE OR NO CLAY AND SILT (<2% FINES). D15 OF THE TRANSITION LAYER MUST BE 5 x D85 OF THE FILTER MEDIA.

THE DRAINAGE LAYER SHALL BE 2-7mm WASHED SCREENINGS WITH 5% ADDED CARBON (BY VOLUME) OS SIMILAR SIZE (E.G. SMALL WOODCHIPS). D15 OF THE DRAINAGE LAYER MUST BE 5 x D85 OF THE TRANSITION LAYER.

THE SURFACE OF THE FILTER AREA IS TO BE COVERED BY A MINIMUM 50MM THICK LAYER OF GRAVEL AND MULCH.

VEGETATION

THE BASIN IS TO BE PLANTED WITH NATIVE AND MOISTURE TOLERANT PLANTS TO INCLUDE:

GROUP 1 - GROUNDCOVERS/PROSTRATE. PLANTING DENSITY TO BE 4-6 PLANTS/m²

- MEFALEVCA ERIKFOLIA
- COODENIA OVALS
- FICINIA NODOSA
- JUNCUS AMABILIA
- JUNCUS FLAVIDUS
- VIOLA HEDERACEA
- DICHONDRA REPENS
- MYOPORUM PARVIFOLIUM
- HIBBERTIA OBTUSIFOLIA

GROUP 2- SMALL ERECT SHRUB/GRASS. PLANTING DENSITY TO BE 2-4 PLANTS/ m².

- DIANELLIA LONGIFOLIA
- DIANELLA TASMANICA
- CAREX APPRESSA
- LOMANDRA FILIFORMIS
- POA LABILLARDIERI
- CORREA REFLEXA

GROUP 3- TALL SHRUBS. PLANTING DENSITY TO BE 1 PLANT/50 m².

- CALLISTEMON SIEBERI
- MELALEUCA ERICIFOLIA
- LEPTOSPERMUM LANIGERUM

BIORETENTION BASIN CONSTRUCTION NOTES:

1. PROVIDE APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES PROTECT FILTRATION MEDIA DURING CONSTRUCTION WORKS FROM UNCONTROLLED SITE RUNOFF LIKELY TO CAUSE SEDIMENTATION (DURING EXCAVATION WORKS LIMIT AREAS OF DISTURBANCE AROUND THE BASIN. STABILISE PERMANENT WORKS AS SOON AS POSSIBLE AND PRIOR TO ANY RAINFALL EVENT PROVIDE TEMPORARY GROUND COVER OVER EXPOSED AREAS USING GEOFABRIC OR TURF).
2. ENSURE NO HEAVY MACHINERY OR OBJECTS ARE LEFT ON THE FILTRATION MEDIA AS THIS CAN COMPACT AND POTENTIAL BLOCK THE FILTRATION LAYER.
3. ALL BATTERS AND SUBGRADE/ EARTHWORKS TO ACHEIVE MINIMUM OF 95% STANDARD COMPACTION IN ACORDANCE WITH AS 1289.
4. PERFORATED PIPES CAN BE SLOTTED WITH 1.5mm WIDE x 7.5mm LONG PERFORATIONS. DO NOT USE A SOCK.
5. INSPECTION OPENINGS FOR THE BASIN SUB-SOIL DRAINAGE SYSTEM ARE TO BE PROVIDED AS SHOWN ON THIS PLAN.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
H — W — SV — W	H — W — SV	HYDRANT (H), STOP VALVE (SV) & THRUST BLOCK
	W 100	Ø100 DICL WATER MAIN RETICULATION WITH CONNECTION TIE
— D — D —	GS — D — KIP	DRAINAGE LINE WITH GRATED PIT (GP) AND KERB INLET PIT (KIP)
	D	DRAINAGE LINE WITH HEAD WALL
— S — S —	MH — S	SEWER LINE WITH MAINTENANCE HOLE (MH)
	FLOW	DRAINAGE LINE WITH SERVICE TIE
	FLOW — S	SEWER LINE WITH SERVICE TIE
— SRM —		SEWER RISING MAIN (PRESSURISED)
— GAS — GAS —		GAS RETICULATION
— TEL —		TELECOMMUNICATION RETICULATION
— E —		ELECTRICAL OVERHEAD RETICULATION
	ST	SHARED TRENCH
	01 / 22	DRAINAGE STRUCTURE NO. DRAINAGE LINE NO.
	6S / 60	SEWER STRUCTURE NO. SEWER LINE NO.
		SIGN REFER TO STD DRG SD-R 11 FOR DETAILS
	VC	SINGLE RESIDENTIAL DRIVEWAY. REFER STD DRG SD-R 06 & SD-R 07 (2.7m WIDE)
		OVERLAND FLOW PATH
		SAWCUT AND MATCH TO EXISTING SMOOTHLY
	BK	KERB BK (BARRIER KERB AND GUTTER) REFER DRG C002 FOR DETAILS.
	LBK	KERB LBK - (LAYBACK KERB). REFER DRG C002 FOR DETAILS
	DC	KERB DC (DISHED CROSSING) REFER DRG C002 FOR DETAILS
	PC	PC (PRAM CROSSING) REFER STD DRG SD-R 10 A FOR DETAILS
	KO	KERB OPENING (KO) REFER DRG C002 FOR DETAILS
		TREE TO BE REMOVED
		PAVEMENT TYPE -TAG
		PAVEMENT TYPE - PV1
		PAVEMENT TYPE - PV2
		PAVEMENT TYPE - PP
		PAVEMENT TYPE - FP

WARNING
EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED ----	DATE ----
SCALE ----	APPROVED ----	DATE ----

S.R.L.E. SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

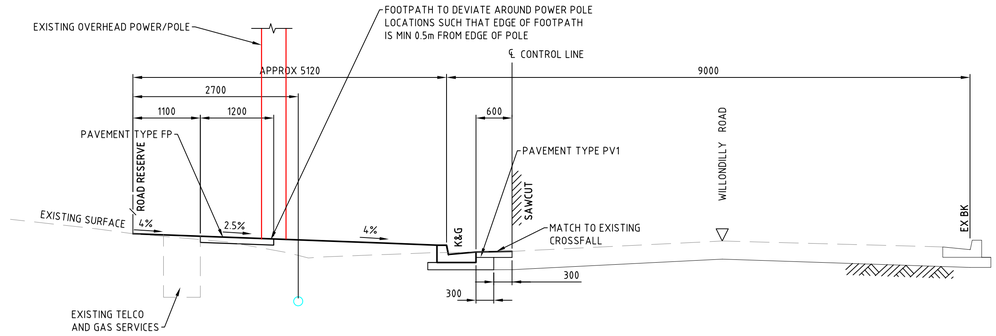
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
GENERAL NOTES AND LEGEND

DRG. No. T01506 - C001 | Issue IFA | Rev. 2

12/12/2017
C001
E:\CES\170352-strathallan-srle\Civil\170352-C001-GN.dwg

DO NOT SCALE

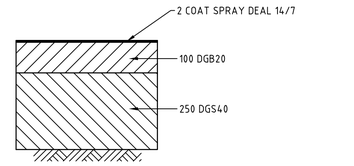


WOLLONDILLY ROAD - (MC03) TYPICAL SECTION (1 C003)

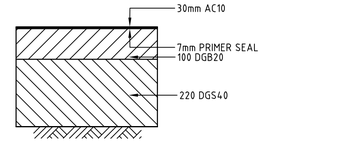
SCALE 1:50

WARNING

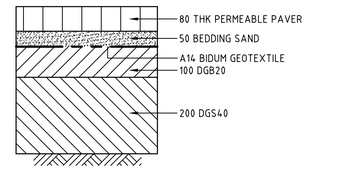
EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY



PAVEMENT TYPE PV1

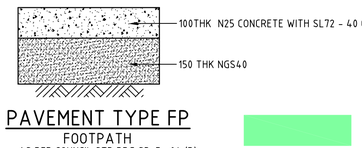


PAVEMENT TYPE PV2



PAVEMENT TYPE PP

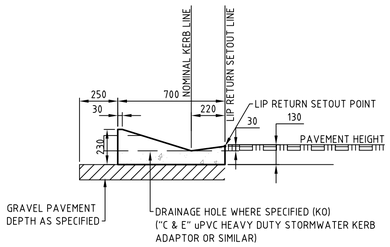
PERMEABLE PAVEMENT



PAVEMENT TYPE FP

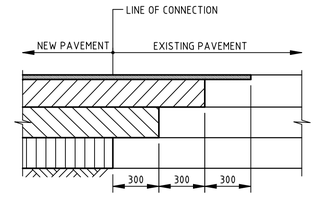
FOOTPATH

AS PER COUNCIL STD DRG SD-R- 04 (B)



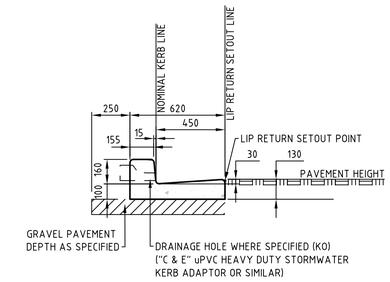
LAYBACK KERB (LBK) DETAIL

SCALE 1:20



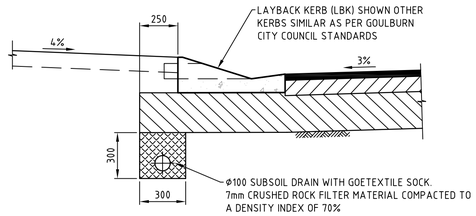
PAVEMENT JOINT DETAIL

SCALE 1:20



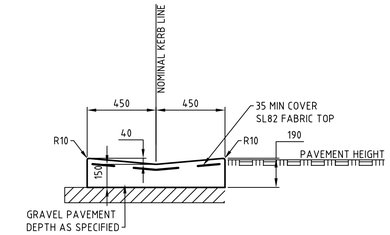
BARRIER KERB AND GUTTER (BK) DETAIL

SCALE 1:20



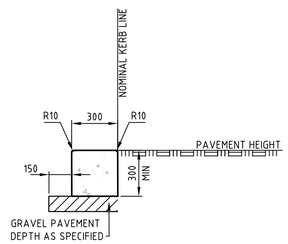
TYPICAL PAVEMENT EDGE DETAIL

SCALE 1:20



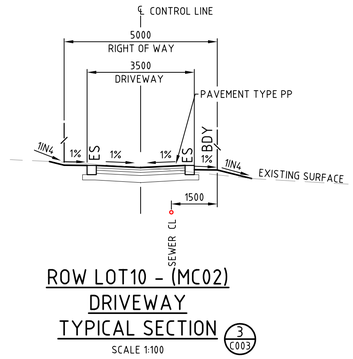
DISH CROSSING (DC) DETAIL

SCALE 1:20



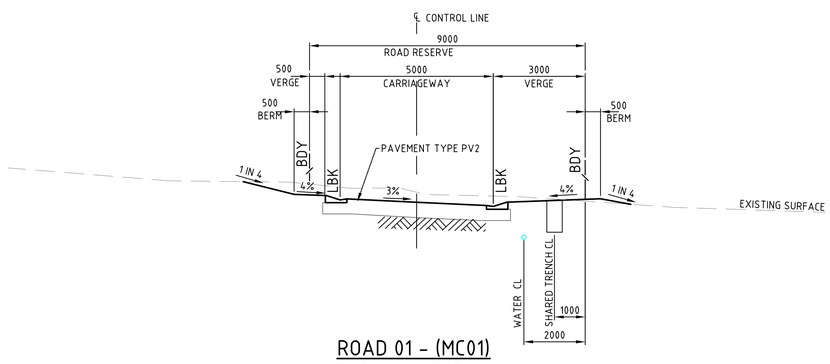
EDGE STRIP (ES) DETAIL

SCALE 1:20



ROW LOT10 - (MC02) DRIVEWAY TYPICAL SECTION (3 C003)

SCALE 1:100



ROAD 01 - (MC01) TYPICAL SECTION (2 C003)

SCALE 1:100

STRATHALLAN - ROAD PAVEMENT SCHEDULE							
Description	**Chainages**	**ESAs**	**Assumed CBR**	**Subbase**	**Base**	**Primer**	**Wearing Course**
MC01	START to END	6x104	5	220mm DGS40	100mm DGB20	7mm Primer Seal	30 mm AC10

1 0.5 0 1 2 3 4 m

1 : 50-A1 1 : 100-A3

1000 500 0 1000 mm

1 : 20-A1 1 : 40-A3

2 1 0 2 4 6 8 m

1 : 100-A1 1 : 200-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	CES

ISSUED FOR APPROVAL

DRAWN: SWC	DESIGNED: SWC	DATE: SEP '17
DATE: DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.

STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.

TYPICAL SECTIONS AND MISCELLANEOUS DETAILS

DRG. No. T01506 - C002 | Issue IFA | Rev. 2

12/12/2017

C002

E:\CES\170352-strathallan-srle\Civil\170352-C002-TYP.dwg

DO NOT SCALE

10 5 0 10 20 m

1 : 250–A1 1 : 500–A3

WARNING
EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

INFILTRATION TRENCH – LOT 10 CONSTRUCTED AND APPROVED AS PART OF NEW DWELLING

LOCALISED SITE REGRADING LEVEL 1 CONTROL FILL

LOT 10 FFL638.200

BREAK UP AND REMOVE EXISTING CONCRETE PAD

Conc Pad

LOCALISED SITE REGRADING LEVEL 1 CONTROL FILL

ROAD 01 (MC01)

MC01A

MC02

LINE 01 LINE 02 LINE 03 LINE S01 LINE S02

LR 01 C006

LR 02 C006

BASIN 01. REFER DRG C012 FOR DETAILS

REMOVE REDUNDANT DRAINAGE INFRASTRUCTURE

CONSTRUCT FOOTPATH TO DEVIATE AROUND POWER POLE LOCATIONS SUCH THAT EDGE OF FOOTPATH IS MIN 0.5m FROM EDGE OF POLE

CUL01 C007

PV1 PV2

Brick Cottage

Car Port

Brick Building

Parking

Garage

Meter

WOLLONDILLY AVENUE – (MC03)

JOIN LINE – REFER BELOW RIGHT

EXISTING KIP AND PIPEWORK TO BE REPLACED WITH INCREASED CAPACITY DRAINAGE INFRASTRUCTURE

ADJUST EXISTING TELSTRA PIT COVER TO DESIGN LEVELS AND INSTALL TRAFFIKABLE SUITABLE COVER

CONNECT TO EXISTING SEWER Ø150 STUB IL635.840

CONNECT EXISTING DRAINAGE LINE TO NEW KIP.

REINSTATE EXISTING DRIVEWAYS/VERGE AND KERB TO PRE-EXISTING CONDITIONS ON COMPLETION OF ALL WORKS

CUT IN AND CONNECT TO EXISTING Ø100 WATERMAIN USING Ø100 x Ø100 TEE

NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title:
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title:
GENERAL ARRANGEMENT

DRG. No. T01506 - C003 | Issue IFA | Rev. 2

06/12/2017 C003 E:\CES\170352-strathallan-srle\Civil\170352-C003-GA.dwg

DO NOT SCALE

10 5 0 10 20 m

1 : 250–A1 1 : 500–A3

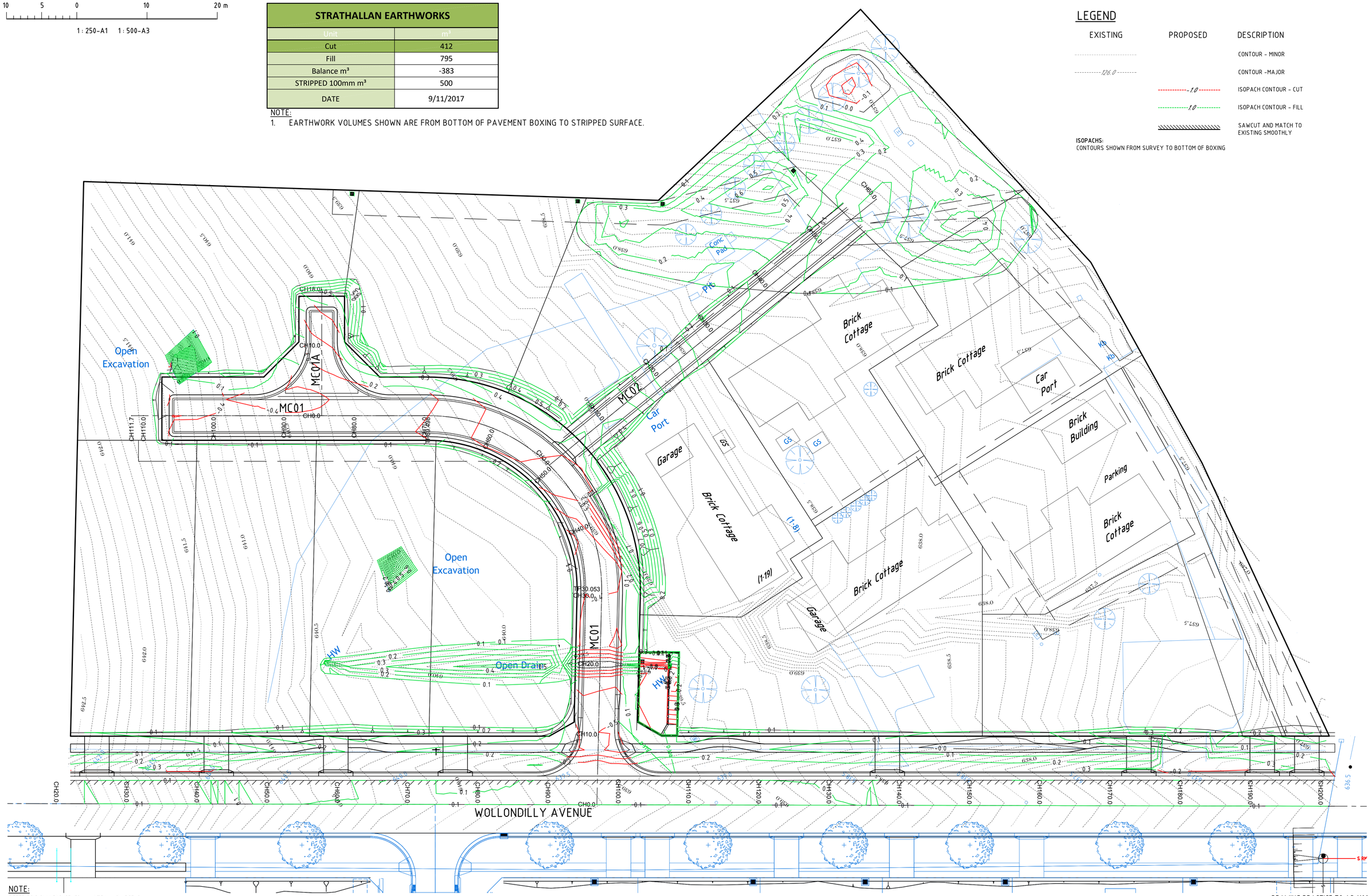
STRATHALLAN EARTHWORKS	
Unit	m³
Cut	412
Fill	795
Balance m³	-383
STRIPPED 100mm m³	500
DATE	9/11/2017

NOTE:
1. EARTHWORK VOLUMES SHOWN ARE FROM BOTTOM OF PAVEMENT BOXING TO STRIPPED SURFACE.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR - MINOR
126.0		CONTOUR -MAJOR
	1.0	ISOPACH CONTOUR - CUT
	1.0	ISOPACH CONTOUR - FILL
		SAWCUT AND MATCH TO EXISTING SMOOTHLY

ISOPACHS:
CONTOURS SHOWN FROM SURVEY TO BOTTOM OF BOXING



NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

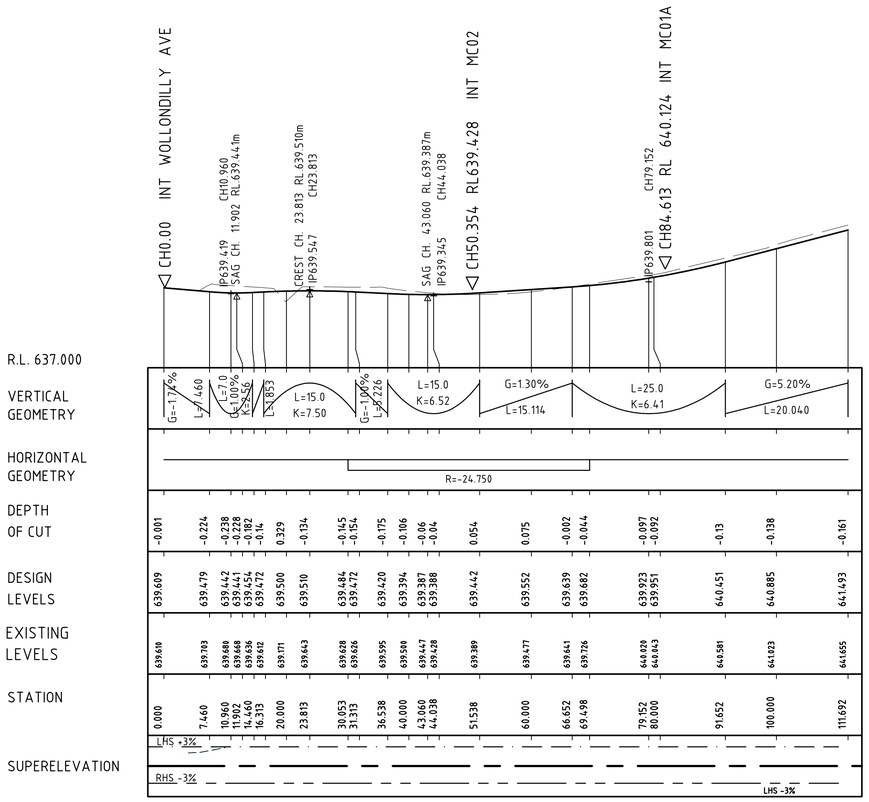
DRG. Title.
EARTHWORKS PLAN

DRG. No. T01506 - C004 | Issue IFA | Rev. 2

E:\CES\T70352-strathallan-srle\Civil\T70352-C004-ISO.dwg 06/12/2017 C004

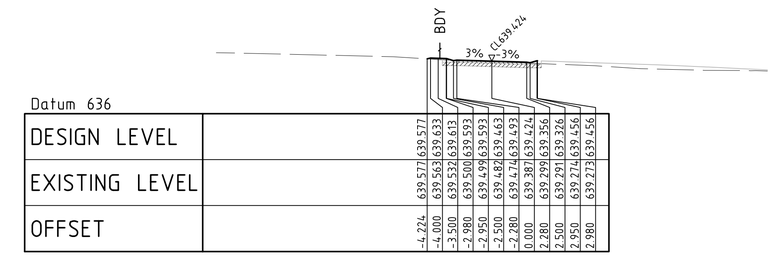
DO NOT SCALE

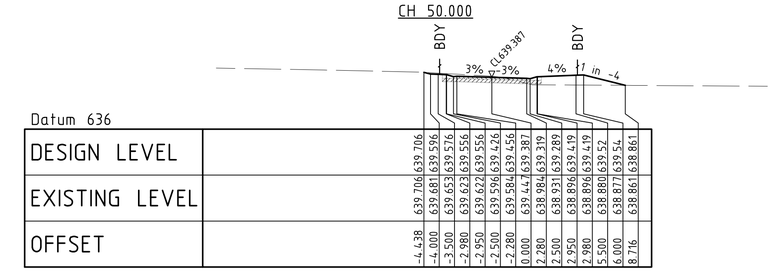
CONTROL ROAD-MC01 HORIZONTAL IPS							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	RADIUS	A.LENGTH	DEFL.ANGLE
IP 1	0.000	751995.385	6154271.652	639.609			
IP 2	49.775	752031.965	6154313.228	639.422	-24.750	39.445	91°18'54.14"
IP 3	111.692	751980.263	6154356.653	641.493			

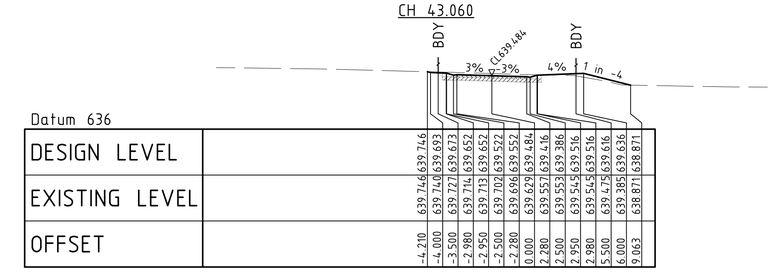


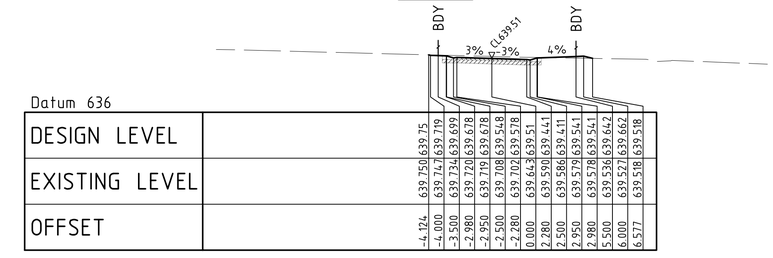
LONGITUDINAL SECTION ALONG MC01

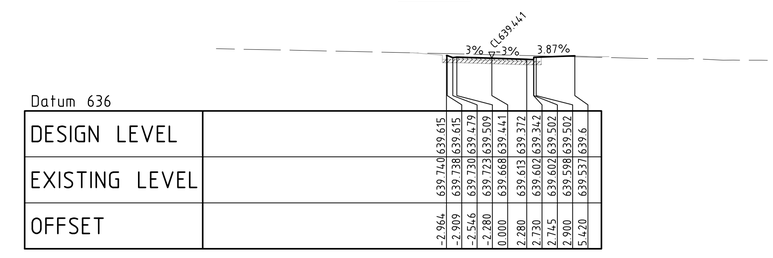
SCALE HORIZ 1:500
VERT 1:100

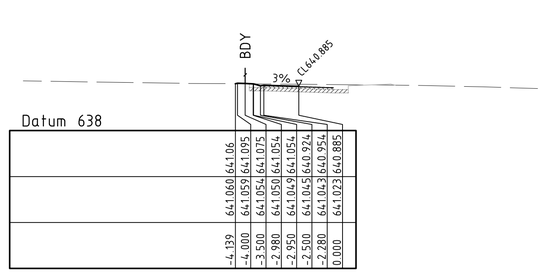


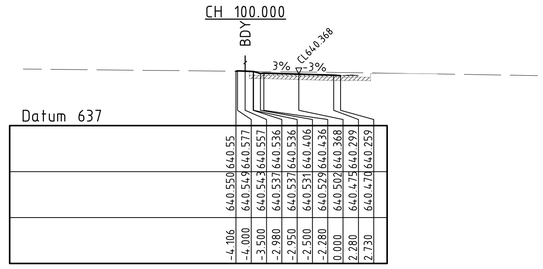


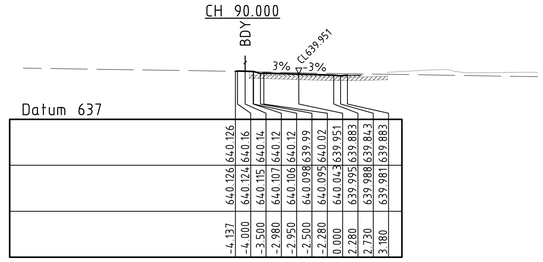


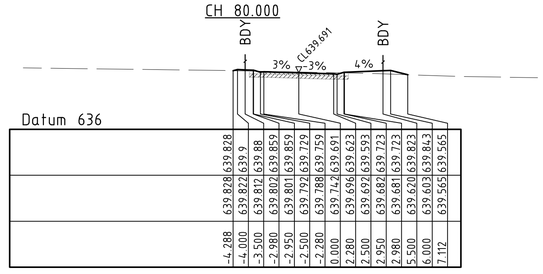


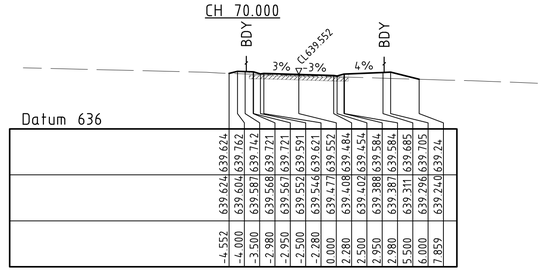












HOR. 10 5 0 10 20 30 40 m 1:500-A1 1:1000-A3

VERT. 1 0.5 0 1 2 3 4 m 1:50-A1 1:100-A3

10 5 0 10 m

1:200-A1 1:400-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
LONGITUDINAL AND CROSS SECTIONS MC01 - ROAD 01

DRG. No. T01506 - C005

ISSUE IFA Rev. 2

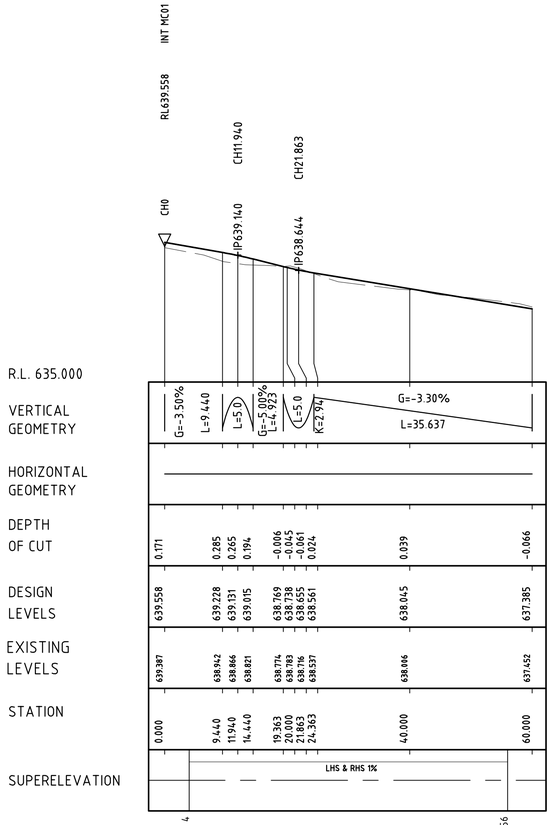
06/12/2017

C005

E:\CES\170352-strathallan-srle\Civil\170352-C05-LS.dwg

DO NOT SCALE

CONTROL ROAD-MC02 HORIZONTAL IPS				
PT	CHAINAGE	EASTING	NORTHING	HEIGHT
IP 1	0.000	752021.284	6154313.002	639.558
IP 2	60.000	752081.277	6154312.038	637.385



LONGITUDINAL SECTION ALONG MC02

SCALE HORIZ 1:500
VERT 1:100

Datum 634

DESIGN LEVEL	637.570	637.571	637.581	637.585	637.604	637.616	637.616	637.621	637.622	
EXISTING LEVEL	637.570	637.571	637.581	637.585	637.604	637.616	637.616	637.621	637.622	
OFFSET	-2.621	-2.500	-1.750	-1.450	0.000	1.450	1.750	2.500	2.832	

CH 56.000

Datum 635

DESIGN LEVEL	637.999	638.000	638.002	638.002	638.006	638.010	638.014	638.026	638.029	
EXISTING LEVEL	637.999	638.000	638.002	638.002	638.006	638.010	638.014	638.026	638.029	
OFFSET	-2.773	-2.500	-1.750	-1.450	0.000	1.450	1.750	2.500	2.654	

CH 40.000

Datum 635

DESIGN LEVEL	638.549	638.549	638.545	638.544	638.537	638.531	638.529	638.524	638.521	
EXISTING LEVEL	638.549	638.549	638.545	638.544	638.537	638.531	638.529	638.524	638.521	
OFFSET	-2.636	-2.500	-1.750	-1.450	0.000	1.450	1.750	2.500	2.749	

CH 24.363

Datum 636

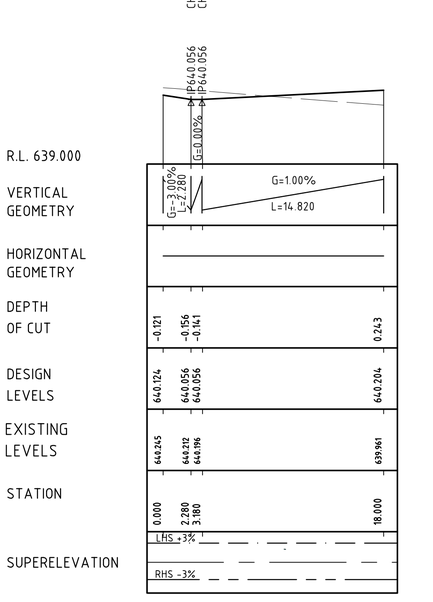
DESIGN LEVEL	638.747	638.748	638.756	638.759	638.774	638.790	638.793	638.805	638.807	
EXISTING LEVEL	638.747	638.748	638.756	638.759	638.774	638.790	638.793	638.805	638.807	
OFFSET	-2.676	-2.500	-1.750	-1.450	0.000	1.450	1.750	2.500	2.564	

CH 19.363

Datum 636

DESIGN LEVEL	638.851	638.838	638.828	638.827	638.821	638.814	638.813	638.814	638.815	
EXISTING LEVEL	638.851	638.838	638.828	638.827	638.821	638.814	638.813	638.814	638.815	
OFFSET	-3.243	-2.500	-1.750	-1.450	0.000	1.450	1.750	2.500	3.389	

CH 14.440



LONGITUDINAL SECTION ALONG MC01A

SCALE HORIZ 1:250
VERT 1:50

HOR. 10 5 0 10 20 30 40 m 1:500-A1 1:1000-A3

VERT. 1 0.5 0 1 2 3 4 m 1:50-A1 1:100-A3

10 5 0 10 m

1:200-A1 1:400-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	----	----	----	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED ----	DATE ----
DATE DEC'17	VERIFIED ----	DATE ----
SCALE ----	APPROVED ----	DATE ----

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.

STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.

RESIDENTIAL SUBDIVISION

DRG. No. T01506 - C006 | Issue IFA | Rev. 2

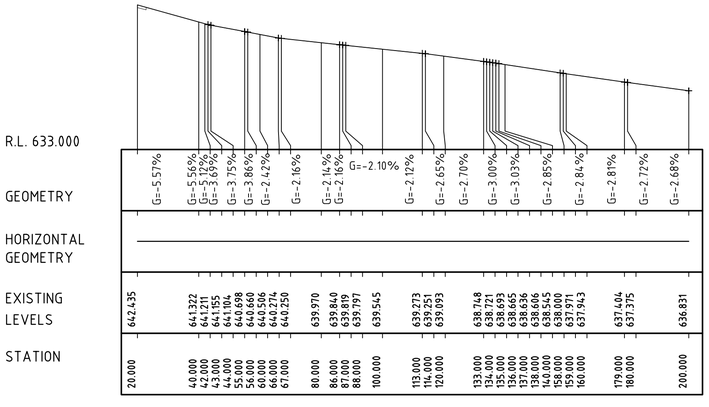
06/12/2017

C006

E:\CES\170352-strathallan-srle\Civil\170352-C05-LS.dwg

DO NOT SCALE

CONTROL ROAD-MC03 WOLLONDILLY AVE HORIZONTAL IPS				
PT	CHAINAGE	EASTING	NORTHING	HEIGHT
IP 1	0.000	751921.257	6154334.143	643.548
IP 2	219.453	752089.013	6154192.659	636.314

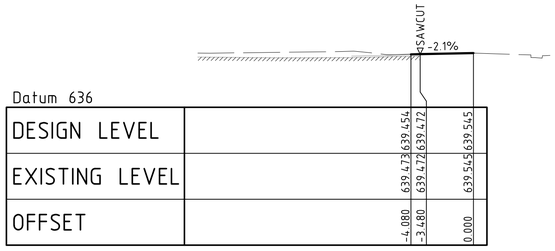


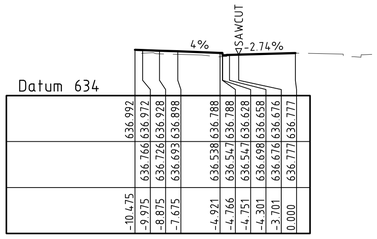
LONGITUDINAL SECTION ALONG MC03 WOLLONDILLY AVE

SCALE HORIZ 1:1000
VERT 1:200

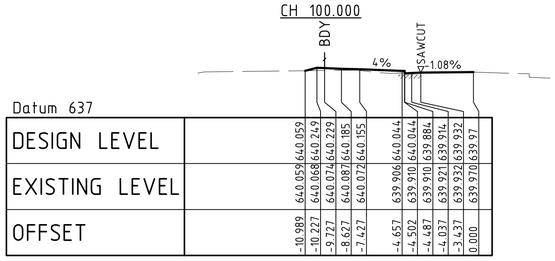
HOR. 20 10 0 20 40 60 80 m 1:1000-A1 1:2000-A3

VERT. 10 5 0 10 m 1:200-A1 1:400-A3

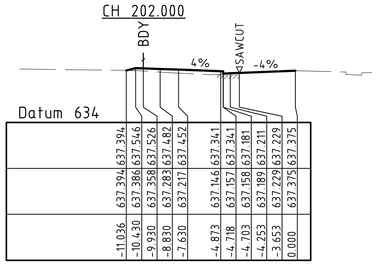




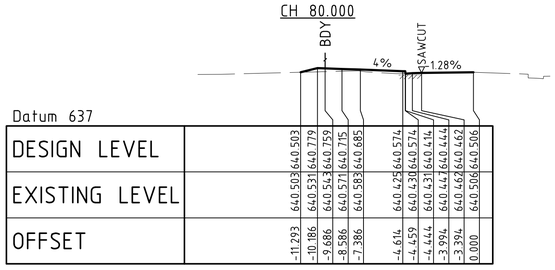
CH 100.000



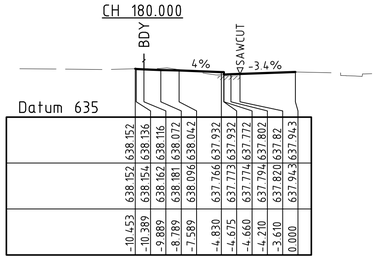
CH 202.000



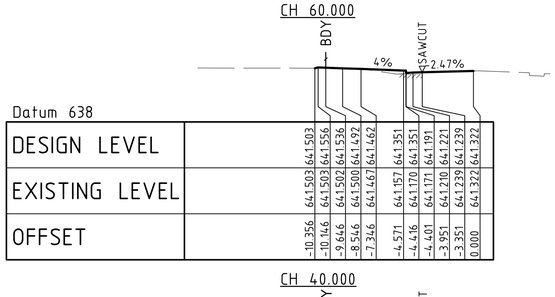
CH 80.000



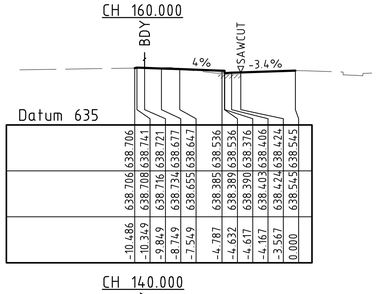
CH 180.000



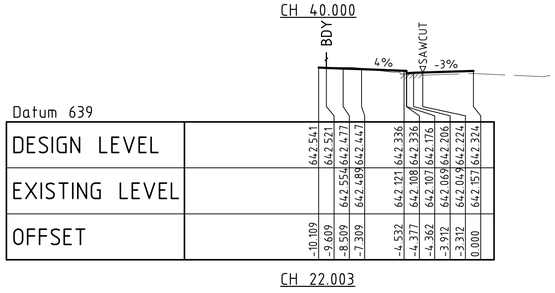
CH 60.000



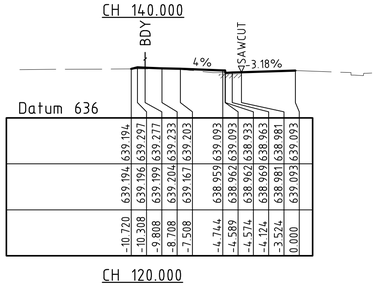
CH 40.000



CH 140.000



CH 22.003



CH 120.000

10 5 0 10 m

1:200-A1 1:400-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	----	----	----	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED ----	DATE ----
DATE DEC'17	VERIFIED ----	DATE ----
SCALE ----	APPROVED ----	DATE ----

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.

STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.

RESIDENTIAL SUBDIVISION

DRG. No. T01506 - C007

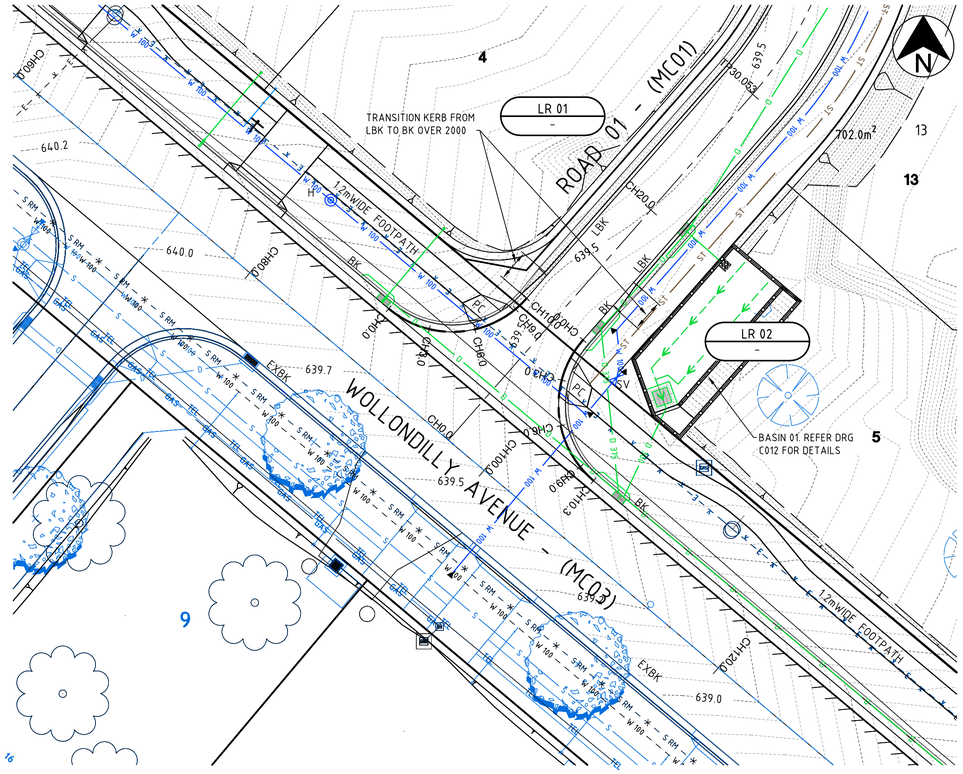
Issue IFA Rev. 2

E:\CES\170352-strathallan-srle\Civil\170352-C05-LS.dwg C007 06/12/2017

DO NOT SCALE

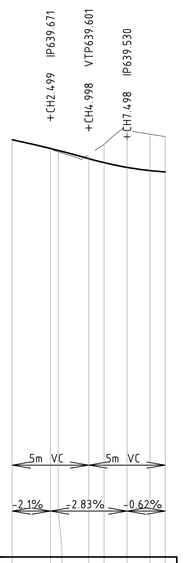
CONTROL LIP-LR01 HORIZONTAL IPS							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	RADIUS	A.LENGTH	DEFL.ANGLE
IP 1	0.000	751991.478	6154280.224	639.724			
IP 2	4.998	751996.307	6154276.152	639.601	-6.450	9.997	88°48'04.91"
IP 3	9.997	752000.479	6154280.894	639.514			

CONTROL LIP-LR02 HORIZONTAL IPS							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	RADIUS	A.LENGTH	DEFL.ANGLE
IP 1	0.000	752004.169	6154278.184	639.375			
IP 2	5.133	751999.818	6154273.240	639.378	-6.450	10.267	91°11'55.09"
IP 3	10.267	752004.853	6154268.993	639.315			



INTERSECTION GRADING PLAN

SCALE 1:200



VERTICAL GEOMETRY

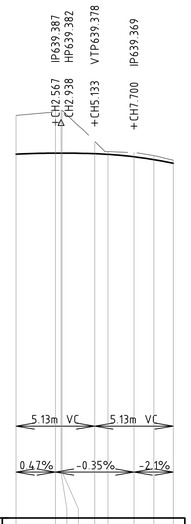
GRADE

Datum RL637

EDGE OF LIP LEVEL	639.724	639.667	639.654	639.601	639.574	639.544	639.523	639.514
EXISTING SURFACE LEVEL	639.727	639.662	639.646	639.620	639.693	639.792	639.758	639.744
PEGGED CHAINAGE	0.000	2.499	3.000	4.998	6.000	7.498	9.000	9.997
PEGGED HORIZONTAL		R-6.45						

LR01 LONGITUDINAL SECTION

SCALE 1:200 HORI
SCALE 1:20 VERT.



VERTICAL GEOMETRY

GRADE

Datum RL637

EDGE OF LIP LEVEL	639.375	639.382	639.382	639.382	639.378	639.374	639.358	639.339	639.315
EXISTING SURFACE LEVEL	639.628	639.658	639.666	639.661	639.455	639.392	639.386	639.367	639.336
PEGGED CHAINAGE	0.000	2.567	2.938	3.000	5.133	6.000	7.700	9.000	10.267
PEGGED HORIZONTAL		R-6.45							

LR02 LONGITUDINAL SECTION

SCALE 1:200 HORI
SCALE 1:20 VERT.

HOR. 10 5.0 0 10.0 m 1:200 -A1 1:400-A3

VERT. 1.0 0.5 0 1.0 m 1:20-A1 1:40-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN	DESIGNED	DATE
SWC	SWC	SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E. SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

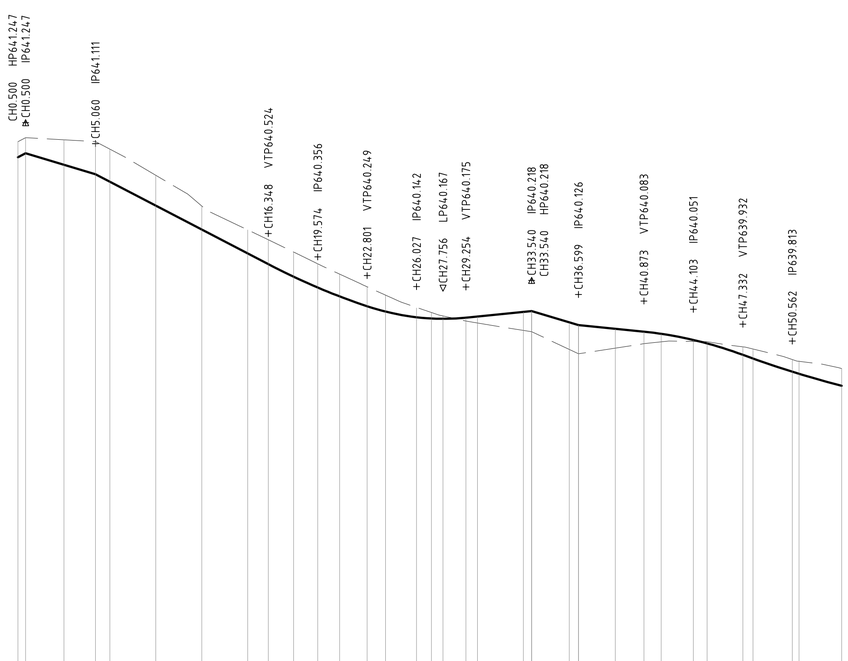
DRG. Title.
INTERSECTION GRADING PLANS
WOLLONDILLY AVE &
ROAD 01

DRG. No. T01506 - C008 | Issue IFA | Rev. 2

E:\CES\170352-strathallan-srle\Civil\170352-C05-LS.dwg 06/12/2017 C008

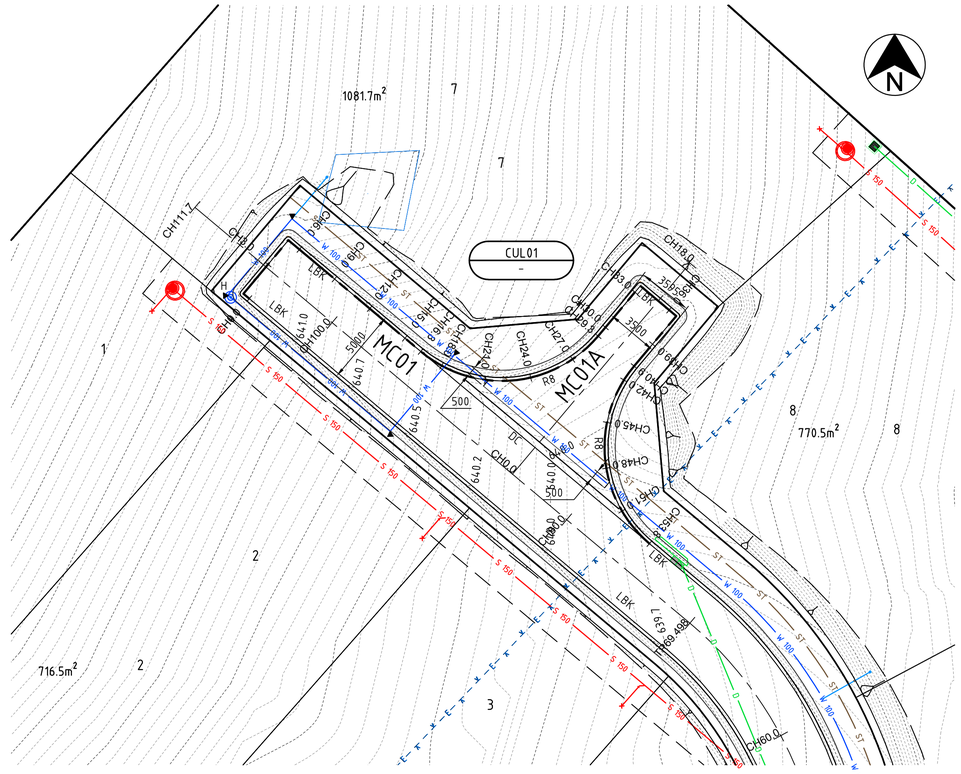
DO NOT SCALE

CONTROL LIP-CUL01 HORIZONTAL IPS							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	RADIUS	A.LENGTH	DEFL.ANGLE
IP 1	0.000	751983.809	6154350.697	641.221			
IP 2	0.500	751983.426	6154351.019	641.247			
IP 3	5.060	751986.359	6154354.510	641.111			
IP 4	22.801	752001.292	6154341.968	640.247	-8.220	12.906	89°57'22.32"
IP 5	33.540	752009.339	6154351.533	640.214			
IP 6	36.600	752011.682	6154349.565	640.122			
IP 7	47.332	752003.635	6154340.000	639.929	-8.220	12.918	90°02'37.68"
IP 8	53.791	752009.935	6154334.709	639.731			



CUL01 LONGITUDINAL SECTION

SCALE 1:200 HORI.
SCALE 1:20 VERT.



INTERSECTION GRADING PLAN

SCALE 1:200

WARNING
EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

HOR. 10 5.0 0 10.0 m 1:200 -A1 1:400-A3
VERT. 1.0 0.5 0 1.0 m 1:20-A1 1:40-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

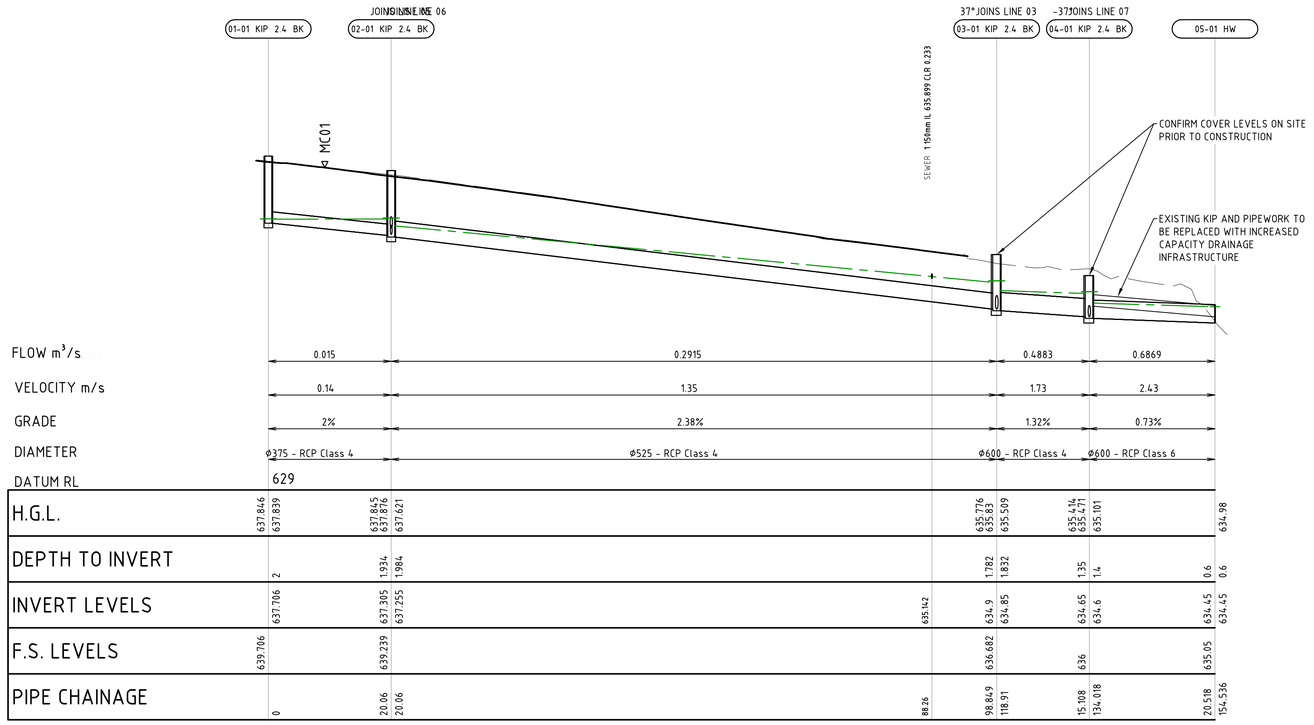
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
INTERSECTION GRADING PLANS
LIP RETURN CUL01

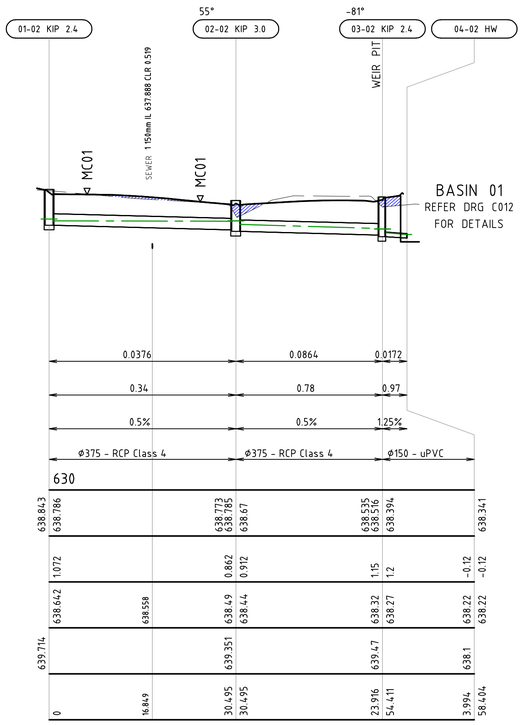
DRG. No. T01506 - C009 | Issue IFA | Rev. 2

06/12/2017 C009 E:\CES\170352-strathallan-srle\Civil\170352-C05-LS.dwg

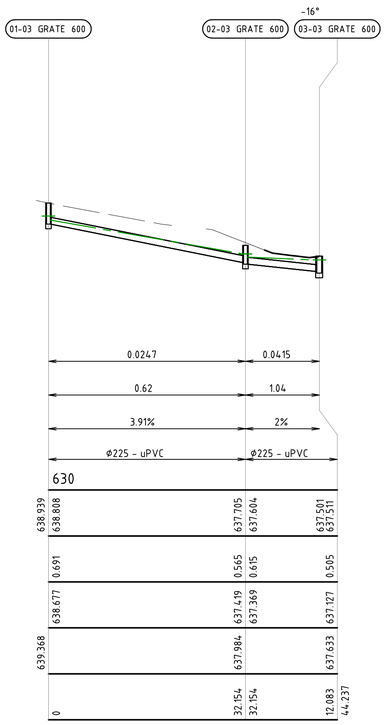
DO NOT SCALE



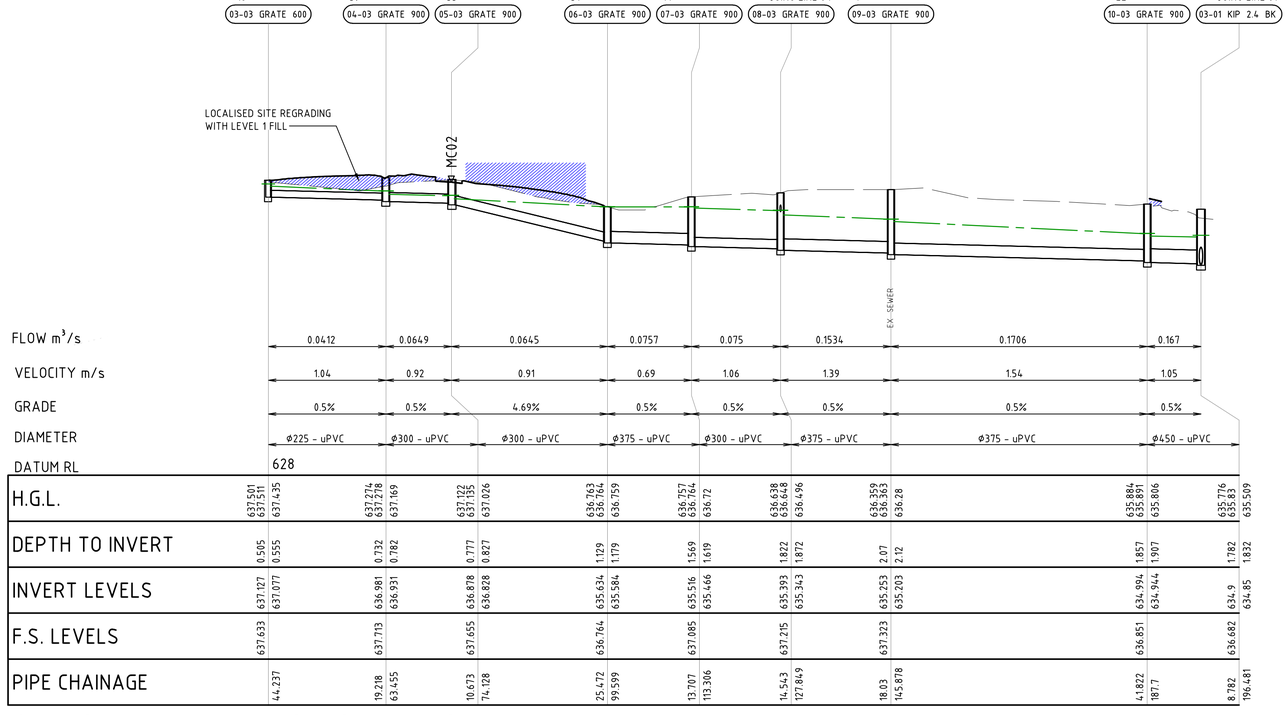
SW LINE 01



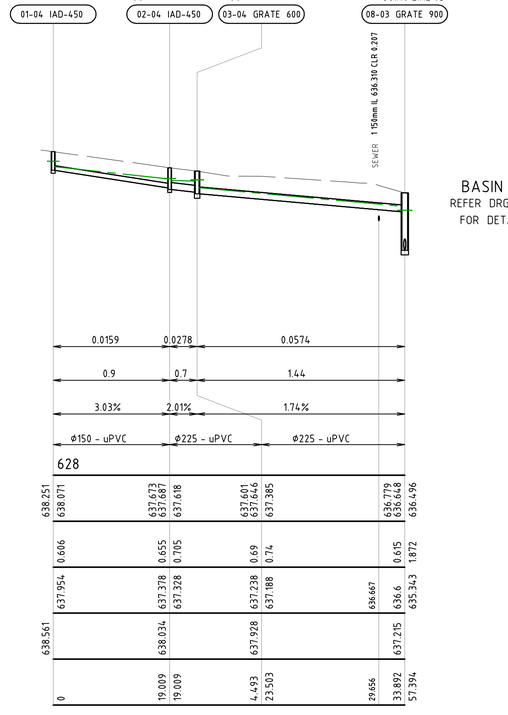
SW LINE 02



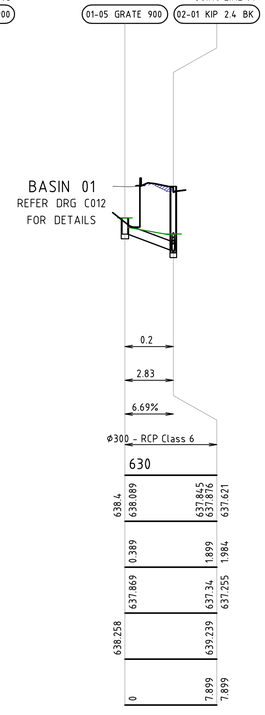
SW LINE 03



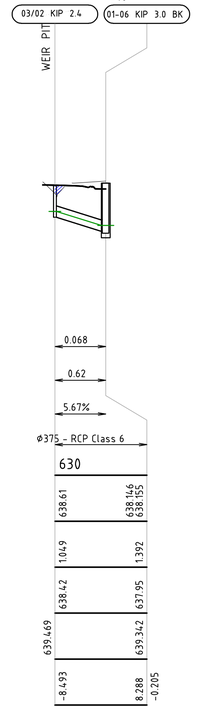
SW LINE 03



SW LINE 04



SW LINE 05



SW LINE 06

HOR. 10 5 0 10 20 30 m 1:500-A1 1:1000-A3

VERT. 2 1 0 2 4 6 m 1:100-A1 1:200-A3

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
DRAINAGE
LONGITUDINAL SECTIONS

DRG. No. T01506 - C010

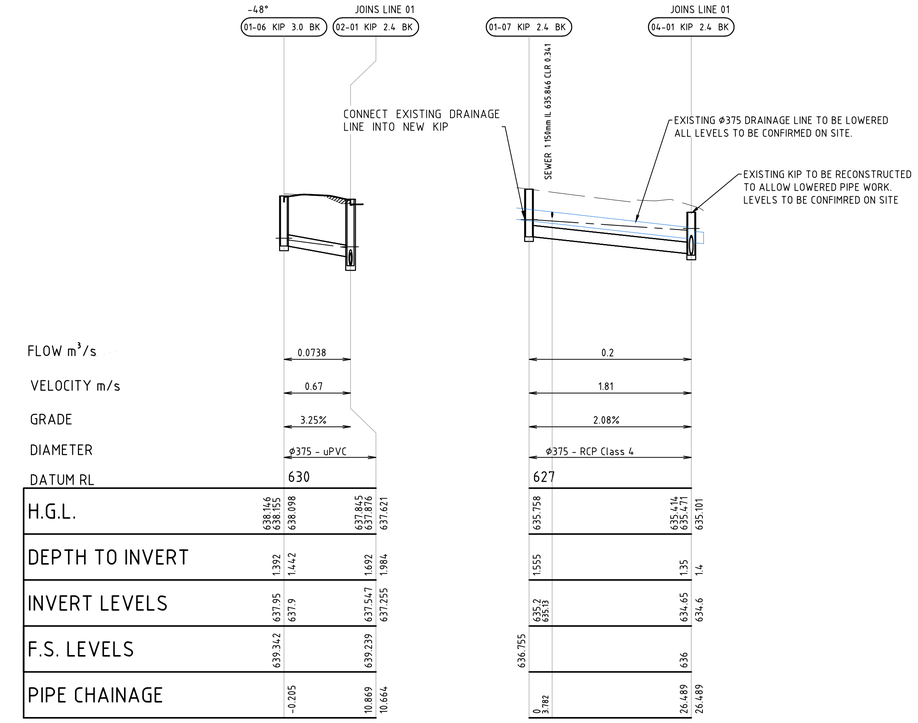
Issue IFA | Rev. 2

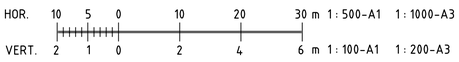
06/12/2017

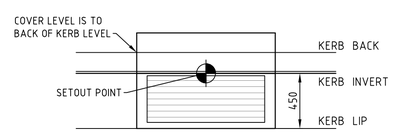
C010

E:\CES\170352-strathallan-srle\Civil\170352-C010-SW-LS.dwg

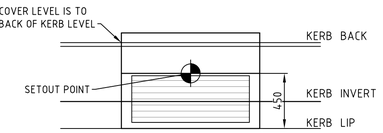
DO NOT SCALE



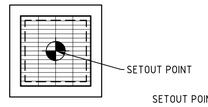




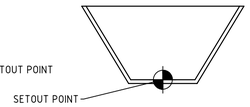
KIP SETOUT POINT AT BARRIER KERB (BK)



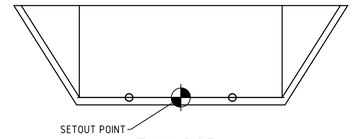
KIP SETOUT POINT AT LAYBACK KERB (LBK)



PIT SETOUT



SINGLE PIPE HEADWALL SETOUT

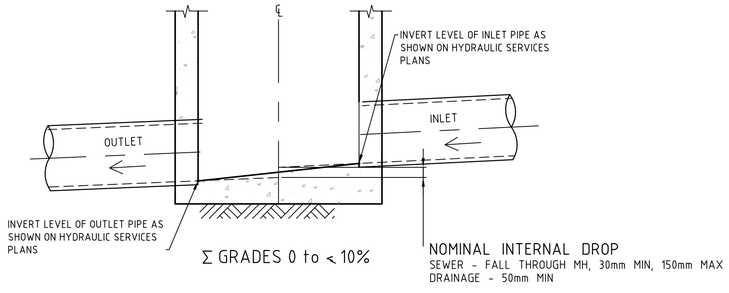


TWIN PIPE HEADWALL SETOUT

DRAINAGE PIT DEPTH /TYPE TABLE	
Depth Range mm	**Pit Type**
0-600	IAD 450
600-900	GRATE 600
900-1200	GRATE 6x9
>1200	GRATE 900

DRAINAGE STRUCTURE TABLE

LINE NO.	PIT NO.	TYPE	EASTING	NORTHING	COVER LEVEL	REMARKS
1	01-01	KIP 2.4 BK	751991.300	6154280.962	639.896	
	02-01	KIP 2.4 BK	752006.662	6154268.062	639.429	
	03-01	KIP 2.4 BK	752082.355	6154204.487	636.682	
	04-01	KIP 2.4 BK	752085.831	6154189.785	636.000	
	05-01	HW	752101.542	6154176.588	-	
2	01-02	KIP 2.4	752011.899	6154333.647	639.808	
	02-02	KIP 3.0	752023.647	6154305.506	639.449	
	03-02	KIP 2.4	752010.966	6154285.228	639.563	WEIR PIT
	04-02	HW	752013.964	6154282.590	-	FINISH FLUSH TO INSIDE BASIN WALL
3	01-03	GRATE 600	752024.616	6154360.633	639.368	
	02-03	GRATE 600	752048.548	6154339.160	637.984	
	03-03	GRATE 600	752057.542	6154331.090	637.633	
	04-03	GRATE 900	752074.850	6154322.739	637.713	
	05-03	GRATE 900	752075.783	6154312.107	637.655	
	06-03	GRATE 900	752097.775	6154299.255	636.764	
	07-03	GRATE 900	752098.376	6154285.561	637.085	
	08-03	GRATE 900	752095.594	6154271.287	637.215	
	09-03	GRATE 900	752092.146	6154253.591	637.323	
	10-03	GRATE 900	752081.286	6154213.204	636.851	
4	01-04	IAD-450	752043.713	6154282.648	638.561	
	02-04	IAD-450	752062.573	6154280.270	638.034	
	03-04	GRATE 600	752062.006	6154275.813	637.928	
5	01-05	GRATE 900	752011.544	6154274.271	638.400	BASIN OUTLET PIT - REFER DRG C012 FOR DETAILS
6	01-06	KIP 3.0 BK	752005.356	6154278.852	639.532	
7	01-07	KIP 2.4 BK	752065.549	6154206.822	636.756	



DETAIL OF INVERT LEVELS AT SUMPS/MAINTENANCE HOLES

SCALE 1:20

DRAINAGE NOTATION

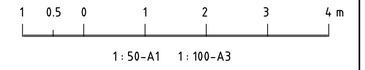
KIP [××]	STANDARD KERB INLET PIT WITH LENGTH OF LINTEL FITTED WITH ENVIROPOD 200 OR EQUIVALENT
BK	PIT IS SITUATED IN BARRIER KERB RATHER THAN LBK (DEFAULT)
BC	BYPASS CONNECTION BETWEEN WEIR PIT AND BASIN
GRATE [×××]	STANDARD GRATED PIT, INTERNAL SQUARE SIZE.
HW	PRECAST HEADWALL TO SUIT
SS1	SPECIAL STRUCTURE - REFER DRAINAGE STRUCTURE DRGS FOR DETAILS
KO	KERB OUTLET - REFER DRG 1004 FOR DETAILS

DRAINAGE PROFILE NOTES:

1. BREAK INTO TO EXISTING DRAINAGE LINE
   CONFIRM EXISTING IL'S PRIOR TO COMMENCEMENT OF WORK

DRAINAGE STRUCTURE NOTES:

1. RMS SPECIFICATION B115 WITH CONCRETE USED COMPLYING WITH RMS SPECIFICATION B80.
2. UNSUITABLE FOUNDING MATERIAL FOR PIPES AND STRUCTURES SHALL BE REMOVED OR IMPROVED IN ACCORDANCE WITH AUSSPEC#1
3. ALL SWALES WILL BE LINED WITH NOMINALLY COMPACTED CLAY AT 150mm DEPTH TO ENSURE INFILTRATION IS MINIMSED. THE TOP 150mm WILL BE FRIABLE LOCALLY DERIVED CLAY LOAM TOP SOIL. THE SWALE OUTLETS INTO THE DEPRESSIONS OR WATERCOURSE.



DRAWING PRACTICE TO AS 1100

NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

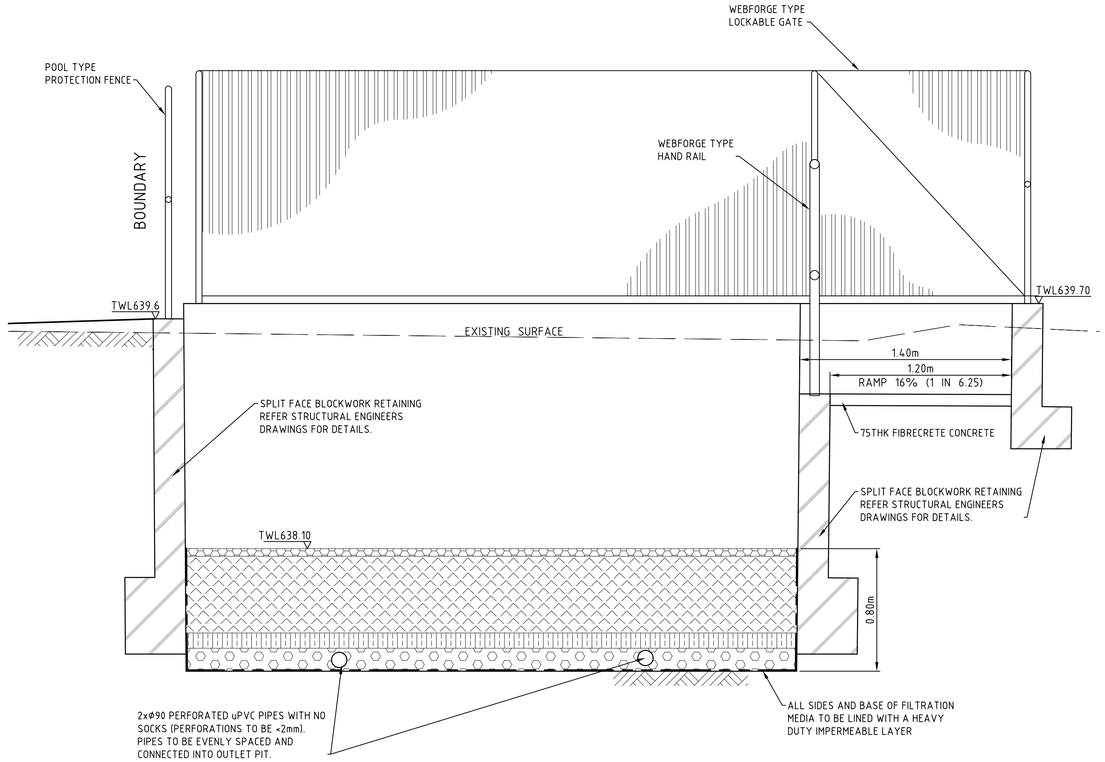
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
DRAINAGE
LONGITUDINAL SECTION
MISCELLANEOUS DETAILS AND

DRG. No. T01506 - C011 | Issue IFA | Rev. 2

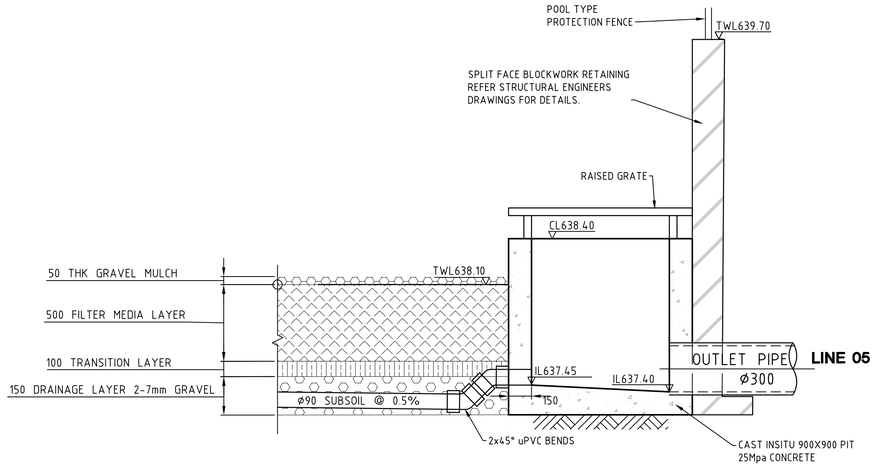
06/12/2017 C011 E:\CES\170352-strathallan-srle\Civil\170352-C010-SW-LS.dwg

DO NOT SCALE



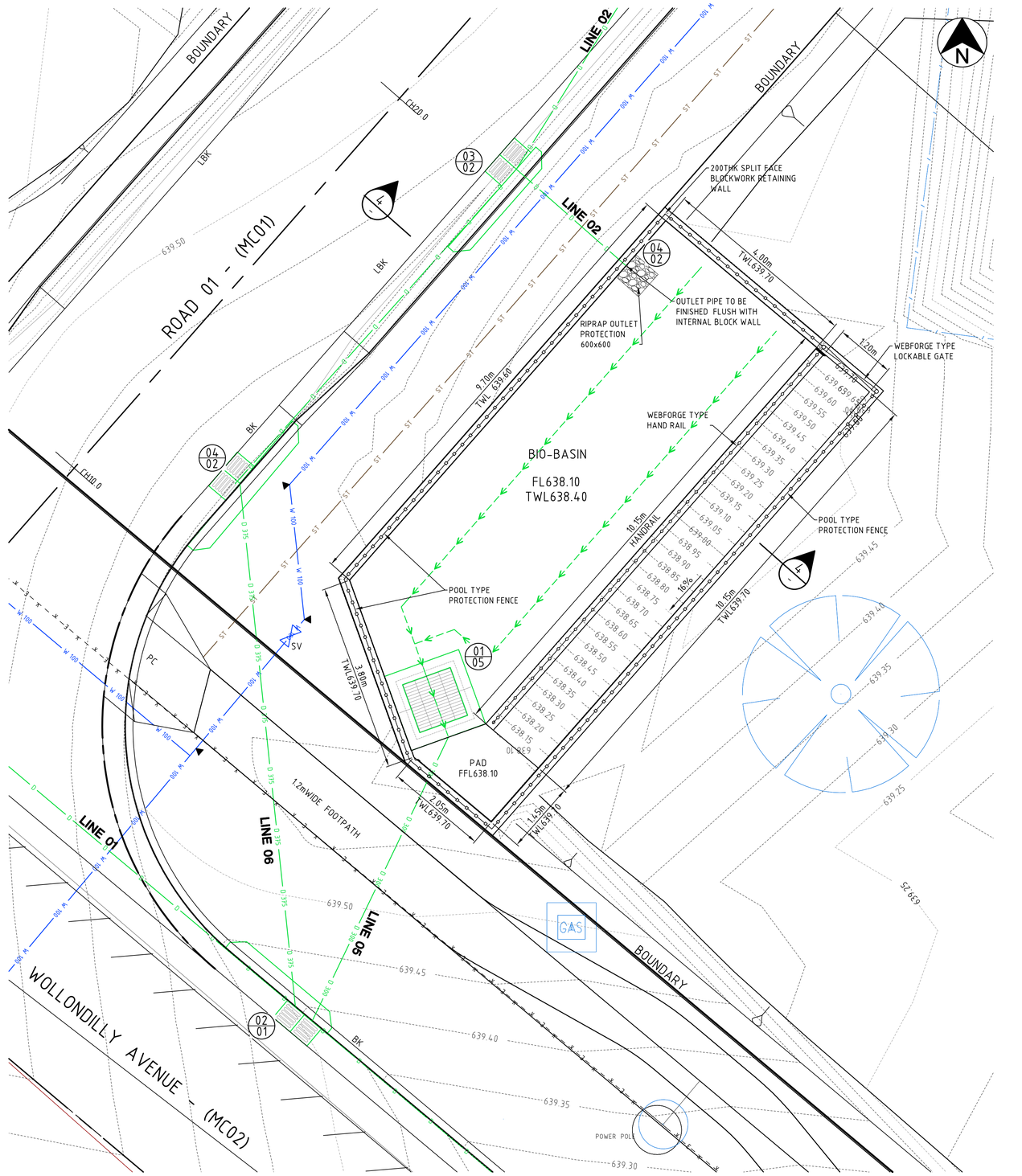
WATER QUALITY CONTROL BASIN SECTION (4 / -)

SCALE 1:20



WATER QUALITY CONTROL BASIN OUTLET PIT 1/5

SCALE 1:20



BASIN DETAIL PLAN

SCALE 1:50

1 0.5 0 1 2 3 4 m

1:50-A1 1:100-A3

DRAWING PRACTICE TO AS 1100

NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

No.	DESIGN	DATE	AMENDMENT	APP
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	----	----	----	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED ----	DATE ----
DATE DEC'17	VERIFIED ----	DATE ----
SCALE ----	APPROVED ----	DATE ----

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

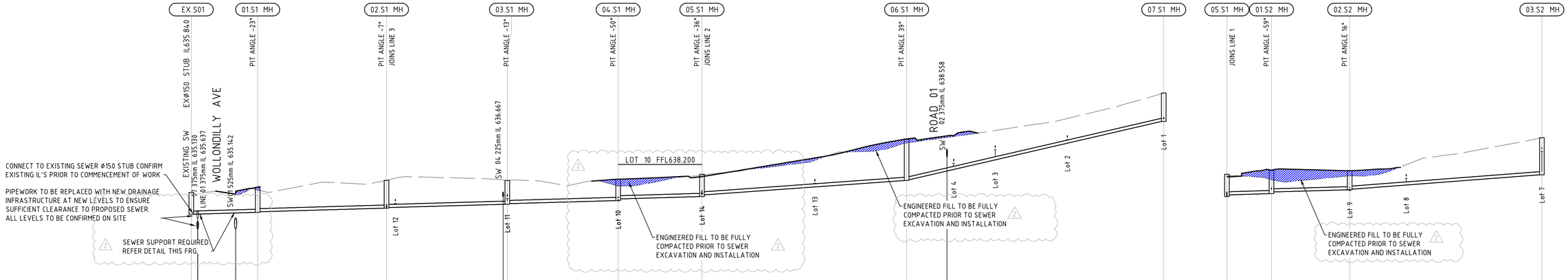
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
DRAINAGE
WATER QUALITY CONTROL BASIN
DETAIL PLAN AND
SECTIONS

DRG. No. T01506 - C012 | Issue IFA | Rev. 2

06/12/2017 C012 E:\CES\170352-strathallan-srle\Civil\170352-C010-SW-LS.dwg

DO NOT SCALE

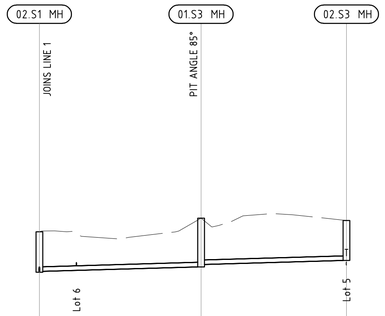


EP'S (LOTS) CUMULATIVE		49(14)	49(14)	42(12)	35(10)	31.5(9)	14(4)	14(4)
GRADE		0.55%	0.55%	0.55%	0.55%	0.55%	1.41%	4.53%
DIAMETER		Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy
DATUM RL		629						
DEPTH TO INVERT	1.03	1.03	1.196	1.323	1.131	1.015	1.057	1.971	1.35
	1.03	1.03	1.166	1.293	1.101	0.935	0.977	1.941	
INVERT LEVELS	635.84	635.846	635.899	636.125	636.31	636.688	636.677	637.441	637.888	640.24
	635.846	635.846	635.957	636.155	636.343	636.568	636.757	637.471		
F.S. LEVELS	636.87		637.123	637.448	637.444	637.502	637.734	639.412		641.59
PIPE CHAINAGE	0	1.525	10.546	30.604	27.706	26.327	19.906	48.627	9.592	61.085	231.037
	0	1.525	15.781	46.385	28.707	101.419	121.325	169.952		

SEWER LINE 1

EP'S (LOTS) CUMULATIVE		14(4)	10.5(3)	10.5(3)
GRADE		0.55%	0.55%	1.49%
DIAMETER		Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy
DATUM RL		629		
DEPTH TO INVERT	1.057	0.977	1.116	1.036	0.906	0.876	1.761
INVERT LEVELS	636.677	636.757	636.815	636.895	636.997	637.027	637.709
F.S. LEVELS	637.734		637.931		637.903		639.47
PIPE CHAINAGE	0		10.597	10.597	18.578	29.174	45.66	74.834

SEWER LINE 2



EP'S (LOTS) CUMULATIVE		7(2)	3.5(1)
GRADE		0.55%	0.55%
DIAMETER		Ø150 - PVC Extra Heavy	Ø150 - PVC Extra Heavy
DATUM RL		628	
DEPTH TO INVERT	1.323	1.293	1.59	1.51	1.306
INVERT LEVELS	636.125	636.155	636.3	636.38	636.511
F.S. LEVELS	637.448		637.89		637.817
PIPE CHAINAGE	0		26.393	26.393	23.739	50.132

SEWER LINE 3

HOR. 10 5 0 10 20 30 m 1 : 500-A1 1 : 1000-A3

VERT. 2 1 0 2 4 6 m 1 : 100-A1 1 : 200-A3

SEWER STRUCTURE TABLE

LINE NO.	PIT NO.	TYPE	EASTING	NORTHING	COVER LEVEL	REMARKS
1	EX.S01	EXMH	752067.464	6154203.222	-	CONNECT TO EXISTING 150 STUB. CONFIRM IL'S
	01.S1	MH	752077.614	6154215.306	637.123	
	02.S1	MH	752086.567	6154244.571	637.448	
	03.S1	MH	752091.571	6154272.839	637.444	
	04.S1	MH	752090.182	6154299.129	637.502	
	05.S1	MH	752074.357	6154311.203	637.734	
	06.S1	MH	752025.735	6154311.929	639.412	
	07.S1	MH	751978.960	6154351.217	641.590	
2	01.S2	MH	752073.431	6154321.759	637.931	
	02.S2	MH	752056.699	6154329.832	637.903	
	03.S2	MH	752022.713	6154360.325	639.470	
3	01.S3	MH	752060.741	6154250.013	637.890	
	02.S3	MH	752063.736	6154273.562	637.817	

SEWER NOTATION

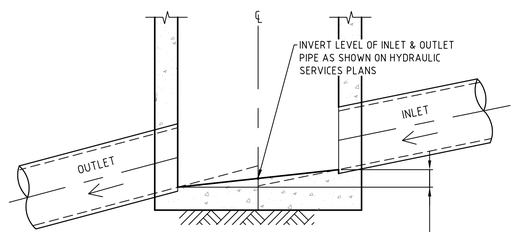
MH	MANHOLE
EXMH	EXISTING MANHOLE
HDMH	MANHOLE WITH HEAVY DUTY 'D' TYPE COVER
VD	VERTICAL DROP AS PER WSSA SEW-1303

SEWER PROFILE NOTES:

1. BREAK INTO TO EXISTING SEWER MANHOLE CONFIRM EXISTING IL'S PRIOR TO COMMENCEMENT OF WORK

SEWER MH SETOUT

SETOUT POINTS ARE TO CENTRE OF STRUCTURE

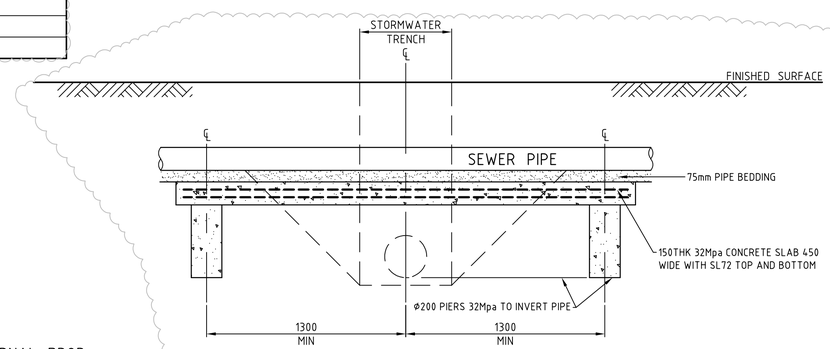


Σ GRADES > 10%
(SEWER MANHOLE ONLY)

NOMINAL INTERNAL DROP
NOMINAL DROP THROUGH SEWER STRUCTURE SHALL BE THAT PROVIDED BY THE UPSTREAM & DOWNSTREAM GRADES TAKEN TO THE CENTRE OF THE MAINTENANCE HOLE

DETAIL OF INVERT LEVELS AT SEWER MAINTENANCE HOLES

SCALE 1:20



SEWER SUPPORT CROSSING OVER STORMWATER TRENCH

SCALE 1:20

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED SWC	DATE SEP '17
DATE DEC'17	VERIFIED	DATE
SCALE	APPROVED	DATE

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
SEWER
LONGITUDINAL SECTION

DRG. No. T01506 - C013 | Issue IFA | Rev. 2

E:\CES\170352-strathallan-srle\Civil\170352-C009-SEW-LS.dwg 06/12/2017 C013

DO NOT SCALE

10 5 0 10 20 m

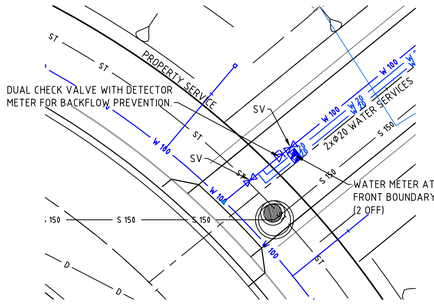
1 : 250–A1 1 : 500–A3

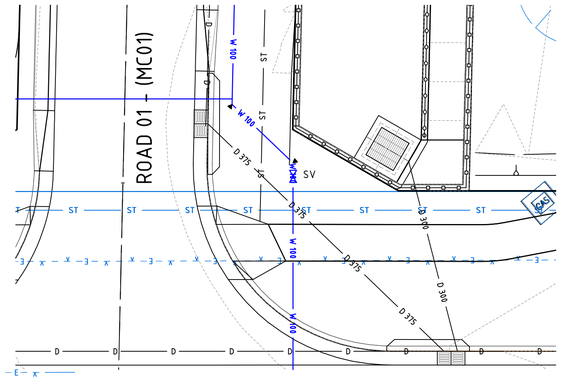
WARNING

EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

BATTLEAXE HANDLE FIRE SERVICE CONNECTION DETAIL

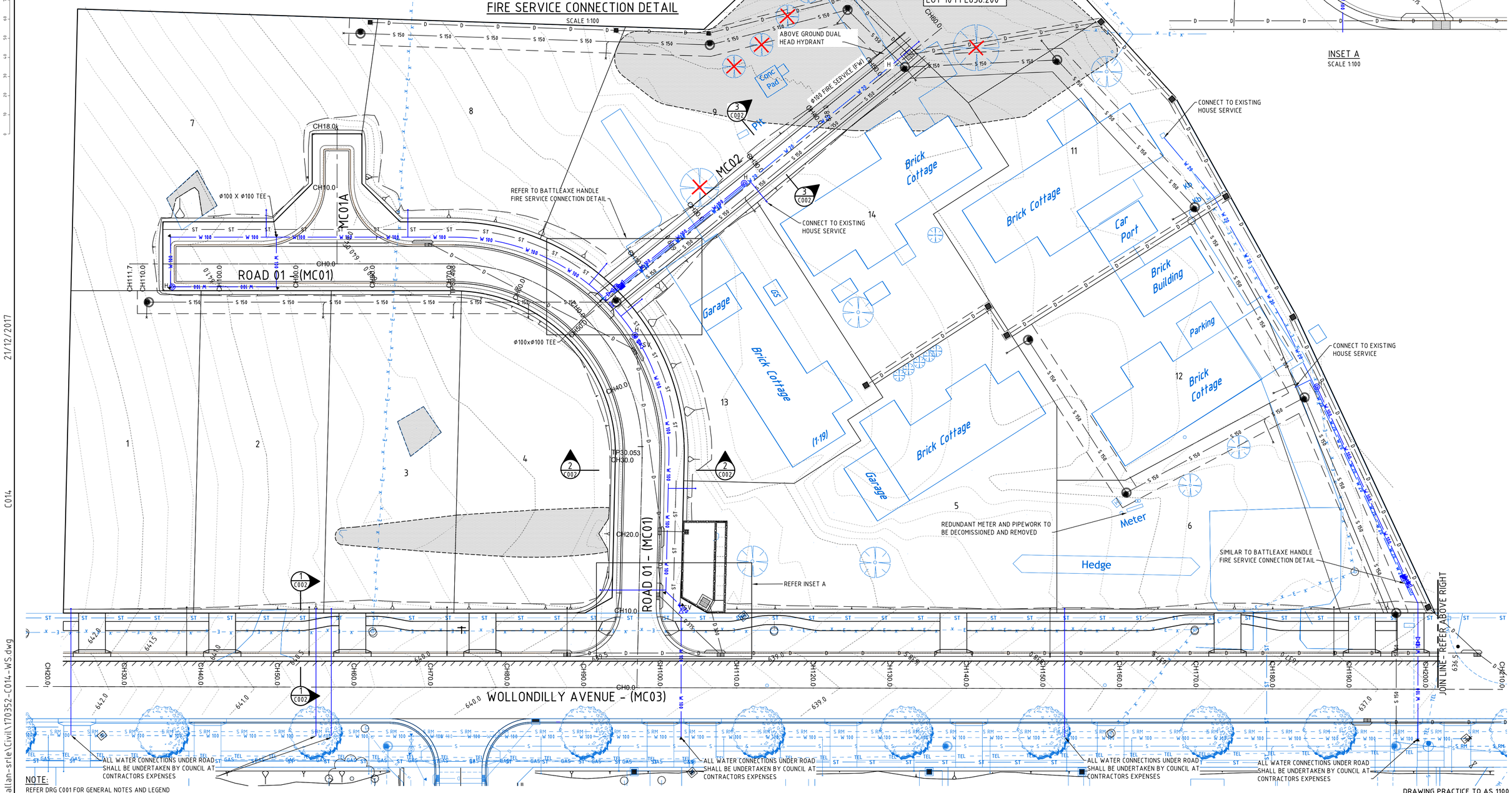
SCALE 1:100





INSET A

SCALE 1:100



NOTE:

REFER DRG C001 FOR GENERAL NOTES AND LEGEND

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
----	----	----	----	----
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	----	----	----	###

ISSUED FOR APPROVAL

DRAWN SWC	DESIGNED ----	DATE ----
DATE DEC'17	VERIFIED ----	DATE ----
SCALE ----	APPROVED ----	DATE ----

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

PRJ. Title:

STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title:

WATER RETICULATION

DRG. No. T01506 - C014 | Issue IFA | Rev. 2

21/12/2017

E:\CES\170352-strathallan-srle\Civil\170352-C014-WS.dwg

DO NOT SCALE

10 5 0 10 20 30 40 m

1 : 500-A1 1 : 1000-A3

SEQUENCE OF CONSTRUCTION WORKS.

APPROXIMATE DURATION OF WORKS IS 4 MONTHS. THE BIO-BASIN IN LOT 5 IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING THE COURSE OF THE WORKS.

1. ACCESS TO EXISTING DWELLINGS TO BE MAINTAINED AT ALL TIMES
2. PRIOR TO THE COMMENCEMENT OF ANY WORKS ONSITE INSTALL SEDIMENT FENCES
3. STRIP TOPSOIL FROM ROADS AND SITE WORKS AND STOCKPILE AS SHOWN.
4. COMMENCE EARTHWORKS TO ROADS AND ACCESS DRIVEWAY PREVENTING RUNOFF FROM ENTERING THE EXISTING PROPERTIES. STABILISE BATTERS WITH SEEDING UPON COMPLETION. MAINTAIN THE BATTERS BY REGULAR WATERING DURING THE REMAINING COURSE OF THE WORKS
5. CONSTRUCT SEWER AND STORMWATER LINES
6. CONSTRUCT THE BIO BASIN WHICH IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING THE REMAINDER OF THE CIVIL WORKS. PERMANENT OR TEMPORARY FENCING IS TO BE INSTALLED AROUND THE SEDIMENT BASIN TO PREVENT UNWANTED ENTRY FROM ADJOINING PROPERTIES.
7. INSTALL SERVICE CROSSINGS AND SUB-BASE TO ROADS AND ACCESS DRIVEWAY.
8. INSTALL K&G AND SERVICES
9. INSTALL BASE COURSE AND ROAD SEAL
10. AFTER STABILISATION HAS OCCURRED ACROSS THE SITE, SUPPLY AND PLACE THE FILTER MATERIALS TO THE BASIN AND INSTALL PLANTING.
11. DECOMMISSION EROSION AND SEDIMENT CONTROL DEVICES FOLLOWING SITE STABILIZATION.

TEMPORARY SEDIMENT BASIN TREATMENT AND FENCING

1. STORMWATER PIPELINE 06 IS NOT TO BE CONSTRUCTED UNTIL THE SEDIMENT BASIN IS CONVERTED TO A BIO-BASIN. THE SEDIMENT BASIN IS TO BE FLOCCULATED PRIOR TO ANY DISCHARGE INTO A STORMWATER PIT. WATER FROM THE SEDIMENT BASIN WILL NOT REQUIRE FLOCCULATION IF IT IS TO BE USED FOR WORKS ONSITE.
2. THE SEDIMENT BASIN IS TO BE FLOCCULATED AND DRAINED WITHIN 5 DAYS OF A RAINFALL EVENT.
3. FLOCCULATION IS TO BE ACHIEVED BY THE SPREADING OF GYPSUM EVENLY ACROSS THE SURFACE OF THE SEDIMENT BASIN AT A RATE OF 40KG PER 100m3 OF STORED WATER. OTHER PROPOSED MEANS OF FLOCCULATION IS TO BE REFERRED TO THE SUPERVISING ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION.
4. FOLLOWING FLOCCULATION THE TREATED WATER CAN BE DISCHARGED TO A STORMWATER PIT.
5. THE SEDIMENT BASIN IS TO BE INSPECTED REGULARLY AND ANY DAMAGED OR ERODED AREAS REPAIRED. ENSURE THE SAFETY FENCING IS IN PLACE.
6. AT THE END OF EACH DAYS WORK THE TEMPORARY FENCING IS TO BE CLOSED OFF TO PREVENT UNAUTHORISED ENTRY.

LEGEND

SYMBOL	DESCRIPTION
	DIRTY WATER DIVERSION BANK
	CLEAN WATER DIVERSION BUND
	STABILISED HAYBALE SEDIMENT TRAPS AS PER SD6-7
	STRAW BALE FILTER
	EXISTING WATER COURSE
SF	SILT FENCE
	MESH AND GRAVEL INLET FILTER AT KERB INLET SUMPS. AS PER SD 6-11
	LEVEL SPREADER AS PER SD 5-6
	STABILISED SITE ENTRANCE
	ROCK SEDIMENT BASIN SEE DETAIL 1141

WARNING

EXISTING ELECTRICAL OVERHEAD POWER CABLE IN THE VICINITY

TOPSOIL STOCKPILE AS PER SD-4-1

SITE COMPOUND

Open Excavation

Open Drain

BIO-BASIN TO BE USED AS A TEMPORARY SEDIMENT BASIN UNTIL SITE STABILISED

TP30.053 CH30.0

Brick Cottage

Brick Building

Car Port

Garage

Conc Pad

Pit

Meter

Hedge

JOIN LINE - REFER ABOVE RIGHT

Edge of Bitumen

NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
3	CES	10.01.18	NOTES AND SILT FENCE ADDED	G.T.
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

DRAWN SWC	DESIGNED SWC	DATE SEP '17	
DATE DEC'17	VERIFIED	DATE	
SCALE	APPROVED	DATE	

S.R.L.E. SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

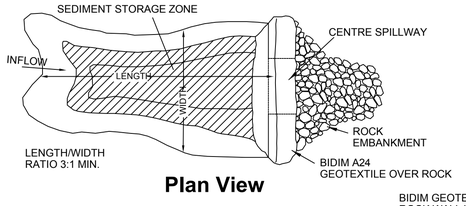
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
EROSION AND SEDIMENT CONTROL

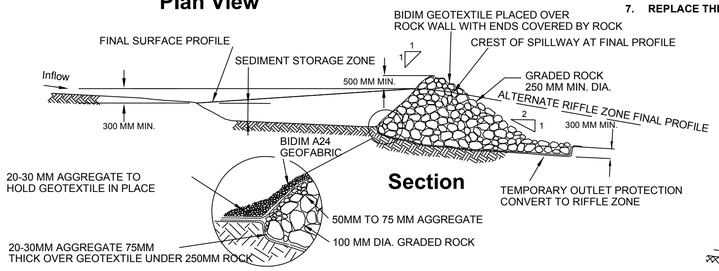
DRG. No. T01506 - C015 | Issue IFA | Rev. 3

10/01/2018 C015 E:\CES\170352-Strathallan-SRLE\Civil\170352-C015-EROS.dwg

DO NOT SCALE

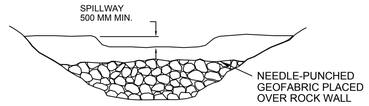


Plan View



Section

NOTE:
SPILLWAY WIDTH AND DEPTH, WALL CREST WIDTH AND DOWNSTREAM OUTLET PROTECTION MEASURES TO BE SPECIFIED ON SWMP.



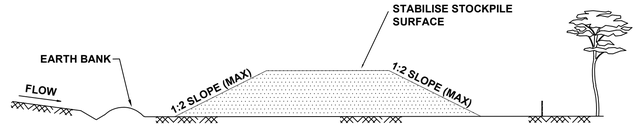
Downstream Elevation

ROCK SEDIMENT BASIN & POND WALL

N.T.S.

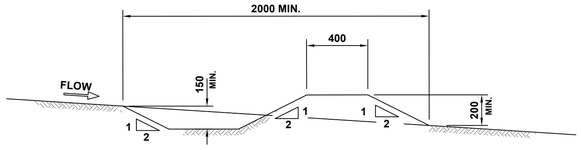
CONSTRUCTION NOTES:

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. EXCAVATE TO 300 MM DEPTH FOR BASE OF THE DAM WALL.
3. LINE THE EXCAVATION WITH A BIDIM A24 GEOTEXTILE & 75 THICK AGGREGATE ALLOWING SUFFICIENT TO LINE BELOW THE WALL, AND OVER THE UPSTREAM ROCK AND THE SPILLWAY TO 500 MM BELOW THE SPILLWAY EXIT ON THE DOWNSTREAM FACE.
4. MAKE UP THE WALL PROFILE AND OUTLET PROTECTION WITH 250 MM (MIN.) DIAMETER GRADED ROCK. SPREAD A LAYER OF 50 MM TO 75 MM DIAMETER AGGREGATE OVER THE UPSTREAM BATTER FOR A MORE EVEN SURFACE, AND ADD 100 MM TO 150 MM OF 20 MM TO 30 MM GRAVEL OVER THE 50 MM TO 75 MM DIAMETER AGGREGATE.
5. LAY GEOTEXTILE OVER THE UPSTREAM BATTER AND THROUGH THE SPILLWAY, FIXING IN PLACE WITH 250 MM ROCK.
6. AT COMPLETION OF WORKS CONVERT THE ROCK SEDIMENT BASIN TO THE FINAL WATERCOURSE PROFILE BY REMOVING WEIR AND EXTENDING THE DOWNSTREAM SCOUR PROTECTION TO A RIFFLE ZONE.
7. REPLACE THE UPSTREAM GEOTEXTILE LAYER EACH TIME SEDIMENT IS REMOVED



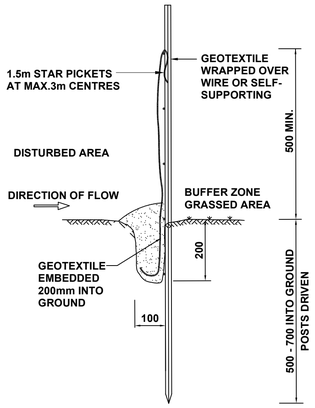
STOCKPILES

N.T.S.



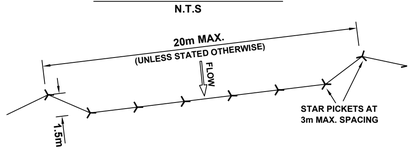
DIVERSION SWALE EARTH BANK (LOW FLOW)

N.T.S.



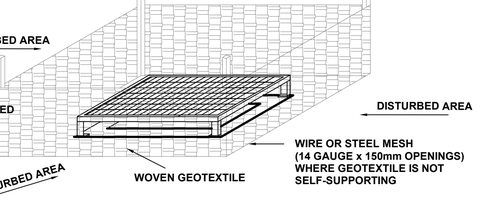
SEDIMENT FENCE

N.T.S



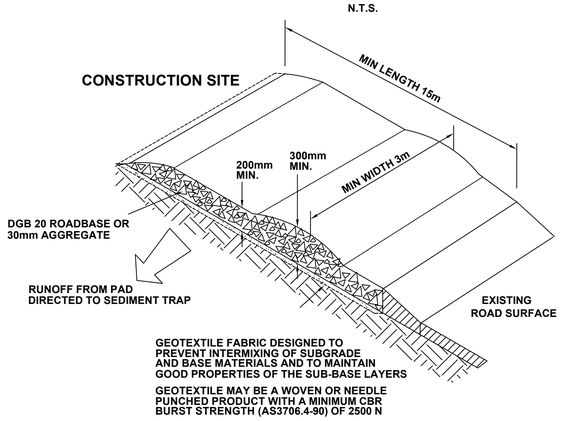
CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO THE GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN THE SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



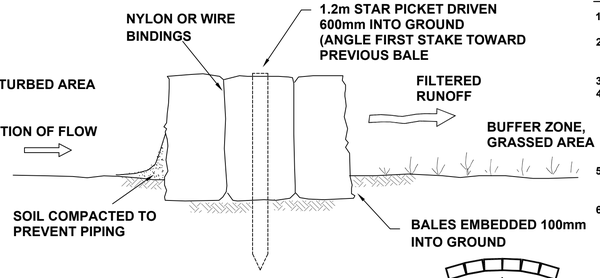
GEOTEXTILE INLET FILTER

N.T.S.



STABILISED SITE ACCESS

N.T.S.



STRAW BALE FILTER

CONSTRUCTION NOTES:

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO THE GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH 1.2m STAR PICKETS OR STAKES. ANGLE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THEN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE ABLE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTHBANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES ANS SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

CONSTRUCTION NOTES:

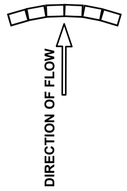
1. BUILD WITH GRADIENTS BETWEEM 1% - 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABLOIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V-SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

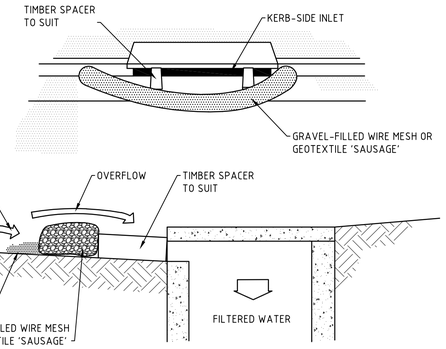
CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

CONSTRUCTION NOTES:

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.





MESH AND GRAVEL INLET FILTER

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm X 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

LEGEND

SYMBOL	DESCRIPTION
	DIRTY WATER DIVERSION BANK
	CLEAN WATER DIVERSION BUND
	STABILISED HAYBALE SEDIMENT TRAPS AS PER SD6-7
	STRAW BALE FILTER
	EXISTING WATER COURSE
SF	SILT FENCE
	MESH AND GRAVEL INLET FILTER AT KERB INLET SUMPS. AS PER SD 6-11
	LEVEL SPREADER AS PER SD 5-6
	STABILISED SITE ENTRANCE
	ROCK SEDIMENT BASIN SEE DETAIL 1141

NOTE:
REFER DRG C001 FOR GENERAL NOTES AND LEGEND

DRAWING PRACTICE TO AS 1100

No.	DESIGN	DATE	AMENDMENT	APP
2	CES	06.12.17	COUNCIL COMMENTS	G.T.
1	CES	04.10.17	ISSUED FOR APPROVAL	###

DRAWN SWC	DESIGNED SWC	DATE SEP '17	
DATE DEC'17	VERIFIED	DATE	
SCALE	APPROVED	DATE	

S.R.L.E.
SOUTHERN REGION LAND ENGINEERING
telephone (02) 4823 5577
mobile 0417 235 415
167 Bourke Street, Goulburn NSW 2580
P.O. Box 111, Thirroul NSW 2515

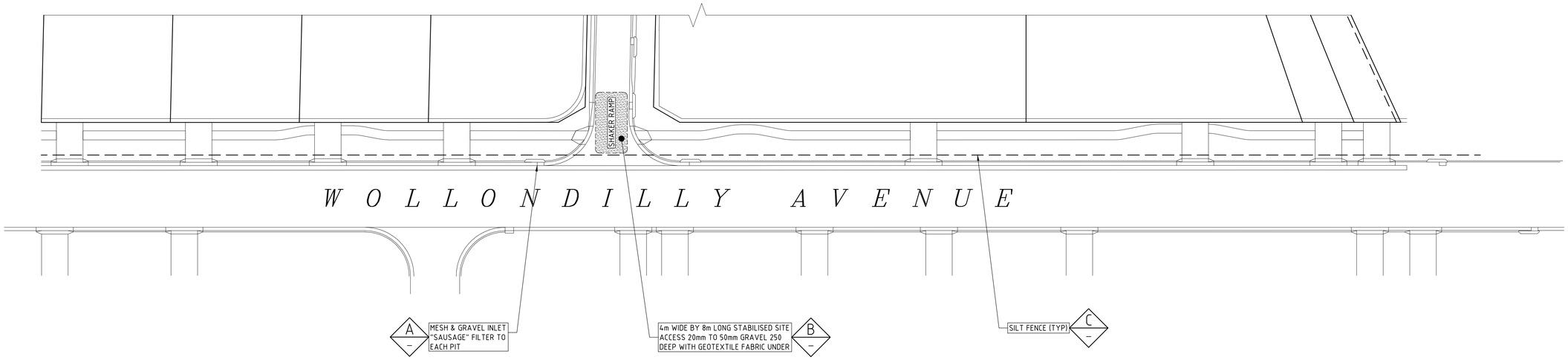
PRJ. Title.
STRATHALLAN
URBAN RESIDENTIAL SUBDIVISION
LOT 2 DP1078852
WOLLONDILLY AVE, GOULBURN, NSW, 2580
FOR
FRAVO CONSTRUCTIONS

DRG. Title.
EROSION AND SEDIMENT CONTROL CONCEPT PLAN

DRG. No. T01506 - C016 | Issue IFA | Rev. 2

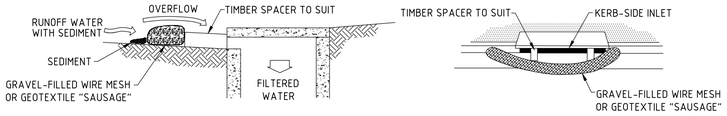
06/12/2017 C016 E:\CES\170352-strathallan-srle\Civil\170352-C015-EROS.dwg

Appendix F



EROSION & SEDIMENT CONTROL PLAN

SCALE 1:300

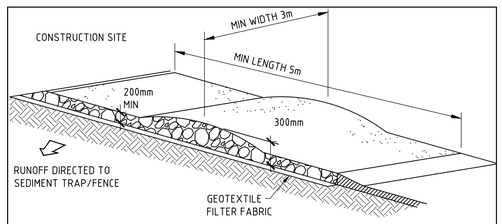


CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLET
2. FABRICATE A SEVE MAD FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM ANELLIPTICAL CROSS-SECTION ABOUT 150m HIGH x 400mm WIDE
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING FILTER.
6. SANDBAGS FILLED T GAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADE WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET "SAUSAGE" FILTER

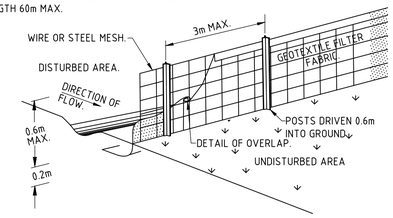
DETAIL A
NOT TO SCALE



SHAKER RAMP

DETAIL B
NOT TO SCALE

DRAINAGE AREA 0.6HA. MAX. SLOPE GRADIENT 1:2 MAX.
SLOPE LENGTH 60m MAX.



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UP-SLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO THE GROUND AT 2.5m INTERVALS (MAX) AT THE DOWN-SLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UP-SLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH THE WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN THE SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE

DETAIL C
NOT TO SCALE

ABBREVIATIONS

FP	FOOTPATH
VC	VEHICLE CROSSING
PC	PEDESTRIAN CROSSING
PV1	PAVEMENT TYPE 1
BK	BARRIER KERB
SC	SAW CUT

ISSUE DATE	REVISION
24 AUGUST 2023	REVISED TO SUIT UPDATED WATER QUALITY ARRANGEMENT

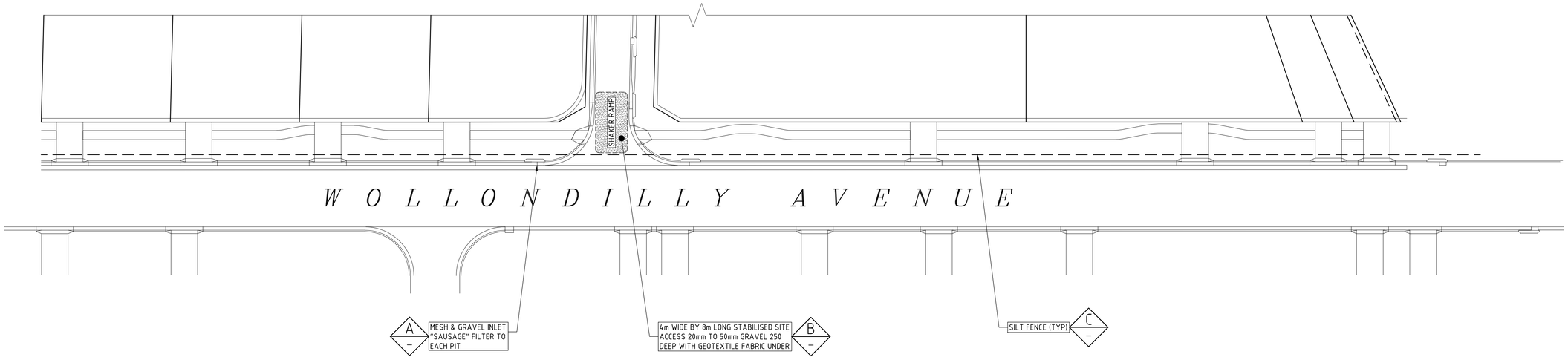
TITLE
EROSION & SEDIMENT CONTROL PLAN
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
JBP	27 JULY 2023	BE Civil (Hons) MIE Aust	1:300

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

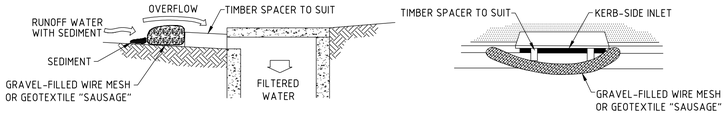
DRAWING NO
STORM-16/A

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au



EROSION & SEDIMENT CONTROL PLAN

SCALE 1:300

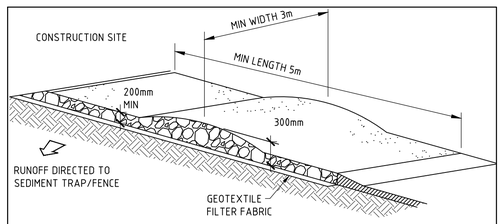


CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLET
2. FABRICATE A SEVE MAD FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM ANELLIPTICAL CROSS-SECTION ABOUT 150m HIGH x 400mm WIDE
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING FILTER.
6. SANDBAGS FILLED T GAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADE WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET "SAUSAGE" FILTER

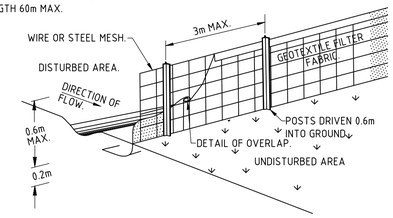
DETAIL A
NOT TO SCALE



SHAKER RAMP

DETAIL B
NOT TO SCALE

DRAINAGE AREA 0.6HA. MAX. SLOPE GRADIENT 1:2 MAX.
SLOPE LENGTH 60m MAX.



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UP-SLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO THE GROUND AT 2.5m INTERVALS (MAX) AT THE DOWN-SLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UP-SLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH THE WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN THE SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE

DETAIL C
NOT TO SCALE

ABBREVIATIONS

FP	FOOTPATH
VC	VEHICLE CROSSING
PC	PEDESTRIAN CROSSING
PV1	PAVEMENT TYPE 1
BK	BARRIER KERB
SC	SAW CUT

ISSUE DATE	REVISION

TITLE
EROSION & SEDIMENT CONTROL PLAN
7 WOLLONDILLY AVENUE, GOULBURN

DRAWN	DATE	CHECKED	SCALE @ A1
L I	22 AUGUST 2023	BE Civil (Hons) MIE Aust.	1:300

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO. CIVIL–6

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

Appendix G

FlowFilter

Cartridge filter for tertiary stormwater treatment

atlan.com.au

Atlan
STORMWATER

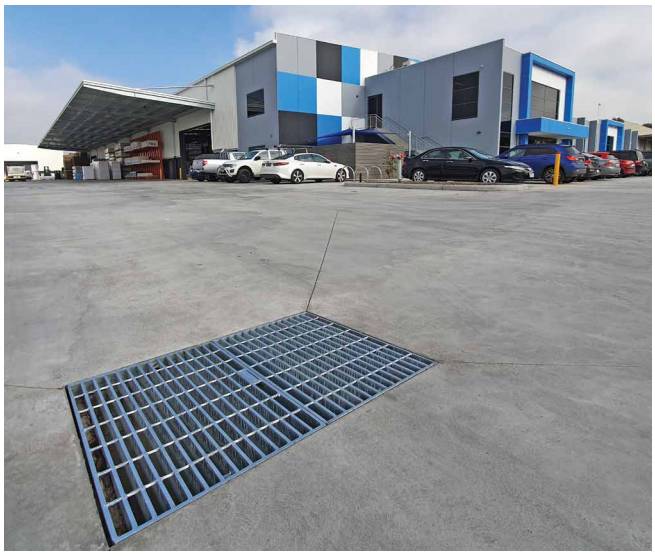
FlowFilter is a specialist stormwater filtration system that is purpose-built to reduce the footprint of WSUD on constrained projects. Manufactured, designed, and engineered in Australia using fibre-reinforced polymer (FRP) this generational asset is supplied with a 25-year warranty & 100-year design life.

This innovative approach to stormwater treatment uses an up-flow filtration process. With minimal head drop required between inlet and outlet, these devices are suitable for installation on flat sites or low gradient developments. The stormwater is treated within the unit by the following processes: sedimentation, filtration, adsorption, and precipitation.

The FlowFilter has been extensively laboratory and field tested for the removal of pollutants – including heavy metals, total suspended solids (TSS), and nutrients (Phosphorous and Nitrogen).

APPLICATIONS

- Car parks & shopping centres
- Council depots
- Industrial estates
- Heavy vehicle maintenance
- Transport depots & loading bays
- Tunnels
- Highways & transport corridors
- Recycling yards
- Airport aprons & tarmacs



FEATURES

- Manufactured, designed, and engineered in Australia at our FRP production facility.
- Lightweight, easy to install and minimal on-site lifting requirements (no crane required).
- Reduced on-site footprint.
- Up-flow filtration process suitable for flat sites requiring only 250 mm of hydraulic head.
- Scalable sizes with variable cartridge configurations from 1 to 39 filter cartridges.
- Treatment flow rates from 2.5 litres per second (LPS) to 156 litres per second installed in offline configuration.
- Custom-designed inline systems available.
- Installed in trafficable and non trafficable applications.

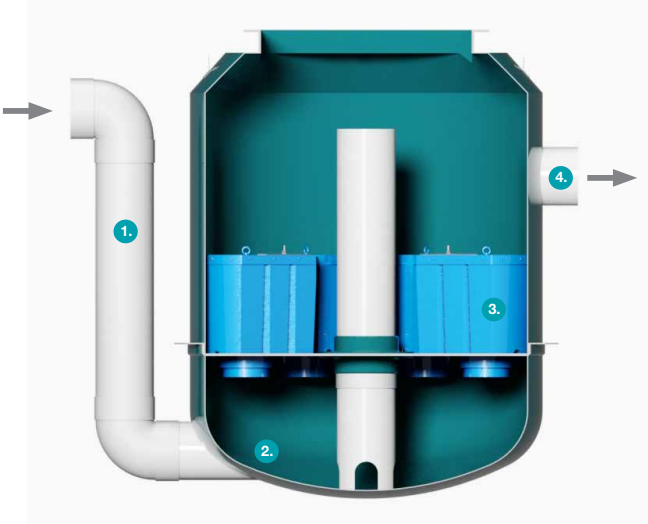
SPECIFICATIONS

MODEL	NO. CARTRIDGE	TFR	ID (m)	HEIGHT (m)	INLET/ OUTLET (mm)
400 SERIES					
HS.400/1	1	2.5 LPS	1.13	1.5	100
HS.400/2	2	5 LPS			
HS.400/3	3	7.5 LPS			
1200 SERIES					
HS.1200/4	4	12 LPS	1.20	2.60	225
1500 SERIES					
HS.1500/4	4	16 LPS	1.50	2.00	225
HS.1500/5	5	20 LPS			
HS.1500/6	6	24 LPS			
1850 SERIES					
SHS.1850/7	7	28 LPS	1.85	2.00	225
2200 SERIES					
HS.2200/7	7	28 LPS	2.20	2.50	225
HS.2200/8	8	32 LPS			
HS.2200/9	9	36 LPS			
2500 SERIES					
HS.2500/10	10	40 LPS	2.50	2.70	300
HS.2500/11	11	44 LPS			
HS.2500/12	12	48 LPS			
HS.2500/13	13	52 LPS			
HS.2500/14	14	56 LPS			
HS.2500/15	15	60 LPS			
HS.2500/16	16	64 LPS			
3000 SERIES					
HS.3000/17	17	68 LPS	3.00	2.85	300
HS.3000/18	18	76 LPS			
HS.3000/19	19	76 LPS			
HS.3000/20	20	80 LPS			
HS.3000/21	20	84 LPS			
3500 SERIES					
HS.3500/22	22	88 LPS	3.50	2.95	375
HS.3500/23	23	92 LPS			
HS.3500/24	24	96 LPS			
HS.3500/25	25	100 LPS			
HS.3500/26	26	104 LPS			
HS.3500/27	27	108 LPS			
HS.3500/28	28	112 LPS			
HS.3500/29	29	116 LPS			
HS.3500/30	30	120 LPS			
HS.3500/31	31	124 LPS			
4000 SERIES					
HS.4000/32	32	128 LPS	4.00	3.25	375
HS.4000/33	33	132 LPS			
HS.4000/34	34	136 LPS			
HS.4000/35	35	140 LPS			
HS.4000/36	36	144 LPS			
HS.4000/37	37	148 LPS			
HS.4000/38	38	152 LPS			
HS.4000/39	39	156 LPS			

Tested Treatment Efficiencies*

POLLUTANT	EFFICIENCY
Gross Pollutants (GP)	100%
Total Suspended Solids (TSS)	85%
Total Phosphorus (TP)	66%
Total Nitrogen (TN)	43%
Petroleum Hydrocarbon	82%

*Contact Atlan to confirm approved performance for the project LGA

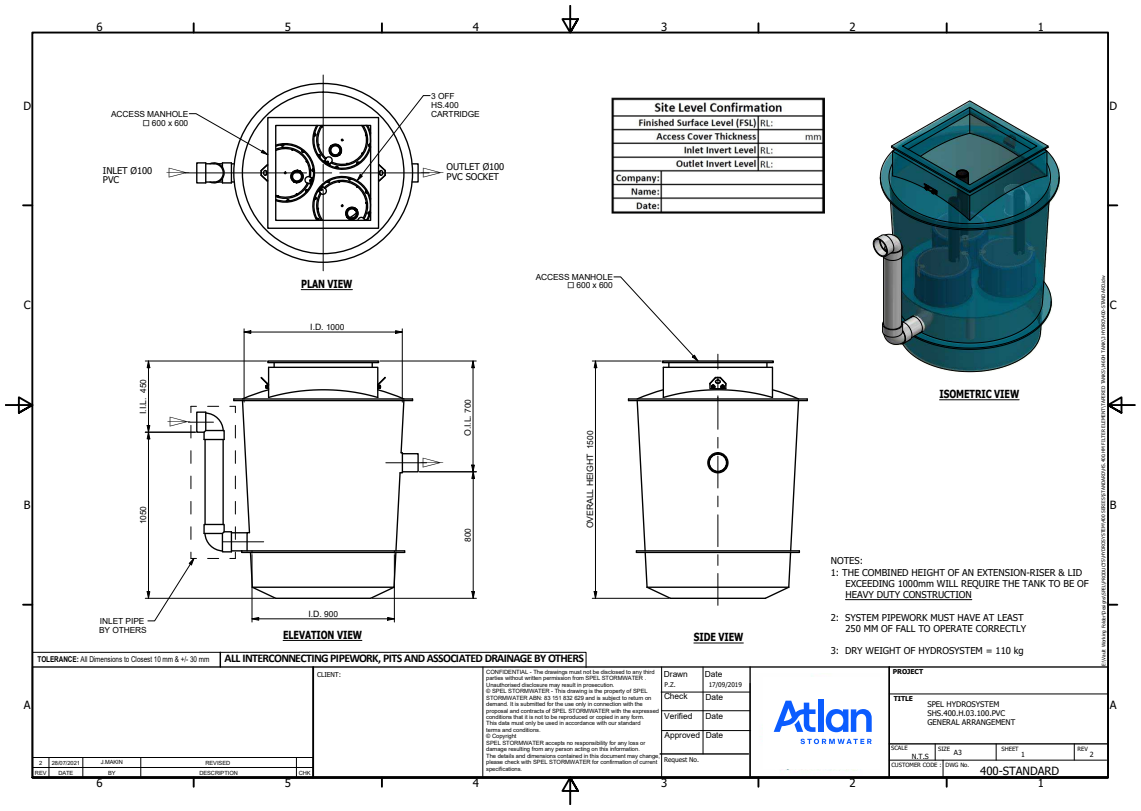


Operating System

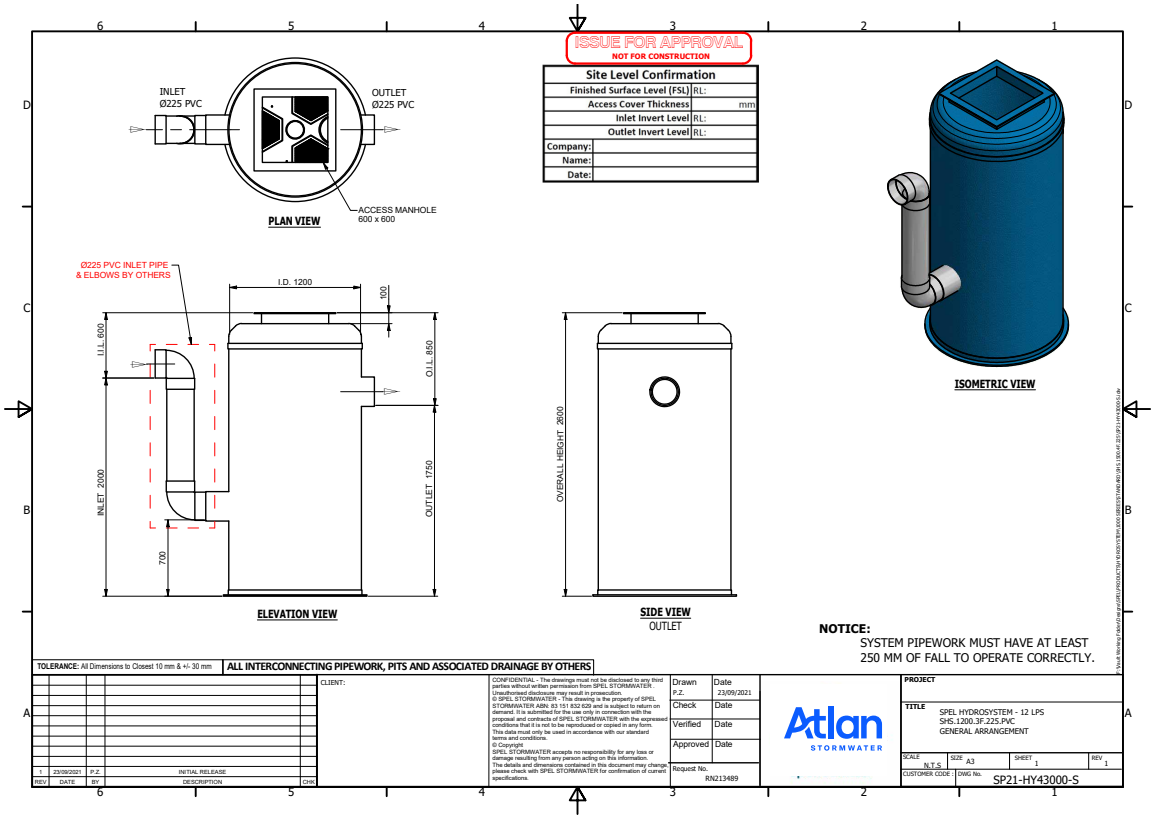
1. Stormwater from catchment enters the offline FlowFilter inlet.
2. Sediment is retained within the sump area.
3. Filter cartridges operate in an up-flow process. The fine sediment is physically removed, and dissolved pollutants are precipitated and adsorptively bound to the filtration media.
4. Treated water flows from cartridges to outlet and into downstream water network.

DRAWINGS

Model HS.400

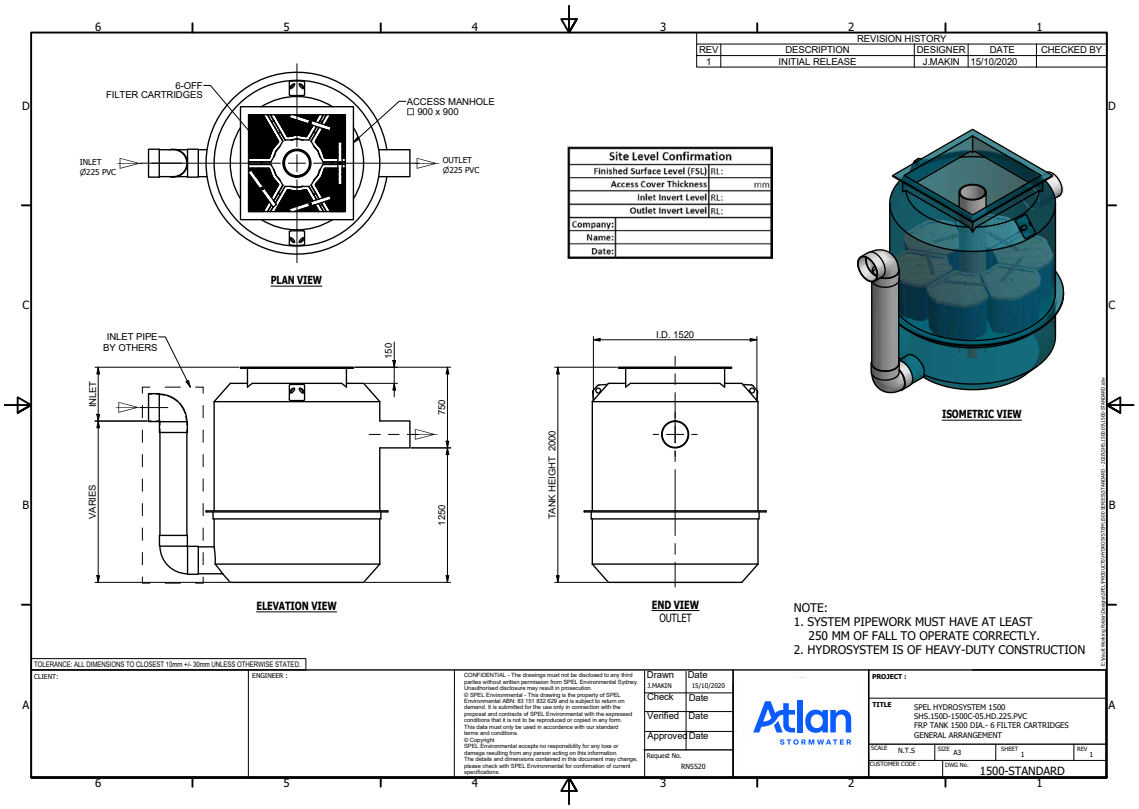


Model HS.1200

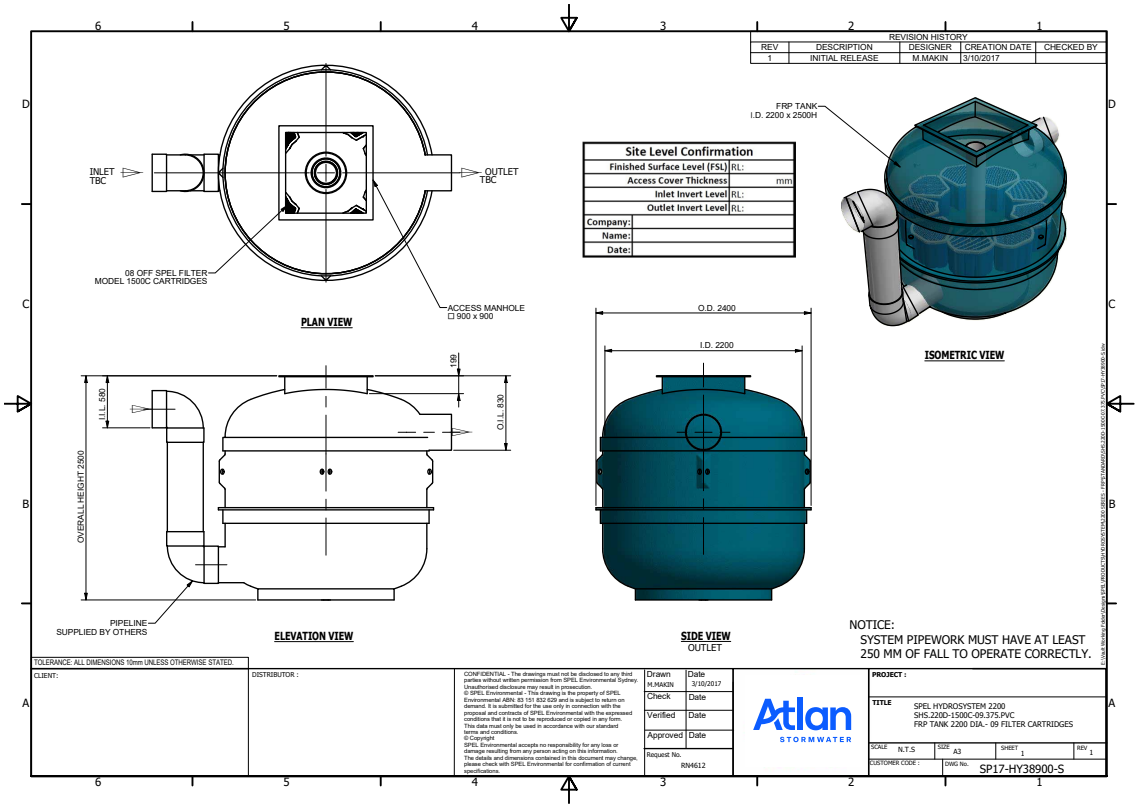


DRAWINGS

Model HS.1500

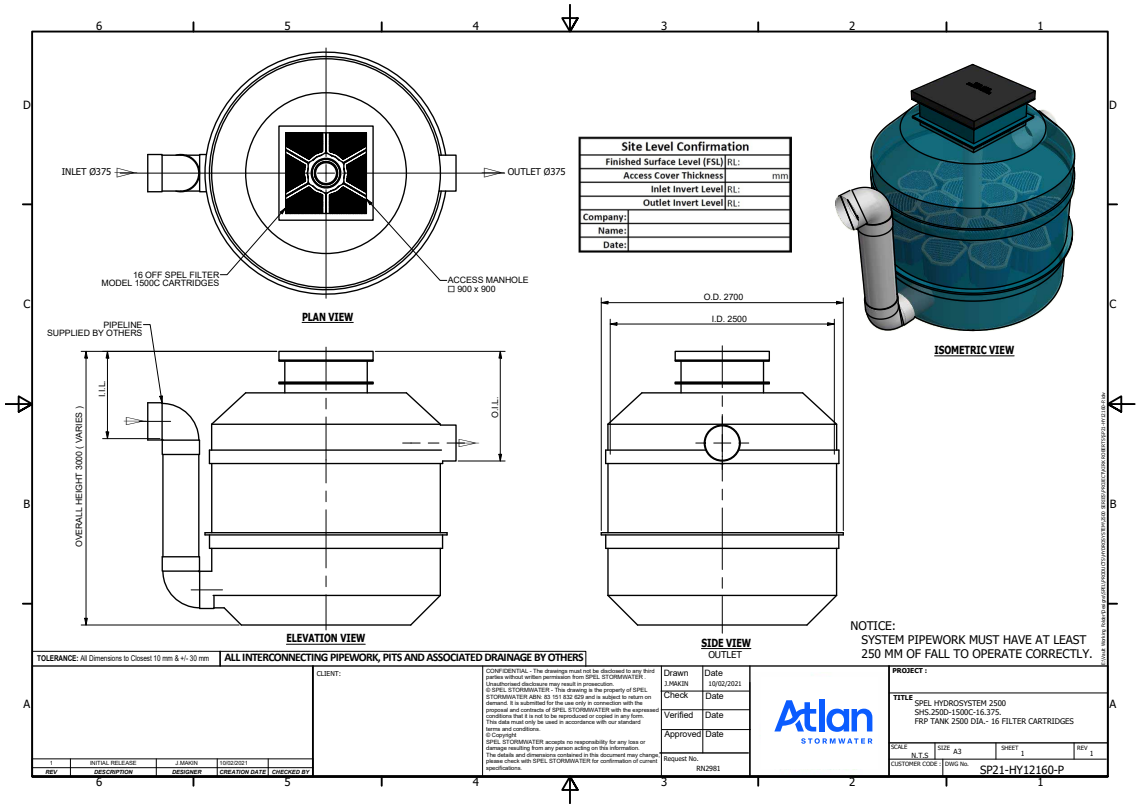


Model HS.2200

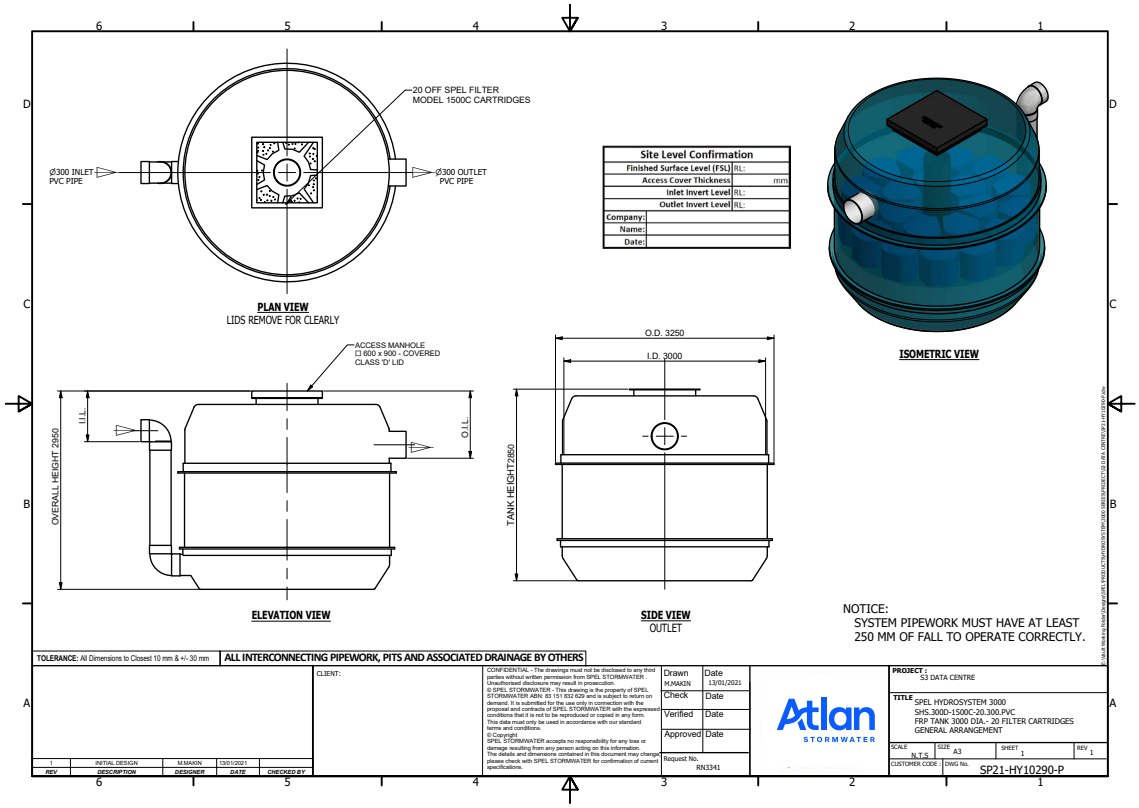


DRAWINGS

Model HS.2500

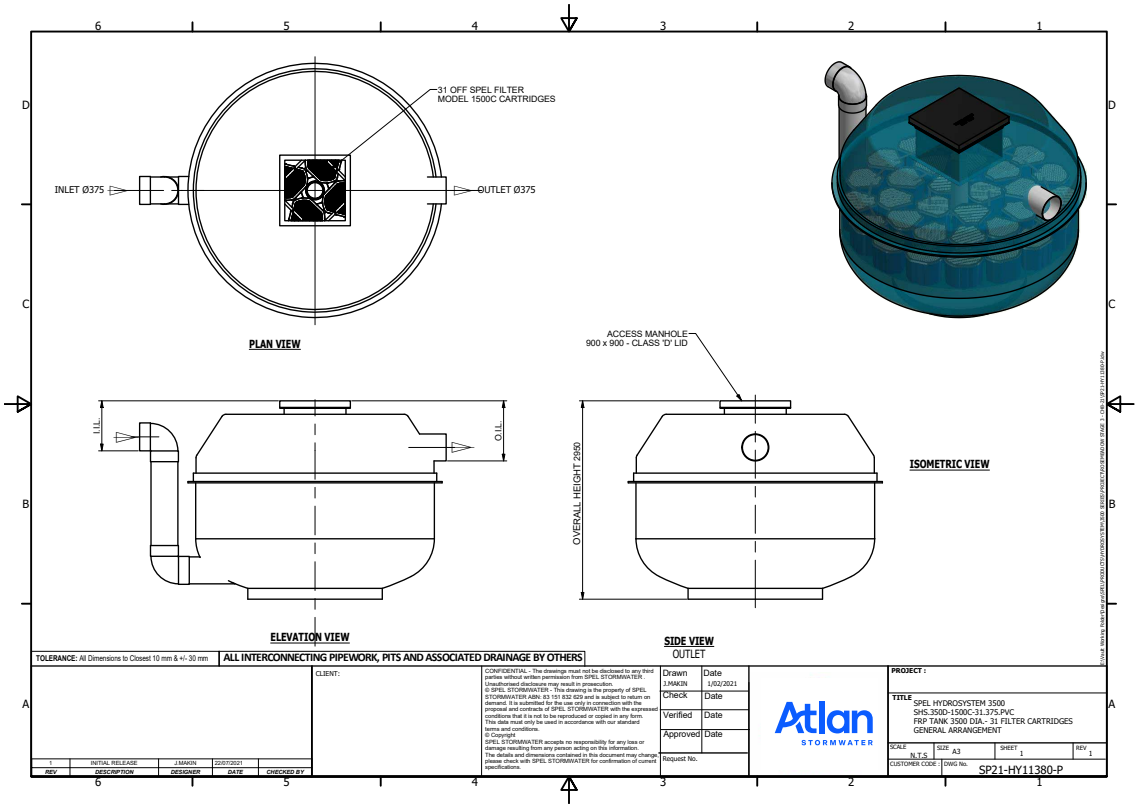


Model HS.3000

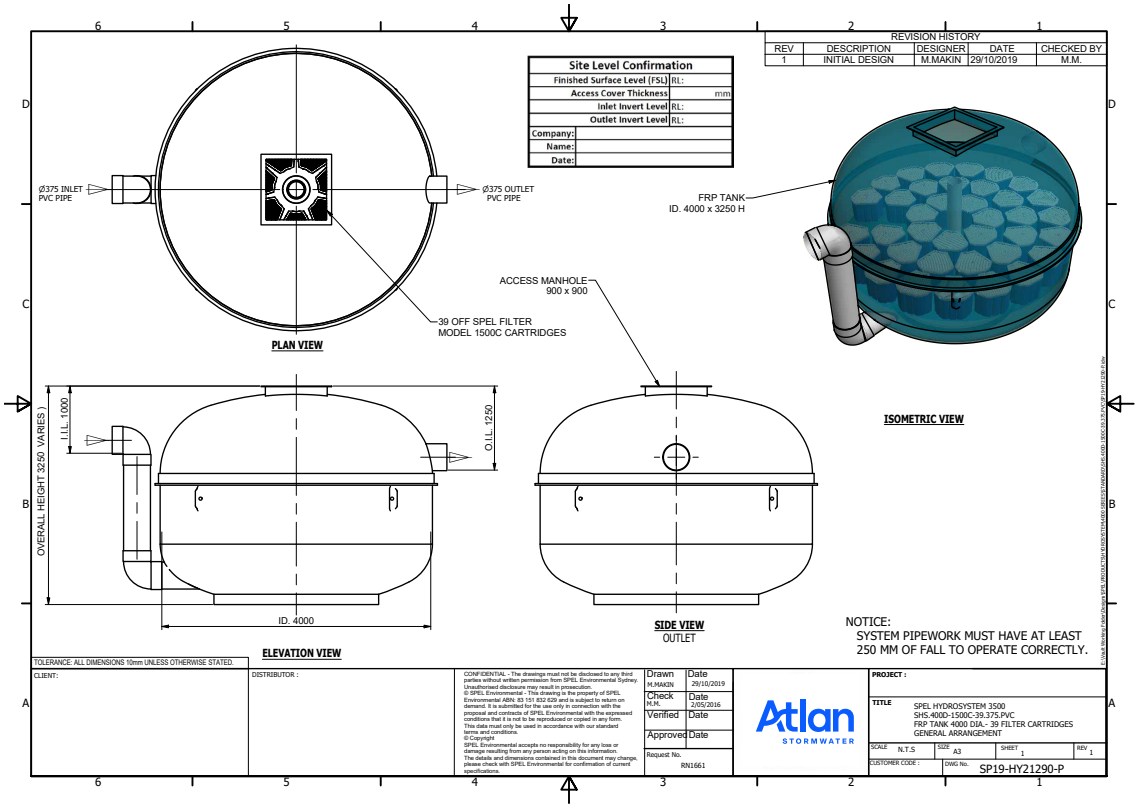


DRAWINGS

Model HS.3500



Model HS.4000



FlowFilter

Cartridge filter for tertiary stormwater treatment

NSW HEAD OFFICE 100 Silverwater Rd, Silverwater NSW 2128 PO Box 7138, Silverwater NSW 1811 P: +61 2 8705 0255 P: 1300 773 500 nsw.sales@atlan.com.au	**QLD MAIN OFFICE** 130 Sandstone Pl, Parkinson QLD 4115 P: +61 7 3271 6960 P: 1300 773 500 qld.sales@atlan.com.au	**VIC & TAS OFFICE** 897 Wellington Rd Rowville VIC 3178 P: +61 3 5274 1336 P: 1800 810 139 sales@atlan.com.au **VIC GEELONG BRANCH** 70 Technology Close, Corio VIC
SA OFFICE 9 Hampden Road, Mount Barker SA 5251 P: 1300 773 500 sales@atlan.com.au	**QLD SUNSHINE COAST BRANCH** 19-27 Fred Chaplin Cct, Bells Creek, QLD 4551 P: 1300 773 500 qld.sales@atlan.com.au	**WA OFFICE** 2 Modal Cres Canning Vale WA 6155 P: +61 8 9350 1000 P: 1800 335 550 sales@atlan.com.au
NZ OFFICE WANGANUI 43 Heads Road Wanganu New Zealand P: +64 6 349 0088 sales@atlan.com.au atlan.co.nz	**NZ OFFICE WELLINGTON** 41 Raiha St Porirua Wellington New Zealand P: +64 4 239 6006 sales@atlan.com.au atlan.co.nz	**NZ OFFICE AUCKLAND** 100 Montgomerie Road Airport Oaks P: +64 9 276 9045 sales@atlan.com.au atlan.co.nz

Joy in water

'We believe clean waterways are a right not a privilege and we work to ensure a joy in water experience for you and future generations.'

Andy Hornbuckle

Atlan STORMWATER

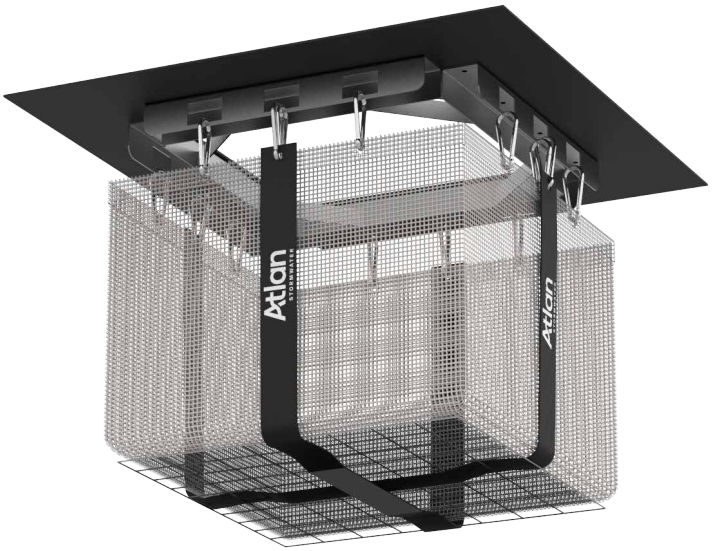
P 02 8705 0255 | sales@atlan.com.au
100 Silverwater Rd, Silverwater NSW 2128 Australia
atlan.com.au

StormSack

At-Source Gross Pollutant Trap

atlan.com.au

Atlan STORMWATER



The Atlan StormSack is specifically designed for the capture of gross pollutants, sediment, litter, and oil and grease. Ideally suited for storm drain retrofits, the StormSack's unique design allows maintenance to be performed using conventional vacuum suction equipment.

StormSack filtration solutions are highly engineered water quality devices that are deployed directly in the stormwater system to capture contaminants close the surface for ease of maintenance. Easily retrofitted into new or existing structures, StormSack filtration technology is a decentralized approach to stormwater treatment that essentially repurposes traditional site infrastructure and customizes it to meet specific site water quality goals. In this way, it satisfies important objectives of today's LID (Low Impact Development) criteria.

From an operations perspective, catch basins with StormSack filters are also easier and quicker to clean out because pollutants are trapped just under the grate.

APPLICATIONS

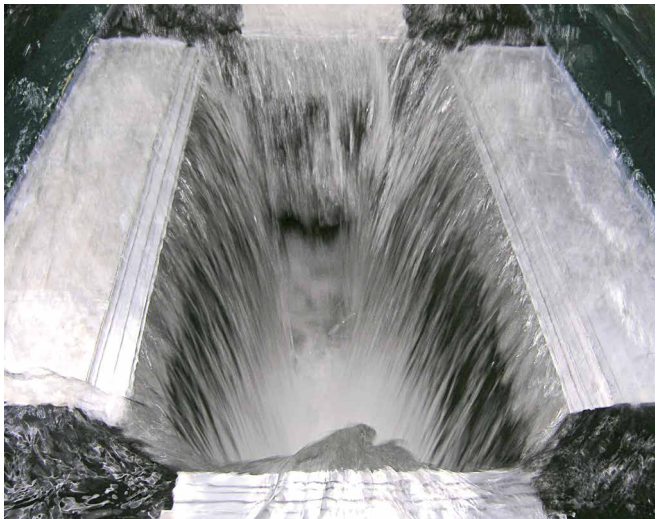
- Council storm drain retrofits
- Commercial / retail / residential
- Litter prone urban areas
- Scrap metal / solid waste / oil storage
- Part of treatment train
- Construction sediment / erosion

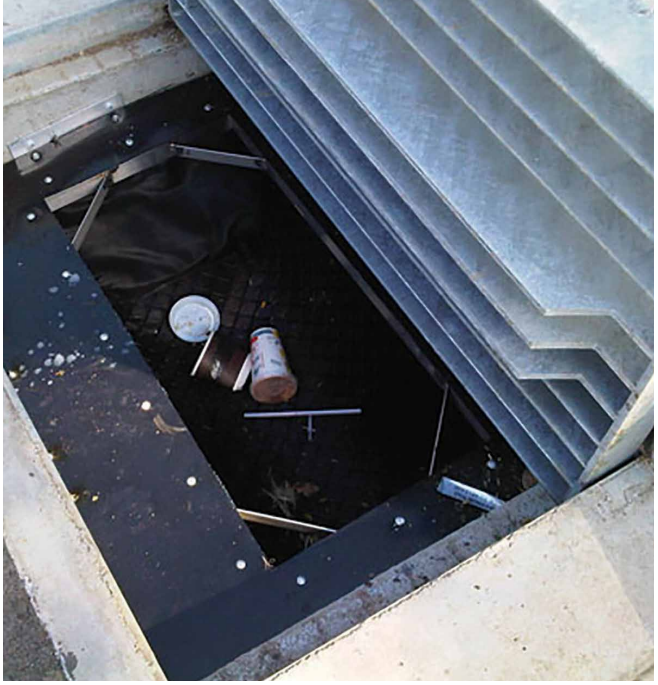
BENEFITS

- Can be modelled in MUSIC in conjunction with bio-retention
- Low cost gross pollutant capture
- Quick & easy installation
- Simple maintenance
- At-source capture
- Adjusts to custom pit sizes

The StormSack was introduced to the Australian market in 2012 and field testing is underway at several locations in South-east Queensland. Laboratory testing has shown capture of 99.99% of gross pollutants up to the bypass flow rate. Further results will be provided as they become available.

Recommended minimum clearance from bottom of StormSack to inside bottom of vault is 50mm. Typical frame adjustability range of 127mm in each direction.





HOW IT WORKS

This technology is a post developed stormwater treatment system. The StormSack provides effective filtration of solid pollutants and debris typical of urban runoff, while utilising existing or new storm drain infrastructure. The StormSack is designed to rest on the flanges of conventional catch basin frames and is engineered for most hydraulic and cold climate conditions.

Installation procedures shall include removing the storm grate, cleaning the ledge of debris and solids, measuring catch basin clear opening and adjusting flanges to rest on the grate support ledge. Install StormSack with splash guard under curb opening so the adjustable flanges are resting on the grate support ledge. Install corner filler pieces. Reinstall storm grate directly on support flanges rise shall be no more than 3mm.

FEATURES

POLLUTANT	EFFICIENCY
Gross Pollutants (GP)	100%
Total Suspended Solids (TSS)	61%
Total Phosphorus (TP)	28%
Total Nitrogen (TN)	45%

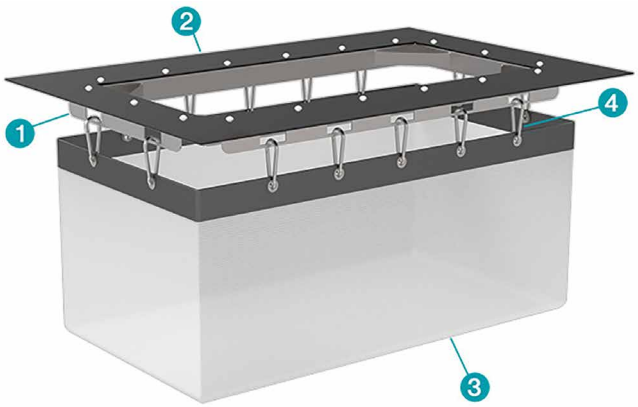
*Contact Atlan to confirm approved performance for the project LGA

MAINTENANCE

Typically the StormSack is serviceable from the street level, and therefore maintenance does not require confined space entry into the catch basin structure. The unit is designed to be maintained in place with a vacuum hose attached to a sweeper or a vactor truck. Use only Atlan replaceable parts.

Application	Regulatory Issue	Target Pollutants
Council Storm Drain Retrofits	At-source litter capture	Sediment, Litter, O&G
Commercial/Retail/Residential	Stormwater Compliance	Sediment, Litter, O&G
Litter Prone Urban Areas	Cost effective litter control	Litter ≥ 5 mm
Scrap Metal/Solid Waste/Oil Storage/Etc	Industrial Multi-Sector General Permit	Gross Pollutants, O&G
Part of Treatment Train	Council Stormwater Quality Improvement Targets	Sediment, Litter, O&G
Construction Sediment/Erosion	Sediment Control Plan	Sediment/Erosion Control

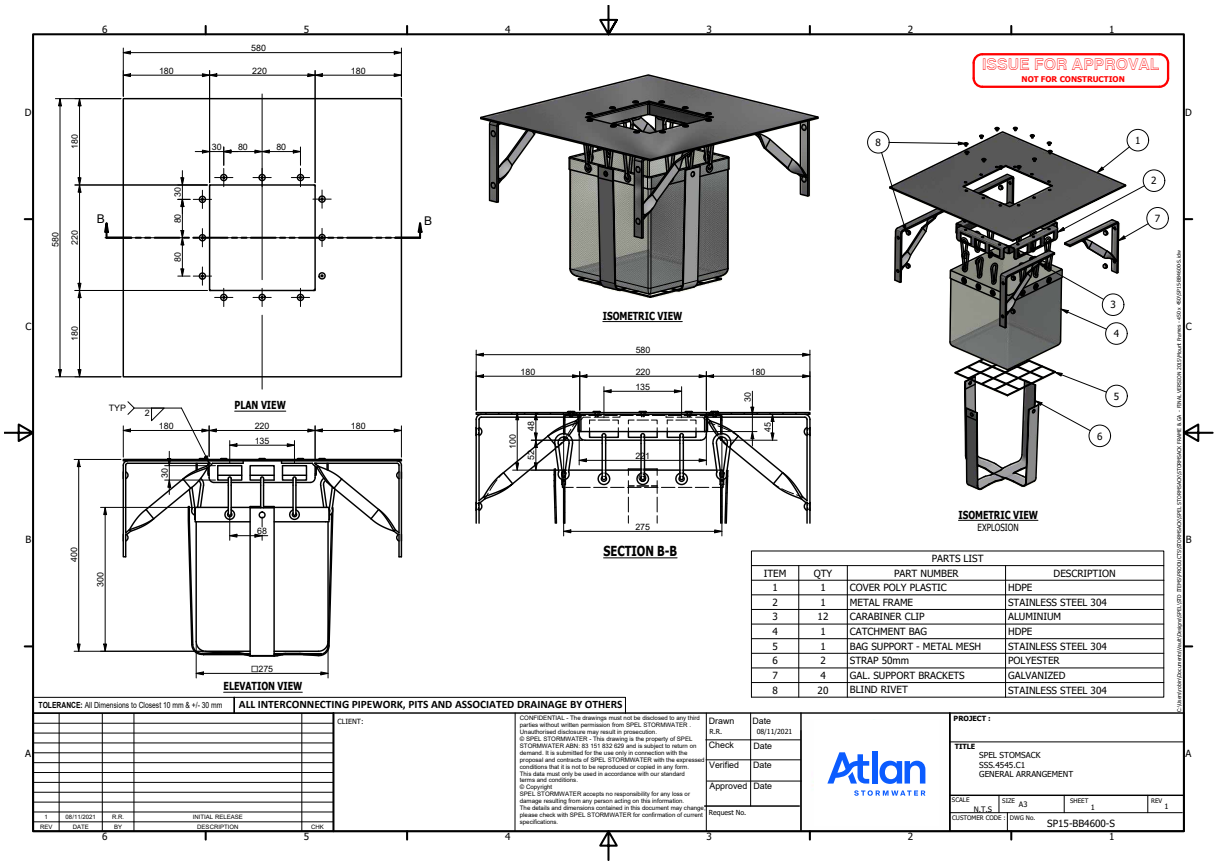
Features	
1.	1. Ultra-Durable Aluminium Frame • Available in 450x450mm, 600x600mm, 600x900mm and 900x900mm sizes • Custom pit arrangements upon request
2.	Black Poly Surround riveted to Frame • Can be cut to suit on site
3.	Reinforced Stormsack Bag • Bag has sewed eyelets • Square bottom design for even distribution
4.	Karabiners attach Bag to Frame for easy service & replacement
5.	5. Aluminium Support Angles & Fixings

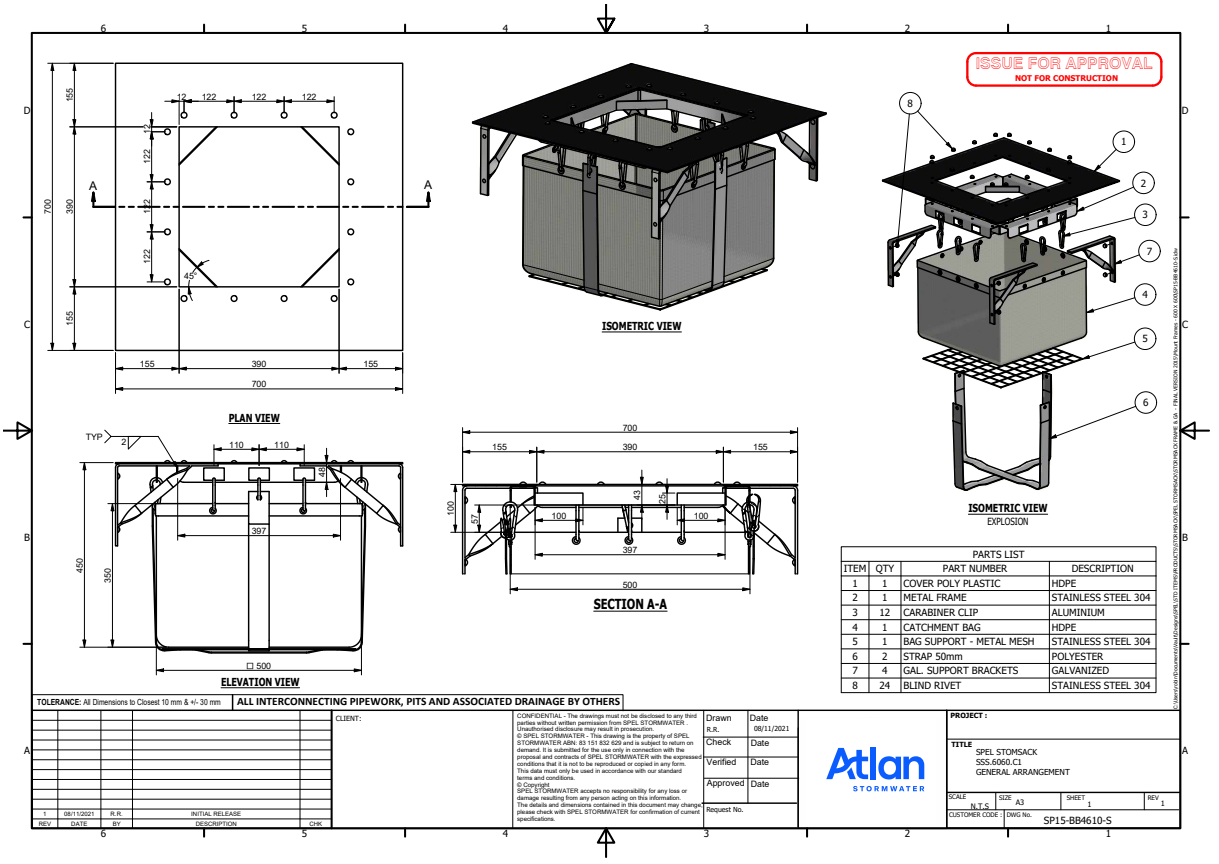


Standard StormSack to suit Pit Sizes
450x450mm
600x600mm
900x600mm
900x900mm

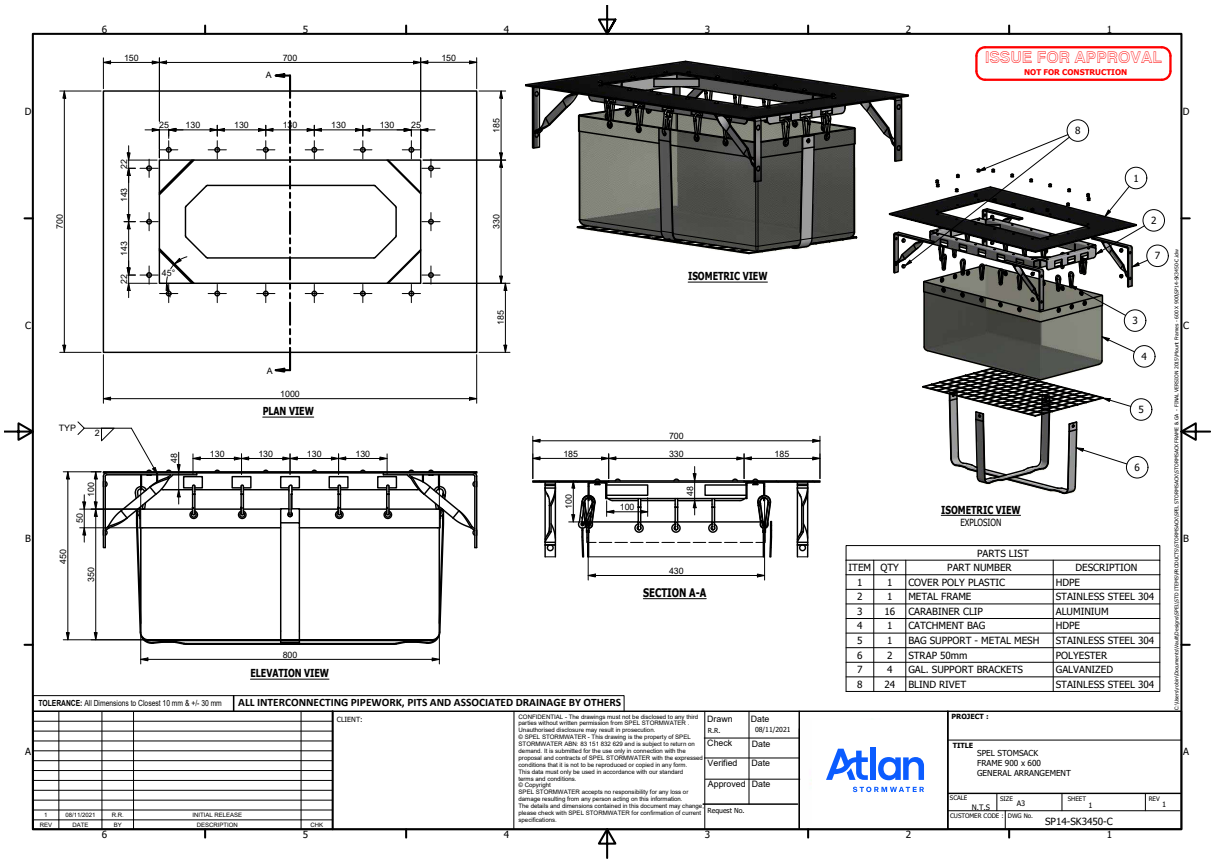
Custom sizes (i.e. 1200x900mm) can be manufactured on short lead times

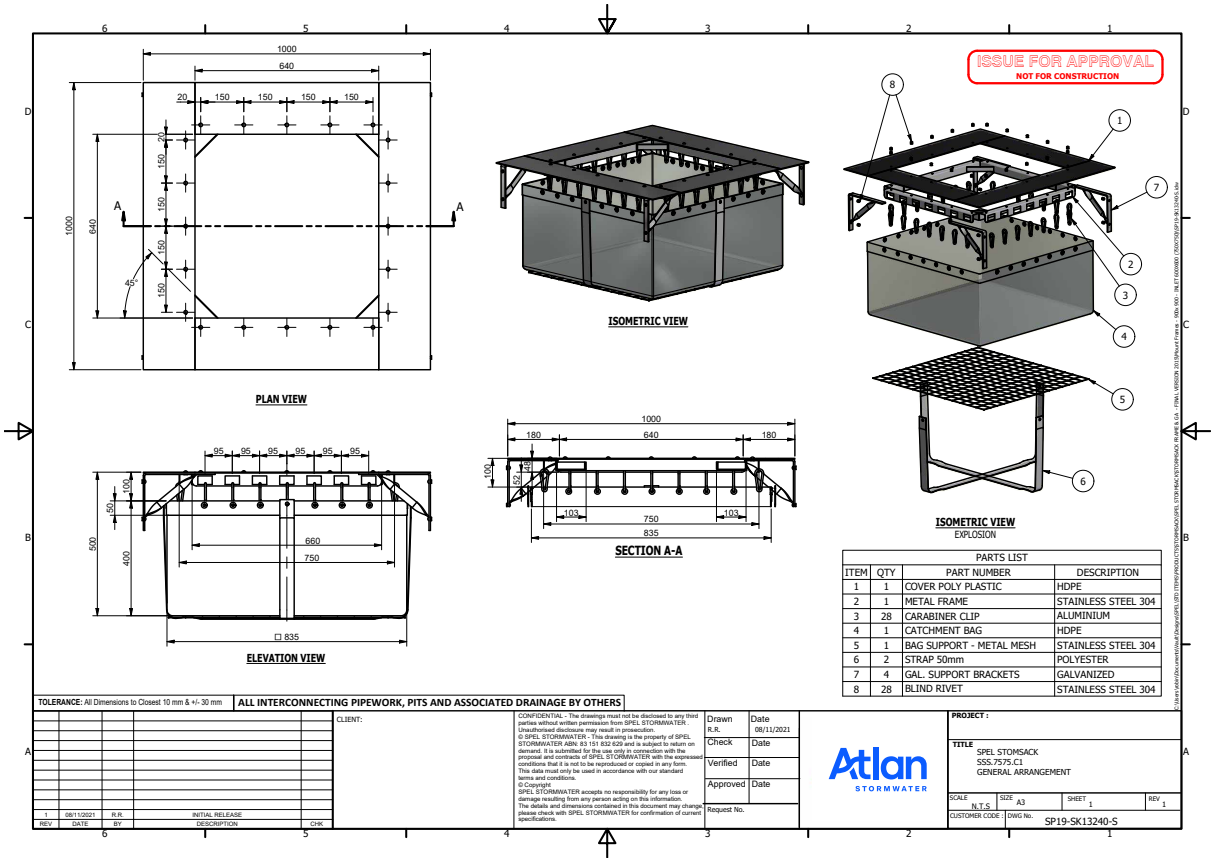
TECHNICAL DRAWINGS



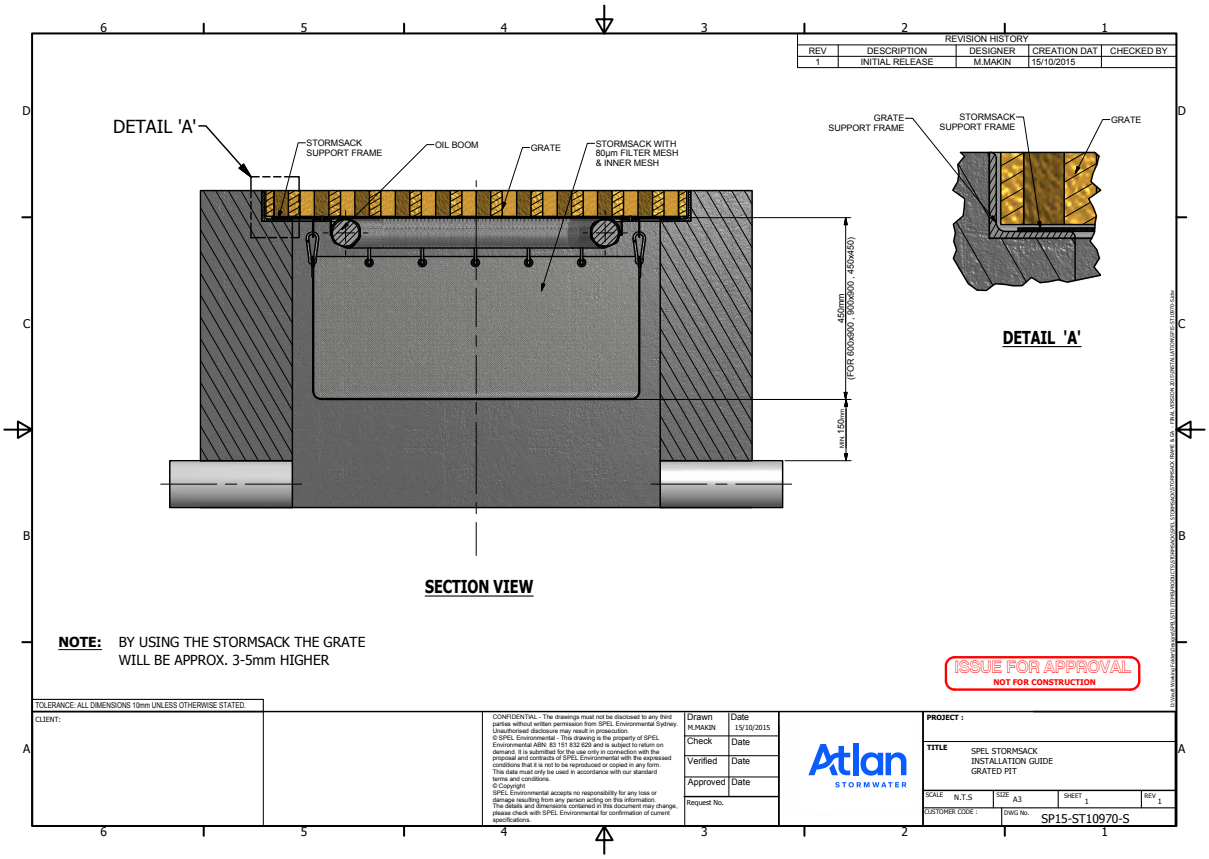


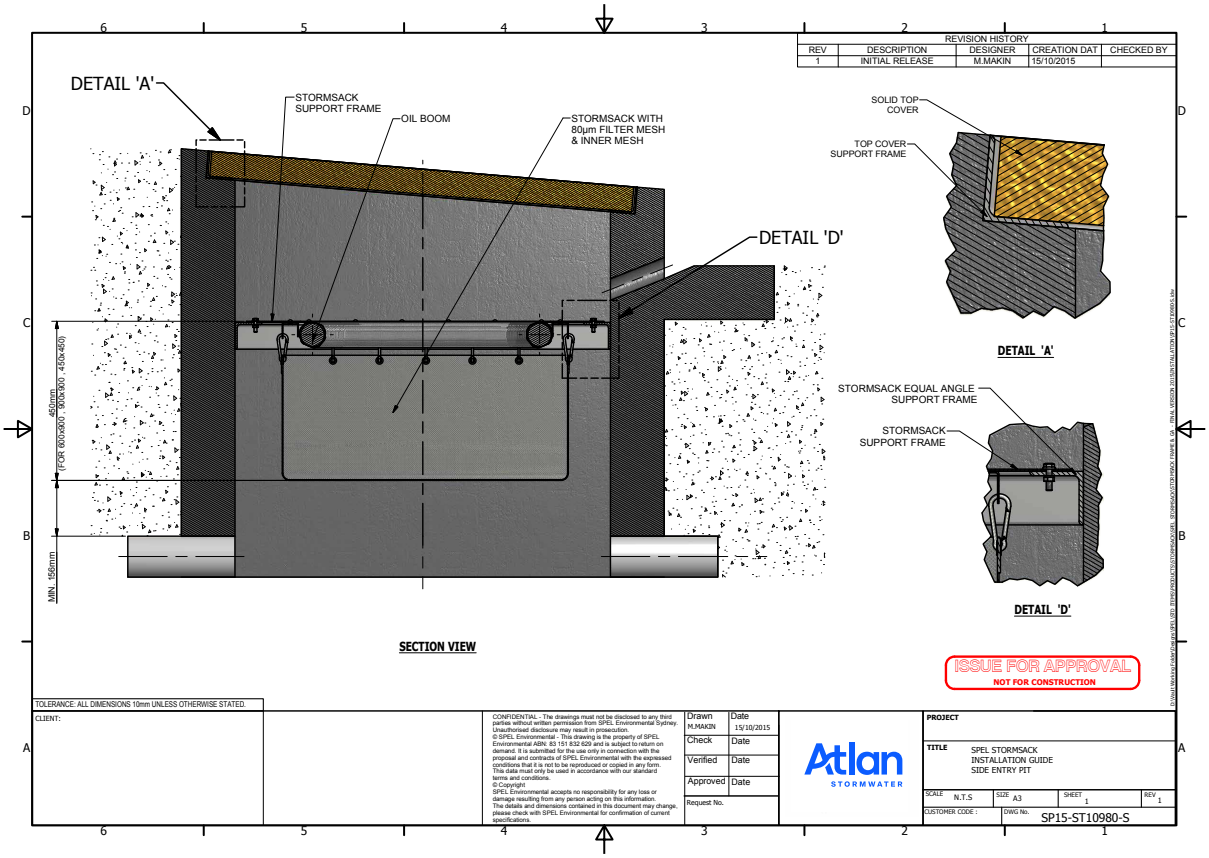
TECHNICAL DRAWINGS





INSTALLATION DETAILS





StormSack

At-Source Gross Pollutant Trap

NSW HEAD OFFICE 100 Silverwater Rd, Silverwater NSW 2128 PO Box 7138, Silverwater NSW 1811 P: +61 2 8705 0255 P: 1300 773 500 nsw.sales@atlan.com.au	**QLD MAIN OFFICE** 130 Sandstone Pl, Parkinson QLD 4115 P: +61 7 3271 6960 P: 1300 773 500 qld.sales@atlan.com.au	**VIC & TAS OFFICE** 897 Wellington Rd Rowville VIC 3178 P: +61 3 5274 1336 P: 1800 810 139 sales@atlan.com.au **VIC GEELONG BRANCH** 70 Technology Close, Corio VIC
SA OFFICE 9 Hampden Road, Mount Barker SA 5251 P: 1300 773 500 sales@atlan.com.au	**QLD SUNSHINE COAST BRANCH** 19-27 Fred Chaplin Cct, Bells Creek, QLD 4551 P: 1300 773 500 qld.sales@atlan.com.au	**WA OFFICE** 2 Modal Cres Canning Vale WA 6155 P: +61 8 9350 1000 P: 1800 335 550 sales@atlan.com.au
NZ OFFICE WANGANUI 43 Heads Road Wanganu New Zealand P: +64 6 349 0088 sales@atlan.com.au atlan.co.nz	**NZ OFFICE WELLINGTON** 41 Raiha St Porirua Wellington New Zealand P: +64 4 239 6006 sales@atlan.com.au atlan.co.nz	**NZ OFFICE AUCKLAND** 100 Montgomerie Road Airport Oaks P: +64 9 276 9045 sales@atlan.com.au atlan.co.nz

Joy in water

'We believe clean waterways are a right not a privilege and we work to ensure a joy in water experience for you and future generations.'

Andy Hornbuckle

Atlan STORMWATER

P 02 8705 0255 | sales@atlan.com.au
100 Silverwater Rd, Silverwater NSW 2128 Australia
atlan.com.au