

SITE BASED STORMWATER MANAGEMENT PLAN

Proposed Lot 105, Flagstone Logistics Estate

Prepared for CH Hydrangea Pty Ltd

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Executive Summary

This Site Based Stormwater Management Plan (SBSMP) has been prepared on behalf of CH Hydrangea Pty Ltd (Applicant) in support of a Development Application (DA) over land described as: proposed lot 105, part of Lot 1 on SP352820 (site). This Priority Development Area (PDA) DA seeks approval for the following aspects of development:

- Development Permit for Reconfiguring a lot – 1 into 2 lots
- Development Permit for a Material Change of Use for a Warehouse, Low impact industry, and Medium impact industry.

The proposed development seeks to facilitate the establishment of a speculative warehouse and/or industrial facility that will operate 24 hours a day, 7 days a week, and will be located on proposed Lot 105.

It is noted that the infrastructure referred to as existing in this report is the estate infrastructure that is currently under construction.

This SBSMP addresses the stormwater management strategy for the proposed development and demonstrates that the proposed development can be constructed and operated in accordance with all stormwater objectives required for the development. The primary outcomes of this SBSMP are as follows:

Lawful Point of Discharge

As outlined in the Arcadis SBSMP EAG001-30109334-AAR Revision 12 and Approved as part of the EDQ approval DEV2018/961/18. The subject site has one lawful point of discharge:

Minor flows and Major flows from the development are to discharge to the combined bioretention and detention basin located along the eastern site boundary (Lot 900).

Stormwater Quantity

As outlined in the Arcadis SBSMP EAG001-30109334-AAR Revision 12 and Approved as part of the EDQ approval DEV2018/961/18. The subject site's stormwater quantity objectives are catered for within the regional detention basin. No further quantity measures are proposed for the site (proposed Lot 105, or existing Lot 1 on SP352820).

Stormwater Quality

As part of the PDA Development Approvals DEV2023/1466 and DEV2023/1446 Arcadis completed a SBSQMP EAG003-30109334-AAR Rev 4. Bioretention systems have been constructed within the development layout to treat stormwater runoff from the internal road reserve and Catchment INTNL-1 as well as EXTNL-1A and EXTNL-1B. Stormwater runoff from Lot 1 (INTNL-1) and external catchments 1A and 1B (EXTNL-1A and EXTNL-1B) will be treated by the northern bioretention basin. Rainwater tanks are to be included in each allotment for roof water runoff which is to be reused across each lot through irrigation and toilet flushing. Half of each roof catchment is to be directed to rainwater harvesting tanks. The rainwater harvesting tank for proposed Lot 105 has been sized in the MUSIC Modelling Software with a 80% non-potable reuse target in accordance with the MUSIC Modelling Guidelines and the Blacktown Council WSUD Developer Handbook. The required size for the rainwater harvesting tank is 75kL.

Erosion and Sediment Control

Construction phase ESCP measures are to be completed by a CPESC in detailed design and implemented during construction in accordance with the relevant requirements.

1. Introduction

This Site Based Stormwater Management Plan (SBSMP) has been prepared on behalf of CH Hydrangea Pty Ltd (Applicant) in support of a Development Application (DA) over land described as: proposed lot 105, part of Lot 1 on SP352820 (site). This Priority Development Area (PDA) DA seeks approval for the following aspects of development:

- Development Permit for Reconfiguring a lot – 1 into 2 lots
- Development Permit for a Material Change of Use for a Warehouse, Low impact industry, and Medium impact industry.

The proposed development seeks to facilitate the establishment of a speculative warehouse and/or industrial facility that will operate 24 hours a day, 7 days a week, and will be located on proposed Lot 105.

Table 1 – Property Details

Site Address	Enterprise Drive, North Maclean, QLD , 4280
Lot Title	Proposed Lot 105, Part of Lot 1 on SP352820
Total Site Area	32,559m ²
Proposed Land Use	Low & Medium Impact Industry

1.1. Related Reports and Documents

This report is to be read in conjunction with the following reference documents:

- Arcadis SBSMP EAG001-30109334-AAR Revision 12
- PDA Development Approval DEV2018/961/18
- Civil Design Drawings by Northrop. Appendix A

2. Site Context and Existing Characteristics

The site, Proposed Lot 105 is part of approved Lot 1, which was approved by the MEDQ as part of the PDA Development Approvals DEV2023/1466 and DEV2023/1446 issued on 11 October 2024 and 19 March 2025, respectively. The subject site is located within stage 1 of the overarching PDA Development Approval for the Flagstone Logistics Estate (DEV2018/961/18) and is located within the Industrial Warehouse, Business, Research and Technology Precinct of the endorsed greater Flagstone context plan. The stormwater management strategy for the development has been designed to satisfy the quantity and quality requirements as outlined in the Arcadis SBSMP EAG001-30109334-AAR Revision 12.

The subject site falls within the INTNL-1 catchment and is catered for by the estate's stormwater quantity or quality management device – Northern Basin (Lot 900). The subject site is not required to provide on lot stormwater quantity treatment quality and quantity treatment. As outlined in Arcadis SBSQMP EAG001-30109334-AAR stormwater runoff from Lot 1 (INTNL-1) will be treated by the Northern Bio-retention Basin. Rainwater tanks are to be included in each allotment for the harvesting of roof water runoff which is to be reused across each lot through irrigation and toilet flushing. Half of each roof catchment is to be direction to rainwater re-use tanks.

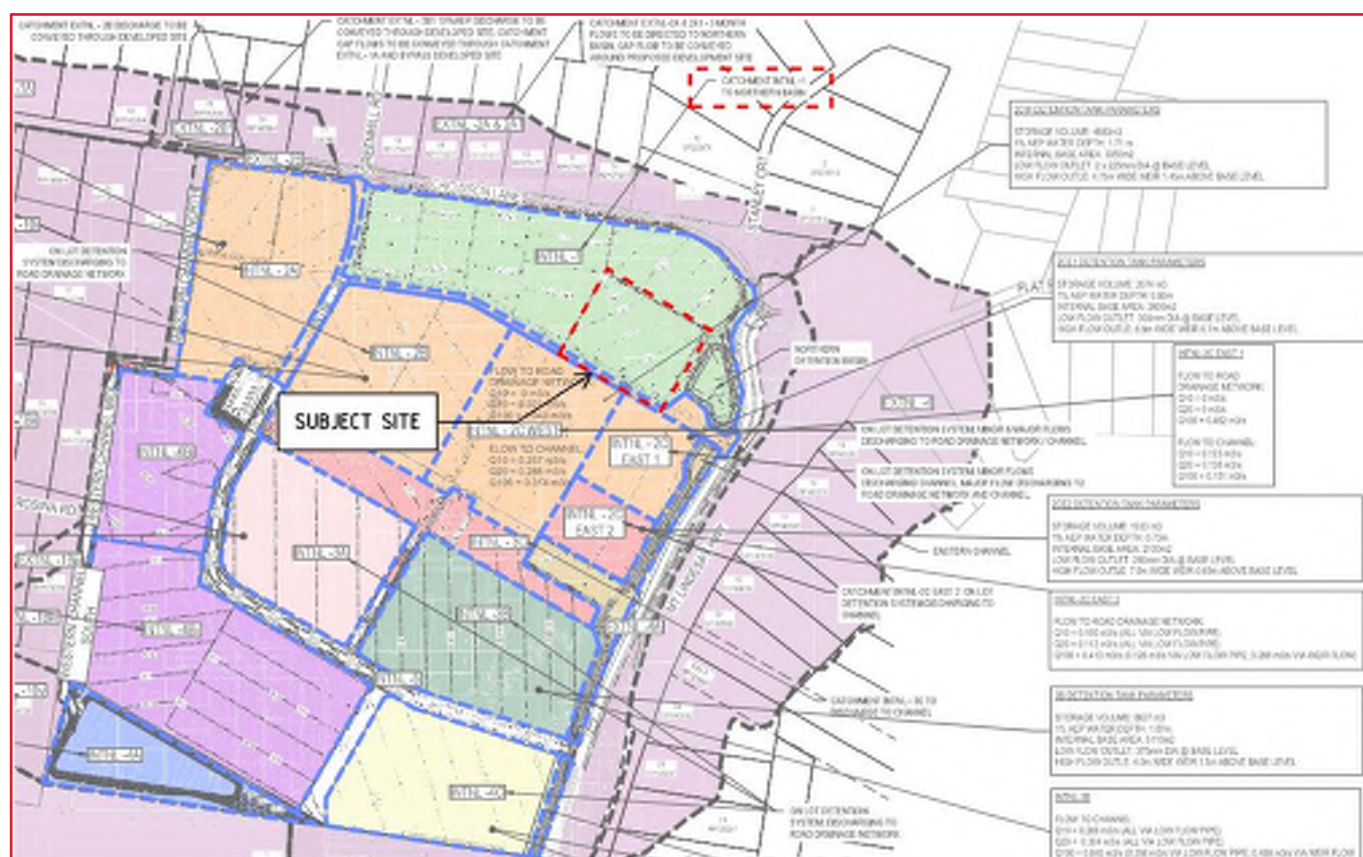


Figure 1 – Site Locality

2.1. Existing Site Characteristics

The site, Proposed Lot 105 (par of approved Lot 1), was approved by the MEDQ as part of the PDA Development Approvals DEV2023/1466 and DEV2023/1446 issued on 11 October 2024 and 19 March 2025, respectively. The site is currently cleared and undeveloped, comprising primarily of exposed soils. The site generally falls east towards the existing combined bio-retention and detention basin (Lot 900) at approximately 0.5% grade. The subject site is located within stage 1 of the overarching PDA Development Approval for the Flagstone Logistics Estate (DEV2018/961/18) and is located within the Industrial Warehouse, Business, Research and Technology Precinct of the endorsed greater Flagstone context plan.

The site is currently bound by:

- Future Industrial development to the north
- Existing combined bio-retention and detention basin to the east (Lot 900)
- Enterprise Road to the south
- Future Industrial development to the west

A site locality is located above in Figure 1.

2.2. Existing Lawful Point of Discharge

The following existing stormwater infrastructure has been identified in the vicinity of the site. The information has been sourced from the Arcadis Detailed Design documentation and the SBSMP EAG001-30109334-AAR Revision 12.

- Minor and major flows from the development are to discharge to the existing lot connection point located along the eastern site boundary and discharge into the existing combined bio-retention and detention basin (Lot 900).

3. Proposed Development

The proposed development involves the construction of a low & medium impact industrial warehouse (distribution centre) on Proposed Lot 105 (Part of existing Lot 1) in support of the Reconfiguration of Lot – 1 into 2 Lots, plus access easements. The proposed architectural layout of the development prepared by Watson Young is shown below in Figure 3-1. Architectural drawings are included in Appendix C.

The material change of use of the proposed development seeks approval for a Warehouse, Low impact industry, and Medium impact industry.

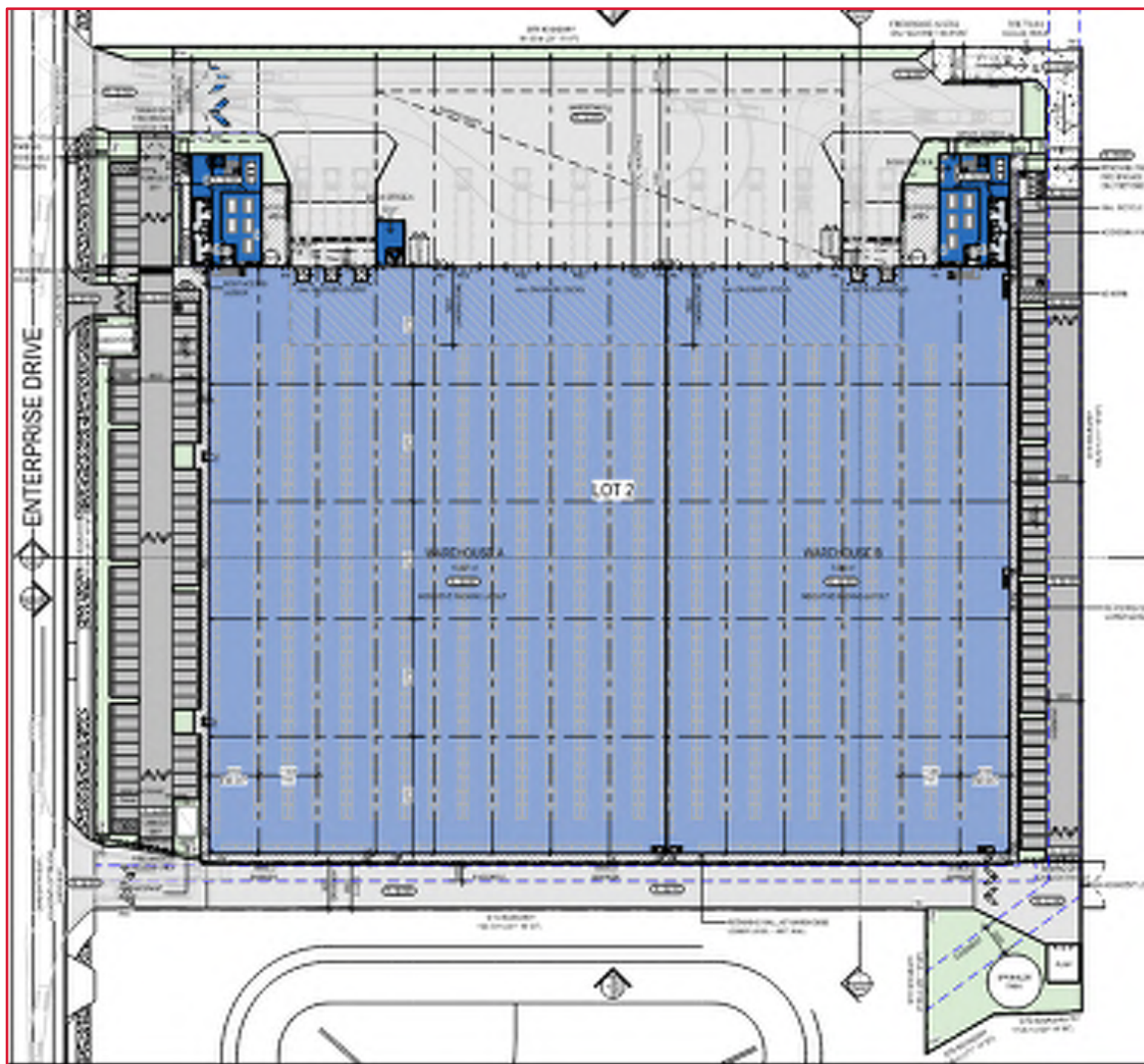


Figure 2 – Proposed Development (Watson Young 2026)

3.1. Proposed Stormwater Management Strategy

The proposed development will introduce a new internal pit and pipe system and connect into the existing lawful point of discharge defined in Section 2.2.

Runoff generated from the site will be captured and conveyed to the lawful point of discharge, similar to the existing conditions, the site will discharge minor and major flows to the combined bio-retention and detention basin located at the eastern boundary of the site (Lot 900).

4. Stormwater Management Objectives

4.1. Development Control Plan Objectives

Stormwater management for the proposed development has been designed in accordance with the following documents:

- EDQ Guideline – PDA Guideline No. 13 Engineering Standards, Stormwater Quantity and Quality
- State Planning Policy (SPP), 2017
- Environmental Protection (Water) Policy, 2009)
- Queensland Urban Drainage Manual (QUDM) Fourth Edition, 2016
- Water By Design MUSIC Modelling Guidelines, Version 3.0, 2018
- Water by Design - Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands V1.1, 2010
- Plumbing and Drainage Code AS3500.3
- Australian Rainfall and Runoff Guideline (ARR)
- International Erosion Control Association – Best Practise Erosion and Sediment Control, 2008

The stormwater management objectives for the development are summarised below:

- Development should not result in water being diverted onto land that is not normally subject to overland flow
- Define a lawful point of discharge that will not cause an actionable nuisance in accordance with QUDM
- Ensure that the development does not create adverse flood impacts to upstream or adjacent properties
- No increase in post development flows for all rainfall events up to and including 100-year event
- Stormwater quality to achieve the minimum design requirements of the State Planning Policy (2017) and achieve Water quality objectives in accordance with Environmental Protection (Water) Policy (2019), as follows in Table 2 Below.

Table 2 - Water Quality Objectives

Pollutant	Percent Reduction
Gross Pollutants (>5mm), GP	90%
Total Suspended Solids, TSS	80%
Total Phosphorous, TP	60%
Total Nitrogen, TN	45%

5. Flooding

The estate Site Based Stormwater Management Plan (Quantity) by Arcadis (EAG001-30109334-AAR Revision 12) discusses the flood risk associated with the proposed estate for design storms up to and including the 1% AEP. The report demonstrates that the proposed Lot 105 development has immunity for all design storms.

Further to their SBSMP, Arcadis have prepared a technical memorandum (EAG001-30109334-AAR-02) which discusses the flood risk associated with the proposed estates for design storms exceeding the 1% AEP 2100, up to and including the 0.2% 2100 AEP (Note. This memorandum was submitted and considered by EDQ as part of previous approvals within the estate). This memorandum was prepared in response to Logan City Council Planning Scheme 2015 Section 8.2.5 – Flood Overlay Code. In accordance with the memorandum and Council's requirements, the proposed lot 105 development is required to achieve immunity to the defined flood level (1% AEP at 2100). Proposed Lot 105 is considered as part of the A1 catchment in the approved flood memorandum. The memorandum nominates an RL of 25.7 for the 0.2% AEP @2100. The proposed FFL of the warehouse is RL 26.00. Based on the design levels the proposed lot 105 development will have immunity up to and including the 0.2% AEP @ 2100.

6. Stormwater Quantity Management

As outlined in the approved Arcadis Site Based Stormwater Management Plan (SBSMP) EAG001-30109334-AAR Rev 12: The northern on-site detention basin is situated in the north-east corner of the proposed development and attenuates flows from INTNL-1 (subject site) and the major flows from the northern portion of the internal road network, prior to discharge to the northernmost portion of the eastern conveyance channel. As such, no further onsite stormwater attenuation is proposed for the development

7. Stormwater Quality Management – Construction Phase

7.1. Erosion and Sediment Control

Prior to construction commencing, it is the principal contractor's responsibility to ensure adequate erosion and sediment control measures are installed around the subject site to minimise disturbance and ensure the quality of runoff discharging from the site is of an acceptable standard.

An erosion and sediment control plan (ESCP) is to be produced by a Certified professional in Erosion and Sediment Control (CPESC) and submitted to the relevant authorities for approval prior to construction. The ESCP is to be prepared in accordance with the Best Practice Erosion and Sediment Control Manual (ICEA 2009) based on Type 1 techniques. Typical erosion and sediment control techniques to be used include but are not limited to:

- Sediment barriers to be installed on all entrances to stormwater inlet pits
- Construction entry and exit shakedown areas
- Sediment fences are to be installed on the downstream boundaries of the subject site
- Construction of temporary bunds at the top of all earthworks batters to ensure runoff is directed away from exposed batters
- Construction of temporary diversion drains to divert water to sediment basins and around any stockpiles
- Sediment fences to be installed on the downstream side of any stockpiles
- Stabilisation of all batters upon reaching the finished earthworks levels
- Dust control measures which includes covering stockpiles, maintain site fences and watering exposed areas
- Sediment basin in accordance with IECA Best Practice Erosion and Sediment Control.

8. Stormwater Quality Management – Operational Phase

8.1. Stormwater Quality Treatment Approach

As part of the PDA Development Approvals DEV2023/1466 and DEV2023/1446 Arcadis completed a SBSQMP EAG003-30109334-AAR Rev 4. Bioretention systems have been constructed within the development layout to treat stormwater runoff from the internal road reserve and Catchment INTNL-1 as well as EXTNL-1A and EXTNL-1B. Stormwater runoff from Lot 1 (INTNL-1) and external catchments 1A and 1B (EXTNL-1A and EXTNL-1B) will be treated by the northern bioretention basin. Rainwater tanks are to be included in each allotment for roof water runoff which is to be reused across each lot through irrigation and toilet flushing. Half of each roof catchment is to be directed to rainwater harvesting tanks.

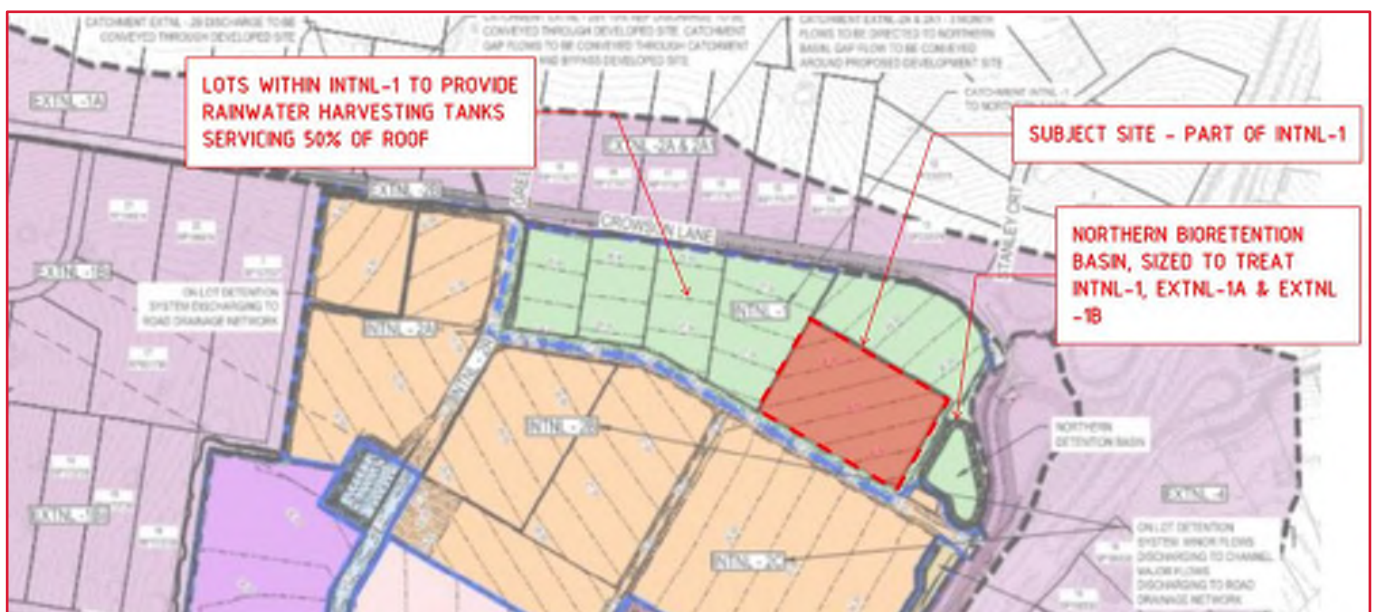


Figure 3- Stormwater Quality Strategy – INTNL-1

8.2. Stormwater Quality Modelling (MUSIC) Methodology

Stormwater quality modelling for the site was prepared using 'Model for Urban Stormwater Improvement Conceptualisation' (MUSIC) Version 6.3. The model has been built to determine the rainwater tank sizing against the 80% non-potable re-use requirements. The reuse demand has been calculated based on an annual irrigation application of 548mm/m²/yr across landscaped areas and a toilet/urinal demand of 0.1kL/toilet/day, in accordance with the specifications outlined by Arcadis and the MUSIC Modelling Guidelines 2020. The number of toilets and landscaping area has been calculated based on Watson Young – Preliminary Issue Plan Rev P1.

Table 3 below, summarises the parameters used to model the rainwater tank.

Table 3 - Rainfall Runoff Parameters

Parameter	Value*
Irrigated landscape area (m ²)	1635
Number of toilets/urinals	8
Number of Tanks	1
Volume below overflow pipe (kL)	75
Depth above overflow pipe (kL)	0.75
Surface Area (m ²)	37.5
Initial Volume (kL)	0
Overflow Pipe Diameter (mm)	90 (x2)
Max Drawdown Height (m)	2
Demand (kL/yr)	1188

MUSIC Model Layout

The development site has been modelled in MUSIC based on the assumptions outlined above. A diagrammatic view of the MUSIC model layout is presented in Figure 5 below:

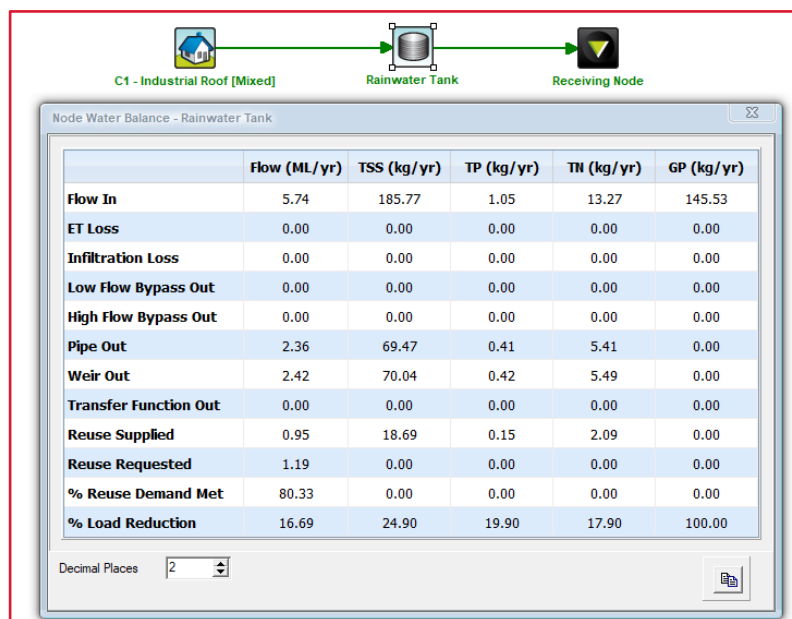


Figure 4 - MUSIC Link and Node Diagram

For the analysis of the MUSIC modelling, Meteorological data (average potential evapotranspiration (PET) and Rainfall Station) was based on the recommendations listed in WBD MUSIC Modelling Guidelines for SEQ, Table 3.1. The rainfall data was obtained from the Bureau of Meteorology for Station No. 40659 at Greenbank. The analysis was undertaken using a 6min time step from the period of 01/01/1980 to 31/12/1989.

The following rainfall and runoff parameters shown in Table 4 have been utilised.

Table 4 – Rainfall Runoff Parameters

Parameter	Value*
Land Use Category	Commercial and Industrial
Rainfall Threshold (mm/day)	1
Soil Storage Capacity (mm)	18
Initial Storage (% of Capacity)	10
Field Capacity (mm)	80
Infiltration Capacity Coefficient – a	243
Infiltration Capacity Exponent – b	0.6
Initial Depth (mm)	50
Daily Recharge Rate (%)	0
Daily Base flow Rate (%)	31
Daily Deep Seepage Rate (%)	0

Table 5 – Water Quality Parameters for MUSIC Source Nodes

Catchment ID	MUSIC Source Nodes	Catchment Area (Ha)	Impervious %
C (Treated Catchment)	C1 – Industrial Roof (50% roof)	1.06	100%

Table 6 – MUSIC Model Results

Node	Reuse ML/yr		% Reuse demand met		Compliance
	Reuse Supplied	Reuse requested	Actual	Target	
Rainwater Tank	0.95	1.19	80.33	80	OK

9. Maintenance

All the stormwater infrastructure detailed in this document are contained within the subject site and will remain an asset of the development's property owner, tenant or similar internal authority.

Maintenance of all rainwater tanks will be the responsibility of body corporate or the development owner. The maintenance should be carried out in accordance with the local authority recommendations and conducted by a professional.

10. Conclusion

This Site Based Stormwater Management Plan (SBSMP) has been prepared on behalf of CH Hydrangea Pty Ltd (Applicant) in support of a Development Application (DA) over land described as: proposed lot 105, part of Lot 1 on SP352820 (site). This Priority Development Area (PDA) DA seeks approval for the following aspects of development:

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Erosion and Sediment Control

Construction phase ESCP measures are to be completed by a CPESC in detailed design and implemented during construction in accordance with the relevant requirements.

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Appendix A – Civil Engineering Plans

PROPOSED INDUSTRIAL DEVELOPMENT

PROPOSED LOT 105, 4499-4651 MT. LINDESAY HIGHWAY, NORTH MACLEAN QLD 4280
DEVELOPMENT APPLICATION



LOCALITY PLAN
NTS

SOURCE : METROMAP.COM.AU

DRAWING SCHEDULE

DWG NUMBER	DWG TITLE
DA-001	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
DA-101	BULK EARTHWORKS LAYOUT PLAN
DA-111	BULK EARTHWORKS SECTIONS
DA-210	ROADWORKS & STORMWATER OVERALL LAYOUT PLAN
DA-211	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN - SHEET 1 OF 4
DA-212	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN - SHEET 2 OF 4
DA-213	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN - SHEET 3 OF 4
DA-214	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN - SHEET 4 OF 4
DA-311	STORMWATER DRAINAGE CATCHMENT LAYOUT PLAN
DA-321	STORMWATER DRAINAGE LONGITUDINAL SECTIONS - SHEET 1 OF 4
DA-322	STORMWATER DRAINAGE LONGITUDINAL SECTIONS - SHEET 2 OF 4
DA-323	STORMWATER DRAINAGE LONGITUDINAL SECTIONS - SHEET 3 OF 4
DA-324	STORMWATER DRAINAGE LONGITUDINAL SECTIONS - SHEET 4 OF 4



NOT FOR CONSTRUCTION

DRAWN: MMAN/APIT
DESIGNED: GDE/LANGE
JOB MANAGER: ADE/ANDRADE
VERIFIER: SKILLORAN
25874

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER		
A	ISSUED FOR APPROVAL	MM	ADA	SK	02.04.26			 Brisbane Level 25, 12 Creek Street, Brisbane QLD 4000 GPO BOX 423 Brisbane QLD 4001 (07) 3365 0400 brisbane@northrop.com.au ABN 81 094 433 100	PROPOSED INDUSTRIAL DEVELOPMENT PROPOSED LOT 105 4499-4651 MT. LINDESAY HIGHWAY NORTH MACLEAN, QLD 4280	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE	26000287		
B	ISSUED FOR APPROVAL	MM	ADA	SK	21.04.26							DRAWING NUMBER	REVISION
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1. VOLUMES ARE CALCULATED BETWEEN STRIPPED SURFACE AND BOXING (BULK) LEVELS.
2. VOLUMES DO NOT CONSIDER BULKING / COMPACTION FACTORS, UNSUITABLE GROUND REMOVAL OR CONTAMINATED GROUND REMOVAL.
3. IT HAS BEEN ASSUMED THAT THE SITE WILL REQUIRE 0mm TOPSOIL STRIP TO REMOVE ORGANIC MATERIAL. SHOULD THIS DEPTH VARY, PLEASE NOTIFY SUPERINTENDENT, GEOTECH & NORTHROP IMMEDIATELY.
4. REFER TO CIVIL PAVEMENT STRUCTURAL FOUNDATION / SLAB DRAWINGS FOR PAVEMENT DEPTHS, TO BE CONFIRMED & VALIDATED AGAINST BULK / BOXING LEVELS BY CONTRACTOR & SURVEYOR PRIOR TO COMMENCEMENT OF EARTHWORKS.
5. ALL EARTHWORKS VOLUMES ARE PRELIMINARY ONLY, AND ARE TO BE USED AS A GUIDE ONLY. CONTRACTOR IS TO ALLOW ADEQUATE CONTINGENCY.

THE CONTRACTORS IS TO ALLOW ADEQUATE PROVISIONAL AMOUNTS FOR CONTINGENCIES FOR THE FOLLOWING UNKNOWN EARTHWORKS/GEOTECH PARAMETERS:

- SWELLING/COMPACTION FACTORS - UNKNOWN
- SUBGRADE CBR - UNKNOWN
- SUBGRADE SUITABLE FOR FILLING/PAVEMENT - UNKNOWN
- IF CUT IS CONSIDERED SUITABLE FOR FILLING - UNKNOWN
- TOPSOIL DEPTH - 50mm
- ONSITE SOILS ARE DISPERSIVE/HIGHLY REACTIVE - UNKNOWN

1. EARTHWORKS LEVELS SHOWN ARE BULK SURFACE LEVELS (UNDERSIDE OF PAVEMENT AND TOPSOIL LAYERS)
2. EARTHWORKS LEVELS ALLOW DRIVEWAY / CAR PARK SLAB THICKNESS AND BUILDING SLAB THICKNESS AS PER STRUCTURAL ENGINEERING DRAWINGS. REFER TO FINAL "FOR CONSTRUCTION" STRUCTURAL DESIGN DRAWINGS FOR FINAL PAD THICKNESS AND CROSS-CHECK/VERIFY THE ASSOCIATED FINAL CIVIL BUILD PAD LEVELS PRIOR TO CONSTRUCTION SETOUT.
3. FLOOD FREQUENCY - 200 YEAR AR RIVER FLOOD LEVEL = 25.3m AHD (FLOOD TECHNIQUE NOT PREPARED BY ARCADIS DATED 10/3/24). ENSURE THE MINIMUM FINISHED FLOOR LEVELS FOR HABITABLE BUILDINGS CAN BE CONSTRUCTED AT ABOVE THIS RL.
4. ALL RETAINING WALL HEIGHT LABELS ARE CALCULATED TO FINISHED SURFACE LEVELS INCLUDING TOPSOIL (AND TO NEAREST 200mm HEIGHT). FINAL RETAINING WALL DESIGNS AND DETAIL STEPPING IS SUBJECT TO STRUCTURAL DESIGN BY OTHERS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING SETOUT INFORMATION.
6. CONTRACTOR TO CONFIRM SITE SURVEY STATION LOCATION AND BUILDING/PAD SETOUT LOCATIONS IN RELATION TO BOUNDARIES PRIOR TO CONSTRUCTION AND ADVISE SUPERINTENDENT IF ANY DISCREPANCIES/ANOMALIES FOUND.

TRUCK MANEUVERING HARDESTAND CONTAINER SET DOWN =
170mm THICK CONCRETE + 100mm CBR 15 SUBBASE = 270
TOTAL BOX

LIGHT DUTY PAVEMENT = 130mm THICK CONCRETE + 100mm
CBR 15 SUBBASE = 230 TOTAL BOX

WAREHOUSE, OFFICE, PUMP ROOM = 165mm THICK CONCRETE +
100mm CBR 15 SUBBASE = 265 TOTAL BOX

TANK SLAB = 300mm THICK CONCRETE + 100mm CBR 15
SUBBASE = 400 TOTAL BOX

QFES = 230mm TOTAL BOX

FOOTPATH SLAB = 100mm THICK CONCRETE + 100mm CBR 15
SUBBASE = 200 TOTAL BOX

NOTE: FOR INTERNAL PAVEMENT DESIGN REFER TO
STRUCTURAL DRAWINGS FOR DETAILS AND SPECIFICATIONS

 PROPOSED SURFACE CONTOURS
 EXISTING SURFACE CONTOURS
 EXISTING PROPERTY BOUNDARY
 WORKS BOUNDARY
 PROPOSED RETAINING WALL IN ACCORDANCE
 WITH STRUCTURAL ENGINEER'S
 SPECIFICATIONS

1. FOR FULL EXISTING FEATURES LEGEND REFER TO C-020.
2. ALL WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH NORTHROP SPECIFICATION NOTES FOUND WITHIN C-010 SERIES DRAWINGS. NORTHROP WILL NOT BE HELD LIABLE FOR NON-COMPLIANT WORKS.



FIRE ANT TREATMENT ZONE

MOVEMENT OF MATERIAL SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF AGRICULTURE AND FISHERIES ACTS AND REGULATIONS. FOR MORE INFORMATION CALL BIOSECURITIES QUEENSLAND ON 13 25 23 OR VISIT WWW.DAF.GLD.GOV.AU FOR MORE INFORMATION.

UNDERGROUND SERVICES
UNDERGROUND SERVICES EXIST IN
THIS AREA. UNDERGROUND SERVICE
LOCATIONS AND DEPTHS TO BE
CONFIRMED PRIOR TO COMMENCEMENT
OF CONSTRUCTION WORKS.

CUT	FILL	BALANCE
1,835 m ³	14,907 m ³	13,072 m ³ (FILL)

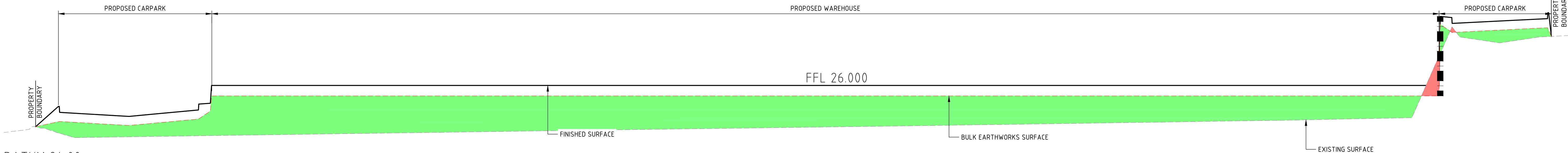
NOT FOR CONSTRUCTION

REVISION		DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	 ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.  Brisbane Level 25, 12 Creek Street, Brisbane QLD 4000 GPO BOX 423 Brisbane QLD 4001 (07) 3365 0400 brisbane@northrop.com.au ABN 81 084 433 100	PROJECT	DRAWING TITLE		JOB NUMBER
A	ISSUED FOR APPROVAL		MM	ADA	SK	02.04.26	 DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS REVISION 1 TO THIS DRAWING TYPE HAS BEEN ADDED.	 Brisbane Level 25, 12 Creek Street, Brisbane QLD 4000 GPO BOX 423 Brisbane QLD 4001 (07) 3365 0400 brisbane@northrop.com.au ABN 81 084 433 100		PROPOSED INDUSTRIAL DEVELOPMENT	BULK EARTHWORKS LAYOUT PLAN		26000287
B	ISSUED FOR APPROVAL		MM	ADA	SK	21.04.26				DRAWING NUMBER	REVISION		
C	ISSUED FOR APPROVAL		MM	ADA	SK	26.04.26				DA-101	C		
										DRAWING SHEET SIZE = A1			

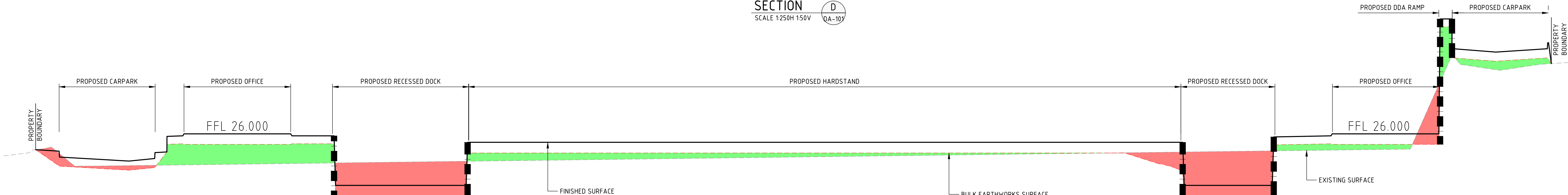
25874
VERIFIER: SKILLORAN
JOB MANAGER: ADE ANDRADE
DESIGNED: GDE LANGE
DRAWN: MMANLAPIT

LEGEND

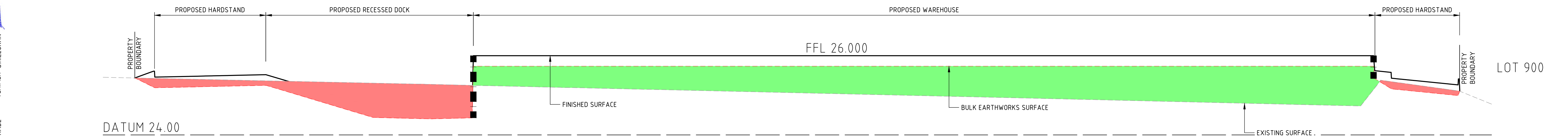
- FINISHED SURFACE
- EXISTING SURFACE
- STRIPPED SURFACE
- BULK EARTHWORKS SURFACE
- EARTHWORKS AREA OF CUT
- EARTHWORKS AREA OF FILL
- PROPOSED RETAINING WALL BY OTHERS



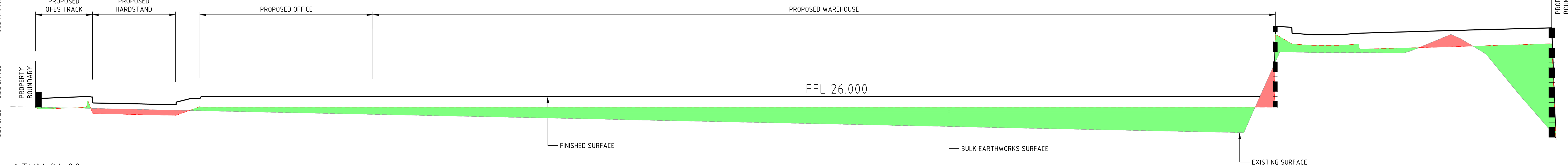
SECTION D
SCALE 1:250H 1:50V
QA-101



SECTION C
SCALE 1:250H 1:50V
QA-101



SECTION B
SCALE 1:250H 1:50V
QA-101



SECTION A
SCALE 1:250H 1:50V
QA-101

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	MM	ADA	SK	02.04.26
B	ISSUED FOR APPROVAL	MM	ADA	SK	21.04.26
C	ISSUED FOR APPROVAL	MM	ADA	SK	26.04.26

CLIENT

Charter Hall

ARCHITECT

watson young

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SCALE 1:50 @ A1
SCALE 1:250 @ A1

0.0 0.5 1.0 1.5 2.0 2.5m
0 2 4 6 8 10 12m

NORTHROP

Brisbane
Level 25, 12 Creek Street, Brisbane QLD 4000
GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

PROPOSED INDUSTRIAL DEVELOPMENT

PROPOSED LOT 105

4499-4651 MT. LINDESAY HIGHWAY

NORTH MACLEAN, QLD 4280

DRAWING TITLE

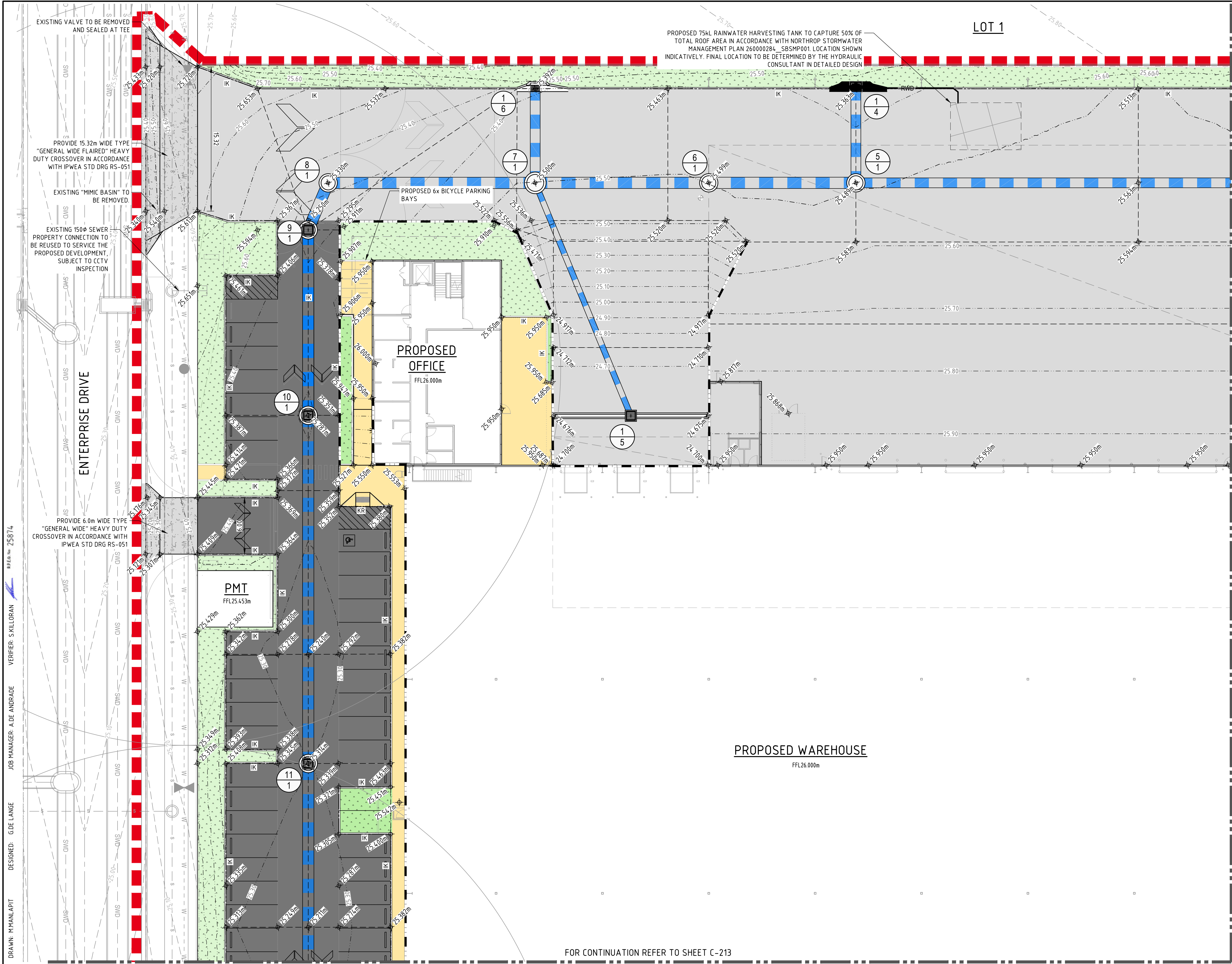
BULK EARTHWORKS SECTIONS

JOB NUMBER

26000287

DRAWING NUMBER	REVISION
DA-111	C

DRAWING SHEET SIZE = A1



LEGEND

- XX.XX--- PROPOSED SURFACE CONTOURS
- XX.XX--- EXISTING SURFACE CONTOURS
- IK--- PROPOSED INTEGRAL KERB
- SWD--- PROPOSED STORMWATER DRAINAGE
- S--- PROPOSED SEWERAGE RETICULATION
- W--- PROPOSED WATER RETICULATION
- SWD--- EXISTING STORMWATER DRAINAGE
- S--- EXISTING SEWERAGE RETICULATION
- W--- EXISTING WATER RETICULATION
- PROPOSED RETAINING WALL
- WORKS BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- PROPOSED LANDSCAPE AREA
- PROPOSED STORMWATER HEADWALL
- PROPOSED STORMWATER MANHOLE
- PROPOSED STORMWATER INLET PIT
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

NOTES:

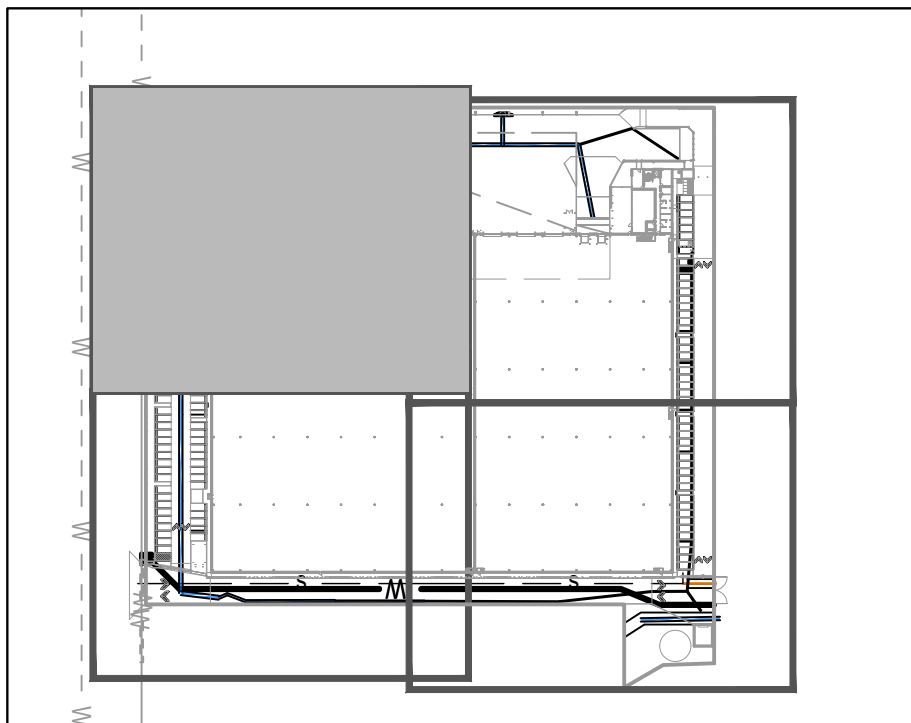
- FOR FULL EXISTING FEATURE LEGENDS REFER TO C-020.
- FOR ROADWORKS & STORMWATER DRAINAGE DETAILS REFER TO C-220 DRAWING.
- ALL WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH NORTHROP SPECIFICATION NOTES FOUND WITHIN C-010 SERIES DRAWINGS. NORTHROP WILL NOT BE HELD LIABLE FOR NON-COMPLIANT WORKS.
- FOR RETAINING WALL AND GUARDRAIL SPECIFICATION, REFER TO STRUCTURAL DRAWINGS.

THRESHOLD NOTES:

- PROVIDE A 50mm LEVEL DIFFERENCE BETWEEN THE INTERNAL AND EXTERNAL SLABS AT ALL ROLLER SHUTTER DOORS UNDER AWNINGS.
- PROVIDE A 100mm LEVEL DIFFERENCE BETWEEN THE INTERNAL AND EXTERNAL SLABS OF THE WAREHOUSE ALONG OTHER EDGES.
- PROVIDE A 30mm LEVEL DIFFERENCE BETWEEN THE INSIDE AND OUTSIDE SLABS AT THE OFFICES AND ALL ODA COMPLIANT DOORS.
- REFER TO ARCHITECT DRAWINGS FOR LOCATION OF ODA COMPLIANT DOORS.

WARNING

UNDERGROUND SERVICES
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KEY PLAN
NTS

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A	ISSUED FOR APPROVAL	MM	SK	ADA	02.04.26
B	ISSUED FOR APPROVAL	MM	SK	ADA	21.04.26
C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26

CLIENT

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ARCHITECT

watson young

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SCALE 1:200@A1

0 2 4 6 8 10m

NORTHROP

Brisbane

Level 25, 12 Creek Street, Brisbane QLD 4000
GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

PROPOSED INDUSTRIAL DEVELOPMENT

PROPOSED LOT 105

4499-4651 MT. LINDESAY HIGHWAY

NORTH MACLEAN, QLD 4280

DRAWING TITLE

ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN

SHEET 1 OF 4

JOB NUMBER

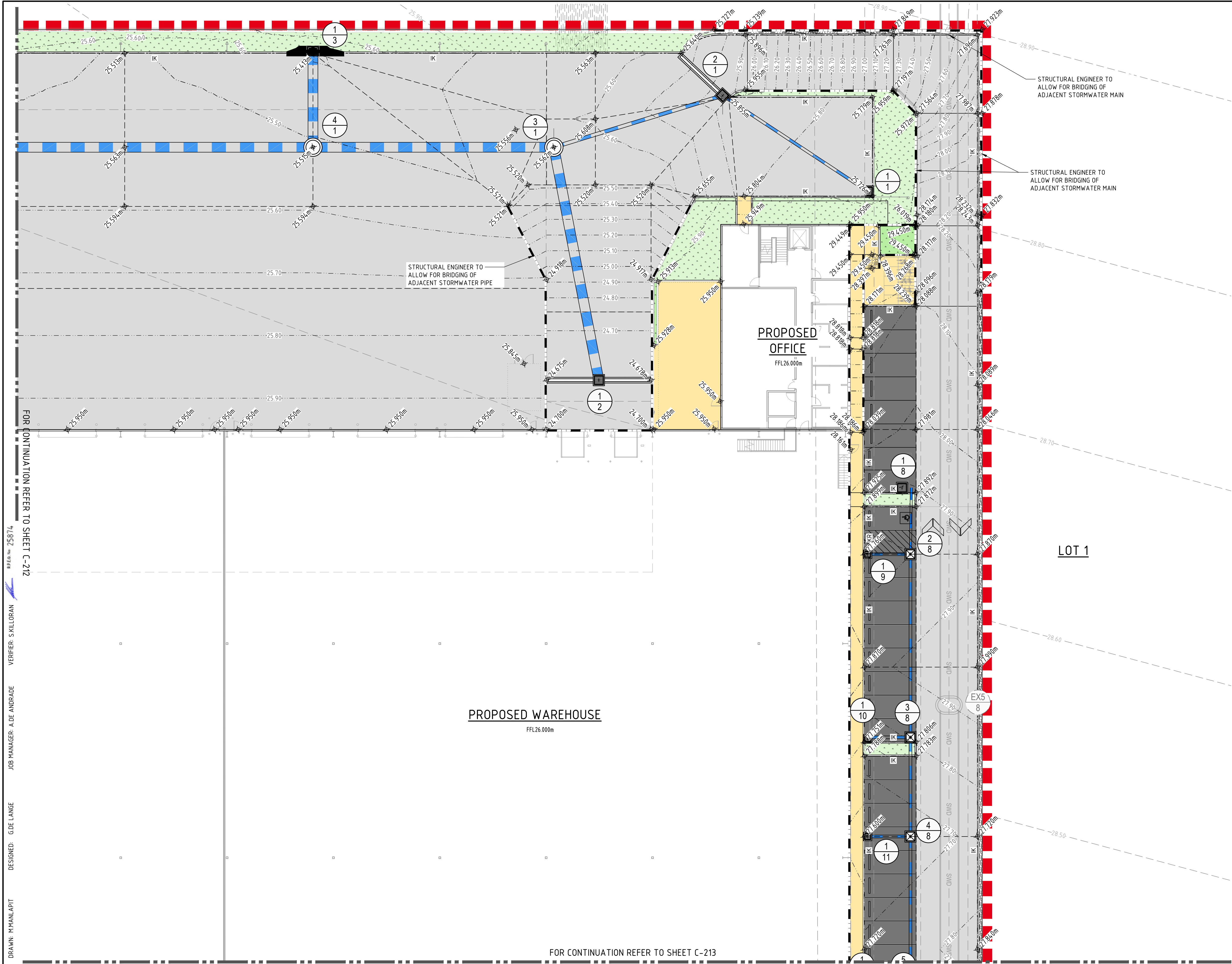
26000287

DRAWING NUMBER

DA-211

REVISION

DRAWING SHEET SIZE = A1



LEGEND

- XX.XX PROPOSED SURFACE CONTOURS
- XX.XX EXISTING SURFACE CONTOURS
- IK PROPOSED INTEGRAL KERB
- SWD PROPOSED STORMWATER DRAINAGE
- S PROPOSED SEWERAGE RETICULATION
- W PROPOSED WATER RETICULATION
- IK EXISTING STORMWATER DRAINAGE
- S EXISTING SEWERAGE RETICULATION
- W EXISTING WATER RETICULATION
- PROPOSED RETAINING WALL
- WORKS BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- PROPOSED LANDSCAPE AREA
- PROPOSED STORMWATER HEADWALL
- PROPOSED STORMWATER MANHOLE
- PROPOSED STORMWATER INLET PIT
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

NOTES:

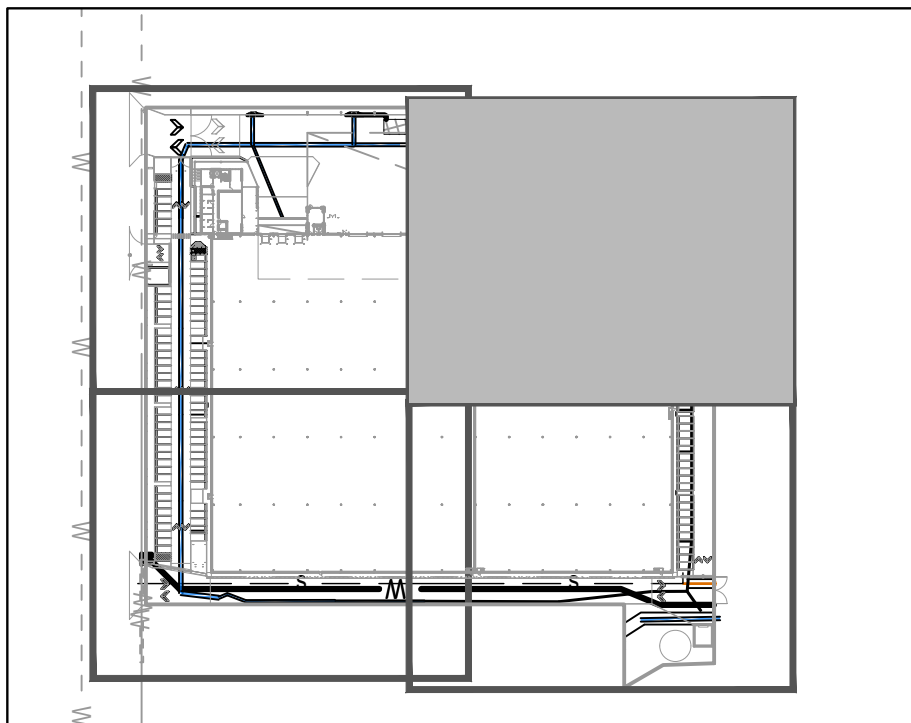
- FOR FULL EXISTING FEATURE LEGENDS REFER TO C-020.
- FOR ROADWORKS & STORMWATER DRAINAGE DETAILS REFER TO C-220 DRAWING.
- ALL WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH NORTHROP SPECIFICATION NOTES FOUND WITHIN C-010 SERIES DRAWINGS. NORTHROP WILL NOT BE HELD LIABLE FOR NON-COMPLIANT WORKS.
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WARNING

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KEY PLAN
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CLIENT

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ARCHITECT

watson young

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SCALE 1:200@A1

0 2 4 6 8 10m

NORTHROP

Brisbane

Level 25, 12 Creek Street, Brisbane QLD 4000
GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

PROPOSED INDUSTRIAL DEVELOPMENT

PROPOSED LOT 105

4499-4651 MT. LINDESAY HIGHWAY

NORTH MACLEAN, QLD 4280

DRAWING TITLE

ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN

SHEET 2 OF 4

JOB NUMBER

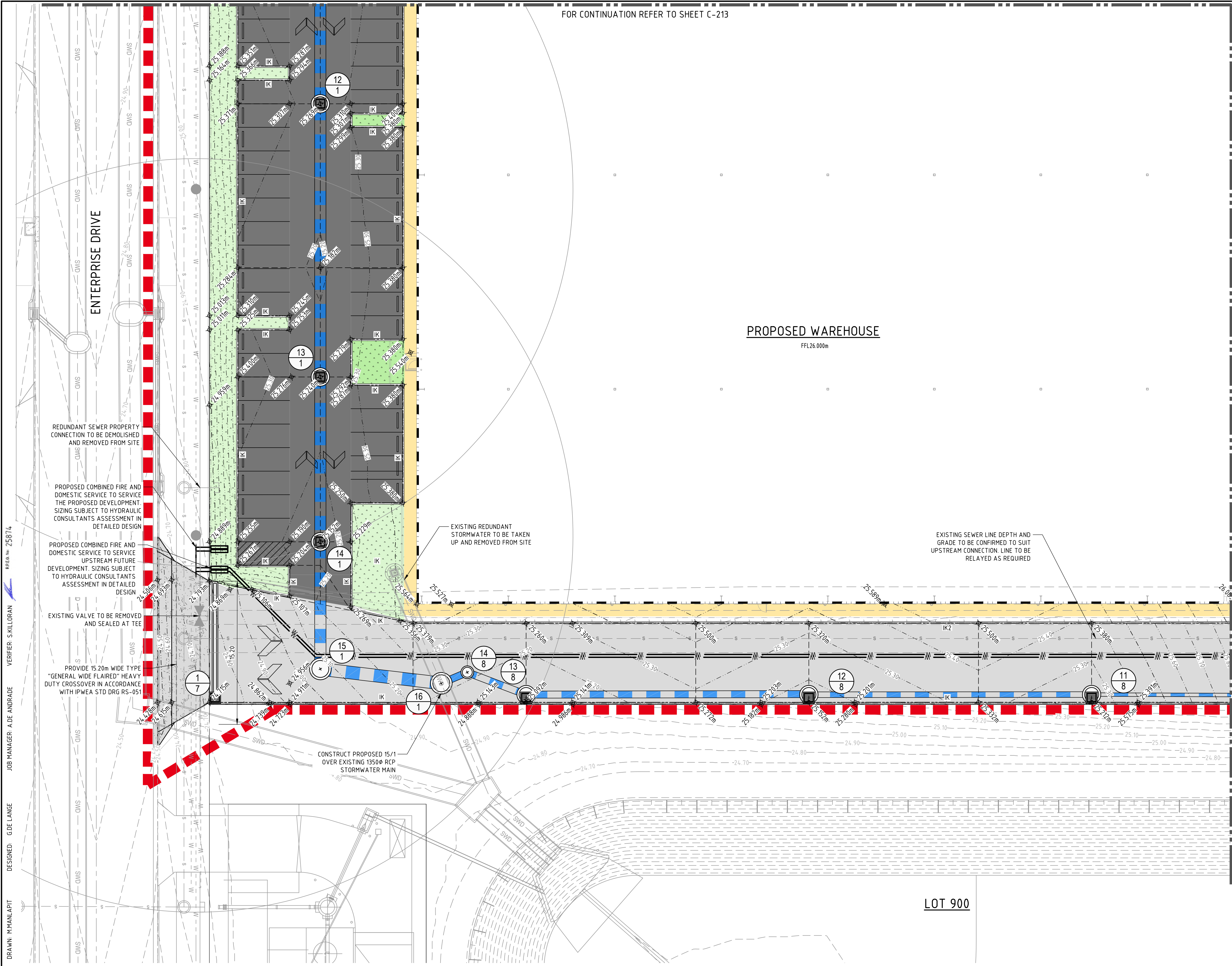
26000287

DRAWING NUMBER

DA-212

REVISION

DRAWING SHEET SIZE = A1



LEGEND

- XX.XX--- PROPOSED SURFACE CONTOURS
---XX.XX--- EXISTING SURFACE CONTOURS
---IK--- PROPOSED INTEGRAL KERB
---SWD--- PROPOSED STORMWATER DRAINAGE
---S--- PROPOSED SEWERAGE RETICULATION
---W--- PROPOSED WATER RETICULATION
---SWD--- EXISTING STORMWATER DRAINAGE
---S--- EXISTING SEWERAGE RETICULATION
---W--- EXISTING WATER RETICULATION
- PROPOSED RETAINING WALL
--- WORKS BOUNDARY
--- PROPOSED LIGHT DUTY CONCRETE PAVEMENT
--- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
--- PROPOSED CONCRETE FOOTPATH
--- PROPOSED LANDSCAPE AREA
- PROPOSED STORMWATER HEADWALL
--- PROPOSED STORMWATER MANHOLE
--- PROPOSED STORMWATER INLET PIT
--- PROPOSED STRUCTURE NUMBER
--- EXISTING STRUCTURE NUMBER

NOTES:

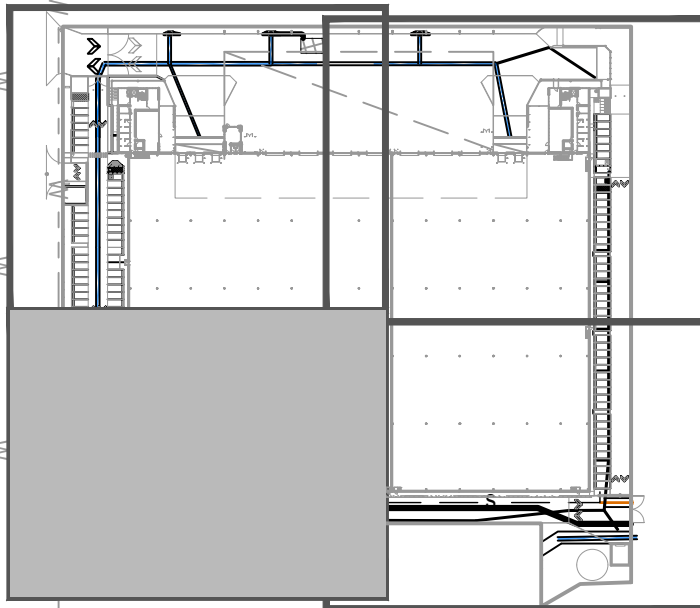
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- FOR ROADWORKS & STORMWATER DRAINAGE DETAILS REFER TO C-220 DRAWING.
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WARNING

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KEY PLAN
NTS

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C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26

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ARCHITECT

watson young

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SCALE 1:200@A1

0 2 4 6 8 10m

NORTHROP

Brisbane

Level 25, 12 Creek Street, Brisbane QLD 4000
GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

**PROPOSED INDUSTRIAL
DEVELOPMENT**

PROPOSED LOT 105
4499-4651 MT. LINDESAY HIGHWAY
NORTH MACLEAN, QLD 4280

DRAWING TITLE

**ROADWORKS & STORMWATER
DRAINAGE LAYOUT PLAN**
SHEET 3 OF 4

JOB NUMBER

26000287

DRAWING NUMBER

DA-213

REVISION

DRAWING SHEET SIZE = A1

FOR CONTINUATION REFER TO SHEET C-213

PROPOSED WAREHOUSE

FFL26.000m

LOT 1

LEGEND

- XX.XX--- PROPOSED SURFACE CONTOURS
- XX.XX--- EXISTING SURFACE CONTOURS
- IK--- PROPOSED INTEGRAL KERB
- SWD--- PROPOSED STORMWATER DRAINAGE
- S--- PROPOSED SEWERAGE RETICULATION
- W--- PROPOSED WATER RETICULATION
- SWD--- EXISTING STORMWATER DRAINAGE
- S--- EXISTING SEWERAGE RETICULATION
- W--- EXISTING WATER RETICULATION
- PROPOSED RETAINING WALL
- WORKS BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- PROPOSED LANDSCAPE AREA
- PROPOSED STORMWATER HEADWALL
- PROPOSED STORMWATER MANHOLE
- PROPOSED STORMWATER INLET PIT
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

NOTES:

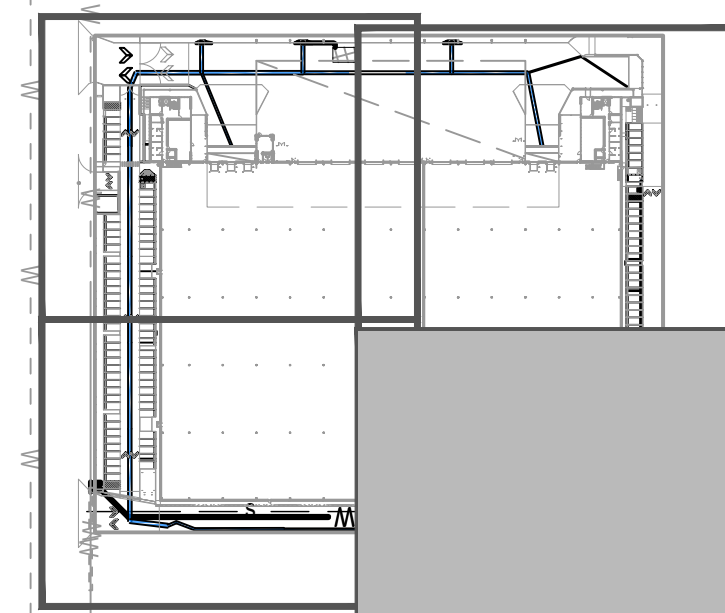
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- FOR ROADWORKS & STORMWATER DRAINAGE DETAILS REFER TO C-220 DRAWING.
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WARNING

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OF CONSTRUCTION WORKS.



KEY PLAN
NTS

NOT FOR CONSTRUCTION

FOR CONTINUATION REFER TO SHEET C-212

VERIFIER: SKILLORAN

JOB MANAGER: ADE ANDRADE

DESIGNED: GDE LANGE

DRAWN: MMANLAPIT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	MM	SK	ADA	02.04.26
B	ISSUED FOR APPROVAL	MM	SK	ADA	21.04.26
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CLIENT
Charter Hall

ARCHITECT
watson young
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SCALE
1:200@A1

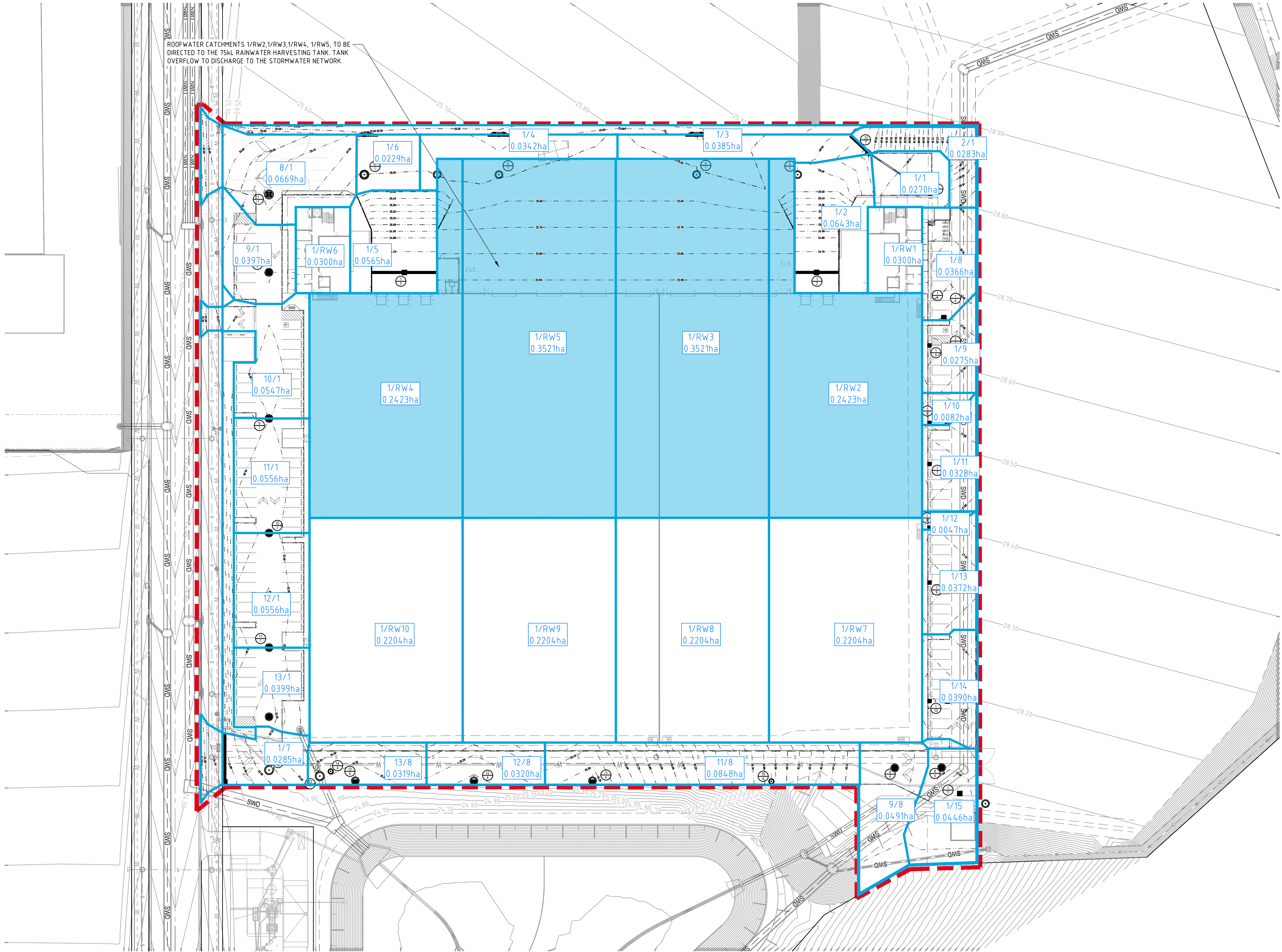
PROJECT
NORTHROP
Brisbane
Level 25, 12 Creek Street, Brisbane QLD 4000
GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
PROPOSED LOT 105
4499-4651 MT. LINDESAY HIGHWAY
NORTH MACLEAN, QLD 4280

DRAWING TITLE
ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN
SHEET 4 OF 4

JOB NUMBER
26000287
DRAWING NUMBER
DA-214
REVISION
DRAWING SHEET SIZE = A1

DRAWN: MMAN/APIT
DESIGNED: GDE/LANGE
JOB MANAGER: ADE/ANDRADE
VERIFIER: SKILLORAN
25874



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26

CLIENT

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ARCHITECT

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SCALE 1:500 @ A1

0 5 10 15 20 25m

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Brisbane

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GPO BOX 423 Brisbane QLD 4001
(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

PROPOSED INDUSTRIAL DEVELOPMENT

PROPOSED LOT 105

4499-4651 MT. LINDESAY HIGHWAY

NORTH MACLEAN, QLD 4280

DRAWING TITLE

STORMWATER DRAINAGE CATCHMENT LAYOUT PLAN

JOB NUMBER

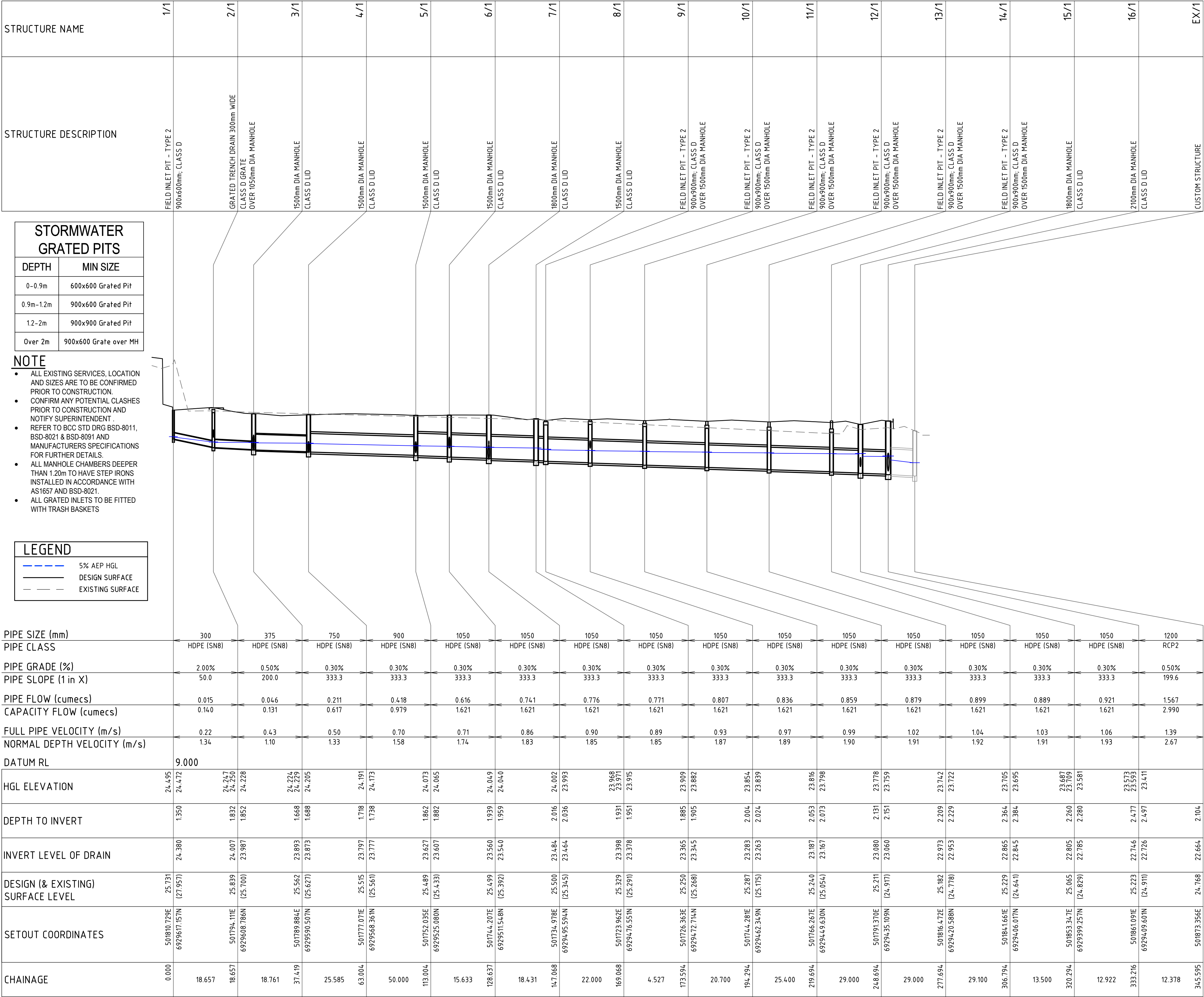
26000287

DRAWING NUMBER

DA-311

REVISION

DRAWING SHEET SIZE = A1



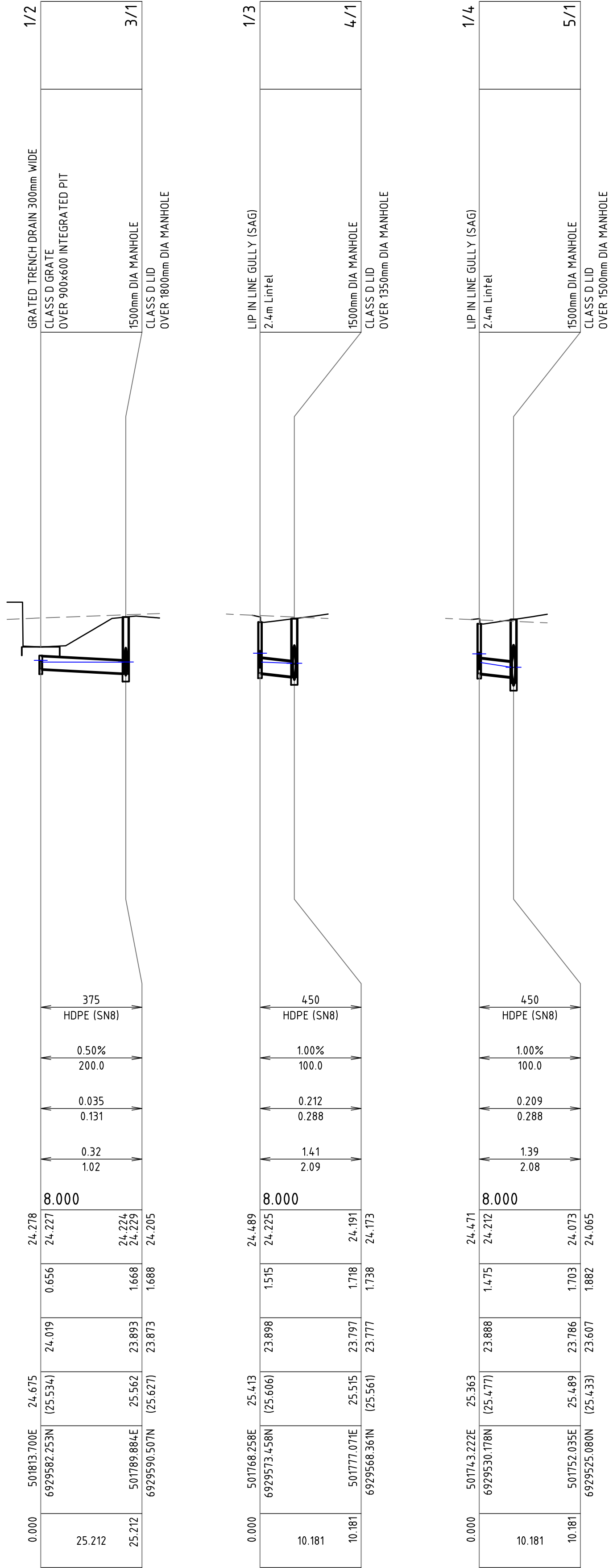
LINE

1

2

3

4



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER			
A	ISSUED FOR APPROVAL	MM	SK	ADA	02.04.26	Charter Hall	watson young	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE SCALE 1:100 @ A1 SCALE 1:1000 @ A1	NORTHROP Brisbane Level 25, 12 Creek Street, Brisbane QLD 4000 GPO BOX 425 Brisbane QLD 4001 (07) 3365 0400 brisbane@northrop.com.au ABN 81 094 433 100	PROPOSED INDUSTRIAL DEVELOPMENT PROPOSED LOT 105 4499-4651 MT. LINDESAY HIGHWAY NORTH MACLEAN, QLD 4280	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 4	26000287		
B	ISSUED FOR APPROVAL	MM	SK	ADA	21.04.26							DRAWING NUMBER	DA-321	REVISION
C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26									
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD							

LINE 5679

JOB NUMBER	
26000287	
DRAWING NUMBER	REVISION
DA-322	
DRAWING SHEET SIZE = A1	

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	MM	SK	ADA	02.04.26
B	ISSUED FOR APPROVAL	MM	SK	ADA	21.04.26
C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26

CLIENT

Charter Hall 

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ARCHITECT

**watson
young**

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	 The graphic scale bars show two scales. The top scale is for 1:100 @ A1, with a total length of 5m divided into 5 equal segments, each representing 1m. The bottom scale is for 1:1000 @ A1, with a total length of 50m divided into 10 equal segments, each representing 5m.

NORTHROP

Brisbane

Level 25, 12 Creek Street, Brisbane QLD 4000
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(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

PROJECT

**PROPOSED INDUSTRIAL
DEVELOPMENT**

PROPOSED LOT 105

4499-4651 MT. LINDESAY HIGHWAY

NORTH MACLEAN, QLD 4280

DRAWING TITLE

**STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 2 OF 4**

JOB NUMBER	
26000287	
DRAWING NUMBER	REVISION
DA-322	
DRAWING SHEET SIZE = A1	

STORMWATER GRATED PITS	
DEPTH	MIN SIZE
0-0.9m	600x600 Grated Pit
0.9m-1.2m	900x600 Grated Pit
1.2-2m	900x900 Grated Pit
Over 2m	900x600 Grate over MH

- ALL EXISTING SERVICES, LOCATION AND SIZES ARE TO BE CONFIRMED PRIOR TO CONSTRUCTION.
- CONFIRM ANY POTENTIAL CLASHES PRIOR TO CONSTRUCTION AND NOTIFY SUPERINTENDENT.
- REFER TO BCC STD DRG BSD-8011, BSD-8021 & BSD-8091 AND MANUFACTURERS SPECIFICATIONS FOR FURTHER DETAILS.
- ALL MANHOLE CHAMBERS DEEPER THAN 1.20m TO HAVE STEP IRONS INSTALLED IN ACCORDANCE WITH AS1657 AND BSD-8021.
- ALL GRATED INLETS TO BE FITTED WITH TRASH BASKETS

LEGEND	
	5% AEP HGL
	DESIGN SURFACE
	EXISTING SURFACE

LINE 10

Year	Percentage
1950	10
1960	12
2050	18

11

Year	Percentage of people who are obese
1980	10
1985	12
1990	15
1995	18
2000	22

Age (years)	Percentage (%)
18	10
20	25
25	45
30	65
35	85
40	95
45	100
50	100
55	100
60	100
65	100

12

Year	Percentage of Population Aged 65 and Over
1950	10.0
1960	11.0
1970	12.0
1980	13.0
1990	14.0
2000	15.0
2010	16.0
2020	17.0
2030	18.0
2040	19.0
2050	20.0

1:

Year	Current (%)	Alternative (%)
1950	7	7
1960	8	8
1970	9	9
1980	10	11
1990	11	13
2000	12	15
2010	13	17
2020	14	18
2030	14	18
2040	14	18
2050	14	18

Age (years)	Percentage of people who have ever been in a romantic relationship
18	10
25	30
30	45
35	60
40	75
45	85
50	90
55	95
60	98
65	100

1

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	MM	SK	ADA	02.04.26
B	ISSUED FOR APPROVAL	MM	SK	ADA	21.04.26
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SCALE 1:100 @ A1 SCALE 1:1000 @ A1	 The image shows two horizontal scale bars. The top bar is for a scale of 1:100 at A1, with markings from 0 to 5 meters. The bottom bar is for a scale of 1:1000 at A1, with markings from 0 to 50 meters.	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE
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PROPOSED LOT 105

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NORTH MACLEAN, QLD 4280

DRAWING TITLE

**STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 3 OF 4**

JOB NUMBER		26000287	
DRAWING NUMBER		REVISION	
DA-323			
DRAWING SHEET SIZE = A1			

STRUCTURE NAME	1/RW1
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	2/1 GRADED TRENCH DRAIN 300mm WIDE CLASS D GRATE OVER 1050mm DIA MANHOLE

STORMWATER GRADED PITS	
DEPTH	MIN SIZE
0-0.9m	600x600 Grated Pit
0.9m-1.2m	900x600 Grated Pit
1.2-2m	900x900 Grated Pit
Over 2m	900x600 Grate over MH

NOTE

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- ALL GRADED INLETS TO BE FITTED WITH TRASH BASKETS

LEGEND	
	5% AEP HGL
	DESIGN SURFACE
	EXISTING SURFACE

PIPE SIZE (mm)	300
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.016
CAPACITY FLOW (cumecs)	0.070
FULL PIPE VELOCITY (m/s)	0.24
NORMAL DEPTH VELOCITY (m/s)	0.84
DATUM RL	9.000
HGL ELEVATION	24.608 24.602 24.591 24.550 24.228
DEPTH TO INVERT	1.316
INVERT LEVEL OF DRAIN	24.505
DESIGN (& EXISTING) SURFACE LEVEL	25.821 6929607.784N (25.691)
SETOUT COORDINATES	501794.111E 6929608.786N (25.700)
CHAINAGE	0.000 2.000

LINE RW1

STRUCTURE NAME	1/RW10
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	14/8 1200mm DIA MANHOLE CLASS D LID

PIPE SIZE (mm)	375
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.120
CAPACITY FLOW (cumecs)	0.131
FULL PIPE VELOCITY (m/s)	1.11
NORMAL DEPTH VELOCITY (m/s)	1.37
DATUM RL	8.000
HGL ELEVATION	24.137 24.072 23.988 23.714 23.579
DEPTH TO INVERT	1.516
INVERT LEVEL OF DRAIN	23.742
DESIGN (& EXISTING) SURFACE LEVEL	25.258 6929413.578N (25.028)
SETOUT COORDINATES	501861.461E 6929412.571N (24.972)
CHAINAGE	0.000 2.000

LINE RW10

STRUCTURE NAME	1/RW2
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	3/1 1500mm DIA MANHOLE CLASS D LID

PIPE SIZE (mm)	375
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.131
CAPACITY FLOW (cumecs)	0.134
FULL PIPE VELOCITY (m/s)	1.19
NORMAL DEPTH VELOCITY (m/s)	1.39
DATUM RL	8.000
HGL ELEVATION	24.607 24.462 24.436 24.229 24.205
DEPTH TO INVERT	1.405
INVERT LEVEL OF DRAIN	24.178
DESIGN (& EXISTING) SURFACE LEVEL	25.583 6929591.510N (25.636)
SETOUT COORDINATES	501789.884E 6929590.507N (25.627)
CHAINAGE	0.000 2.000

LINE RW2

STRUCTURE NAME	1/RW3
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	1/3 LIP IN LINE GULLY (SAG) 2.4m Lintel

PIPE SIZE (mm)	450
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.191
CAPACITY FLOW (cumecs)	0.203
FULL PIPE VELOCITY (m/s)	1.27
NORMAL DEPTH VELOCITY (m/s)	1.53
DATUM RL	8.000
HGL ELEVATION	24.611 24.447 24.438 24.489 24.225
DEPTH TO INVERT	1.473
INVERT LEVEL OF DRAIN	24.100
DESIGN (& EXISTING) SURFACE LEVEL	25.574 6929571.727N (25.600)
SETOUT COORDINATES	501768.258E 6929573.458N (25.606)
CHAINAGE	0.000 2.000

LINE RW3

STRUCTURE NAME	1/RW4
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	6/1 1500mm DIA MANHOLE CLASS D LID OVER 1500mm DIA MANHOLE

PIPE SIZE (mm)	450
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.131
CAPACITY FLOW (cumecs)	0.203
FULL PIPE VELOCITY (m/s)	0.87
NORMAL DEPTH VELOCITY (m/s)	1.43
DATUM RL	8.000
HGL ELEVATION	24.347 24.270 24.259 24.629 24.940
DEPTH TO INVERT	1.473
INVERT LEVEL OF DRAIN	24.013
DESIGN (& EXISTING) SURFACE LEVEL	25.486 6929512.550N (25.401)
SETOUT COORDINATES	501744.207E 6929511.548N (25.392)
CHAINAGE	0.000 2.000

LINE RW4

STRUCTURE NAME	1/RW5
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	1/4 LIP IN LINE GULLY (SAG) 2.4m Lintel

PIPE SIZE (mm)	450
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.191
CAPACITY FLOW (cumecs)	0.203
FULL PIPE VELOCITY (m/s)	1.27
NORMAL DEPTH VELOCITY (m/s)	1.53
DATUM RL	8.000
HGL ELEVATION	24.592 24.428 24.421 24.471 24.212
DEPTH TO INVERT	1.473
INVERT LEVEL OF DRAIN	24.049
DESIGN (& EXISTING) SURFACE LEVEL	25.522 6929528.447N (25.472)
SETOUT COORDINATES	501743.222E 6929530.178N (25.477)
CHAINAGE	0.000 2.000

LINE RW5

STRUCTURE NAME	1/RW6
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	10/1 FIELD INLET PIT - TYPE 2 900x900mm; CLASS D OVER 1500mm DIA MANHOLE

PIPE SIZE (mm)	300
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.016
CAPACITY FLOW (cumecs)	0.070
FULL PIPE VELOCITY (m/s)	0.24
NORMAL DEPTH VELOCITY (m/s)	0.84
DATUM RL	8.000
HGL ELEVATION	24.098 24.092 24.081 23.854 23.839
DEPTH TO INVERT	1.331
INVERT LEVEL OF DRAIN	23.995
DESIGN (& EXISTING) SURFACE LEVEL	25.326 6929464.079N (25.180)
SETOUT COORDINATES	501744.281E 6929462.349N (25.175)
CHAINAGE	0.000 2.000

LINE RW6

STRUCTURE NAME	1/RW7
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	10/8 1050mm DIA MANHOLE CLASS D LID

PIPE SIZE (mm)	450
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.120
CAPACITY FLOW (cumecs)	0.203
FULL PIPE VELOCITY (m/s)	0.79
NORMAL DEPTH VELOCITY (m/s)	1.40
DATUM RL	9.000
HGL ELEVATION	25.696 25.632 25.520 25.203 25.093
DEPTH TO INVERT	1.052
INVERT LEVEL OF DRAIN	25.389
DESIGN (& EXISTING) SURFACE LEVEL	26.441 6929508.714N (26.429)
SETOUT COORDINATES	501819.630E 6929507.748N (26.395)
CHAINAGE	0.000 2.000

LINE RW7

STRUCTURE NAME	1/RW8
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	11/8 FIELD INLET PIT - TYPE 2 900x900mm; CLASS D OVER 1200mm DIA MANHOLE

PIPE SIZE (mm)	375
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.120
CAPACITY FLOW (cumecs)	0.131
FULL PIPE VELOCITY (m/s)	1.11
NORMAL DEPTH VELOCITY (m/s)	1.37
DATUM RL	8.000
HGL ELEVATION	24.241 24.116 24.092 24.056 23.959
DEPTH TO INVERT	1.416
INVERT LEVEL OF DRAIN	23.846
DESIGN (& EXISTING) SURFACE LEVEL	25.262 6929469.563N (25.601)
SETOUT COORDINATES	501896.962E 6929468.562N (25.548)
CHAINAGE	0.000 2.000

LINE RW8

STRUCTURE NAME	1/RW9
STRUCTURE DESCRIPTION	DOWNPIPE 100% CAPTURE
	12/8 FIELD INLET PIT - TYPE 2 900x900mm; CLASS D OVER 1200mm DIA MANHOLE

PIPE SIZE (mm)	375
PIPE CLASS	HDPE (SN8)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	200.0
PIPE FLOW (cumecs)	0.120
CAPACITY FLOW (cumecs)	0.131
FULL PIPE VELOCITY (m/s)	1.11
NORMAL DEPTH VELOCITY (m/s)	1.37
DATUM RL	8.000
HGL ELEVATION	24.181 24.056 24.032 23.833 23.805
DEPTH TO INVERT	1.416
INVERT LEVEL OF DRAIN	23.786
DESIGN (& EXISTING) SURFACE LEVEL	25.202 6929443.595N (25.307)
SETOUT COORDINATES	501881.940E 6929442.594N (25.252)
CHAINAGE	0.000 2.000

LINE RW9

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C	ISSUED FOR APPROVAL	MM	SK	ADA	26.04.26



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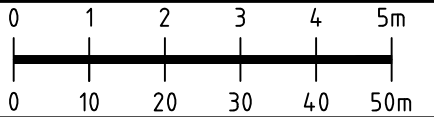
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DRAWING TITLE

STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 4 OF 4

JOB NUMBER
26000287

DRAWING NUMBER
DA-324

REVISION

DRAWING SHEET SIZE = A1