

# LAHC MARYLAND

38 - 40 JOHN T BELL DRIVE MARYLAND, NSW  
CIVIL DA PACKAGE



LOCALITY PLAN

IMAGE SOURCE : GOOGLE EARTH

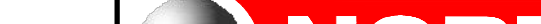


DRAWING LIST

DWG No.	DRAWING TITLE
DA.C01	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN
DA.C02	EROSION AND SEDIMENT CONTROL PLAN
DA.C03	EROSION AND SEDIMENT CONTROL DETAILS
DA.C04	CIVIL STORMWATER AND LEVELS PLAN
DA.C05	CIVIL STORMWATER PHILOSOPHY AND DETAILS

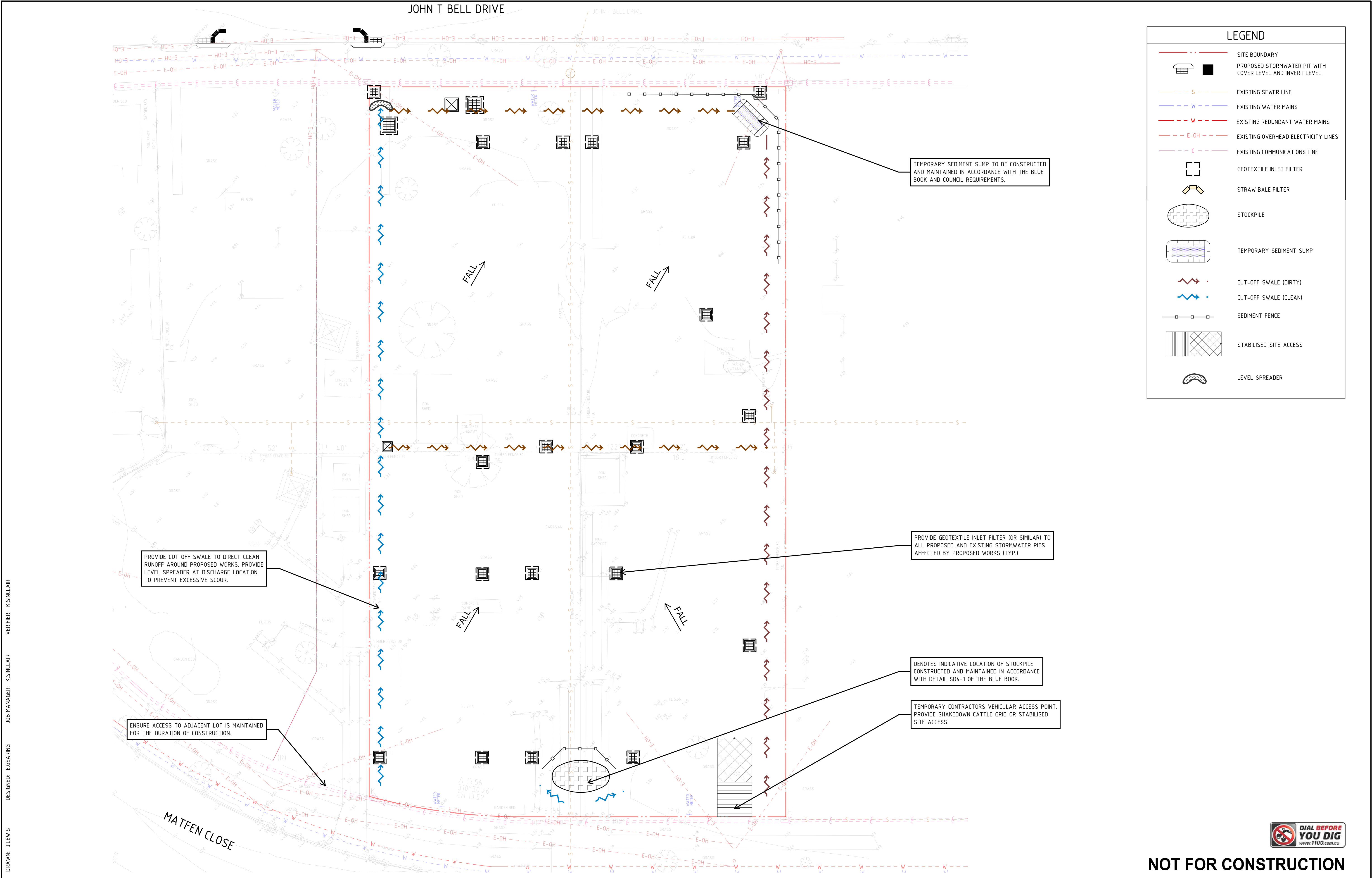
DRAWN: J LEWIS  
DESIGNED: E GEARING  
JOB MANAGER: K SINCLAIR  
VERIFIER: K SINCLAIR



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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER		
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A	ISSUED FOR APPROVAL	BD	KS	EG	19.07.2022						DRAWING NUMBER	REVISION
											DA.C01	A
											DRAWING SHEET SIZE = A1	





LEGEND

SITE BOUNDARY

PROPOSED STORMWATER PIT WITH COVER LEVEL AND INVERT LEVEL.

EXISTING SEWER LINE

EXISTING WATER MAINS

EXISTING REDUNDANT WATER MAINS

EXISTING OVERHEAD ELECTRICITY LINES

EXISTING COMMUNICATIONS LINE

GEOTEXTILE INLET FILTER

STRAW BALE FILTER

STOCKPILE

TEMPORARY SEDIMENT SUMP

CUT-OFF SWALE (DIRTY)

CUT-OFF SWALE (CLEAN)

SEDIMENT FENCE

STABILISED SITE ACCESS

LEVEL SPREADER

VERIFIER: K SINCLAIR  
JOB MANAGER: K SINCLAIR  
DESIGNED: E GEARING  
DRAWN: J LEWIS

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PROJECT

**38 - 40 JOHN T BELL DRIVE  
MARYLAND, NSW**

DRAWING TITLE

**EROSION AND SEDIMENT CONTROL  
PLAN**

DRAWING NUMBER

**DA.C02**

REVISION

**A**

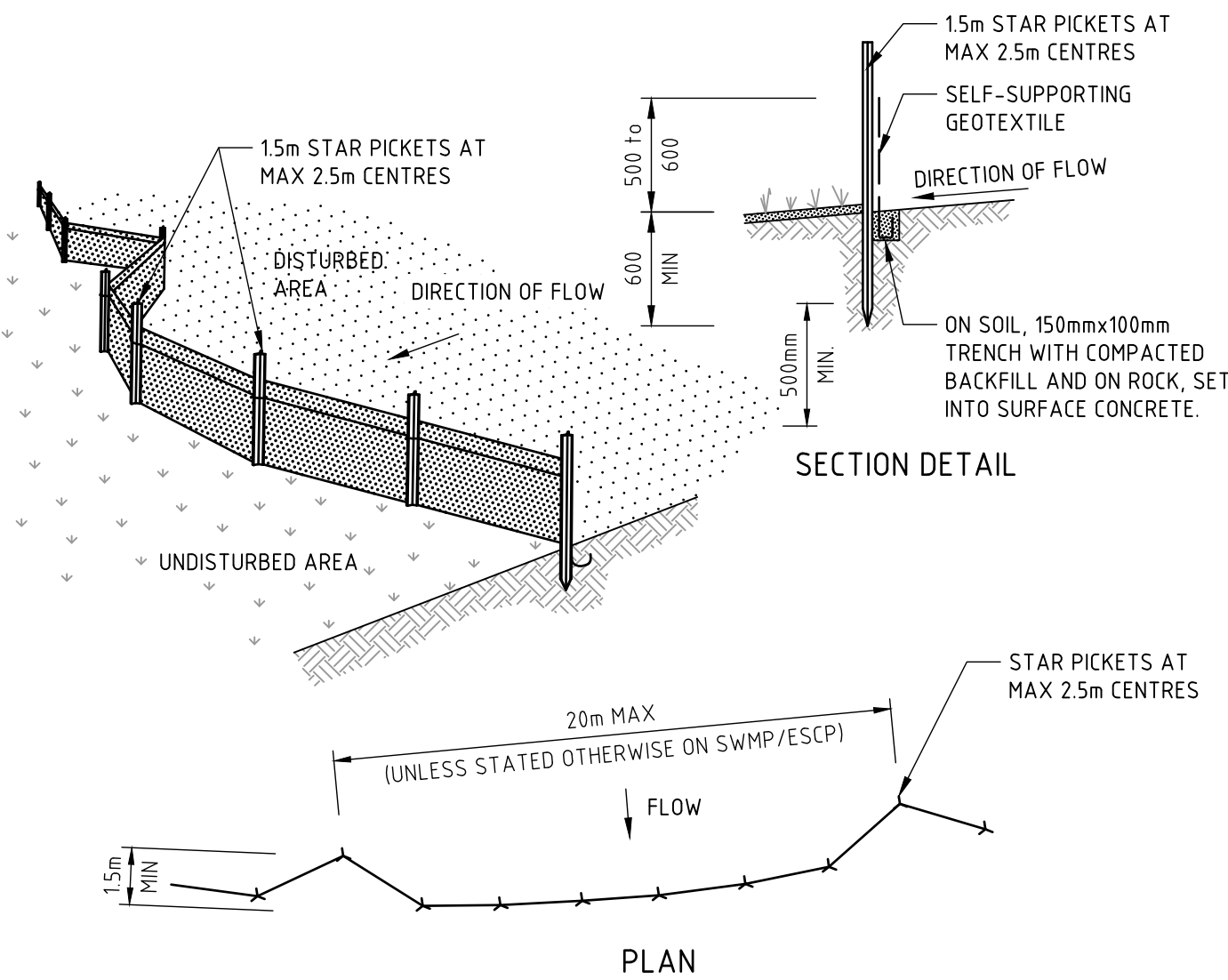
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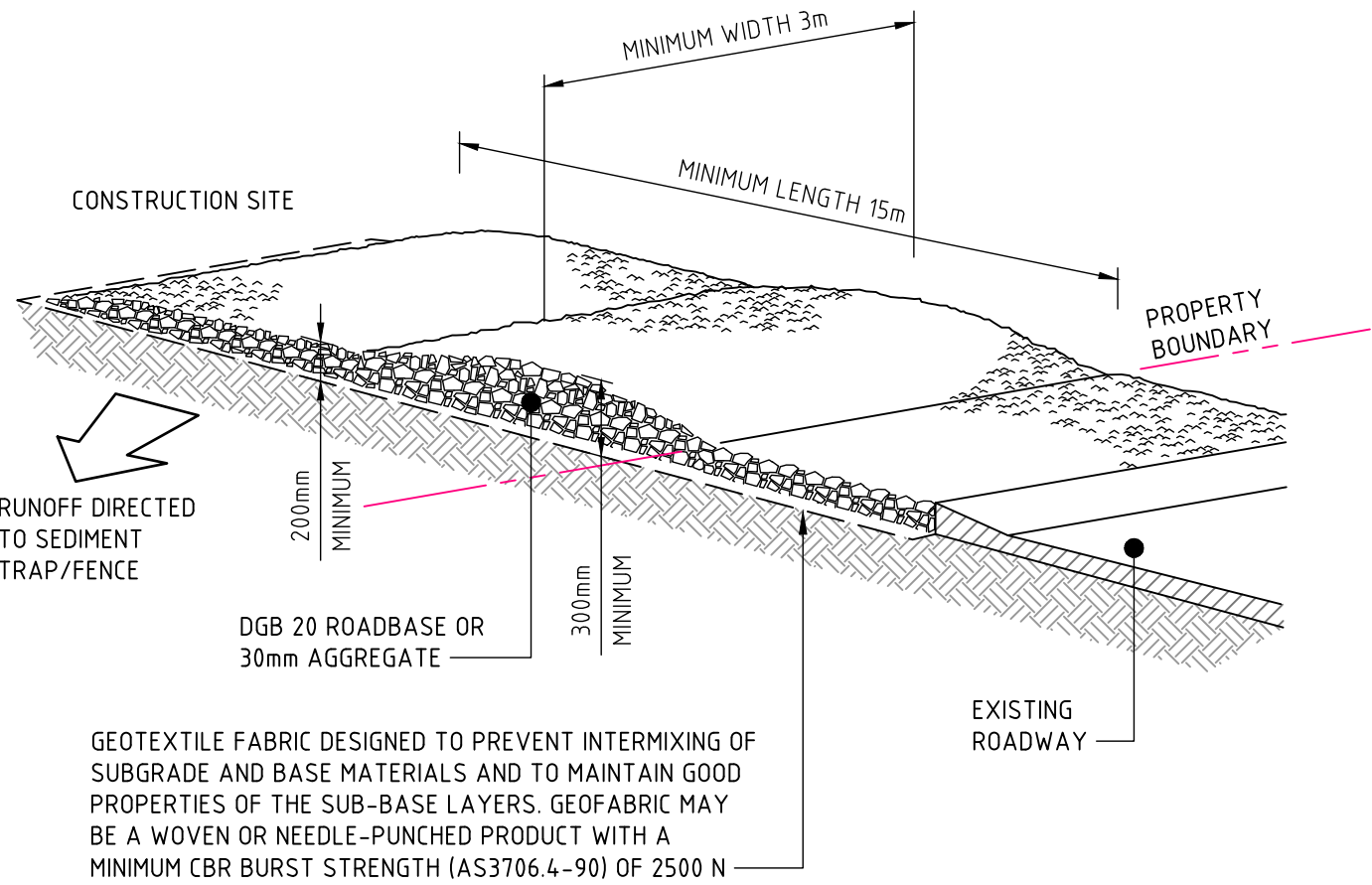
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JOB MANAGER: K SINCLAIR  
DESIGNED: E GEARING  
DRAWN: J LEWIS



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 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 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.

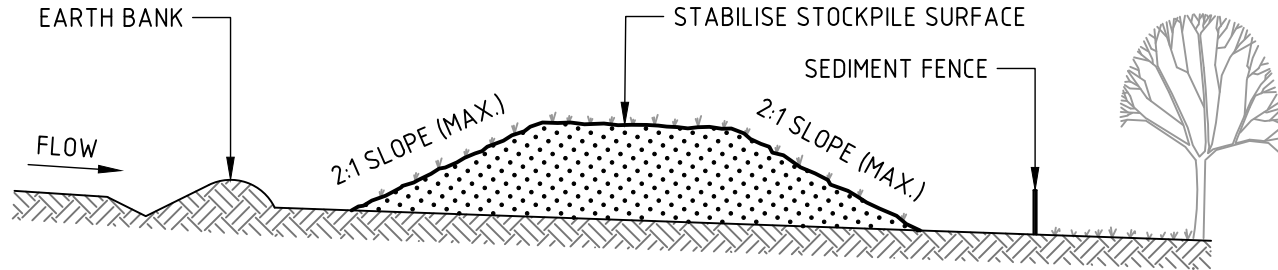
SEDIMENT FENCE (SD 6-8)



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.

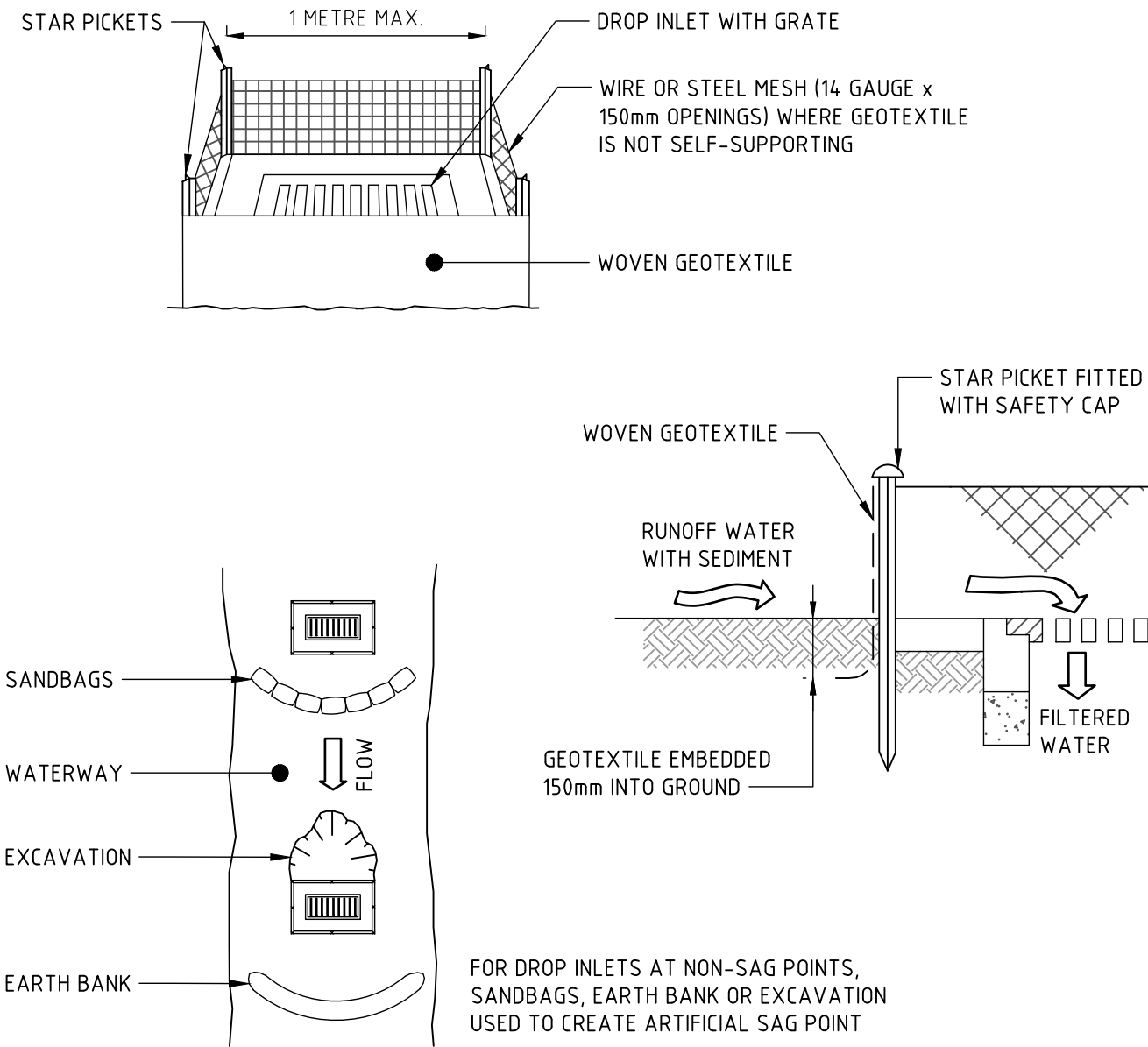
STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) 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 2m IN HEIGHT.
4. WHERE THEY ARE 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 EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

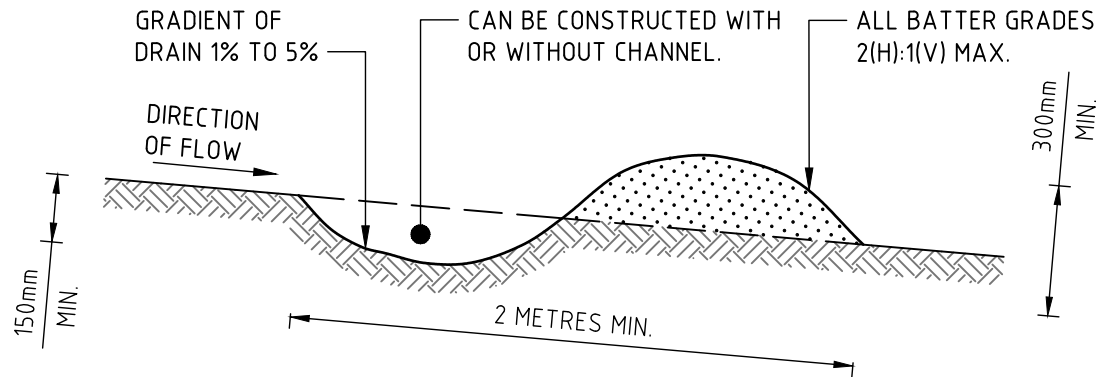
STOCKPILES (SD 4-1)



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 GEOTEXTILE. REDUCE THE PICKET SPACING TO 1 METRE 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.

GEOTEXTILE INLET FILTER (SD 6-12)



CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
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, PARABOLIC 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.

NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.  
EARTH BANK - LOW FLOW (SD 5-5)



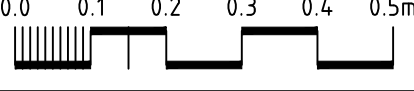
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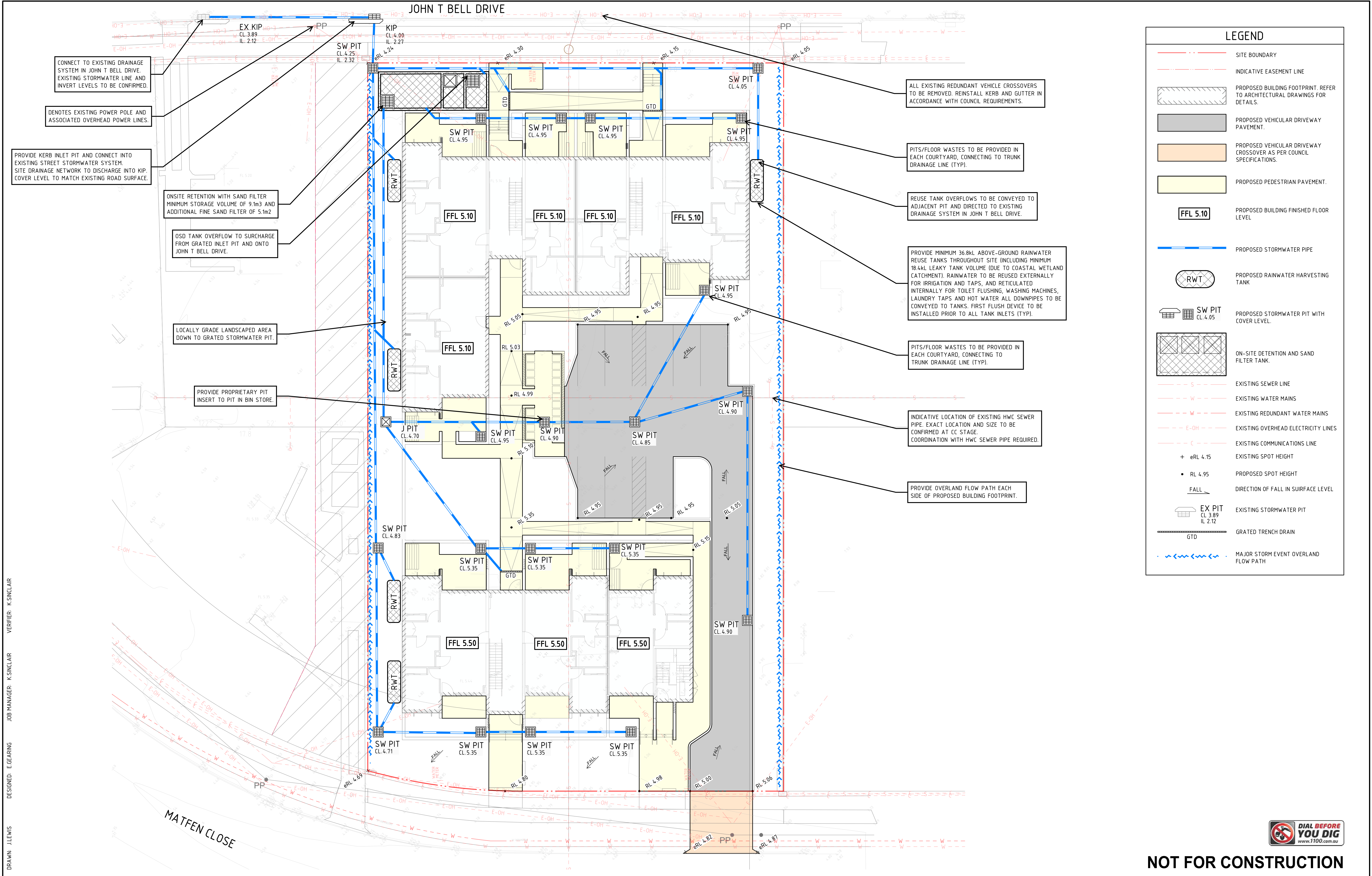
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Level 1, 215 Pacific Hwy, Charlestown NSW 2290  
Ph (02) 4943 1777 Email [newcastle@northrop.com.au](mailto:newcastle@northrop.com.au)  
ABN 81 094 433 100

PROJECT	DRAWING TITLE	JOB NUMBER
38 - 40 JOHN T BELL DRIVE MARYLAND, NSW	EROSION AND SEDIMENT CONTROL DETAILS	NL202298
		DRAWING NUMBER
		DA.C03
		REVISION
		A
		DRAWING SHEET SIZE = A1





LEGEND

SITE BOUNDARY

INDICATIVE EASEMENT LINE

PROPOSED BUILDING FOOTPRINT. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.

PROPOSED VEHICULAR DRIVEWAY PAVEMENT.

PROPOSED VEHICULAR DRIVEWAY CROSSOVER AS PER COUNCIL SPECIFICATIONS.

PROPOSED PEDESTRIAN PAVEMENT.

FFL 5.10

PROPOSED BUILDING FINISHED FLOOR LEVEL

PROPOSED STORMWATER PIPE

RWT

PROPOSED RAINWATER HARVESTING TANK

SW PIT CL 4.05

PROPOSED STORMWATER PIT WITH COVER LEVEL.

ON-SITE DETENTION AND SAND FILTER TANK.

S

EXISTING SEWER LINE

W

EXISTING WATER MAINS

W

EXISTING REDUNDANT WATER MAINS

E-OH

EXISTING OVERHEAD ELECTRICITY LINES

C

EXISTING COMMUNICATIONS LINE

+ eRL 4.15

EXISTING SPOT HEIGHT

• RL 4.95

PROPOSED SPOT HEIGHT

FALL

DIRECTION OF FALL IN SURFACE LEVEL

EX PIT CL 3.89 IL 2.12

EXISTING STORMWATER PIT

GTD

GRATED TRENCH DRAIN

MAJOR STORM EVENT OVERLAND FLOW PATH

DRAWN: JLEWIS  
DESIGNED: EGEARING  
JOB MANAGER: K SINCLAIR  
VERIFIER: K SINCLAIR

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SCALE 1:150 @ A1





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Level 1, 215 Pacific Hwy, Charlestown NSW 2290  
Ph (02) 4943 1777 Email newcastle@northrop.com.au  
ABN 81 094 433 100

PROJECT

38 - 40 JOHN T BELL DRIVE  
MARYLAND, NSW



Newcastle

Level 1, 215 Pacific Hwy, Charlestown NSW 2290  
Ph (02) 4943 1777 Email newcastle@northrop.com.au  
ABN 81 094 433 100

DRAWING TITLE

CIVIL STORMWATER AND  
LEVELS PLAN



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Level 1, 215 Pacific Hwy, Charlestown NSW 2290  
Ph (02) 4943 1777 Email newcastle@northrop.com.au  
ABN 81 094 433 100

JOB NUMBER

NL202298



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Level 1, 215 Pacific Hwy, Charlestown NSW 2290  
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DRAWING NUMBER

DA.C04



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REVISION

B

Date: 06.09.2022 5:44 PM  
Plotted by: EMMA GEARING  
Printed: 11/09/2022 10:00:00 AM  
Project: Y:\YEAR 2020 - jobs\NL202298 - LAHC Housing Redevelopment\Drawings\CIVIL\03 CAD\05 DA MARYLAND\NL202298 - CIVIL STORMWATER DA.dwg  
Drawing Sheet Size: A1



CONCEPT STORMWATER MANAGEMENT SUMMARY

LGA: CITY OF NEWCASTLE (CN)

NORTHROP CONSULTING ENGINEERS HAVE PREPARED A CONCEPT STORMWATER DRAINAGE DESIGN FOR THE PROPOSED DEVELOPMENT AT 38-40 JOHN T BELL DRIVE AND 31-33 MATFEN CLOSE, MARYLAND. THE PROPOSED MANAGEMENT PLAN HAS BEEN DEVELOPED IN ACCORDANCE WITH THE CN'S DEVELOPMENT CONTROL PLAN, CN'S STORMWATER AND WATER EFFICIENCY FOR DEVELOPMENT TECHNICAL MANUAL AND AS3500.3:2015 PLUMBING AND DRAINAGE - STORMWATER DRAINAGE.

THE SITE CURRENTLY CONTAINS 4 SINGLE STOREY BUILDINGS ACROSS FOUR LOTS (LOT 111, 112, 116 AND LOT 117 DP253956), WITH A TOTAL AREA OF 2340m2 AND IS LOCATED WITHIN THE SEPP 14 WETLANDS CATCHMENT. THE DEVELOPMENT PROPOSES THE CONSTRUCTION OF A 2-STOREY AFFORDABLE HOUSING BUILDING WITH ASSOCIATED LANDSCAPING AND HARDSTAND. A VEHICLE ACCESS POINT IS PROPOSED FROM MATFEN CLOSE WITH PEDESTRIAN ACCESS ALSO PROPOSED FROM BOTH THE MATFEN CLOSE AND JOHN T BELL DRIVE FRONTAGES.

STORMWATER RUNOFF FROM THE ROOF AREA IS PROPOSED TO BE CONVEYED TO ABOVE GROUND REUSE TANKS WITH LEAKY TANK VOLUME. RUNOFF FROM DRIVEWAY AND LANDSCAPING AREAS IS PROPOSED TO BE CONVEYED TO A BELOW GROUND OSD TANK WITH SAND FILTER LOCATED ADJACENT JOHN T BELL DRIVE. CAPTURED RUNOFF IS ULTIMATELY PROPOSED TO BE DISCHARGED TO THE EXISTING DRAINAGE NETWORK WITHIN JOHN T BELL DRIVE.

1. STORAGE REQUIREMENTS

TOTAL SITE AREA	= 2330 m2
TOTAL ROOF AREA TO REUSE TANK	= 920 m2
TOTAL HARDSTAND AREA TO OSD	= 550 m2
TOTAL LANDSCAPE TO OSD	= 90 m2
TOTAL IMPERVIOUS AREA	= 1570 m2
TOTAL PERVIOUS AREA	= 760 m2
SITE IMPERVIOUS PERCENTAGE	= 67.4%

IN ACCORDANCE WITH THE CN 2012 DCP, SECTION 7.06 (STORMWATER), FIGURE 1, A MINIMUM OF 16.52mm/m2/ OF RAINFALL IS TO BE CAPTURED FROM THE SITE'S IMPERVIOUS AREA TO MANAGE PEAK RUNOFF.

TOTAL SITE STORAGE REQUIREMENT	= 16.52 mm/m2 x 1570 m2
	= 25.94 m3

2. ONSITE HARVESTING/REUSE

TO ACHIEVE THE WETLANDS CATCHMENT REQUIREMENTS, RAINWATER HARVESTING TANKS HAVE BEEN PROPOSED TO COLLECT 100% OF ROOF RUNOFF, WHICH WHEN COMBINED WITH THE PROPOSED OSD VOLUME WILL ADEQUATELY SATISFY THE TOTAL SITE STORAGE REQUIREMENT. A COMBINED 36.8m3 (0.04 x 920m2) OF REUSE TANKS HAS BEEN PROPOSED WHICH WILL INCORPORATE 18.4m3 REUSE VOLUME AND 18.4m3 LEAKY TANK VOLUME. THE HARVESTED VOLUME IS TO BE RETICULATED INTERNALLY FOR TOILET FLUSHING AND LAUNDRY USE AS WELL AS EXTERNALLY FOR LANDSCAPING IRRIGATION. ALL DOWN PIPES ARE TO BE CONNECTED TO A FIRST FLUSH DEVICE LOCATED PRIOR TO THE TANK INLET.

3. STORMWATER QUANTITY

IN ORDER TO SATISFY CN'S SITE STORAGE VOLUME AN OSD TANK HAS BEEN PROPOSED TO LIMIT PEAK STORMWATER DISCHARGE FROM SITE. 9.1m3 OSD VOLUME IS PROPOSED (16.52 mm/m2 x 550m2), WHICH WHEN COMBINED WITH THE PROPOSED 36.8m3 REUSE VOLUME, SATISFIES THE TOTAL SITE STORAGE REQUIREMENT.

4. STORMWATER QUALITY

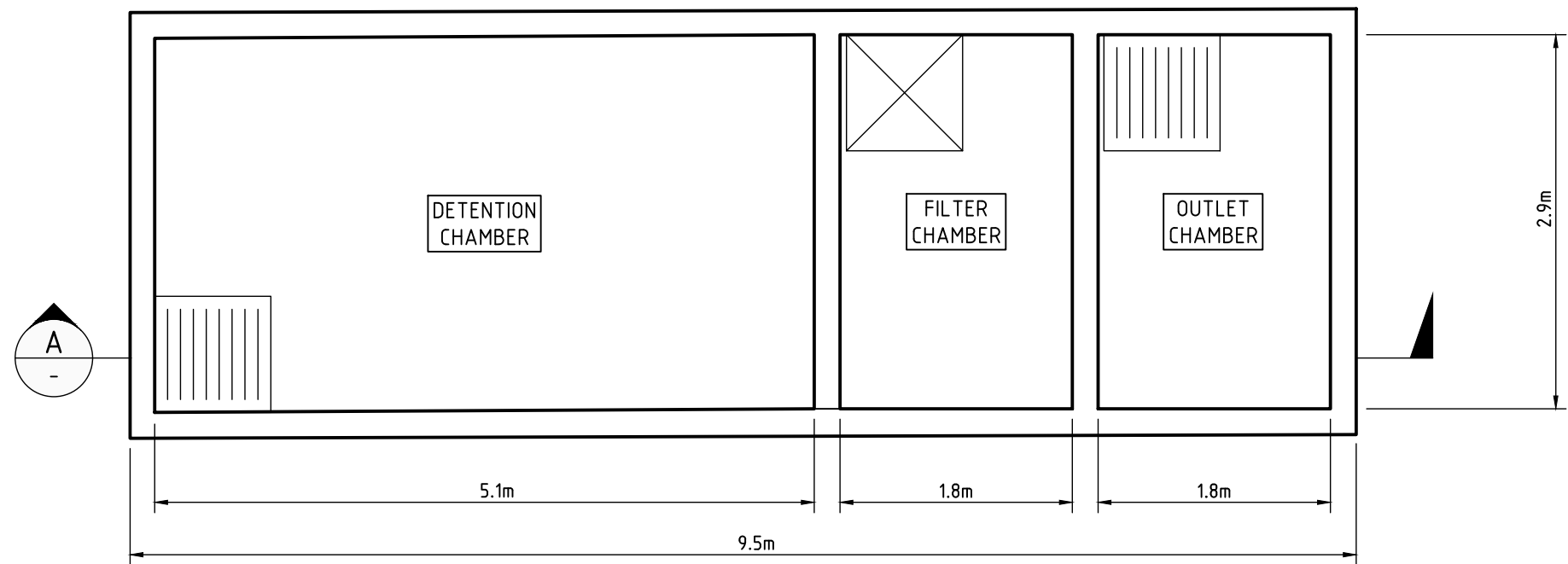
IN ACCORDANCE WITH CN'S DCP WATER QUALITY PROVISIONS HAVE BEEN PROPOSED IN ORDER TO LIMIT ECOLOGICAL IMPACTS OF THE DOWNSTREAM RECEIVING WATER BODIES DUE TO THE DEVELOPMENT. THE NEW ROOF AREA IS PROPOSED TO BE MANAGED BY THE 36.8m3 RAINWATER REUSE TANK DESCRIBED IN SECTION 2 ABOVE. THE REMAINING SITE AREA (HARDSTAND AND LANDSCAPING) IS PROPOSED TO BE CONVEYED TO WATER QUALITY PROVISIONS WITHIN THE OSD TANK. IT IS PROPOSED TO PROVIDE A 5.1m2 IN-TANK SAND FILTER CHAMBER TO POLISH RUNOFF PRIOR TO SITE DISCHARGE.

SAND FILTER AREA REQUIREMENT	= 0.8m2 FILTER AREA PER 100m2 CONTRIBUTING CATCHMENT
	= 0.8m2 x 640m2 /100
	= 5.12m2

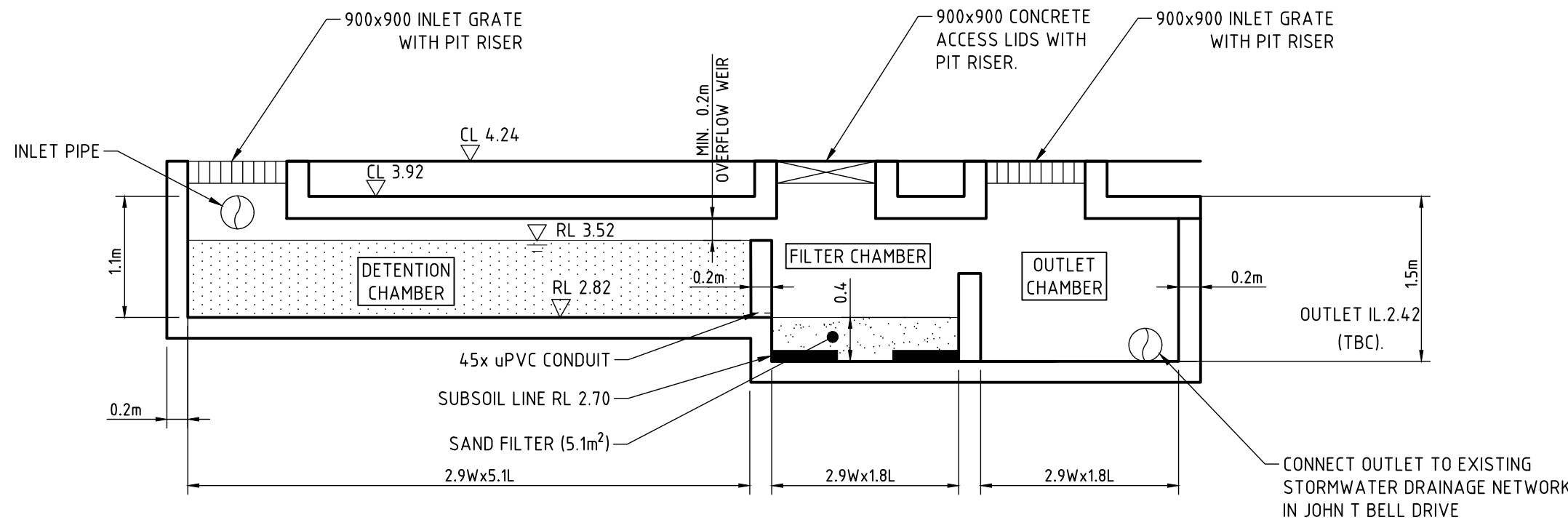
3. FLOODING

THE SITE IS SUBJECT TO FLOODING AND HAS BEEN ADDRESSED IN BMT'S EXISTING FLOOD BEHAVIOUR REPORT. THE RECOMMENDED FPL OF 5.1m FOR LOT 111 AND 112 AND 5.5m FOR LOT 116 AND 117 HAVE BEEN INTEGRATED INTO THE DESIGN.

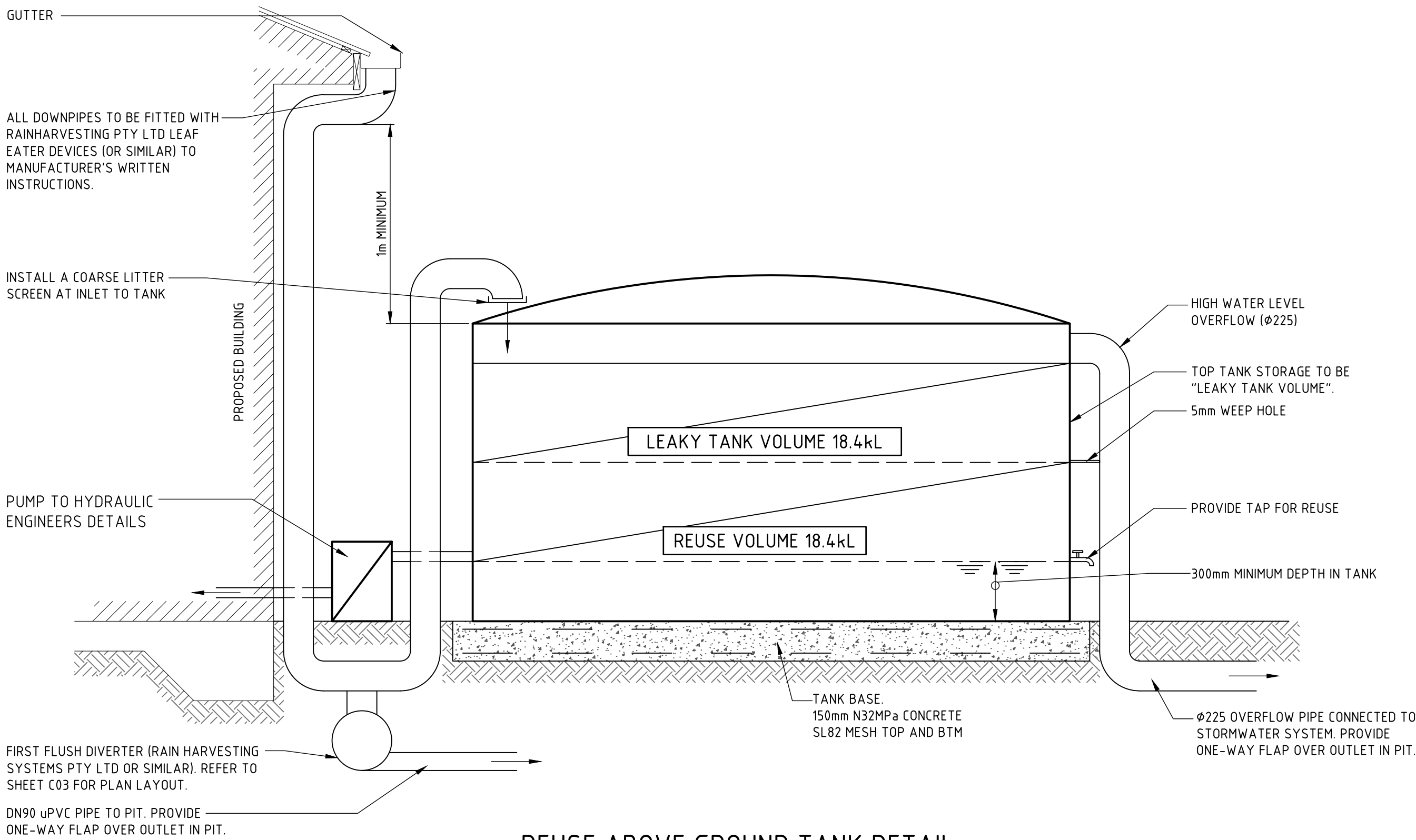
IT IS CONSIDERED THAT THE PROPOSED STORMWATER MANAGEMENT PLAN ADEQUATELY MEETS THE DESIGN INTENT OF CN'S DCP.



PROPOSED DETENTION AND SAND FILTER TANK - PLAN VIEW



SECTION A SCALE 1:50



REUSE ABOVE GROUND TANK DETAIL

NOTE: THE ENTIRE PRESSURISED DOWNPIPE SYSTEM SHALL BE AIR TIGHT AND BE ABLE TO WITHSTAND ATMOSPHERIC PRESSURE. THE PIPING SYSTEM SHALL BE MINIMUM SN6 AND FITTINGS WITH INTERNAL ULTRA VIOLET STABILISING (OR APPROVED EQUIVALENT).



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VERIFIER: K SINCLAIR  
JOB MANAGER: K SINCLAIR  
DESIGNED: E GEARING  
DRAWN: J LEWIS

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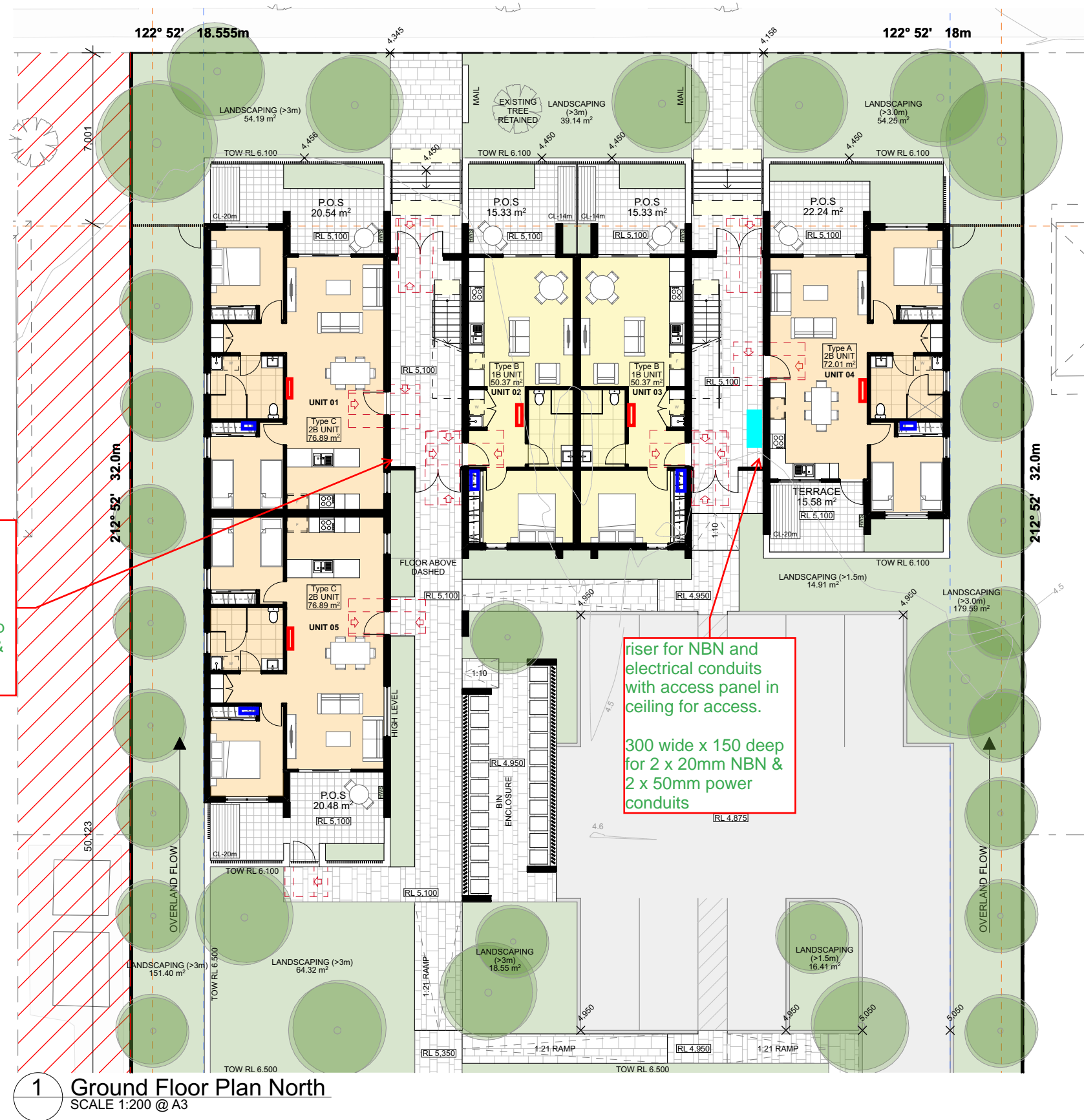
PROJECT
38 - 40 JOHN T BELL DRIVE MARYLAND, NSW

DRAWING TITLE
CIVIL STORMWATER PHILOSOPHY AND DETAILS

JOB NUMBER
NL202298
DRAWING NUMBER
DA.C05
REVISION
B
DRAWING SHEET SIZE = A1







SITE IS FLOOD AFFECTED AS PER  
BMT FLOOD BEHAVIOUR REPORT  
DATED 17th MARCH 2021.

riser for NBN and electrical conduits with access panel in ceiling for access.  
300 wide x 150 deep for 3 x 20mm NBN & 3 x 50mm power conduits

riser for NBN and electrical conduits with access panel in ceiling for access.  
300 wide x 150 deep for 2 x 20mm NBN & 2 x 50mm power conduits

1 First Floor Plan North  
SCALE 1:200 @ A3

SITE IS FLOOD AFFECTED AS PER  
BMT FLOOD BEHAVIOUR REPORT  
DATED 17th MARCH 2021.

Developed Design



Architecture | Planning | Interiors

115 King Street (P.O. Box 958) Newcastle NSW 2300  
P 02 4929 1843 E admin@ckds.com.au  
www.ckds.com.au ACN 129 231 269

North Point



LAHC Maryland Development  
project #

20126

38-40 John T Bell Dr Maryland NSW 2287

First Floor Plan - North  
drawing #

A-1103 03

AS SHOWN 28/2/22

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DATED 17th MARCH 2021.

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CKDS

Architecture | Planning | Interiors

115 King Street (P.O. Box 958) Newcastle NSW 2300

P 02 4929 1843

www.ckds.com.au

E admin@ckds.com.au

ACN 129 231 269

North Point



LAHC Maryland Development  
project #

20126

38-40 John T Bell Dr Maryland NSW 2287

First Floor Plan - South  
drawing #

A-1104

AS SHOWN

03

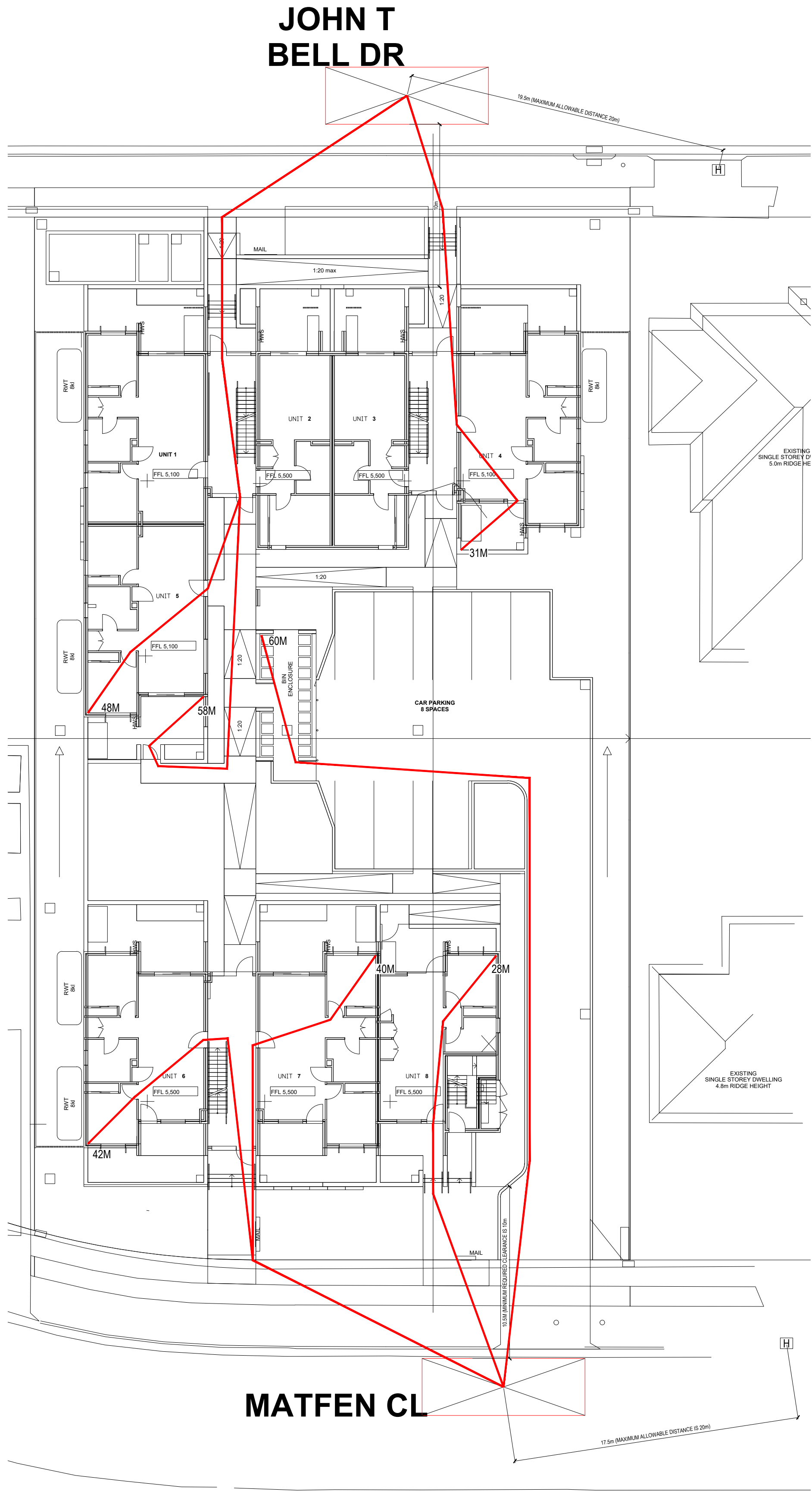
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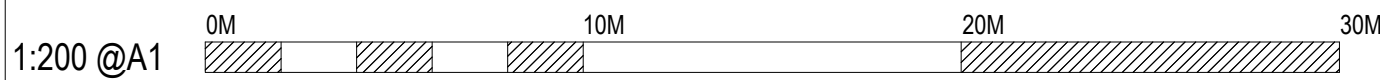
NOTE: THE ENTIRE PLUMBING INSTALLATION IS TO COMPLY WITH THE FULL REQUIREMENTS OF THE LOCAL REGULATORY AUTHORITY, A.S.3500 AND THE PLUMBING AND THE BUILDING CODES OF AUSTRALIA.



GROUND FLOOR

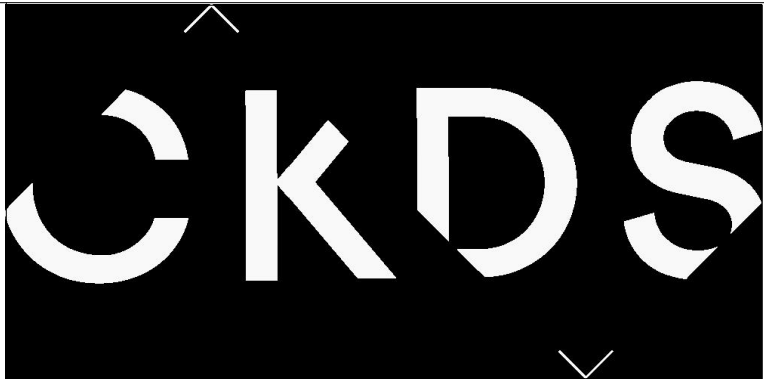
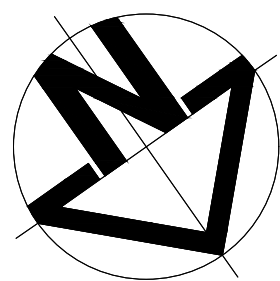


FIRST FLOOR



GENERAL NOTES:  
1. THE DRAWING ISSUED IS DIAGRAMMATIC. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. REFER TO ARCHITECTURAL DRAWINGS WHERE APPROPRIATE FOR EXACT LOCATION OF FIXTURES, DUCTS AND THE LIKE. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS FORMING THE PROJECT DOCUMENTATION PACKAGE.  
2. CONFIRM ALL LEVELS AND DIMENSIONS AS ACCURATE ON SITE PRIOR TO INSTALLATION. REPORT ALL DISCREPANCIES TO THE SUPERINTENDENT IMMEDIATELY.  
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REV	DATE	AMENDMENT
1	02/09/22	FOR INFORMATION



ARCHITECT:	CKDS
CLIENT:	CKDS
PROJECT:	LAHC MARYLAND DEVELOPMENT 38-40 JOHN T BELL DR, MARYLAND NSW 2287 FIRE HYDRANT COVERAGE

Drawn	A.FATMI
Design	B.McCALLUM
Approved	R.McCALLUM

FOR INFORMATION		Size	A1
Scale	1:200	Job No.	4214-820W
DRG. No.	F-01	Revision	1



HYDRAULIC SERVICES  
SPATIAL MARKUP  
02/09/2022

P.O.S.	Private Open Space
RL	Reduced Level
RWT	Rain Water Tank
BG	Box Gutter
FB1	Face Brickwork Type 1
FB2	Face Brickwork Type 2
LC1	Lightweight Cladding - Prefinished Board
GB	Glazed Aluminium Balsutrade - Obscure
MRS	Metal Roof Sheetting
MRC	Metal Roof Capping/Flashing
EG	Eaves Gutter
DP	Downpipe
FEN1	Fence Type 1 - Vertical Slat
SCR	Privacy Screen - Vertical Slat
LB	Letterbox

1 Site Plan - Ground  
SCALE 1:350 @ A3



SITE IS FLOOD AFFECTED AS PER  
BMT FLOOD BEHAVIOUR REPORT  
DATED 17th MARCH 2021.

issue	description	date	verified
02	For Client Review	12/2022	02
03	For Client Review	28/2/2022	03
04	For Client Review	3/3/2022	04
05	For Client Review	27/4/2022	05
06	Issue for Information	26/5/2022	06
07	Issue for Review	6/6/2022	07
08	Issue for Review	12/7/2022	08
09	Draft Part 5 Activity Submission	19/7/2022	09
A	Part 5 Activity Submission	21/7/2022	A
B	Part 5 Activity Submission	26/8/2022	B

key plan



consultants  
Civil/Structural Engineers  
Northrop Consulting Engineers  
1/215 Pacific Hwy  
Charlestown NSW 2290  
(02) 4943 1777  
Landscape Architects  
Xeriscapes  
1/28 Adelaide Street,  
East Gosford NSW 2250  
(02) 4302 0477

Electrical Engineer  
Electrical Projects Australia  
385 Maitland Rd  
Maitland NSW 2304  
(02) 4967 5999  
Hydraulic Engineer  
McCallums PRC  
5/35 Smith St  
Charlestown NSW 2290  
(02) 4946 2633

clients  
Land & Housing  
Corporation  
NSW  
Government  
Planning &  
Environment

project  
LAHC Maryland  
Development - BGWY7  
38, 40 John T Bell Dr & 31, 33 Matfen Cl  
Lot 111, 112, 116, 117/-/DP253956  
Maryland NSW 2287

drawing title  
Site Plan(s)  
Site Plan - Ground

drawing scale	drawn	verified	date
AS SHOWN		SC	26/8/2022
project #	drawing #	issue	
20126	A-1001	B	

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where any discrepancies to the designer before proceeding with the work.  
do not scale drawings manually or electronically.  
drawing shall not be used for construction until issued for construction by designer.