

# RAYMOND TERRACE BOWLING CLUB

2 JACARANDA AVENUE, RAYMOND TERRACE, NSW, 2324  
DA CIVIL ENGINEERING PACKAGE






LOCALITY PLAN

### DRAWING LIST

DRAWING No.	DRAWING TITLE
DA-C01.01	COVER SHEET LOCALITY PLAN AND DRAWING LIST
DA-C02.11	CONCEPT EROSION AND SEDIMENT CONTROL PLAN
DA-C02.12	CONCEPT EROSION AND SEDIMENT CONTROL DETAILS
DA-C04.11	CONCEPT CIVIL WORKS PLAN - STAGE 1 AND 2
DA-C04.12	CONCEPT CIVIL WORKS PLAN - STAGE 3

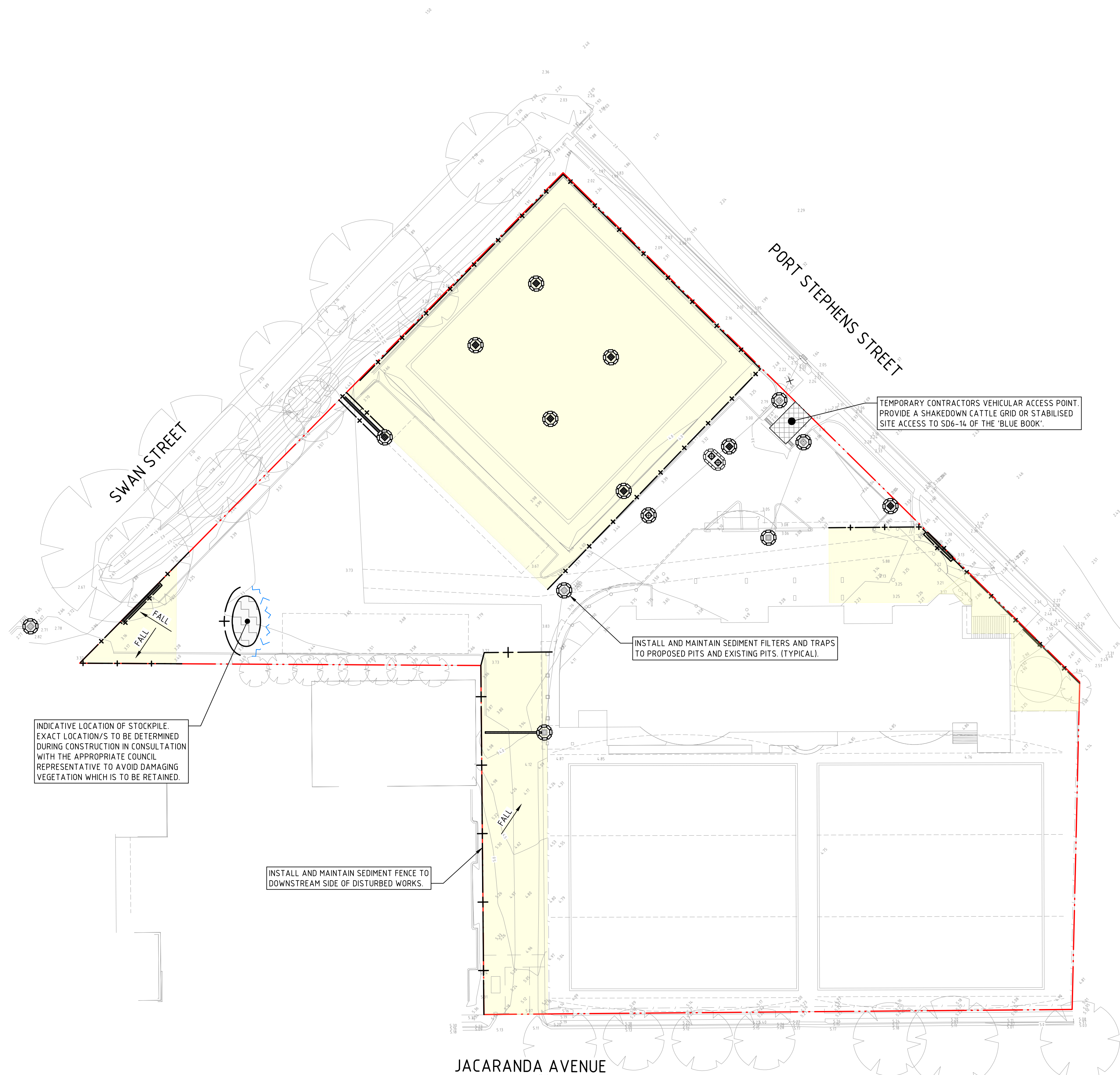
DRAWN: JRYALL  
DESIGNED: R STEVENSON  
JOB MANAGER: R STEVENSON  
VERIFIER: A BROWN

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER	
A	ISSUED FOR CLIENT REVIEW	JR		RS	31.10.23	 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	 Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	RAYMOND TERRACE BOWLING CLUB 2 JACARANDA AVENUE, RAYMOND TERRACE, NSW, 2324	CIVIL ENGINEERING PACKAGE  COVER SHEET, LOCALITY PLAN AND DRAWING LIST	NL231087  DA-C01.01  1  DRAWING SHEET SIZE = A1
1	ISSUED FOR DEVELOPMENT APPLICATION	JR	AB	RS	27.11.23						



REFER TO EROSION AND SEDIMENT CONTROL  
DETAILS FOR BASIN SIZING CALCULATIONS



### LEGEND

- SITE BOUNDARY LINE
- PROPOSED AREA OF DISTURBANCE
- SW PIT
- PROPOSED SEDIMENT FENCE. REFER TO EROSION AND SEDIMENT CONTROL DETAILS
- PROPOSED SANDBAG SEDIMENT FILTER. REFER TO EROSION AND SEDIMENT CONTROL DETAILS
- PROPOSED DIVERSION DRAIN (CLEAN). REFER TO EROSION AND SEDIMENT CONTROL DETAILS.
- PROPOSED STABILISED SITE ACCESS. REFER TO EROSION AND SEDIMENT CONTROL DETAILS
- PROPOSED STOCKPILES. REFER TO EROSION AND SEDIMENT CONTROL DETAILS
- FALL
- EX PIT
- EXISTING CONTOURS (0.5m INTERVAL)

### GENERAL NOTES

- THE CONTRACTOR SHALL PROVIDE BARRIER / PERSON PROOF FENCE TO THE SITE / THEIR COMPOUND TO ENSURE THE SITE IS MADE SAFE TO THE PUBLIC FOR THE DURATION OF CONSTRUCTION.
- THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON THIS PLAN ARE GENERAL. SITE MEASURES. ADDITIONAL MEASURES MAY BE REQUIRED AROUND INDIVIDUAL BUILDING ZONES DEPENDENT ON THE SEQUENCE OF CONSTRUCTION.

### EROSION AND SEDIMENT CONTROL NOTES

- ALL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE APPROPRIATE FOR THE SEDIMENT TYPE(S) OF THE SOILS ON-SITE, IN ACCORDANCE WITH THE 'BLUE BOOK' (MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION, LANDCOM, 2004), OR OTHER CURRENT RECOGNISED INDUSTRY STANDARDS FOR EROSION AND SEDIMENT CONTROL FOR AUSTRALIAN CONDITIONS. THIS INCLUDES SEDIMENT TRAPS AND LINING OF CHANNELS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION AND SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS AND SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ALL MAINTENANCE, CLEANING AND BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.
- INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
- ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
- INSTALL SEDIMENT FENCING, OR OTHER SEDIMENT CONTROL DEVICES, AROUND INDIVIDUAL BUILDING ZONES / AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT OR APPROPRIATE COUNCIL OFFICER.
- ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
- THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB AND GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION.
- ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ON-SITE AND SPREAD / STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
- STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE SPREAD ON-SITE AS DIRECTED BY THE SUPERINTENDENT OR REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
- CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
- ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
- PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
- ONCE CUT / FILL OPERATIONS HAVE BEEN FINALISED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.

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CLIENT

**Raymond Terrace Bowling Club**

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ARCHITECT

**EJE architecture**

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SCALE 1:400@A1

0 4 8 12 16 20m

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ABN 81 094 433 100

PROJECT

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**2 JACARANDA AVENUE, RAYMOND TERRACE, NSW, 2324**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**CONCEPT EROSION AND SEDIMENT CONTROL PLAN**

JOB NUMBER

**NL231087**

DRAWING NUMBER

**DA-C02.11**

REVISION

**1**

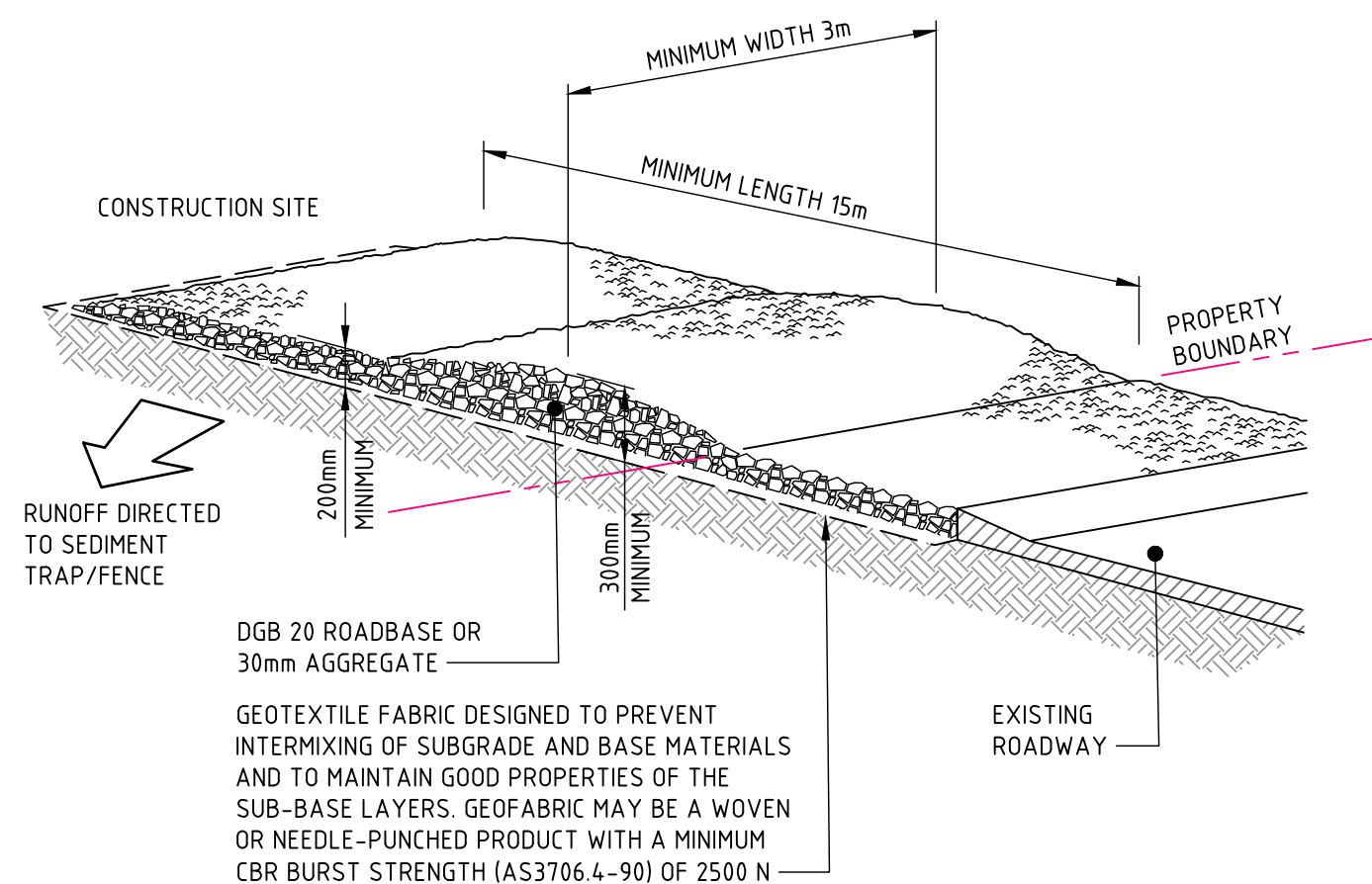
DRAWING SHEET SIZE = A1



### SEDIMENT BASIN SIZING CALCULATION

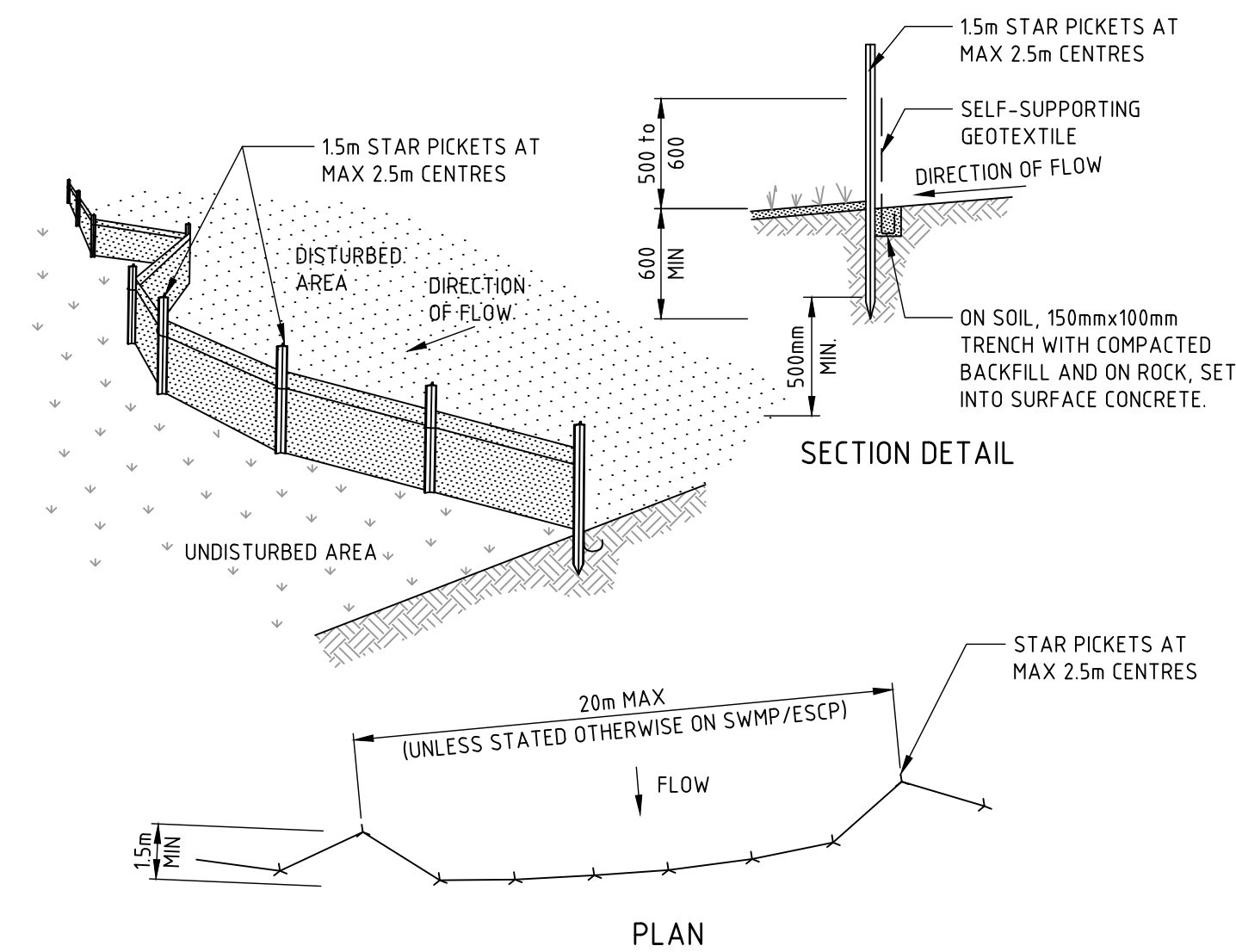
SITE PARAMETERS	
CONSTRAINT	VALUE
SEDIMENT TYPE	D/F (MILLERS FOREST SOIL LANDSCAPE)
SOIL HYDROLOGY GROUP	C
K = SOIL ERODIBILITY (K-FACTOR)	0.025
R = RAINFALL EROSIVITY (R-FACTOR)	2500
S = 2 YEAR, 6 HOUR STORM INTENSITY	10.7mm/hr
LS = SLOPE LENGTH/GRADIENT	0.5 (45m SLOPE @ 3% GRADE)
P = EROSION CONTROL PRACTICE (P-FACTOR)	13 (TYPICAL)
C = GROUND COVER (C-FACTOR)	1.0 (TYPICAL FOR STRIPPED SITE)
CALCULATED SOIL LOSS (RUSTLE METHOD)	41 t/ha/yr

AVERAGE ANNUAL SOIL LOSS FROM TOTAL AREA OF LAND DISTURBANCE IS LESS THEN 150 CUBIC METRES PER YEAR. IN ACCORDANCE WITH THE BLUE BOOK, A SEDIMENT BASIN IS NOT REQUIRED



### CONSTRUCTION NOTES

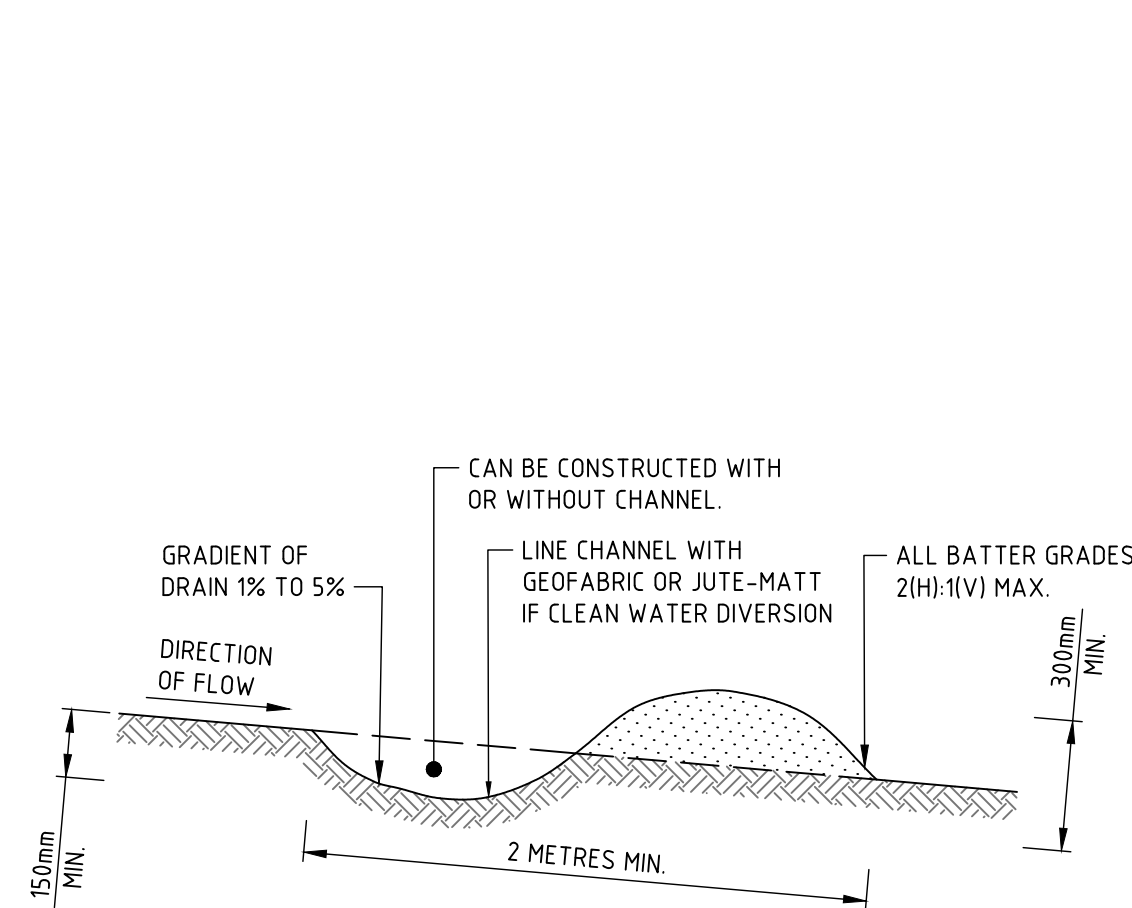
1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.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



### 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 15 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.

## STABILISED SITE ACCESS (SD 6-14)

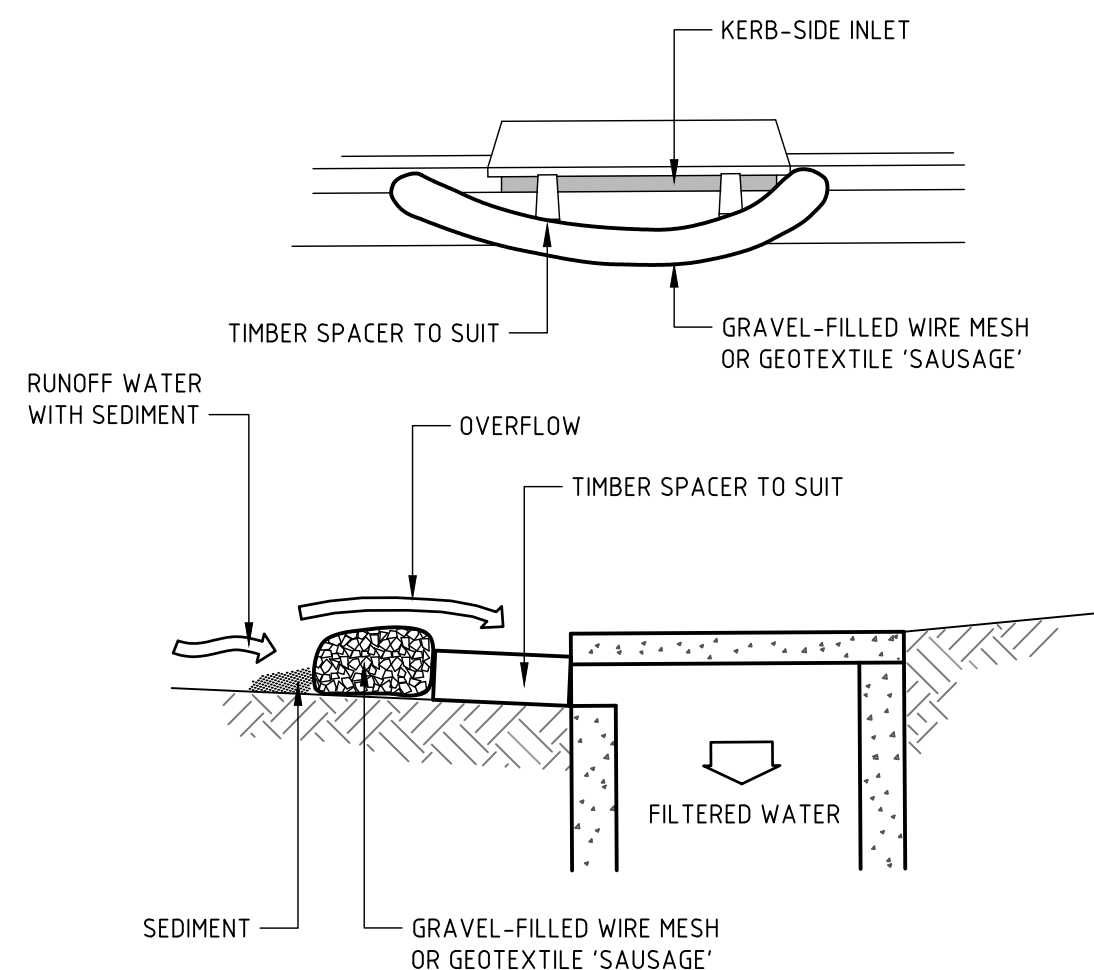


### CONSTRUCTION NOTES

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

#### DIVERSION DRAIN (SD 5-5)

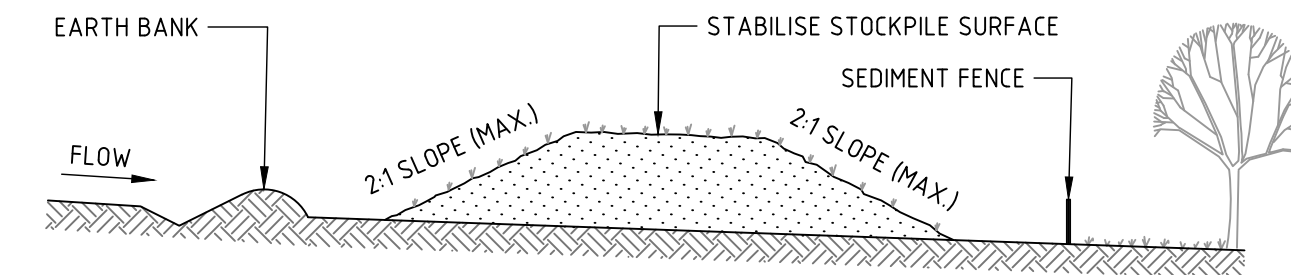


NOTE: THIS PRACTICE ONLY TO BE USED  
WHERE SPECIFIED IN APPROVED SWMP/ESCP

### 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 WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm 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 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.

SANDBAG SEDIMENT FILTER (SD 6-11)



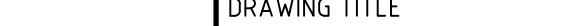


### CONSTRUCTION NOTES

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 FENS (STANDARD DRAWING 6-8) 1) TO 2m DOWNSLOPE.

## STOCKPILES (SD 4-1)

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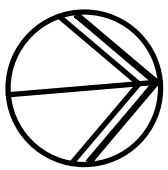
0000 - 27.11.2023 4:52 PM Printed by: JAMES RYALL Filepath: \\nw-northrop\NW\115049\2023\3010\NL231087-Raymond Terrace Bowling Club\01-Drawings\Civil\3010-CAD\DW\NL231087-DA-C04-11 CIVIL STAGE 1.dwg



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0 4 8 12 16 20m



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**CONCEPT CIVIL WORKS PLAN  
- STAGE 1 AND 2**

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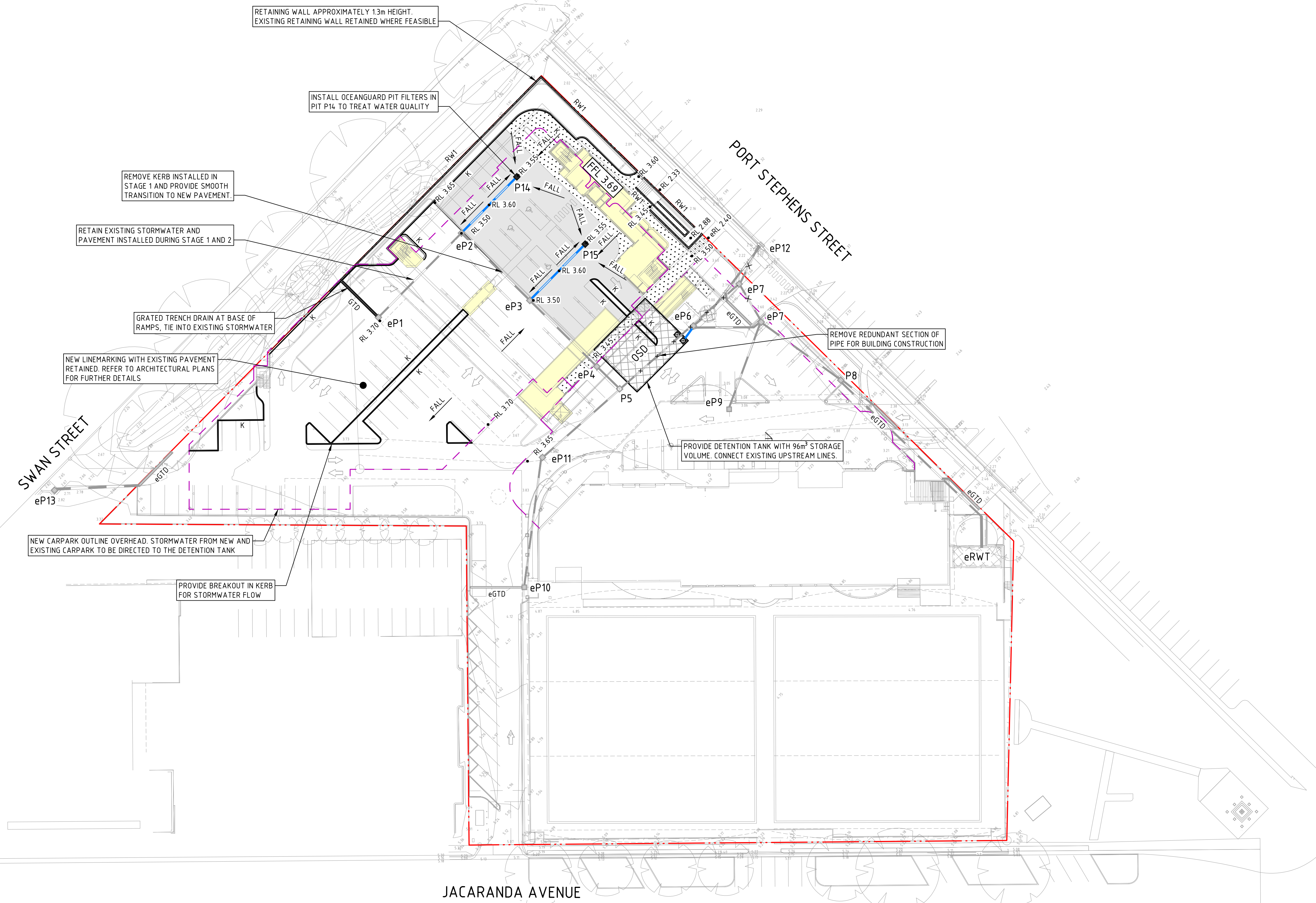
## LEGEND

	SITE BOUNDARY LINE
	NEW BUILDING OUTLINE OVERHEAD. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION
	EXISTING BUILDING UNDERGOING RENOVATIONS. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION
	PROPOSED VEHICULAR PAVEMENT. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED DRIVEWAY REPLACEMENT CONSTRUCTED IN ACCORDANCE WITH S138 APPROVAL
	PROPOSED PEDESTRIAN PAVEMENT CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED STORMWATER PIPE CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED STORMWATER PIT AND TAG CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED GRATED TRENCH DRAIN CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE DETAILED AT CC STAGE.
	PROPOSED 15kL UNDERGROUND RAINWATER TANK CONSTRUCTED AS PART OF STAGE 2. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED OCEAN PROTECT JELLYFISH CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED FINISHED FLOOR LEVEL. REFER TO ARCHITECTURAL PLANS FOR DETAILS
	PROPOSED SPOT LEVEL
	PROPOSED RETAINING WALL AND TYPE. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED DIRECTION OF GRADE IN FINISHED SURFACE
	PROPOSED KERB CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED KERB RAMP CONSTRUCTED AS PART OF STAGE 1. DETAILS TO BE PROVIDED AT CC STAGE
	EXISTING STORMWATER PIT
	EXISTING STORMWATER PIPE TO REMAIN
	EXISTING STORMWATER PIPE TO BE REMOVED
	EXISTING CONTOURS (0.5m INTERVALS)

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DETAILS TO BE PROVIDED AT CC STAGE

PROPOSED DRIVEWAY REPLACEMENT  
CONSTRUCTED IN ACCORDANCE WITH S138  
APPROVAL

PROPOSED PEDESTRIAN PAVEMENT  
CONSTRUCTED AS PART OF STAGE 3.  
DETAILS TO BE PROVIDED AT CC STAGE

PROPOSED STORMWATER PIPE  
CONSTRUCTED AS PART OF STAGE 3.  
DETAILS TO BE PROVIDED AT CC STAGE

PROPOSED STORMWATER PIT AND TAG  
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DETAILS TO BE PROVIDED AT CC STAGE

PROPOSED GRATED TRENCH DRAIN  
CONSTRUCTED AS PART OF STAGE 3.  
DETAILS TO BE DETAILED AT CC STAGE.

PROPOSED DETENTION TANK WITH 96m³  
STORAGE VOLUME CONSTRUCTED AS  
PART OF STAGE 3. DETAILS TO BE  
PROVIDED AT CC STAGE

PROPOSED OCEAN PROTECT JELLYFISH  
CONSTRUCTED AS PART OF STAGE 1.  
REFER TO STAGE 1 AND 2 PLANS FOR  
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PROPOSED FINISHED FLOOR LEVEL. REFER  
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PROPOSED RETAINING WALL AND TYPE.  
DETAILS TO BE PROVIDED AT CC STAGE

PROPOSED SPOT LEVEL

PROPOSED DIRECTION OF  
GRADE IN FINISHED SURFACE

PROPOSED KERB CONSTRUCTED AS  
PART OF STAGE 3. DETAILS TO BE  
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EXISTING STORMWATER PIT

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EXISTING STORMWATER PIPE TO REMAIN

EXISTING STORMWATER PIPE TO  
BE REMOVED

EXISTING GRATED TRENCH DRAIN  
TO REMAIN

EXISTING CONTOURS (0.5m INTERVALS)

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