

[illegible]

DEVELOPMENT APPLICATION

0mm 50mm 100mm 150mm 200mm 250mm 300mm 350mm 400mm 450mm 500mm 550mm 600mm 650mm 700mm 750mm

A1

11 10 9 8 7 6 5 4 3 2 1

NOTE

STORMWATER OUTLETS TO BE ORIENTATED IN THE DIRECTION OF NATURAL FLOW OF THE RECEIVING WATER COURSE AND NOT OBSTRUCTING FLOW FROM UPSTREAM. OUTLETS TO BE INSTALLED IN ACCORDANCE WITH NSW OFFICE OF WATER REQUIREMENTS

NOTE

ROCK SIZES AND DEPTH ARE SHOWN AS INDICATIVE ONLY TO BE CONFIRMED IN DESIGNED DURING DETAIL DESIGN.

CREEK BED

RIPARIAN PLANTING

FSL

LOW FLOW CHANNEL ROCKS

JUTE MESH PEGGED IN PLACE

ROCKS TO BE LAID IN A CLOSED VOID SURFACE WITH VOIDS PACKED TIGHTLY WITH COBBLES AND GRAVEL, SOIL AND THE SURFACE PLANTED OUT WITH SEDGES AND RUSHES

ROCK SUB-ARMOUR

GEOTEXTILE A34 BIDIM

LOW FLOW CHANNEL

DETAIL A

NTS

ROCK ARMOUR

GEOTEXTILE A34 BIDIM

ROCK SUB-ARMOUR

STANDARD ARMOUR

DETAIL C

NTS

NARRABEEN CREEK

STACKED ROCK HEADWALL. SANDSTONE BOULDERS (D₉₀= 300-500mm)

FLOW

ROCKS TO BE LAID IN A CLOSED VOID SURFACE WITH VOIDS PACKED TIGHTLY WITH COBBLES AND GRAVEL, SOIL AND THE SURFACE PLANTED OUT WITH SEDGES AND RUSHES

ROCK BED ARMOUR REFER TO DETAIL No.3

GEOTEXTILE A34 BIDIM

STORMWATER OUTLET

DETAIL B

NTS

F	22.11.23	ISSUED FOR DEVELOPMENT CONSENT	T.F.	K.S.
E	15.11.23	ISSUED FOR DEVELOPMENT CONSENT	T.F.	K.S.
D	26.05.23	ISSUED FOR DEVELOPMENT CONSENT	S.Y.	N.M.
C	18.05.23	ISSUED FOR DEVELOPMENT CONSENT	L.Mc.	K.S.
B	04.05.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	N.M.
A	14.04.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	L.Mc.

APPROVED COMPANY

NSW OFFICE OF WATER

APPROVED COMPANY

NSW OFFICE OF WATER

APPROVED COMPANY

NSW OFFICE OF WATER

DIAL 1100

BEFORE YOU DIG

Authorised for issue by:

Signature: _____

Principal:

IPM PROPERTIES


L.G.A.


NORTHERN BEACHES COUNCIL

Project:

PROPOSED SUBDIVISION OF LOT 4 D.P. 553816

16 MACPHERSON STREET, WARRIEWOOD





CRAIG & RHODES

TAKE THE LEAD

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Drawing title

DRAINAGE DETAILS

REV. DATE AMENDMENT DESCRIPTION DES. DRN.

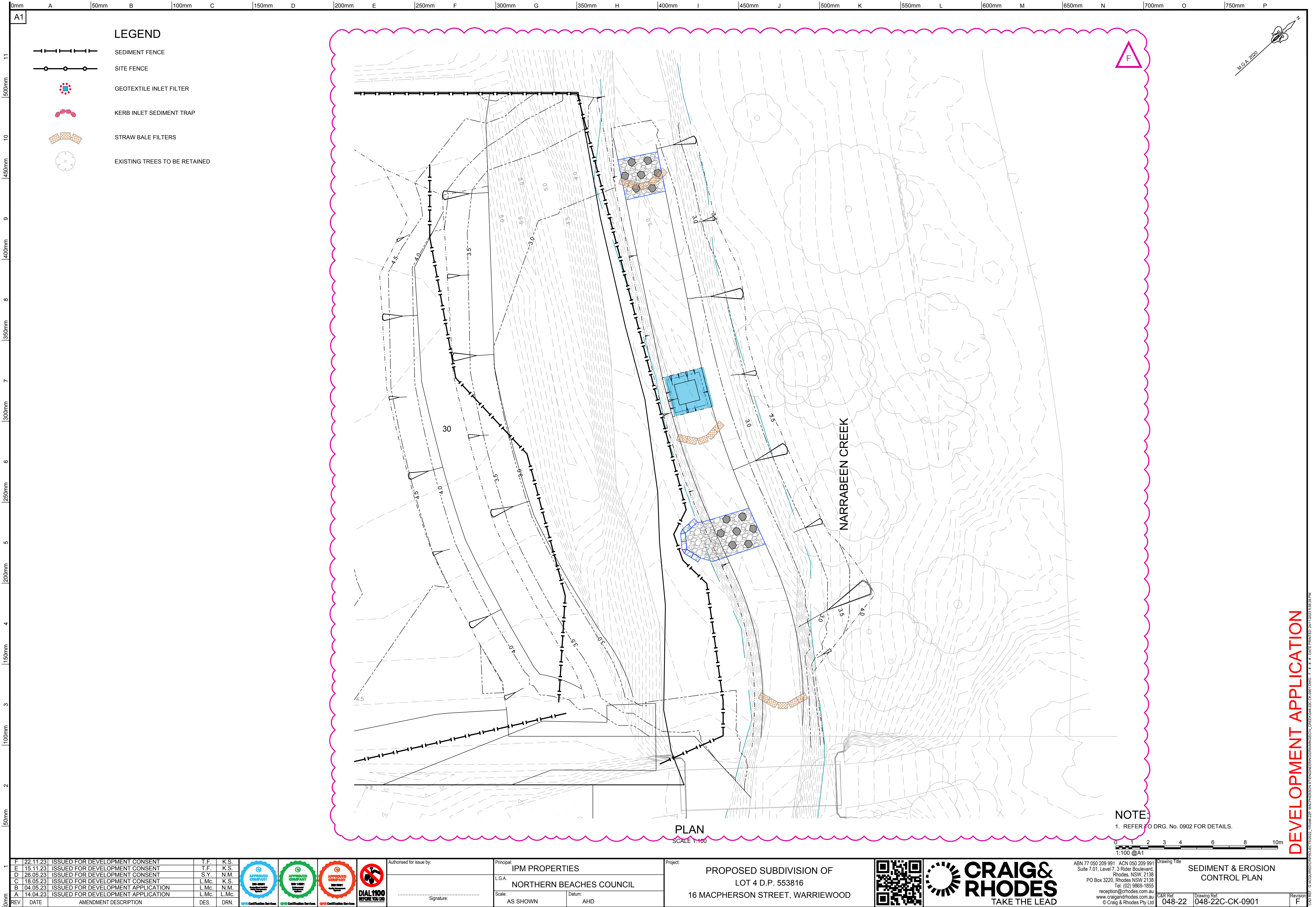
C&R Ref. 048-22

Drawing Ref. 048-22C-CK-0771

Revision

F

DEVELOPMENT APPLICATION



0mm

A

50mm

B

100mm

C

150mm

D

200mm

E

250mm

F

300mm

G

350mm

H

400mm

I

450mm

J

500mm

K

550mm

L

600mm

M

650mm

N

700mm

O

750mm

P

A1

11

500mm

10

450mm

9

400mm

8

350mm

7

300mm

6

250mm

5

200mm

4

150mm

3

100mm

2

50mm

1

1. COVER THE EXISTING SANDSTONE SUBGRADE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.

2. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.

3. ENSURE THE STRUCTURE IS AT LEAST 15 METERS LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METERS WIDE.

4. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT

SEDIMENT FENCE

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BE 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/SEC 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 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER 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.

KERB INLET SEDIMENT FILTER

1. REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION,DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.

3. INSTALL SEDIMENT TRAP IN ACCORDANCE WITH STANDARD DRAWING SUPPLIED WITH THE APPROVED PLAN, OR AS DIRECTED BY THE SITE SUPERVISOR.

4. ENSURE THE SEDIMENT TRAP IS CONSTRUCTED UP-SLOPE OF AN ON-GRADE KERB INLET. THE SEDIMENT TRAP MUST NOT SURROUND THE KERB INLET UNLESS SPECIFICALLY DIRECTED BY THE SITE SUPERVISOR.

5. ENSURE THE SEDIMENT TRAP FULLY ENCLOSES THE KERB INLET. USE APPROPRIATE SPACERS TO ENSURE THE SEDIMENT TRAP DOES NOT BLOCK THE SIDE-ENTRY INLET.

6. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE

DROP INLET FILTERS

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OF STRAW BALES.

2. FOLLOW STANDARD DRAWINGS OF STRAW BALE FILTERS AND SEDIMENT FENCES 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.

EARTHBANK (LOW FLOW)

1. BUILD WITH GRADIENTS BETWEEN 1% AND 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, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.

5. ENSURE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.

6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

STRAW BALE FILTERS

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DIAGRAM TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION.

2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN THE BALES. THE STRAWS IN EACH BALE ATE TO BE ALIGNED 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 THE 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 BALES ARE PLACED 1M TO 2m DOWNSLOPE FROM THE TOE.

6. ESTABLISH A MAINTENANCE PROGRAM THE ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STOCKPILE

1. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.

2. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK LARGE STONE OR FOREIGN MATERIAL.

3. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.

CONSTRUCTION SITE

"CATTLE GRID" 5m LONG (MIN.)

MIN. LENGTH 15 METERS

MIN. WIDTH 3 METERS

PROPERTY BOUNDARY

EXISTING ROAD BASE

DGB20 ROAD BASE OR 30mm AGGREGATE

200mm MIN.

300mm MIN.

GEOTEXTILE FABRIC DESIGNED TO PREVENT INTERMIXING OF SUBGRADE AND BASE MATERIALS AND TO MAINTAIN GOOD PROPERTIES OF THE SUBBASE LAYERS.

RUNOFF DIRECTED TO SEDIMENT TRAP/FENCE

STABILISED SITE ACCESS DETAIL

NTS

SANDBAG OVERLAP ONTO KERB

4m (MIN.)

1m (MAX.)

RUNOFF

GAP BETWEEN BAGS ACT AS SPILLWAY

KERB INLET SEDIMENT FILTER (ON GRADE)

NTS

FOR DROP INLET PITS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT.

SANDBAGS

WATERWAY

EXCAVATION

EARTHBANK

WOVEN GEOTEXTILE

RUNOFF WATER WITH SEDIMENT

STAR PICKET FITTED WITH SAFETY CAP

STAR PICKETS

1m (MAX.)

DROP INLET WITH GRATE

GEOTEXTILE EMBEDDED 150mm INTO GROUND

WIRE OR STEEL MESH (14 GAUGE X 150MM OPENINGS) WHERE GEOTEXTILE IS NOT SELF-SUPPORTING

DROP INLET FILTER

NTS

1.2m PICKET DRIVEN 600mm INTO GROUND

ANGLE FIRST STAKE TOWARDS LAID STRAW BALE

FLOW

STRAW BALES TIGHTLY ABUTTING TOGETHER

NYLON OR WIRE BINDINGS

1.5m TO 2.0m

DISTURBED AREA

2:1 SLOPE

BALES EMBEDDED 100mm INTO GROUND

SECTION A - A

STRAW BALE FILTERS

NTS

SEDIMENT FENCE - PLAN

NTS

1.5m STAR PICKETS MAX. 2.5m CENTRES

SELF SUPPORTING GEOTEXTILE

FLOW

ON SOIL, 150mm x 100mm TRENCH WITH COMPACTED BACKFILL AND ON ROCK, SET INTO SURFACE CONCRETE

20m MAX.

1.5m MAX.

STAR PICKETS AT MAX 2.5m SPACING

SEDIMENT FENCE - SECTION

NTS

DISTURBED AREA

1.5m STAIRS PICKETS AT MAX. 2.5m CENTRES

UNDISTURBED AREA

DIRECTION OF FLOW

SEDIMENT FENCE - DETAIL

NTS

EARTH BANK

NTS

CAN BE CONSTRUCTED WITH OR WITHOUT CHANNEL

GRADIENT OF DRAIN 1% TO 5%

DIRECTION OF FLOW

ALL BATTER GRADES 2:1 MAX.

300mm MIN.

2m MIN.

NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES

STOCKPILE

NTS

A

RETURN TURF STRIPS EVERY 10m TO PREVENT SCOUR

1000

400mm min.

TURF

KERB

GUTTER

ROADWAY

KERBSIDE TURF STRIP

NTS

F 12.11.23 ISSUED FOR DEVELOPMENT CONSENT T.F. K.S.

E 15.11.23 ISSUED FOR DEVELOPMENT CONSENT T.F. K.S.

D 26.05.23 ISSUED FOR DEVELOPMENT CONSENT S.Y. N.M.

C 18.05.23 ISSUED FOR DEVELOPMENT CONSENT L.Mc. K.S.

B 04.05.23 ISSUED FOR DEVELOPMENT APPLICATION L.Mc. N.M.

A 14.04.23 ISSUED FOR DEVELOPMENT APPLICATION L.Mc. L.Mc.

REV. DATE AMENDMENT DESCRIPTION DES. DRN.

APPROVED COMPANY

100 YEARS

100 YEARS

100 YEARS

APPROVED COMPANY

100 YEARS

100 YEARS

100 YEARS

APPROVED COMPANY

100 YEARS

100 YEARS

100 YEARS

100 YEARS

100 YEARS

100 YEARS

100 YEARS

Authorised for issue by:

Principal:

L.G.A.

Scale:

Datum:

Signature:

AHD

IPM PROPERTIES

NORTHERN BEACHES COUNCIL

PROPOSED SUBDIVISION OF LOT 4 D.P. 553816

16 MACPHERSON STREET, WARRIEWOOD

QR CODE

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Drawing Title

SEDIMENT & EROSION CONTROL DETAILS

C&R Ref.

048-22

Drawing Ref.

048-22C-CK-0902

Revision

F

DEVELOPMENT APPLICATION