

CORPORATION

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NORTHROP CONSULTING ENGINEERS PTY LTD

SOURCE: MAPS.GOOGLE.COM.AU

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Email sydney@northrop.com.au ABN 81 094 433 100

SHEET LIST TABLE SHEET NUMBER SHEET TITLE DA1.01 COVER SHEET AND LOCALITY PLAN DA2.01 CONCEPT SEDIMENT & EROSION CONTROL PLAN DA3.01 CONCEPT STORMWATER MANAGEMENT PLAN DA3.02 STORMWATER EASEMENT AND SITE DISCHARGE PLAN

DESIGN SUMMARY

ONSITE DETENTION TANK DETAIL

STORMWATER CALCULATIONS

SITE AREA = 1811m² PSD + 150l/s /ha =27.16l/s

-DRAINS VIA EASEMENT OSD STORAGE UP TO 100yr ARI PROPOSED

IMPERVIOUS AREA =1265m²
USING DRAINS PROGRAM

OSD VOLUME CALCULATED =88m² TOP WATER LEVEL =RL 29.05

BELOW GROUND TANK PROPOSED UNDER CARPARK AREA

STORMWATER QUALITY CALCULATIONS
ALL CARPARK AREAS ARE TREATED THROUGH ENVIROPOD INSERTS WITHIN STORMWATER PITS AND A STORMWATER 360 PROVIDED OUTPUTS FROM MUSIC MODEL AS FOLLOWS

TREATMENT NODES:

• RAINWATER RE-USE TANK

ON-SITE DETENTION TANKSTORMWATER 360 ENVIROPODS

STORMWATER 360 ENVIROPODS
 STORMWATER 360 'STORMFILTER' CARTRIDGE

• VEGETATIVE SWALE

TREATMENT STANDARDS:

	POLLUTANT	REDUCTION STANDARDS		
	GROSS POLLUTANTS	100%		
	TOTAL SUSPENDED SOLIDS	93.6%		
	TOTAL PHOSPHORUS	77.6%		
	TOTAL NITROGEN	46.5%		

MUSIC MODEL PARAMETERS IN ACCORDANCE WITH THE DRAFT NSW MUSIC MODELLING GUIDELINES REF: R.B17048.001.01 DATED AUGUST 2010.

GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DETAIL SURVEY DATA WAS SUPPLIED BY DENNIS SMITH SURVEYS DATED 15.01.09

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASABILITY. ALL MEASURES WILL BE SUBJECT TO DETAIL DESIGN AT THE CONSTRUCTION CERTIFICATE STAGE AND MAY BE SUBJECT TO VARIATION PROVIDED THAT THE DESIGN INTENT IS MAINTAINED.

STORMWATER DRAINAGE

1. ALL DRAINAGE LINES SHALL BE UPVC (CLASS SN4) SEWER GRADE

DRAINAGE PIPE, U.N.O.

2. ALL DRAINAGE LINES SHALL BE LAID AT 1% MIN. FALL, UNO.

3. ALL LEVELS ARE AUSTRALIAN HEIGHT DATUM (AHD).

4. ALL DOWNPIPES GUTTERS TO BE DESIGNED IN ACCORDANCE WITH AS/NZS 3500.3.2 - 2003 'STORMWATER' DRAINAGE.

5. THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3.2-2003 'STORMWATER' DRAINAGE.

6. ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

7. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

8. ALL GRATES TO BE GALVANISED STEEL WITH HINGES AND CHILD PROOF LOCK.

RAINWATER RE-USE

1. PROVIDE RAINWATER RE-USE SYSTEM TO SUPPLY WATER FOR TOILET FLUSHING.

GUTTER GUARD TO BE INSTALLED ON ALL EAVES GUTTERS. A PERMANENT SIGN IS TO BE LOCATED IN THE VICINITY OF THE TANK

STATING THE WATER IS "NON POTABLE WATER" WITH APPROPRIATE HAZARD IDENTIFICATION.

4. PIPEWORK USED FOR RAINWATER SERVICES SHALL BE COLOURED

LILAC IN ACCORDANCE WITH AS1345.

ALL VALVES AND APERTURES SHALL BE CLEARLY AND PERMANENTLY LABELLED WITH SAFETY SIGNS TO COMPLY WITH AS1319.

6. RAINWATER TANK RETICULATION SYSTEM AND MAINS WATER BYPASS ARRANGEMENT TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3500.1.2-2003 AND THE NSW CODE OF PRACTICE: PLUMBING

7. A FIRST FLUSH FILTRATION DEVICE IS TO BE PROVIDED AT RAINWATER TANK.

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DRAWING SHEET SIZE = A1

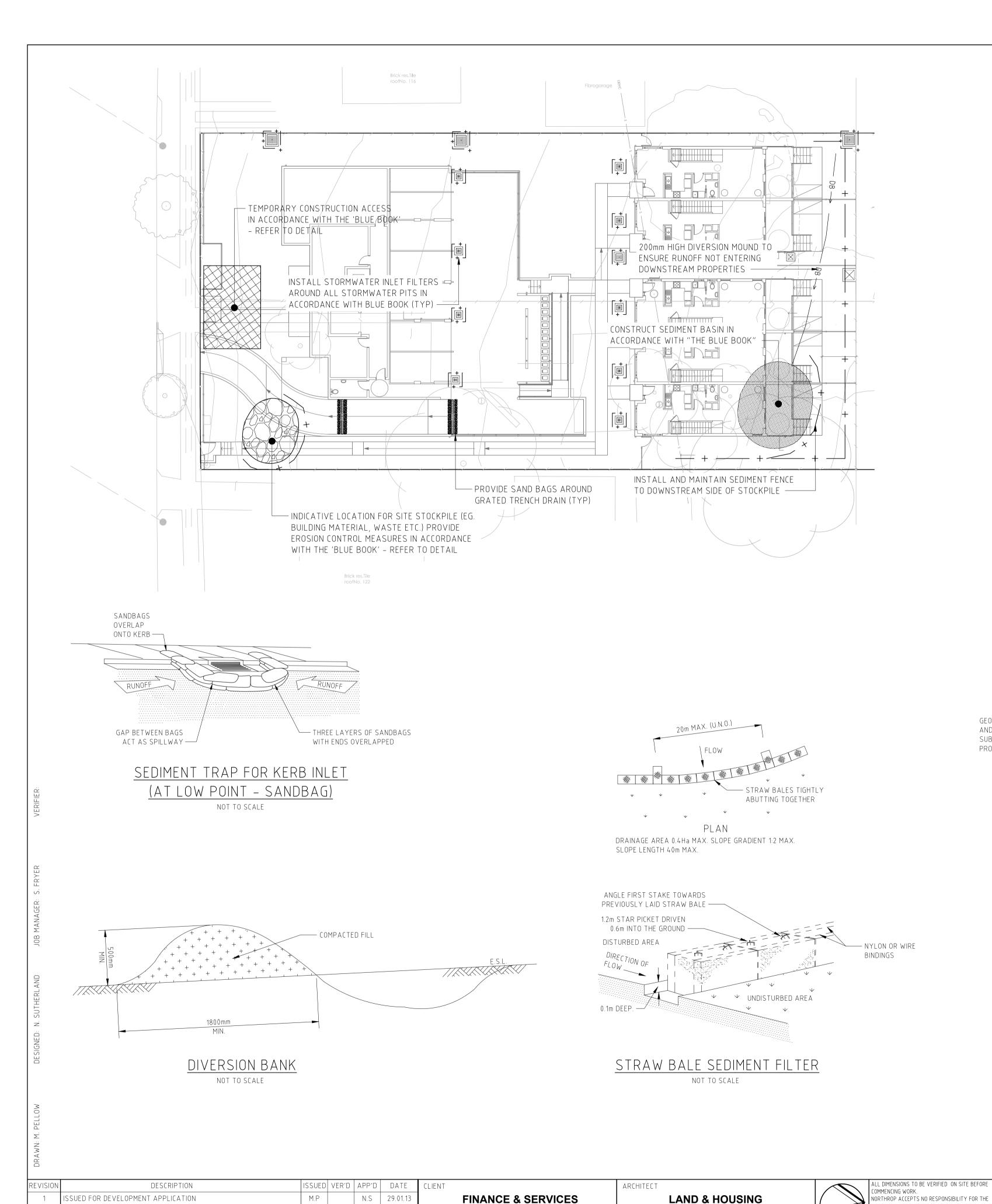
ISSUED VER'D APP'D DATE DIMENSIONS TO BE VERIFIED ON SITE BEFORE DESCRIPTION DRAWING TITLE ARCHITECT SUED FOR DEVELOPMENT APPLICATION N.S 29.01.13 **FINANCE & SERVICES** LAND & HOUSING RTHROP ACCEPTS NO RESPONSIBILITY FOR THE 118 - 120 HANNANS ROAD, **CIVIL DESIGN** 120836 SABILITY, COMPLETENESS OR SCALE OF DRAWINGS LAND & HOUSING CORPORATION NARWEE ANSEERRED ELECTRONICALLY

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LOCALITY PLAN

DA



AMENDED TO SUIT NEW ARCHITECTS LAYOUT

S.K

N.S 07.04.14

LAND & HOUSING

CORPORATION

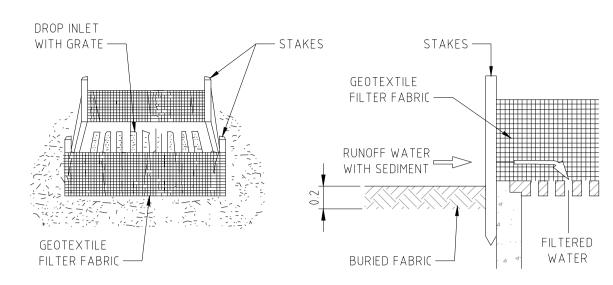
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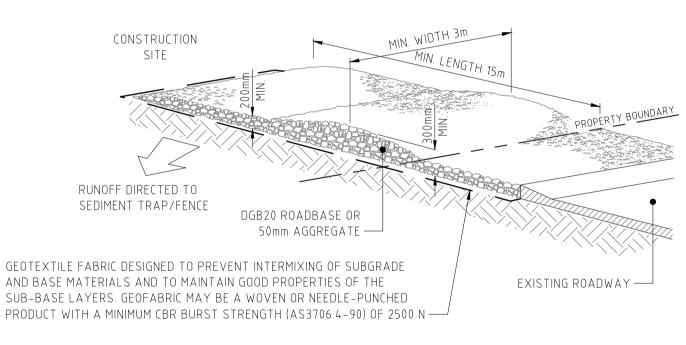
GEOTEXTILE INLET FILTER DROP INLET SEDIMENT TRAP

NOT TO SCALE

NOTES:

FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.

- 2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- 3. DRIVE 1.0m LONG STAR PICKETS INTO GROUND AT THE FOUR CORNERS OF PIT WALLS. 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.

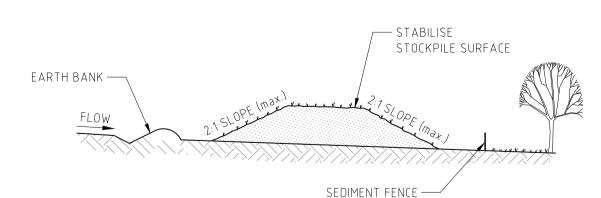


TEMPORARY CONSTRUCTION ENTRY/EXIT

NOT TO SC

<u>NOTES:</u>

- 1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
- COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
 CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE
- CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
 ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m 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.



STOCKPILE NOT TO SCALE

NOTES:

ABILITY, COMPLETENESS OR SCALE OF DRAWINGS

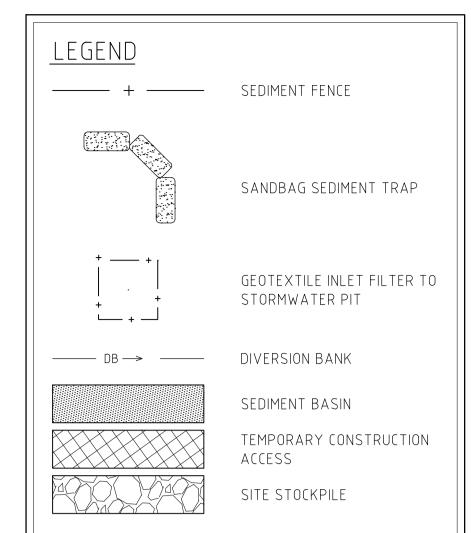
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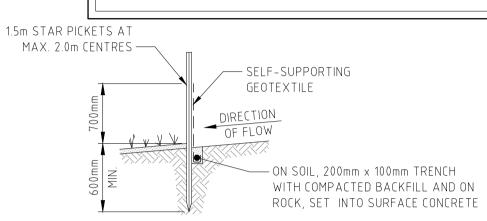
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ANSEFRRED ELECTRONICALLY

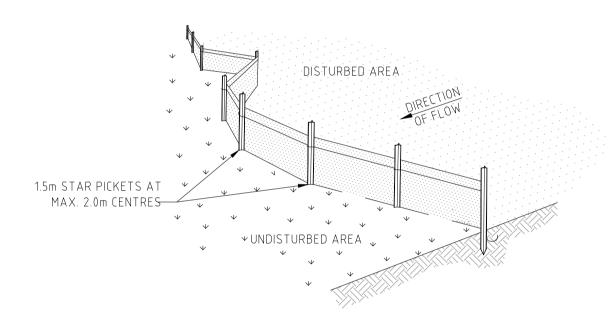
- PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION,
- CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
- CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
 WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT. 4. WHERE THEY ARE TO 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.

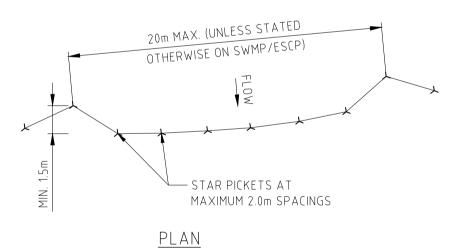
 5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.











SEDIMENT FENCE

NOTES:

<u>LS:</u>

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

STORM EVENT, USUALLY THE 10-YEAR EVENT.

CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR

SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT

WATER FLOW IF CONCENTRATED AT ONE POINT TO 50L/s IN THE DESIGN

- THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.

 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.0m 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.

 JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

 BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT
- 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

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DRAWING TITLE

CIVIL DESIGN

12

120836

DRAWING NUMBER REVISION

DRAWING SHEET SIZE = A1

NORTHROP

Sydney
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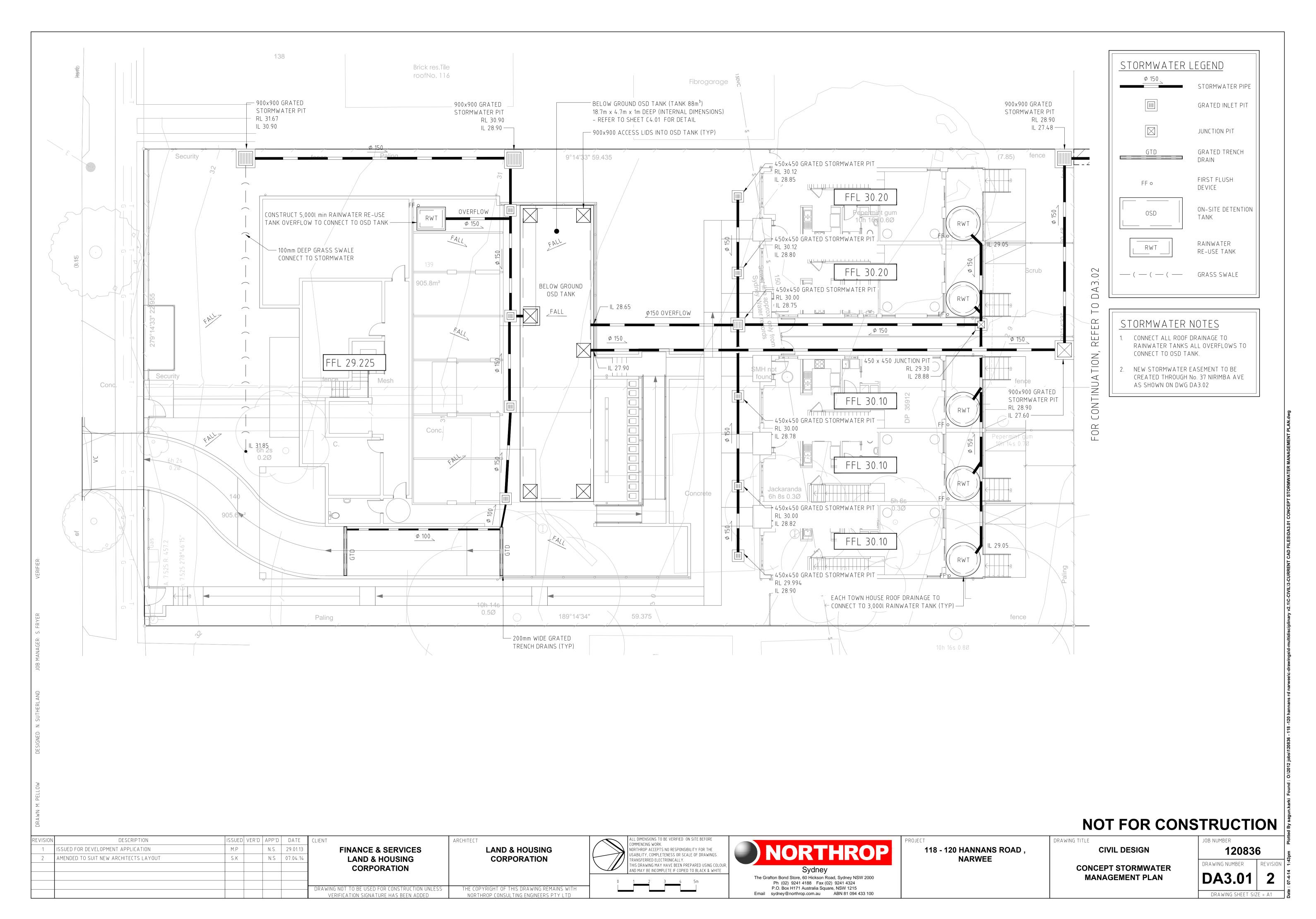
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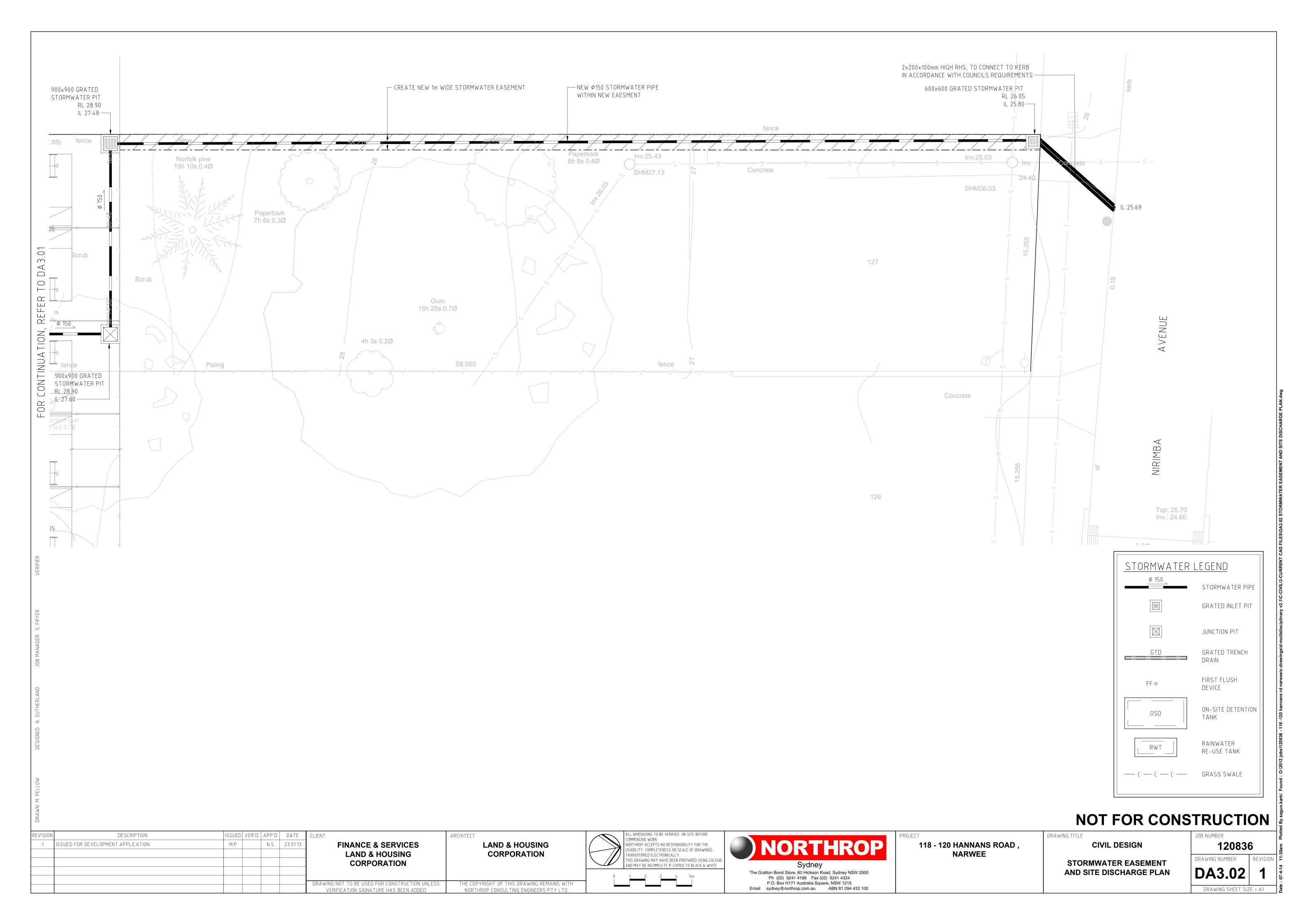
118 - 120 HANNANS ROAD , NARWEE

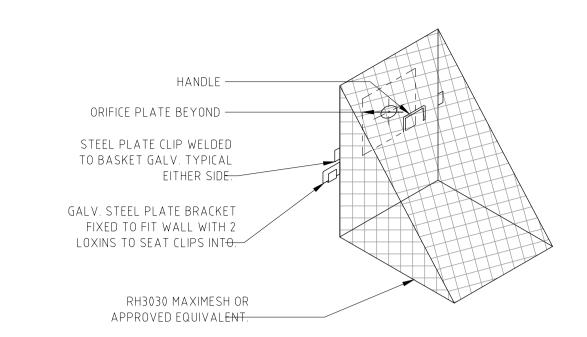
NARWEE

CONCEPT SEDIMENT &

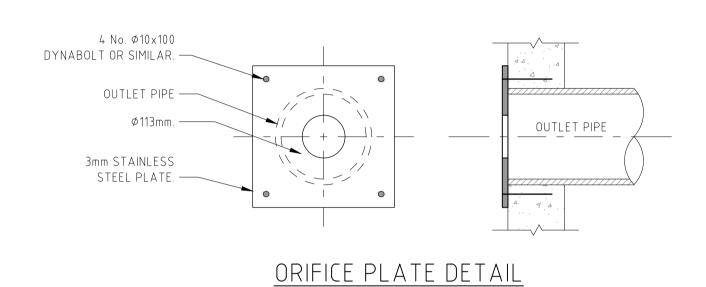
EROSION CONTROL PLAN



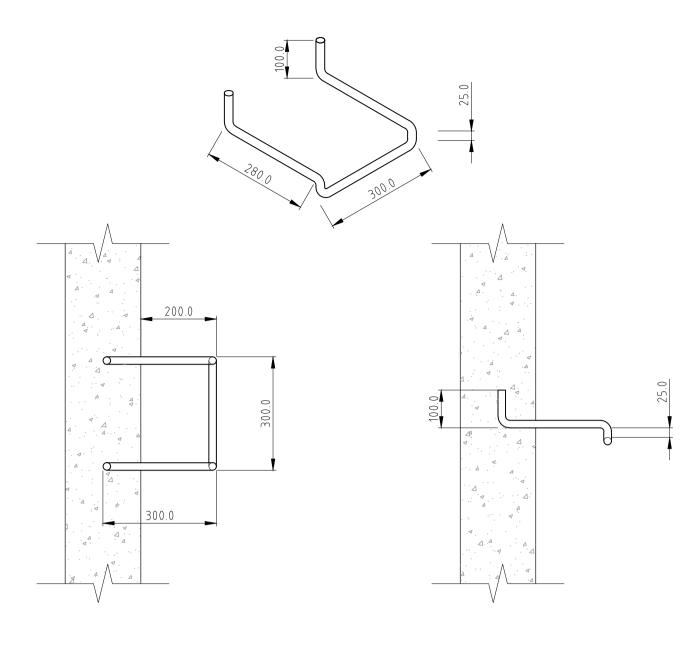




TRASH SCREEN DETAIL NOT TO SCALE ST7.05

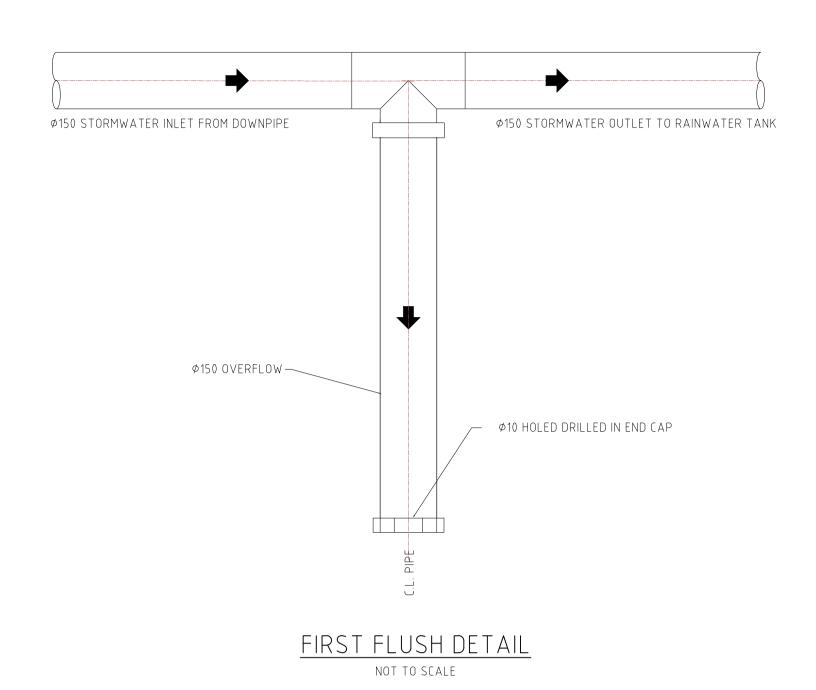


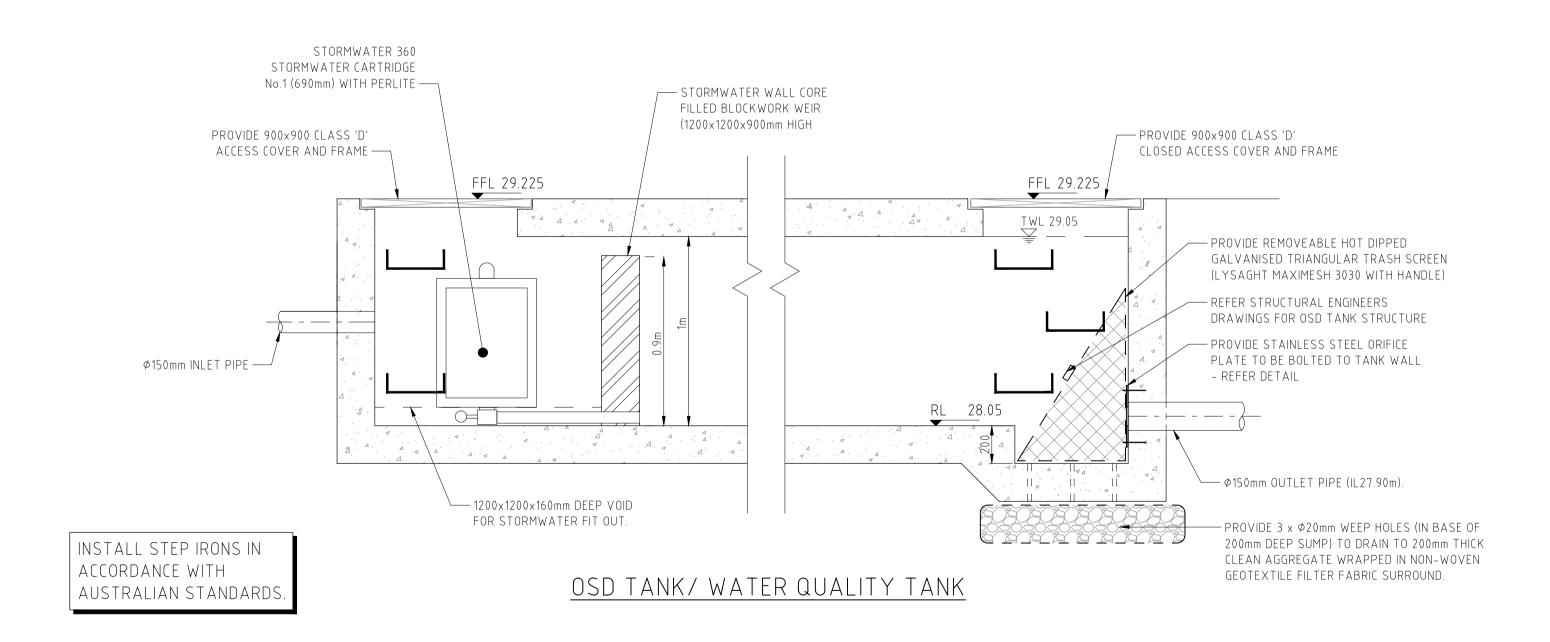
NOT TO SCALE



STEP IRON DETAIL

STEP IRON OF 20mm GALVANIZED STEEL MADE TO SHAPE AND DIMENSIONS SHOWN AND PLACED AT 300 CENTRES AND STAGGERED HORIZONTALLY FOR PITS DEEPER THAN 1.0m.





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REVISION	DESCRIPTION	ISSUED	VER'D APP'D DATE CLIENT		ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE		PROJECT	DRAWING TITLE	JOB NUMBER	
1	ISSUED FOR DEVELOPMENT APPLICATION	M.P	N.S 29.01.13	FINANCE & SERVICES	LAND & HOUSING CORPORATION	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	NORTHROP	118 - 120 HANNANS ROAD , NARWEE	CIVIL DESIGN	120836	
2	AMENDED TO SUIT NEW ARCHITECTS LAYOUT	S.K	N.S 07.04.14 LAN	LAND & HOUSING CORPORATION					ONSITE DETENTION TANK SECTION AND DETAILS		T. 55, 410, 61
										DRAWING NUMBER	REVISION
						400 000 200 400 500	The Grafton Bond Store, 60 Hickson Road, Sydney NSW 2000			DA4.01	2
			DRAWI	CORPORATION THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE O 100 200 300 400 500mm O 100 200 300 400 500mm O 100 200 300 400 500mm Ph (02) 9241 4188 Fax (02) 9241 4324 P.O. Box H171 Australia Square, NSW 1215							
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