

ANGLICAN MINISTRY CENTRE

30 HEATH ROAD, LEPPINGTON

MASTERPLAN



SOURCE : NEARMAP.COM.AU (©2016)

DRAWING SCHEDULE

DRG No.	DRAWING TITLE
DA1.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN
DA1.11	GENERAL ARRANGEMENT PLAN
DA2.01	CONCEPT SEDIMENT AND EROSION CONTROL PLAN - STAGE 1 & 2
DA2.02	CONCEPT SEDIMENT AND EROSION CONTROL PLAN - STAGE 3
DA2.11	SEDIMENT AND EROSION CONTROL DETAILS
DA2.21	BULK EARTHWORKS CUT TO FILL PLAN
DA3.01	CONCEPT STORMWATER MANAGEMENT PLAN STAGE 1&2 - SHEET 1
DA3.02	CONCEPT STORMWATER MANAGEMENT PLAN STAGE 1&2 - SHEET 2
DA3.11	CONCEPT STORMWATER MANAGEMENT PLAN STAGE 3 - SHEET 1
DA3.12	CONCEPT STORMWATER MANAGEMENT PLAN STAGE 3 - SHEET 2
DA4.01	CATCHMENT PLAN - STAGE 3
DA5.01	TYPICAL DETAILS

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 REALSERVE, DRAWING 52995AK DATED 25-06-2014 AND VINCE MORGAN SURVEYORS, DRAWING 19520T DATED 03.03.15.

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.

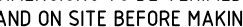
NOT FOR CONSTRUCTION

VERIFIER:

JOB MANAGER: S.NAJWOSKI

DESIGNED: C.SCHULZ

DRAWN: D.TENHAVE

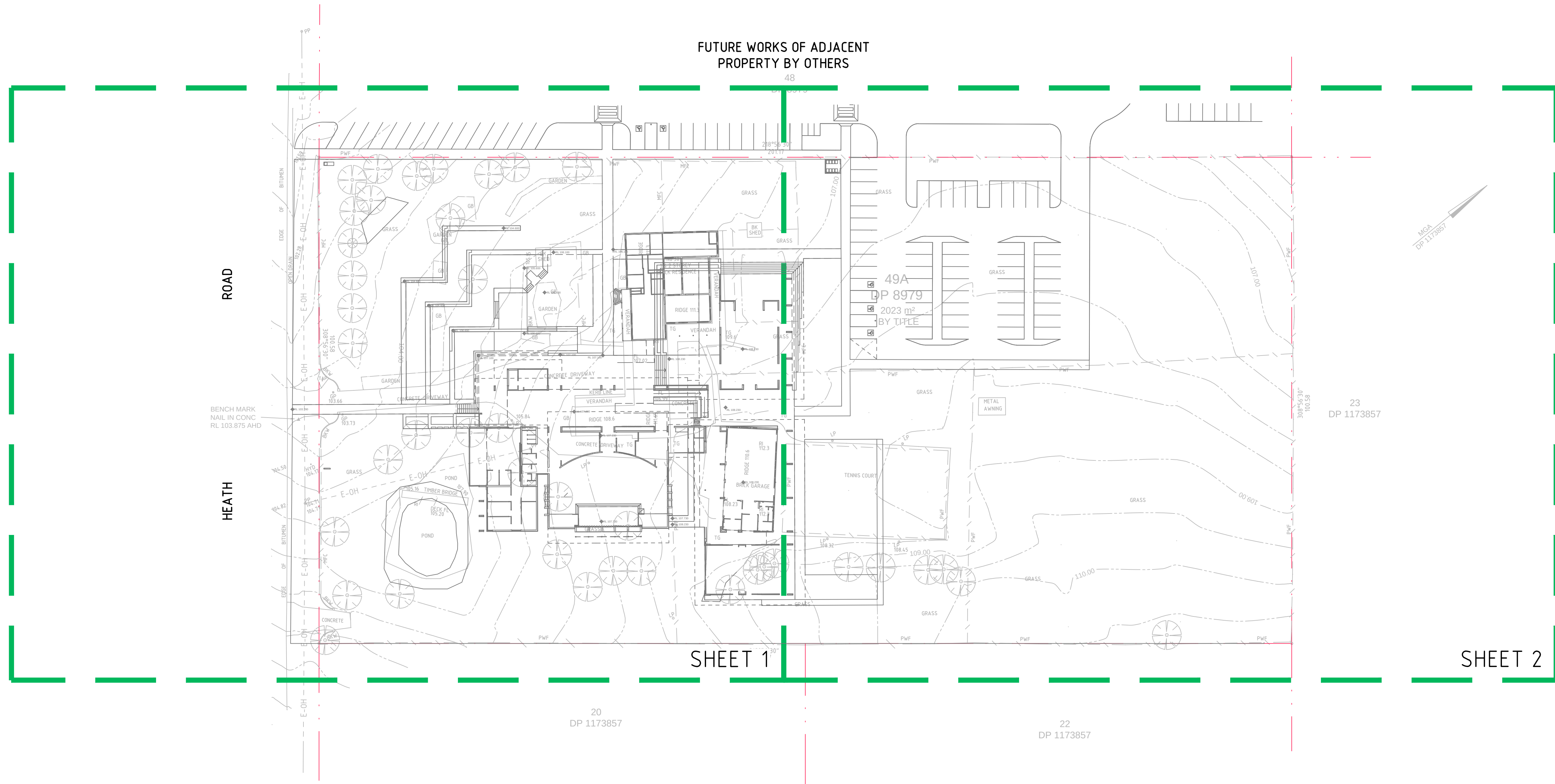
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2	ISSUED FOR DEVELOPMENT APPLICATION	D.T		S.N	21.11.16									DRAWING NUMBER	REVISION
3	MINOR CAR PARK AMENDMENTS	D.T		S.N	14.12.16									DA1.01	5
4	COUNCIL COMMENTS AMENDMENTS	D.T		S.N	22.02.17									DRAWING SHEET SIZE = A1	
5	UPDATED ARCHITECTURALS	D.T		S.N	06.03.17										
						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.							

VERIFIER:

JOB MANAGER: S.NAUWOSKI

DESIGNED: C.SCHULZ

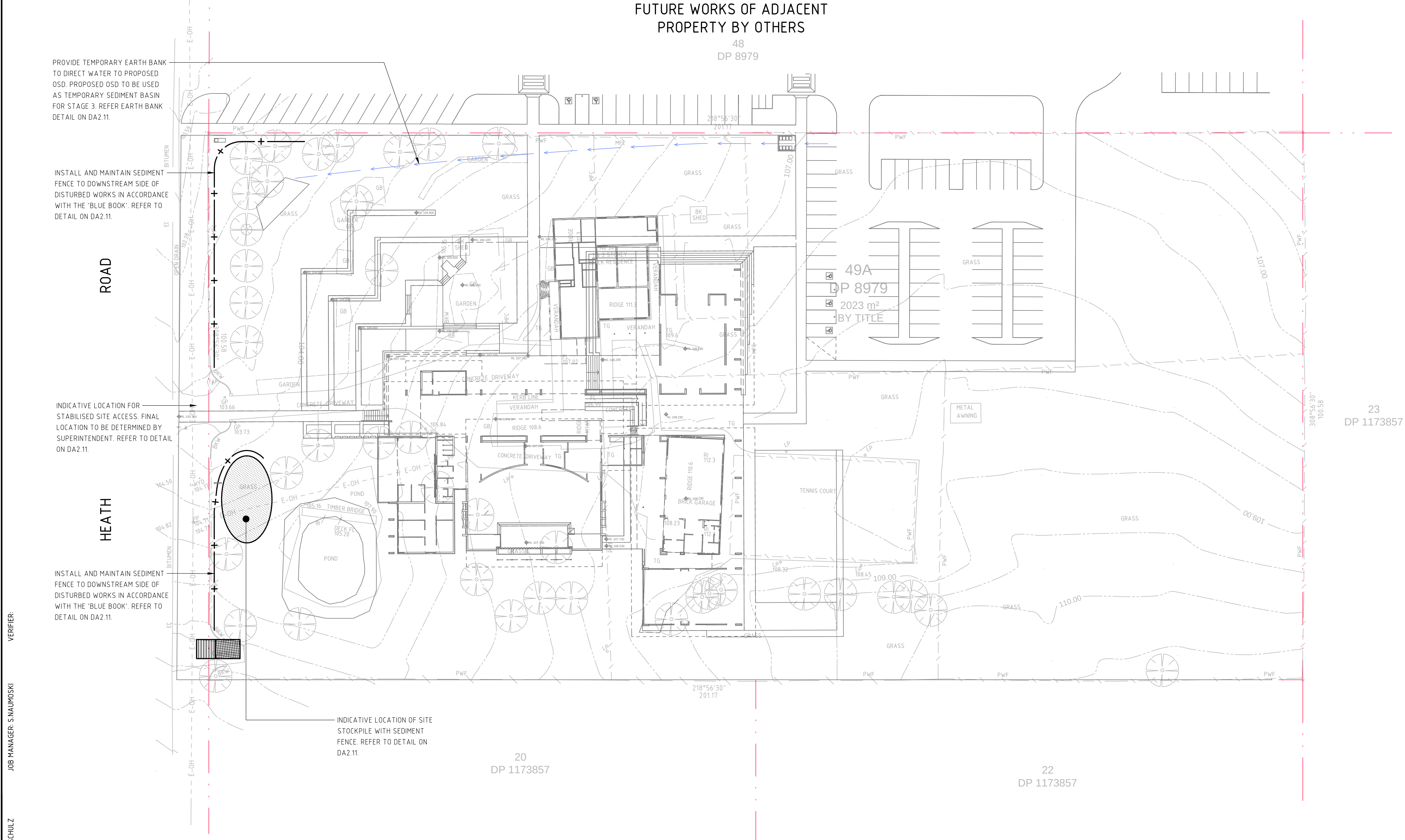
DRAWN: D.TENHAVE



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												DA1.11	5		
														DRAWING SHEET SIZE = A1	

VERIFIER: C.SCHULZ
JOB MANAGER: S.NAUWOSKI
DESIGNED: C.SCHULZ
DRAWN: D.TENHAVE



LEGEND

BOUNDARY LINE

EXISTING CONTOURS

EARTH BANK DIVERSION

SEDIMENT FENCE

STABILISED SITE ACCESS

STOCKPILE

SEDIMENT BASIN

NOT FOR CONSTRUCTION

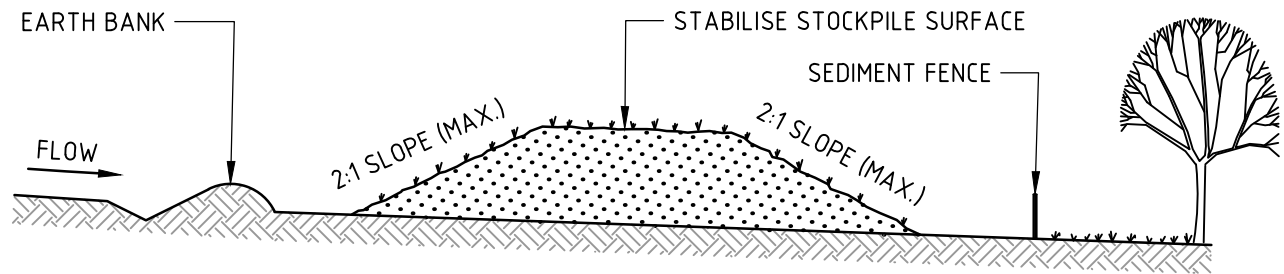
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4	UPDATED ARCHITECTURALS	D.T		S.N	06.03.17						DA2.02
											4
											DRAWING SHEET SIZE = A1

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

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SCALE 1:400@A1

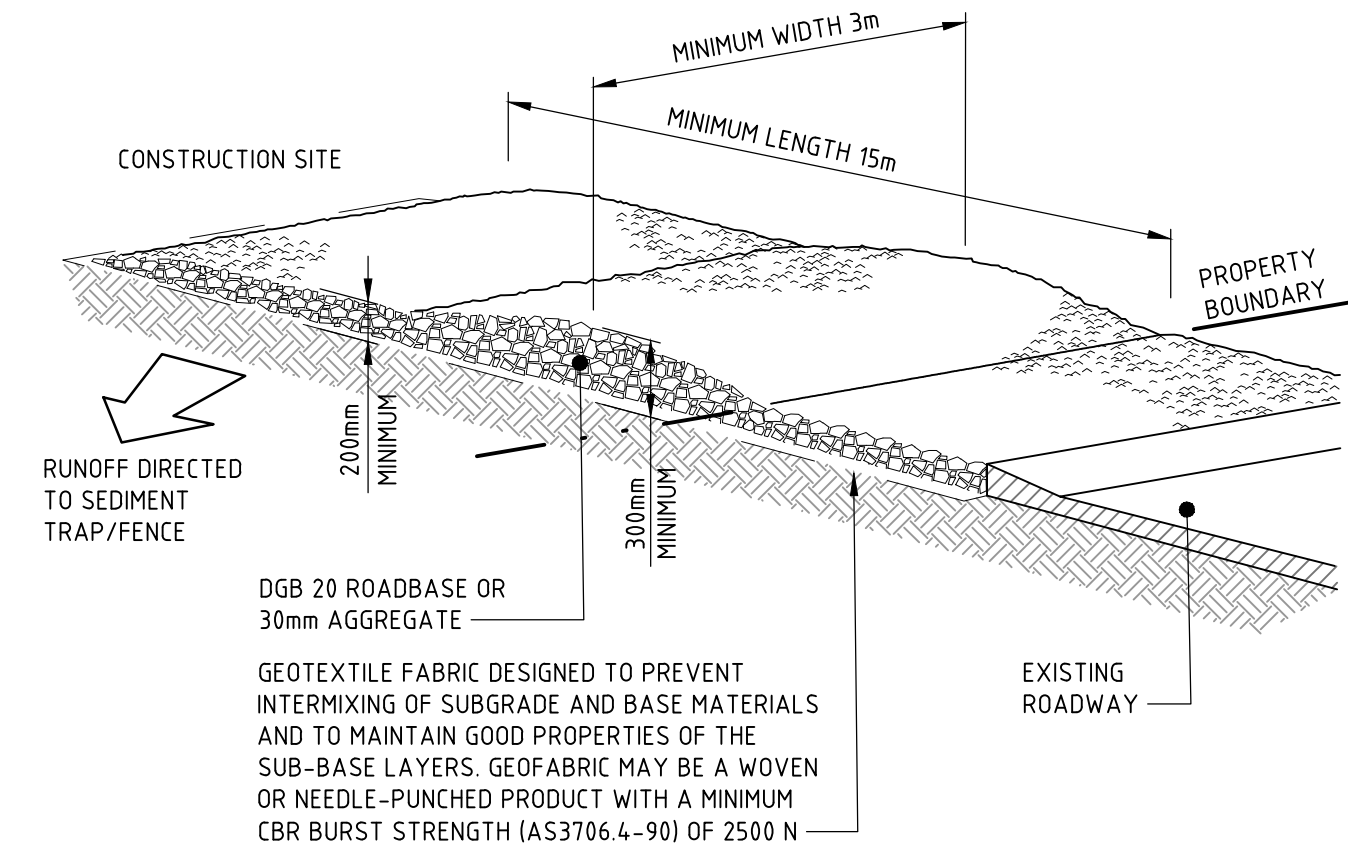
NORTHROP
Wollongong
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Email southcoast@northrop.com.au ABN 61 094 433 100



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.

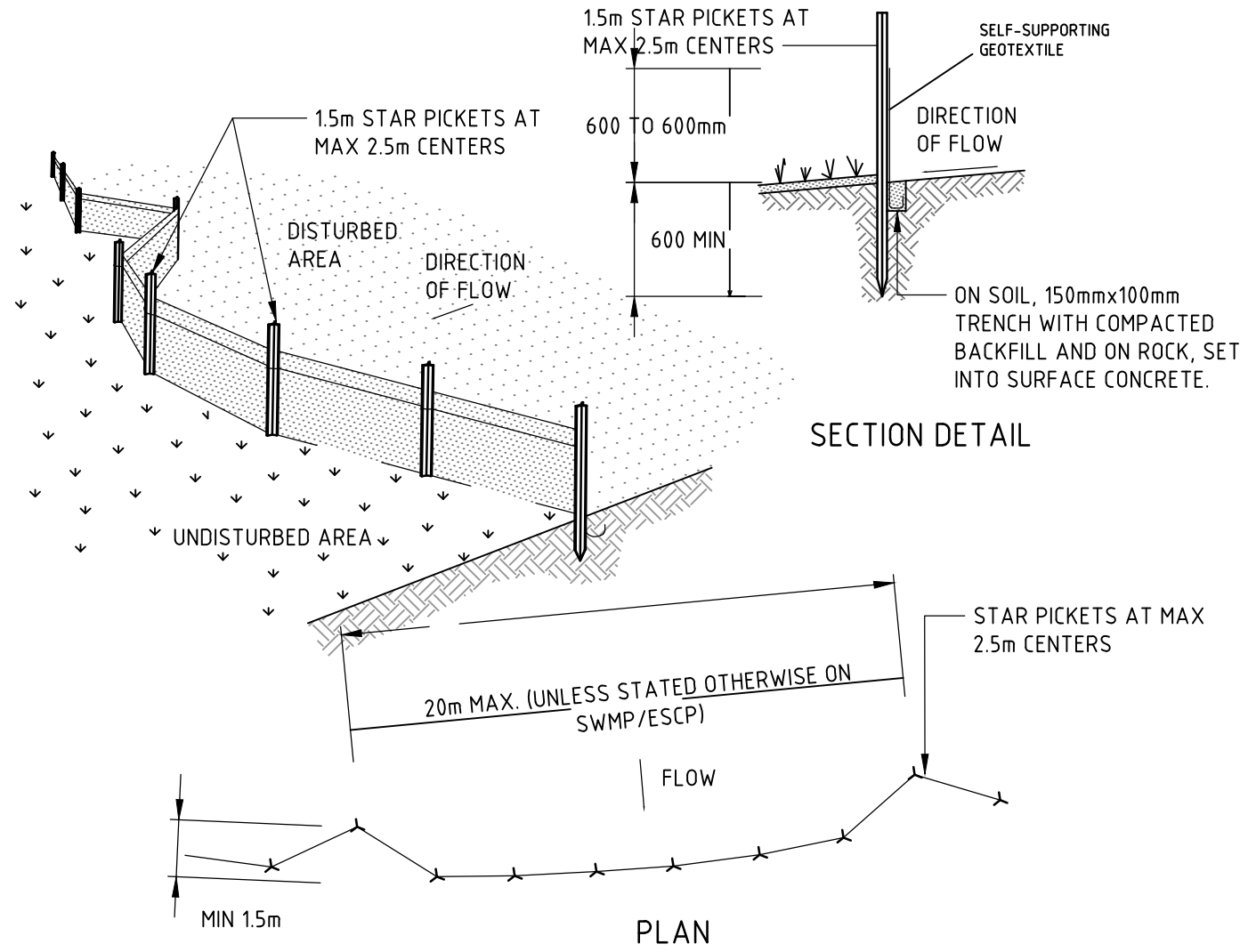
STOCKPILES (SD 4-1)



CONSTRUCTION NOTES

1. 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.

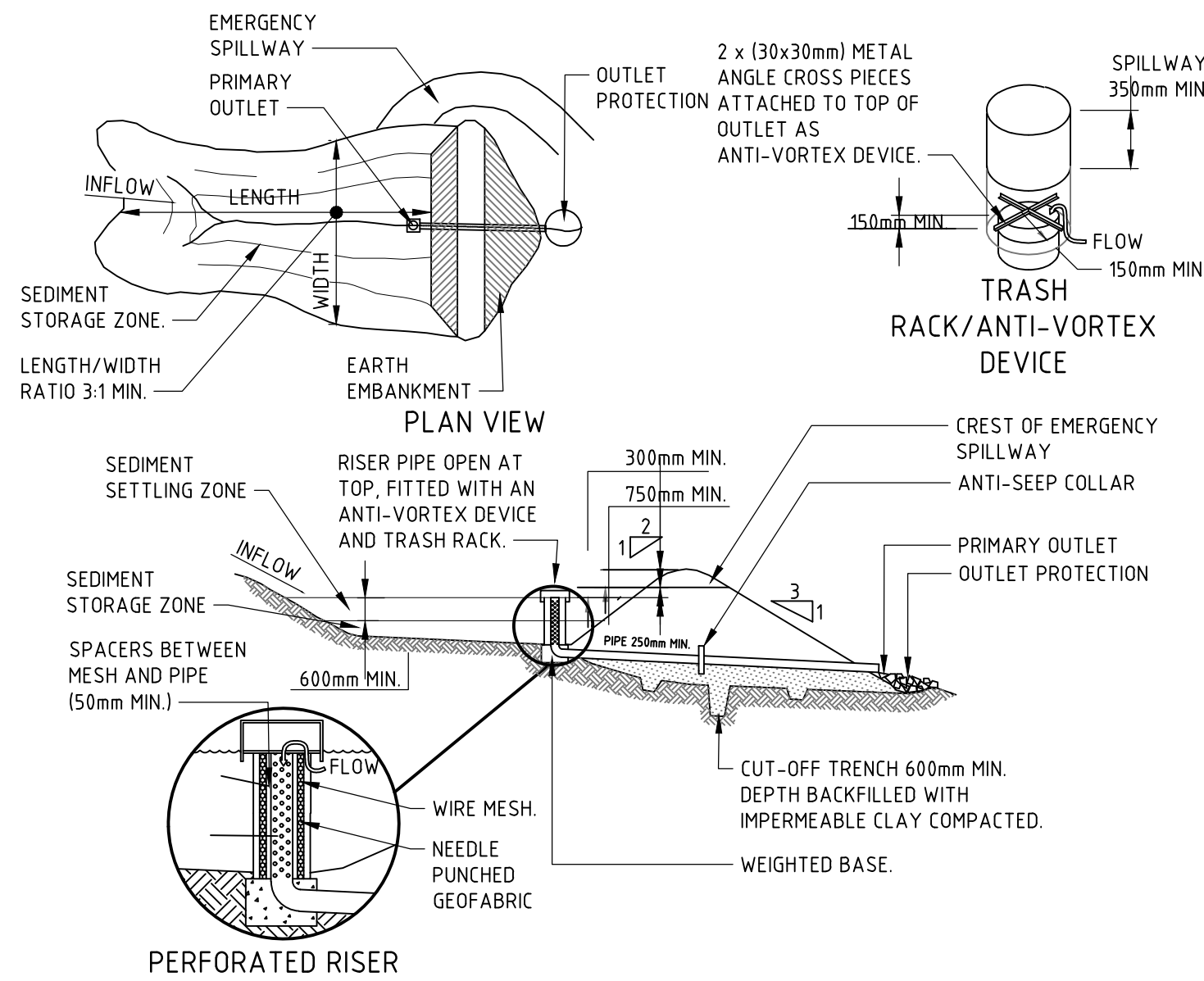
STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

1. 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.

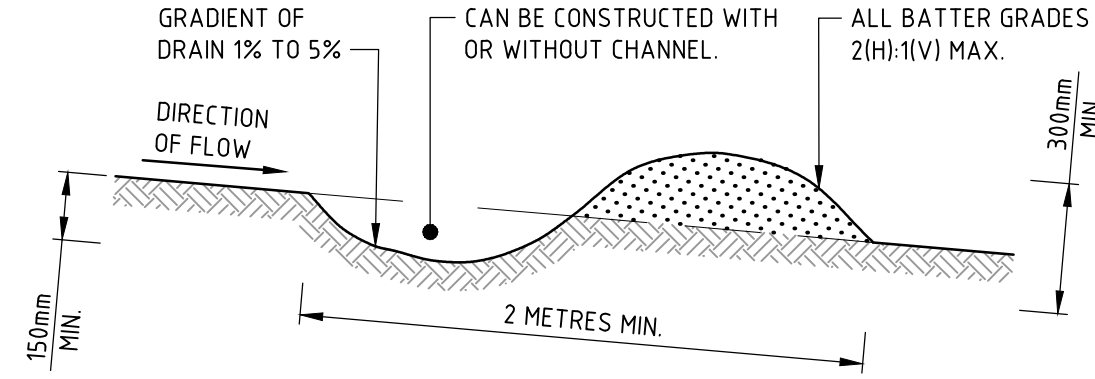
SEDIMENT FENCE (SD 6-8)



CONSTRUCTION NOTES

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. FORM A CUT OFF TRENCH UNDER THE CENTRELIN OF THE EMBANKMENT 600mm DEEP AND 1200mm WIDE, EXTENDING TO A POINT ON THE WATERCOURSE WALL ABOVE THE RISER SILL LEVEL.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL ACCORDING TO THE SWMP THAT IS FREE FROM ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND THE COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. INSTALL THE PIPE OUTLET WITH SEEPAGE COLLARS AS SPECIFIED IN THE SWMP AND STANDARD DRAWING 6-3B.
8. FORM BATTER GRADES AT 2(H):1(V) UPSTREAM AND 3(H):1(V) DOWNSTREAM OR AS SPECIFIED IN THE SWMP.

(APPLIES TO 'TYPE C' SOILS ONLY)
EARTH BASIN - DRY (SD 6-3)



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)

VERIFIER:

JOB MANAGER: S.NAUMOSKI

DESIGNED: C.SCHULZ

DRAWN: D.TENHAVE

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3	COUNCIL COMMENTS AMENDMENTS	D.T		S.N	22.02.17

CLIENT

 ANGLICAN CHURCH
PROPERTY TRUST
DIOCESE OF SYDNEY

PROJECT MANAGER

 midson

ARCHITECT

 NBRS+PARTNERS

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 NORTHROP

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

PROJECT

ANGLICAN MINISTRY CENTRE
30 HEATH ROAD, LEPPINGTON
MASTERPLAN

DRAWING TITLE

SEDIMENT AND EROSION
CONTROL DETAILS

JOB NUMBER

161511

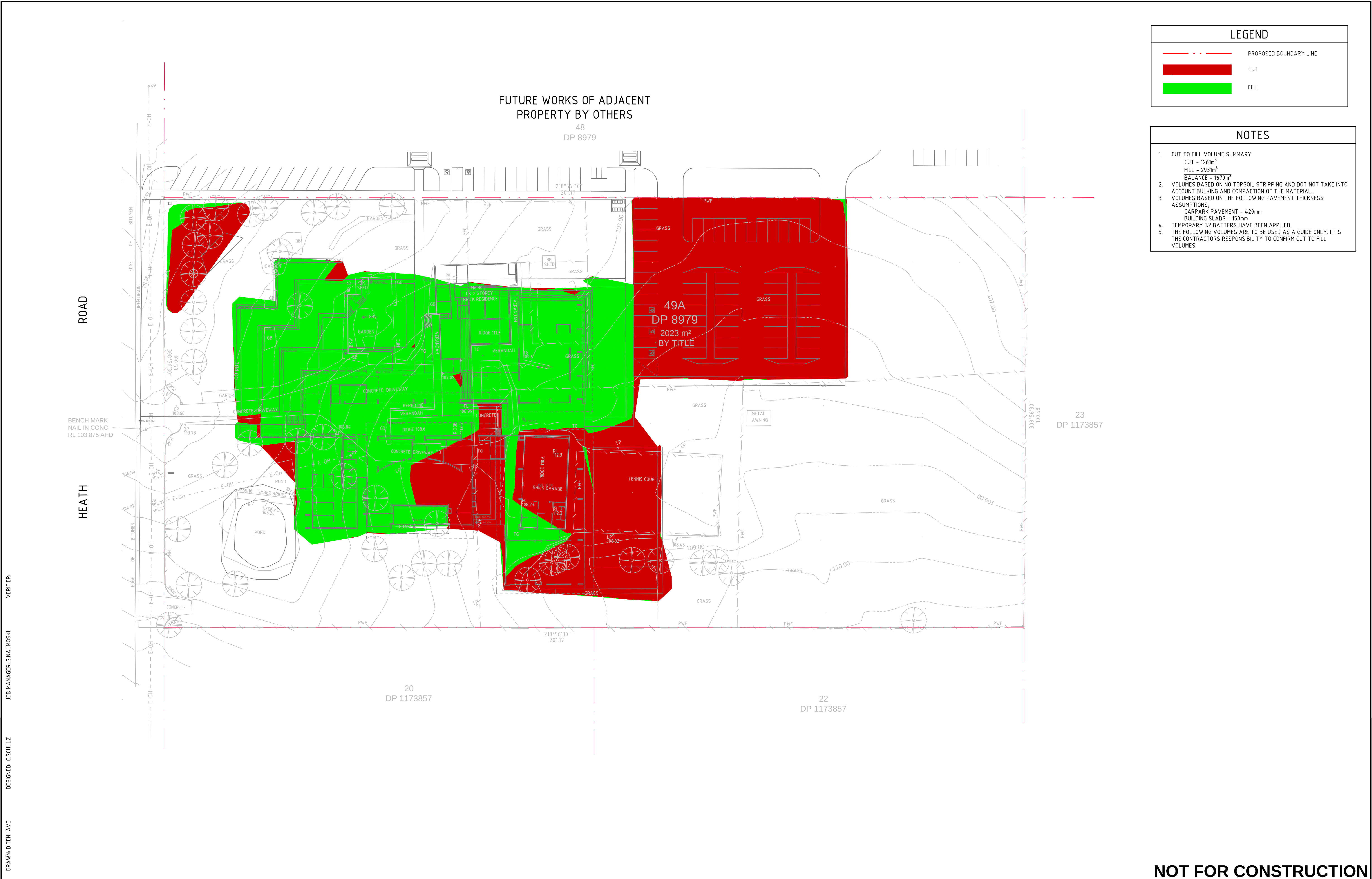
DRAWING NUMBER

DA2.11

REVISION

3

DRAWING SHEET SIZE = A1



LEGEND

PROPOSED BOUNDARY LINE

CUT

FILL

- NOTES
1. CUT TO FILL VOLUME SUMMARY

CUT - 1261m³

FILL - 2931m³

BALANCE - 1670m³

2. VOLUMES BASED ON NO TOPSOIL STRIPPING AND DOT NOT TAKE INTO ACCOUNT BULKING AND COMPACTION OF THE MATERIAL.

3. VOLUMES BASED ON THE FOLLOWING PAVEMENT THICKNESS ASSUMPTIONS:

CARPARK PAVEMENT - 420mm

BUILDING SLABS - 150mm

4. TEMPORARY 1:2 BATTERS HAVE BEEN APPLIED.

5. THE FOLLOWING VOLUMES ARE TO BE USED AS A GUIDE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM CUT TO FILL VOLUMES

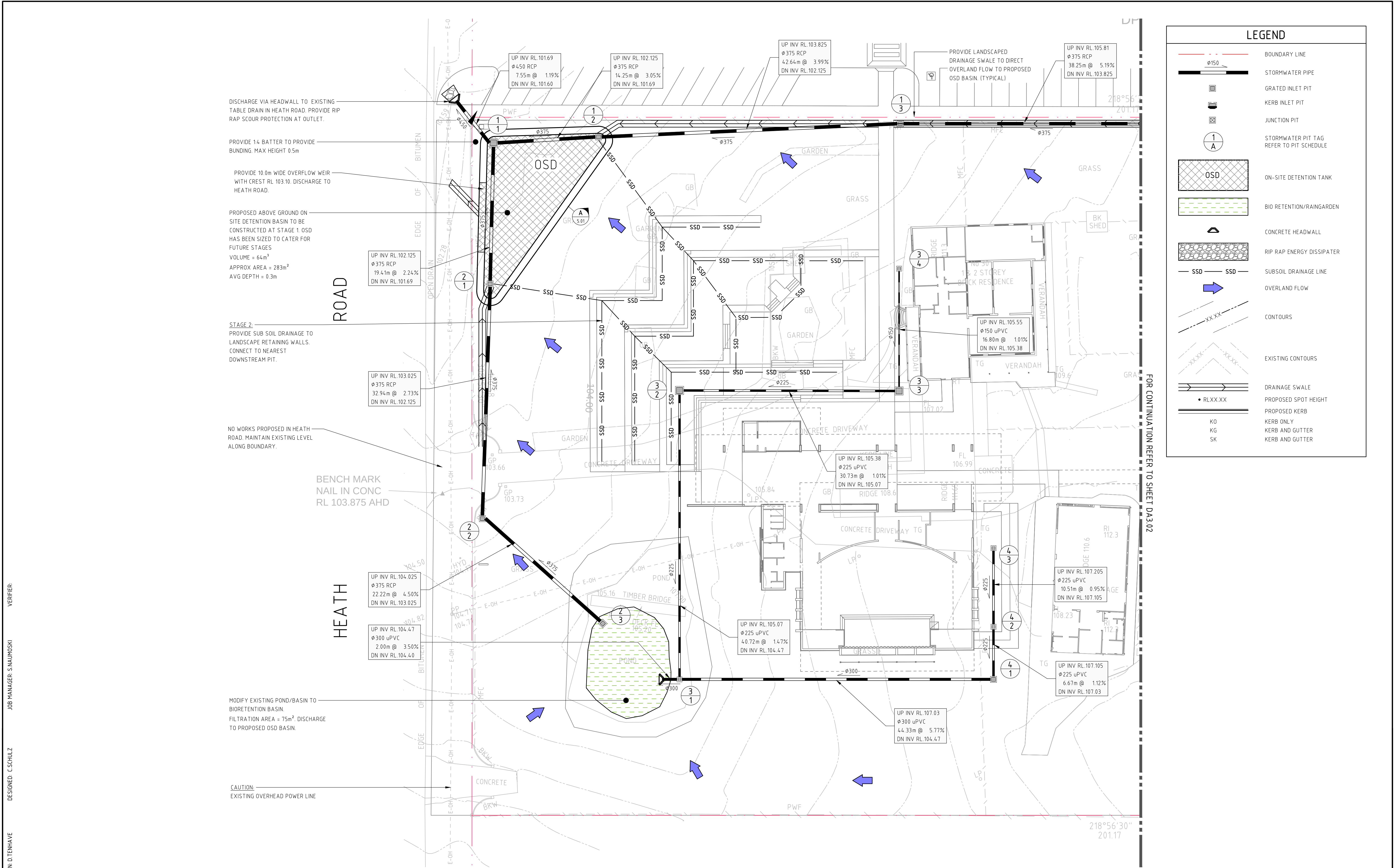
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SCALE 1:250@A1

0 2 4 6 8 10 12m

NORTHROP

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PROJECT

ANGELICAN MINISTRY CENTRE
30 HEATH ROAD, LEPPINGTON
MASTERPLAN

DRAWING TITLE

CONCEPT STORMWATER
MANAGEMENT PLAN
STAGE 1 & STAGE 2
SHEET 1

JOB NUMBER

161511

DRAWING NUMBER

DA3.01

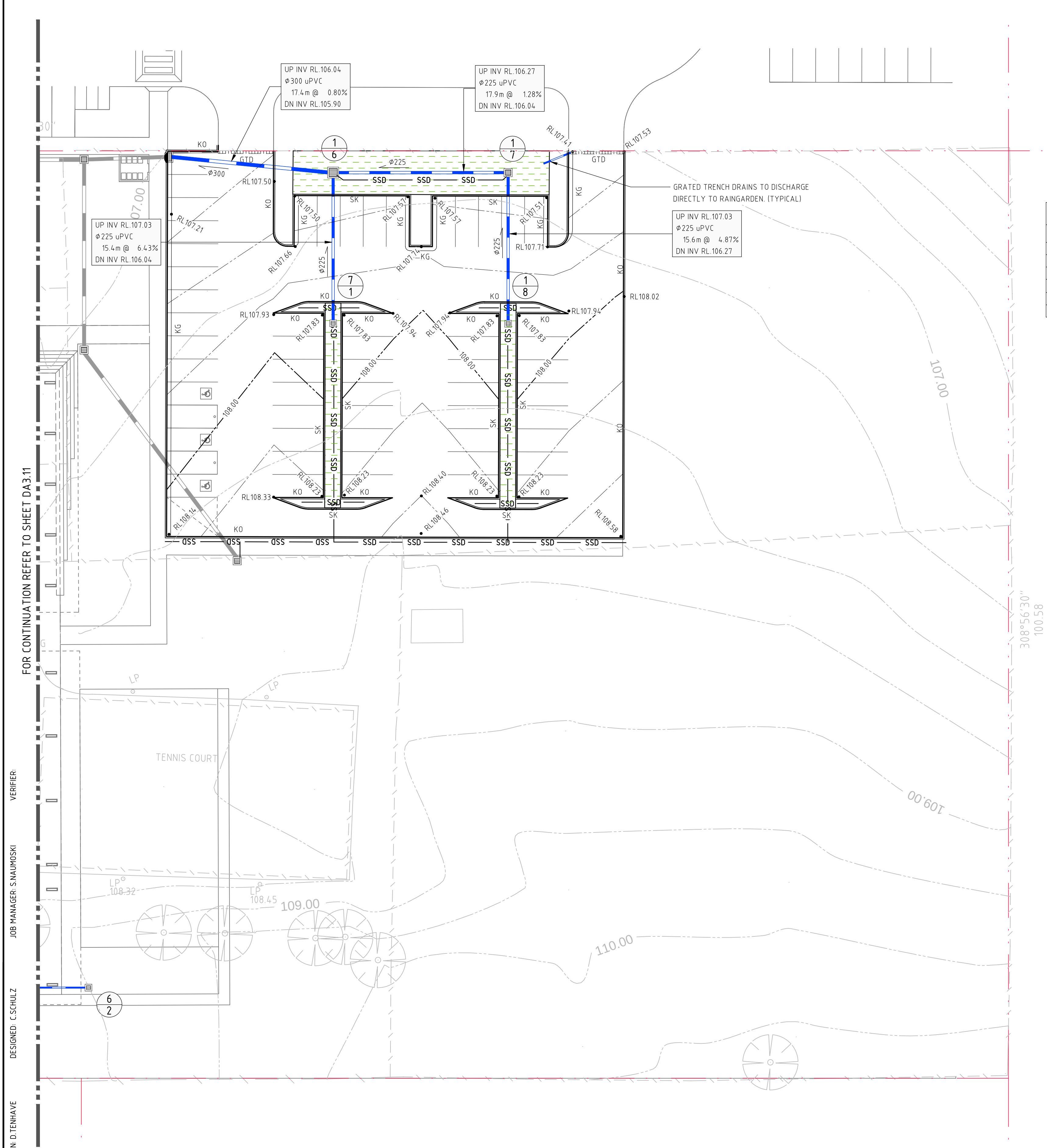
REVISION

5

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STORMWATER PIT SCHEDULE (STAGE 3)					
PIT No.	PIT SIZE	PIT TYPE	COVER TYPE	COVER RL	COMMENTS
1/6	900 X 900	INLET PIT	CLASS 'B' GRATE	107.40	RAINGARDEN SURCHARGE PIT
1/7	600 X 600	INLET PIT	CLASS 'B' GRATE	107.40	RAINGARDEN SURCHARGE PIT
1/8	450 X 450	INLET PIT	CLASS 'B' GRATE	107.68	RAINGARDEN SURCHARGE PIT
6/1	450 X 450	INLET PIT	CLASS 'B' GRATE	108.20	
6/2	600 X 600	INLET PIT	CLASS 'B' GRATE	108.20	
7/1	450 X 450	INLET PIT	CLASS 'B' GRATE	107.68	RAINGARDEN SURCHARGE PIT

LEGEND

BOUNDARY LINE

STORMWATER PIPE (STAGE 3)

STORMWATER PIPE (STAGE 1 & 2)

GRATED INLET PIT

KERB INLET PIT

JUNCTION PIT

STORMWATER PIT TAG
REFER TO PIT SCHEDULE

OSD

ON-SITE DETENTION TANK

BIO RETENTION/RAINGARDEN

CONCRETE HEADWALL

RIP RAP ENERGY DISSIPATER

SSD

SUBSOIL DRAINAGE LINE

OVERLAND FLOW

CONTOURS

EXISTING CONTOURS

DRAINAGE SWALE

PROPOSED SPOT HEIGHT

PROPOSED KERB

KO

KERB ONLY

KG

KERB AND GUTTER

DESIGN SUMMARY

REFER DA3.02 FOR CATCHMENT SUMMARY AND OSD CALCULATIONS.

REFER DA4.01 FOR CATCHMENT PLAN.

MUSIC MODEL SUMMARY (STAGE 3):

SOURCE NODE	CATCHMENT	AREA
URBAN	ROOF AREA	3356m ²
URBAN	PERVIOUS GROUND LEVEL	10724m ²
URBAN	IMPERVIOUS GROUND LEVEL	782m ²
URBAN	CAR PARK	1979m ²
		TOTAL 16841m ²

TREATMENT NODES:

VEGETATION SWALES

RAINGARDEN

BIO RETENTION POND

4x SPEL STORMSACKS

OSD BASIN

TREATMENT STANDARDS (STAGE 3):

POLLUTANT	REDUCTION STANDARDS	REDUCTION ACHIEVED
GROSS POLLUTANTS	90%	100%
TOTAL SUSPENDED SOLIDS	85%	89.2%
TOTAL PHOSPHORUS	65%	66.6%
TOTAL NITROGEN	45%	52.9%

MUSIC MODEL PARAMETERS IN ACCORDANCE WITH THE DRAFT NSW MUSIC MODELING GUIDELINES REF: R.B1704.8.001.01 DATED AUGUST 2010.

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.

9. ALL GRATES TO BE HEEL SAFE WITHIN AGED CARE DEVELOPMENTS.

10. THE STORMWATER DRAINAGE IS DESIGNED IN ACCORDANCE WITH COUNCIL'S STORMWATER CODE.

ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASIBILITY. 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.

FOR CONTINUATION REFER TO SHEET DA3.11

VERIFIER:

JOB MANAGER: S.NAUMOSKI

DESIGNED: C.SCHULZ

DRAWN: D.TENHAVE

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR REVIEW	D.T		S.N	15.11.16
2	ISSUED FOR DEVELOPMENT APPLICATION	D.T		S.N	21.11.16
3	MINOR CAR PARK AMENDMENTS	D.T		S.N	14.12.16
4	COUNCIL COMMENTS AMENDMENTS	D.T		S.N	22.02.17
5	UPDATED ARCHITECTURALS	D.T		S.N	06.03.17

CLIENT

ANGLICAN CHURCH
PROPERTY TRUST
DIOCESE OF SYDNEY

PROJECT MANAGER

MIDSON

ARCHITECT

NBRS+PARTNERS

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

NORTHROP

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P.O. Box 863, Wollongong, NSW 2500
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SCALE 1:250@A1

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PROJECT

ANGLICAN MINISTRY CENTRE
30 HEATH ROAD, LEPPINGTON
MASTERPLAN

DRAWING TITLE

CONCEPT STORMWATER
MANAGEMENT PLAN STAGE 3
SHEET 2

JOB NUMBER

161511

DRAWING NUMBER

DA3.12

REVISION

5

DRAWING SHEET SIZE = A1

NOT FOR CONSTRUCTION



- | | |
|---|---|
| <p>BIO-FILTRATION LAYER SPECIFICATION</p> <ul style="list-style-type: none"> • SANDY LOAM MIX • SATURATED HYDRAULIC CONDUCTIVITY (100-300mm/hr) • CLAY CONTENT <3% • SILT CONTENT <3% • SAND CONTENT 50-70% • ORGANIC CONTENT 5-10% Max IN ACCORDANCE WITH AS1289-1.11 • FREE OF STONES, STUMPS, ROOTS AND OTHER WOODY MATERIALS OVER Ø25mm • FREE OF BRUSH AND SEED FROM WEEDS • GRAVEL 7-10mm | <p>TRANSITION LAYER SPECIFICATION</p> <ul style="list-style-type: none"> • COARSE WASHED / CLEAN SAND 0.5-10mm <p>DRAINAGE LAYER SPECIFICATION</p> <ul style="list-style-type: none"> • GRAVEL 7-10mm WASHED SCREENINGS • NOTE: RIVER SAND AND RIVER PEBBLES NOT PERMITTED <p>IMPERMEABLE LINER SPECIFICATION</p> <ul style="list-style-type: none"> • HEAVY DUTY HDPE LINER OR APPROVED EQUAL • ALL JOINTS TO BE THERMAL WELDED TO PREVENT SEEPAGE |
|---|---|



PROVIDE $\phi 100$ CORRUGATED SUBSOIL DRAINAGE LINE 'CLASS 1000' WITHIN NON-WOVEN FILTER FABRIC SOCK SURROUND LAID AT MIN 0.5% LONGITUDINAL GRADE AND DISCHARGING AT NEAREST DOWNSTREAM DRAINAGE STRUCTURE AS SHOWN

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	PROJECT MANAGER	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR REVIEW	D.T.		S.N	15.11.16	 ANGLICAN CHURCH PROPERTY TRUST DIOCESE OF SYDNEY	 midson	 NBRS+PARTNERS	 NORTHROP Wollongong Level 1, 57 Kembla Street, Wollongong NSW 2500 Ph (02) 4226 3333 Fax (02) 4226 3666 P.O. Box 863, Wollongong NSW 2500 Email southcoast@northrop.com.au ABN 81 094 433 100	ANGELICAN MINISTRY CENTRE 30 HEATH ROAD, LEPPINGTON MASTERPLAN	TYPICAL DETAILS	161511
2	ISSUED FOR DEVELOPMENT APPLICATION	D.T.		S.N	21.11.16							
3	COUNCIL COMMENTS AMENDMENTS	D.T.		S.N	22.02.17							
4	UPDATED ARCHITECTURALS	D.T.		S.N	06.03.17							
						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.		SCALE VARIES			DRAWING NUMBER DA5.01 REVISION 4 DRAWING SHEET SIZE = A1