

# FLOWER POWER, TERREY HILLS

## CIVIL ENGINEERING PACKAGE DEVELOPMENT APPLICATION



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DRAWING SCHEDULE	
DRG No.	DRAWING TITLE
DA1.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN
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DA2.01	CONCEPT EROSION AND SEDIMENT CONTROL PLAN
DA2.11	EROSION AND SEDIMENT CONTROL DETAILS
DA3.01	CONCEPT BULK EARTHWORKS PLAN
DA4.01	SITWORKS AND GRADING PLAN
DA4.02	STORMWATER MANAGEMENT PLAN
DA5.01	CATCHMENT PLAN
DA6.01	OSD DETAILS
DA6.02	DETAILS - SHEET 01
DA6.03	DETAILS - SHEET 02

VERIFIER:

JOB MANAGER: S.FRYER


DESIGNED: J.GRNSELL

DRAWN: MMAI

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR CO-ORDINATION	C.B		S.F	04.08.21
02	ISSUED FOR INFORMATION	M.M		J.R.G	23.12.21
03	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M		J.R.G	20.01.22

CLIENT

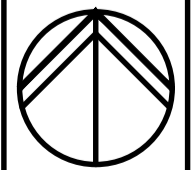


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ARCHITECT

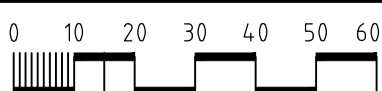
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PROJECT

**FLOWER POWER  
277 MONA VALE ROAD,  
TERREY HILLS NSW**

DRAWING TITLE

**COVER SHEET, DRAWING SCHEDULE  
AND LOCALITY PLAN**

JOB NUMBER

**211979**

DRAWING NUMBER	REVISION
<b>DA1.01</b>	<b>02</b>

DRAWING SHEET SIZE = A1

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Date: 21-12-22 10:37am

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL DEVELOPMENT GUIDELINES .THE AFOREMENTIONED GUIDELINES INCLUSIVE OF ALL SPECIFICATIONS TAKE PRECEDENCE OVER NOTES PROVIDED BELOW.

### 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 BOXALL SURVEYORS, DRAWING DATED 01/06/2021.

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.

### STORMWATER DRAINAGE

- ALL DRAINAGE LINES SHALL BE UPVC (CLASS SN4) SEWER GRADE DRAINAGE PIPE, U.N.O.
- ALL DRAINAGE LINES SHALL BE LAID AT 1% MIN. FALL, UNO.
- ALL LEVELS ARE AUSTRALIAN HEIGHT DATUM (AHD).
- ALL DOWNPIPES GUTTERS TO BE DESIGNED IN ACCORDANCE WITH AS/NZS 3500.3.2 - 2003 'STORMWATER' DRAINAGE.
- THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3.2-2003 'STORMWATER' DRAINAGE.
- ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.
- SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.
- ALL GRATES TO BE GALVANISED STEEL WITH HINGES AND CHILD PROOF LOCK.
- THE STORMWATER DRAINAGE IS DESIGNED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY 2021.

### DESIGN SUMMARY

#### SITE DISCHARGE CALCULATIONS:

	20% AEP	5% AEP	1% AEP
PRE-DEVELOPMENT	0.450 m³/s	0.820 m³/s	1.260 m³/s
POST-DEVELOPMENT	0.428 m³/s	0.767 m³/s	0.884 m³/s

#### ON-SITE DETENTION:

##### DESIGN BASIS:

- PRE TO POST DEVELOPMENT CONDITIONS

##### ON-SITE DETENTION SUMMARY:

- BELOW GROUND BLOCK WORK TANK

TOP WATER LEVEL = RL196.680  
OVERFLOW LEVEL = RL195.200  
ORIFICE CENTERLINE = RL193.899  
ORIFICE DIAMETER = Ø375mm

#### RAINWATER RE-USE:

IN ACCORDANCE WITH BASIX/COUNCIL REQUIREMENTS. RAINWATER RE-USE STORAGE PROVIDED IS TO BE DESIGNED

RAINWATER RE-USE TO BE USED FOR THE FOLLOWING:

- TOILET FLUSHING;
- IRRIGATION.

A 25% OF THE RAINWATER REUSE TANK VOLUME CAN OFFSET THE OSD VOLUME IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY.

STORMWATER MANAGEMENT REQUIREMENTS HAVE BEEN CALCULATED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT PLAN FOR DEVELOPMENT POLICY 2021: PART 9.0 ONSITE STORMWATER MANAGEMENT.

#### WATER QUALITY:

MUSIC MODEL SUMMARY (REFER NORTHPROP REPORT FOR FURTHER DETAILS).

#### TREATMENT NODES:

- RAINWATER RE-USE TANK
- 'OCEANGUARD' PIT INSERTS (OR SIMILAR)
- FILTER CARTRIDGES

MUSIC MODEL PARAMETERS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S MUSIC MODELLING GUIDELINES 2016.

### CONCEPT SOIL & WATER MANAGEMENT

- ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS. NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' (THE 'BLUE BOOK'). THIS SOIL AND WATER MANAGEMENT PLAN DETAILS THE ACTIONS TO BE TAKEN FOR THE MANAGEMENT AND DEWATERING OF STORMWATER DURING CONSTRUCTION OF THE PROPOSED BUILDING.
- 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 AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
- 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 & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
- ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE 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 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 FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & 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.
- GROUNDWATER SEEPAGE RATES AND QUALITY TO BE MONITORED AND TREATED IF REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH REQUIREMENTS OF SUPERVISING GEOTECHNICAL ENGINEER.

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.

### RAINWATER RE-USE

- PROVIDE RAINWATER RE-USE SYSTEM TO SUPPLY WATER FOR TOILET FLUSHING AND IRRIGATION
- 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.
- 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.
- RAINWATER TANK RETICULATION SYSTEM AND MAINS WATER BYPASS ARRANGEMENT TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3500.12-2003 AND THE NSW CODE OF PRACTICE : PLUMBING AND DRAINING.
- A FIRST FLUSH FILTRATION DEVICE IS TO BE PROVIDED AT RAINWATER TANK.

VERIFIER:

JOB MANAGER: S.FRYER


DESIGNED: J.GRNSELL

DRAWN: M.MAI

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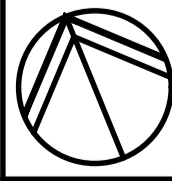


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PROJECT

**FLOWER POWER  
277 MONA VALE ROAD,  
TERREY HILLS NSW**

DRAWING TITLE

**SPECIFICATION NOTES**

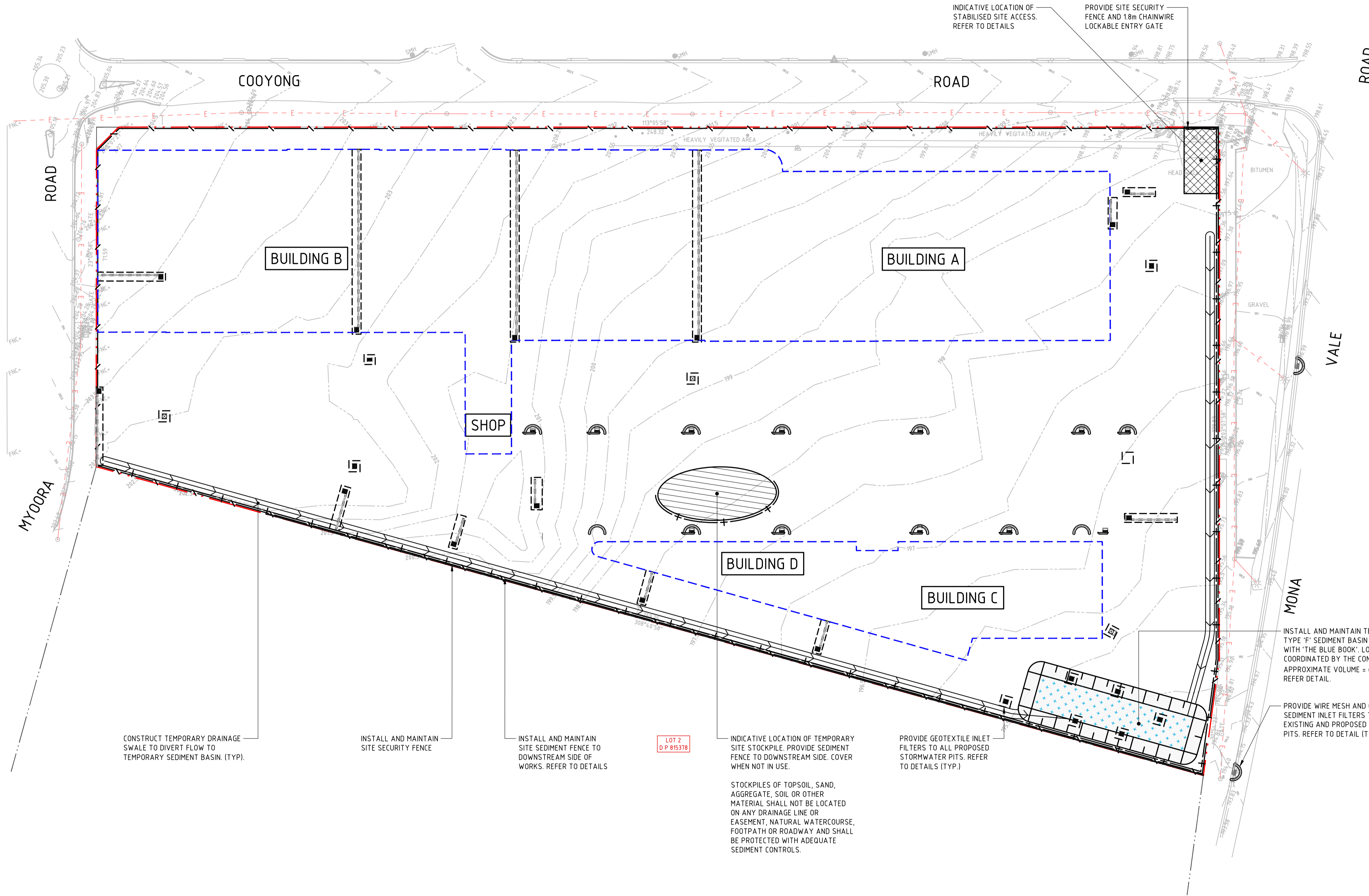
JOB NUMBER

**211979**

DRAWING NUMBER	REVISION
<b>DA1.11</b>	<b>02</b>

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LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	BUILDING FOOTPRINT
	EXISTING CONTOURS
	SEDIMENT FENCE
	SECURITY FENCE
	SITE SECURITY GATE
	WIRE MESH AND GRAVEL SEDIMENT FILTER
	GEOTEXTILE INLET FILTER TRAPS
	TEMPORARY DRAINAGE SWALE
	SEDIMENT BASIN
	STABILISED SITE ACCESS
	STOCKPILE

- GENERAL NOTES**
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  - ALL SEDIMENT AND SOIL EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH THE 'BLUE BOOK'. CONTRACTOR TO ENSURE THESE MEASURES ARE IN PLACE AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION WORKS.
  - CONTRACTOR TO PROVIDE 'WIRE MESH AND GRAVEL SEDIMENT FILTER' TO ALL PAVED / ROAD AREAS (BOTH PROPOSED AND EXISTING) IN ACCORDANCE WITH THE 'BLUE BOOK'.
  - CONTRACTOR TO PROVIDE 'GEOTEXTILE INLET FILTER TRAPS' TO ALL STORMWATER DRAINAGE INLETS (BOTH PROPOSED AND EXISTING) IN ACCORDANCE WITH THE 'BLUE BOOK'.

**SEDIMENT BASIN CALCULATIONS**

PARAMETER	ADOPTED VALUE
TOTAL DISTURBED AREA (ha)	2.8301
SOIL TEXTURE GROUP	D OR F
DESIGN RAINFALL DEPTH (DAYS)	5
DESIGN RAINFALL DEPTH (PERCENTILE)	80%
x-DAY, y-PERCENTILE RAINFALL EVENT	35.2
Cv	0.42
SETTLING ZONE VOLUME (m³)	418.402
SEDIMENT STORAGE VOLUME (m³)	209.201
TOTAL BASIN VOLUME REQUIRED (m³)	627.603

CONSTRUCT TEMPORARY DRAINAGE SWALE TO DIVERT FLOW TO TEMPORARY SEDIMENT BASIN. (TYP.)

INSTALL AND MAINTAIN SITE SECURITY FENCE

INSTALL AND MAINTAIN SITE SEDIMENT FENCE TO DOWNSTREAM SIDE OF WORKS. REFER TO DETAILS

LOT 2  
D.P. 815378

INDICATIVE LOCATION OF TEMPORARY SITE STOCKPILE. PROVIDE SEDIMENT FENCE TO DOWNSTREAM SIDE. COVER WHEN NOT IN USE.

STOCKPILES OF TOPSOIL, SAND, AGGREGATE, SOIL OR OTHER MATERIAL SHALL NOT BE LOCATED ON ANY DRAINAGE LINE OR EASEMENT, NATURAL WATERCOURSE, FOOTPATH OR ROADWAY AND SHALL BE PROTECTED WITH ADEQUATE SEDIMENT CONTROLS.

PROVIDE GEOTEXTILE INLET FILTERS TO ALL PROPOSED STORMWATER PITS. REFER TO DETAILS (TYP.)

INSTALL AND MAINTAIN TEMPORARY TYPE 'F' SEDIMENT BASIN IN ACCORDANCE WITH 'THE BLUE BOOK'. LOCATION TO BE COORDINATED BY THE CONTRACTOR. APPROXIMATE VOLUME = 628m³. REFER DETAIL.

PROVIDE WIRE MESH AND GRAVEL SEDIMENT INLET FILTERS TO ALL EXISTING AND PROPOSED KERB INLET PITS. REFER TO DETAIL (TYP.)

DRAWN: M.MAI  
DESIGNED: J. GRINSELL  
JOB MANAGER: S. FRYER  
VERIFIER:

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277 MONA VALE ROAD,  
TERREY HILLS NSW**

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**CONCEPT EROSION AND SEDIMENT  
CONTROL PLAN**

JOB NUMBER  
**211979**

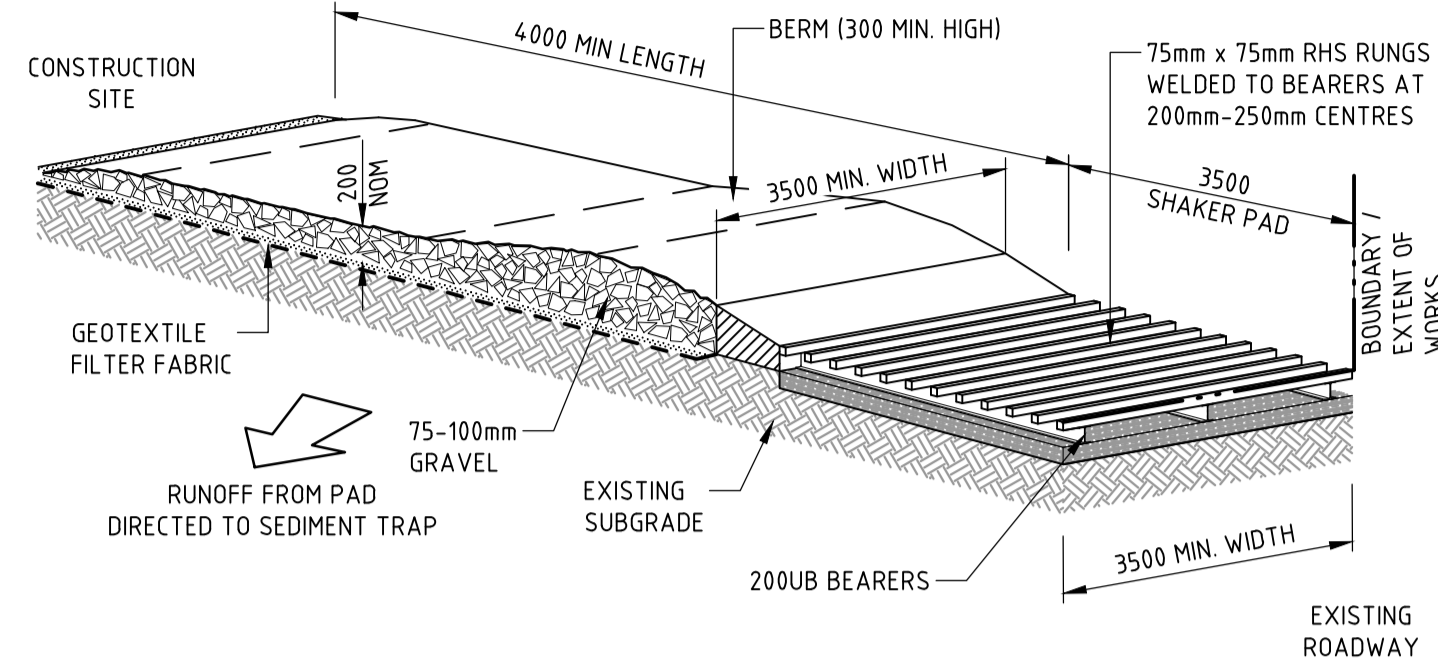
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**DA2.01**

REVISION  
**01**

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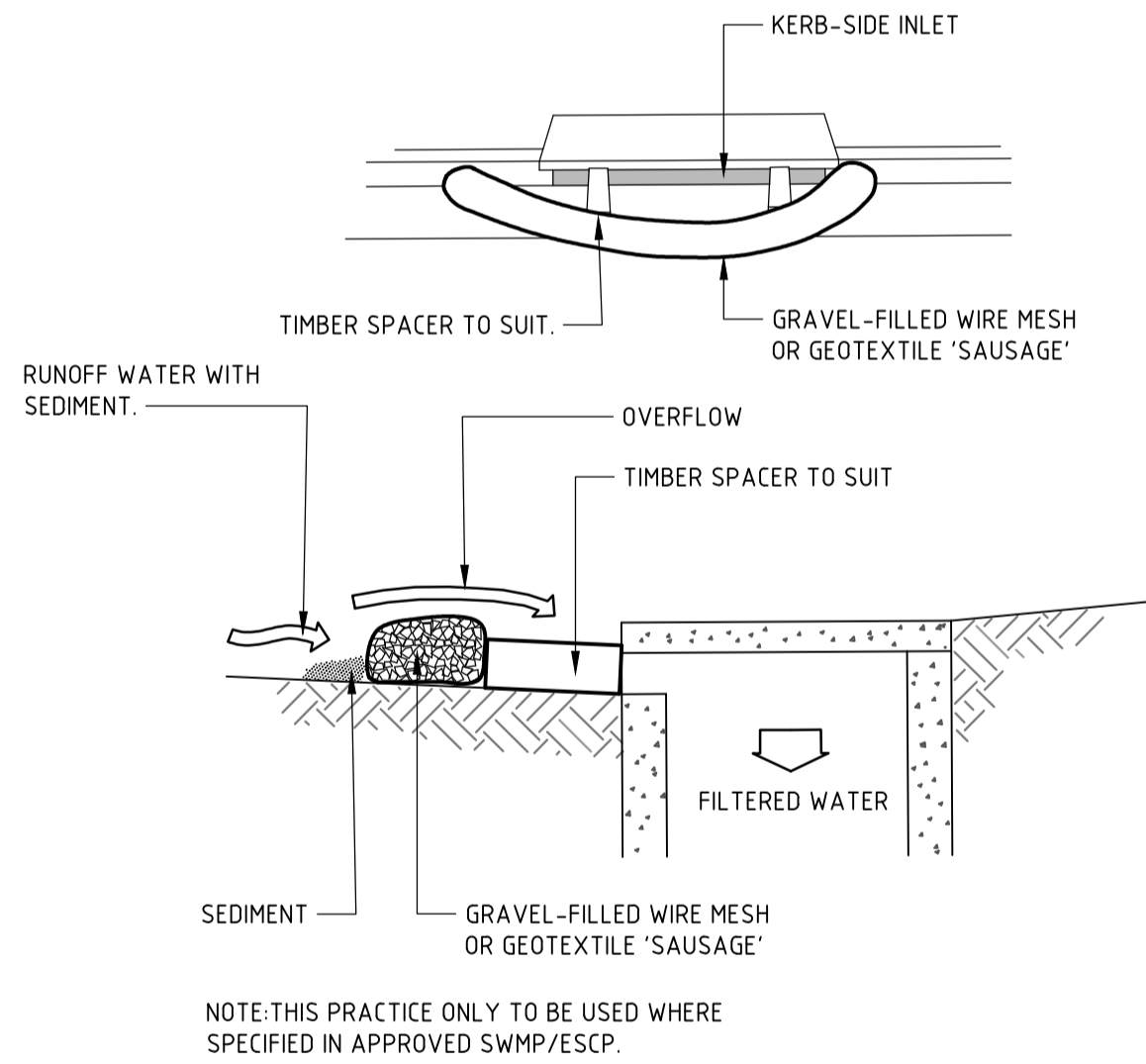
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**CONSTRUCTION NOTES**

1. THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.
  - THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
3. INSTALL BARRIER ON EITHER SIDE OF SHAKER PAD. TO ENSURE VEHICLES ARE GUIDED ON TO THE PAD.
4. INVERT OF SHAKER PAD TO BE DRAINED VIA AGRICULTURAL PIPE WRAPPED IN GEOTEXTILE FABRIC.

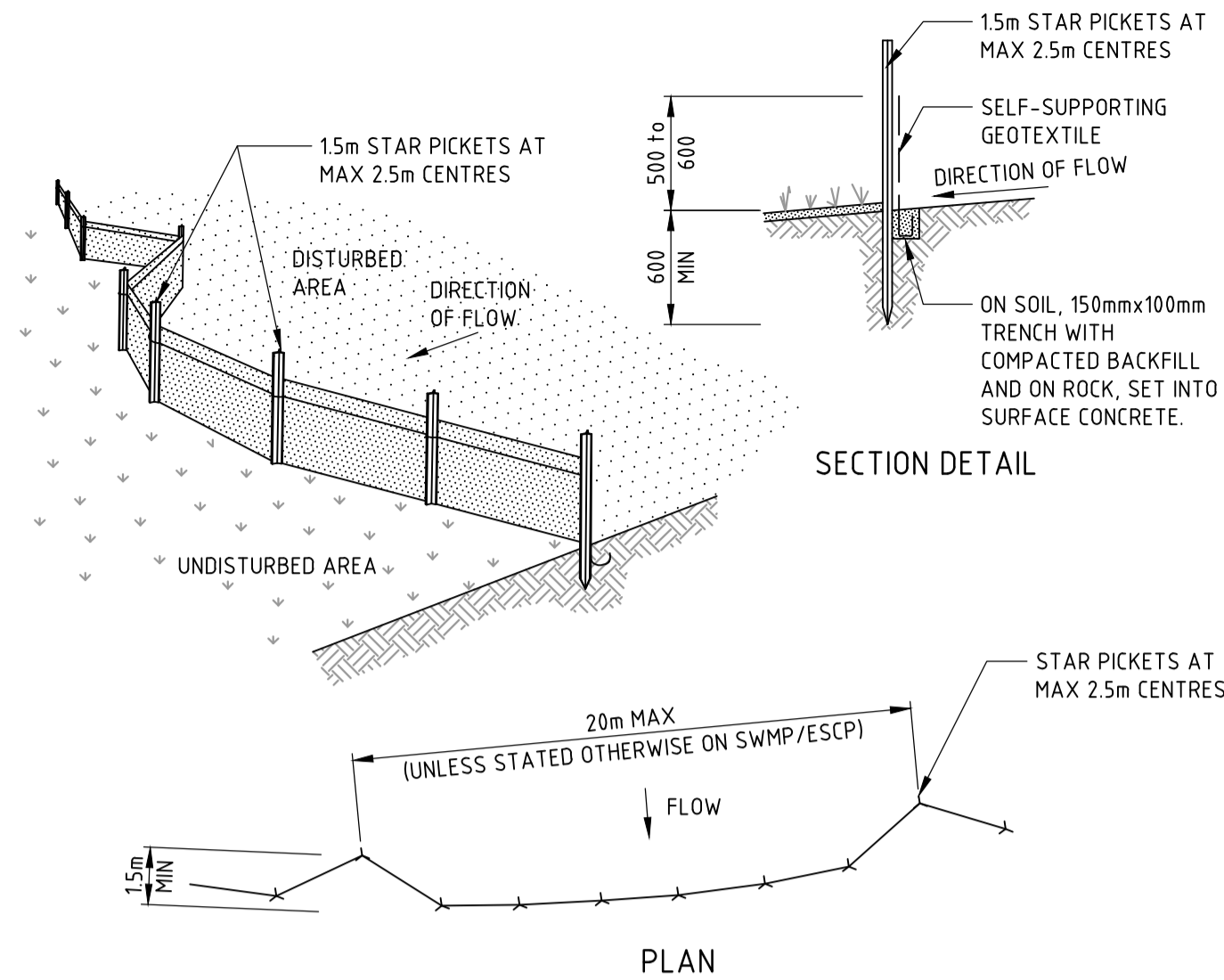
**STABILISED SITE ACCESS**



**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.

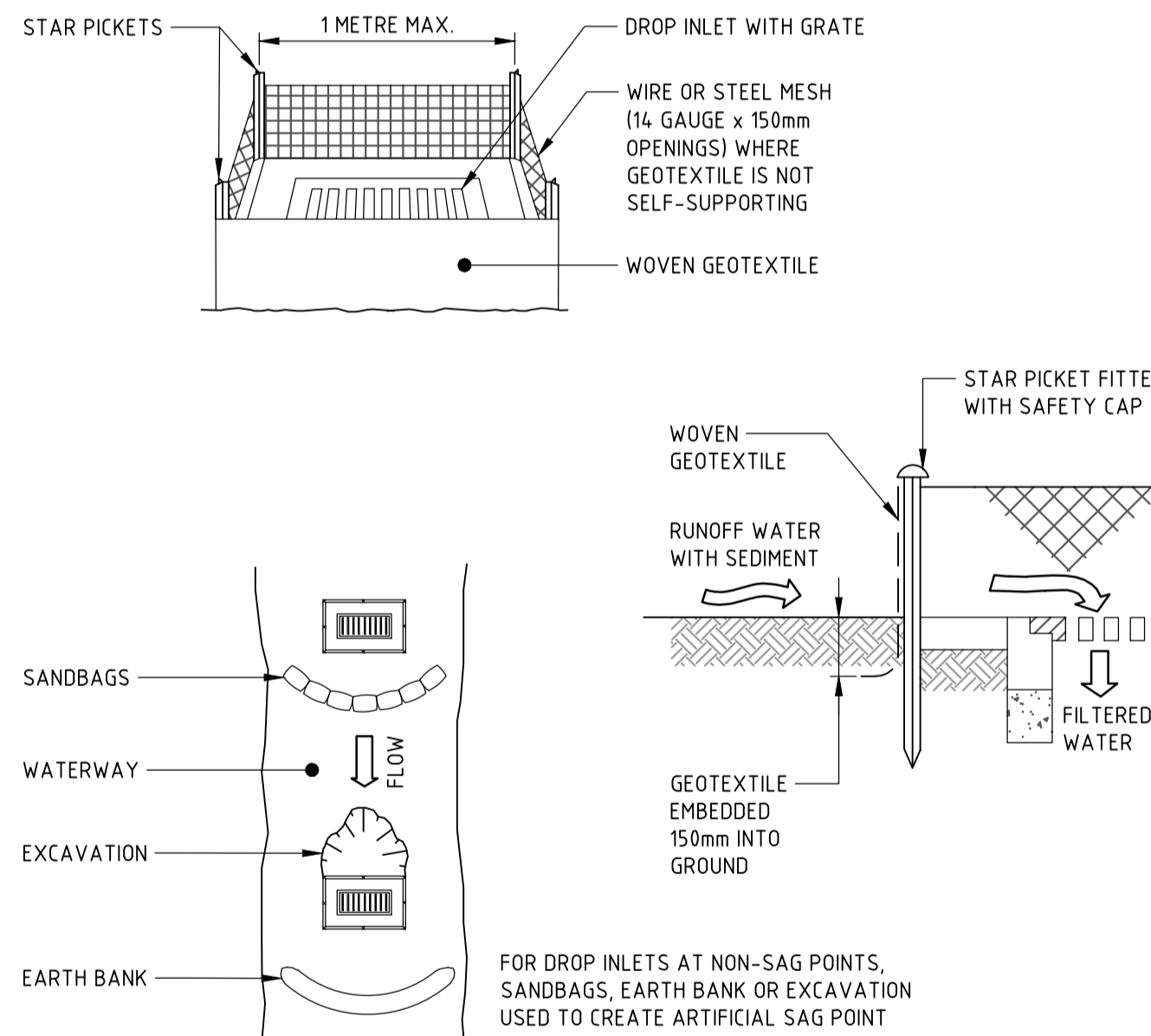
**WIRE MESH AND GRAVEL SEDIMENT FILTER**



**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.

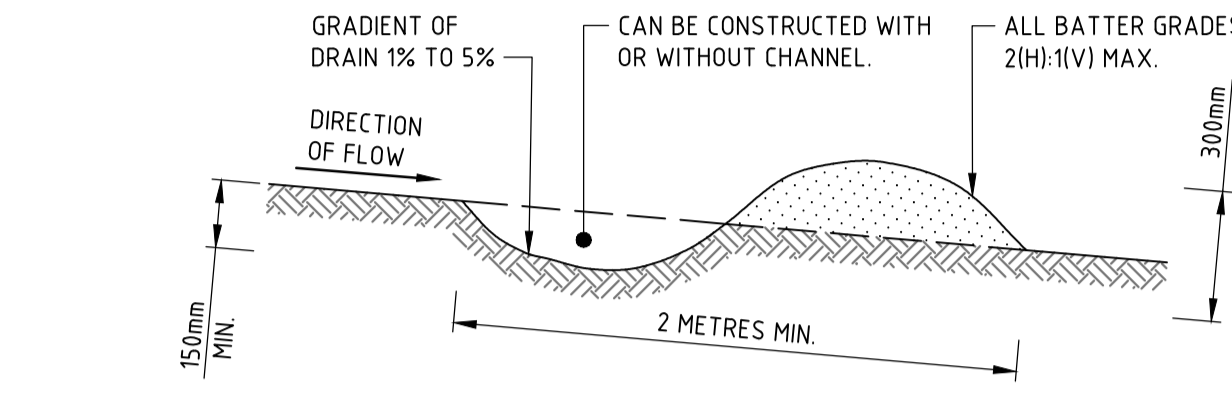
**SEDIMENT FENCE**



**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 GEOFABRIC. 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.

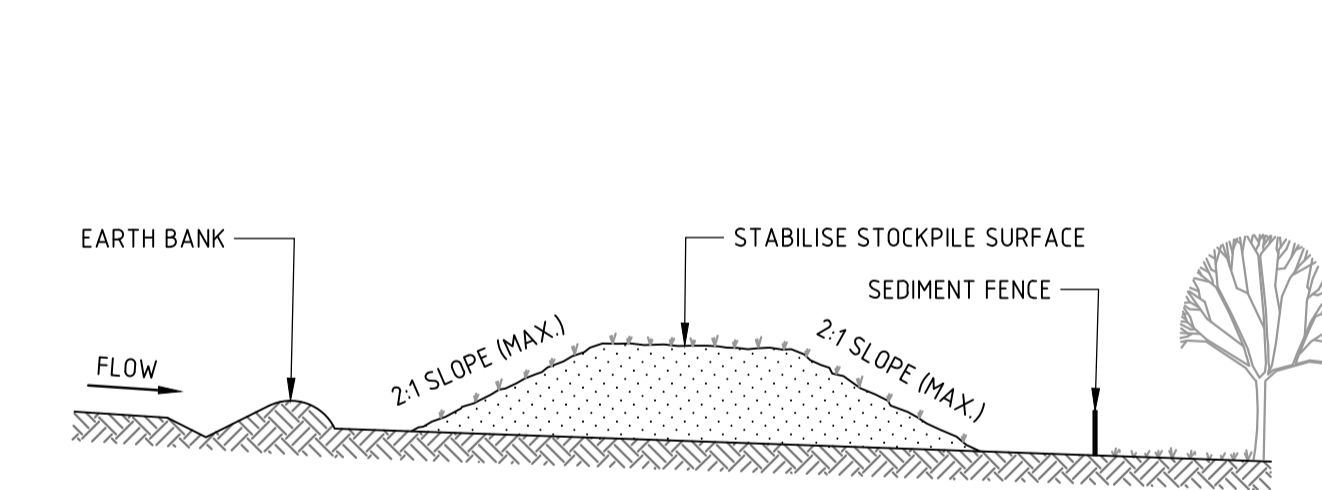
**GEOTEXTILE INLET FILTER TRAPS**



**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.

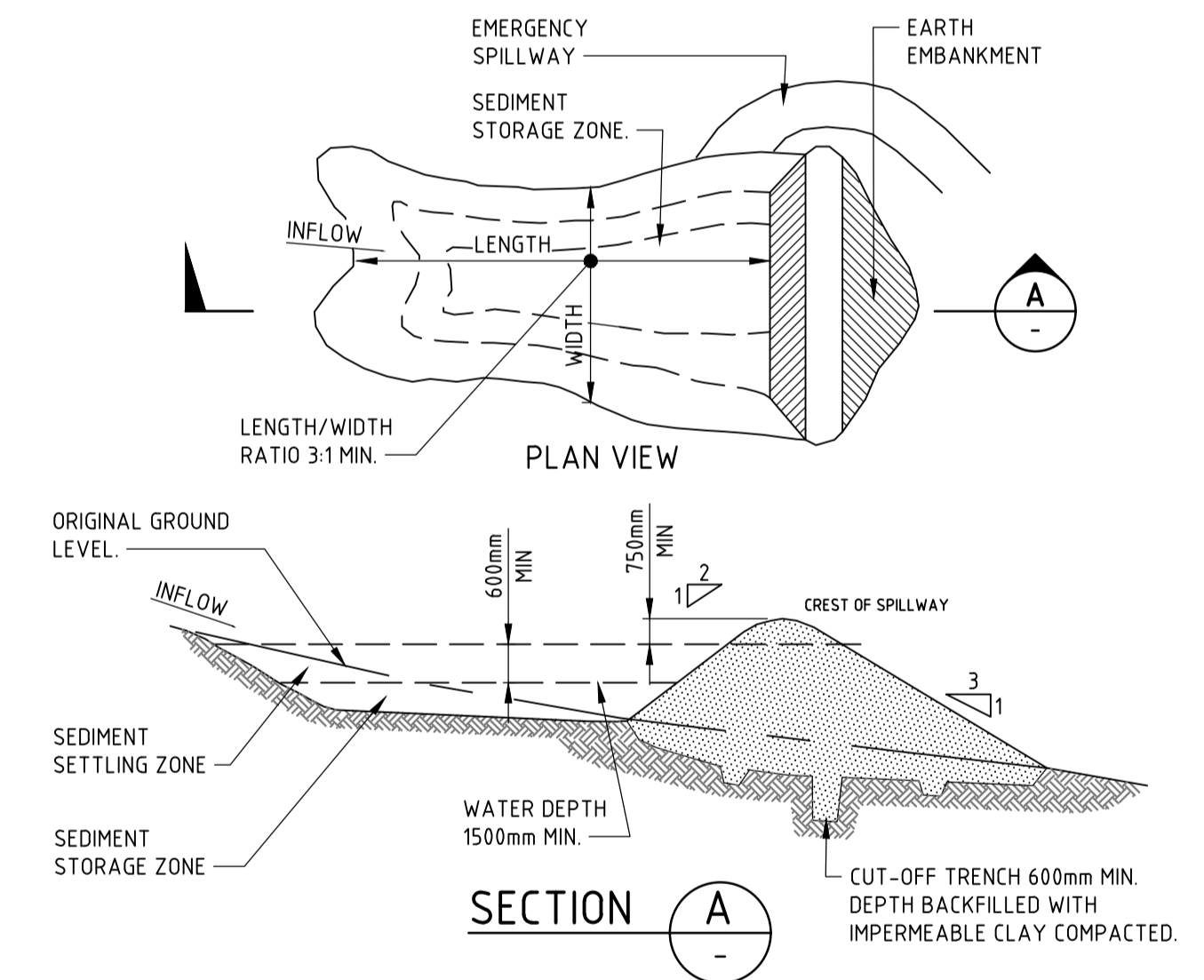
**TEMPORARY DRAINAGE SWALE**



**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.

**STOCKPILE**



**CONSTRUCTION NOTES**

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
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 FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND 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. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

**SEDIMENT BASIN**

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR CO-ORDINATION	C.B.		S.F.	04.08.21
02	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M.		J.R.G.	20.01.22

CLIENT: **flower power**

ARCHITECT: **LEFFLER SIMES ARCHITECTS**

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

PROJECT: **FLOWER POWER 277 MONA VALE ROAD, TERREY HILLS NSW**

DRAWING TITLE: **EROSION AND SEDIMENT CONTROL DETAILS**

JOB NUMBER: **211979**

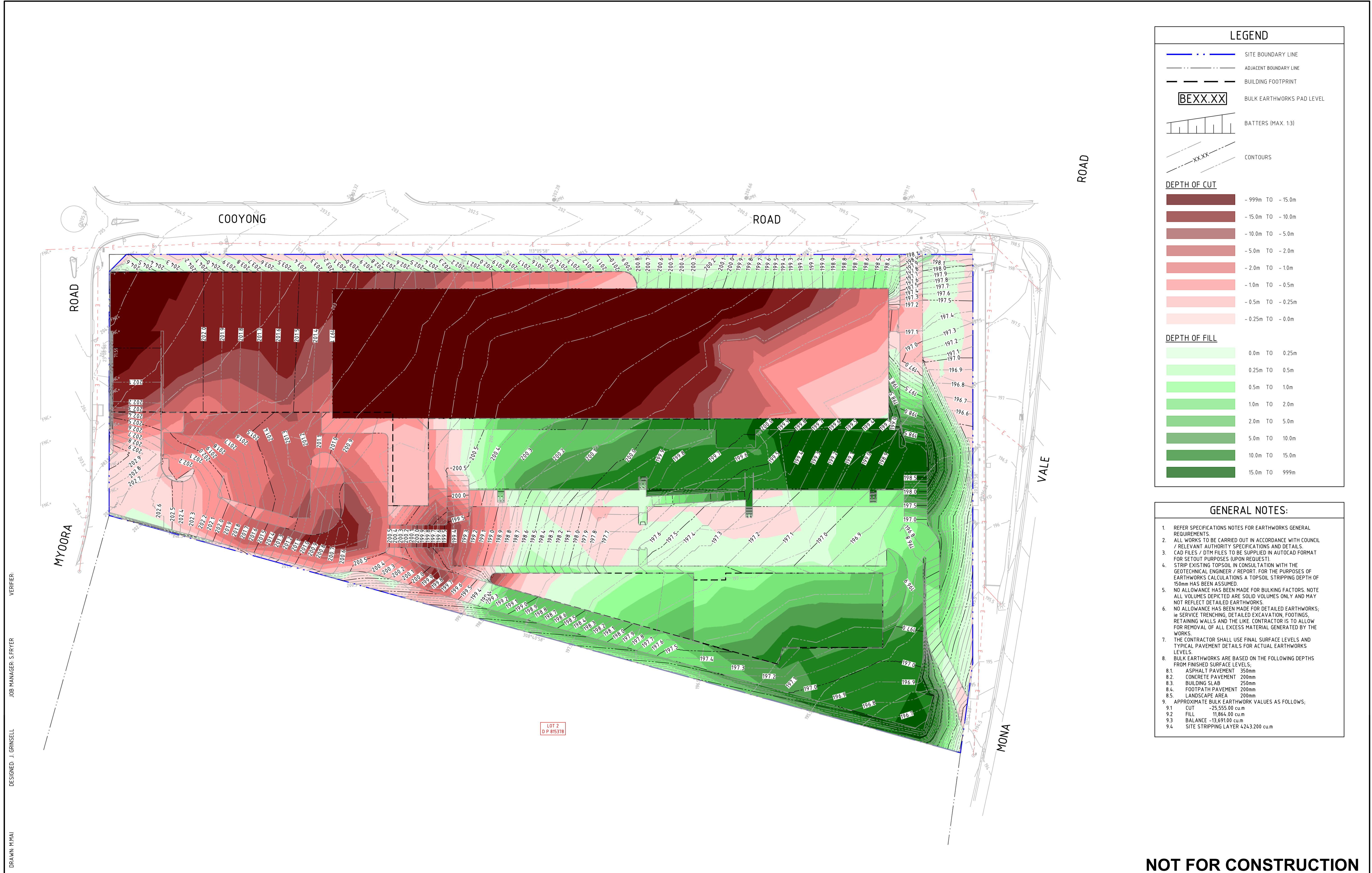
DRAWING NUMBER: **DA2.11**

REVISION: **01**

DRAWING SHEET SIZE = A1

DESIGNED: J. GRINSELL  
DRAWN: M.MAI  
JOB MANAGER: S. FRYER  
VERIFIER:

Found: 11/02/2021 Job: 211979 - FLOWER POWER REDEVELOPMENT - TERREY HILLS - Drawings - C:\Users\JG\Documents\211979-01-DA2.11.dwg  
Printed By: M.Mai  
Date: 21-11-22 10:38am



### LEGEND

- SITE BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- BUILDING FOOTPRINT
- BULK EARTHWORKS PAD LEVEL
- BATTERS (MAX. 1:3)
- CONTOURS

#### DEPTH OF CUT

- 9.99m TO - 15.0m
- 15.0m TO - 10.0m
- 10.0m TO - 5.0m
- 5.0m TO - 2.0m
- 2.0m TO - 1.0m
- 1.0m TO - 0.5m
- 0.5m TO - 0.25m
- 0.25m TO - 0.0m

#### DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 1.0m
- 1.0m TO 2.0m
- 2.0m TO 5.0m
- 5.0m TO 10.0m
- 10.0m TO 15.0m
- 15.0m TO 99.9m

- ### GENERAL NOTES:
- REFER SPECIFICATIONS NOTES FOR EARTHWORKS GENERAL REQUIREMENTS.
  - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  - CAD FILES / DTM FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
  - STRIP EXISTING TOPSOIL IN CONSULTATION WITH THE GEOTECHNICAL ENGINEER / REPORT. FOR THE PURPOSES OF EARTHWORKS CALCULATIONS A TOPSOIL STRIPPING DEPTH OF 150mm HAS BEEN ASSUMED.
  - NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
  - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS, ie SERVICE TRENCHING, DETAILED EXCAVATION, FOOTINGS, RETAINING WALLS AND THE LIKE. CONTRACTOR IS TO ALLOW FOR REMOVAL OF ALL EXCESS MATERIAL GENERATED BY THE WORKS.
  - THE CONTRACTOR SHALL USE FINAL SURFACE LEVELS AND TYPICAL PAVEMENT DETAILS FOR ACTUAL EARTHWORKS LEVELS.
  - BULK EARTHWORKS ARE BASED ON THE FOLLOWING DEPTHS FROM FINISHED SURFACE LEVELS:
    - ASPHALT PAVEMENT 350mm
    - CONCRETE PAVEMENT 200mm
    - BUILDING SLAB 250mm
    - FOOTPATH PAVEMENT 200mm
    - LANDSCAPE AREA 200mm
  - APPROXIMATE BULK EARTHWORK VALUES AS FOLLOWS:
 

9.1 CUT	-25,555.00 cu.m
9.2 FILL	11,864.00 cu.m
9.3 BALANCE	-13,691.00 cu.m
9.4 SITE STRIPPING LAYER	4243.200 cu.m

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR CO-ORDINATION	C.B	S.F		04.08.21	
02	ISSUED FOR INFORMATION	M.M	J.R.G		23.12.21	
03	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M	J.R.G		20.01.22	

ARCHITECT  
**LEFFLER SIMES ARCHITECTS**

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CLIENT  
**flower power**

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

SCALE 1:4,000@A1

0 4 8 12 16 20m

PROJECT  
**FLOWER POWER  
277 MONA VALE ROAD,  
TERREY HILLS NSW**

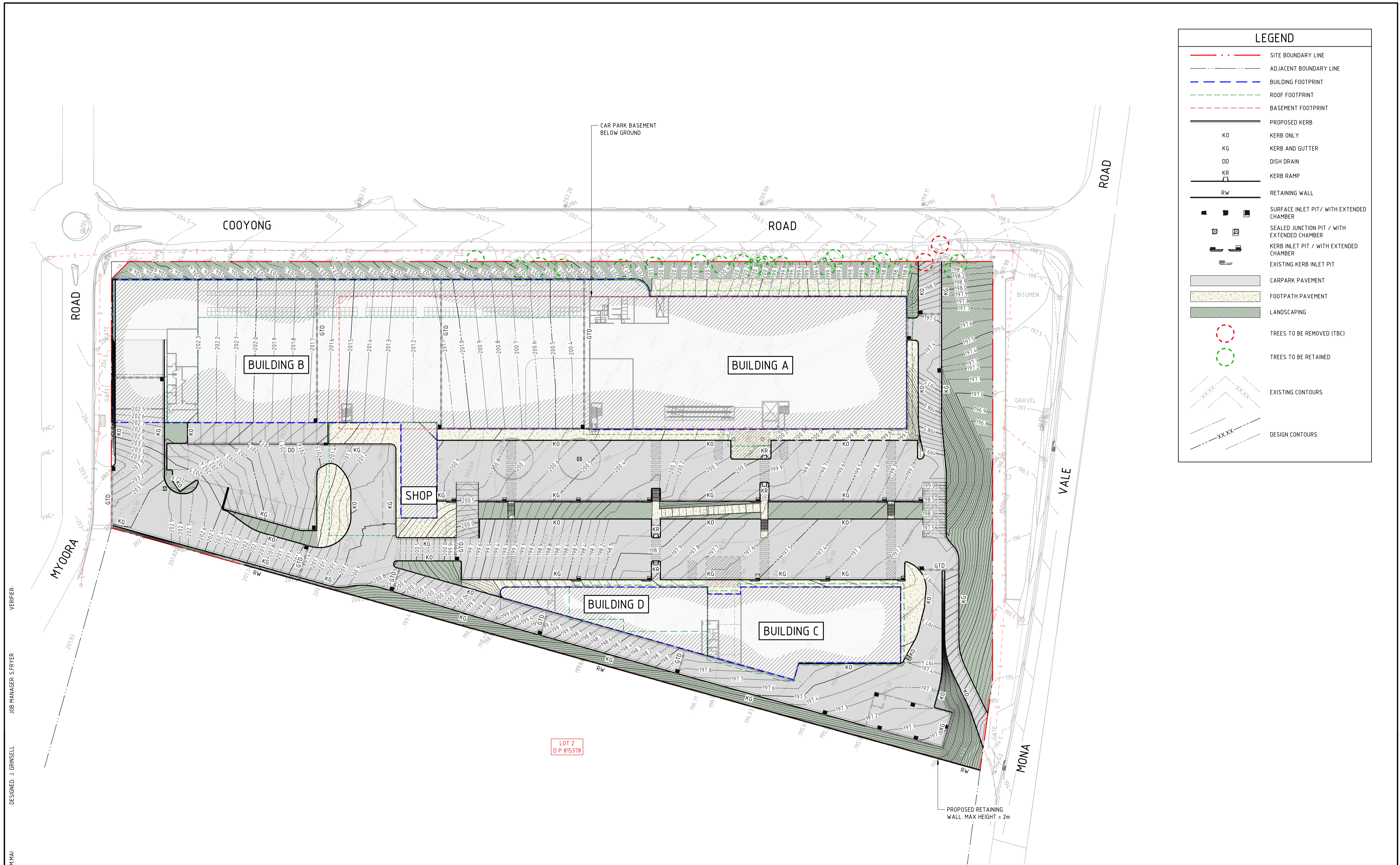
DRAWING TITLE  
**CONCEPT BULK EARTHWORKS PLAN**

JOB NUMBER <b>211979</b>	REVISION <b>02</b>
DRAWING NUMBER <b>DA3.01</b>	DRAWING SHEET SIZE = A1

**NOT FOR CONSTRUCTION**

DESIGNED - J. GRINSELL  
JOB MANAGER - S. FRYER  
VERIFIER -  
DRAWN - M.MAI

File Path: I:\2021\Jobs\219179 - FLOWER POWER DEVELOPMENT - TERREY HILLS\0-Drawings\CAD\219179-CAD\01-DA3.01.dwg  
Date: 21-12-22 10:35am  
Printed By: M.Mai



LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	BUILDING FOOTPRINT
	ROOF FOOTPRINT
	BASEMENT FOOTPRINT
	PROPOSED KERB
	KERB ONLY
	KERB AND GUTTER
	DISH DRAIN
	KERB RAMP
	RETAINING WALL
	SURFACE INLET PIT / WITH EXTENDED CHAMBER
	SEALED JUNCTION PIT / WITH EXTENDED CHAMBER
	KERB INLET PIT / WITH EXTENDED CHAMBER
	EXISTING KERB INLET PIT
	CARPARK PAVEMENT
	FOOTPATH PAVEMENT
	LANDSCAPING
	TREES TO BE REMOVED (TBC)
	TREES TO BE RETAINED
	EXISTING CONTOURS
	DESIGN CONTOURS

DRAWN: M.MAI  
 DESIGNED: J. GRINSELL  
 JOB MANAGER: S. FRYER  
 VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR CO-ORDINATION	C.B.	S.F.		04.08.21	 CLIENT
02	ISSUED FOR CO-ORDINATION	A.C.	A.C.		10.11.21	
03	ISSUED FOR CO-ORDINATION	A.C.	A.C.		12.11.21	
04	ISSUED FOR INFORMATION	M.M.	J.R.G.		23.12.21	
05	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M.	A.C.		20.01.22	

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

PROJECT  
**FLOWER POWER  
 277 MONA VALE ROAD,  
 TERREY HILLS NSW**

DRAWING TITLE  
**SITWORKS AND GRADING PLAN**

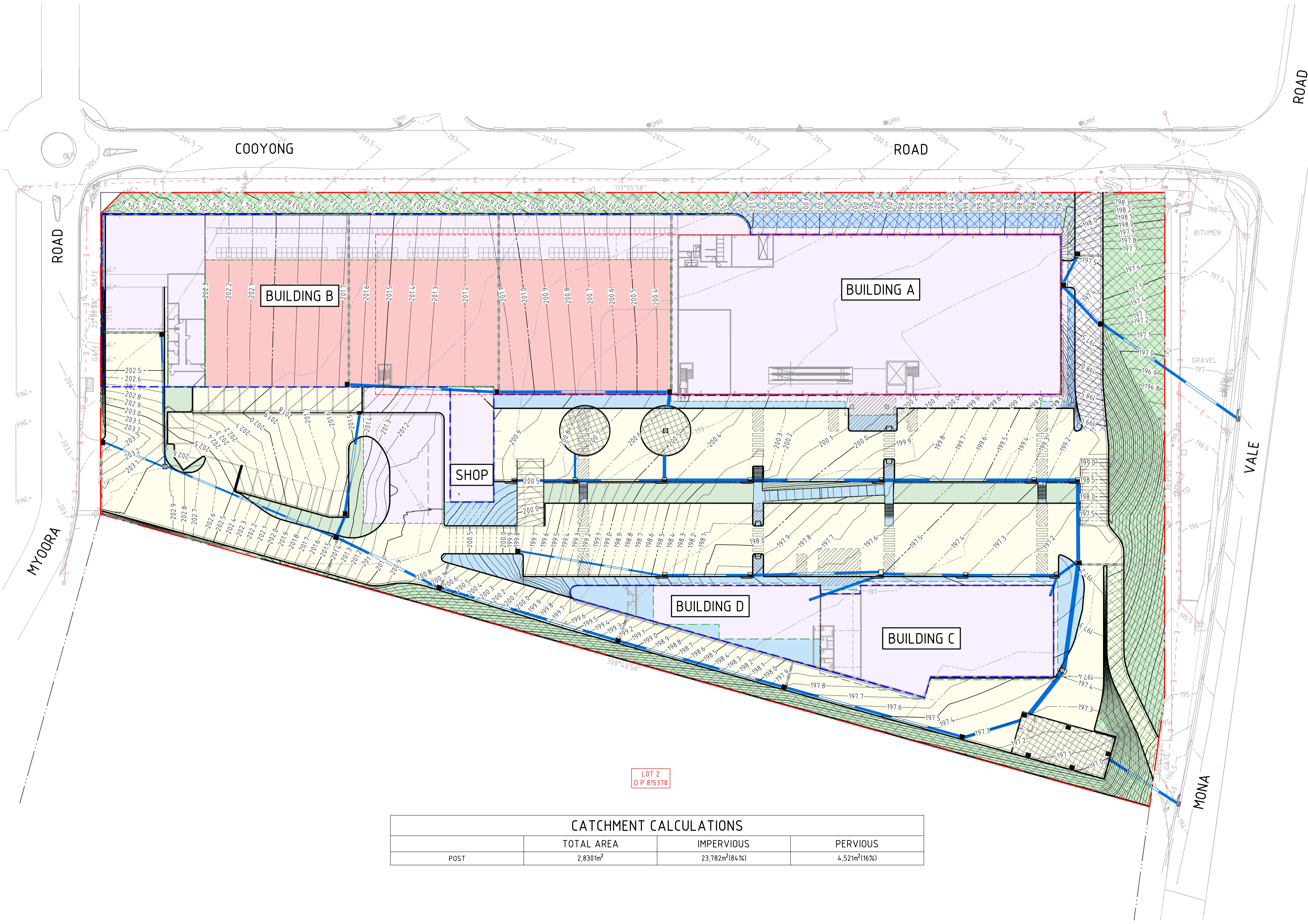
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DRAWING NUMBER <b>DA4.01</b>	REVISION <b>05</b>
DRAWING SHEET SIZE = A1	

**NOT FOR CONSTRUCTION**

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 Date: 21-1-22 10:00am  
 Plotted By: M.Mai



LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	ROOF AREAS (IMPERVIOUS) - 8,779m <sup>2</sup>
	ROAD AREAS (IMPERVIOUS) - 10,150m <sup>2</sup>
	FOOTPATH AREAS (IMPERVIOUS) - 1,474m <sup>2</sup>
	LANDSCAPE AREAS (PERVIOUS) - 4,402m <sup>2</sup>
	NURSERY AREAS (IMPERVIOUS) - 3,436m <sup>2</sup>
	PIPED BYPASS - 1,146m <sup>2</sup>
	OVERLAND BYPASS - 3,477m <sup>2</sup>



LOT 2  
D P 015378

CATCHMENT CALCULATIONS			
POST	TOTAL AREA	IMPERVIOUS	PERVIOUS
	2,8301m <sup>2</sup>	23,782m <sup>2</sup> (84%)	4,521m <sup>2</sup> (16%)

DRAWN: MMAI    DESIGNED: J. GRINSELL    JOB MANAGER: S. FRYER    VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR CO-ORDINATION		C.B.	S.F.	04.08.21	flower power

CLIENT  
**flower power**

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

PROJECT  
**FLOWER POWER  
277 MONA VALE ROAD,  
TERREY HILLS NSW**

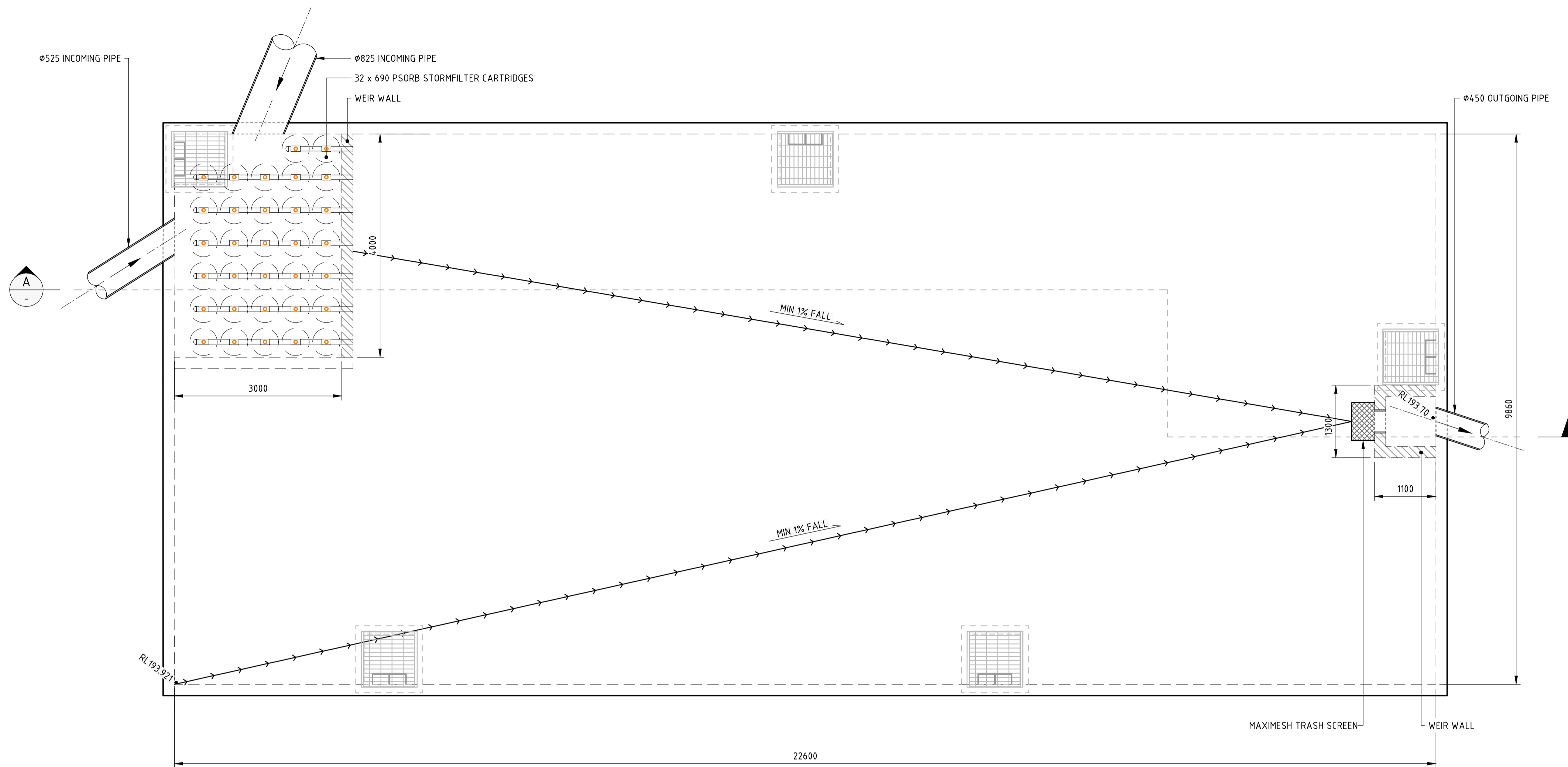
DRAWING TITLE  
**CATCHMENT PLAN**

JOB NUMBER <b>211979</b>	
DRAWING NUMBER <b>DA5.01</b>	REVISION <b>02</b>
DRAWING SHEET SIZE = A1	

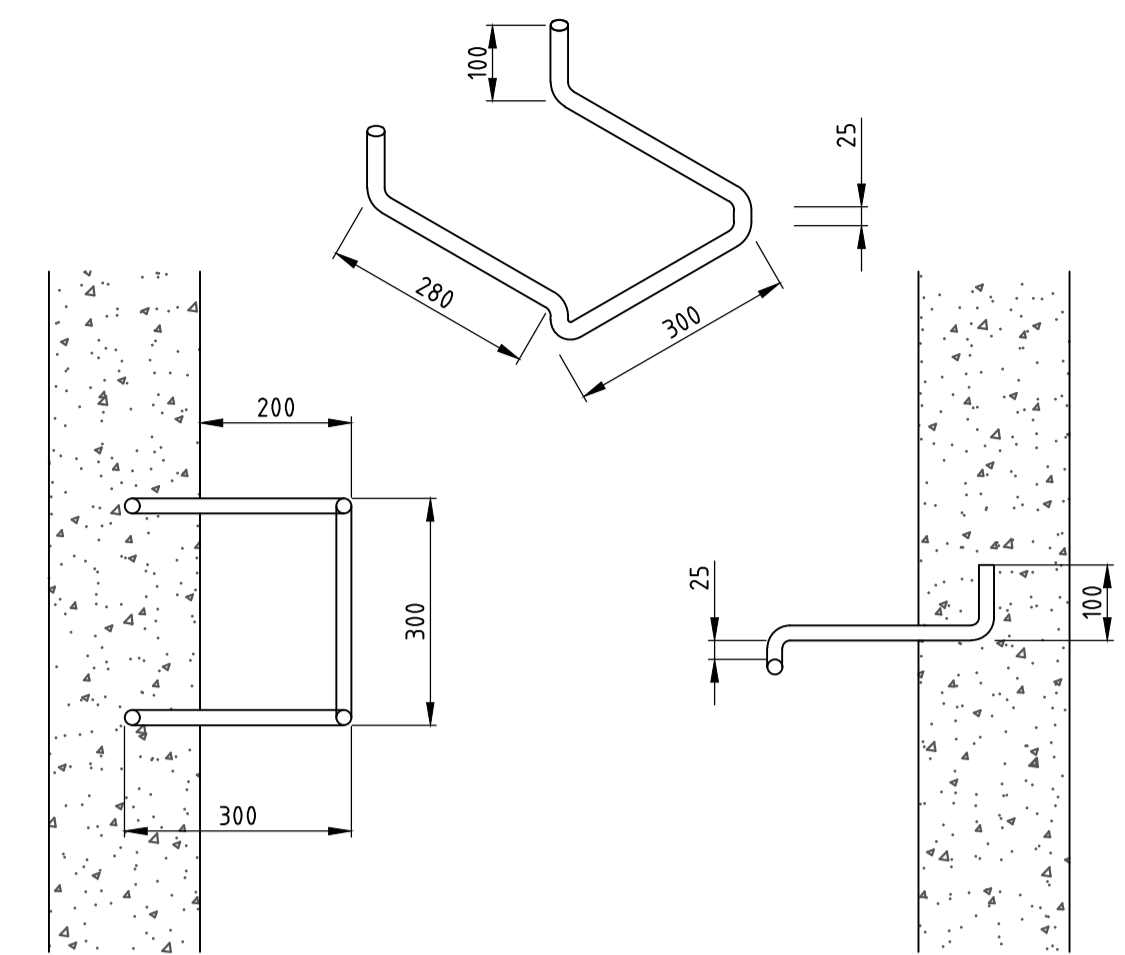
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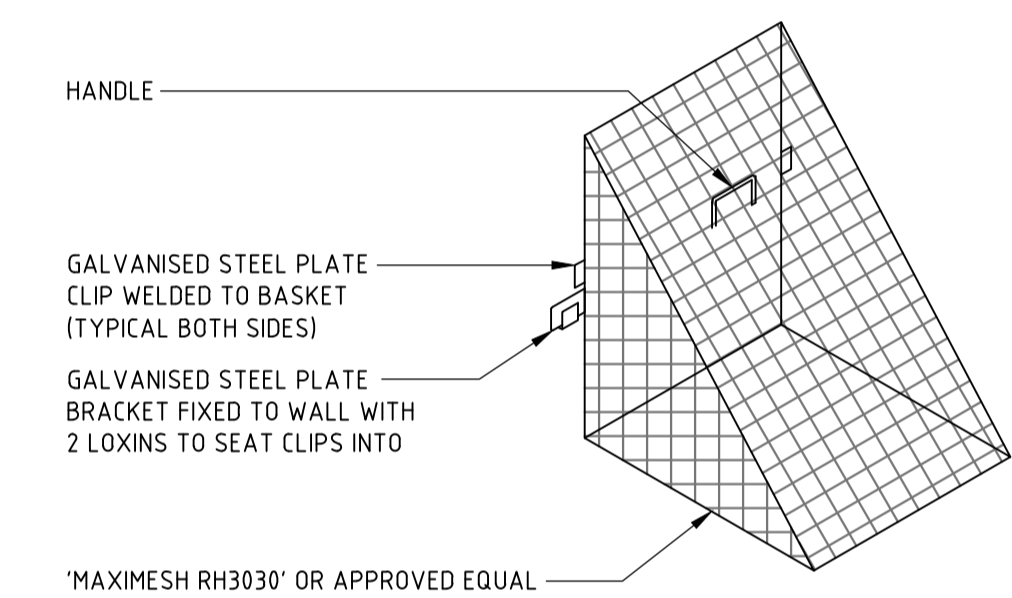




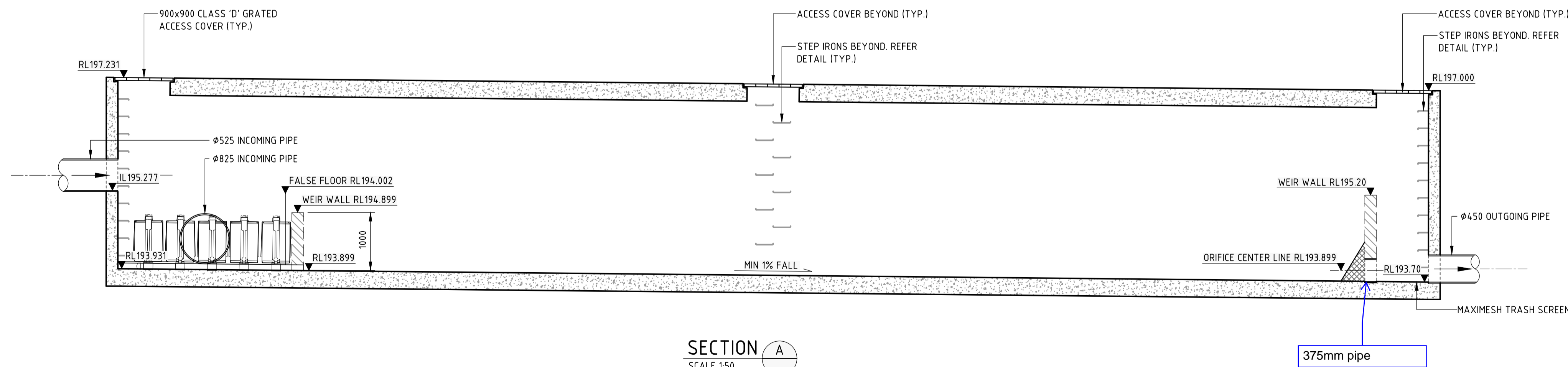
OSD BASE PLAN  
SCALE 1:50



STEP IRON DETAIL  
STEP IRON OF 20mm GALVANISED STEEL MADE TO SHAPE AND DIMENSIONS AS SHOWN, PLACED AT 300 CENTRES AND STAGGERED HORIZONTALLY FOR ALL PITS DEEPER THAN 1.0m. THE USE OF PROPRIETARY STEP IRONS ARE ACCEPTABLE PROVIDED THE PRODUCT IS IN ACCORDANCE WITH AUSTRALIAN STANDARDS  
SCALE 1:10



TRASH SCREEN DETAIL  
SCALE 1:10



SECTION A  
SCALE 1:50

**NOT FOR CONSTRUCTION**

DESIGNED - J. GRINSELL  
JOB MANAGER - S. FRYER  
DRAWN - M. MAI  
VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR CO-ORDINATION	C.B.		S.F.	04.08.21
02	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M.		A.C.	20.01.22

CLIENT  
**flower power**

ARCHITECT  
**LEFFLER SIMES ARCHITECTS**

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SCALE 1:10 @ A1

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

PROJECT  
**FLOWER POWER  
277 MONA VALE ROAD,  
TERREY HILLS NSW**

DRAWING TITLE  
**OSD DETAILS**

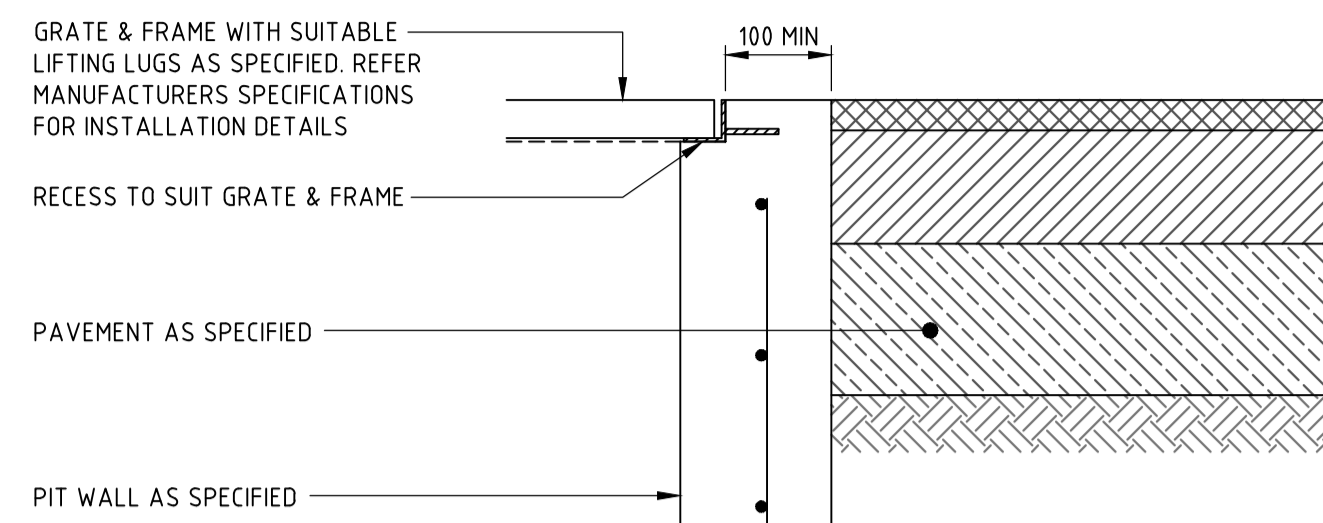
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DRAWING NUMBER  
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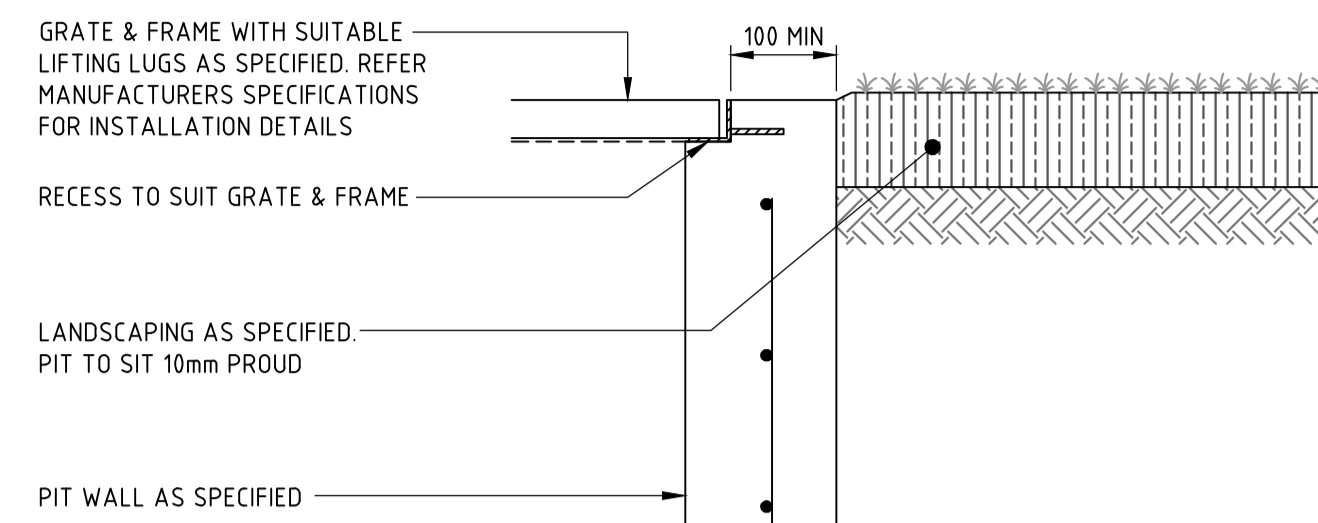
REVISION  
**02**

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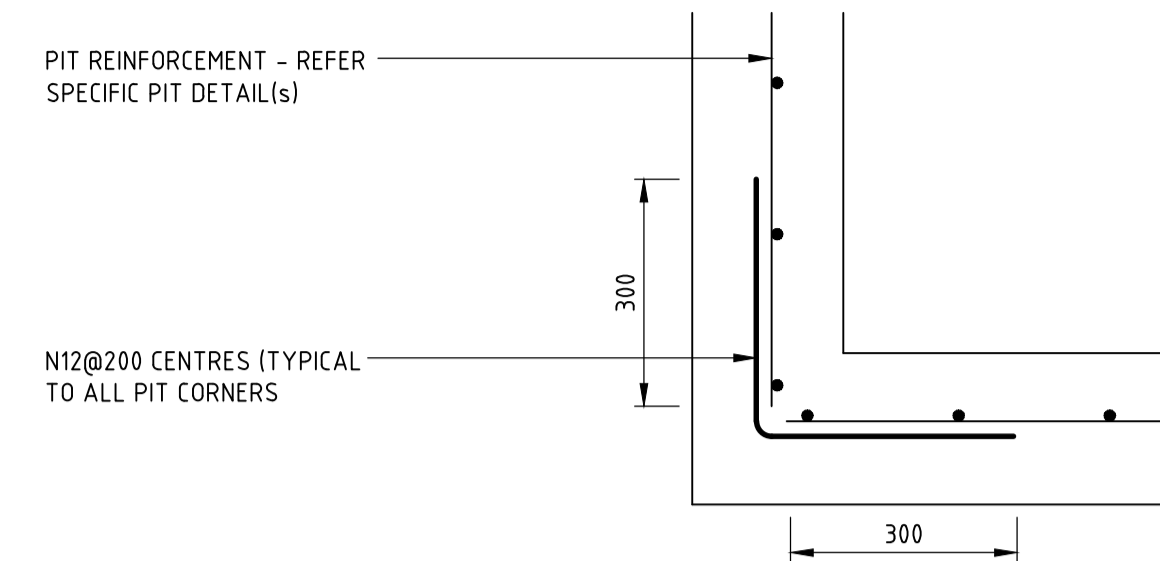
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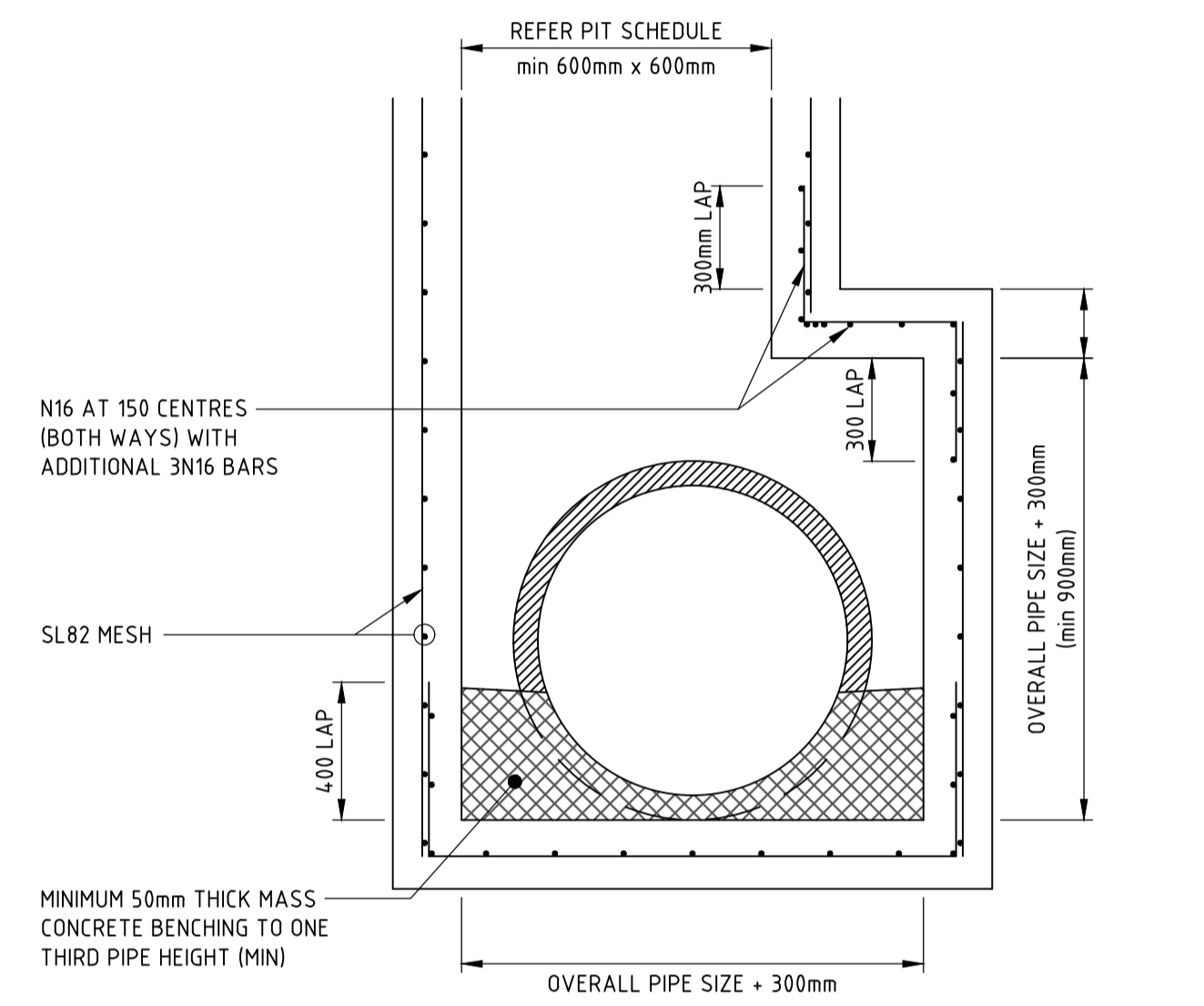
PIT INTERFACE - DETAIL 'A'  
SCALE 1:10



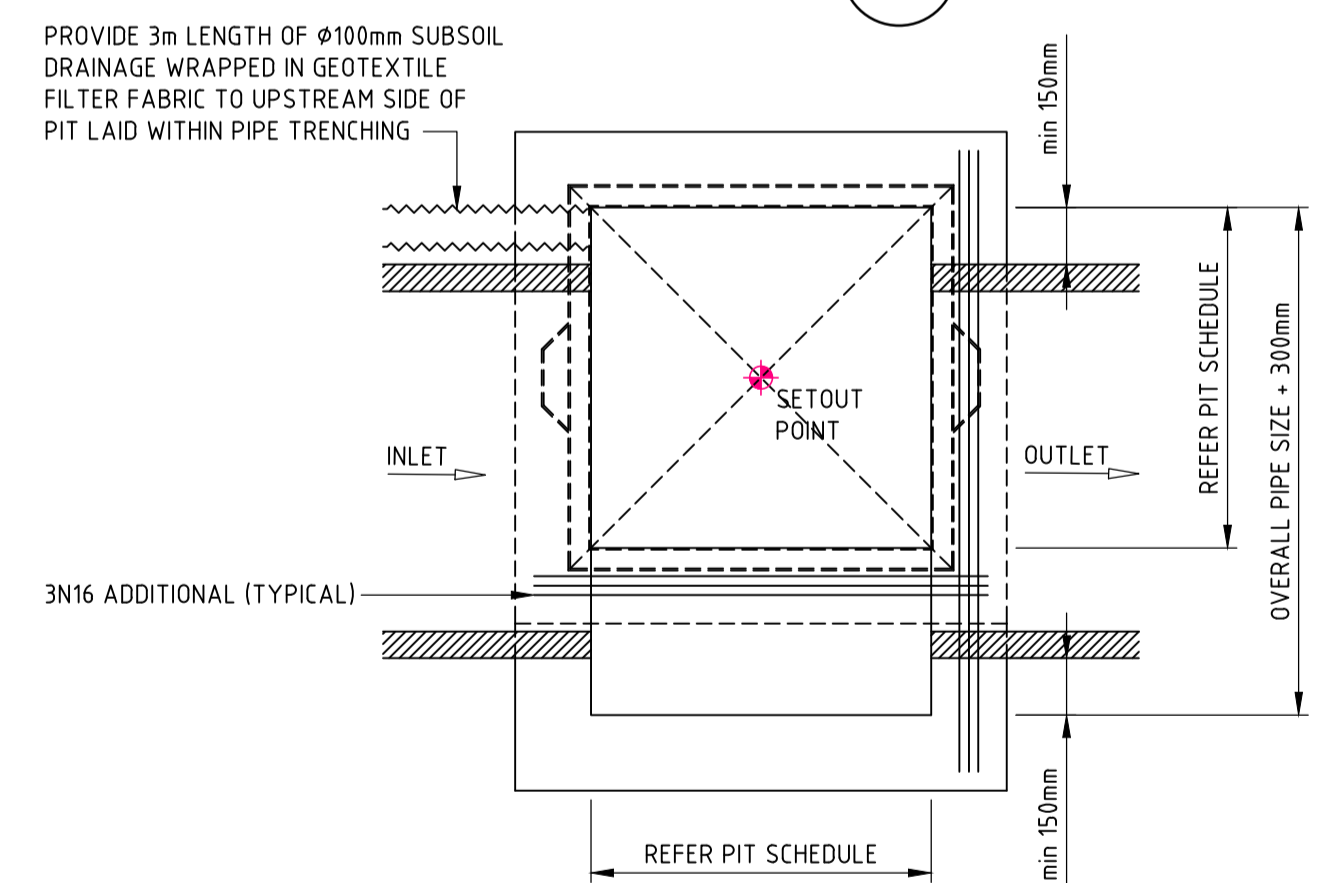
PIT INTERFACE - DETAIL 'B'  
SCALE 1:10



PIT INTERFACE (PLAN VIEW)  
APPLICABLE TO ALL STORMWATER DRAINAGE STRUCTURES  
SCALE 1:10

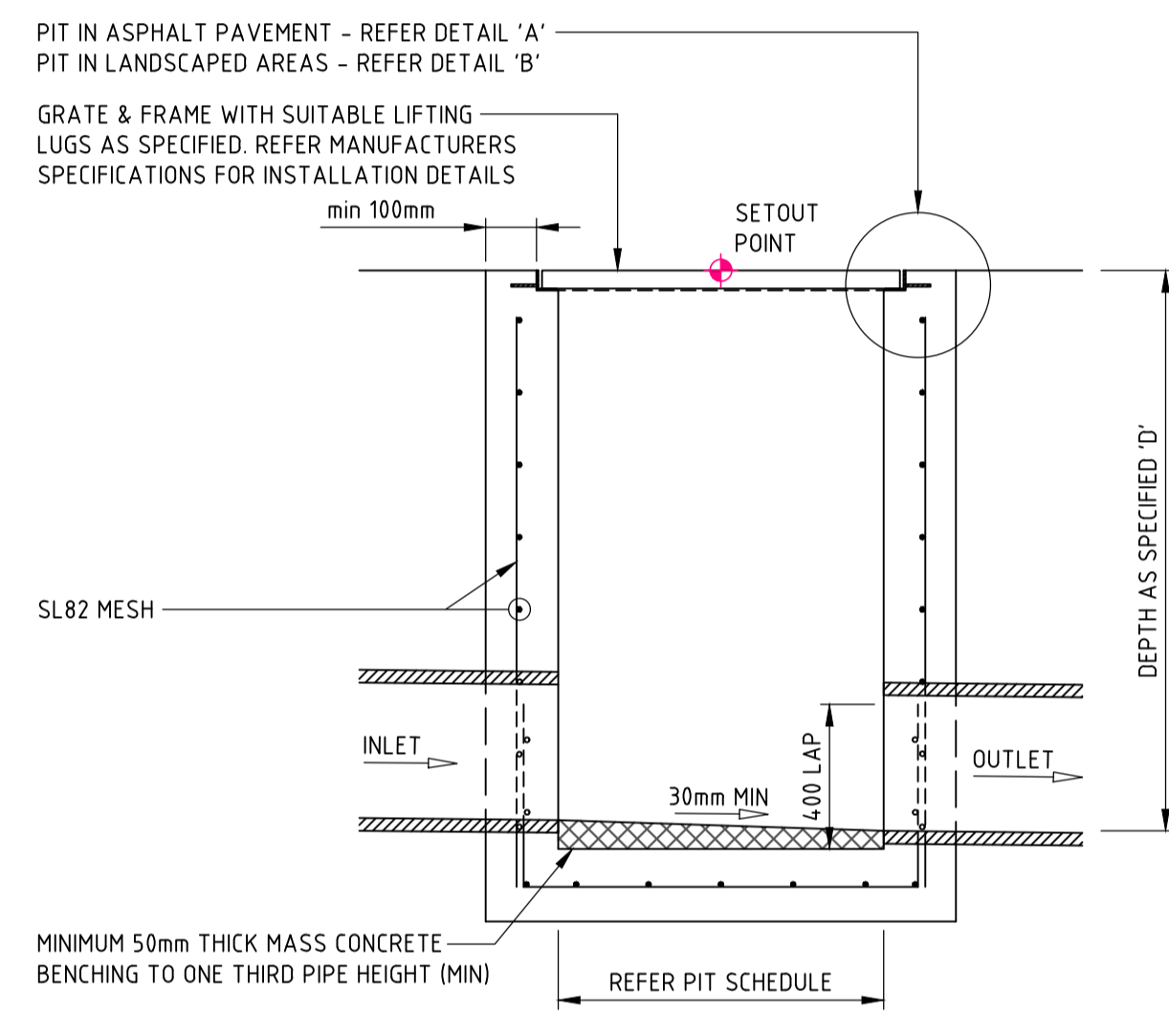


SECTION 1

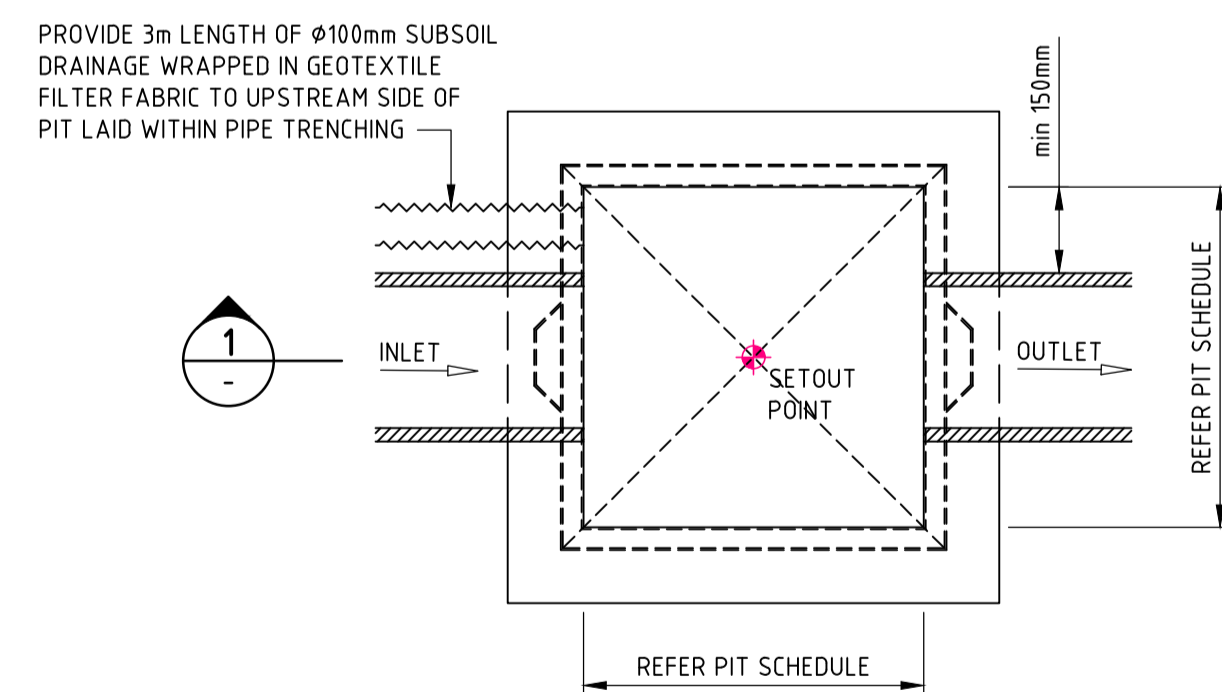


PLAN  
DRAINAGE PIT - EXTENDED CHAMBER

PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT  
SCALE 1:20

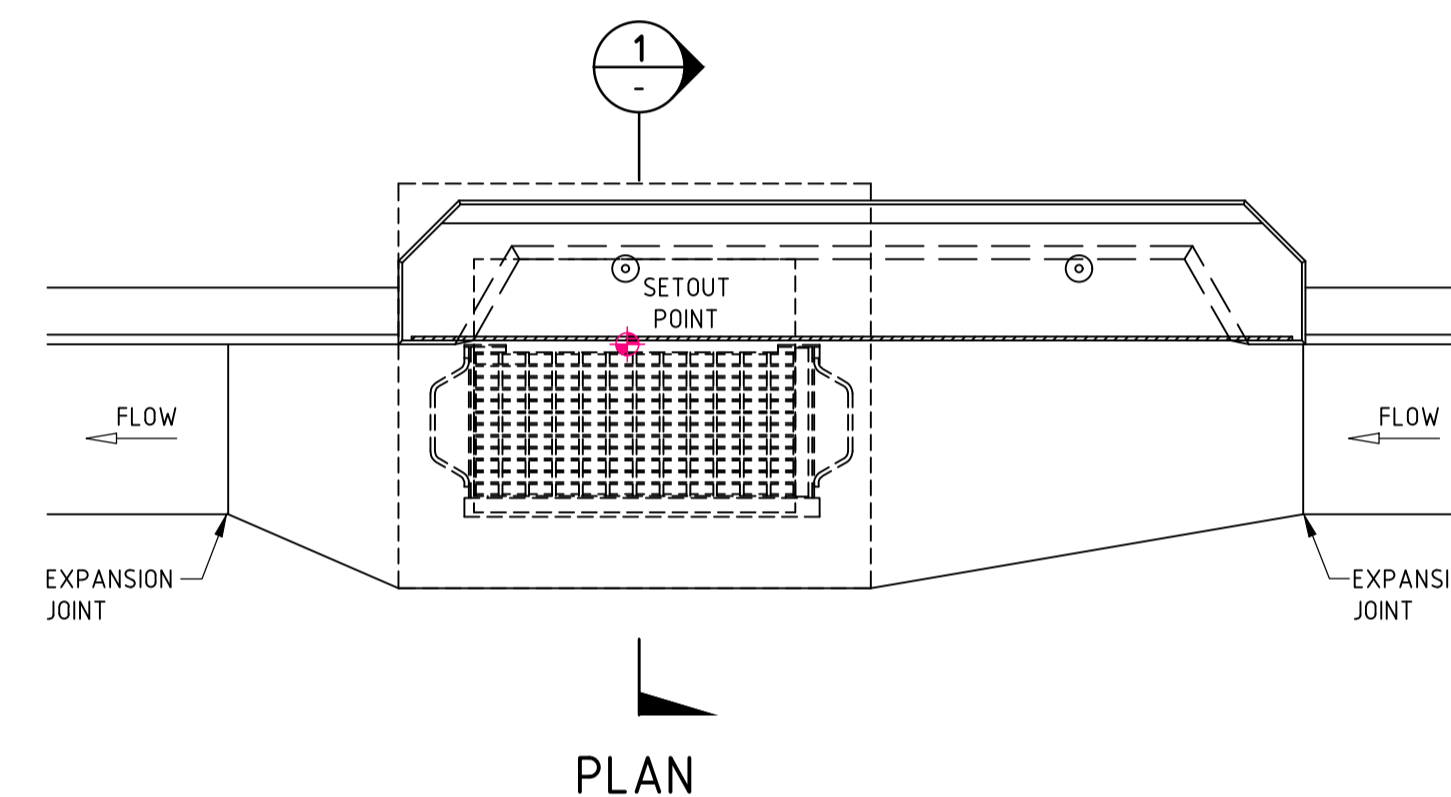


SECTION 1

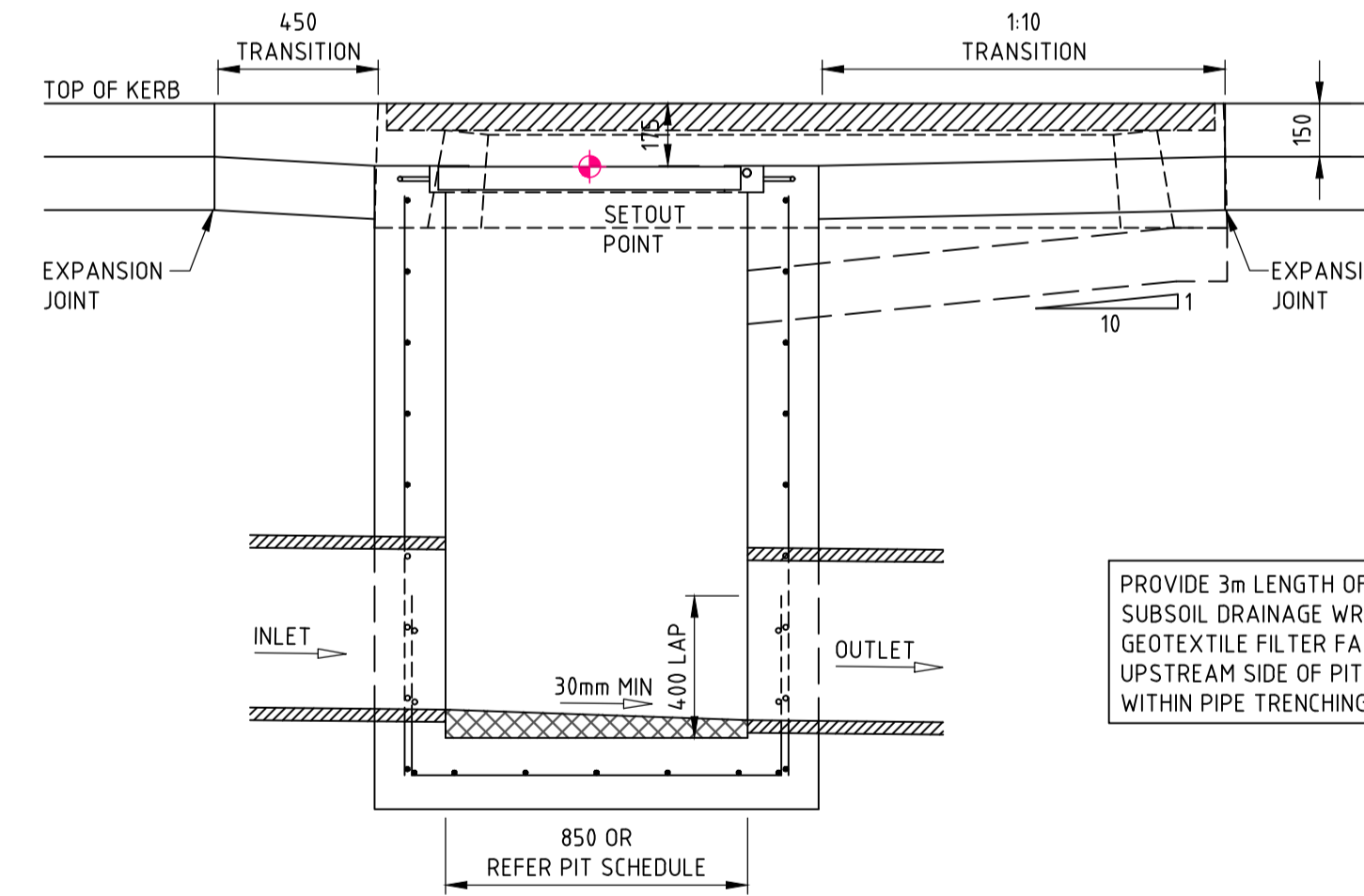


PLAN  
SURFACE INLET 'SIP' / JUNCTION PIT 'JP'

PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT  
SCALE 1:20



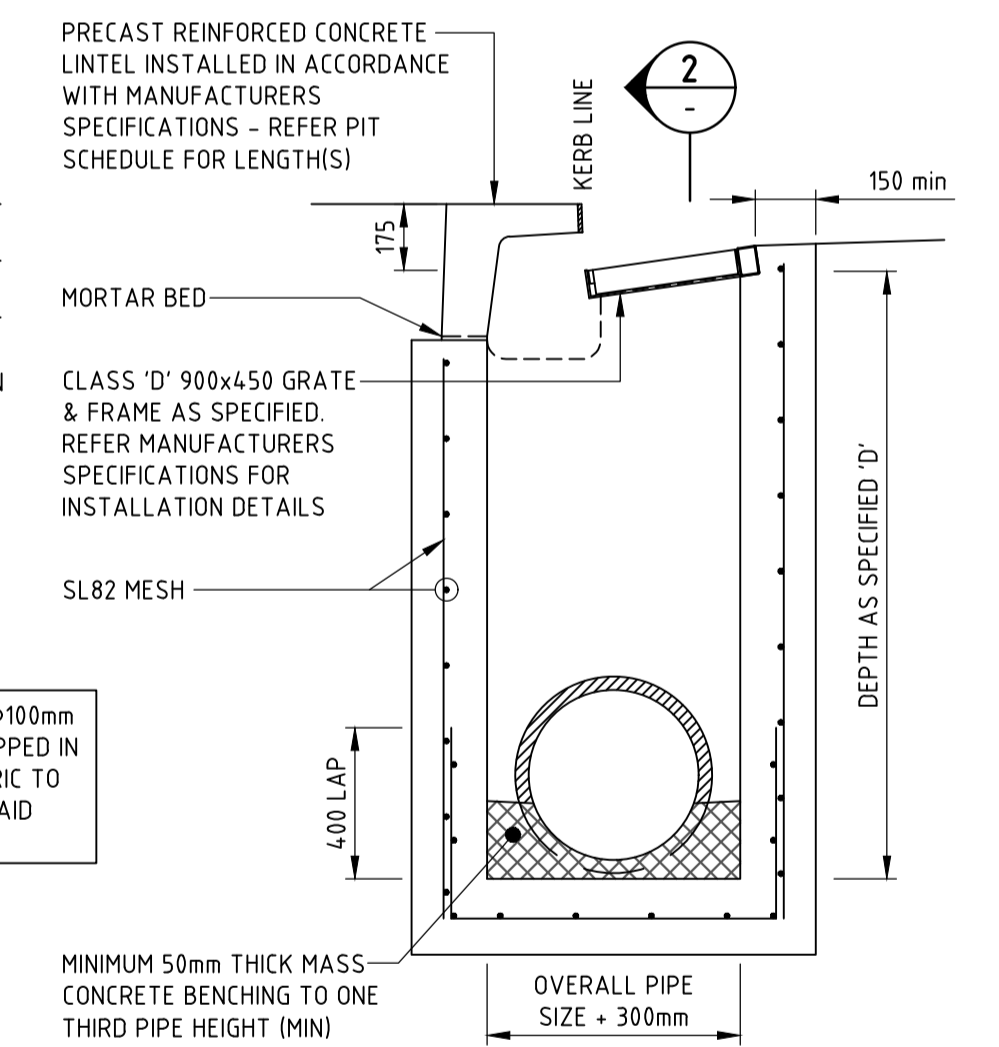
PLAN



SECTION 2

KERB INLET PIT 'KIP'

PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT  
SCALE 1:20



SECTION 1

FOR SAG PITS, ENSURE PIT LINTEL IS LOCATED CENTRAL TO PIT GRATE AND FRAME AND 1:10 CHUTE IS CONSTRUCTED TO BOTH SIDES OF PIT

REFER EXTENDED CHAMBER PIT DETAIL FOR PIPEWORK IN EXCESS OF Ø450 AND WHERE REQUIRED

PROVIDE 3m LENGTH OF Ø100mm SUBSOIL DRAINAGE WRAPPED IN GEOTEXTILE FILTER FABRIC TO UPSTREAM SIDE OF PIT LAID WITHIN PIPE TRENCHING

PRECAST REINFORCED CONCRETE LINTEL INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS - REFER PIT SCHEDULE FOR LENGTH(S)

CLASS 'D' 900x450 GRATE & FRAME AS SPECIFIED. REFER MANUFACTURERS SPECIFICATIONS FOR INSTALLATION DETAILS

SL82 MESH

MINIMUM 50mm THICK MASS-CONCRETE BENCHING TO ONE THIRD PIPE HEIGHT (MIN)

**NOT FOR CONSTRUCTION**

DESIGNED - J. GRINSELL  
JOB MANAGER - S. FRYER  
VERIFIER -  
DRAWN - M. MAI

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	M.M.		A.C.	20.01.22	

flower power

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:10 @ A1

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PROJECT

**FLOWER POWER**  
277 MONA VALE ROAD,  
TERREY HILLS NSW

DRAWING TITLE

**DETAILS - SHEET 01**

JOB NUMBER

**211979**

DRAWING NUMBER

**DA6.02**

REVISION

**01**

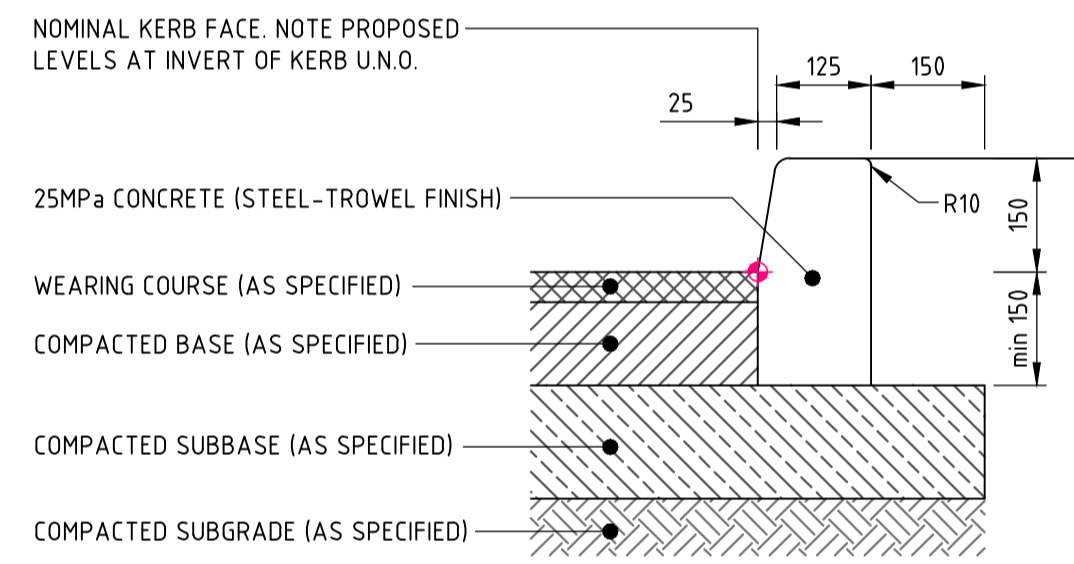
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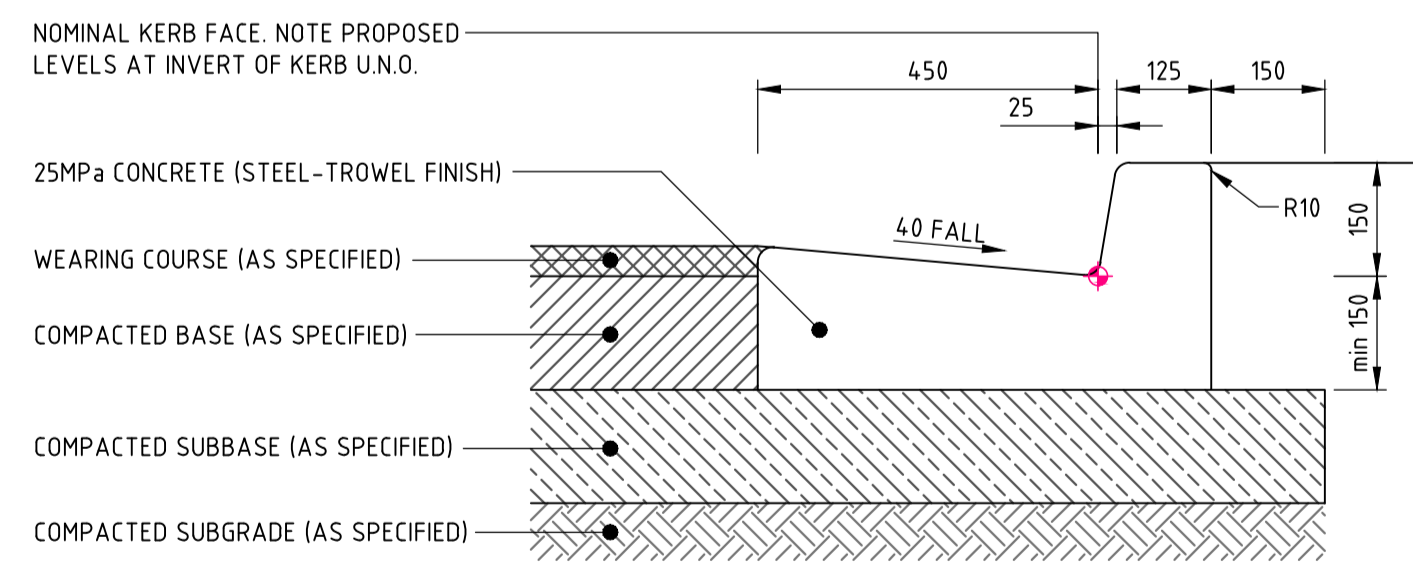
JOB MANAGER: S.FRYER

DESIGNED: J.GRINSELL

DRAWN: M.MAI



**KERB ONLY 'K0'**  
 EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS  
 ALL RADII TO BE 20mm U.N.O.  
 SCALE 1:10



**KERB & GUTTER 'KG'**  
 EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS  
 ALL RADII TO BE 20mm U.N.O.  
 SCALE 1:10

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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PROJECT

**FLOWER POWER  
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DRAWING TITLE

**DETAILS - SHEET 02**

JOB NUMBER

**211979**

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