



**JORDAN SPRINGS STAGE 2 - RETIREMENT VILLAS**  
**LOT 12 DP1244083**  
**BULK EARTHWORKS**  
**DA NUMBER: DA18/0678**



**LOCALITY SKETCH**

Prepared By:

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**ISSUED FOR CONSTRUCTION APPROVAL** PLAN No. 11048703/CC101 **A**  
 FILE No. 11048703CC101

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## GENERAL NOTES

- ALL WORKS ARE TO BE IN ACCORDANCE WITH COUNCILS "STANDARD SPECIFICATION FOR ENGINEERING WORKS.
- SURVEY MARKS: -
  - SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
- THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
- THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
- THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
- COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
- TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
- THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
- PUBLIC RESERVE AREAS SHALL BE CLEARED OF UNDERGROWTH, IMPROVEMENTS AND FENCES AS DIRECTED BY THE ENGINEER.
- FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
- SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
- ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
- ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
- SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
- DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
- ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.

## SURVEY SET OUT INFORMATION NOTES:

- ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
- THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
  - CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
  - 2D DRAFTING BASE (ELECTRONIC FILE)
  - 3D DTM (ELECTRONIC FILE)
- ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

Survey By:  
**SDG**  
 SUITE 1, 3 RAILWAY STREET  
 BAULKHAM HILLS, NSW 2153  
 PH: 02 96307955

Date: 11/05/18 File Name: 7202 PARKLAND ESTATE JORDAN SPRINGS ROAD DETAIL ISSUE D.DWG

## BULK EARTHWORKS NOTES

### TOPSOIL

- REMOVAL OF TOPSOIL ON ANY SECTION OF THE WORKS MUST COMMENCE ONLY AFTER EROSION AND SEDIMENTATION CONTROLS HAVE BEEN IMPLEMENTED AND WHEN CLEARING, GRUBBING AND REMOVAL OF CLEARED MATERIALS HAVE BEEN COMPLETED ON THAT SECTION OF WORKS.
- THE CONTRACTOR SHALL STRIP TOPSOIL FROM ALL FORMATION AREAS TO A DEPTH NOMINATED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL STOCKPILE TOPSOIL TEMPORARILY ON AREAS AS APPROVED BY THE SUPERINTENDENT, WITHIN THE WORKING AREA FOR RE-USE OR DISPOSAL OFF SITE.
- EXCESS TOPSOIL IS TO BE STOCKPILED WITHIN THE SITE EXTENT.
- WHERE TOPSOIL DEPTHS EXCEEDING THAT NOMINATED BY THE GEOTECHNICAL ENGINEER, NOMINALLY 100mm, THE CONTRACTOR MUST NOTIFY THE SUPERINTENDENT. THE CONTRACTOR SHALL RE-SPREAD TOPSOIL TO EARTHWORKS FORMATIONS AND ANY AREAS DENUDED OF TOPSOIL TO A MAXIMUM THICKNESS OF 100mm OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.
- TEMPORARY TOPSOIL STOCKPILES MUST:
  - BE FREE FROM EXCAVATED MATERIALS, CONTAMINATED MATERIALS, REFUSE, CLAY LUMPS AND STONES, TIMBERS, OR OTHER RUBBISH;
  - HAVE BATTERS TRACK ROLLED OR STABILISED BY OTHER MEANS ACCEPTABLE TO THE SUPERINTENDENT.
  - BE SEEDED TO ENCOURAGE VEGETATION COVER. SEEDING MUST BE CARRIED OUT PROGRESSIVELY WITHIN SEVEN DAYS OF COMPLETION OF EACH 500m<sup>2</sup> OR EXPOSED BATTER FACE.
  - ALL EXCESS TOPSOIL IS TO BE REMOVED FROM THE SITE UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT.

### EARTHWORKS OPERATIONS

- THE CONTRACTOR SHALL EXCAVATE AND/OR PLACE AND COMPACT FILL TO CONFORM TO THE LINES, GRADES, CROSS SECTIONS, AND DIMENSIONS SHOWN ON THE DRAWINGS, ALLOWING FOR TOPSOIL LAYERS.
- SHOULD WET MATERIAL BE ENCOUNTERED, THE CONTRACTOR SHALL DRY THE MATERIAL SUFFICIENTLY BY RE-WORKING, OR SPREADING IT TO ALLOW DRYING.
- WET MATERIAL IS NOT CONSIDERED 'UNSUITABLE MATERIAL' (REFER TO DEFINITION BELOW).
- THE CONTRACTOR SHALL OVER-EXCAVATE WITHIN AREAS EXHIBITING UNSUITABLE MATERIAL (AFTER TOPSOIL STRIPPING) TO REMOVE ALL UNSUITABLE MATERIAL.
- UNSUITABLE MATERIAL IS DEFINED AS CONTAINING DELETERIOUS MATERIALS SUCH AS ORGANIC MATTER, SILTS AND/OR DEMOLITION WASTE MATERIAL AS DIRECTED BY THE SUPERINTENDENT AND / OR COUNCIL.
- ALL WASTE MATERIALS, INCLUDING DEMOLITION MATERIALS AND UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED FROM THE SITE BY THE CONTRACTOR.
- THE CONTRACTOR SHOULD MAKE SUFFICIENT ALLOWANCE FOR ALL EARTHWORKS OPERATIONS TO BE INCLUSIVE OF ALL NECESSARY EXCAVATION IN ALL CLASSES OF MATERIAL, INCLUDING ROCK (IF ENCOUNTERED) AND EXCAVATION AND REPLACEMENT OF WASTE AND UNSUITABLE MATERIAL.
- THE CONTRACTOR WILL MAKE ALLOWANCE FOR DISPOSAL OF EXCESS FILL MATERIAL OFF SITE, INCLUSIVE OF CARTING AND TIPPING FEES.

## REMOVAL OF DAMS & FAUNA PROTECTION

- ALL DAMS SHALL BE DEWATERED IN STAGES. ALL NATIVE FAUNA LOCATED WITHIN AND SURROUNDING THE DAMS SHALL BE COLLECTED BY AN APPROPRIATELY QUALIFIED AND LICENSED ECOLOGIST.
- ANY CAPTURED NATIVE FAUNA SHALL BE LOCATED TO A SUITABLE LOCATION, AT THE COMPLETION OF THE RELOCATION PROCESS. DETAILS SHALL BE SUBMITTED TO COUNCIL CONFIRMING THAT THE FAUNA COLLECTION PROCESS HAS BEEN UNDERTAKEN, INCLUDING PHOTOGRAPHS, SURVEYS AND DIARY ENTRIES. SUFFICIENT NOTICE SHALL BE GIVEN TO THE ECOLOGIST OF THE INTENDED DATE OF DAM DEWATERING SO THAT THEY ARE ABLE TO COLLECT THE FAUNA SPECIES BEFORE THE DAM DEWATERING AND FILLING.

## BATTERS

- BATTER SLOPES ARE TYPICALLY 1v:5h UNLESS NOTED OTHERWISE.

## GEOTECHNICAL

- REFER TO GEOTECHNICAL REPORT PREPARED BY GEOTECH TESTING PTY LTD. DESIGN REPORT 8921/1 DATED 20TH FEB 2019 FOR ROAD BOXING DEPTHS

CIVIL PLAN INDEX		
PLAN NO.	PLAN NAME	REV
11048703/CC101	COVER SHEET & INDEX	A
11048703/CC102	GENERAL NOTES & LEGEND	A
11048703/CC103	CUT & FILL PLAN	A
11048703/CC104	SITE SECTIONS	A
11048703/CC105	SITE SECTIONS	A
11048703/CC106	SOIL & WATER MANAGEMENT PLAN	A
11048703/CC107	BASIN CALCULATIONS	A
11048703/CC108	SOIL & WATER MANAGEMENT NOTES	A

## LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
SURVEY MARKS - BENCH MARKS			
STATE SURVEY MARKS			
CONTOURS			
CATCH DRAIN			
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE			



UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS



**ISSUED FOR CONSTRUCTION APPROVAL**

JORDAN SPRING  
 STAGE 2 - RETIREMENT VILLAS  
 GENERAL NOTES & LEGEND

PLAN No:  
**11048703/CC102** A  
 FILE No: 11048703CC102  
 SHEET SIZE: A1 ORIGINAL

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A	ISSUED FOR CONSTRUCTION CERTIFICATE	MMC	NM	DJH MS 10/05/19
	AMENDMENT	DES	DRN	CKD APR DATE

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**LEGEND**

- 40m OFFSET
- WATERFRONT LAND
- FSL XX.XX LOT PAD AND FINISHED SURFACE LEVEL

**VOLUME DEPTH RANGE**

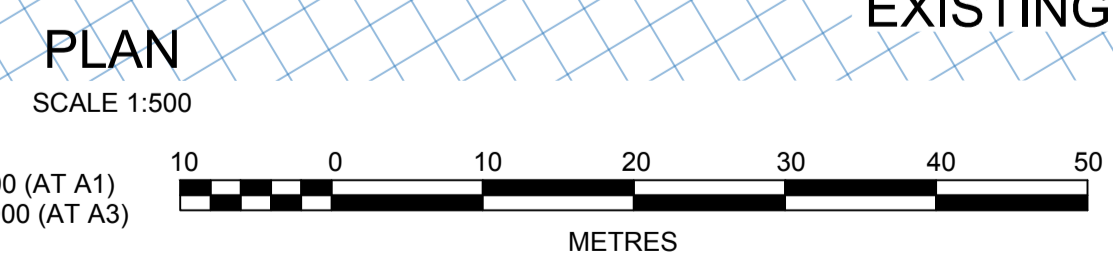
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-1.75	to -1.5	m
-1.5	to -1.25	m
-1.25	to -1	m
-1	to -.75	m
-.75	to -.5	m
-.5	to -.25	m
-.25	to 0	m
0	to .25	m
.25	to .5	m
.5	to .75	m
.75	to 1.0	m
1.0	to 1.25	m
1.25	to 1.5	m
1.5	to 1.75	m
1.75	to 2	m
2	to 50	m

NOTE: PAD LEVELS ARE TAKEN IN THE CENTRE OF PAD. NOTE PAD FALLS 100mm.

NOTE: CONTOURS FOR ROADWAYS AND VERGES ARE SHOWN AS FINISHED SURFACE LEVELS. CONTOUR FOR PADS ARE APPROXIMATELY 300mm BELOW FINISHED FLOOR LEVELS. THE CONTRACTOR IS TO CONFIRM ROAD BOXING DEPTHS WITH GEOTECHNICAL REPORT.

**VOLUME CALCULATIONS**

STAGE 2 CUT - 23m<sup>3</sup>  
 FILL - 17526m<sup>3</sup>  
 BALANCE - 17503m<sup>3</sup> EXCESS FILL



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**JORDAN SPRING**  
**STAGE 2 - RETIREMENT VILLAS**  
 CUT & FILL PLAN

PLAN No: **11048703/CC103 A**  
 FILE No: 11048703CC103  
 SHEET SIZE: A1 ORIGINAL

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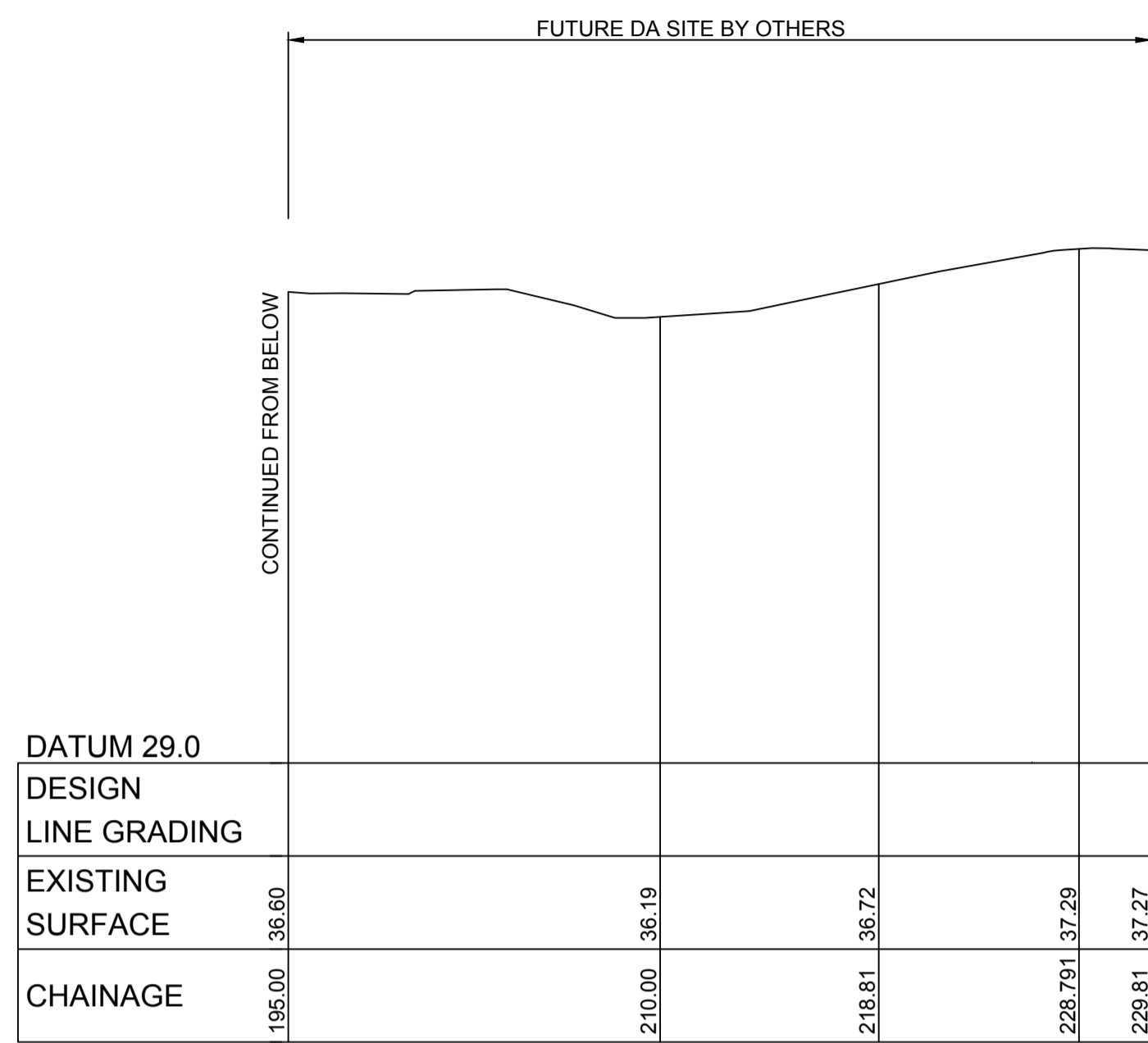
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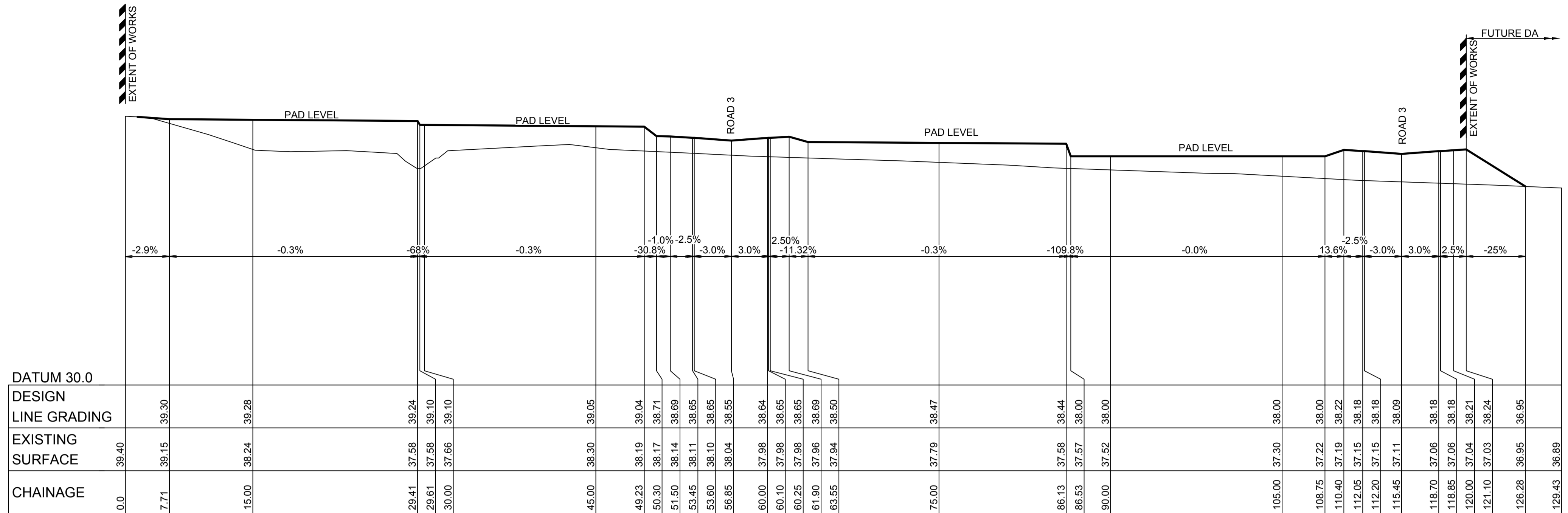


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DATUM 29.0	
DESIGN LINE GRADING	
EXISTING SURFACE	
CHAINAGE	

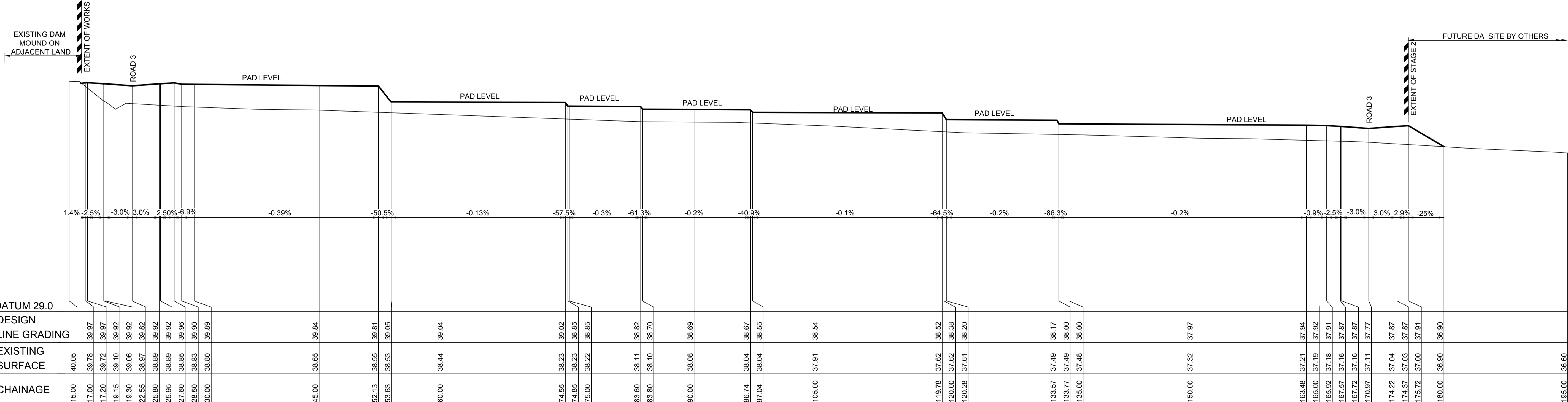
**SECTION 2**  
SCALE H 1:250  
V 1:100  
CC103



DATUM 30.0	
DESIGN LINE GRADING	
EXISTING SURFACE	
CHAINAGE	

**SECTION 3**  
SCALE H 1:250  
V 1:100  
CC103

**NOTE :**  
CONTOURS FOR ROADWAYS AND VERGES ARE SHOWN AS FINISHED SURFACE LEVELS.  
CONTOUR FOR PADS ARE APPROXIMATELY 300mm BELOW FINISHED LEVELS.  
THE CONTRACTOR IS TO CONFIRM ROAD BOXING DEPTHS WITH GEOTECHNICAL REPORT.



DATUM 29.0	
DESIGN LINE GRADING	
EXISTING SURFACE	
CHAINAGE	

**SECTION 2**  
SCALE H 1:250  
V 1:100  
CC103



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**JORDAN SPRING  
STAGE 2 - RETIREMENT VILLAS  
SITE SECTIONS**

PLAN No:  
**11048703/CC105 A**  
FILE No: 11048703CC105  
SHEET SIZE: A1 ORIGINAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE	MMC	NM	DJH	MS	10/05/19
	AMENDMENT	DES	DRN	CKD	APR	DATE

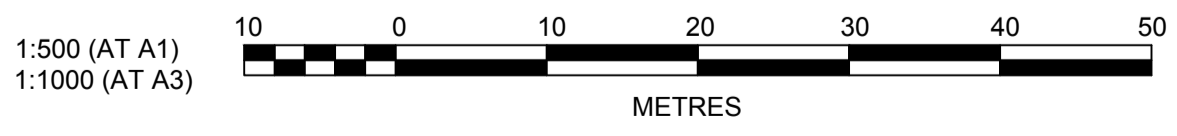
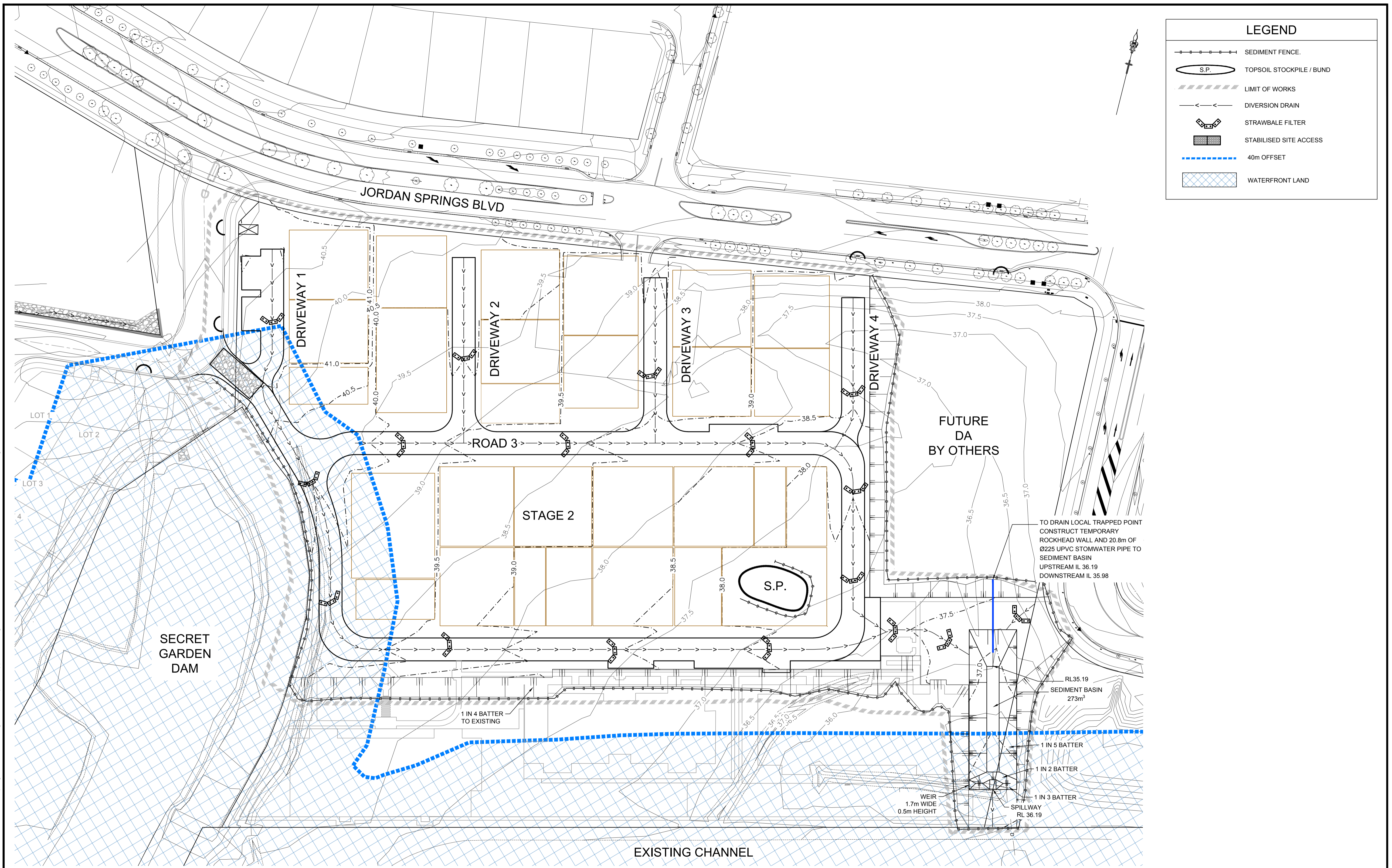
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**JORDAN SPRING**  
**STAGE 2 - RETIREMENT VILLAS**  
SOIL & WATER MANAGEMENT PLAN

PLAN No: **11048703/CC106 A**

FILE No: 11048703CC106

SHEET SIZE: A1 ORIGINAL

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	AMENDMENT	DES	DRN	CKD	APR	DATE

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### 1. Site Data Sheet

Site Name:	JORDAN SPRINGS				
Site Location:	PENRITH				
Precinct:	STAGE 2				
Description of Site:	RETIREMENT LIVING				

Site area	Site					Remarks
	1					
Total catchment area (ha)	2.25					
Disturbed catchment area (ha)	2.25					

#### Soil analysis

% sand (fraction 0.02 to 2.00 mm)	33					Soil texture should be assessed through mechanical dispersion only. Dispersing agents (e.g. Calgon) should not be used	
% silt (fraction 0.002 to 0.02 mm)	33						
% clay (fraction finer than 0.002 mm)	33						
Dispersion percentage	10.0						E.g. enter 10 for dispersion of 10%
% of whole soil dispersible	4.95						See Section 6.3.3(e)
Soil Texture Group	F					See Section 6.3.3(c), (d) and (e)	

#### Rainfall data

Design rainfall depth (days)	5					See Sections 6.3.4 (d) and (e)
Design rainfall depth (percentile)	75					See Sections 6.3.4 (f) and (g)
x-day, y-percentile rainfall event	21.8					See Section 6.3.4 (h)
Rainfall intensity: 2-year, 6-hour storm	10.3					See IFD chart for the site

#### RUSLE Factors

Rainfall erosivity (R-factor)	2330					Automatic calculation from above data  RUSLE data can be obtained from Appendixes A, B and C
Soil erodibility (K-factor)	0.05					
Slope length (m)	234					
Slope gradient (%)	1.93					
Length/gradient (LS-factor)	0.617					
Erosion control practice (P-factor)	1.3					
Ground cover (C-factor)	1					

#### Calculations

Soil loss (t/ha/yr)	93					
Soil Loss Class	1					See Section 4.4.2(b)
Soil loss (m <sup>3</sup> /ha/yr)	72					
Sediment basin storage volume, m <sup>3</sup>	27					See Sections 6.3.4(i) and 6.3.5 (e)

### 4. Volume of Sediment Basins, Type D and Type F Soils

Basin volume = settling zone volume + sediment storage zone volume

#### Settling Zone Volume

The settling zone volume for Type F and Type D soils is calculated to provide capacity to contain all runoff expected from up to the y-percentile rainfall event. The volume of the basin's settling zone (V) can be determined as a function of the basin's s

$$V = 10 \times C_v \times A \times R_{x\text{-day}, y\text{-}\%ile} \text{ (m}^3\text{)}$$

where:

10 = a unit conversion factor

$C_v$  = the volumetric runoff coefficient defined as that portion of rainfall that runs off as stormwater over the x-day period

$R_{x\text{-day}, y\text{-}\%ile}$  = is the x-day total rainfall depth (mm) that is not exceeded in y percent of rainfall events. (See Sections 6.3.4(d), (e), (f), (g) and (h)).

A = total catchment area (ha)

#### Sediment Storage Zone Volume

In the detailed calculation on Soil Loss Classes 1 to 4 lands, the sediment storage zone can be taken as 50 percent of the settling zone capacity. Alternately designers can design the zone to store the 2-month soil loss as calculated by the RUSLE (Section

Place an "X" in the box below to show the sediment storage zone design parameters used here:

<input type="checkbox"/>	50% of settling zone capacity,
<input checked="" type="checkbox"/>	2 months soil loss calculated by RUSLE

#### Total Basin Volume

Site	$C_v$	$R_{x\text{-day}, y\text{-}\%ile}$	Total catchment area (ha)	Settling zone volume (m <sup>3</sup> )	Sediment storage volume (m <sup>3</sup> )	Total basin volume (m <sup>3</sup> )
1	0.50	21.8	2.25	245.25	27	272.25

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JORDAN SPRING  
STAGE 2 - RETIREMENT VILLAS  
BASIN CALCULATIONS

PLAN No:  
**11048703/CC107 A**  
FILE No: 11048703CC107  
SHEET SIZE: A1 ORIGINAL

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# SOIL AND WATER MANAGEMENT NOTES

## GENERAL NOTES:

- ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE "SOILS AND CONSTRUCTION - VOLUME 1, 4TH EDITION, MARCH 2004".
- TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.
- ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
- ALL TAIL-OUT DRAINS SHALL BE COUGH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.
- VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.
- DISTURBANCE OF VEGETATION SHALL BE LIMITED TO FILL AREAS, ROADWAYS AND DRAINAGE LINES. NO LOT GRADING SHALL BE CARRIED OUT IN UNDISTURBED AREAS WITHOUT CONSULTATION WITH COUNCIL'S ENGINEER.
- ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.
- ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.
- THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.
- CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").
- ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.
- THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:  
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE A GROUND COVER MORE THAN 70%, USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

- WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-
  - INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 6-8.
  - CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE PLAN AND TO DETAIL (SD) 6-14.
  - CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 5-5.
  - PROVIDE TEMP. ACCESS TO THE SEDIMENT BASIN(S) AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-8 OR BARRIER FENCING AND EARTH BANKS (SD) 5-5.
  - PLACE SEDIMENT FENCING (SD) 6-8 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
  - CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
  - STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
  - CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE PLAN OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
  - UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
  - GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
  - REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
- CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE
- EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-
  - 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
  - 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
  - 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
  - 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
  - 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
  - 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

- PROTECTION FROM EROSION FORCES SHALL BE UNDERTAKEN ON ALL LANDS. GROUND COVER TO BE IN PLACE WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION AND BEFORE THEY ARE ALLOWED TO CARRY ANY CONCENTRATED FLOWS.
- TEMPORARY GROUND COVER SHOULD BE MINIMUM 70%. FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS.
- WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO SCHEDULE WORKS SUCH THAT LAND DISTURBANCE ACTIVITIES ARE COMPLETED IN LESS THAN 6 MONTHS. REVEGETATION WORKS MUST BE CARRIED OUT AS STIPULATED IN THE RELEVANT COUNCIL GUIDELINES / SPECIFICATIONS SUCH THAT A SATISFACTORY GROUND COVER IS PROVIDED TO AT LEAST 60% OF THE DISTURBED AREA WITHIN 10 DAYS AND AT LEAST 70% OF THE DISTURBED AREA WITHIN A FURTHER 60 DAYS..
- SEDIMENT FENCES (SD) 6-8 SHALL:-
  - BE INSTALLED WHERE SHOWN ON THE PLAN AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
  - HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m. AND A STORAGE DEPTH OF AT LEAST 0.6m.
  - PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 50litres/sec IN A MAX. 10yr Tc DISCHARGE.
- STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.
- DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.
- STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.
- THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-
  - BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
  - BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
  - HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.
- STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-
  - LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
  - THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
  - THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT DISCHARGING SEDIMENT FROM THE SITE.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.
- WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-11 & 6-12.
- TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.
- ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

## STOCKPILE NOTES:

- SPOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.
- IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.
- FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATED.

## SEDIMENTATION CONTROL DEVICES:

- ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 600mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.
- SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2.5m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.
- PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

## SITE INSPECTION AND MAINTENANCE:

- A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON AN INSPECTION TEST PLAN (ITP) OR LOG BOOK. A SITE INSPECTION USING THE ITP SHALL BE MADE BY THE SITE MANAGER:-
  - AT LEAST WEEKLY
  - IMMEDIATELY BEFORE SITE CLOSURE
  - IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

THE SELF AUDIT SHALL INCLUDE:-

  - RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
  - RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
  - RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
  - RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
  - FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.
- IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-
  - 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
  - ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

## THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

- THIS PLAN IS BEING IMPLEMENTED CORRECTLY
  - REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
  - ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY. EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.
- WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT
  - PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED, ESPECIALLY THAT:-
    - NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    - AREAS OF EROSION ARE REPAIRED (eg LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    - BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)
  - SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.
  - RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.
  - EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.
  - ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-
    - RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    - DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    - SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.
  - ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECT TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.
  - EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.
  - WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(S) SHALL BE:-
    - TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    - DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.
  - LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

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	AMENDMENT	DES	DRN	CKD	APR
					DATE

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**ISSUED FOR CONSTRUCTION APPROVAL**

**JORDAN SPRING  
STAGE 2 - RETIREMENT VILLAS  
SOIL & WATER MANAGEMENT NOTES**

PLAN No: **11048703/CC108** A

FILE No: 11048703CC108

SHEET SIZE: A1 ORIGINAL

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.