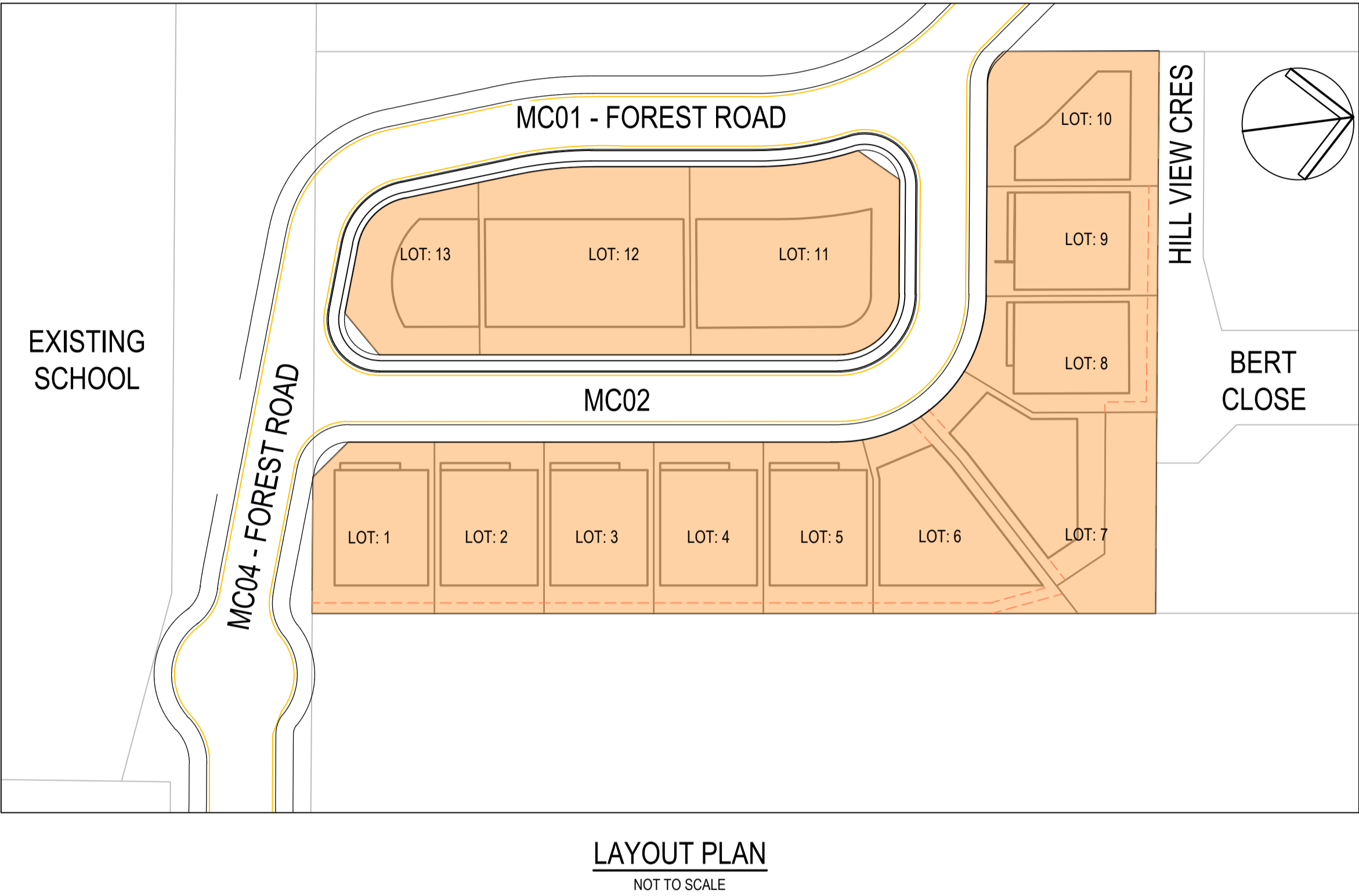


PROPOSED RESIDENTIAL SUBDIVISION

4 FOREST ROAD, WARRIEWOOD NSW 2102

CIVIL ENGINEERING SERVICES - DEVELOPMENT APPLICATION

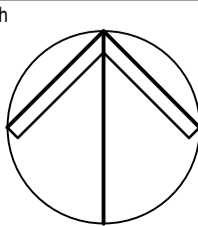
DRAWING INDEX		
DWG No.	DESCRIPTION	REV
C1.001	COVER SHEET AND DRAWING INDEX	D
C1.101	NOTES AND LEGENDS	D
C1.201	TYPICAL DETAILS	D
C2.001	BULK EARTHWORKS PLAN	E
C2.101	BULK EARTHWORKS - SITE SECTION - SHEET 1	D
C2.102	BULK EARTHWORKS - SITE SECTION - SHEET 2	D
C2.103	BULK EARTHWORKS - SITE SECTION - SHEET 3	D
C2.104	BULK EARTHWORKS - SITE SECTION - SHEET 4	D
C2.105	BULK EARTHWORKS - SITE SECTION - SHEET 5	D
C3.001	GENERAL ARRANGEMENT - SITeworks AND GRADING PLAN	D
C4.101	RETAINING WALL - NOTES AND DETAILS	D
C5.101	ROAD DESIGN - TYPICAL ROAD CROSS SECTION	D
C5.201	ROAD DESIGN - LONGITUDINAL SECTIONS - SHEET 1	D
C5.202	ROAD DESIGN - LONGITUDINAL SECTIONS - SHEET 2	D
C7.001	STORMWATER MANAGEMENT PLAN	D
C7.101	STORMWATER MANAGEMENT - CATCHMENT PLAN	D
C7.201	STORMWATER MANAGEMENT - DETAILS - SHEET 1	D
C7.202	STORMWATER MANAGEMENT - DETAILS - SHEET 2	D
C7.203	STORMWATER MANAGEMENT - DETAILS - SHEET 3	D
C7.401	STORMWATER MANAGEMENT - DRAINAGE LONGITUDINAL SECTIONS - SHEET 1	D
C7.402	STORMWATER MANAGEMENT - DRAINAGE LONGITUDINAL SECTIONS - SHEET 2	D
C8.001	SOIL EROSION AND SEDIMENT CONTROL PLAN	D
C8.101	SOIL EROSION AND SEDIMENT CONTROL PLAN - NOTES AND DETAILS	D



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D	ISSUE FOR DA	17.07.24	RP	VG
C	ISSUE FOR DA	16.10.23	ROB	VG
Issue	Description	Date	Drawn	Approved



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Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
COVER SHEET AND DRAWING INDEX

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C1.001	F		

NOT FOR CONSTRUCTION

GENERAL NOTES

1. ALL WORK TO BE IN ACCORDANCE WITH THE NORTHERN BEACHES COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, AND TO THE REQUIREMENTS OF COUNCIL ENGINEERS.
2. A SURVEY OF THE SITE HAS BEEN UNDERTAKEN BY MICHAEL KIRKWOOD AND ASSOCIATE PTY LTD AS RECEIVED BY ACOR CONSULTANTS PTY LTD' ON 03.05.21 ALL LEVELS TO A.H.D. DRAWINGS SHOW DETAILS AT THE TIME OF SURVEY
3. ALL RUBBISH, DEBRIS, UNDERGROWTH, FENCES & TREES NOTED ON THE PLAN WITHIN THE LIMIT OF WORKS ARE TO BE REMOVED FROM SITE AREA TO THE SATISFACTION OF COUNCIL OR THE SUPERINTENDENT
4. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM SITE WITHOUT COUNCIL APPROVAL
5. NO WORK WITHIN ADJOINING PROPERTIES TO BE UNDERTAKEN WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY
6. THE CONTRACTOR SHALL OBTAIN LEVELS FROM ESTABLISHED BENCHMARKS ONLY
7. THE LOCATION OF RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED BY THE CONTRACTOR AND ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH THE SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK
8. THE CONTRACTOR SHALL ERECT A POLLUTION WARNING SIGN AT THE ENTRANCE TO THE SUBDIVISION OR PROPOSED DEVELOPMENT
9. SERVICE CONDUITS SHALL BE PLACED AS DIRECTED BY INTEGRAL ENERGY, NBN / TELSTRA, AND AS REQUIRED BY THE RELEVANT SERVICE AUTHORITY AND AS PER SERVICE AUTHORITY APPROVED PLANS
10. STREET SIGNS REQUIRED WHERE SHOWN. STREET SIGNS TO COUNCIL STANDARD SHALL BE INSTALLED BY THE CONTRACTOR.
11. SIGNPOSTING AND LINEMARKING TO CONFORM WITH AS1742.2 & AS1743.
12. KERB RAMP CROSSINGS TO BE PROVIDED WHERE SHOWN ON PLAN AND CONSTRUCTED AS DETAILED AND TO COUNCIL STANDARDS
13. NO TREES ARE TO BE REMOVED OR LOPPED OTHER THAN THOSE SHOWN AND THOSE IN ROAD RESERVES, WITHOUT COUNCIL'S WRITTEN PERMISSION. A TREE INSPECTION WITH COUNCIL SHALL BE ARRANGED ONCE LOTS HAVE BEEN PEGGED.
14. ALL NEW WORKS ARE TO MAKE SMOOTH JUNCTIONS WITH ALL EXISTING CONDITIONS. AC JOINTS TO BE SAW CUT AT CONNECTION TO EXISTING PAVEMENT. THE CONTRACTOR IS TO MAKE ALL DUE ALLOWANCES FOR WORKS DURING CONSTRUCTION.
15. SUBSOIL DRAINAGE TO BE PROVIDED BEHIND KERBING AS PER APPROVED PLANS AND AS DIRECTED BY COUNCIL OR THE CERTIFIER DURING CONSTRUCTION.
16. THE THICKNESS OF ROAD PAVEMENTS SHALL BE CONFIRMED BY THE CONTRACTOR UPON COMPLETION OF SUBGRADE TESTING UNDERTAKEN BY THE CONTRACTOR.
17. SERVICES TO EXISTING DEVELOPMENTS ARE TO BE MAINTAINED AT ALL TIMES.
18. PROPOSED SERVICES CROSSING EXISTING ROADS SHALL BE THRUST BORED UNDER THE ROAD SO AS NOT TO DAMAGE EXISTING SURFACES.
19. CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES WITH EACH RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE REPAIRED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY. ANY UTILITIES ADJUSTMENTS REQUIRED TO BE AT THE CONTRACTORS EXPENSE.
20. ENSURE ADEQUATE TRENCH FOUNDATION AND BEDDING COMPACTION SPECIFICALLY ADJACENT TO DRAINAGE STRUCTURES AND PROTECTION TO PIPES FROM CONSTRUCTION TRAFFIC. CRACKED STORMWATER PIPES WILL NOT BE ACCEPTED.
21. NO MATERIALS TO BE STOCKPILED ON FUTURE ALLOTMENTS WITHOUT APPROVAL IN WRITING FROM THE CLIENTS REPRESENTATIVE.
22. EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES AND THE LENGTH OF TRENCH OPENINGS MINIMISED.
23. THE CONTRACTORS ITP SHALL ALLOW FOR A HOLD POINT TO ALLOW CHECK LEVELS AND PROOF ROLL PRIOR TO PLACEMENT OF
 - SUB BASE COURSE
 - BASE COURSE MATERIAL
 - WEARING COURSE MATERIAL, PRIME COAT TWO WEEKS PRIOR TO AC SEAL, THICKNESS OF AC SEAL AS SPECIFIED
26. ALL PIPES TO BE SOCKET/SPIGOT RUBBER RING JOINT FRC PIPES CLASS '3' OR REINFORCED CONCRETE CLASS '3'. UNLESS NOTED OTHERWISE.
27. GRATES TO COMPLY WITH COUNCIL STANDARDS, ALL GRATES TO BE CYCLE FRIENDLY GALVANISED BOLT DOWN TYPE.
28. STEP IRONS REQUIRED IN PITS GREATER THAN 1.0m DEPTHS.
29. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FULL QA DOCUMENTATION OF THE PROJECT TO ENSURE WORKS MEET THE RELEVANT SECTIONS OF THE CC FOR ROADS AND DRAINAGE WORKS. A COMPLETE ITP PLAN SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO WORKS COMMENCING ON SITE, COVERING ALL ASPECTS OF THE CONTRACT.

GENERAL NOTES (cont'd)

30. ALL WORKS ARE TO BE SETOUT BY A REGISTERED SURVEYOR.
31. THE CLIENT WILL PREPARE WAE DRAWINGS AT COMPLETION TO ENSURE THE WORKS MEET THE REQUIREMENTS OF THE DESIGN.
32. A TRAFFIC CONTROL PLAN IS TO BE SUBMITTED TO COUNCIL BY THE CONTRACTOR FOR APPROVAL PRIOR TO WORKS COMMENCING.
33. CONTRACTOR IS TO PROVIDE A 3m LONG LENGTH OF 1000 SUBSOIL DRAINAGE LINE ON THE UPSTREAM SIDE OF DRAINAGE PITS, INCLUDING GEOFABRIC SOCK AND NOM. 20mm GRAVEL.
34. ALL DRAINAGE TRENCHES WITHIN THE ROAD RESERVE ARE TO BE BACKFILLED WITH CLEAN SHARP SAND.
35. SUB-BASE AND BASE MATERIALS FOR ROADS MUST COMPLY WITH RMS SPECIFICATION 3051. ALL OTHER ROAD PAVEMENT MATERIALS MUST COMPLY WITH THE RELEVANT RMS SPECIFICATION.
36. ALL ROADS ARE TO HAVE A TEMPORARY SINGLE COAT SEAL APPLIED PRIOR TO LAYING OF THE ASPHALTIC CONCRETE SEAL. AC TO BE BONDED.
37. POWER & LIGHT POLES TO HAVE A 1m X 1m ISOLATION ZONE REGARDLESS OF LOCATION.
38. ALL INTER-ALLOTMENT PIPELINES TO HAVE RODDING EYES IMMEDIATELY DOWNSTREAM OF ALL SLOPE JUNCTIONS.
39. CONCRETE PATHS, DRIVEWAYS, & BATTLE-AXE HANDLES TO BE BONDED PENDING COMPLETION OF SERVICES IN ACCORDANCE WITH COUNCIL REQUIREMENTS AND AS DIRECTED BY THE PRINCIPAL
40. ALL MAJOR & NON-STANDARD STRUCTURES TO HAVE ENGINEERING CERTIFICATION.
41. HIGH EROSION AREAS, INCLUDING BATTERS TO BE STABILISED WITHIN 7 DAYS OF COMPLETION OF WORKS OR EARLIER IF DIRECTED BY THE SUPERINTENDENT.
42. ALL STABILISED WORKS ARE TO BE MAINTAINED UNTIL EXPIRY OF MAINTENANCE PERIOD.
43. ALL STABILISED WORKS ARE TO BE MAINTAINED UNTIL EXPIRY OF MAINTENANCE PERIOD. OVERFLOW PATHS TO BE FORMED AT THE TIME OF CONSTRUCTION TO SUIT DESIGN ARI
44. VARIATIONS NEED TO BE APPROVED PRIOR TO COMMENCEMENT OF WORK. IF IN DOUBT, CONTACT ACOR CONSULTANTS

EARTHWORKS NOTES

1. EARTHWORKS TO BE CARRIED OUT TO THE SATISFACTION OF COUNCIL'S AND RELEVANT AUSTRALIAN STANDARD AND GEOTECH ENGINEER. UNSOUND MATERIALS ARE TO BE REMOVED FROM ROADS AND LOTS AND TESTED PRIOR TO FILLING. THE CONTRACTOR IS TO PROVIDE PLANS OF TEST LOCATIONS AND TEST CERTIFICATES AS PER THE SPECIFICATION WHERE REQUIRED. THE CONTRACTOR MUST ENSURE COUNCIL APPROVAL OF MATERIALS, PRIOR TO DELIVERY TO SITE.
2. DEWATER AND REMOVE SLUDGE FROM EXISTING DAM - ENSURE ALL DAM DEWATERING AND SLUDGE REMOVAL IS IN ACCORDANCE WITH SEPARATE REPORT BY OTHERS.
3. ALL EARTHWORKS TO BE APPROVED BY A GEOTECHNICAL ENGINEER TO LEVEL 1 MONITORING, SAMPLING, TESTING AND CERTIFICATION.
4. TOPSOIL FROM SITE FILLING AND REGRADING AREAS TO BE STRIPPED, STOCKPILED AND RESPAVED AS SHOWN ON PLAN. EXCESS MATERIAL TO BE CARTED OFFSITE TO APPROVED LOCATION. ALL SITE FILLING TO BE COMPACTED IN ACCORDANCE WITH AS3798 TO A MIN. OF 98% SMDM AT $\pm 2\%$ OF O.M.C. A GEOTECHNICAL CERTIFICATE FROM A N.A.T.A REGISTERED LABORATORY IS TO BE SUPPLIED BY CONTRACTOR.
5. WHERE THE SLOPE OF THE NATURAL SURFACE EXCEEDS ONE IN FOUR (1:4) BENCHES ARE TO BE CUT TO PREVENT SLIPPING OF THE PLACED FILL MATERIAL AS REQUIRED BY THE DEVELOPER'S GEOTECH ENGINEER TO STANDARD PRACTICE.
6. ALL BATTERS ARE TO BE SCARIFIED TO ASSIST WITH ADHESION OF TOP SOIL TO BATTER FACE.
7. PROVIDE MIN. 50mm - 75mm TOPSOIL WITH COUGH GRASS TURF ON ALL FOOTPATHS. ALL BARE AREAS OTHER THAN FOOTPATHS TO BE SOWN WITH SEED, FERTILISED AND HAY MULCHED TO COUNCIL'S SPECIFICATION. GRASS / TURF TO BE MAINTAINED BY CONTRACTOR AT ALL TIMES INCLUDING PERIODS OF INSUFFICIENT RAIN.
8. THE METHOD TESTING OF EARTHWORKS SHALL BE IN ACCORDANCE WITH THE GUIDELINES IN AUSTRALIAN STANDARD 3798-1990. WHERE IT IS PROPOSED TO USE TEST METHOD AS1289 EB.1 OR AS1289 EB2 TO DETERMINE THE FIELD DENSITY, A SAND REPLACEMENT METHOD SHALL BE USED TO CONFIRM THE RESULTS AS DIRECTED BY COUNCIL.
9. THE CONTRACTOR SHALL CONTROL SEDIMENTATION, EROSION AND POLLUTION DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL AND APPROVED PLANS.
10. A 1.2 METER WIDE, CONTINUOUS STRIP OF COUGH GRASS SHALL BE PLACED BEHIND THE BACK OF ALL KERBS AND PERIMETER OF ALL INLET PITS IMMEDIATELY AFTER THE COMPLETION OF THE FOOTPATH GRADING AND CONSTRUCTION OF PITS RESPECTIVELY, MAINTAINED AND REPLACED AS REQUIRED DURING THE MAINTENANCE PERIOD. TURFING / LANDSCAPE GRASS SHALL ALSO BE PLACED TO THE FULL WIDTH OF ROAD SWALE DRAINS UPON COMPLETION.
11. SOIL AND SEDIMENT PROTECTION TO BE PROVIDED AND THOROUGHLY MAINTAINED AROUND DRAINAGE SYSTEM FOR THE DURATION OF WORKS. DIVERSION OF WATER AND THE PROTECTION OF WORKS IS THE CONTRACTORS RESPONSIBILITY.
12. LOTS REQUIRING FILL SHALL BE CONSTRUCTED TO LEVEL 1 SUPERVISION WITH TESTING AND DOCUMENTATION SUITABLE TO DETERMINE FUTURE LOT CLASSIFICATION.
13. CONTROLLED EARTHWORKS SHALL BE CERTIFIED BY A N.A.T.A REGISTERED LABORATORY. ALL TEST CERTIFICATION AND PLANS LOCATION TO BE SUBMITTED TO THE PRINCIPAL AND SHALL BE TO COUNCILS SATISFACTION

EXISTING SERVICES AND FEATURES

<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p> <p>6.</p>	<p>THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION, REMOVAL AND DISPOSAL, IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE PRINCIPAL'S REPRESENTATIVE.</p> <p>THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT INTERRUPTED.</p> <p>PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR, SHALL GAIN WRITTEN APPROVAL OF THEIR PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.</p> <p>EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.</p> <p>CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE PRINCIPAL'S REPRESENTATIVE. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE PRINCIPAL'S REPRESENTATIVE.</p> <p>INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL OF PRINCIPAL'S REPRESENTATIVE FOR TIME OF INTERRUPTION.</p>
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SITEWORKS NOTES	
1.	ORIGIN OF LEVELS :- AUSTRALIAN HEIGHT DATUM (A.H.D.)
2.	CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
3.	ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS AND THE DIRECTIONS OF THE PRINCIPAL'S REPRESENTATIVE.
4.	EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE PRINCIPAL'S REPRESENTATIVE. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
5.	WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABUPT CHANGES IS OBTAINED.
6.	THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
7.	CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
8.	ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED NON-NATURAL GRANULAR MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS.1289.5.1.1.
9.	ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
10.	ON COMPLETION OF PIPE INSTALLATION ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS.
11.	PROVIDE 10mm WIDE EXPANDING CORK JOINTS BETWEEN CONCRETE PAVEMENTS AND ALL BUILDINGS , WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC
12.	CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
13.	ALL BATTERS TO BE GRASSED LINED WITH MINIMUM 100 TOPSOIL AND APPROVED COUCH LAID AS TURF.
14.	MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD.
15.	THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS AND MOUNDS TO ENSURE THAT AT ALL TIMES EXPOSED SURFACES ARE FREE DRAINING AND WHERE NECESSARY EXCAVATE SUMPS AND PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS.
16.	THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
17.	TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
18.	ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 980 uPVC SEWER GRADE CONDUITS EXTENDING A MIN OF 500mm PAST PAVING.
19.	ON COMPLETION OF WORKS ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL INCLUDING, BUT NOT LIMITED TO, KERBS, FOOTPATHS, CONCRETE AREAS, GRASS AND LANDSCAPED AREAS.

STORMWATER NOTES

1. ALL 375 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "2" APPROVED SPIGOT AND SOCKET FRC OR RCP. PIPES WITH RUBBER RING JOINTS. (U.N.O.) ALL DOWNPIPE DRAINAGE LINES SHALL BE SEWER GRADE UPVC WITH SOLVENT WELD JOINTS. (U.N.O.)
2. EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
3. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
4. MINIMUM GRADE TO STORMWATER LINES TO BE 1%. (U.N.O.)
5. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
6. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
7. PRECAST PITS SHALL NOT BE USED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.
8. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50MM CONCRETE BED (OR 75MM THICK BED OF 12MM BLUE METAL) UNDER THE BARREL OF THE PIPE, THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75MM THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200MM ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150MM LAYERS TO 98% STANDARD MAX. DRY DENSITY.
9. BEDDING SHALL BE (U.N.O.) TYPE HS2, IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS.
10. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
11. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED UPVC SEWER GRADE PIPE SHALL BE USED.
12. PROVIDE 3.0M LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.

RETAINING WALL NOTES

- RW1. ALL WORKMANSHIP SHALL COMPLY WITH AS 4679 AND AS 3700.
- RW2. RETAINING WALL FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE AS NOTED ON DRAWINGS. THIS FOUNDATION MATERIAL SHALL BE UNIFORM AND BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOOTING REINFORCEMENT.
- RW3. TEMPORARY BATTERS TO BE AS PER GEOTECHNICAL ENGINEERS REPORTS.
- RW4. PROVIDE WATERPROOFING MEMBRANES AS REQUIRED BY ARCHITECTURAL SPECIFICATIONS. DESIGN, EXTENT AND CERTIFICATION OF MEMBRANE IS TO BE PROVIDED BY WATERPROOFING SPECIALIST.
- RW5. RETAINING WALLS ARE DESIGNED BASED ON THE ASSUMPTION THAT A FUNCTIONING DRAINAGE SYSTEM IS EFFECTIVE IN REMOVING HYDRAULIC PRESSURE. PROVIDE CONTINUOUS AG DRAINS BEHIND THE ENTIRE EXTENT OF THE RETAINING WALL. THE DRAINAGE SYSTEM IS TO BE DESIGNED FOR LONG TERM PERFORMANCE EQUAL TO THAT OF THE DESIGN LIFE OF THE WALL. THE DESIGN AND DOCUMENTATION OF THIS SYSTEM IS BY OTHERS AND IS TO INCLUDE DETAILS OF CLEANOUT POINTS FOR THE DRAINAGE AND ACCESS / MAINTENANCE POINTS.
- RW6. BACKFILL BEHIND THE WALL IS TO BE CLASSIFIED AS FREE DRAINING GRANULAR MATERIAL. FREE DRAINING GRANULAR MATERIAL SHALL BE A NON-COHESIVE WELL GRADED GRANULAR MATERIAL COMPRISING SOUND STONE PARTICLES WHICH DO NOT BREAK DOWN UNDER COMPACTION. WETTING OR EXPOSURE TO AIR. THE MATERIAL PROPERTIES SHALL COMPLY WITH THOSE SPECIFIED IN TABLE BELOW.

FREE DRAINING GRANULAR MATERIAL PROPERTIES		
PROPERTY	LIMIT	VALUE
STONE SIZE	MAXIMUM	20 mm
% PASSING 0.15 mm SIEVE	MAXIMUM	5 %
PLASTICITY INDEX	MAXIMUM	8

- RW7. PROVIDE GEOTEXTILE SEPARATION LAYER BETWEEN FREE DRAINING GRANULAR MATERIAL AND RETAINED FILL MATERIAL.
- RW8. COMPACTION OF BACKFILL BEHIND WALLS - COMPACTION SHALL BE BY MECHANICAL PLATE VIBRATOR TO A MINIMUM OF 100% STANDARD COMPACTION. - BACKFILLING IS NOT TO TAKE PLACE UNTIL APPROVAL HAS BEEN GIVEN BY THE ENGINEER.
- RW9. WHERE EVER POSSIBLE, SURFACE WATER SHALL BE DIRECTED AWAY FROM THE TOP OF THE WALL AND NOT BE ALLOWED TO POND BEHIND THE TOP OF THE WALL OR ENTER THE SUBSURFACE DRAINAGE SYSTEM.

CIVIL LEGEND PROPOSED	
	KERB AND GUTTER
	VEHICULAR CROSSING
	EASEMENT TO DRAIN WATER
	CONTROL LINE
	TOP OF WALL
	BOTTOM OF WALL
	FINISHED SURFACE CONTOUR MINOR
	FINISHED SURFACE CONTOUR MAJOR
	EXISTING SURFACE CONTOUR
	STORMWATER DRAINAGE STRUCTURE WITH NUMBER (REFER STORMWATER DRAINAGE STRUCTURES SCHEDULE)
	STORMWATER DRAINAGE LINE, SIZE AND FLOW DIRECTION
	PROPOSED ROAD PAVEMENT
	PROPOSED 1.5m WIDE FOOTPATH PAVEMENT
	PROPOSED LOT
	PROPOSED 4.0m WIDE DRIVEWAY PAVEMENT
	RETAINING WALL
	STORMWATER OVERLAND FLOW PATH
	INDICATIVE TRAFFIC CALMING DEVICE
	OSD TANK

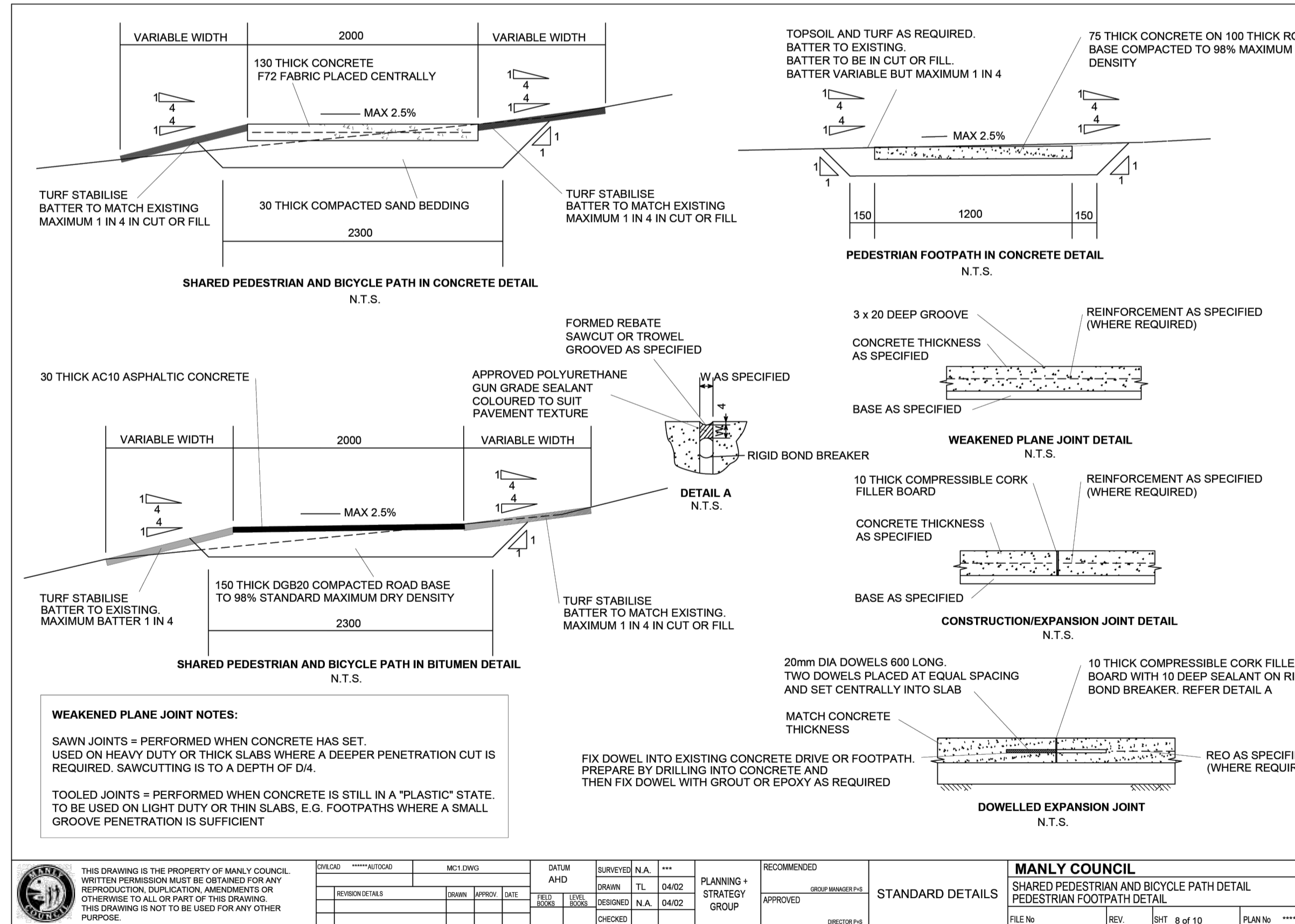
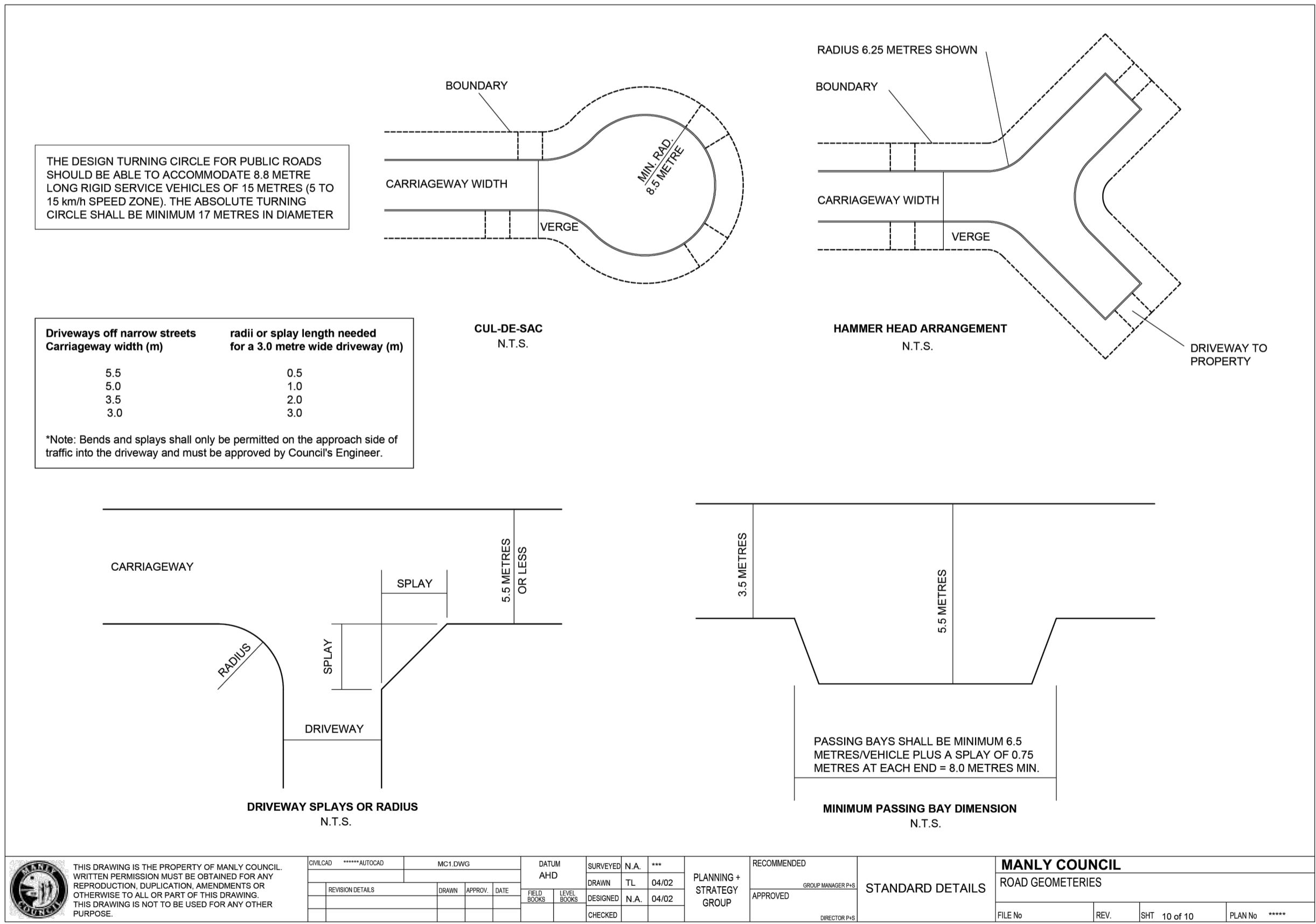
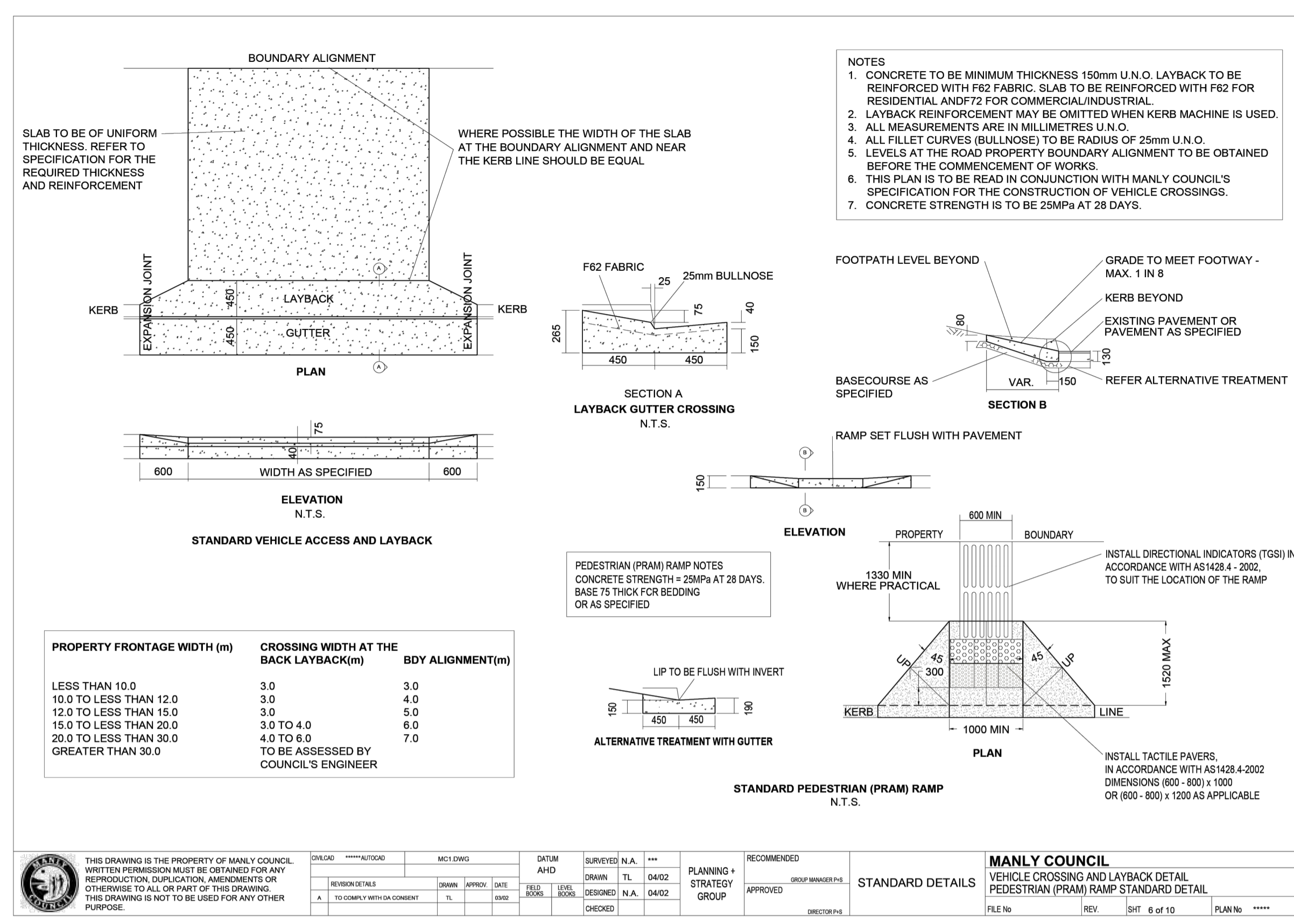
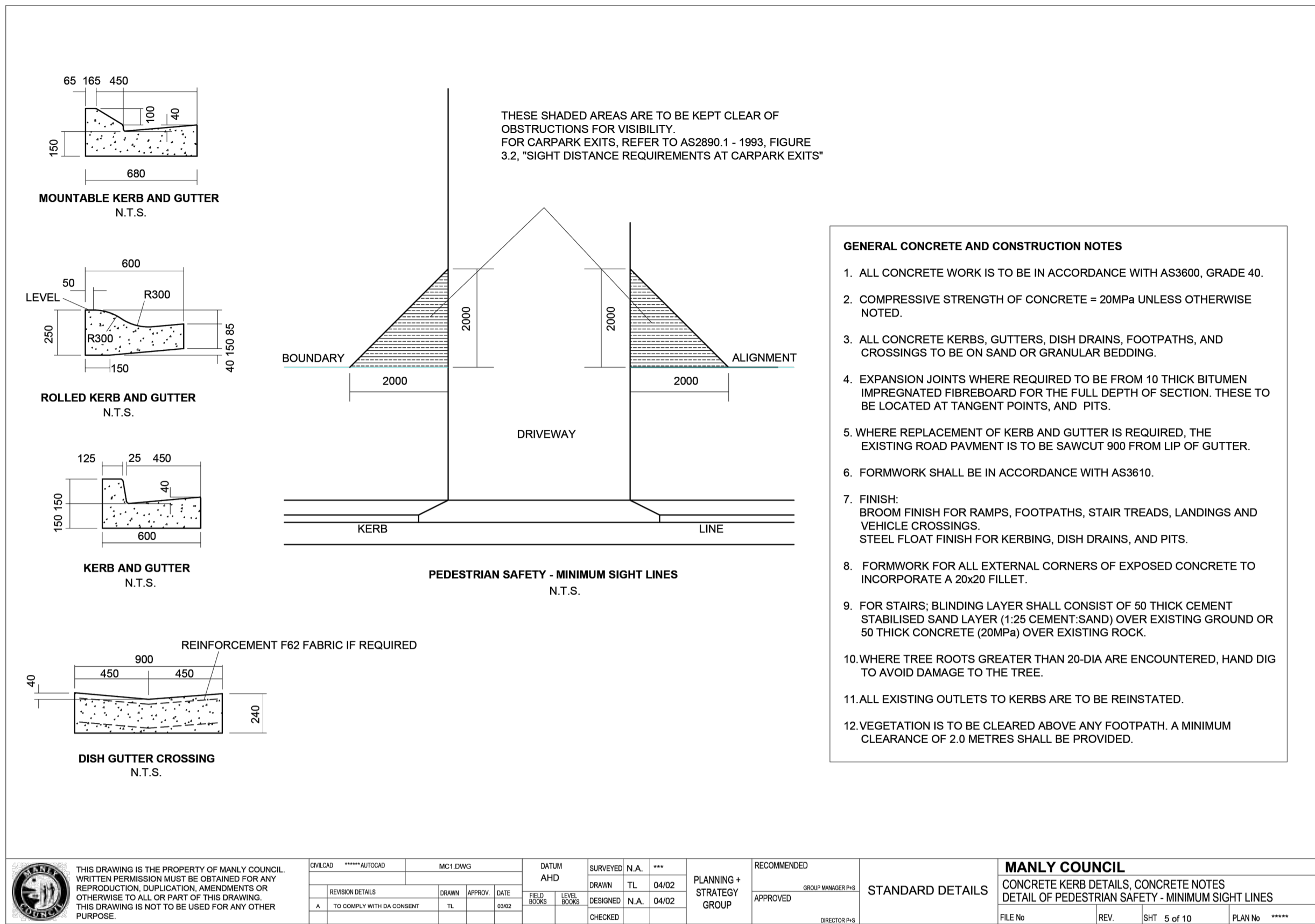
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4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawn UF	Date JUN 22	Scale A1 NOT TO SCALE	Q.A. Check JR	Date
Designed VG	Project No. NSW210416		Dwg. No. C1.101	Issue F



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F	ISSUE FOR LEC REVIEW	16.12.24	JK/DW	VG	North
E	ISSUE FOR COUNCIL REVIEW	22.08.24	VG	VG	
D	ISSUE FOR DA	17.07.24	RP	VG	
C	ISSUE FOR DA	16.10.23	ROB	VG	
Issue	Description	Date	Drawn	Approved	

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CROWS NEST NSW 2065



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Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
TYPICAL DETAILS

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	NSW210416		Dwg. No.	Issue
VG				C1.201	F

NOT FOR CONSTRUCTION

CUT FILL LEGEND			
LOWER VALUE		UPPER VALUE	COLOUR
-5.00m	to	-2.00m	
-2.00m	to	-1.00m	
-1.00m	to	-0.50m	
-0.50m	to	-0.25m	
-0.25m	to	0.00 m	
0.000m	to	0.250m	
0.250m	to	0.500m	
0.500m	to	1.000m	
1.000m	to	2.000m	
2.000m	to	5.000m	

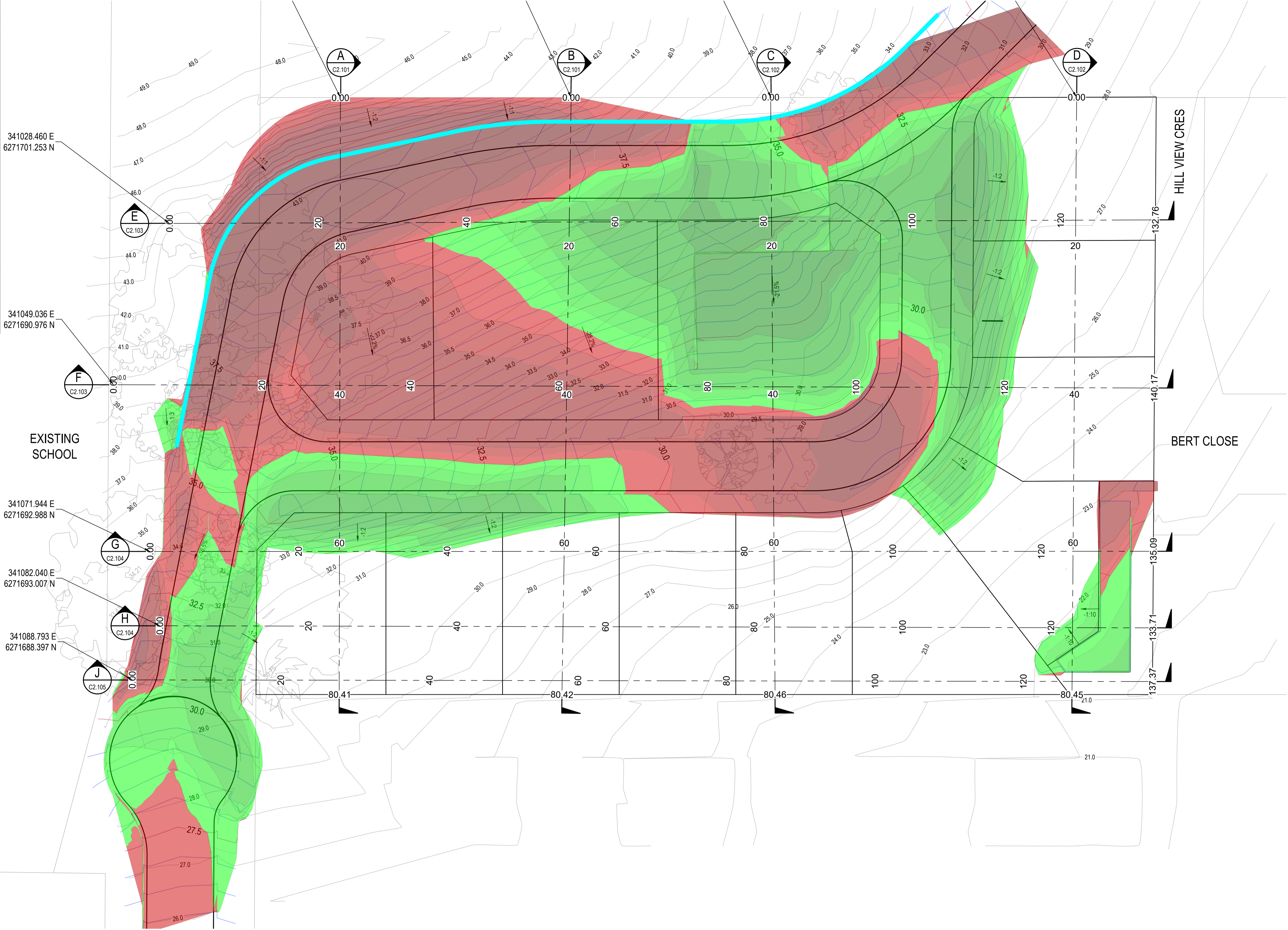
CUT = -2,966m³

FILL = 1,949m³

BALANCE = -1,017m³

NOTES:

- TENDERERS / CONTRACTORS SHALL UNDERTAKE THEIR OWN INDEPENDENT EARTHWORKS VOLUMES CALCULATIONS - THIS DRAWING IS NOT SUITABLE FOR COSTING PURPOSES DUE TO INHERENT PREVAILING VARIABLES AND MODELLING LIMITATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - BULKING AND COMPACTION FACTORS
 - APPLIED TOPSOIL DEPTHS
 - SOIL REMEDIATION / AMELIORATION IMPACTS
 - OTHER EARTHWORKS FACTORS AND VOLUMES NOT EXPRESSLY MODELLED, ETC.
- THE INDICATIVE QUANTITIES PROVIDED ARE MEASURED BETWEEN FINISHED DESIGN SURFACE LEVELS AND NATURAL SURFACE LEVELS.
- THE DOCUMENTED EARTHWORKS EXCLUDES ALL OTHER EARTHWORKS CONSIDERATIONS INCLUDING BUT NOT LIMITED TO;
 - BULKING AND COMPACTION FACTORS
 - UTILITY SERVICES AND STORMWATER TRENCHING
 - PAVEMENT BOXING AND
 - STRUCTURAL FOUNDATIONS, ETC.
- DESIGN CONTOURS SHOWN REPRESENT FINISHED SURFACE LEVELS.

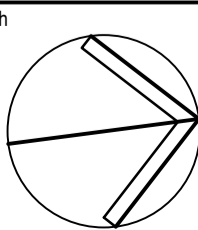


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F	ISSUE FOR COUNCIL REVIEW	22.08.24	VG	VG
E	ISSUE FOR DA	17.07.24	RP	VG
D	ISSUE FOR COUNCIL INFORMATION	04.07.24	RP	VG
Issue	Description	Date	Drawn	Approved

SCALE 1:250 @ A1
SCALE 1:500 @ A3



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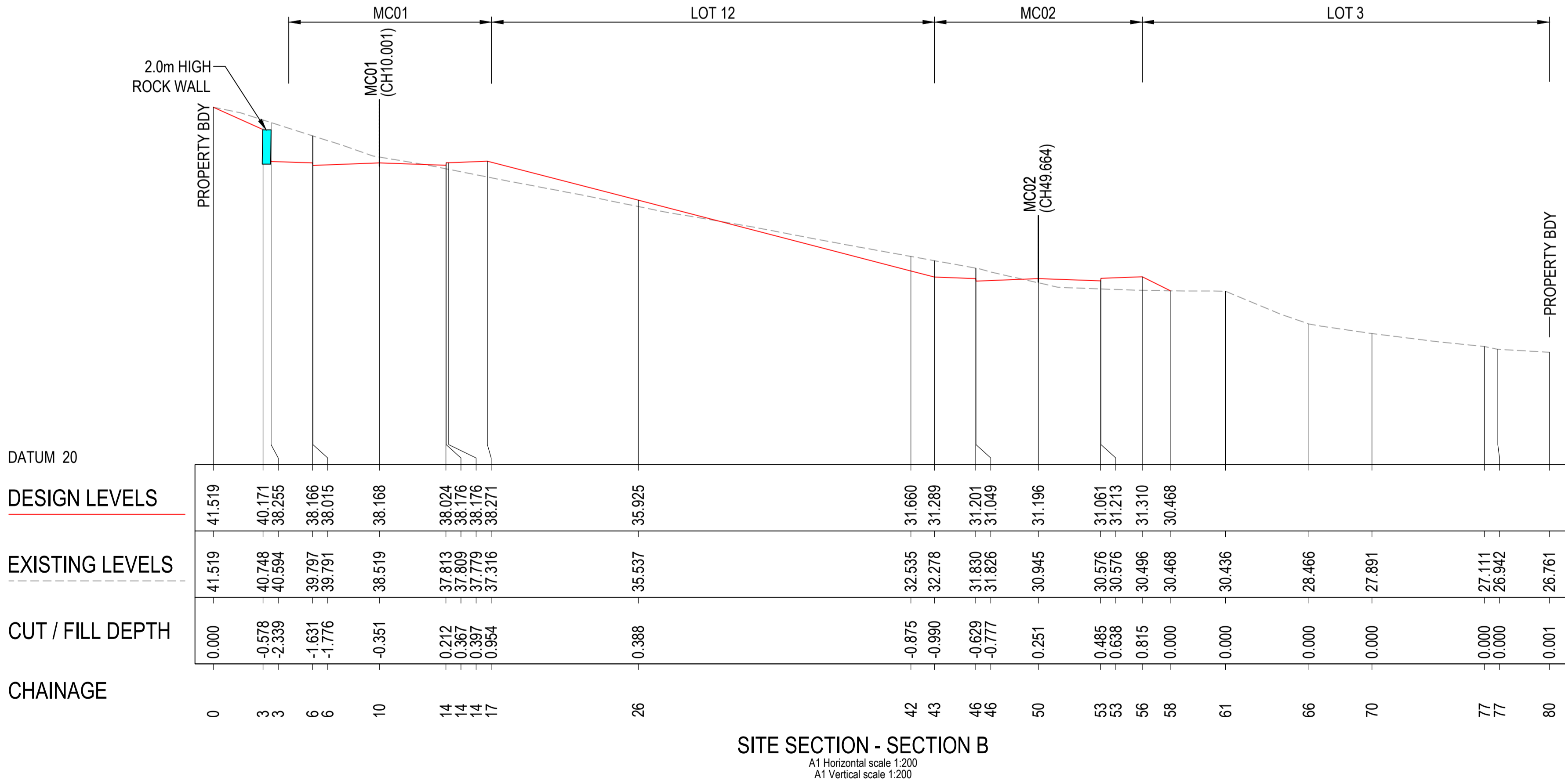
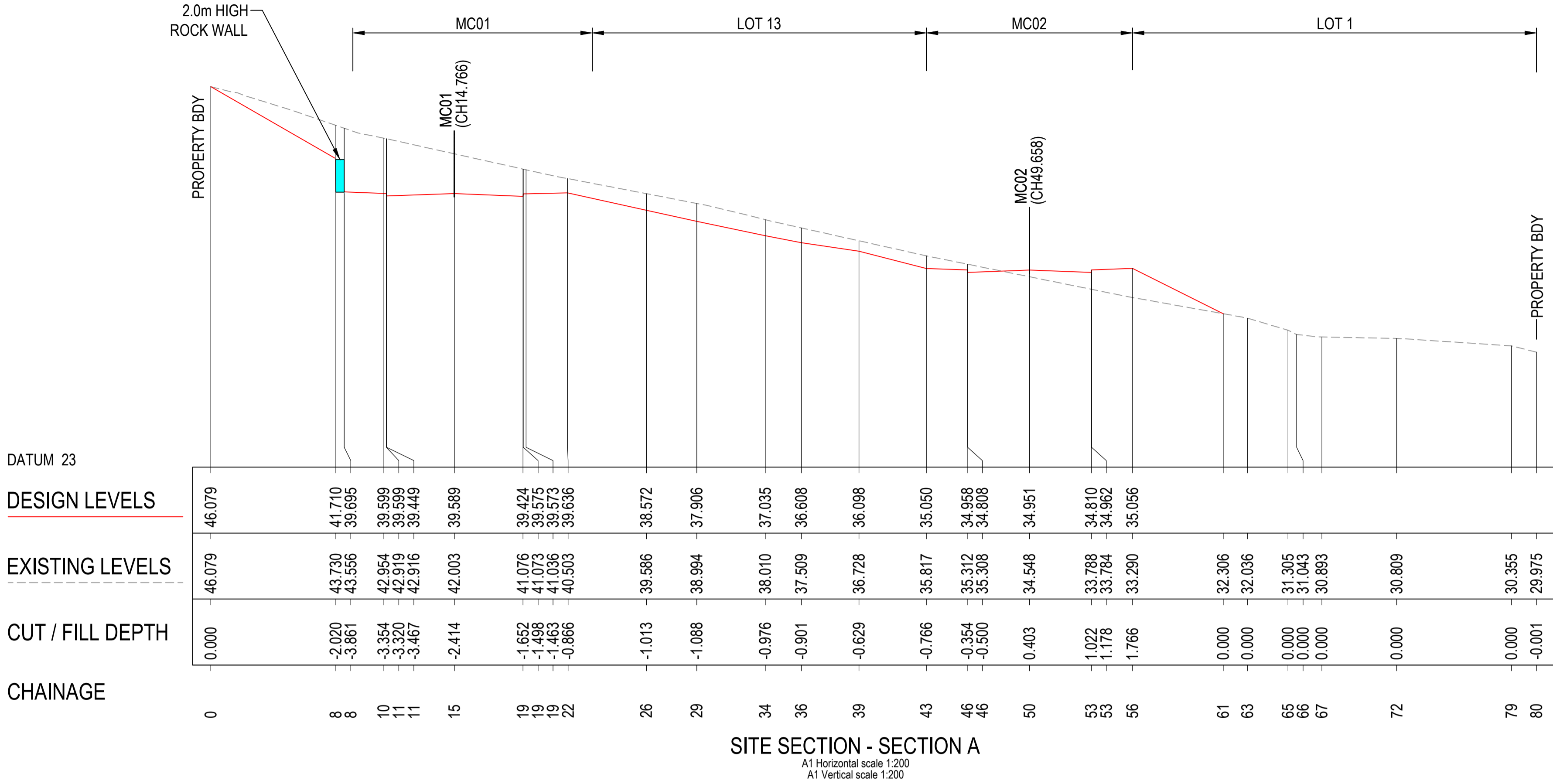
Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
BULK EARTHWORKS PLAN

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	1:250		JR	
Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C2.001	G		

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SCALE 1:200 @ A1
SCALE 1:400 @ A3



G	ISSUE FOR LEC REVIEW	16.12.24	JK/DW	VG
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E	ISSUE FOR COUNCIL REVIEW	17.07.24	RP	VG
D	ISSUE FOR DA	17.07.24	RP	VG
Issue	Description	Date	Drawn	Approved

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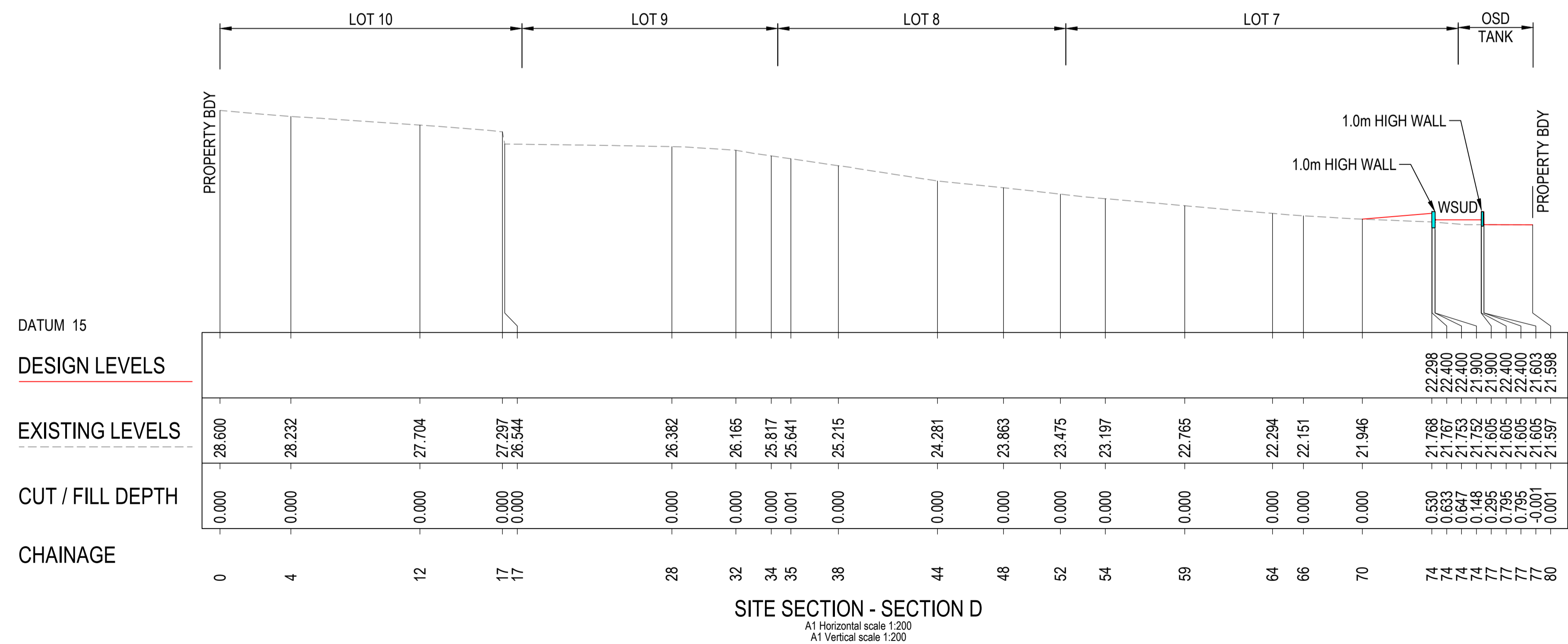
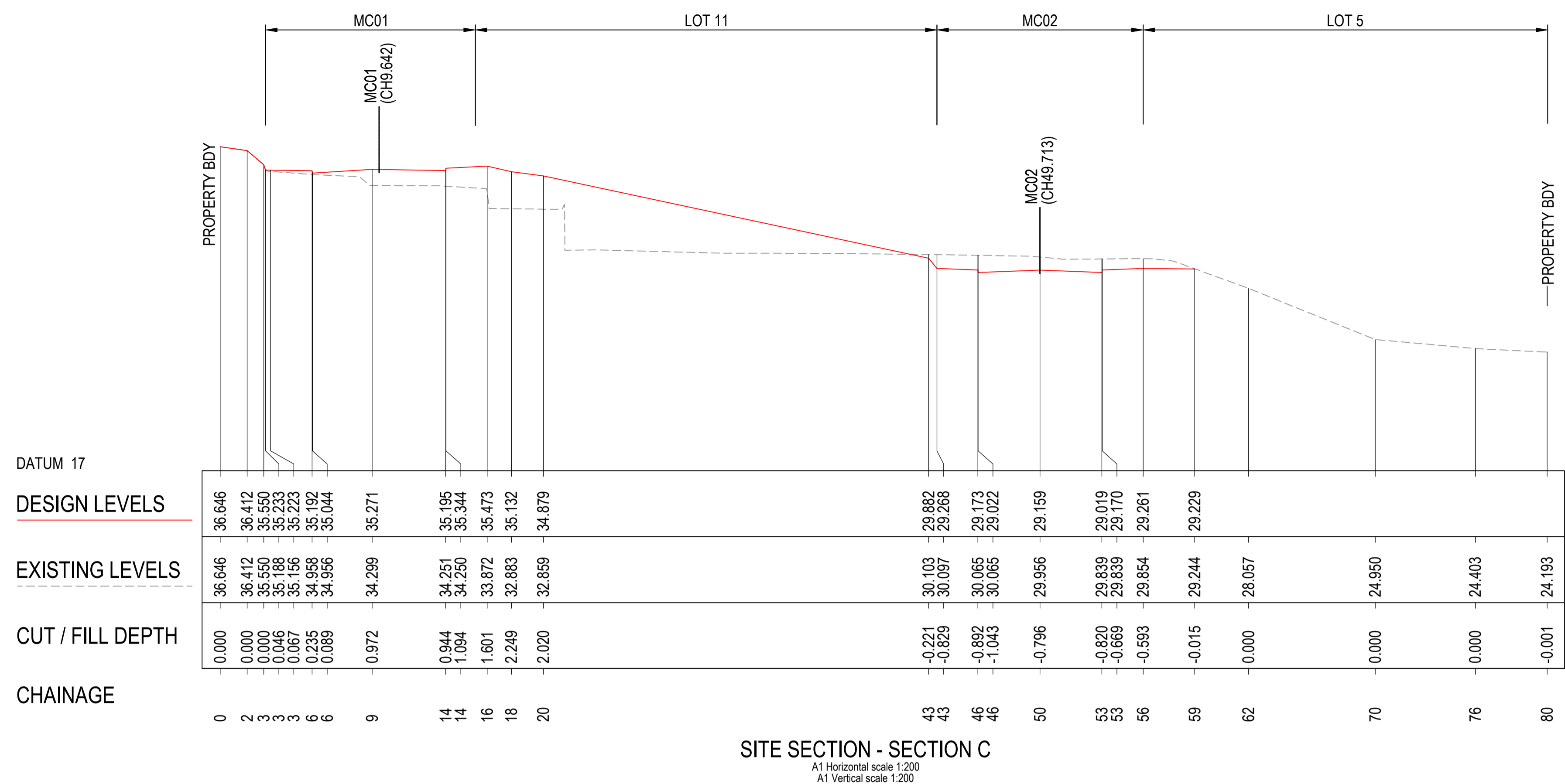


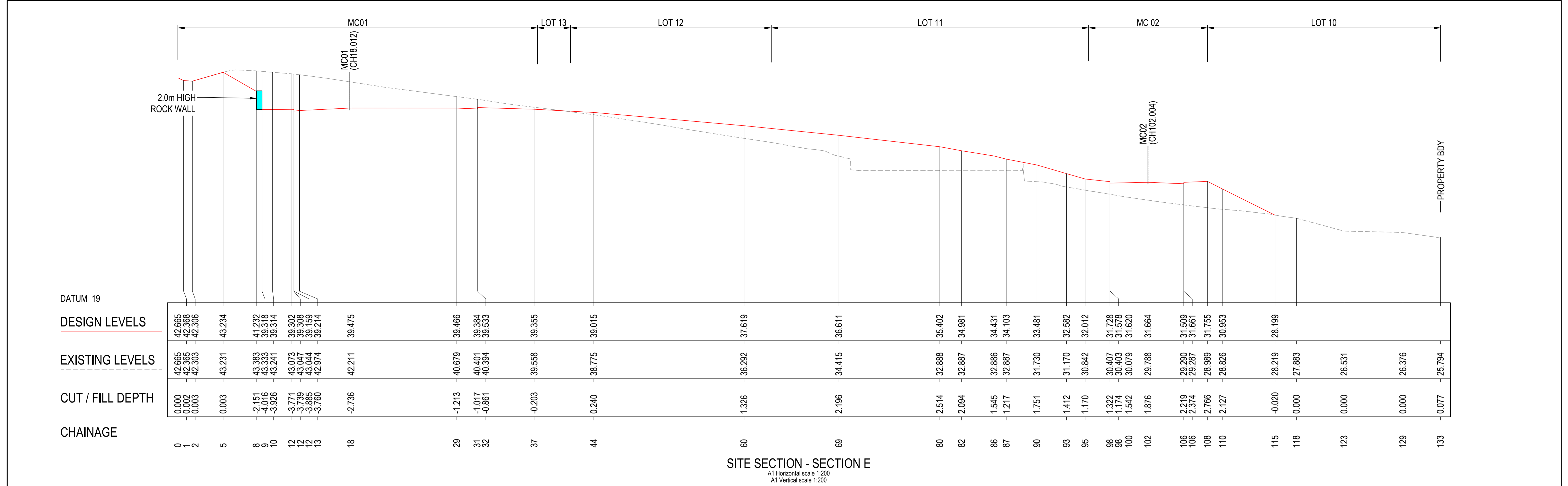
Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title BULK EARTHWORKS SITE SECTION SHEET 1					
Drawn UF	Date JUN 22	Scale AS SHOWN	A1	Q.A. Check JR	Date
Designed VG	Project No. NSW210416	Dwg. No. C2.101		Issue G	

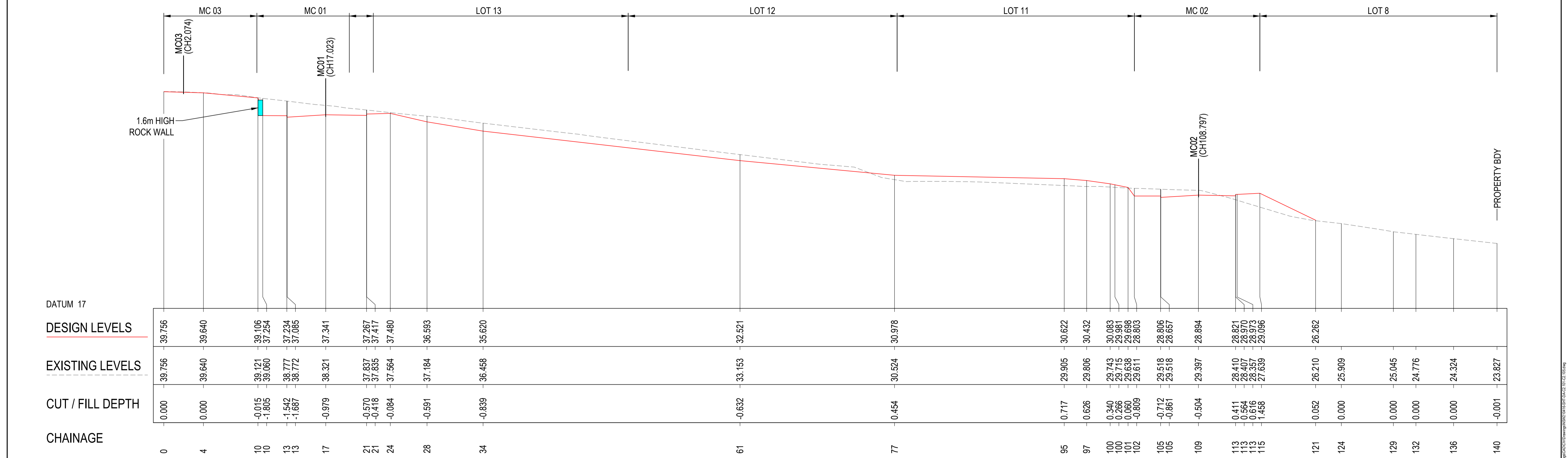
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SITE SECTION - SECTION E

A1 Horizontal scale 1:200
A1 Vertical scale 1:200



SITE SECTION - SECTION F

A1 Horizontal scale 1:200
A1 Vertical scale 1:200

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SCALE 1:200 @ A1
SCALE 1:400 @ A3

0 2 4 8 12 16 20 metres

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Drawing Title
**BULK EARTHWORKS
SITE SECTION
SHEET 3**

Drawn UF	Date JUN 22	Scale AS SHOWN	A1	Q.A. Check JR	Date
Designed VG	Project No. NSW210416	Dwg. No.		Issue C2.103	

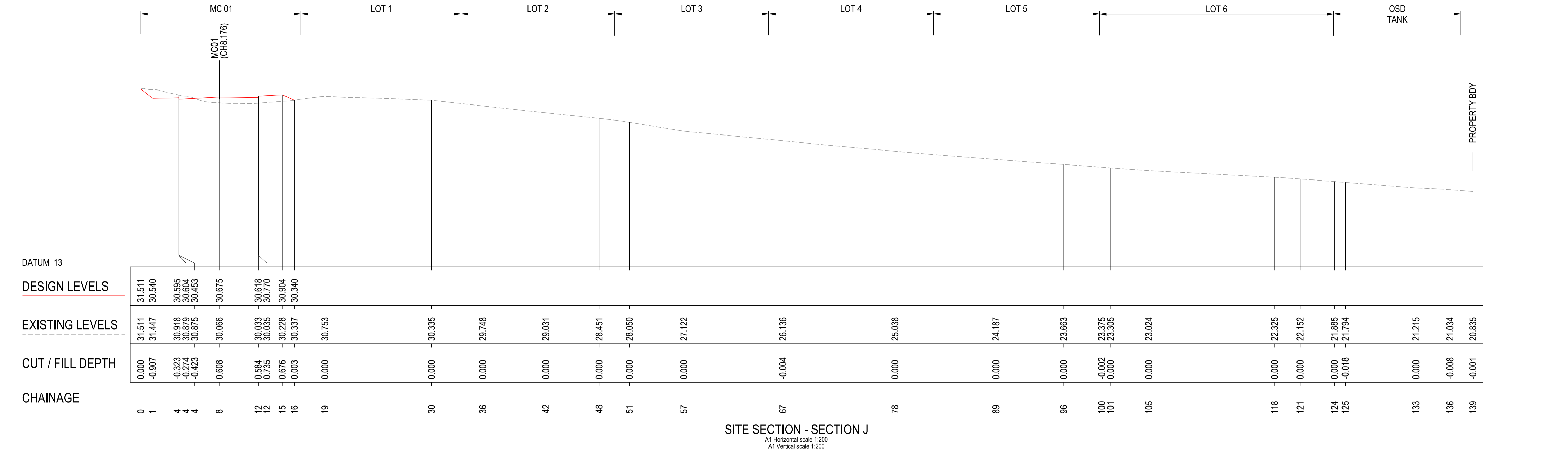
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Drawn UF	Date JUN 22	Scale AS SHOWN	A1	Q.A. Check JR	Date
Designed VG	Project No. NSW210416			Dwg. No. C2.104	Issue G

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Dec 16, 2024 - 11:23am | Username: US0801 ECIS:US02 INSV2 04181 Draw:001 CAD:CMV Draw:001 INSV2 104181 SHF:DA:22 101:22 506:dan



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SCALE 1:200 @ A1
SCALE 1:400 @ A3



G	ISSUE FOR LEC REVIEW	16.12.24	JK/DW	VG	North
F	ISSUE FOR COUNCIL REVIEW	22.08.24	VG	VG	
E	ISSUE FOR COUNCIL REVIEW	17.07.24	RP	VG	
D	ISSUE FOR DA	17.07.24	RP	VG	
Issue	Description	Date	Drawn	Approved	

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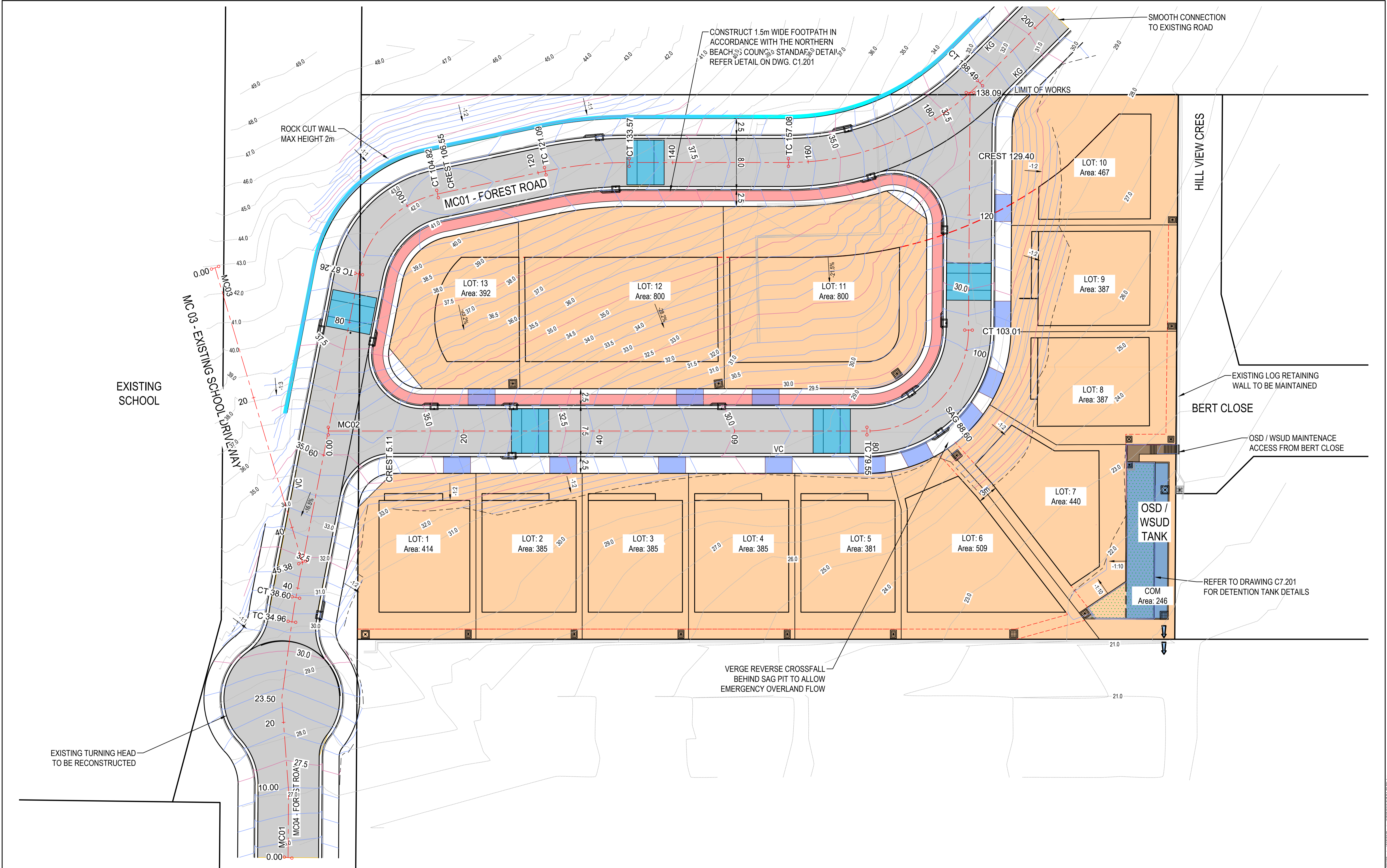


Project
RESIDENTIAL SUBDIVISION
4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title BULK EARTHWORKS SITE SECTION SHEET 5					
Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.		Issue	
VG	NSW210416	C2.105		G	

NOT FOR CONSTRUCTION

\\nas001\projects\2024\20240616_BMN_Pty_Ltd\Drawings\BULK EARTHWORKS\DA\20240616_BMN_Pty_Ltd\20240616_BMN_Pty_Ltd.dwg Date: 16/06/2024 - 11:13 AM



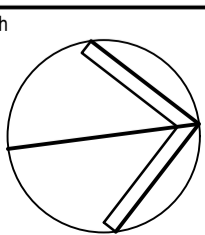
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C	ISSUE FOR DA	16.10.23	ROB	VG
Issue	Description	Date	Drawn	Approved

SCALE 1:250 @ A1
SCALE 1:500 @ A3

0 2.5 5 10 15 20 25 metres



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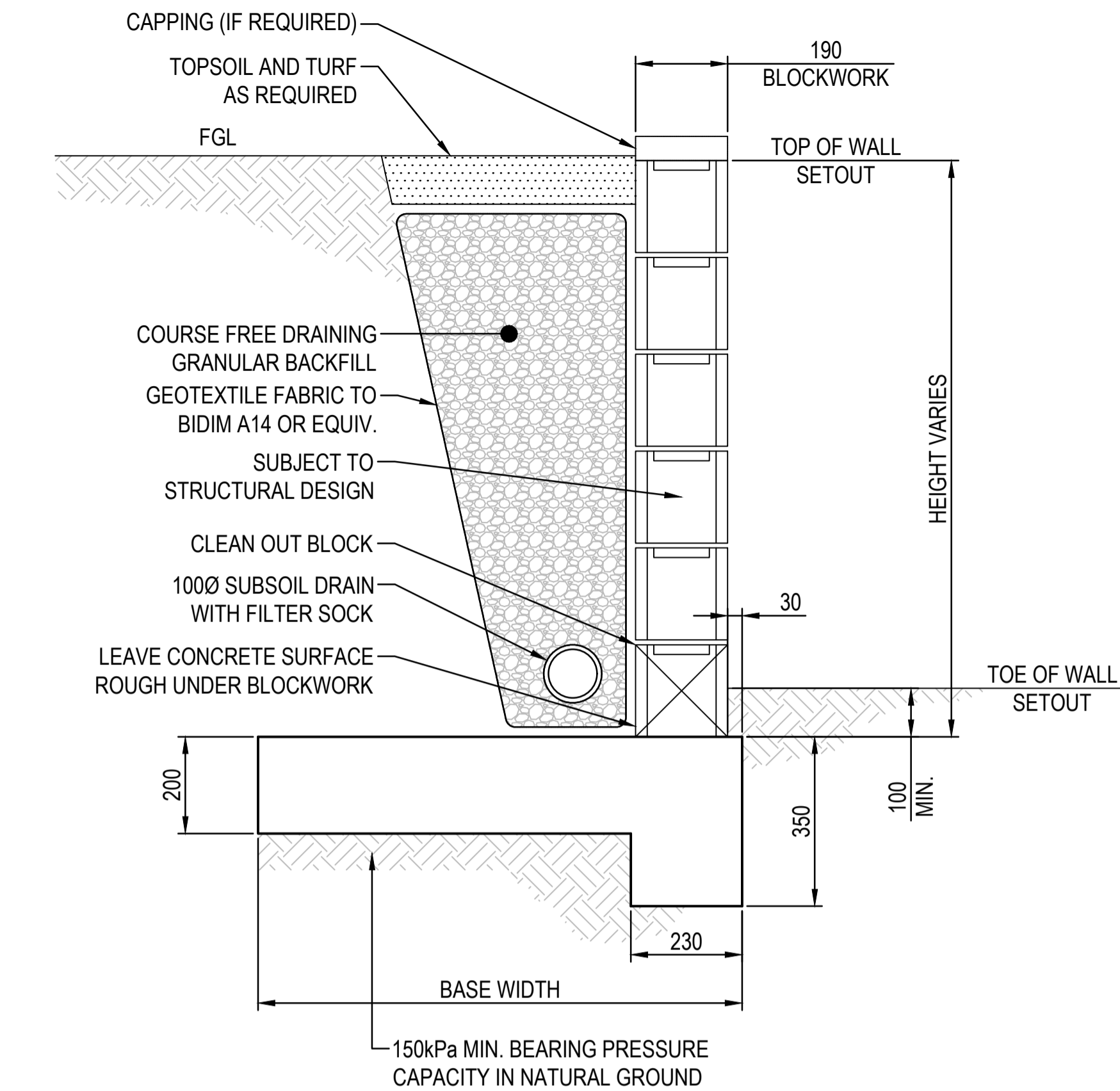
Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
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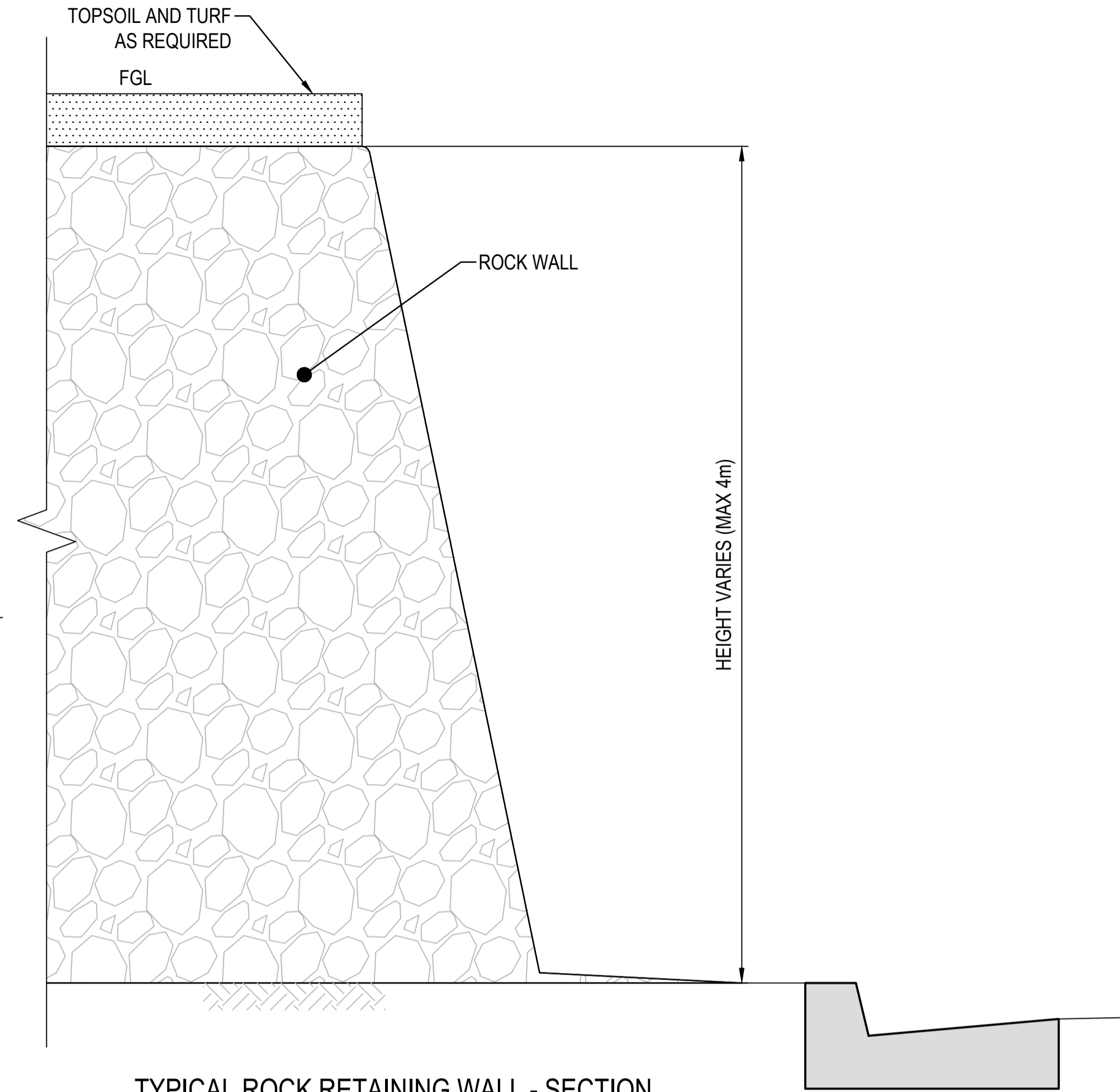
Drawing Title
**GENERAL ARRANGEMENT
SITEWORKS AND GRADING PLAN**

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	1:250		JR	
Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C3.001	F		

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TYPICAL RETAINING WALL - SECTION
NOT TO SCALE



TYPICAL ROCK RETAINING WALL - SECTION
(HEIGHT UP TO 8.1m MAX.)
NOT TO SCALE

REINFORCEMENT

- R1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600, AS4671 AND OTHER RELEVANT AUSTRALIAN CODES.
- R2. REINFORCEMENT TYPE AND GRADE.
- | SYMBOL | TYPE | MPa | DUCTILITY CLASS |
|--------|-----------------------------|-----|-----------------|
| N | HOT ROLLED DEFORMED BARS | 500 | NORMAL |
| R | HOT ROLLED PLAIN BARS | 250 | NORMAL |
| W | COLD DRAWN PLAIN ROUND WIRE | 500 | LOW |
| SL | SQUARE WELDED MESH | 500 | LOW |
| RL | RECTANGULAR WELDED MESH | 500 | LOW |
| L TM | RECTANGULAR WELDED MESH | 500 | LOW |
- R3. ALL REINFORCEMENT TO CONFORM TO AS4671, CURRENT EDITIONS WITH AMENDMENTS. REINFORCEMENT NOTATION GIVES THE FOLLOWING INFORMATION: NO. OF BARS, TYPE, SIZE (MM), SPACING (MM), LAYER. FOR EXAMPLE 17N16 /250 T
- FABRIC OR MESH NOTATION GIVES THE FOLLOWING INFORMATION: 'RL' OR 'SL', PRODUCT CODE, LAYER. FOR EXAMPLE SL82 T
- R4. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- R5. COVER TO REINFORCEMENT - CLEAR COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS INDICATED IN THE CONCRETE NOTES. COVER SHALL NOT BE LESS THAN THE SIZE OF THE AGGREGATE OR THE MAIN BAR. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT.
- SUPPORT REINFORCEMENT ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS. IN EXPOSED CONDITIONS B2 OR C (TO AS3600) USE ONLY PLASTIC OR CONCRETE CHAIRS.
- R6. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.
- R7. PROVIDE DISTRIBUTION REINFORCEMENT OR TIE BARS IF NOT SHOWN. WHERE NECESSARY PROVIDE N12-400 CENTRES (SPlice 450)
- R8. SITE BENDING OF N BARS SHALL BE DONE COLD WITH POWER OR MECHANICAL BENDING TOOLS AND A MANDREL OR FORMER WITH A BAR DIAMETER OF 5 TIMES THE BAR SIZE. NOTE: IF N BARS ARE HEATED ABOVE 450°C (LESS THAN RED HEAT) THEY LOSE STRENGTH.

REINFORCEMENT LAPS

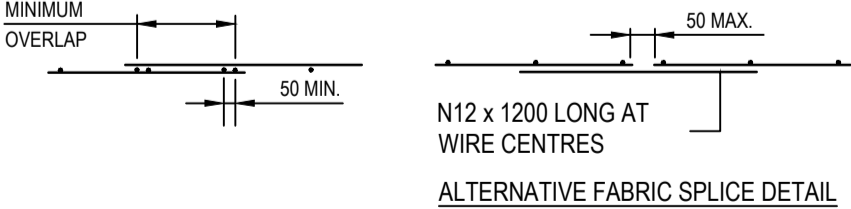
- R9. LAP REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS OR AS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

SLAB REINFORCEMENT - LAP LENGTH (mm)				
BAR DIA.	CONCRETE GRADE			
	25 MPa	32 MPa	40 MPa	
N12	600	500	450	
N16	850	750	650	
N20	1100	1000	900	

BEAM REINFORCEMENT - LAP LENGTH (mm)						
BAR DIA.	< 300mm CONCRETE CAST BELOW THE BAR			> 300mm CONCRETE CAST BELOW THE BAR		
	CONCRETE GRADE			CONCRETE GRADE		
	25 MPa	32 MPa	40 MPa	25 MPa	32 MPa	40 MPa
N12	600	500	450	750	650	600
N16	850	750	650	1100	950	850
N20	1100	1000	900	1450	1300	1150
N24	1400	1250	1100	1800	1600	1400
N28	1700	1500	1350	2200	1950	1700
N32	2000	1800	1600	2600	2300	2050
N36	2400	2100	1850	3050	2700	2400

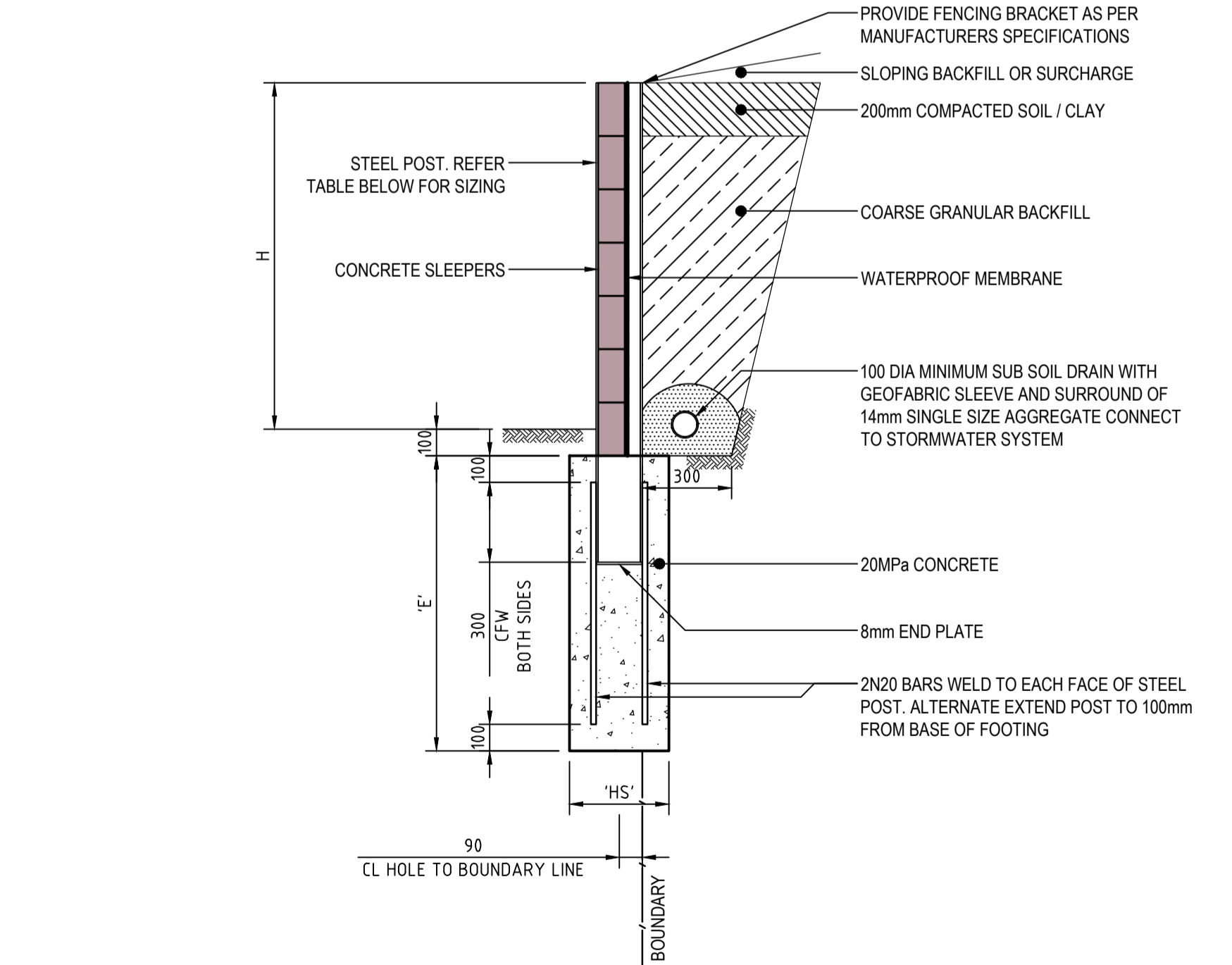
BAR DIA.	COLUMN AND WALL REINFORCEMENT LAP LENGTH (mm)
N12	500
N16	650
N20	800
N24	950
N28	1150
N32	1300
N36	1450

- R10. LAPS IN MESH (FABRIC) SHALL COMPLY WITH AS3600. THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET SHALL OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED BY 25MM. A MAXIMUM OF 3 SHEETS OF MESH SHALL BE LAPPED AT ANY POINT.
- R11. SLAB REINFORCEMENT SHALL EXTEND 70mm ONTO SUPPORTING WALLS, WITH 50% OF BOTTOM BARS COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS. MESH IN SLABS SHALL EXTEND 70mm ONTO SUPPORTING WALLS WITH A CROSS WIRE.
- R12. ALL BEAM TIES ARE TO HAVE BAR ANCHORAGES LOCATED ON THE TOP FACE OF THE BEAM UNO.
- R13. REINFORCEMENT BAR JOGGLES SHALL BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS.



GENERAL NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G2. DO NOT COMMENCE CONSTRUCTION USING THESE STRUCTURAL DRAWINGS UNTIL A CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL AUTHORITY.
- G3. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIA CODES AND STANDARDS AND WITH THE BUILDING CODE OF AUSTRALIA.
- G4. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED.
- G5. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
- G6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE. ALL LEVELS ARE EXPRESSED IN METRES. THE RL'S SHOWN ON THESE DRAWINGS ARE FOR THE SOLE PURPOSE OF ASSISTING THE STRUCTURAL DOCUMENTATION. THEY MUST NOT BE USED FOR CONSTRUCTION. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL CONSTRUCTION RL'S.
- G7. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, SHORING AND PROPPING IN ORDER TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- G8. THE BUILDER IS RESPONSIBLE FOR THE ADEQUACY OF ALL TEMPORARY WORKS INCLUDING SHORING, PROPPING AND BRACING. WHERE NECESSARY THE CONTRACTOR IS TO ENGAGE A STRUCTURAL ENGINEER TO DESIGN AND CERTIFY THE TEMPORARY WORKS.
- G9. THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE BUILDER. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE STRUCTURAL ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- G10. IF THERE IS A DISCREPANCY IN MEMBER SIZES FOR ANY COMPONENT, ASSUME FOR PRICING PURPOSE ONLY THAT THE LARGER OR MORE EXPENSIVE SIZE IS CORRECT. REFER TO STRUCTURAL ENGINEER FOR DECISION BEFORE DETAILING OR CONSTRUCTION.
- G11. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE ENGINEER BUT IS NOT AN AUTHORIZATION FOR A VARIATION. ANY VARIATIONS INVOLVED MUST BE TAKEN UP WITH THE ARCHITECT OR PROJECT MANAGER BEFORE THE WORK COMMENCES.
- G12. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE ENGINEER FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
- G13. THE WRITTEN CONSENT OF ADJOINING PROPERTY OWNERS SHALL BE OBTAINED BEFORE INSTALLATION OF UNDERPINNING, ANCHORING WORKS, DRAINAGE LINES OR ANY OTHER WORKS BEYOND THE PROPERTY BOUNDARY.
- G14. UNLESS AGREED OR SPECIFIED OTHERWISE, THE BUILDER IS REQUIRED TO NOTIFY AND ALLOW TIME FOR THE STRUCTURAL ENGINEER TO INSPECT THE WORKS AT THE FOLLOWING POINTS: COMPLETED EXCAVATION, FORMWORK, REINFORCEMENT, MEMBRANES AND EMBEDMENTS PRIOR TO PLACEMENT OF CONCRETE, COMPLETED ERECTED STRUCTURAL AND / OR TIMBER FRAMING ELEMENTS PRIOR TO COVERING.
- G15. THE BUILDER SHALL GIVE 48 HOURS NOTICE FOR ALL ENGINEERING INSPECTIONS.
- G16. SITE INSPECTIONS BY THE STRUCTURAL ENGINEER DO NOT RELIEVE THE BUILDER OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF THEIR WORK.
- G17. WHERE STRUCTURAL ELEMENTS ARE DESIGNED AND CERTIFIED BY OTHER PARTIES, THE CONTRACTOR SHALL OBTAIN WRITTEN CERTIFICATION PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WORK WHICH WOULD PREVENT INSPECTION OR REMEDIAL WORKS TO BE UNDERTAKEN. ALL CERTIFICATIONS ARE TO BE ISSUED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO WORK PROCEEDING.
- G18. THE WORD 'ENGINEER' USED IN THESE NOTES REFERS TO AN EMPLOYEE OR NOMINATED REPRESENTATIVE OF ACOR CONSULTANTS PTY LTD.



TYPICAL SLEEPER RETAINING WALL DETAIL
SCALE 1:20

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D	ISSUE FOR DA	17.07.24	RP	VG
C	ISSUE FOR DA	16.10.23	ROB	VG
Issue	Description	Date	Drawn	Approved

Client
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Project
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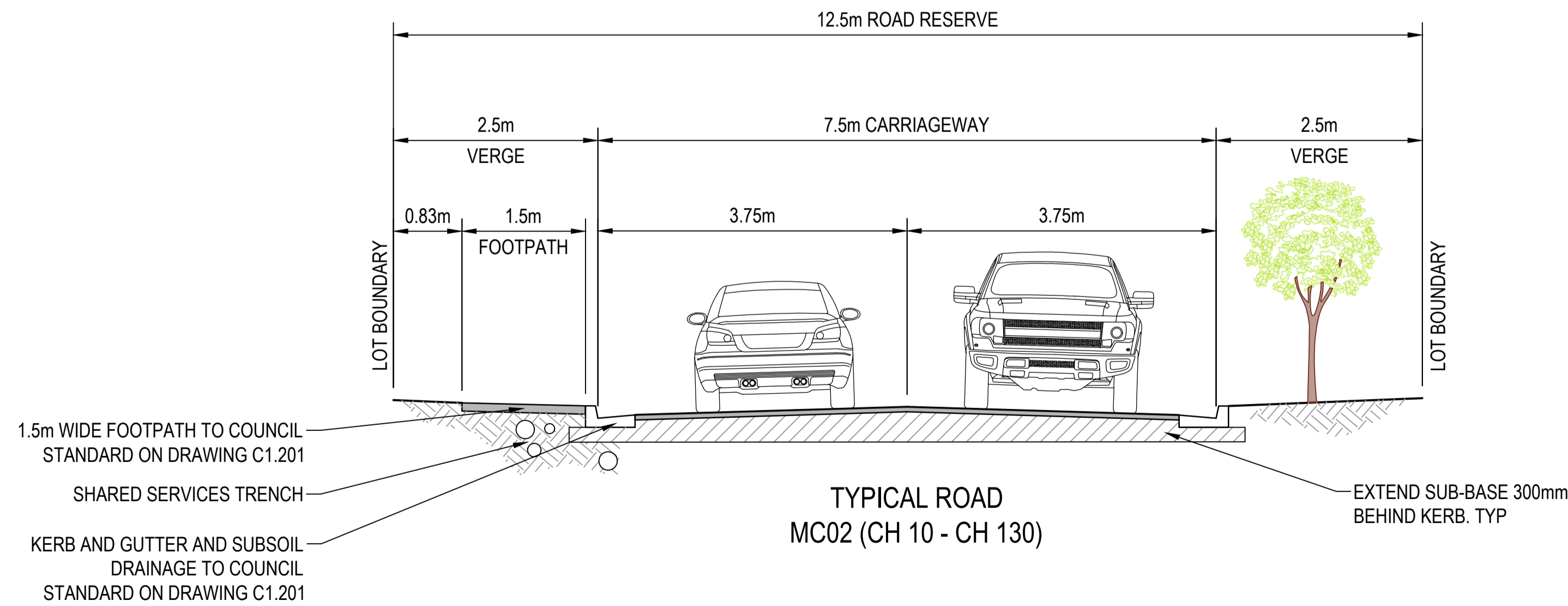
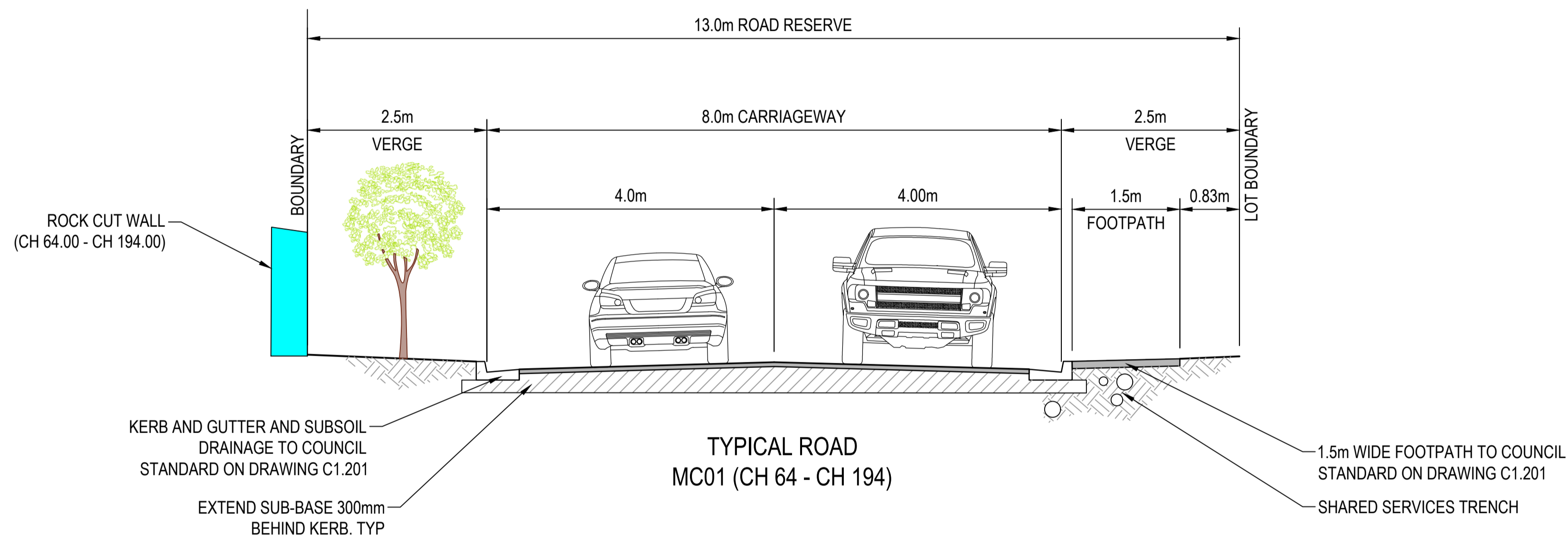
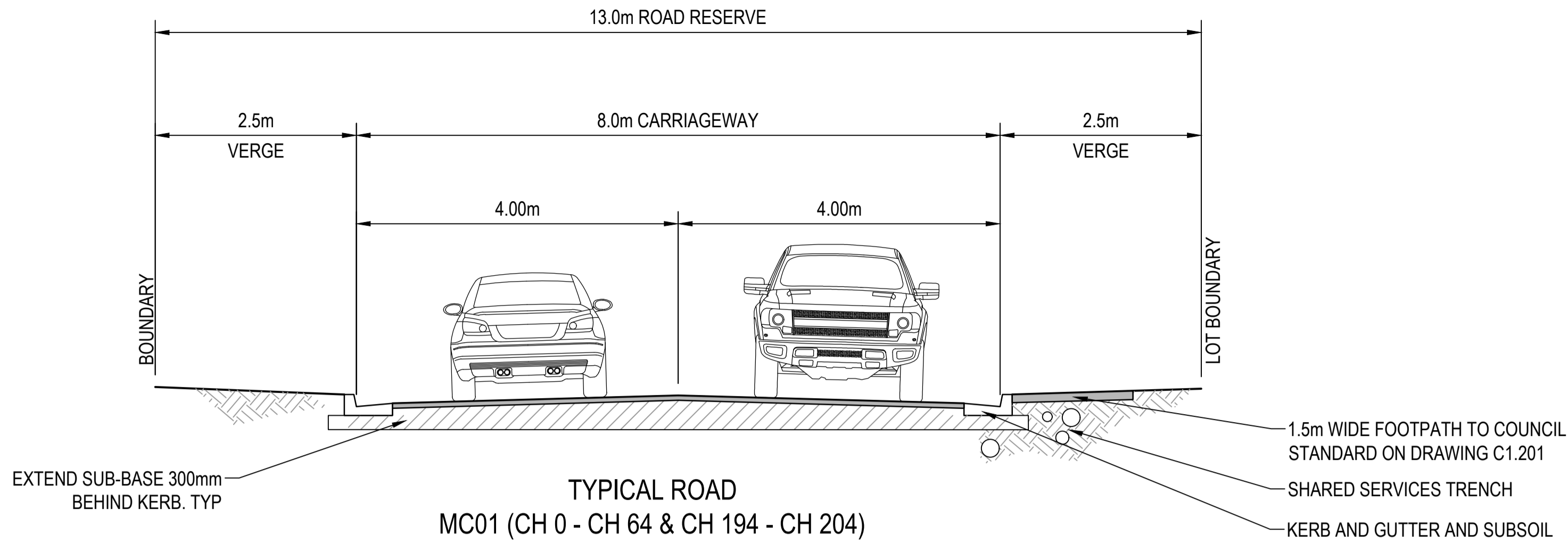
4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
RETAINING WALL
NOTES AND DETAILS

Drawn UF	Date NOV 22	Scale NOT TO SCALE	A1 G.A. Check JR	Date
Designed VG	Project No. NSW210416	Dwg. No. C4.101	Issue F	

NOTE:

- PAVEMENT TO BE DETAILED DURING DETAILED DESIGN STAGE PRIOR TO CC



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E	ISSUE FOR COUNCIL REVIEW	22.08.24	VG	VG	
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Issue	Description	Date	Drawn	Approved	

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CROWS NEST NSW 2065



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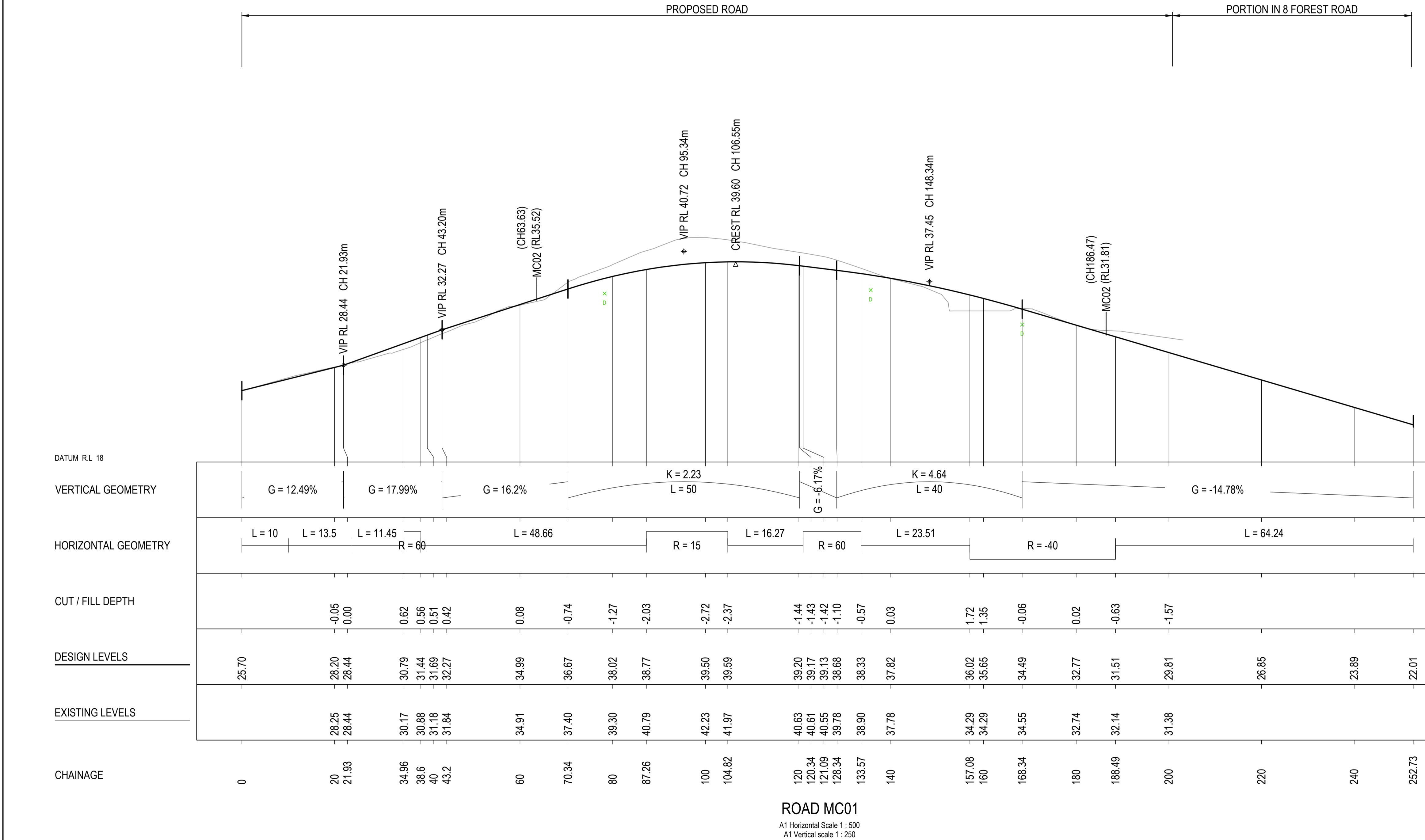


Project
RESIDENTIAL SUBDIVISION
4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
**ROAD DESIGN
TYPICAL ROAD CROSS SECTION**

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.		Issue	
VG	NSW210416	C5.101		F	

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F	ISSUE FOR COUNCIL REVIEW	22.08.24	VG	VG	
E	ISSUE FOR COUNCIL REVIEW	07.08.24	VG	VG	
D	ISSUE FOR DA	17.07.24	RP	VG	
Issue	Description	Date	Drawn	Approved	

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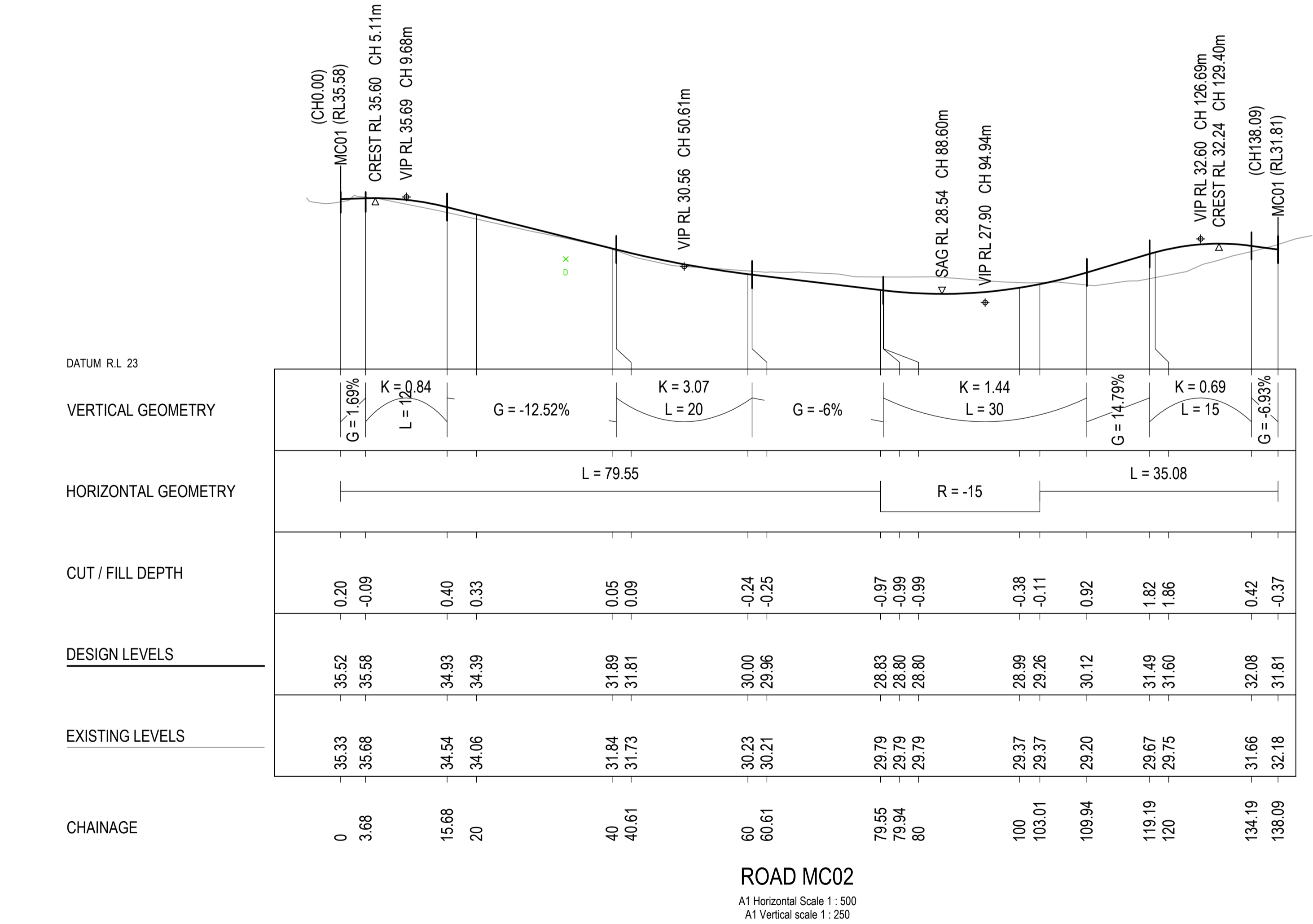
Project
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4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
ROAD DESIGN
LONGITUDINAL SECTIONS
SHEET 1

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.	Issue		
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SCALE 1:500 @ A1
SCALE 1:1000 @ A3



SCALE 1:250 @ A1
SCALE 1:500 @ A3



G	ISSUE FOR LEC REVIEW	16.12.24	JK/DW	VG	North
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E	ISSUE FOR COUNCIL REVIEW	07.08.24	VG	VG	
D	ISSUE FOR DA	17.07.24	RP	VG	
Issue	Description	Date	Drawn	Approved	

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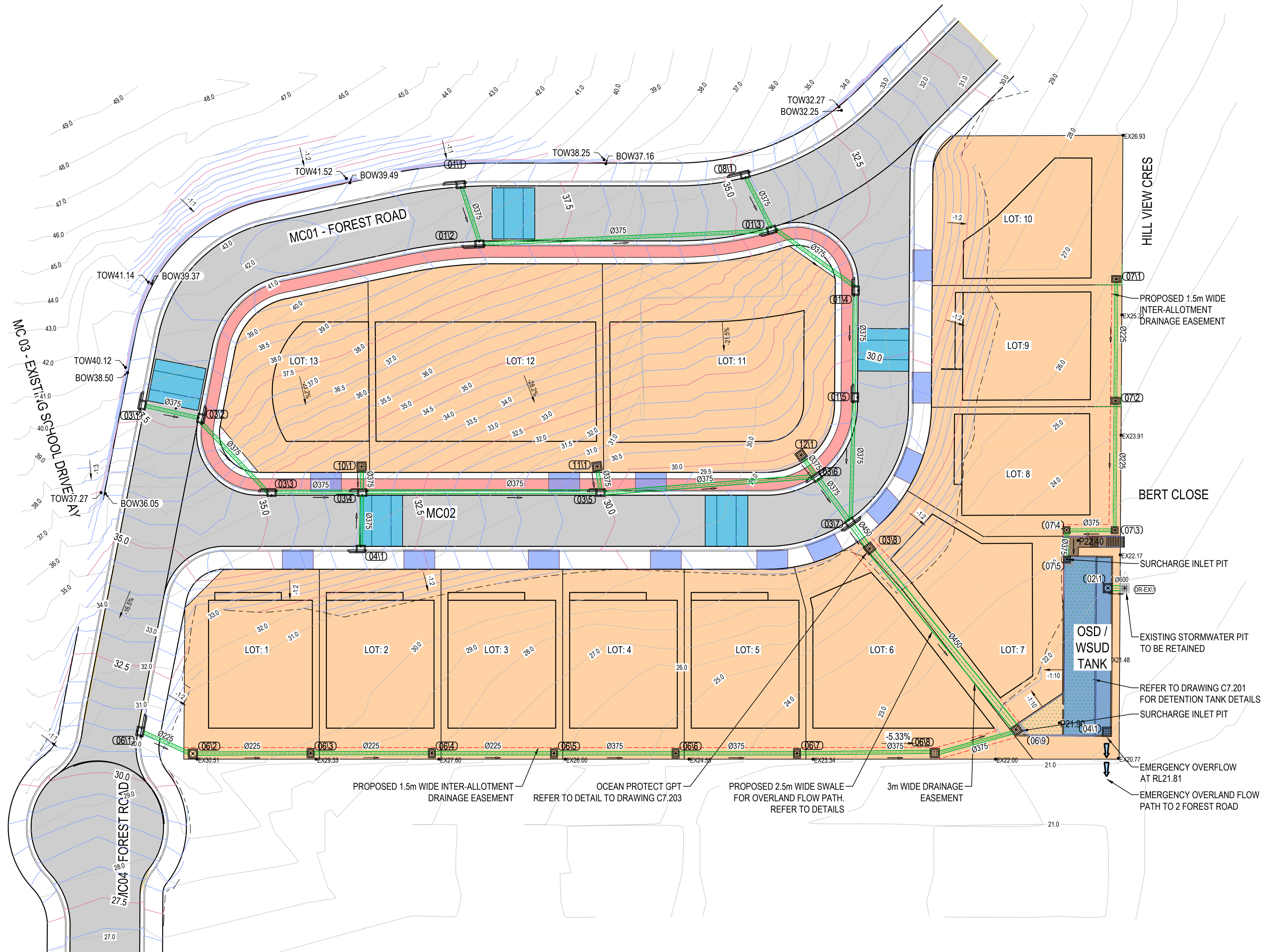
4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
**ROAD DESIGN
LONGITUDINAL SECTIONS
SHEET 2**

Drawn	Date	Scale	A1	Q.A. Check	Date
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Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C5.202	G		

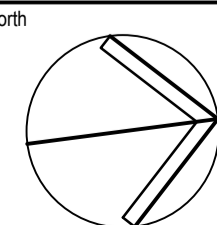
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\\nas001\projects\NSW210416\Drawings\Road Design\Longitudinal Sections\Sheet 2.dwg Date: 16/06/2024 11:52am



A horizontal number line representing distance in metres. It starts at 0 and ends at 25. Major tick marks are labeled at 0, 2.5, 5, 10, 15, 20, and 25 metres. Minor tick marks are present at every 1 unit interval. The line is divided into five equal segments of 5 metres each by the major ticks at 5, 10, 15, and 20.

133 ALEXANDER STREET
CROWS NEST NSW 2065



4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawn UF	Date JUN 22	Scale 1:250	A1	Q.A. Check JR	Date
Designed VG	Project No. NSW210416			Dwg. No. C7.001	Issue F

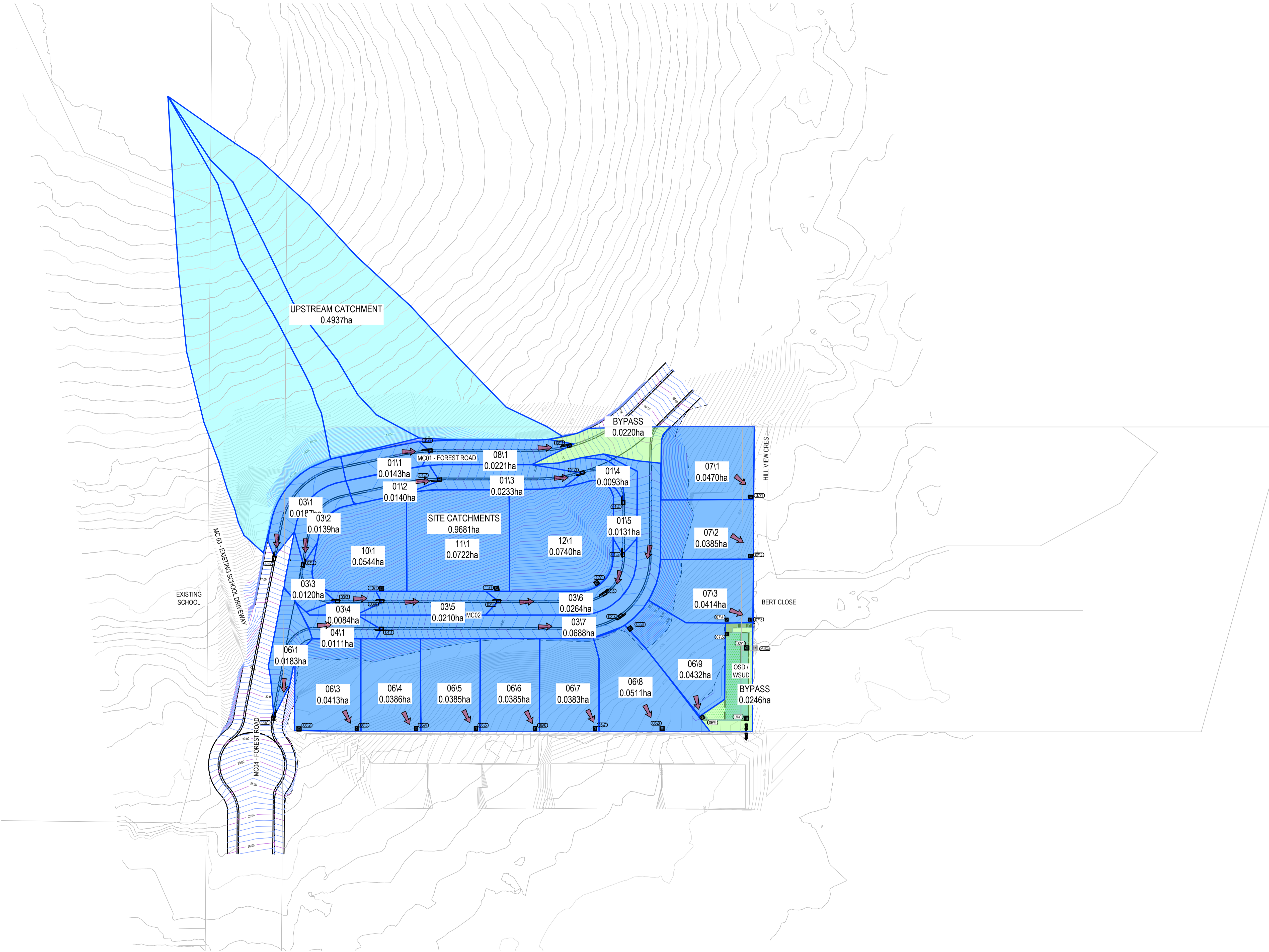
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LEGEND

BYPASS CATCHMENTS

UPSTREAM CATCHMENTS

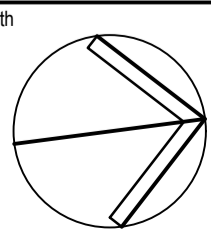
SITE CATCHMENTS



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C	ISSUE FOR DA	16.10.23	ROB	VG
B	ISSUE FOR DA	20.01.23	UF	VG
Issue	Description	Date	Drawn	Approved



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4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
**STORMWATER MANAGEMENT
CATCHMENT PLAN**

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	1:500		JR	
Designed	Project No.	Dwg. No.		Issue	
VG	NSW210416	C7.101		D	

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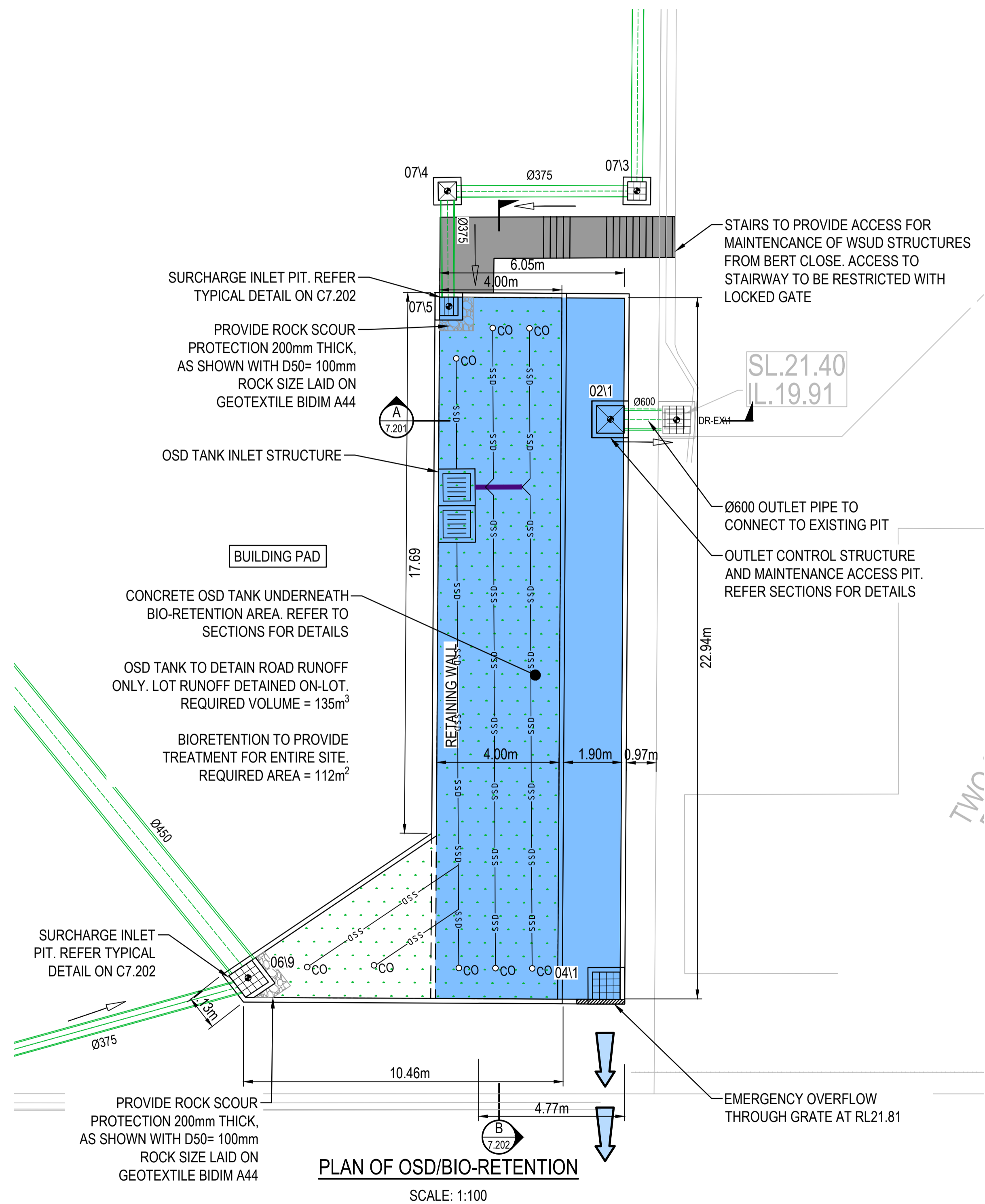
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Date: 16/06/2024 - 11:13 AM

LEGEND

BIO-RETENTION AREA

OSD TANK

SCOUR PROTECTION



FILTER MEDIA SPECIFICATION:

THE FILTER MEDIA SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1. pH BETWEEN 5.5 TO 7.5
2. ELECTRICAL CONDUCTIVITY (EC) < 1.2 dS/m
3. ORGANIC MATTER CONTENT < 5% w/w
4. ORTHOPHOSPHATE CONTENT <= 40 mg/kg
5. TOTAL NITROGEN CONTENT = 400 mg/kg
6. TOTAL SILT & CLAY CONTENT (<0.05mm) < 3% w/w
7. MINIMUM HYDRAULIC CONDUCTIVITY AS DEFINED BY ASTM F1815-06 OF 200mm/h (ACTUAL, NOT PREDICTED)
8. MAXIMUM HYDRAULIC CONDUCTIVITY AS DEFINED BY ASTM F1815-06 OF 400mm/h (ACTUAL, NOT PREDICTED).

THE FILTER MEDIA SHALL BE WELL GRADED AND GENERALLY BE A LOAMY SAND AND BE FREE OF CONTAMINANTS SUCH AS RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND WEEDS AND SHOULD NOT BE HYDROPHOBIC.

THE COARSE SAND TRANSITION LAYER SHALL BE OF A CLEAN WELL GRADED SAND/COARSE SAND MATERIAL CONTAINING LITTLE OR NO FINES.

THE DRAINAGE LAYER SHALL BE OF A CLEAN FINE GRAVEL CONSISTED OF 5-7 mm WASHED SCREENINGS.

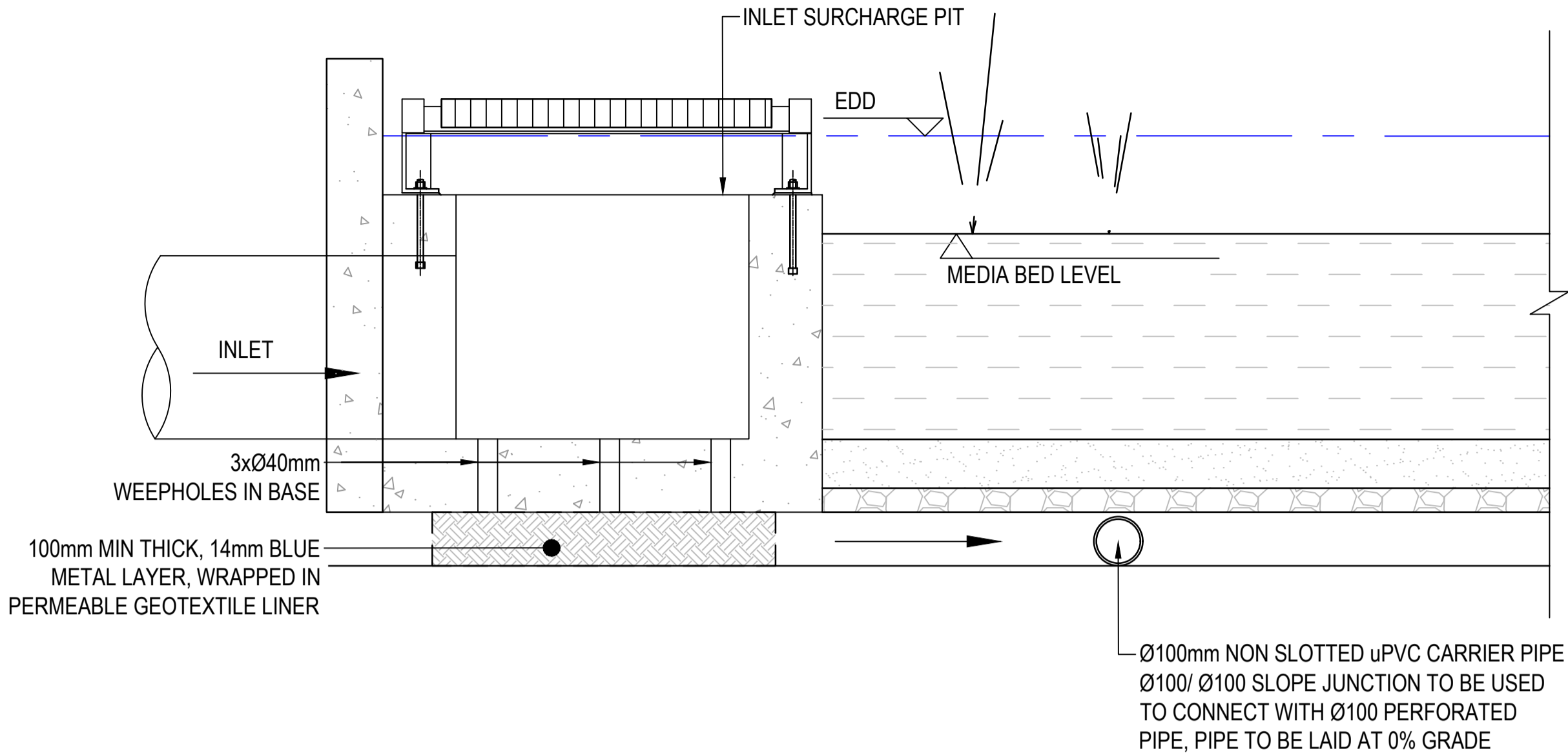
BIO-RETENTION PLANTING PLAN:

ALL BATTER SLOPES ARE TO BE TURFED.

BIO-RETENTION BASIN FILTER MEDIA IS TO BE PLANTED OUT AT 5 PLANTS/ m² WITH SPECIES FROM THE FOLLOWING MIX:

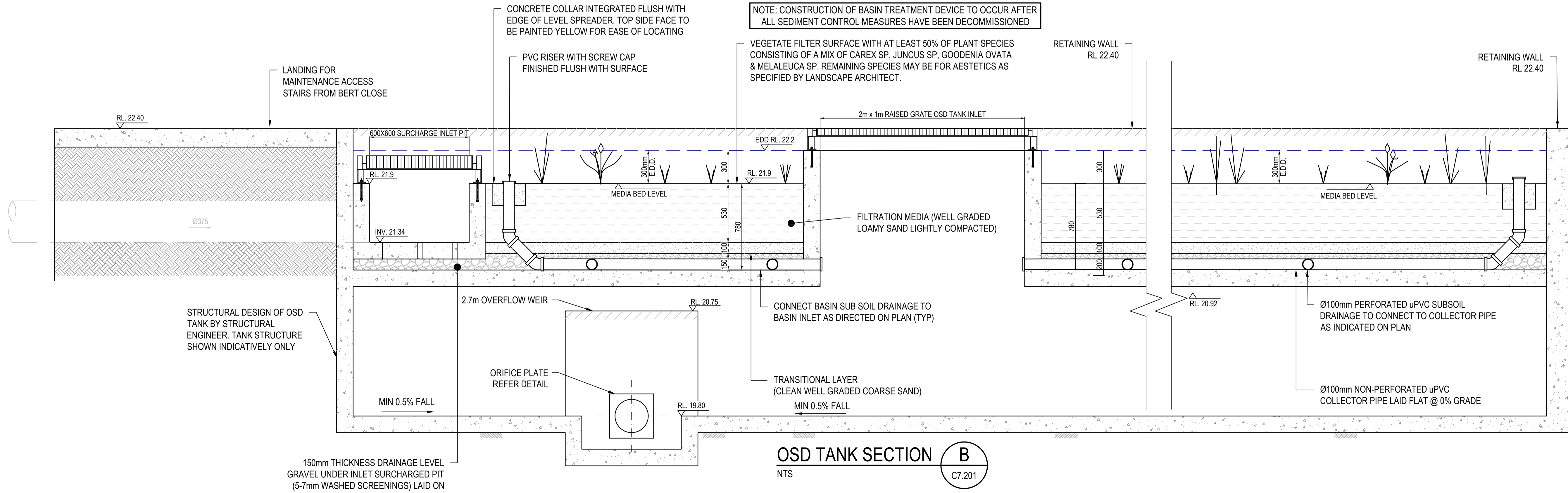
- BAUMEA JUNCEA
- CAREX APPRESSA
- CAREX FASCICULARIS
- CYPERUS EXALTATUS
- CAREX POLYSTACHYUS
- GAHNIA SIEBERANA
- JUNCUS PRISMATOCARPUS
- JUNCUS USITATUS
- LOMANDRA LONGIFOLIA
- PASPALUM DISTICHUM
- SCHOENUS BREVIFOLIUS

NOTE:
CLEAN OUT POINTS TO BE PROVIDED AT
END OF EVERY SUBSOIL DRAINAGE LINE



TYPICAL SURCHARGE INLET PIT DETAIL

NTS



OSD TANK SECTION B

NTS

B

C7.201

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C	ISSUE FOR DA	16.10.23	ROB	VG
B	ISSUE FOR DA	20.01.23	UF	VG

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Project
RESIDENTIAL SUBDIVISION

4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
**STORMWATER MANAGEMENT
DETAILS
SHEET 2**

Drawn	Date	Scale	A1	Q.A. Check	Date
HB	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.	Issue		
HB	NSW210416	C7.202	D		

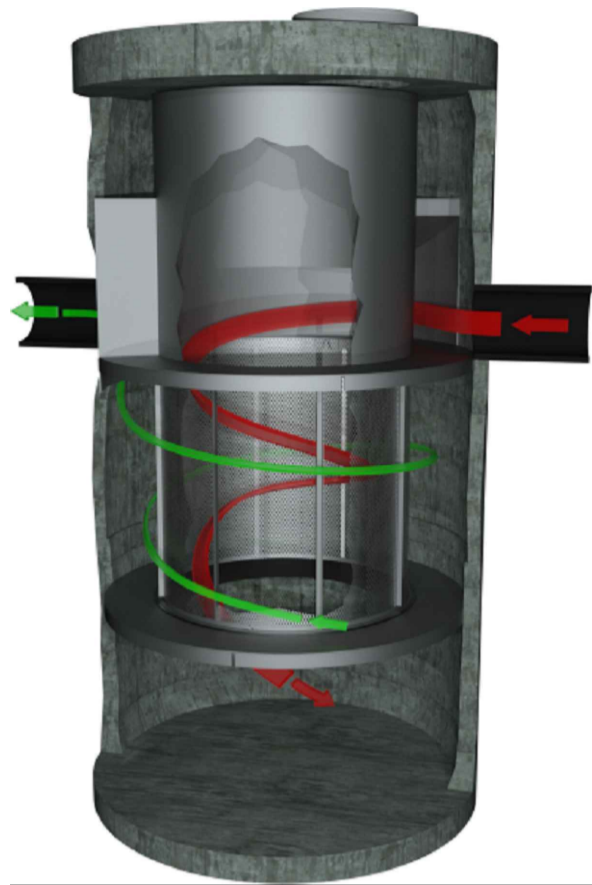
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LAST MODIFIED: 16-12-24



TO BE INSTALLED ONLINE THE TOTAL INLET PIPE FLOW RATE MUST BE LESS THAN THE SPECIFIED UNITS LISTED MAXIMUM TOTAL FLOW RATE; THE UNIT MUST BE PLACED OFFLINE WHERE THE INLET FLOW RATE EXCEEDS THIS VALUE.

TREATABLE FLOWRATE [L/s]	68
MAXIMUM TOTAL FLOWRATE [L/s]	368
WEIR HEIGHT [mm]	400



SITE SPECIFIC DATA REQUIREMENTS

TOTAL FLOWRATE THROUGH INLET [L/\$]]

NOTE: TANK SUPPLIED IN TWO PARTS; PARTS A & B TO BE JOINED ON SITE

1. OCEANSAVE WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF THE PROJECT.
2. PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
3. PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 2.0m AND A GROUND WATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER TO CONFIRM ACTUAL GROUNDWATER ELEVATION. PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
4. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
6. DRAWING NOT TO SCALE.

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE SPECIFIC DESIGN CONSIDERATION AND SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER.

B. CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).

C. CONTRACTOR TO INSTALL AND LEVEL THE STRUCTURE, APPLY SEALANT TO ALL JOINTS AND TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.

D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT SCREEN & SEPARATION CYLINDER COMPONENTS DURING INSTALLATION



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OCEAN PROTECT
OCEANSAVE 0809
SPECIFICATION DRAWING

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C	ISSUE FOR DA	16.10.23	ROB	VG
B	ISSUE FOR DA	20.01.23	UF	VG
Issue	Description	Date	Drawn	Approved

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CROWS NEST NSW 2065



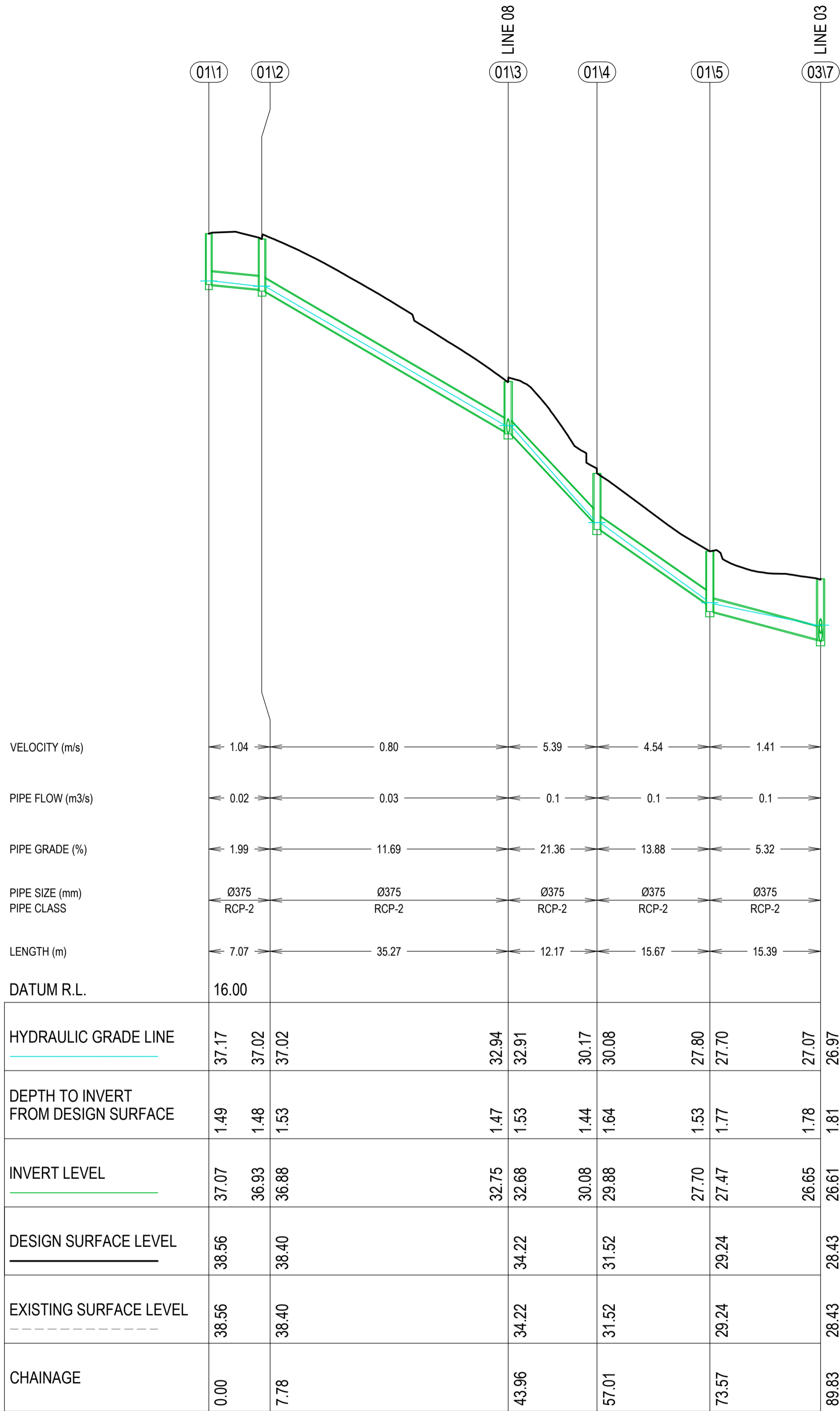
4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawn Title				
STORMWATER MANAGEMENT				
DETAILS				
SHEET 3				
Drawn	Date	Scale	A1	Q.A. Check
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Designed	Project No.		Dwg. No.	Issue
HB	NSW210416		C7.203	D

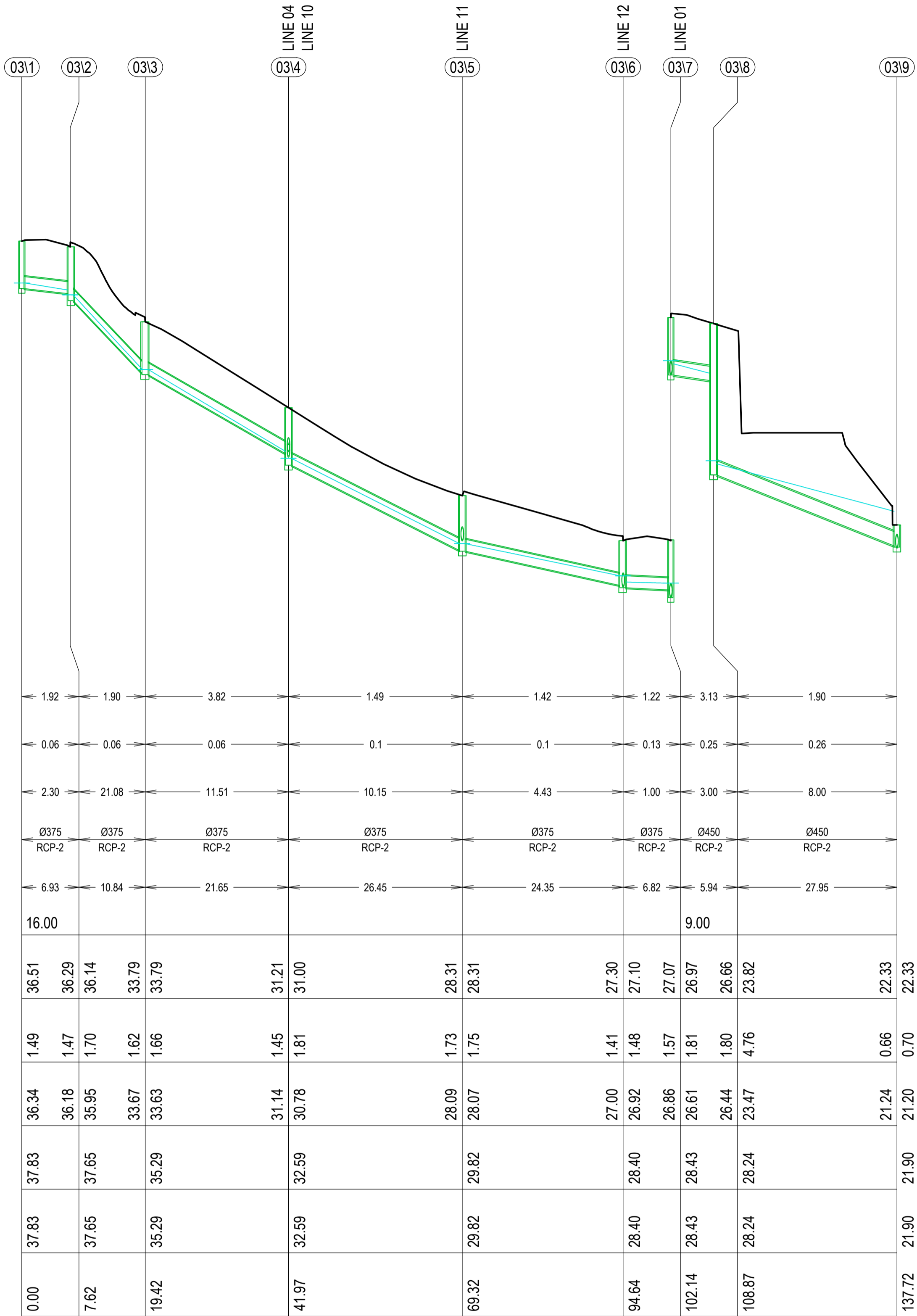
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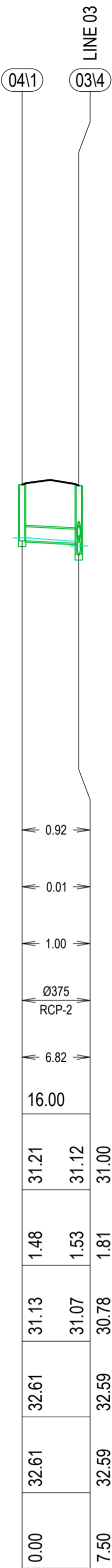
HGL SHOWN IS 5% AEP



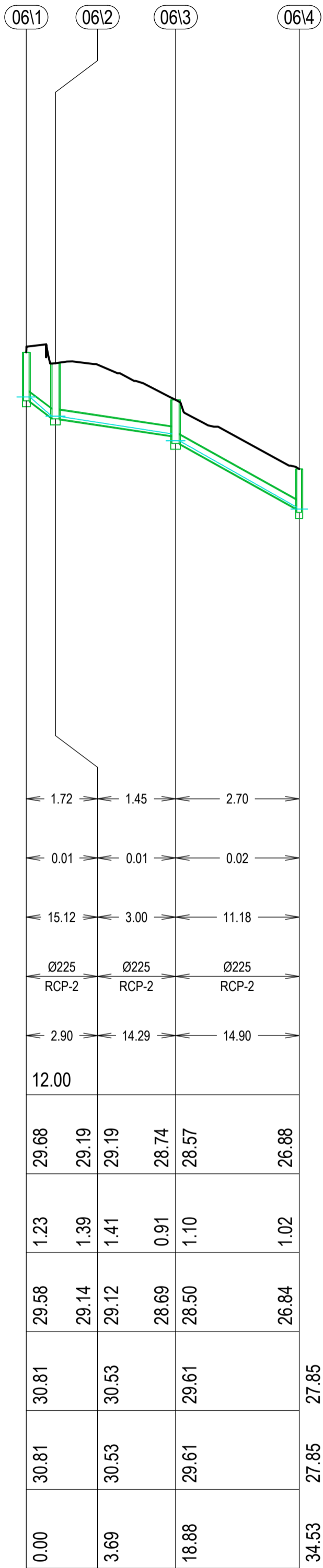
LINE 01



LINE 03



LINE 04



LINE 06

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HORIZONTAL SCALE 1:500 @ A1



VERTICAL SCALE 1:100 @ A1



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B	ISSUE FOR DA	20.01.23	UF	VG	
Issue	Description	Date	Drawn	Approved	

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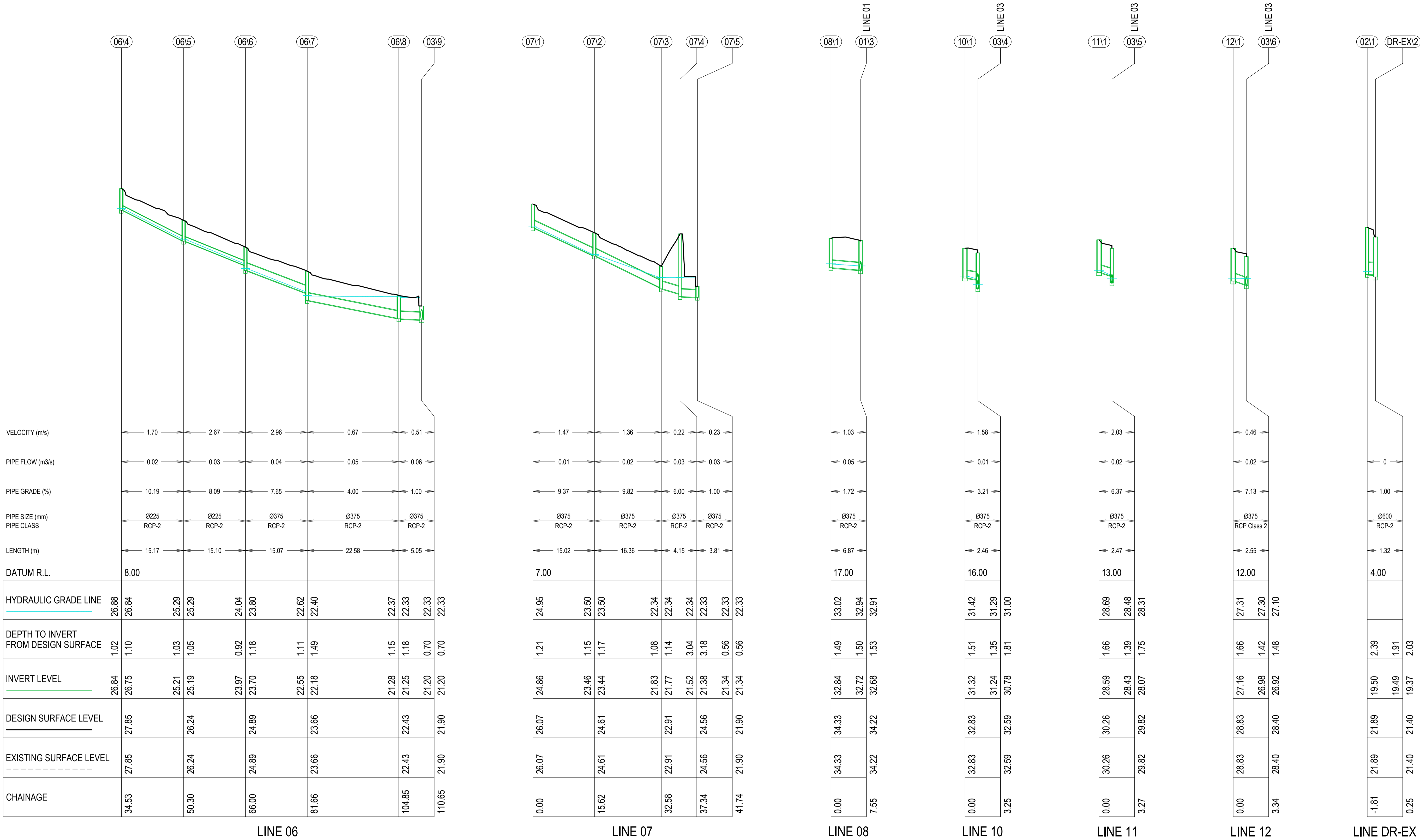
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WARRIEWOOD, NSW 2102

Drawn	Date	Scale	A1	Q.A. Check	Date
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HORIZONTAL SCALE 1:500 @ A1



VERTICAL SCALE 1:100 @ A1



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Issue	Description	Date	Drawn	Approved	

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Project
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4 FOREST ROAD
WARRIEWOOD, NSW 2102

Drawing Title
STORMWATER MANAGEMENT
DRAINAGE LONGITUDINAL SECTIONS
SHEET 2

Drawn	Date	Scale	A1	Q.A. Check	Date
UF	JUN 22	AS SHOWN		JR	
Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C7.402	D		

EROSION AND SEDIMENT CONTROL LEGEND

SEDIMENT CONTROL FENCE

DROP INLET SEDIMENT FILTER

SANDBAG KERB INLET PROTECTION

TEMPORARY CONSTRUCTION ACCESS

TEMPORARY STOCKPILE WITH SEDIMENT FENCE SURROUND

EROSION AND SEDIMENT CONTROL NOTES

1.

THIS DRAWING IS FOR GUIDANCE PURPOSES ONLY - THE SOIL AND EROSION CONTROLS ARE INDICATIVE AND REMAIN SUBJECT TO CONSTRUCTION METHODOLOGY - THE CONTRACTOR SHALL AT ALL TIMES REMAIN RESPONSIBLE FOR COMPLIANCE WITH ALL LAWS AND REGULATIONS PERTAINING TO SAFETY AND PROTECTION OF ENVIRONMENT

2.

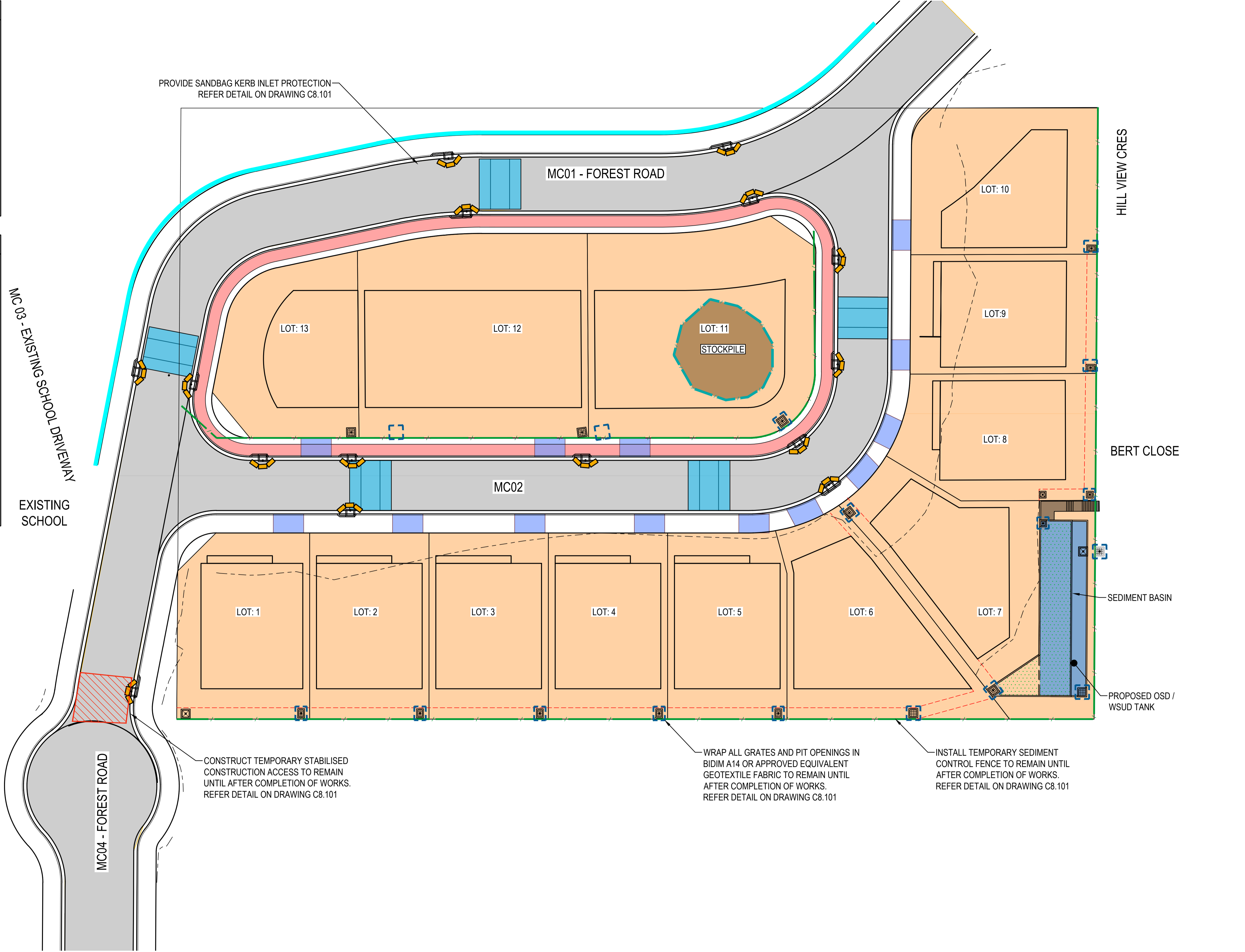
ALL SOIL AND EROSION CONTROLS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNCIL GUIDELINES AND CONDITIONS AND THE CURRENT NSW GOVERNMENT "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION" HANDBOOK

3.

CONTRACTOR TO ENSURE THAT SEDIMENT IS NOT ALLOWED TO ENTER ADJACENT LOTS TO DOWNSTREAM STORMWATER SYSTEMS. ANY DAMAGE WHATSOEVER CAUSED THROUGH BREACH OF THIS CONDITION BY THE CONTRACTOR SHALL BE RECTIFIED SOLELY AT THE CONTRACTORS COST

4.

ANY FINE, FEE, LEVY OR THE LIKE IMPOSED BY THE REGULATORY AUTHORITY AS A CONSEQUENCE OF THE CONTRACTORS ACTS OR OMISSIONS SHALL BE PAID BY THE CONTRACTOR EITHER DIRECTLY OR INDIRECTLY VIA CREDIT OR VARIATION TO THE CONTRACT SUM

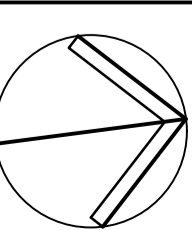


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Issue	Description	Date	Drawn	Approved

SCALE 1:250 @ A1
SCALE 1:500 @ A3



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Project
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Drawing Title
SOIL EROSION AND SEDIMENT CONTROL PLAN

Drawn	Date	Scale	A1	G.A. Check	Date
UF	JUN 22	1:250		JR	
Designed	Project No.	Dwg. No.	Issue		
VG	NSW210416	C8.001	D		

\\ms01\projects\2024\NSW210416\Drawings\C8.001_Soil Erosion and Sediment Control Plan.dwg Date: 16/06/2024 - 11:53am

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

- THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
- CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, (BLUE BOOK) 14TH EDITION.
- ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

- DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
- ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
- ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
- WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
 - INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
 - CONSTRUCT THE STABILISED SITE ACCESS.
 - CONSTRUCT DIVERSION DRAINS AS REQUIRED.
 - INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
 - INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
 - CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
 - UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
 - GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
 - REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
- ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING. 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.
- CONTRACTOR TO MANAGE THE ALIGNMENT OF CATCH DRAINS ON SITE AND TO ENSURE THAT CATCH DRAINS INTERCEPT THE SITE SURFACE RUNOFF AND DIRECT THE RUNOFF TOWARDS THE SEDIMENTATION BASINS.

SITE INSPECTION AND MAINTENANCE INSTRUCTIONS

- THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
 - ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
 - REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
 - REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
 - ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
 - CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
 - MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
- THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
 - THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
 - THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
 - THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
 - THE NEED FOR DUST PREVENTION STRATEGIES.
 - ANY REMEDIAL WORKS TO BE UNDERTAKEN. THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

EROSION AND SEDIMENT CONTROL NOTES

SEDIMENT CONTROL INSTRUCTIONS

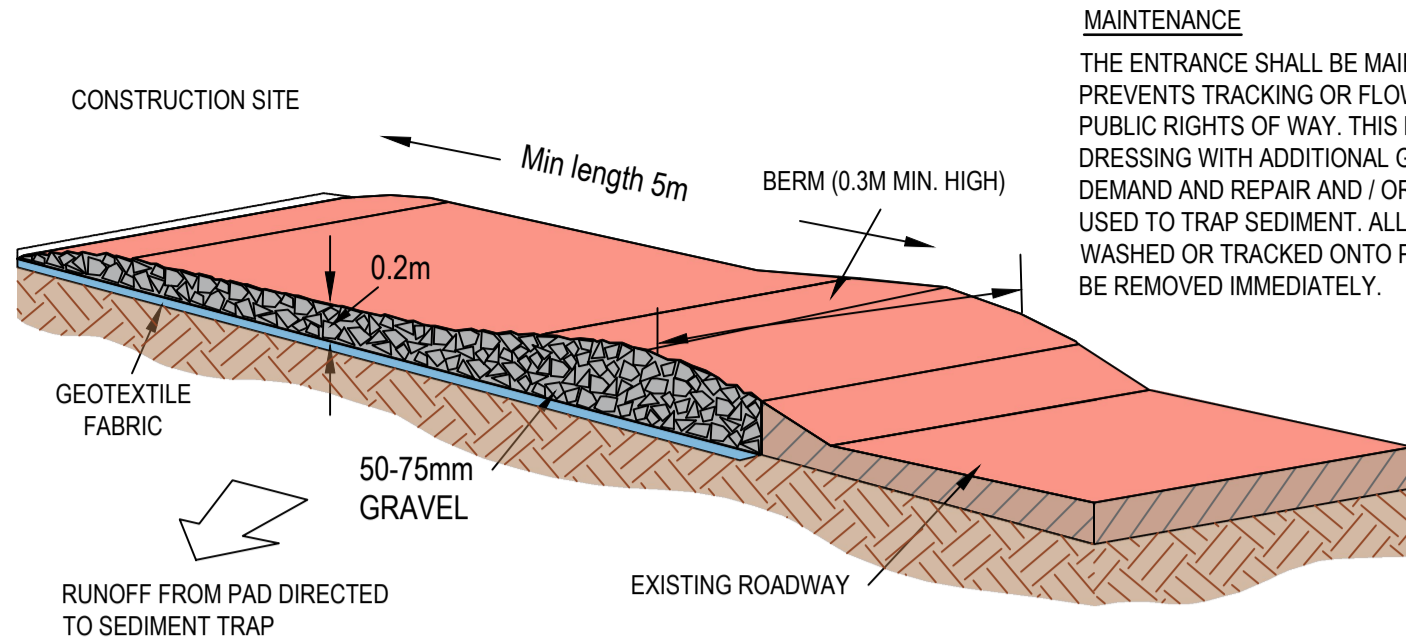
- SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
- SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
- STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
- WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE. 6. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

SOIL EROSION CONTROL INSTRUCTIONS

- EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
 - 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
 - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
 - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
 - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
- ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
- WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
- STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
- ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
- FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
- PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
- RE-VEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

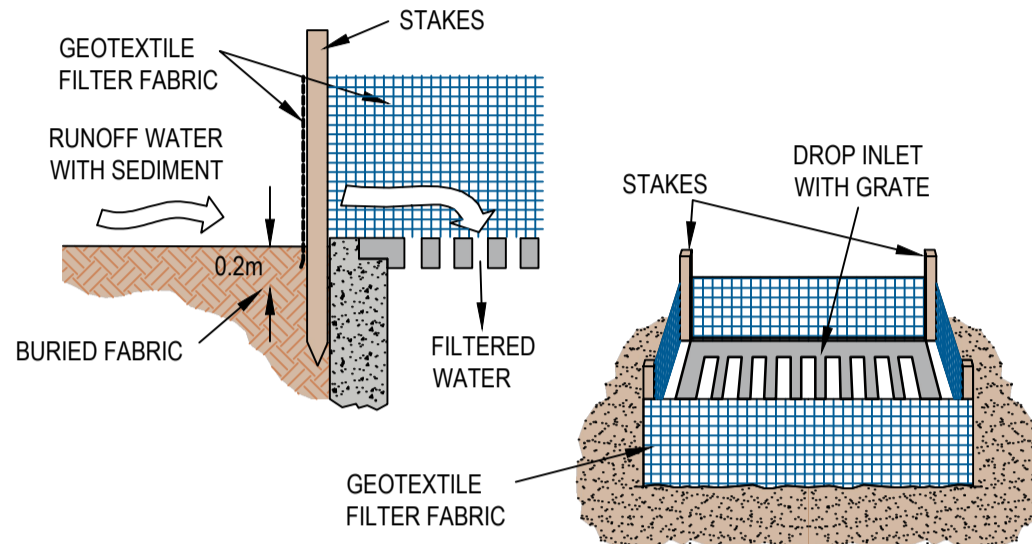
- ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
- ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
- ALL SITE STAFF AND SUB-CONTRACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
- ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
- PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.



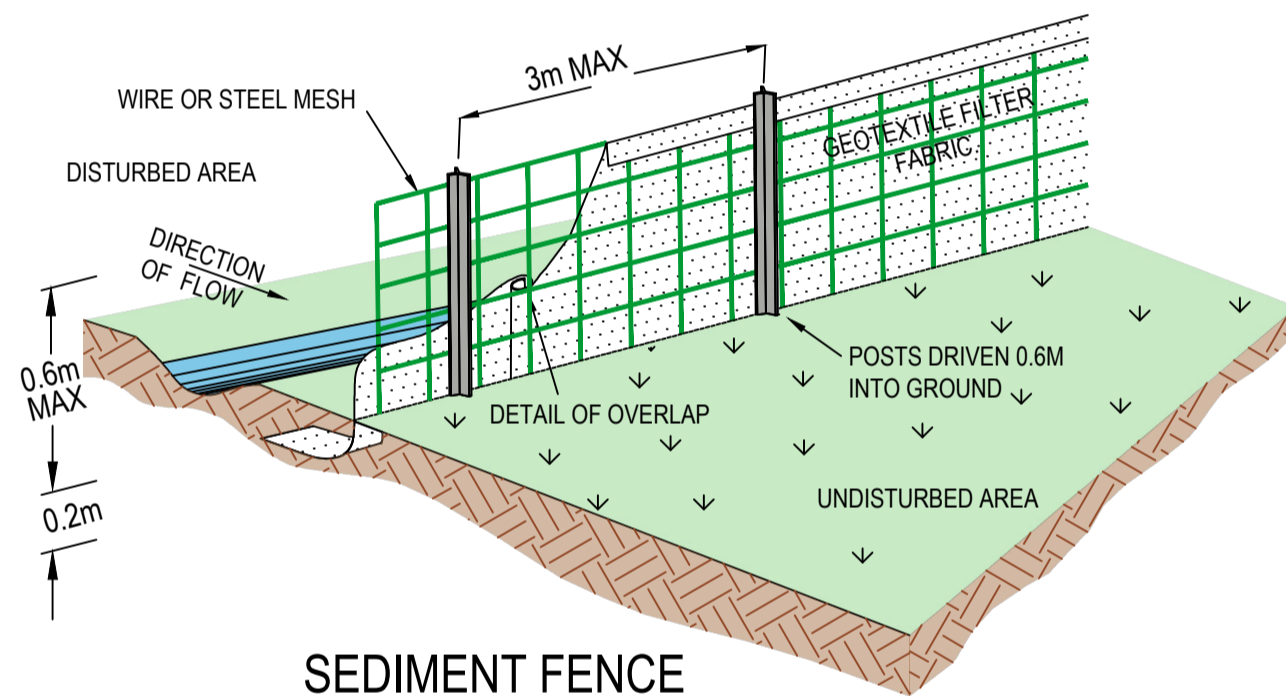
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH 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. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

TEMPORARY CONSTRUCTION EXIT

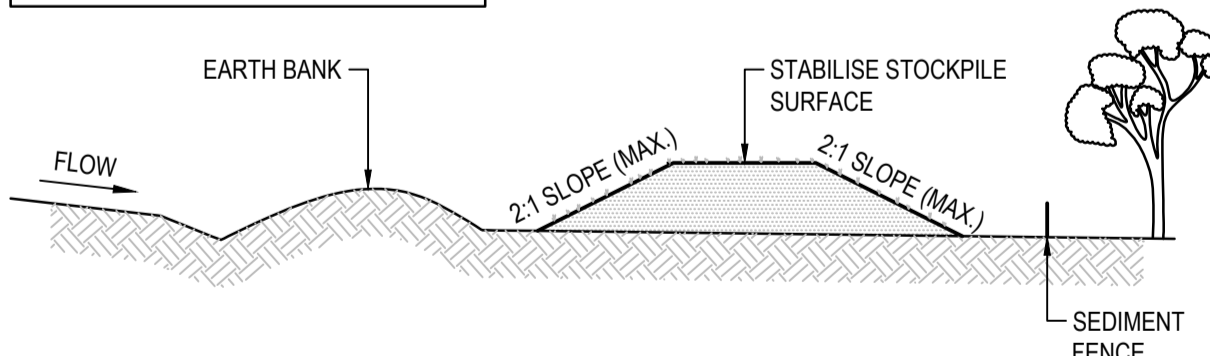


GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP



SEDIMENT FENCE

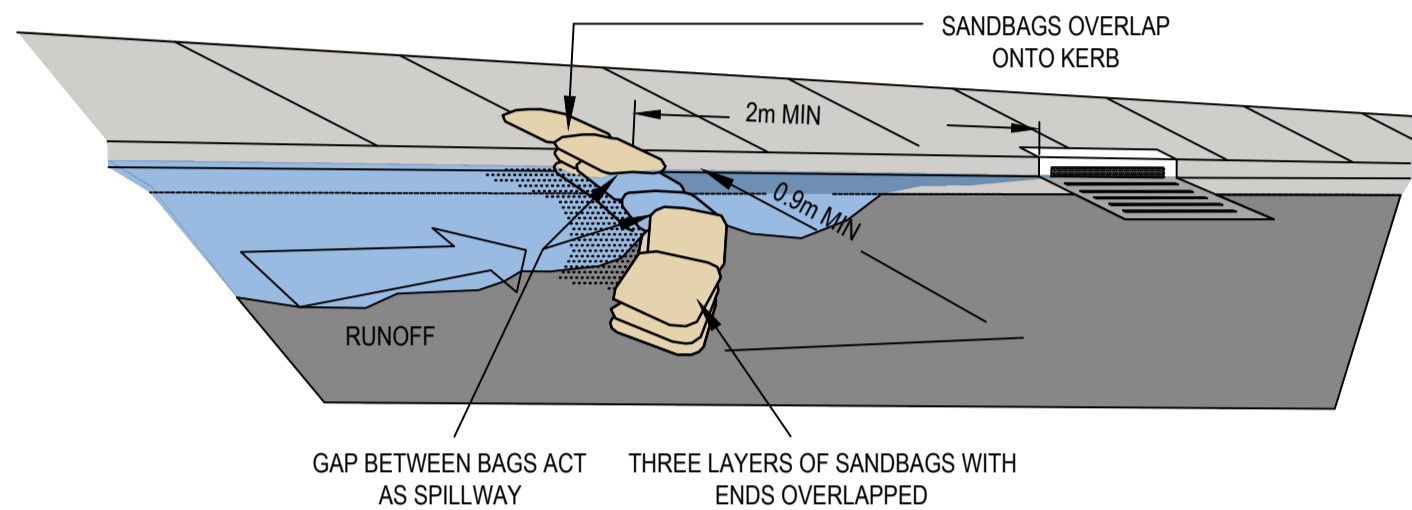
SOURCE:
MANAGING URBAN STORMWATER SOILS
AND CONSTRUCTION. THIRD EDITION,
AUGUST 1998 PRODUCED BY THE
DEPARTMENT OF HOUSING



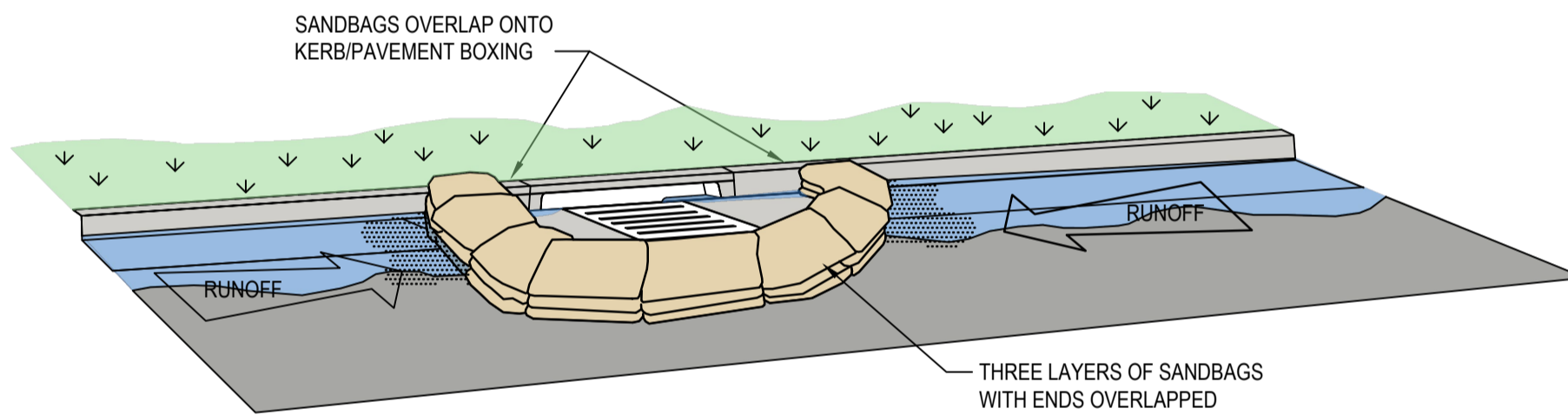
CONSTRUCTION NOTES

- LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
- CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
- WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METERS IN HEIGHT.
- REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
- CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

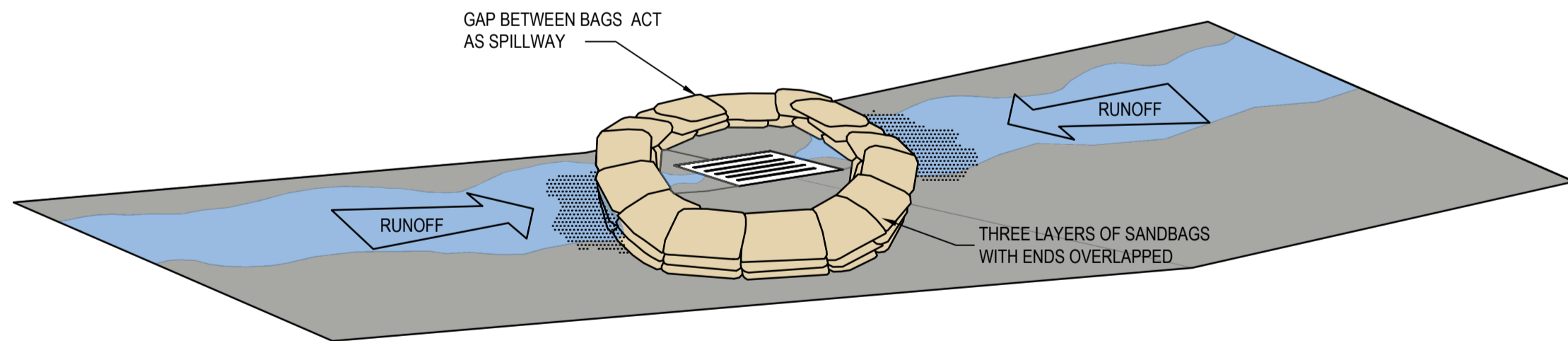
STOCKPILES N.T.S.



SANDBAG KERB INLET SEDIMENT TRAP



SANDBAG SEDIMENT TRAP - AT KERB SAG PIT



SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

SANDBAG SEDIMENT TRAP DETAILS N.T.S.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

- THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
- CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, (BLUE BOOK) 14TH EDITION.
- ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

- DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
- ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
- ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
- WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
 - INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
 - CONSTRUCT THE STABILISED SITE ACCESS.
 - CONSTRUCT DIVERSION DRAINS AS REQUIRED.
 - INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
 - INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
 - CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
 - UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
 - GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
 - REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
- ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING. 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.
- CONTRACTOR TO MANAGE THE ALIGNMENT OF CATCH DRAINS ON SITE AND TO ENSURE THAT CATCH DRAINS INTERCEPT THE SITE SURFACE RUNOFF AND DIRECT THE RUNOFF TOWARDS THE SEDIMENTATION BASINS.

SITE INSPECTION AND MAINTENANCE INSTRUCTIONS

- THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
 - ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
 - REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
 - REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
 - ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
 - CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
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EROSION AND SEDIMENT CONTROL NOTES

IMPORTANT NOTES:

- THIS DRAWINGS IS FOR GUIDANCE PURPOSES ONLY - THE SOIL AND EROSION CONTROLS ARE INDICATIVE AND REMAIN SUBJECT TO CONSTRUCTION METHODOLOGY - THE CONTRACTOR SHALL AT ALL TIMES REMAIN RESPONSIBLE FOR COMPLIANCE WITH ALL LAWS AND REGULATIONS PERTAINING TO SAFETY AND PROTECTION OF ENVIRONMENT
- ALL SOIL AND EROSION CONTROLS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNCIL GUIDELINES AND CONDITIONS. ALL WORK TO BE IMPLEMENTED TO THE NSW "BLUE BOOK": MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION - VOLUME 14TH EDITION.
- CONTRACTOR TO ENSURE THAT SEDIMENT IS NOT ALLOWED TO ENTER ADJACENT LOTS TO DOWNSTREAM STORMWATER SYSTEMS OR ANY PUBLIC ROAD OR ROAD RELATED AREA. ANY DAMAGE WHATSOEVER CAUSED THROUGH BREACH OF THIS CONDITION BY THE CONTRACTOR SHALL BE RECTIFIED SOLELY AT THE CONTRACTORS COST
- THE CONTRACTOR IS TO REMOVE ANY SEDIMENT DEPOSITS OUTSIDE THE SITE BY THE END OF EACH WORKING DAY BY VACUUM SWEEPER TRUCKS.
- WHOLE OF SITE TO BE REVEGETATED WITH HYDROMULCH WITHIN FIVE DAYS OF REACHING FSL AND COMPLETION OF TRENCH WORKS TO "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION VOL. 1" REQUIREMENTS.

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D	ISSUE FOR DA	17.07.24	RP	VG	
C	ISSUE FOR DA	16.10.23	ROB	VG	
B	ISSUE FOR DA	20.01.23	UF	VG	
Issue	Description	Date	Drawn	Approved	

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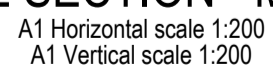
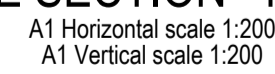
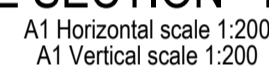
Project
RESIDENTIAL SUBDIVISION

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WARRIEWOOD, NSW 2102

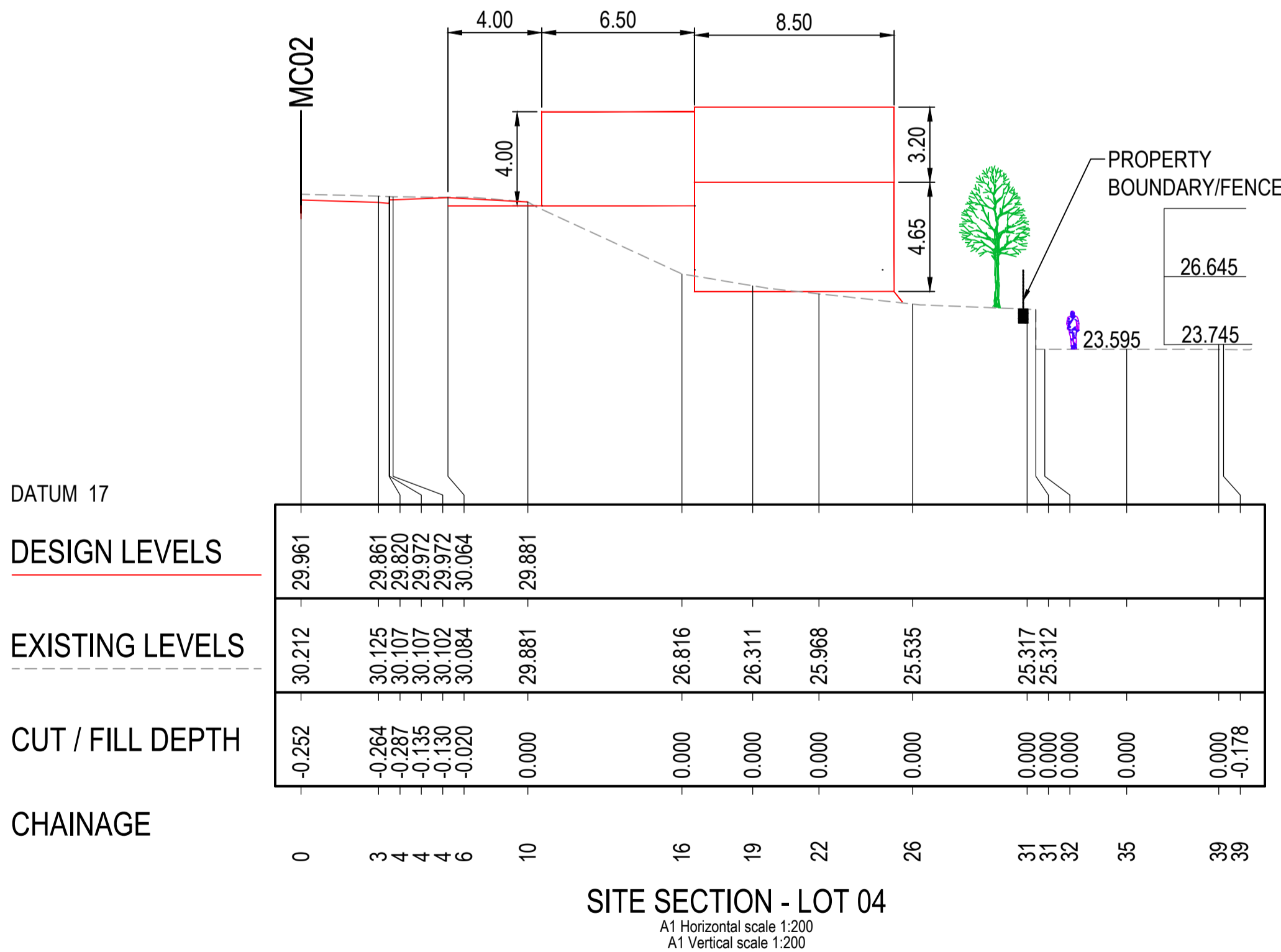
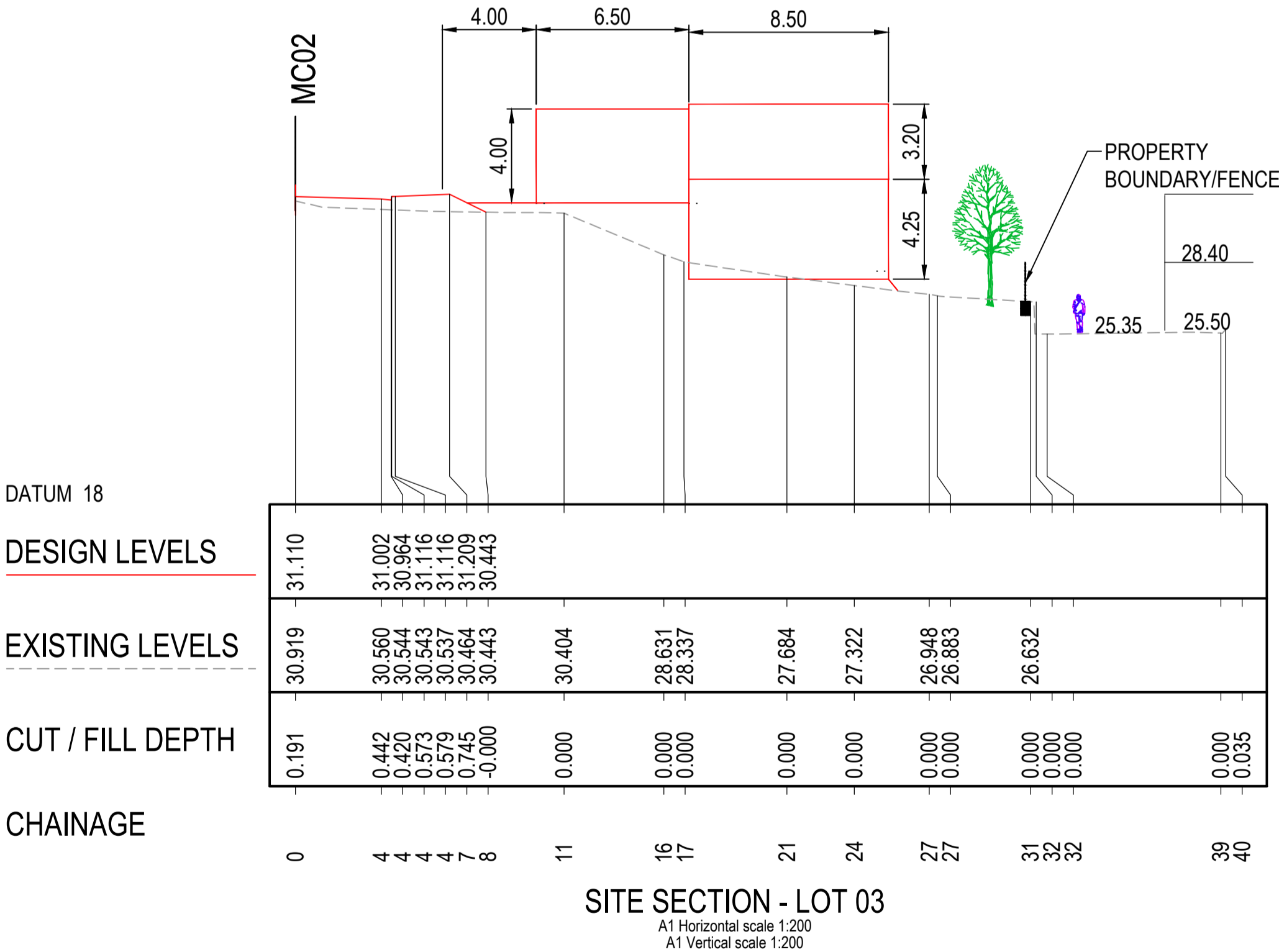
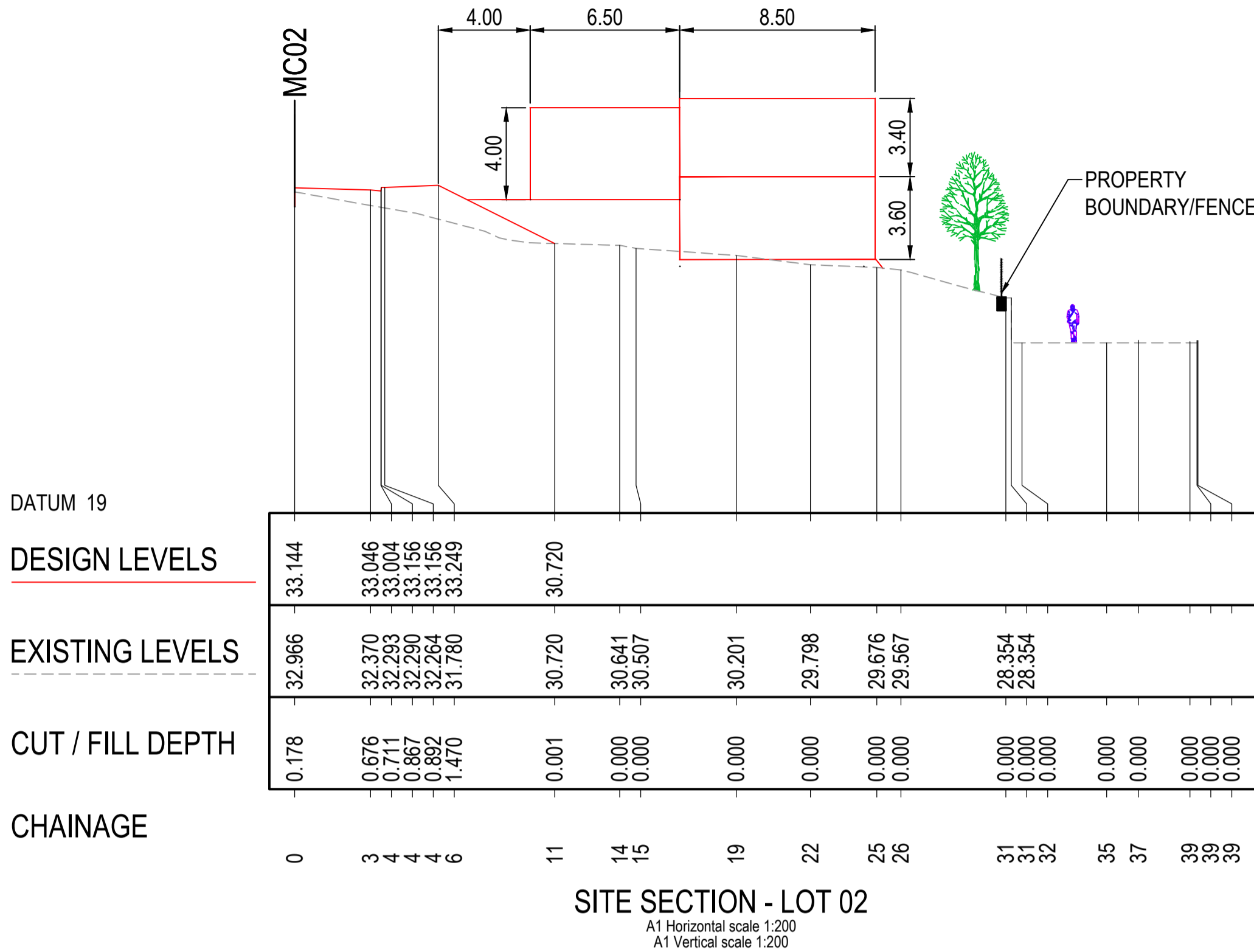
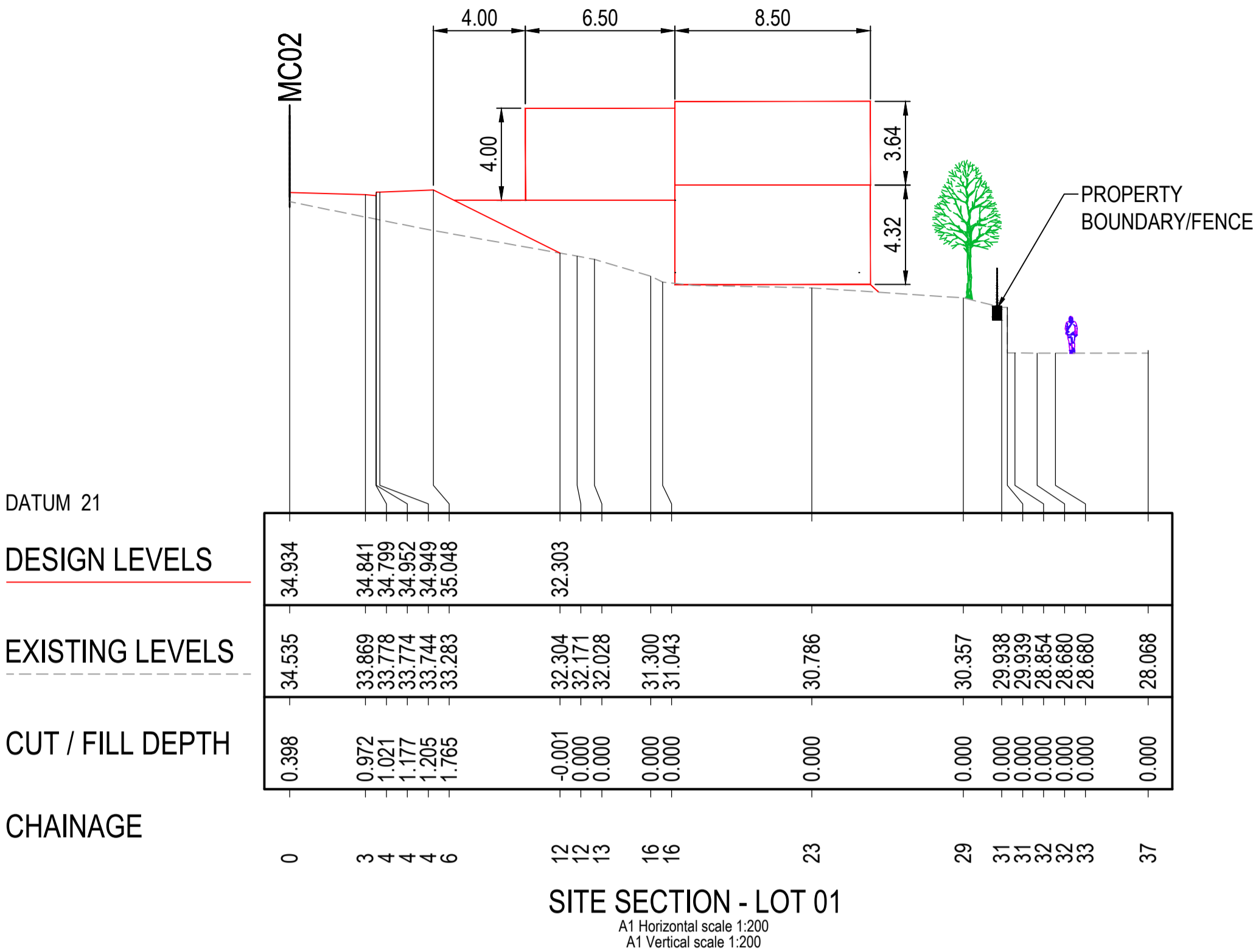
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**SOIL EROSION AND SEDIMENT CONTROL PLAN
NOTES AND DETAILS**

Drawn UF	Date JUN 22	Scale NOT TO SCALE	A1	G.A. Check JR	Date
Designed VG	Project No. NSW210416	Dwg. No. C8.101	Issue D		

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						North
C	ISSUE FOR INFORMATION	19.12.24	VG	VG		
B	ISSUE FOR COUNCIL INFORMATION	04.07.24	RP	VG		
Issue	Description	Date	Drawn	Approved		
1cm at full page						

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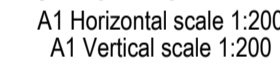
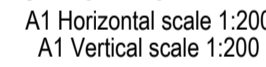
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WARRIWOOD, NSW 2102

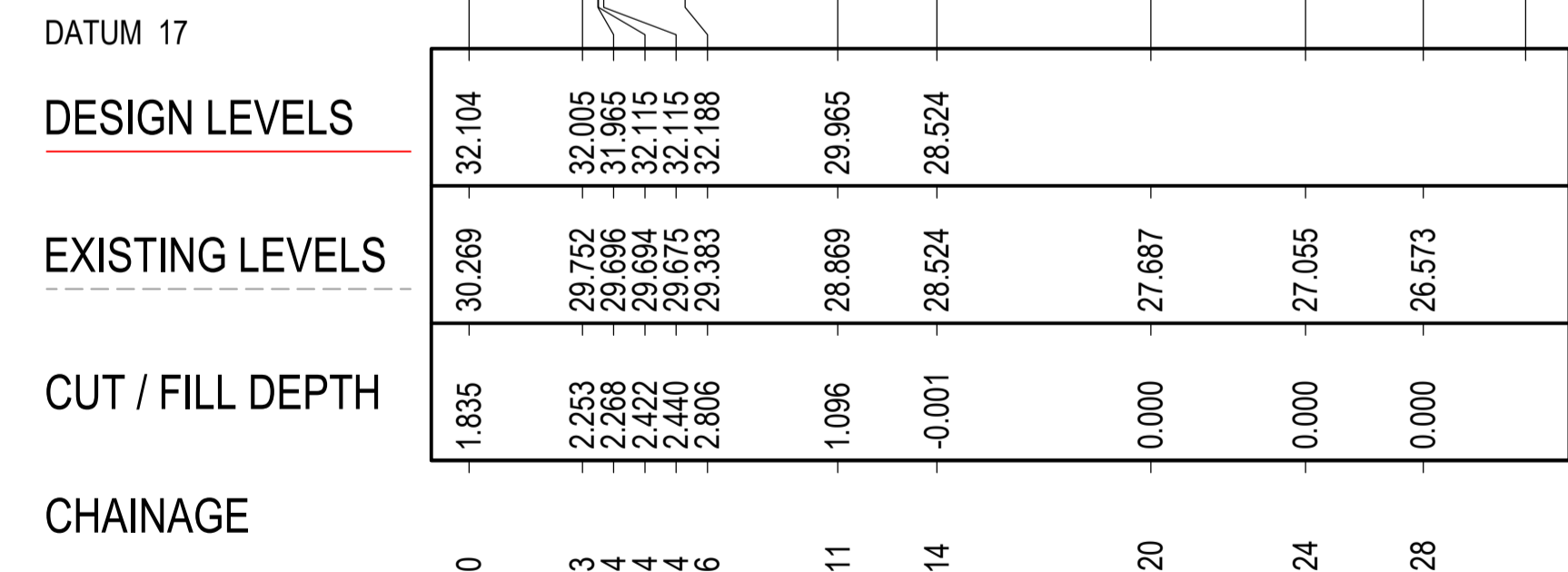
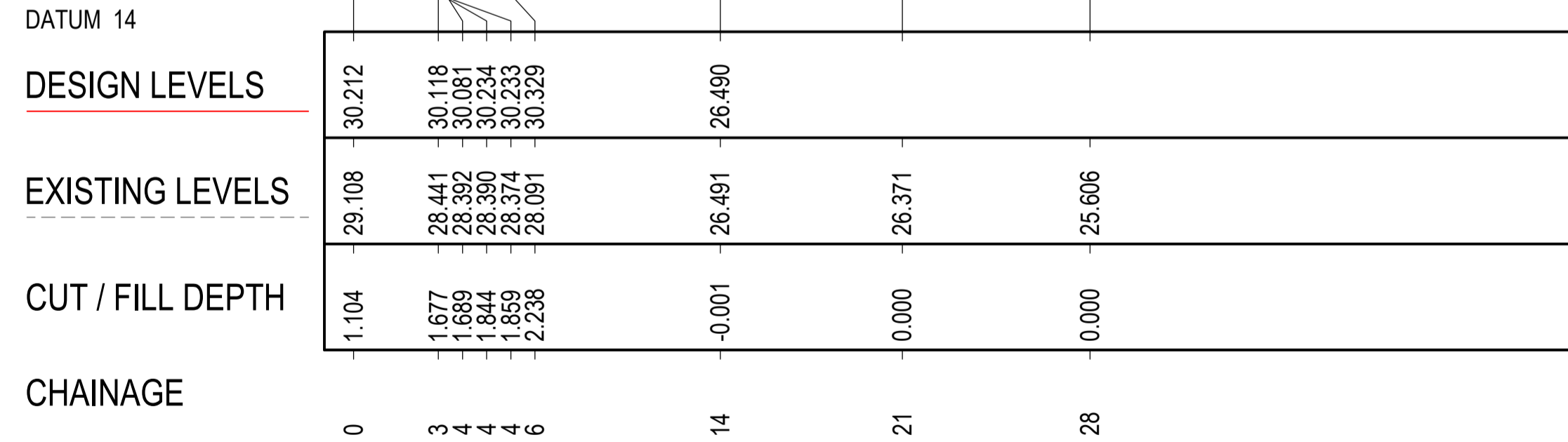
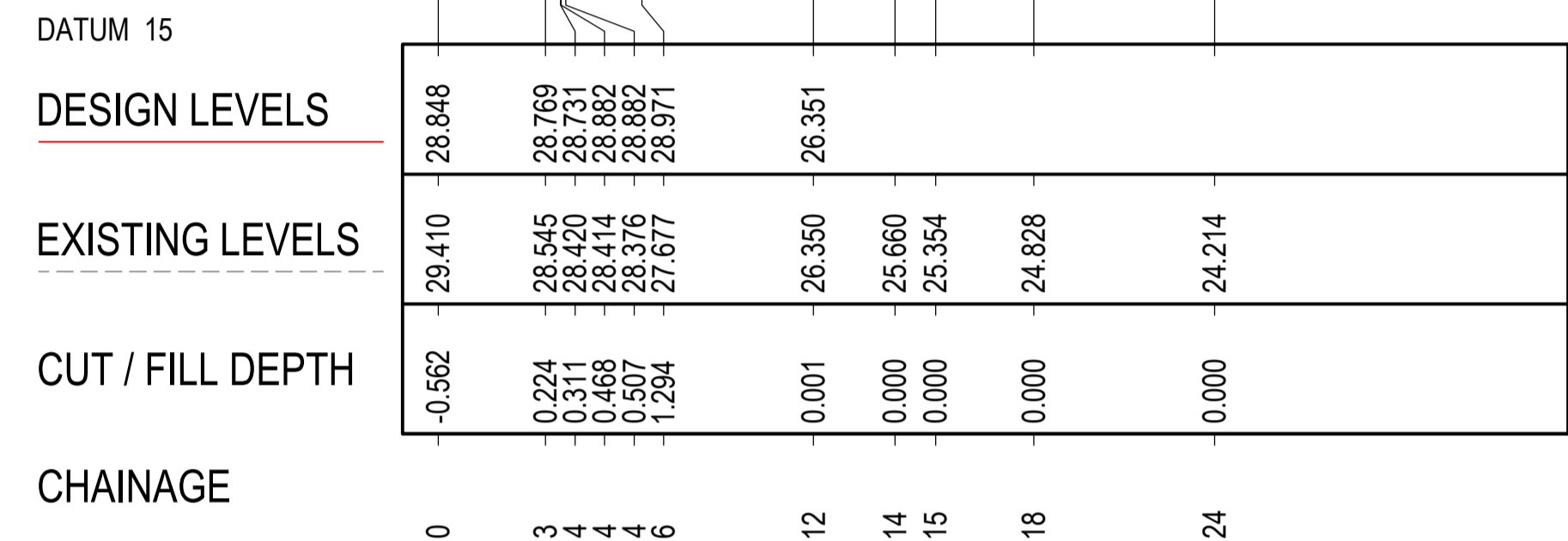
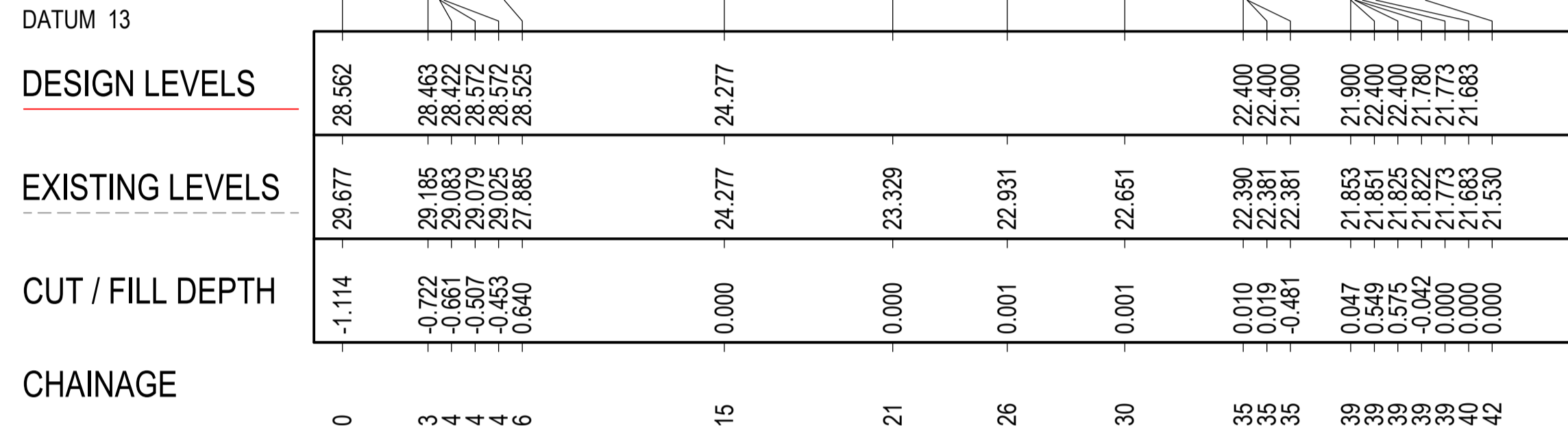
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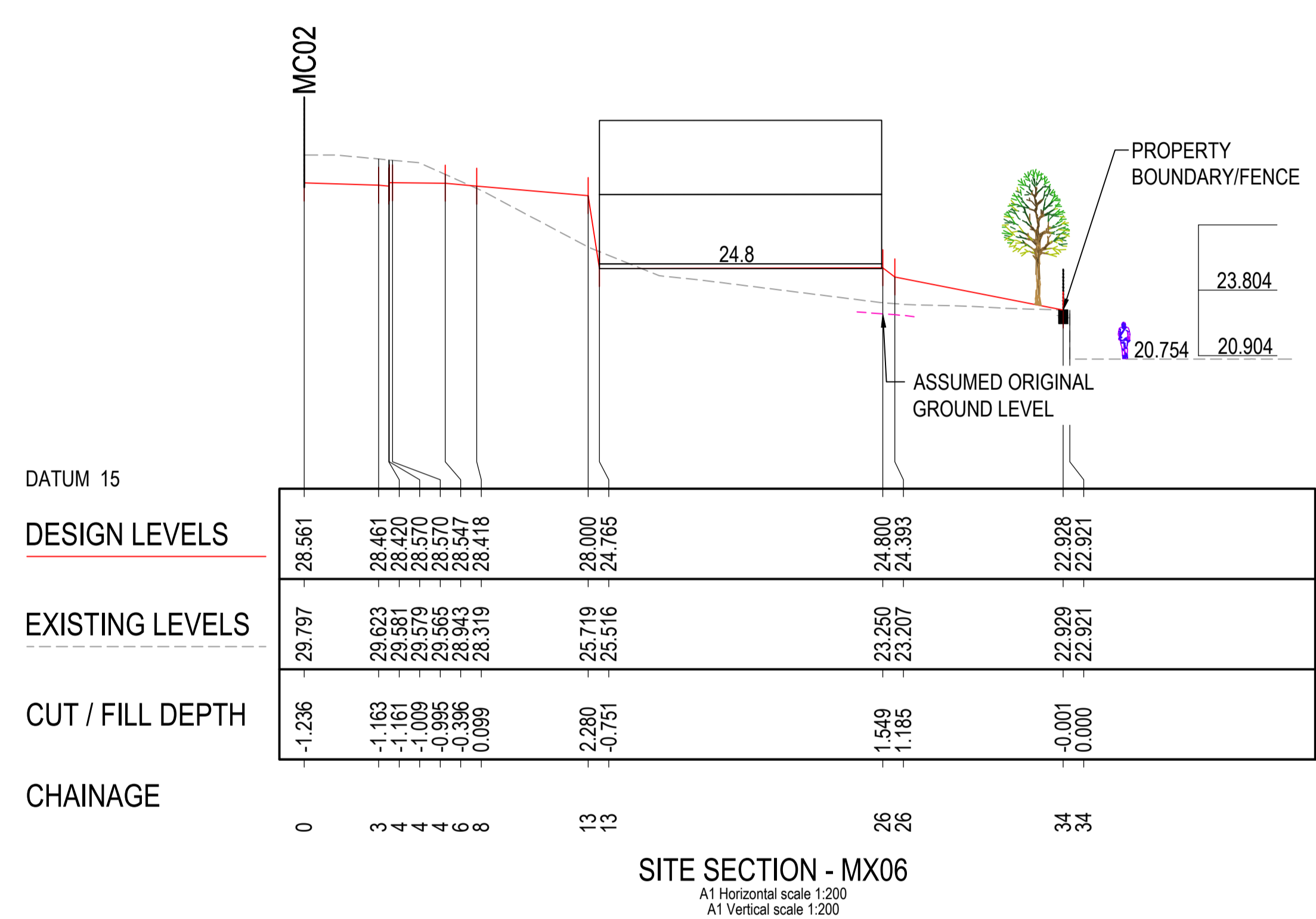
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4 FOREST ROAD
WARRIEWOOD, NSW 2102

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Designed VG	Project No. NSW210416		Dwg. No. SKC5.03		Issue C	





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A horizontal scale bar with markings at 1, 0, 1cm at full size, 10cm, and 20cm.

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Drawn UF	Date JUN 22	Scale 1:250	A1	Q.A. Check	Date
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