

REDSTONE ESTATE STAGE 21 VILLAWOOD PROPERTIES

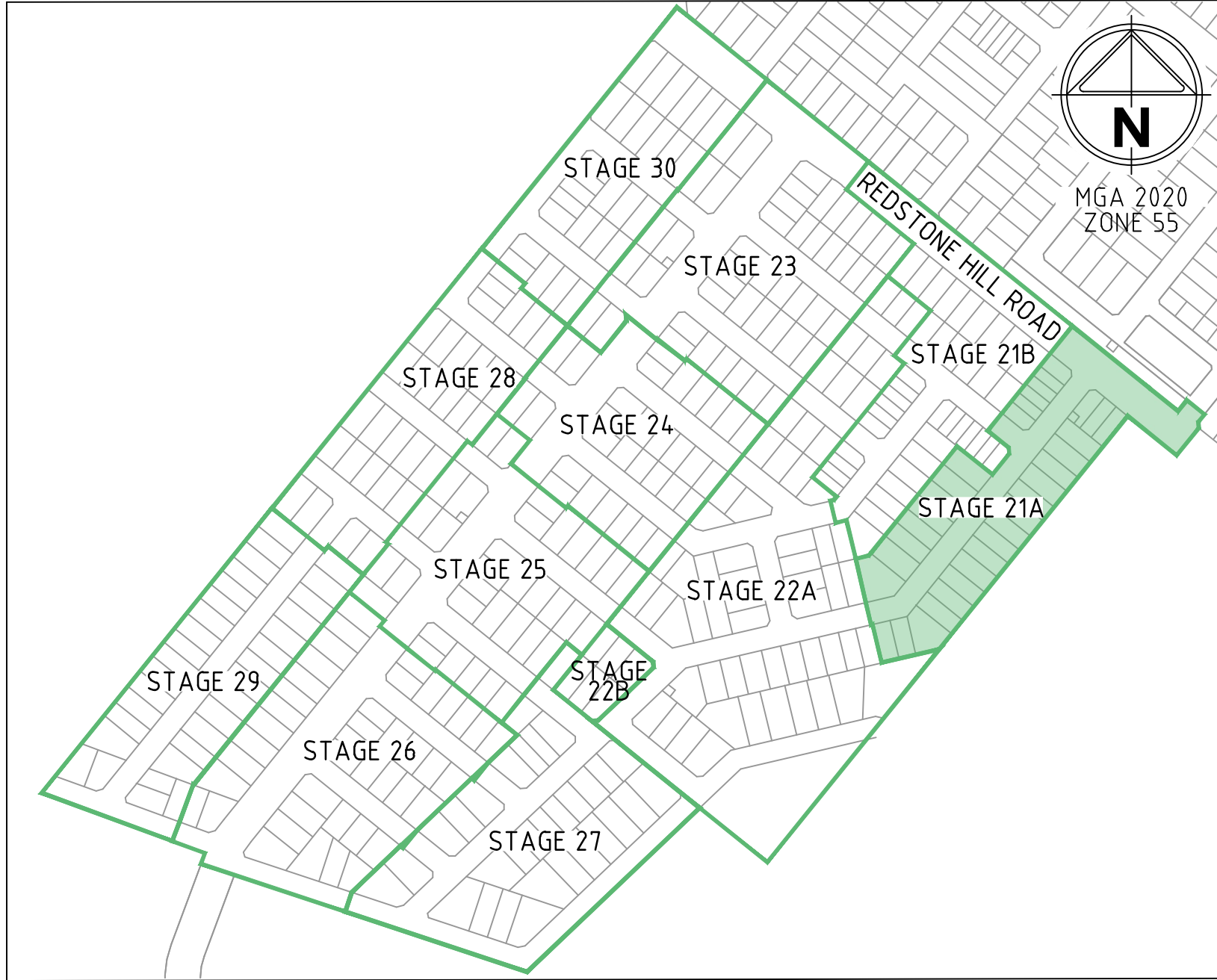
HUME CITY COUNCIL GENERAL NOTES:

- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH V.P.A. AND HUME CITY COUNCIL STANDARD DRAWINGS, SPECIFICATIONS, APPROVED PLANS AND TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- COUNCIL TO BE NOTIFIED SEVEN (7) CLEAR WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORKS WITH A PRE-COMMENCEMENT MEETING BEING HELD BETWEEN HUME CITY COUNCIL, THE CONSULTANT AND THE CONTRACTOR BEFORE WORKS COMMENCE. A SITE MANAGEMENT PLAN IS TO BE SUBMITTED PRIOR TO COMMENCEMENT OF WORKS AND PRIOR TO AN ONSITE PRE-COMMENCEMENT MEETING.
- PRIOR TO COMMENCEMENT OF THE WORKS, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION:
 - SOURCE OF QUARRY MATERIAL.
 - N.A.T.A. APPROVED TESTS RESULTS FOR THE F.C.R. THAT IS TO BE USED.
 - IF THE SOURCE OF THE QUARRY MATERIAL IS CHANGED DURING THE COURSE OF THE WORKS, THEN NEW TEST RESULTS SHALL BE PROVIDED.
- PRIOR TO COMMENCEMENT OF WORKS ON SITE, THE CONTRACTOR MUST ENSURE THAT ALL MATTERS RELATING TO THE OCCUPATIONAL HEALTH AND SAFETY ACT 2004 AND O.H.S. REGULATIONS 2007 HAVE BEEN AND WILL BE COMPLIED WITH.
- ON COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR MUST COMPLY WITH THE RECOMMENDATIONS OF THE ENVIRONMENT PROTECTION AUTHORITY PUBLICATION "CONSTRUCTION TECHNIQUES FOR SEDIMENT POLLUTION CONTROL". APPROPRIATE SILTATION CONTROL IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION AND MAINTENANCE PERIOD OF THE WORKS.
- THE DISPOSAL SITE FOR SPOIL REMOVAL FROM SITE AND TRUCK ROUTE IS TO BE SUBMITTED TO AND APPROVED BY THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE IN WRITING PRIOR TO THE COMMENCEMENT OF ANY WORKS.
- WHERE WORKS ARE IN THE VICINITY OF EXISTING SERVICES, THESE SERVICES ARE TO BE LOCATED AND EXPOSED/PROVED PRIOR TO COMMENCEMENT OF WORKS, AND THE RELEVANT AUTHORITIES NOTIFIED SEVEN (7) CLEAR DAYS PRIOR TO THE COMMENCEMENT OF THE WORKS.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.).
- ALL CO-ORDINATES ARE TO MAP GRID OF AUSTRALIA - MGA 2020 ZONE 55.
- THE CONTRACTOR MUST ARRANGE THE REQUISITE INSPECTIONS OF THE WORKS WITH THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE AS PER THE HOLD POINTS IN THE V.P.A. MANUAL AND HUME CITY COUNCIL SPECIFICATIONS.
- FILL AREAS TO BE STRIPPED OF TOPSOIL, FILLED AND TOPSOIL REPLACED TO OBTAIN FINAL FILL LEVELS AS SHOWN ON PLAN. FILLING IS TO BE CLEAN CLAY COMPACTED TO A DENSITY NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH A.S.1289.5.1.1-2003.
- FILLING TO COMPLY WITH A.S.3798-2007, LEVEL 1 UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL IMPORTED FILL MATERIAL, INCLUDING TOPSOIL, SATISFIES THE DESCRIPTION FOR CLEAN FILL MATERIAL IN EPA BULLETIN PUBLICATION NO 448 (SEPT '95) AND SUBSEQUENT REVISIONS. THE CONTRACTOR SHALL IF REQUIRED PROVIDE VERIFICATION INCLUDING TEST CERTIFICATES TO THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- WHERE, AS A CONDITION OF THE PLANNING PERMIT OR AS A RESULT OF THE PRE-CONSTRUCTION MEETING, FENCING OF AREAS CONTAINING TREES, NATIVE GRASSES AND SHRUBS IS REQUIRED, A THREE STRAND STAR PICKET AND WIRE FENCE SHALL BE CONSTRUCTED.
- NO TREE OR NATIVE VEGETATION IS TO BE DISTURBED OR REMOVED WITHOUT PRIOR APPROVAL FROM COUNCIL'S SUSTAINABLE ENVIRONMENT DEPARTMENT. ANY TREES REMOVED, VEGETATION OR OTHER MATERIALS ARE NOT TO BE BURNT ON SITE.
- BEFORE COMMENCING WORK ON TRENCHES IN EXCESS OF 1.5m DEEP, NOTICE OF SUCH PROPOSAL IS TO BE FORWARDED BY THE CONTRACTOR TO WORKSAFE VICTORIA.
- THE CONTRACTOR IS TO OBTAIN A BUILDING PERMIT FOR ANY STRUCTURES / FENCES AND FOR ANY RETAINING WALLS OVER 1.0m IN HEIGHT.
- ANY INFRASTRUCTURE DAMAGE DURING THE DEFECTS LIABILITY PERIOD IS THE RESPONSIBILITY OF THE DEVELOPER OR HIS REPRESENTATIVE AND IS TO BE REINSTATED TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER OR HIS REPRESENTATIVE.
- PRIOR TO STATEMENT OF COMPLIANCE ALL DISTURBED AREAS (INCLUDING NATURE STRIPS, BATTERS, ALLOTMENTS WITH GRADES OF 1:5 AND GREATER, AND RESERVES) ARE TO BE REINSTATED TO A CLEAN, TIDY CONDITION, TOP DRESSED (100MM LOAMY TOP SOIL FREE OF RUBBISH, DEBRIS, CLUMPS, SODS AND CLAY LUMPS), LIGHTLY COMPACTED AND HYDRO MULCHED.
- HYDROMULCH AND SEED MIX TO BE:
 - 40KG/HA KIKUYU
 - 200KG/HA TURF TYPE PERENNIAL RYE
 - 100KG/HA CREEPING RED FESCUE
 - 1500KG/HA OF CELLULOSE FIBRE
 - SOIL BINDER, SPECIFICALLY MANUFACTURED FOR HYDROMULCHING, USED AT MANUFACTURERS RECOMMENDED RATES. (E.G. ORGANIC GAUR TACKIFIERS @ 20 - 30 KG/HA, BASED ON, SITE CONDITIONS).
- GRASS IS TO BE ESTABLISHED PRIOR TO THE END OF THE MAINTENANCE PERIOD, UNLESS OTHERWISE AGREED IN WRITING.
- FOOTPATHS ARE TO BE 50mm OFFSET FROM TITLE BOUNDARIES UNLESS NOTED OTHERWISE. VEHICLE CROSSING ALIGNMENTS ARE GENERALLY TO BE PARALLEL TO THE SIDE BOUNDARY.
- ALL NEW CONCRETE WORKS SHALL BE JOINED INTO ABUTTING EXISTING CONCRETE WITH 450mm LONG Y20 DOWEL BARS @ 600 CENTRES, UNLESS OTHERWISE SPECIFIED.
- ANY EXPOSED AGGREGATE CONCRETE WORKS TO BE ACHIEVED BY SAND-BLASTING ONLY. WASHING AGGREGATE OFF WITH WATER IS NOT PERMITTED.
- ALL SERVICE CONDUITS TRENCHES UNDER ROAD PAVEMENTS ARE TO BE BACKFILLED WITH 20mm 3% CEMENT TREATED CLASS 3 CRUSHED ROCK COMPACTED TO A DENSITY NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE MODIFIED COMPACTION TEST IN ACCORDANCE WITH A.S.1289.5.2.1-2003. ALL SERVICE CONDUITS TRENCHES UNDER FOOTPATH, VEHICULAR CROSSINGS, PARKING BAYS AND WITHIN 750MM OF PARKING BAYS TO BE BACKFILLED WITH CLASS 3 CRUSHED ROCK.
- ALL STORMWATER DRAINS ARE TO BE CLASS 2 R.C. OR RIGID F.R.C. PIPES WITH ADCOL FLEXIBLE COLLARS UNLESS NOTED OTHERWISE. ALL PIPES UP TO AND INCLUDING 750mm DIAMETER ARE TO BE RUBBER RING JOINTED. INTERLOCKING / FLUSH JOINTS WITH EXTERNAL BANDS CAN ONLY BE USED ON PIPE SIZES OVER 750mm DIAMETER.
- WHERE NEW ASPHALT, CONCRETE KERB & CHANNEL, PATHS AND DRIVEWAYS MATCH INTO EXISTING, THE EXISTING SURFACE IS TO BE SAW CUT AND MATCHED NEATLY.
- ALL REDUNDANT ASSETS ARE TO BE REMOVED AND DISPOSED OFF SITE.
- ALL TREES AND SHRUBS ARE TO BE RETAINED UNLESS OTHERWISE SHOWN OR DIRECTED BY THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- AT THE COMPLETION OF ALL WORKS, ALL RUBBISH, DEBRIS AND SURPLUS SPOIL SHALL BE REMOVED AND THE SITE SHALL BE CLEARED TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- ALL DRAINS BEHIND KERB AND CHANNEL SHALL BE BACKFILLED TO MATCH PAVEMENT SUBGRADE LEVEL WITH 20mm CLASS 3 F.C.R. COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE MODIFIED COMPACTION TEST IN ACCORDANCE WITH A.S. 1289.5.2.1-2003. ALL DRAINS, SEWERS, GAS & WATER MAINS LAID THROUGH THE ROAD PAVEMENT (EXCEPT CONDUITS) ARE TO BE BACKFILLED WITH 20mm CLASS 2 FCR COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE MODIFIED COMPACTION TEST IN ACCORDANCE WITH A.S.1289.5.2.1-2003.
- PAVEMENT DEPTH SPECIFIED IS A MINIMUM DEPTH AND MAY BE VARIED BY THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE. SOFT SPOTS SHALL BE EXCAVATED TO A PROOF ROLLED BASE AND BACKFILLED WITH APPROVED MATERIAL COMPACTED IN 150mm LAYERS TO ACHIEVE TO A DENSITY NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH A.S.1289.5.1.1-2003.

- ALL EXISTING ASSETS AFFECTED BY THE WORKS, E.G. SIGNS, VEHICLE CROSSINGS, FOOTPATHS, KERB AND LINEMARKING SHALL BE REINSTATED BY THE CONTRACTOR PRIOR TO THE COMPLETION OF THE WORKS TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- PRIOR TO THE COMPLETION OF THE WORKS ALL FIRE HYDRANTS ARE TO BE MARKED IN ACCORDANCE WITH "IDENTIFICATION OF STREET HYDRANTS FOR FIREFIGHTING PURPOSES" PUBLICATION (DEVELOPED BY C.F.A, M.F.B. & E.S.B). MARKINGS TO BE VIA BLUE PAVEMENT MARKER AND A (RED TOPPED) WHITE POST.
- AGRICULTURAL DRAINS ARE TO BE PLACED BEHIND ALL KERB AND CHANNEL, KERB ONLY AND EDGE STRIPS IN ACCORDANCE WITH COUNCIL STANDARD DRAWING SD202.
- ALL TABLE DRAINS AND VERGES ARE TO BE REINSTATED UPON COMPLETION OF WORKS TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
- ALL TRAFFIC CONTROL MEASURES, SIGNS AND LINEMARKING SHALL BE IN ACCORDANCE WITH A.S.1742 - 1, 2 & 3. STREET NAME SIGNS ARE TO BE IN ACCORDANCE WITH COUNCIL STANDARD DRAWING SD408.
- ALL LINEMARKING PAINT SHALL BE LONG LIFE TYPE IN ACCORDANCE WITH SECTION 95C OF THE HUME CITY COUNCIL SPECIFICATIONS. LATERAL WORKS AND ARROWS BEING COLD APPLIED PLASTIC TROWELLED INTO PLACE (MATERIAL DEGADUR PLASTELINE) AND LONGITUDINAL LINES BEING EXTRUDED THERMOPLASTIC MATERIAL.
- ALL SIGNS TO BE CLASS 1 HIGH INTENSITY TYPE AND TO COMPLY WITH THE REQUIREMENTS OF A.S.1743 -2001.
- HOUSE DRAIN CONNECTIONS TO 150mm DIAMETER PIPES TO BE VIA A MANUFACTURED JUNCTION PIECE. 150mm DIAMETER STORMWATER PIPES ARE TO BE HEAVY DUTY SEWER GRADE. PVC PIPES SHALL BE BACKFILLED WITH 10mm MINUS F.C.R. TO 150mm ABOVE TOP OF PIPE IN ALL LOCATIONS.
- 100mm HOUSE DRAIN CONNECTIONS TO BE LAID AT AN OFFSET OF 5.5m FROM THE LOW SIDE TITLE BOUNDARY AND PROPERTY INLETS 1.0m FROM THE LOW SIDE OF TITLE BOUNDARY REAR EASEMENTS UNLESS OTHERWISE SHOWN.
- BLASTING GENERALLY IS NOT ENCOURAGED, HOWEVER BLASTING MAY BE REQUIRED AS A LAST RESORT DEPENDING ON GROUND CONDITIONS. COUNCIL IS TO BE NOTIFIED IN WRITING IF ANY BLASTING IS NECESSARY. RESIDENTS LIKELY TO BE AFFECTED BY THE BLASTING AND ALL SERVICE AUTHORITIES SHALL BE NOTIFIED IN WRITING PRIOR TO WORKS COMMENCING. COPIES OF THESE NOTIFICATIONS ARE TO BE SUBMITTED TO COUNCIL.
- RESIDENT NOTIFICATION LETTER IS TO INCLUDE BLASTING GUIDELINES, FIRING AND MISFIRE PROCEDURES AND CONTRACTOR AND CONSULTANT CONTACT NAMES AND PHONE NUMBERS.
- ALL BLASTING IS TO BE WITHIN THE LIMITS FOR AIR AND GROUND VIBRATION LEVELS AS SET DOWN IN A.S.2187.2-1993. ALL BLASTS SHALL BE MONITORED FOR AIR AND NOISE VIBRATION AT POTENTIALLY AFFECTED RESIDENCES. "FORM A" FROM A.S. 2187.2-1993, AND WAVE TRACE COPIES ARE TO BE SUBMITTED TO COUNCIL FOR EACH BLAST.
- BLASTING IS TO BE RESTRICTED TO BETWEEN 9:00am AND 3:30pm.
- BLASTING IS NOT TO OCCUR ON WEEKENDS OR PUBLIC HOLIDAYS.
- BLASTING AREA SIGNS ARE TO BE PLACED AT ALL ENTRANCES TO THE SITE.
- FENCING TO BE PROVIDED ALONG LOT BOUNDARIES ABUTTING RESERVES TO THE SATISFACTION OF THE RESPONSIBLE AUTHORITY.
- WHERE SODIC SOILS ARE ENCOUNTERED, SODIC SOIL INVESTIGATIONS SHOULD BE CARRIED OUT BY A QUALIFIED SOIL SCIENTIST AND THE RECOMMENDATIONS OF THE REPORT SHOULD BE APPLIED DURING ROAD & DRAINAGE DESIGN AND CONSTRUCTION.

SPIIRE GENERAL NOTES:

- ALL EXISTING SURFACE LEVELS SHOWN ON THE ENGINEERING DRAWINGS HAVE BEEN INTERPOLATED FROM A DIGITAL TERRAIN MODEL. THESE LEVELS HAVE BEEN USED AS THE BASIS FOR ALL ENGINEERING DESIGN AND DETERMINATION OF QUANTITIES AND ARE ACCURATE TO WITHIN ±0.05m.
- ANY EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
- WHERE REQUIRED ANY BUILDINGS, TROUGHS, FENCES AND OTHER STRUCTURES ON SITE ARE TO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVAL IS TO BE INCLUDED IN THE OVERALL EARTHWORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DENOTED IN THE SCHEDULE.
- ALL FILLING ON LOTS AND WITHIN ROAD RESERVES GREATER THAN 200mm IS TO BE UNDERTAKEN USING LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH A.S.3798-2007. FILLING MATERIAL IS TO BE IN ACCORDANCE WITH THE SPECIFICATION, A.S.3798-2007 & TO THE SATISFACTION OF COUNCIL AND THE SUPERINTENDENT.
- ALL BATTERS SHALL BE 1 IN 6, UNLESS OTHERWISE SHOWN.
- NO FILL OR STOCKPILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE FOR PUBLIC OPEN SPACE UNLESS OTHERWISE DIRECTED OR APPROVED BY THE SUPERINTENDENT.
- T.B.M.'S TO BE RE-ESTABLISHED BY THE LICENSED SURVEYOR IF FOUND TO BE MISSING AT THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR CARE AND MAINTENANCE OF T.B.M.'S THEREAFTER.
- AT LEAST THREE (3) DAYS PRIOR TO COMMENCING WORK ON EXCAVATIONS IN EXCESS OF 1.50m DEEP, A NOTIFICATION FORM MUST BE SENT TO WORKSAFE. THE CONTRACTOR IS TO COMPLY WITH WORKSAFE, THE MINES (TRENCHES) REGULATION 1982, THE MINES ACT 1958 AND OCCUPATIONAL HEALTH AND SAFETY ACT 1985, 2004.
- WHERE REQUIRED, ALL EXISTING DAMS, DEPRESSIONS AND DRAINS ARE TO BE BREACHED, DRAINED, DE-SLUDGED AND SHALL BE EXCAVATED TO A CLEAN FIRM BASE. THE SURFACE SHALL BE INSPECTED, APPROVED AND LEVELLED BY THE ENGINEER PRIOR TO COMMENCEMENT OF FILLING. THE FILL SHALL BE APPROVED SELECTED ON SITE MATERIAL OR APPROVED IMPORTED MATERIAL. THE FILL SHALL BE PLACED UNDER CONTROLLED MOISTURE CONDITIONS IN ACCORDANCE WITH THE SPECIFICATION.
- GAS AND WATER CONDUITS SIZES ARE AS FOLLOWS:
 - Ø50mm CLASS 12 P.V.C. - SINGLE SERVICE
 - Ø100mm CLASS 12 P.V.C. - DUAL SERVICE (DRINKING AND NON DRINKING WATER)WITH THE FOLLOWING MINIMUM COVER TO FINISHED SURFACE LEVELS:
 - ROAD PAVEMENT - 0.80m
 - VERGE & FOOTPATHS - 0.45m
- A.G. / SUBSOIL DRAIN TO BE LAID BEHIND KERB & CHANNEL. KERB ONLY AND EDGE STRIPS WHERE REQUIRED IN ACCORDANCE WITH THE HUME CITY COUNCIL STANDARD DRAWING SD282 AND CONNECTED TO UNDERGROUND DRAINAGE.
- CENTRE LINES OF ALL EASEMENT DRAINS ARE OFFSET 1.0m OR 2.2m (WHERE OUTSIDE OF SEWER) FROM THE PROPERTY LINE UNLESS SHOWN OTHERWISE.
- WHERE CURVED PIPE ALIGNMENTS ARE SHOWN ON THE FACE PLANS THEY ARE TO BE LAID PARALLEL TO THE BACK OF KERB, EXCEPT WHERE A RADIUS HAS BEEN SPECIFICALLY NOMINATED. CURVED PIPES ARE TO BE APPROVED BY COUNCIL AND IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS2124-1992 GENERAL CONDITIONS OF CONTRACT.
- TELSTRA IS TO BE NOTIFIED 7 DAYS PRIOR TO PLACEMENT OF CONCRETE WORKS.
- PAVEMENT DEPTHS MAY BE MODIFIED AS DIRECTED BY THE SUPERINTENDENT. PAVEMENT TO BE BOXED OUT TO MINIMUM DEPTH DENOTED, INSPECTED AND IF SUBGRADE IS IN QUESTION, FURTHER TESTING CARRIED OUT TO DETERMINE FINAL PAVEMENT DEPTH.
- WHERE PAVEMENT IS CONSTRUCTED ON FILLING, FILL MATERIAL IS TO BE APPROVED BY THE SUPERINTENDENT AND COUNCIL. FILLING TO BE CONSTRUCTED IN LAYERS 150mm THICK WITH COMPACTION ACHIEVING 95% AUSTRALIAN STANDARD DENSITY.
- WHEN PAVEMENT EXCAVATION IS IN ROCK, ALL LOOSE MATERIAL, (INCLUDING ROCKS AND CLAY) MUST BE REMOVED. THE SUB-GRADE MUST THEN BE REGULATED WITH COUNCIL APPROVED MATERIAL.
- ALL TEMPORARY WARNING SIGNS USED DURING CONSTRUCTION SHALL BE SUPPLIED AND MAINTAINED IN ACCORDANCE WITH A.S.1742-3.
- THE CONTRACTOR IS REQUIRED TO OBTAIN A 'PERMIT TO WORK' FROM MELBOURNE WATER'S SURVEILLANCE OFFICER AT THE PRE-COMMENCEMENT MEETING. THE CONTRACTOR IS REQUIRED TO ENSURE THAT THE 'PERMIT TO WORK' IS KEPT UP TO DATE FOR THE DURATION OF THE CONTRACT.
- CONTRACTOR TO ENSURE SEWER MANHOLES ARE WHOLLY LOCATED IN PROPOSED FOOTPATHS.



DRAWING SCHEDULE

DRAWING	DESCRIPTION	SHEET No.	REVISION
CR100	FACE SHEET	1	3
CR200	FACE PLAN - SHEET 1	2	2
CR201	FACE PLAN - SHEET 2	3	1
CR202	SERVICES PLAN - SHEET 3	4	2
CR203	TREE REMOVAL PLAN - SHEET 4	5	2
CR300	ROAD LONG SECTIONS - SHEET 1	6	1
CR301	ROAD LONG SECTIONS - SHEET 2	7	1
CR302	ROAD LONG SECTIONS - SHEET 3	8	1
CR400	ROAD CROSS SECTIONS - SHEET 1	9	3
CR401	ROAD CROSS SECTIONS - SHEET 2	10	1
CR402	ROAD CROSS SECTIONS - SHEET 3	11	1
CR403	ROAD CROSS SECTIONS - SHEET 4	12	1
CR404	ROAD CROSS SECTIONS - SHEET 5	13	1
CR500	INTERSECTION DETAILS - SHEET 1	14	1
CR501	INTERSECTION DETAILS - SHEET 2	15	1
CR600	DRAINAGE LONG SECTIONS - SHEET 1	16	1
CR601	DRAINAGE LONG SECTIONS - SHEET 2	17	2
CR602	DRAINAGE LONG SECTIONS - SHEET 3	18	2
CR603	DRAINAGE LONG SECTIONS - SHEET 4	19	1
CR604	DRAINAGE LONG SECTIONS & PIT SCHEDULE - SHEET 5	20	1
CR700	PAVEMENT AND TYPICAL DETAILS	21	1
CR703	SODIC SOIL RECOMMENDATIONS	22	1
CR800	SIGNAGE AND LINEMARKING	23	1
CR900	RETAINING WALLS - SHEET 1	24	1
CR901	RETAINING WALLS - SHEET 2	25	1

LEGEND

DESCRIPTION

WATER MAIN, VALVE AND HYDRANT		
UNDERGROUND ELECTRICITY		
OVERHEAD ELECTRICITY & POLE		
TELECOMMUNICATIONS & SERVICE PIT		
OPTIC FIBRE		
SEWER & MAINTENANCE STRUCTURE		
CENTRAL INVERT		
COUNCIL STORMWATER DRAIN AND PIT		
STORM WATER DRAINAGE PROPERTY INLETS		
COUNCIL STORM WATER PITS		
HOUSE DRAIN		
AG DRAIN AND FLUSHER		
STORM WATER DRAINAGE PIT NUMBER		
WATER CONDUITS		
CONCRETE VEHICLE CROSSING		
NON-STANDARD CONCRETE VEHICLE CROSSING		
- 6.0m FOOTPATH X 7.2m KERB LENGTH (DOUBLE)		
- 3.0m FOOTPATH X 4.2m KERB LENGTH (SINGLE)		
CONCRETE VEHICLE CROSSING (INDUSTRIAL) AS PER EDMC 503		
RIDGE / CHANGE OF GRADE LINE		
SURFACE CONTOUR MINOR		
SURFACE CONTOUR MAJOR		
SURFACE LEVEL		
BATTER LEVEL (TOP / TOE)		
RETAINING WALL LEVEL (TOP/BOTTOM)		
EARTHWORKS GRADE		
SIGN AND POST		
LIGHT & POLE (BY OTHERS)		
STREET SIGN		
PERMANENT SURVEY MARK		
TEMPORARY BENCH MARK		
ROAD CHAINAGES		
LOT CHAINAGES		
SETOUT POINT		
LIMIT OF WORKS		
BATTER		
EXCAVATION GREATER THAN 0.20m		
FILLING GREATER THAN 0.20m		
SLEEPER RETAINING WALL		
ROCK RETAINING WALL		
FENCES		
TREE (& SURVEYED CANOPY) TO BE RETAINED		
TREE TO BE REMOVED		
VEGETATION LINE		
FOOTPATH		
KERB TRANSITION		
STREET TREES		



WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
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3	AS CONSTRUCTED	M.R	28/04/25
2	REDSTONE HILL ROAD SERVICES AMENDED	M.R	10/01/25
1	PIT 6 & REDSTONE HILL ROAD SERVICES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
M	AMENDED AS PER COUNCIL COMMENTS	M.R	05/09/24
L	AMENDED AS PER COUNCIL COMMENTS AND DRAINAGE AMENDED	M.R	01/08/24
K	DRAWING SCHEDULE AND LEGEND AMENDED	M.R	22/05/24
J	LOTS 2107-2109 LEVELS AMENDED	M.R	13/05/24
Rev	Amendments	Approved	Date

Scale



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M. RANJANAN

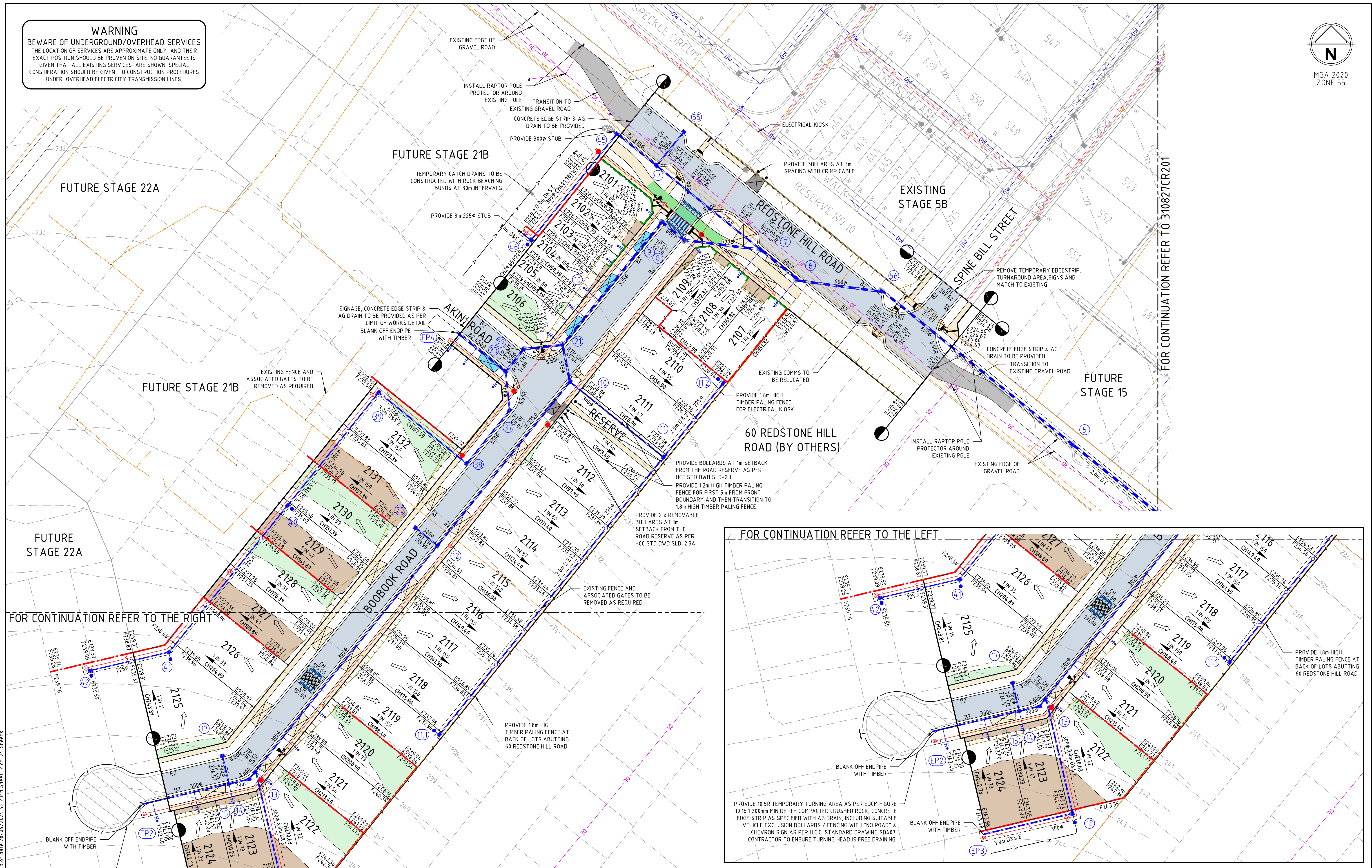


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W. ONG
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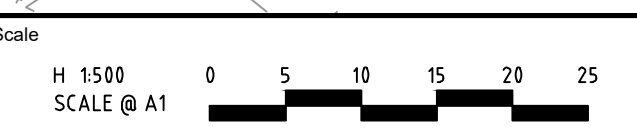
**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
FACE SHEET**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED Drg No **310827CR100** Rev **3**

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2	AS CONSTRUCTED	M.R	28/04/25
1	PIT 6 & REDSTONE HILL ROAD SERVICES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
K	REDSTONE HILL ROAD FOOTPATH AND LOTS 2116-2118 DRAINAGE AMENDED	M.R	05/09/24
J	DRIVEWAY AND BOLLARDS ADDED	M.R	22/05/24
I	LOTS 2107-2109 LEVELS AMENDED	M.R	13/05/24
H	LOTS 2116-2119 GRADING AMENDED AND REDSTONE HILL ROAD BATTER AMENDED	M.R	09/04/24
G	REDSTONE HILL ROAD PATH AMENDED	M.R	23/02/24
Rev	Amendments	Approved	Date



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villawood properties
Communities Designed for Living

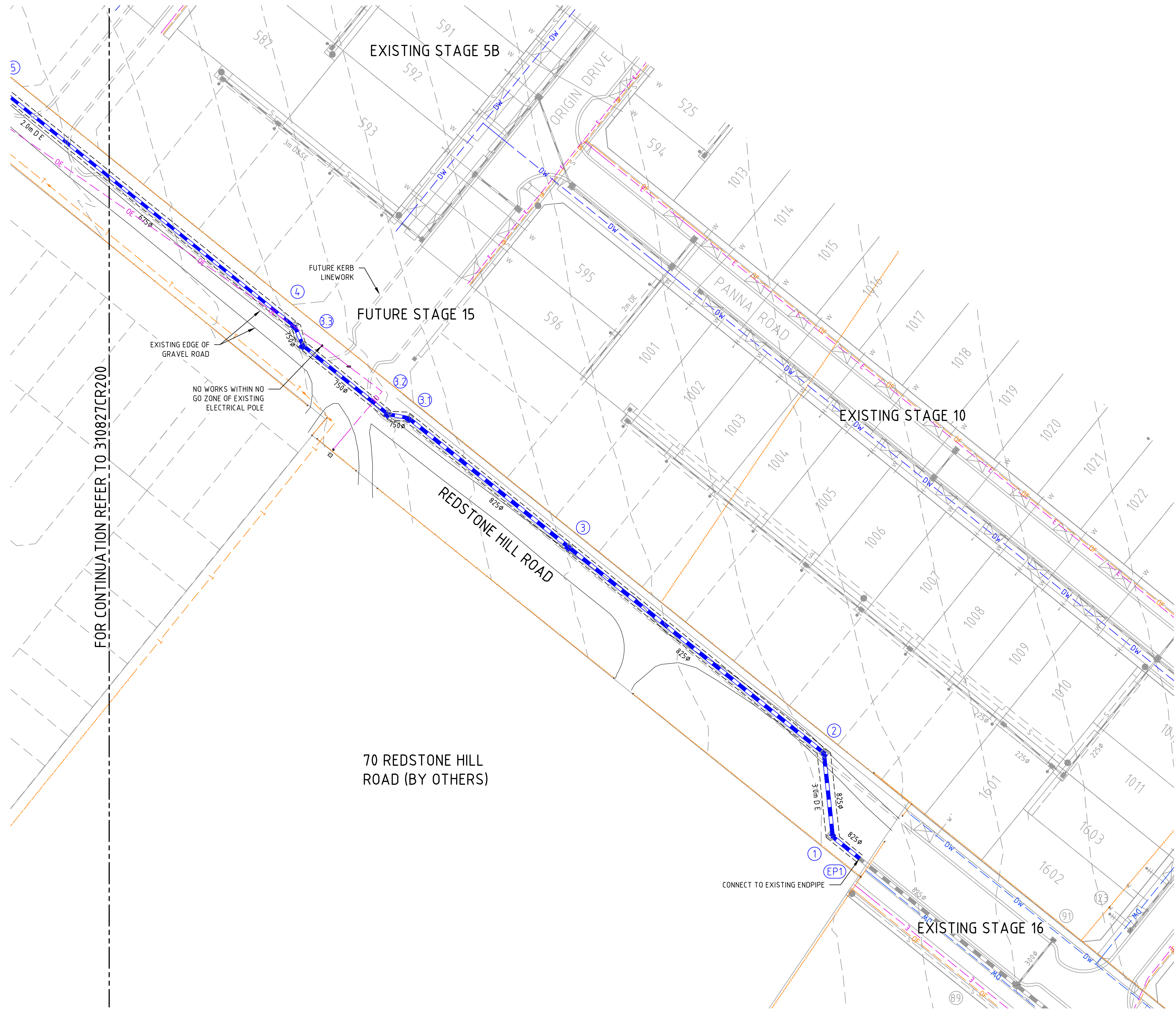
Redstone.
Your world awaits

Designed L. TRAN	Checked W. ONG
Authorised M. RANJANAN	Date 26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
FACE PLAN - SHEET 1
HUME CITY COUNCIL
VILLAWOOD PROPERTIES**

AS CONSTRUCTED

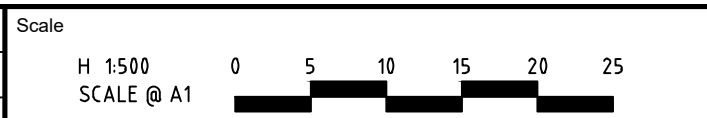
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WARNING
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1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
D	DRAINAGE AMENDED	M.R	01/08/24
C	EASEMENT ADDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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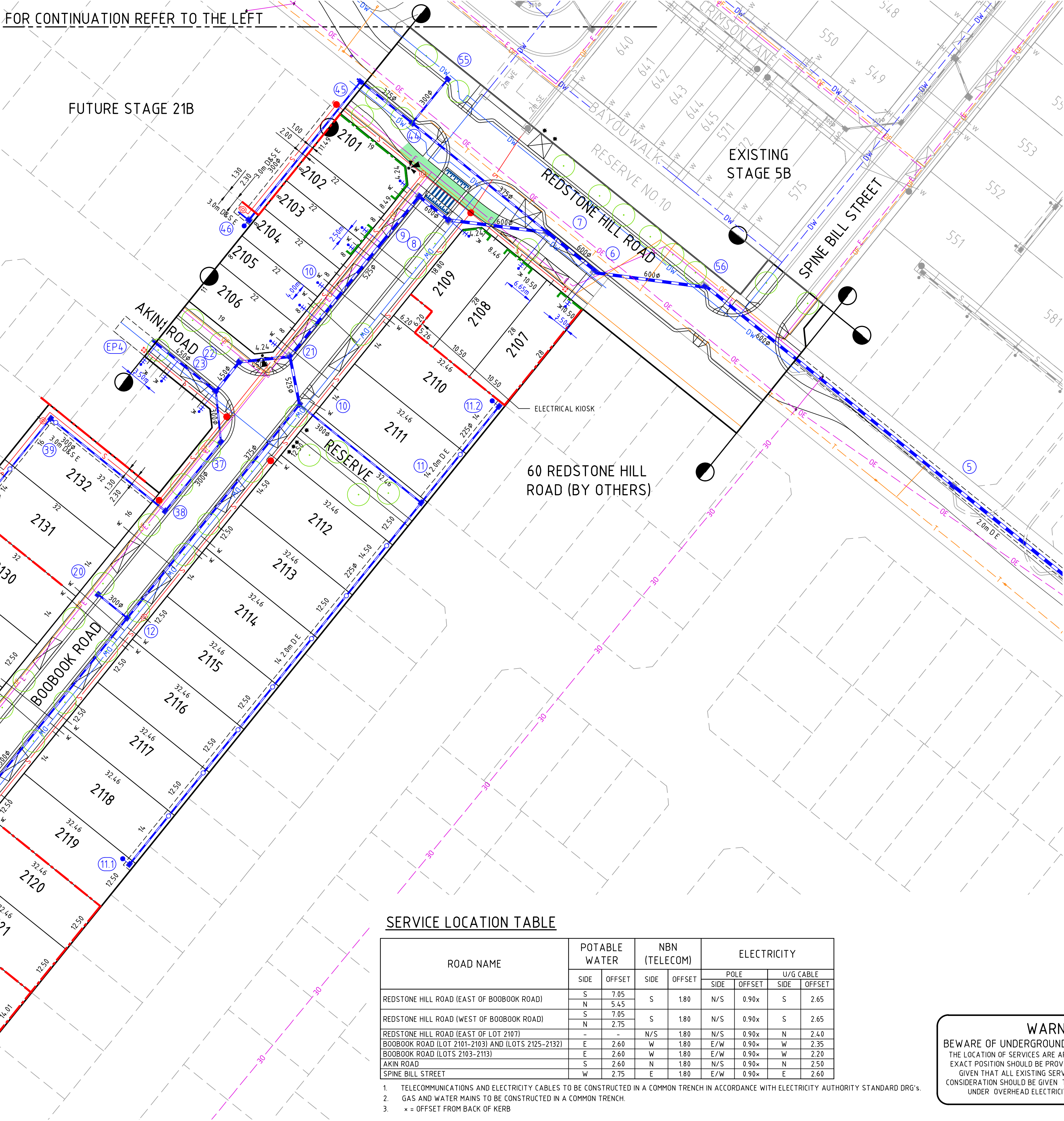
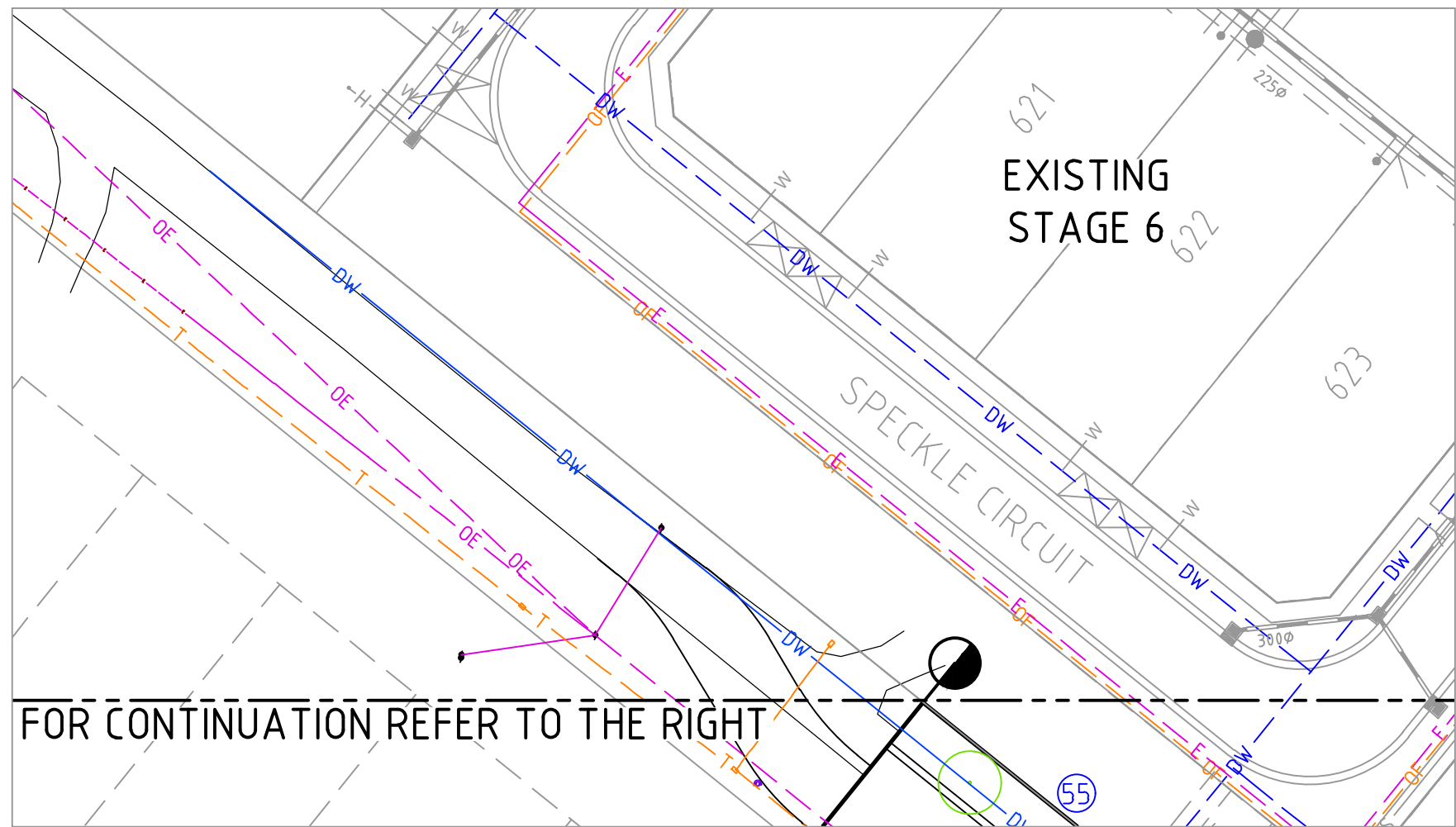
Designed
L. TRAN
Authorised
M. RANJANAN

Checked
W. ONG
Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
FACE PLAN - SHEET 2**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED Drg No **310827CR201** Rev **1**

file name: 310827CR202.dwg, layout name: CR202, plotted by: Lillian Tran, plot date: 28/04/2025 4:42 PM, Sheet 4 of 25 Sheets, file location: \\spiremedia\data\310827\civil\310827\civil\310827.dwg



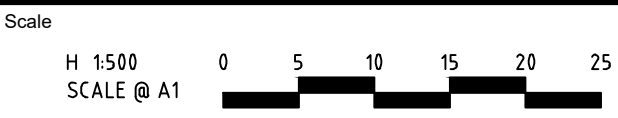
SERVICE LOCATION TABLE

ROAD NAME	POTABLE WATER		NBN (TELECOM)		ELECTRICITY			
	SIDE	OFFSET	SIDE	OFFSET	POLE		U/G CABLE	
					SIDE	OFFSET	SIDE	OFFSET
REDSTONE HILL ROAD (EAST OF BOOBOOK ROAD)	S	7.05	S	1.80	N/S	0.90x	S	2.65
REDSTONE HILL ROAD (WEST OF BOOBOOK ROAD)	N	5.45	S	1.80	N/S	0.90x	S	2.65
REDSTONE HILL ROAD (EAST OF LOT 2107)	S	7.05	S	1.80	N/S	0.90x	S	2.65
BOOBOOK ROAD (LOT 2101-2103) AND (LOTS 2125-2132)	N	2.75	S	1.80	N/S	0.90x	S	2.65
REDSTONE HILL ROAD (EAST OF LOT 2107)	-	-	N/S	1.80	N/S	0.90x	N	2.40
BOOBOOK ROAD (LOT 2101-2103) AND (LOTS 2125-2132)	E	2.60	W	1.80	E/W	0.90x	W	2.35
BOOBOOK ROAD (LOTS 2103-2113)	E	2.60	W	1.80	E/W	0.90x	W	2.20
AKIN ROAD	S	2.60	N	1.80	N/S	0.90x	N	2.50
SPINE BILL STREET	W	2.75	E	1.80	E/W	0.90x	E	2.60

1. TELECOMMUNICATIONS AND ELECTRICITY CABLES TO BE CONSTRUCTED IN A COMMON TRENCH IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARD DRG's.
2. GAS AND WATER MAINS TO BE CONSTRUCTED IN A COMMON TRENCH.
3. * = OFFSET FROM BACK OF KERB

WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY, AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

2	AS CONSTRUCTED	M.R	28/04/25
1	PIT 6 & REDSTONE HILL ROAD SERVICES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
H	DRIVEWAY AND BOLLARDS ADDED, SERVICE OFFSETS AMENDED	M.R	22/05/24
G	LOTS 2107-2109 RETAINING WALL ADDED	M.R	13/05/24
F	SERVICE LOCATION TABLE AMENDED	M.R	23/02/24
E	LOTS 2110-2115 AMENDED & TREES ADDED	M.R	20/12/23
D	SERVICE LOCATION TABLE AMENDED	M.R	23/10/23
Rev	Amendments	Approved	Date



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Authorised
M. RANJANAN

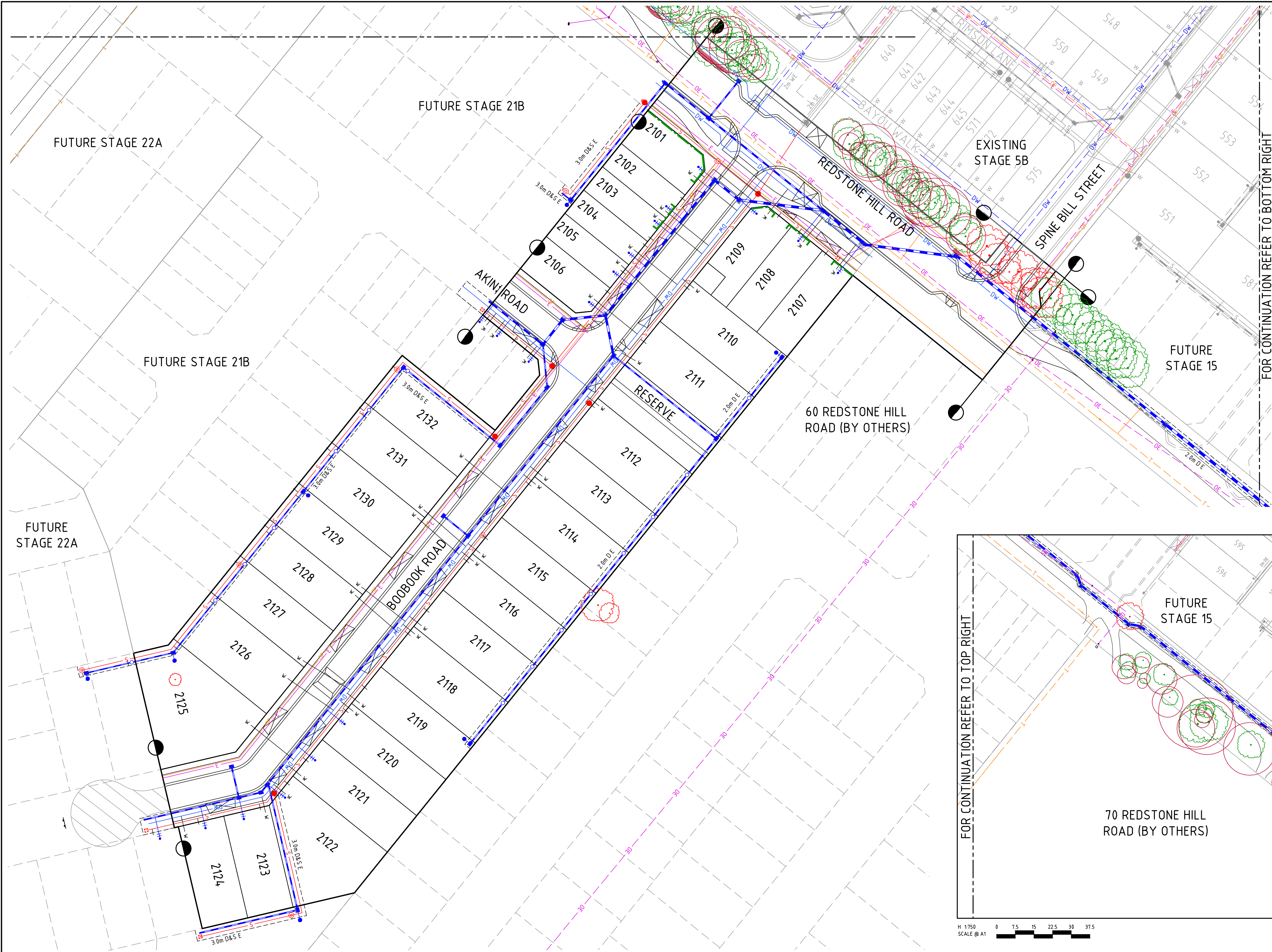


Checked
W. ONG
Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
SERVICES PLAN**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED Drg No **310827CR202** Rev **2**

file name: 310827CR203.dwg, project name: CR203, sheet title: Litter, Tree, file location: \\spiremedia\data\310827\civil\ACAD\plot date: 28/04/2025 4:42 PM Sheet 5 of 25 Sheets



WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
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NOTE:
• TPZ SHOWN BASED ON TREE LOGIC REPORT 'TREE PROTECTION MANAGEMENT PLAN (TPMP), REDSTONE HILL ROAD SUNBURY, SEPTEMBER 2024'
• SERVICES FRONTING THE RESERVE WILL REQUIRE TO BE BORED

LEGEND
TPZ
ENCROACHMENT ZONE

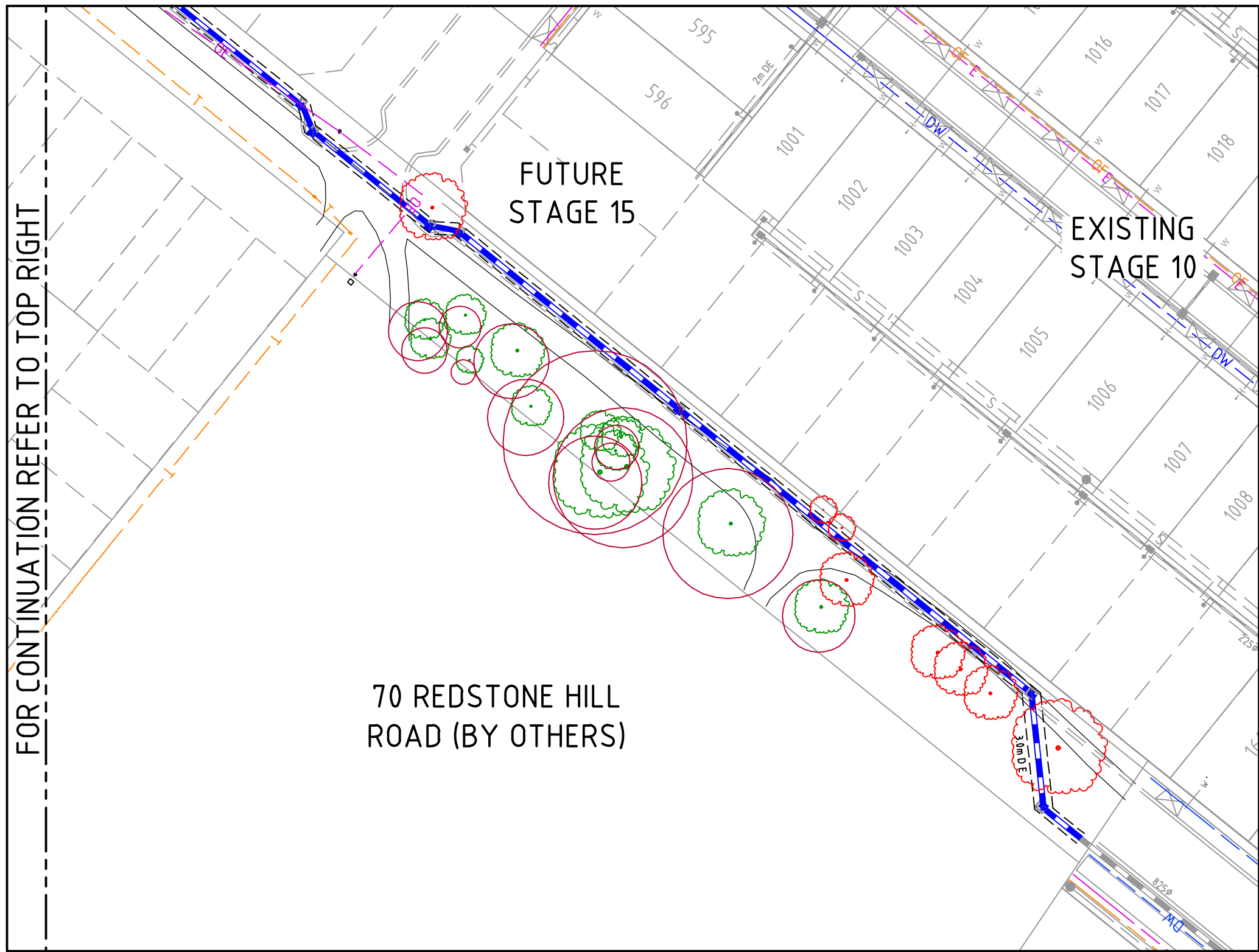
NOTE:
THE FOLLOWING IS EXTRACTED FROM THE TREE LOGIC REPORT 'TREE PROTECTION MANAGEMENT PLAN (TPMP), REDSTONE HILL ROAD SUNBURY, SEPTEMBER 2024'

A PROJECT ARBORIST IS TO BE APPOINTED WHO IS SUITABLY QUALIFIED (AQF LEVEL IV OR HIGHER). THE PROJECT ARBORIST IS TO BRIEF THE SITE MANAGER AND SITE SUPERVISOR REGARDING ASPECTS OF TREE PROTECTION AND TO GO OVER THE REQUIREMENTS AS DOCUMENTED IN THE TPMP.

PROJECT ARBORIST IS TO SUPERVISE NDD EXCAVATION WORKS FOR THE PASSIVE IRRIGATION PITS.

GUIDANCE FROM THE PROJECT ARBORIST IS TO BE SOUGHT REGARDING TREE RELATED MATTERS.

PROJECT ARBORIST IS TO UNDERTAKE A FINAL INSPECTION POST WORKS AND PREPARE A FINAL ARBORICULTURAL REPORT.



H 1:750
SCALE @ A1

2	AS CONSTRUCTED	M.R	28/04/25
1	PIT 6 & REDSTONE HILL ROAD SERVICES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION AND NOTE ADDED	M.R	20/09/24
H	TPZ ADDED	M.R	01/08/24
G	DRIVEWAY ADDED	M.R	22/05/24
F	NOTE ADDED	M.R	09/04/24
E	NOTE ADDED	M.R	19/01/24
D	LOTS 2110-2115 AMENDED	M.R	20/12/23
Rev	Amendments	Approved	Date

Scale
H 1:500
SCALE @ A1

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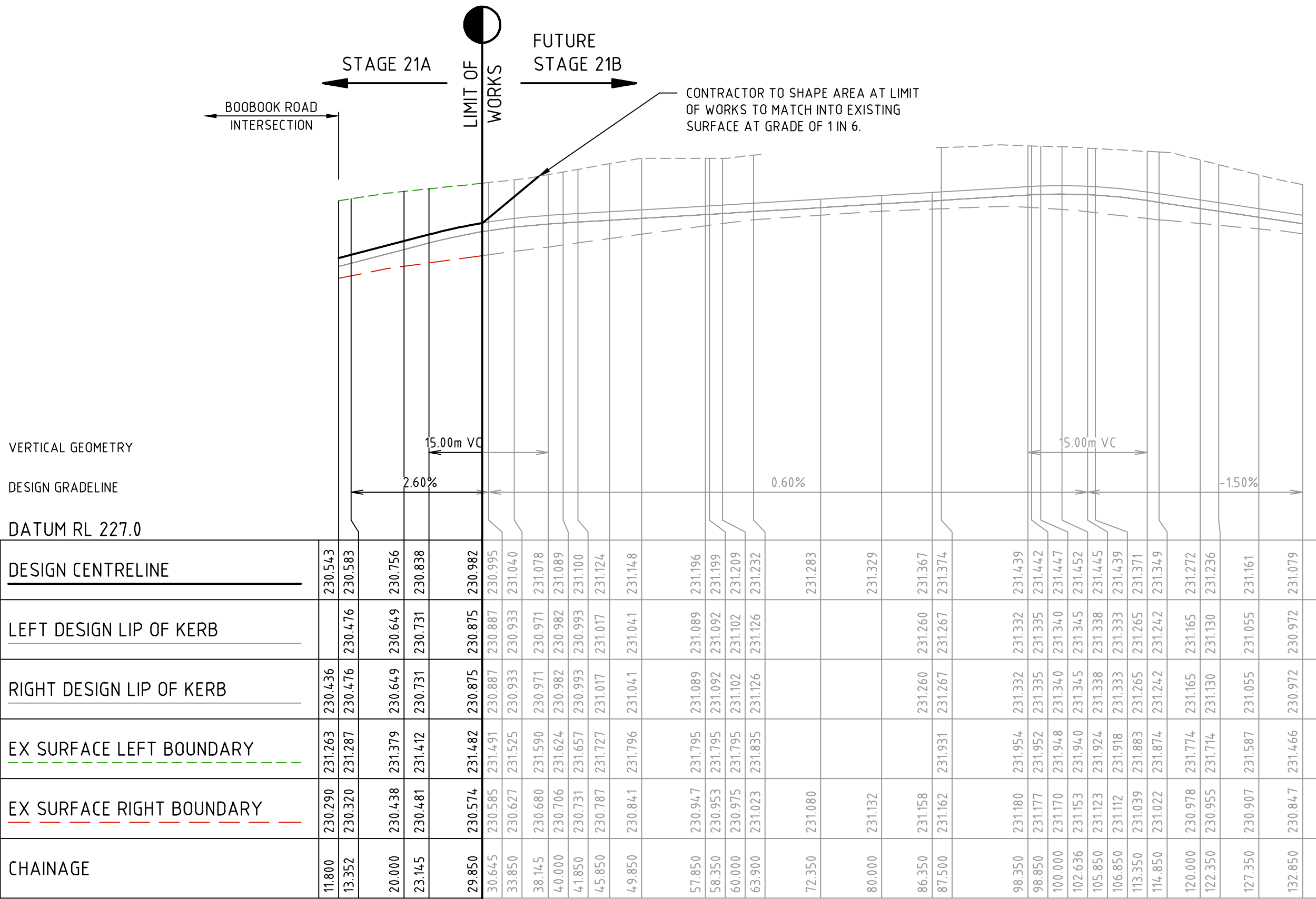
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villawood properties
Communities Designed for Living
Designed
L. TRAN
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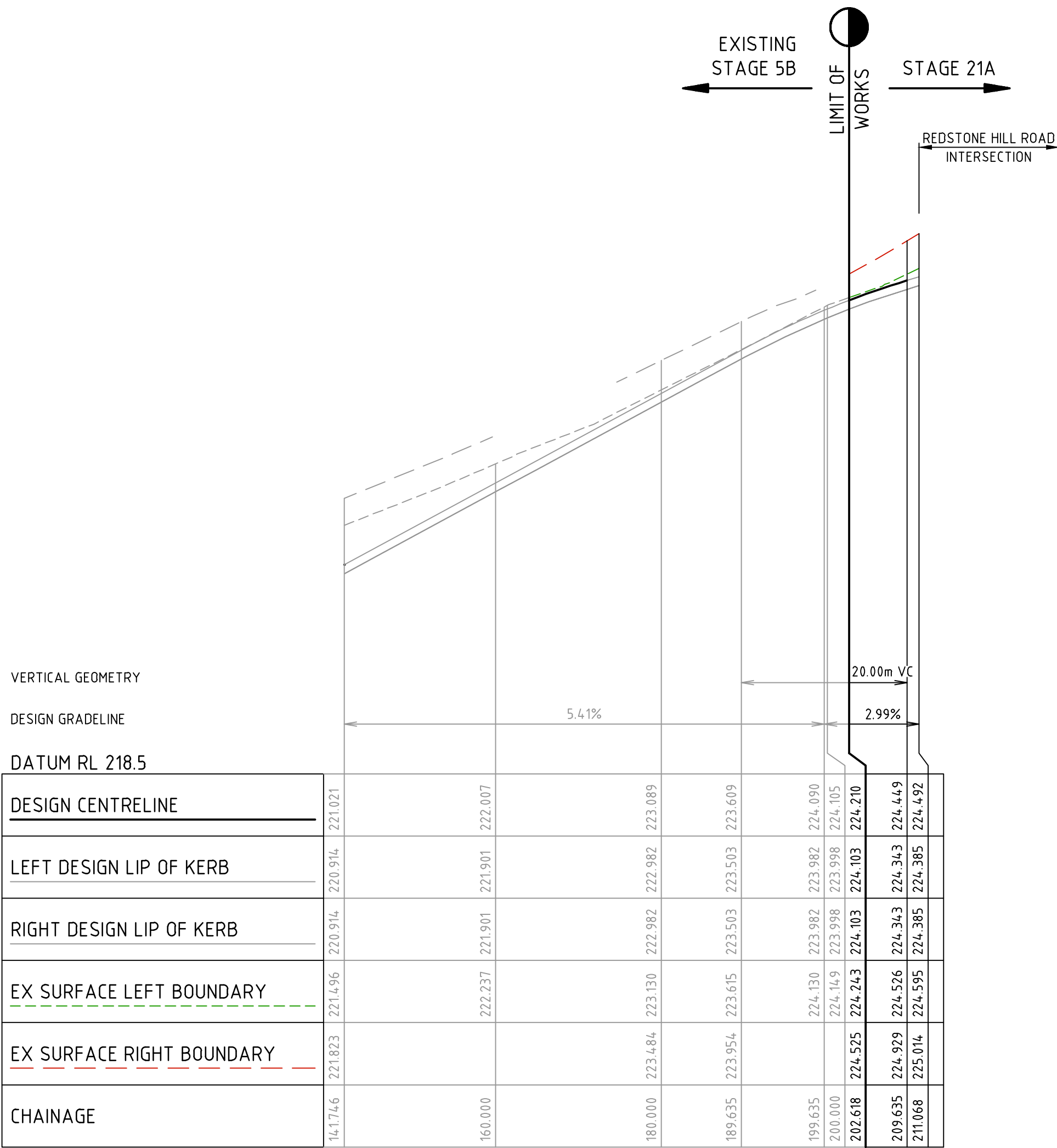
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**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
TREE REMOVAL PLAN - SHEET 4**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES
AS CONSTRUCTED
310827CR203
2

file name: 310827CR302.dwg, layout name: CR302, plotted by: Lillian Tran, plot date: 18/06/2025 4:43 PM, sheet 8 of 25, sheets

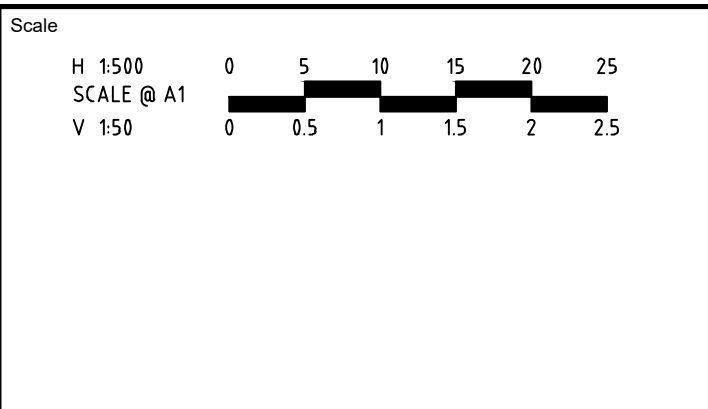


AKIN ROAD



SPINE BILL STREET

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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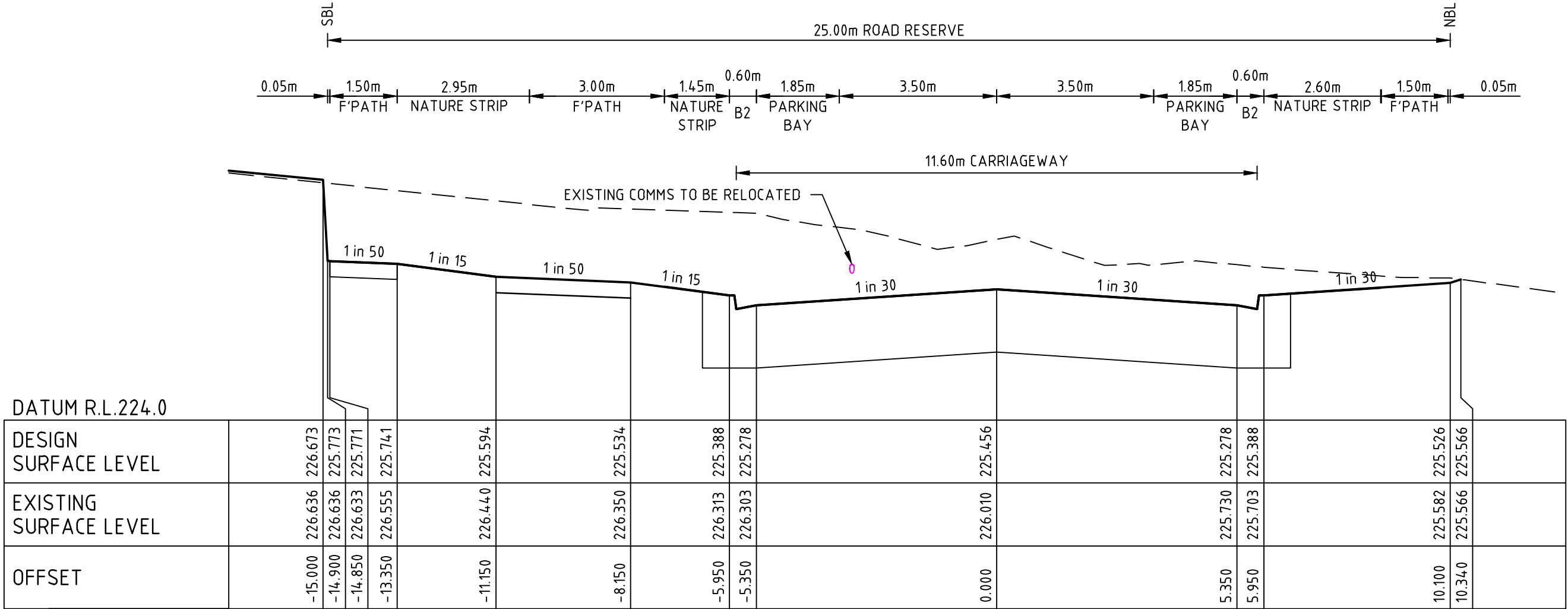
REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD LONG SECTIONS - SHEET 3
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

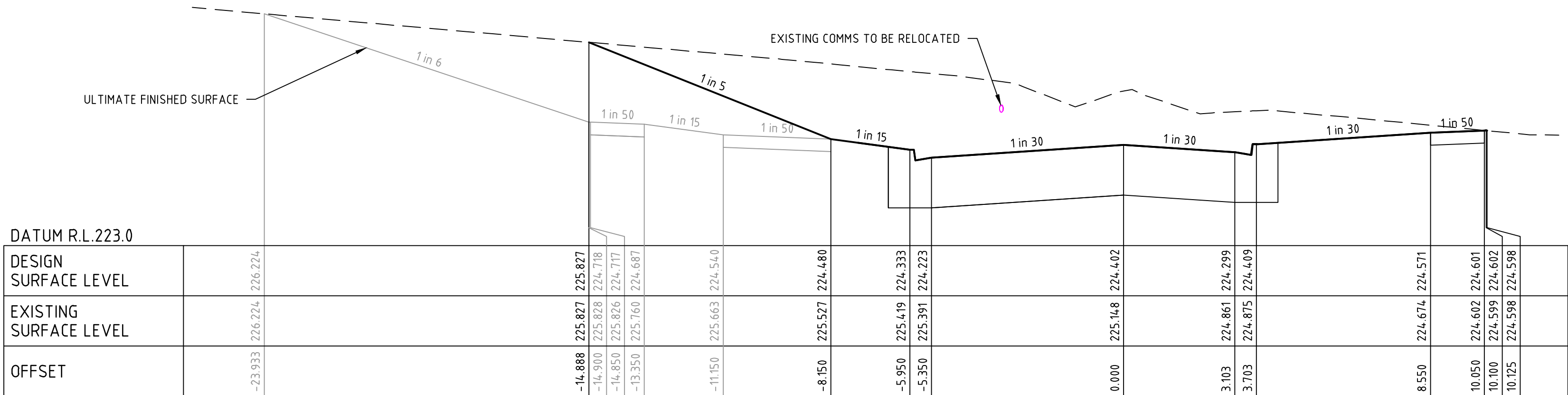
Drg No
310827CR302

Rev
1

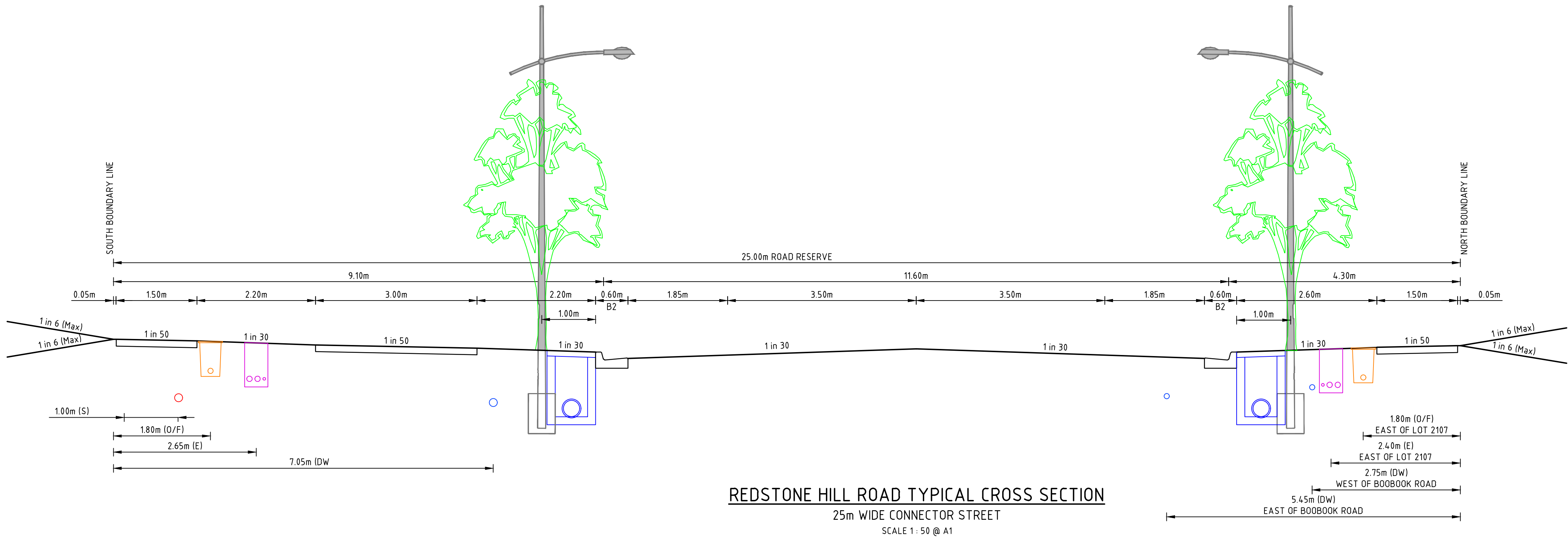
FILLING NOTE
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REDSTONE HILL ROAD CH 351.32



REDSTONE HILL ROAD CH 306.75



REDSTONE HILL ROAD TYPICAL CROSS SECTION
25m WIDE CONNECTOR STREET
SCALE 1:50 @ A1

file name: 310827CR400.dwg, layout name: CR400, plotted by: Lilia Tran, file location: G:\31\310827\LA\LA1.dwg, plot date: 28/04/2025 11:43 PM, Sheet 9 of 25 Sheets

3	AS CONSTRUCTED	M.R	28/04/25
2	ELECTRICAL OFFSET AMENDED AND WATER MAIN ADDED	M.R	10/01/25
1	TYPICAL CROSS SECTION AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
F	FOOTPATH REMOVED	M.R	05/09/24
E	CROSS SECTION AMENDED	M.R	09/04/24
D	TYPICAL CROSS SECTION AMENDED	M.R	23/02/23
C	RETAINING WALL ADDED TO CROSS SECTION	M.R	03/11/23
Rev	Amendments	Approved	Date

Scale	
H 1:100	
SCALE @ A1	
V 1:50	



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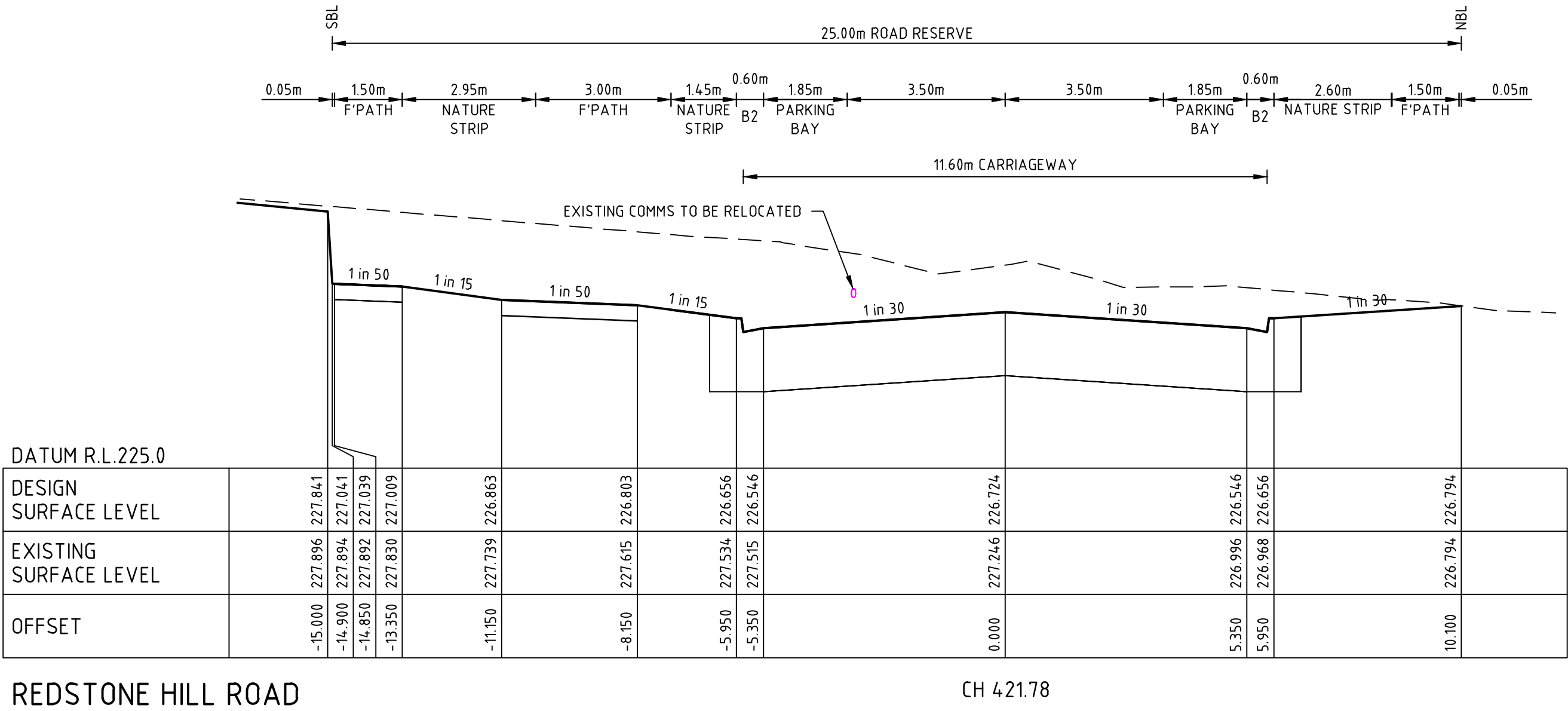
REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 1
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

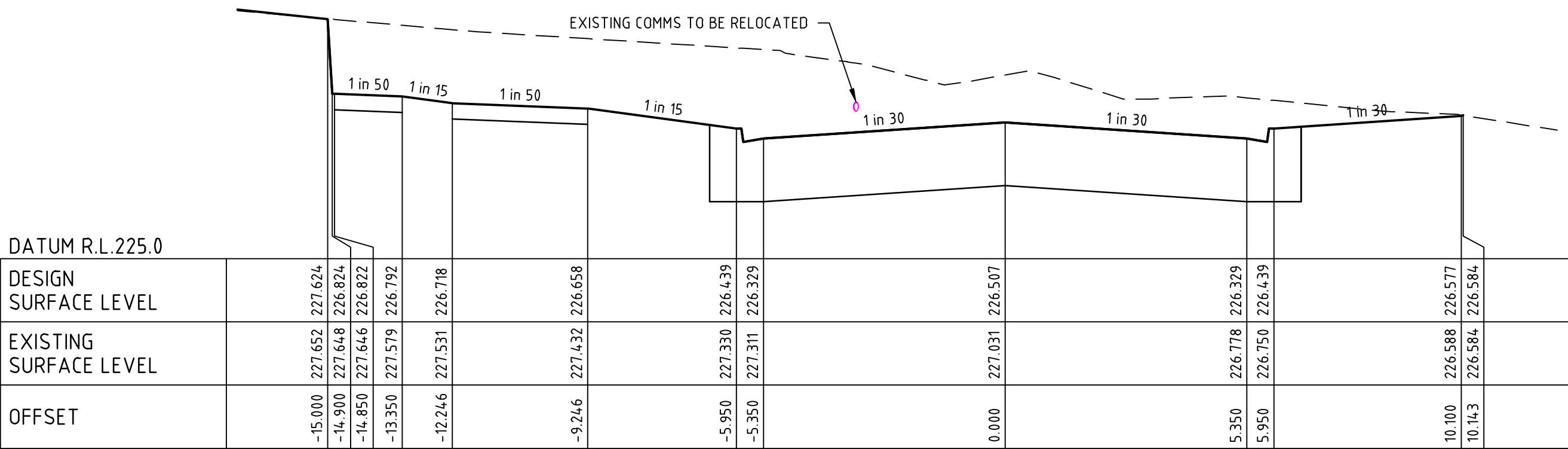
Dwg No
310827CR400

Rev
3

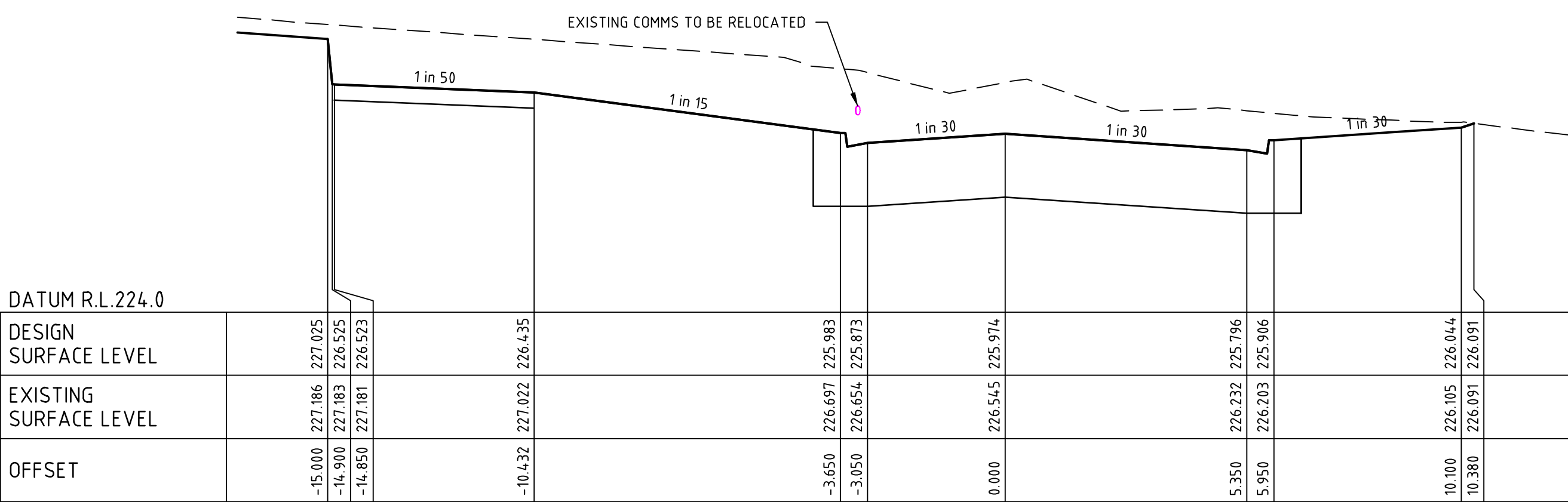
FILLING NOTE
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REDSTONE HILL ROAD CH 421.78



REDSTONE HILL ROAD CH 409.71



REDSTONE HILL ROAD CH 380.13

file name: 310827CR400.dwg, layout name: CR401, plotted by: Lillian Tran, file location: G:\310827\310827.dwg, plot date: 26/07/2025 4:43 PM, Sheet 10 of 25 Sheets

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0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
G	FOOTPATH REMOVED	M.R	05/09/24
F	CROSS SECTIONS AMENDED	M.R	23/02/24
E	CROSS SECTION AMENDED	M.R	20/12/23
D	RETAINING WALL ADDED TO CROSS SECTION	M.R	03/11/23
C	DIMENSIONS AMENDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
Rev	Amendments	Approved	Date

Scale	
H 1:100	
SCALE @ A1	
V 1:50	
0 1 2 3 4 5	
0 0.5 1 1.5 2 2.5	



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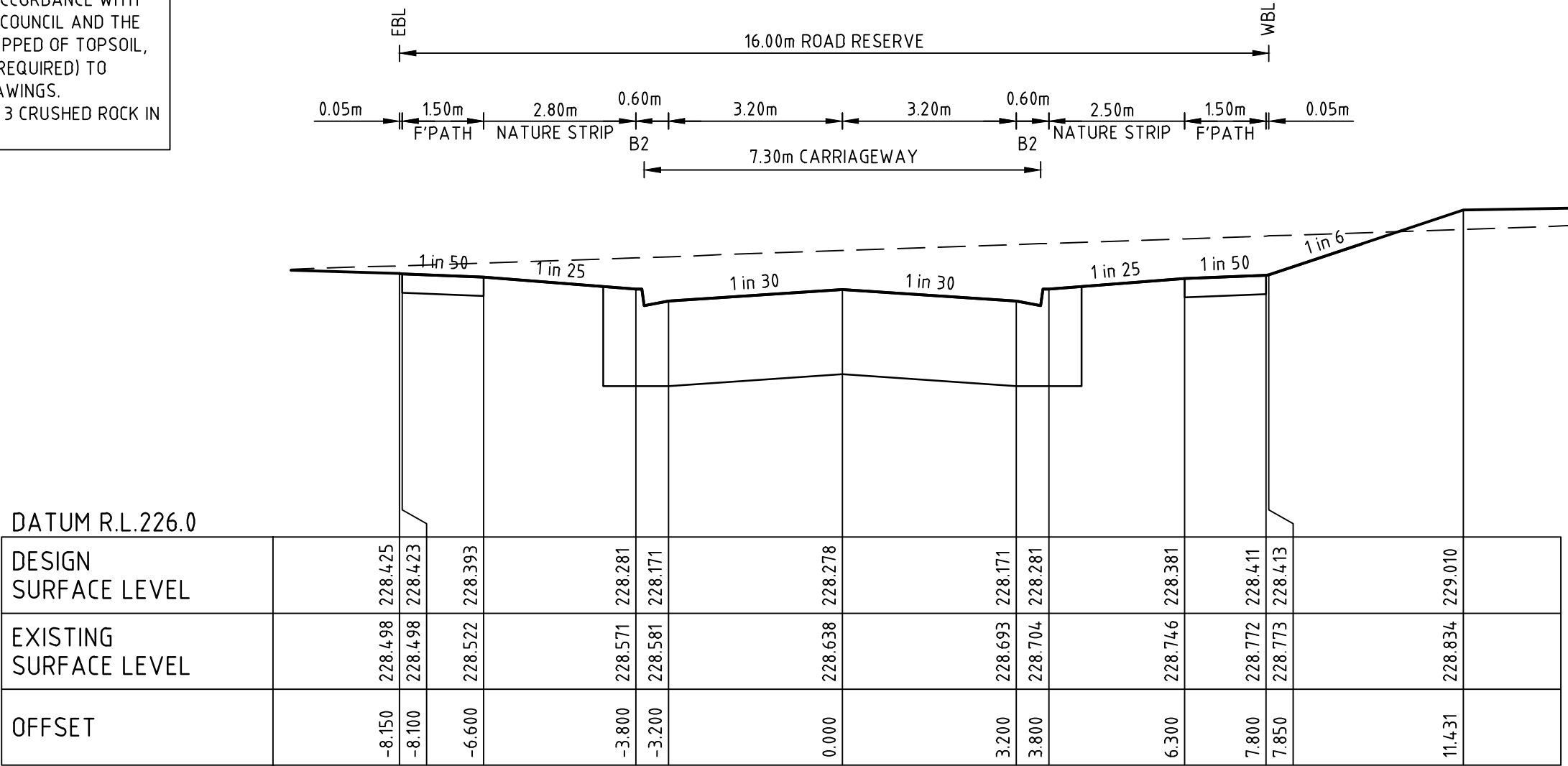
REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 2
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Drw No
310827CR401

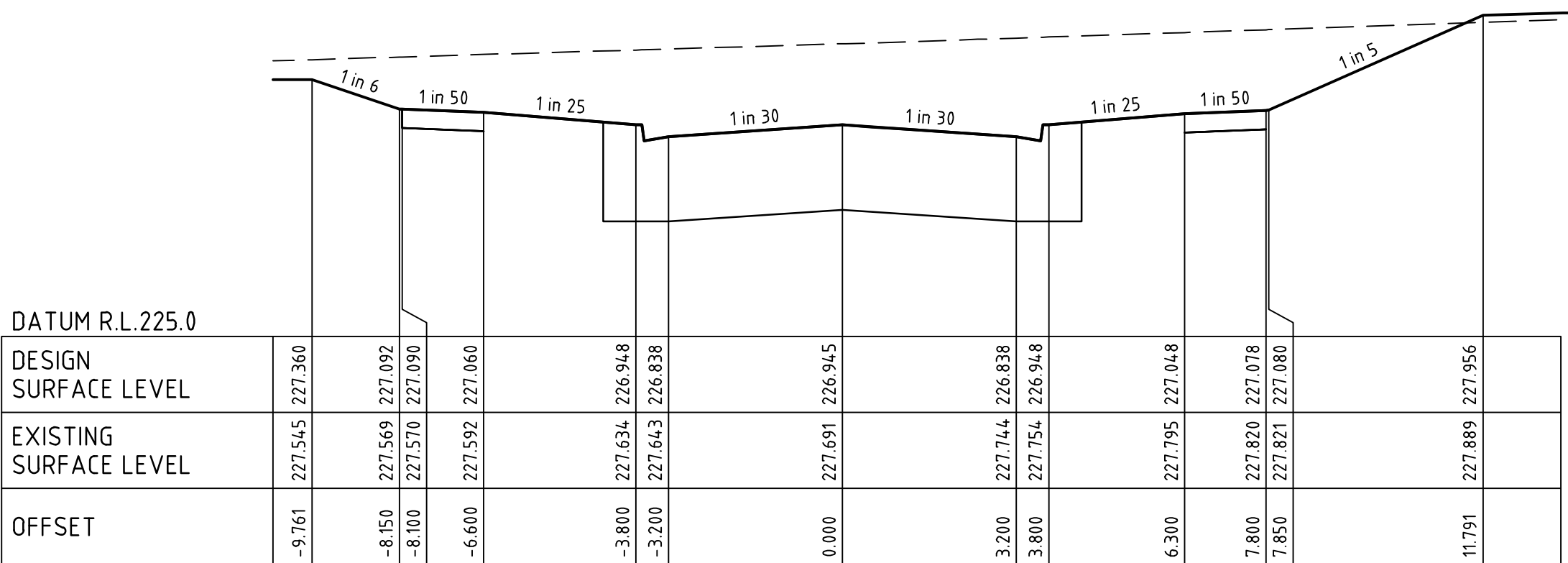
Rev
1

FILLING NOTE
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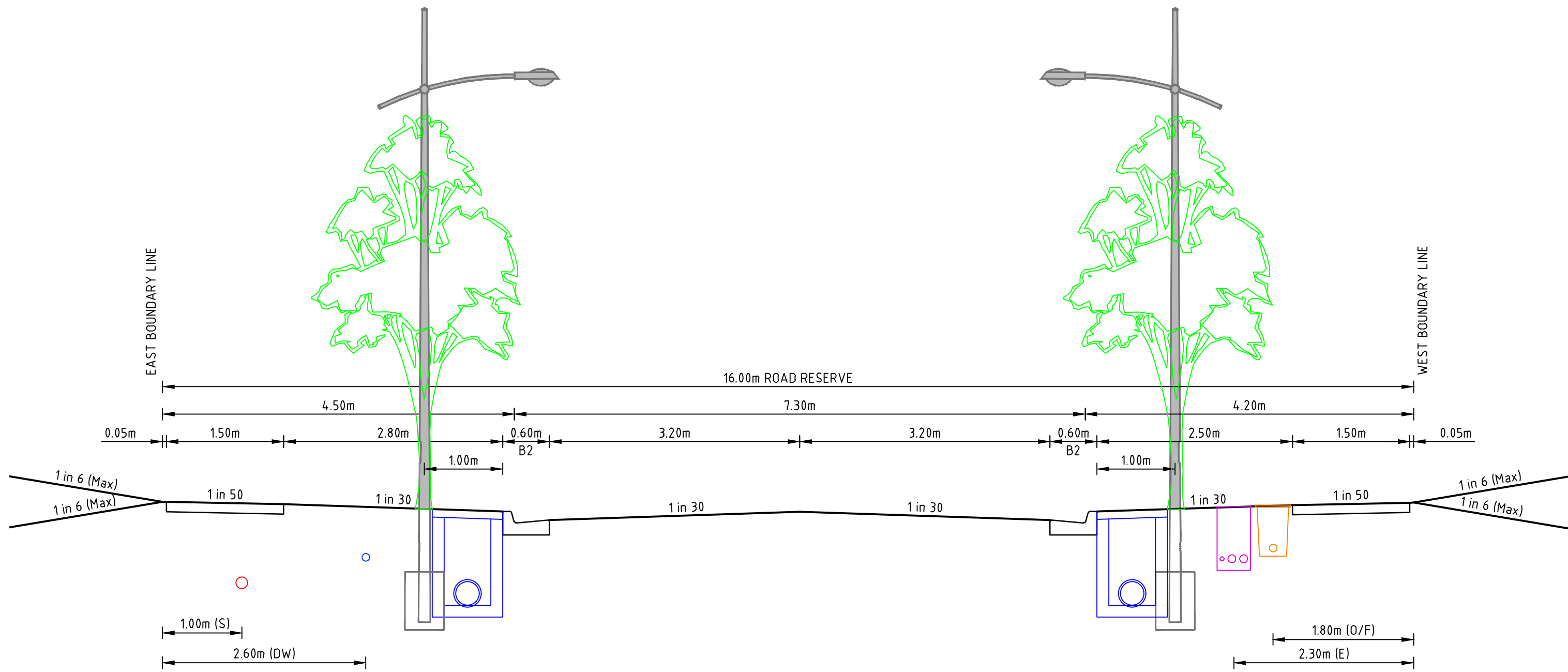
BOOBOOK ROAD

CH 42.90



BOOBOOK ROAD

CH 22.70

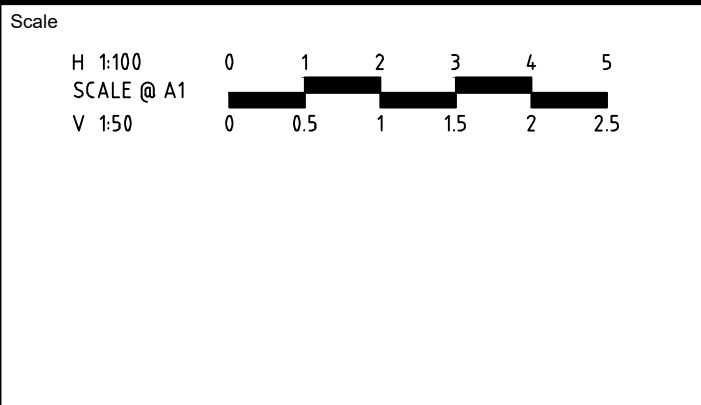


BOOBOOK ROAD TYPICAL CROSS SECTION

16m WIDE ACCESS STREET

SCALE 1:50 @ A1

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
F	FILLING NOTE AMENDED	M.R	23/02/24
E	CROSS SECTIONS AMENDED	M.R	03/11/23
D	CROSS SECTION AMENDED	M.R	23/10/23
C	CROSS SECTIONS AMENDED	M.R	11/09/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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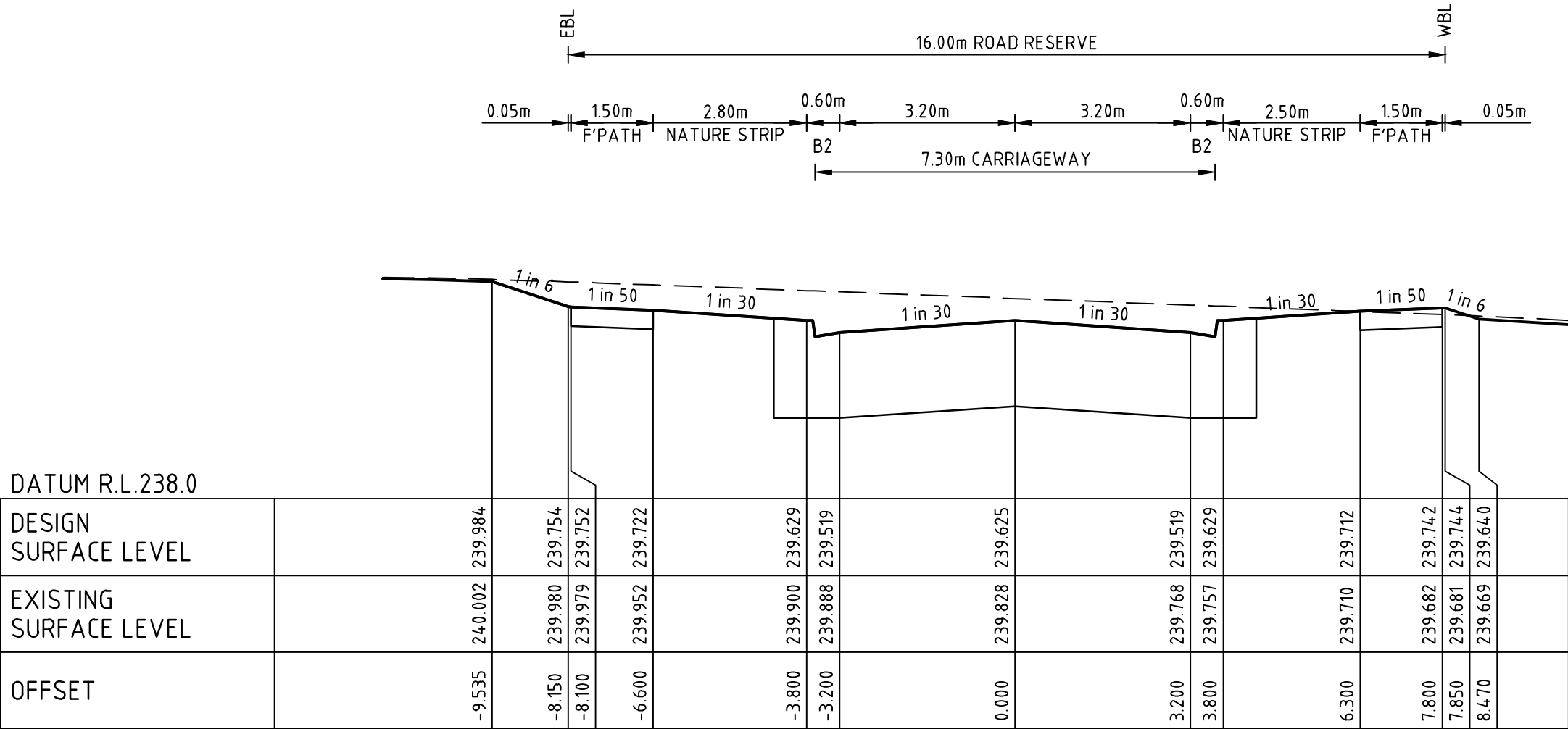


Checked
W. ONG
Date
26/07/23

REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 3
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

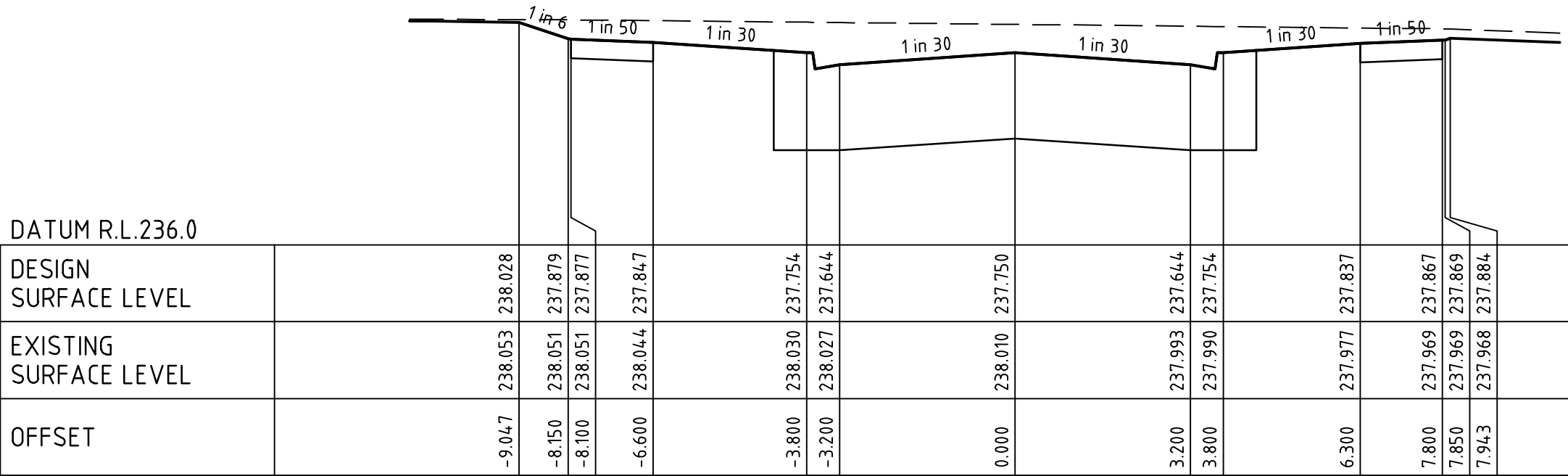
AS CONSTRUCTED
310827CR402
1

FILLING NOTE
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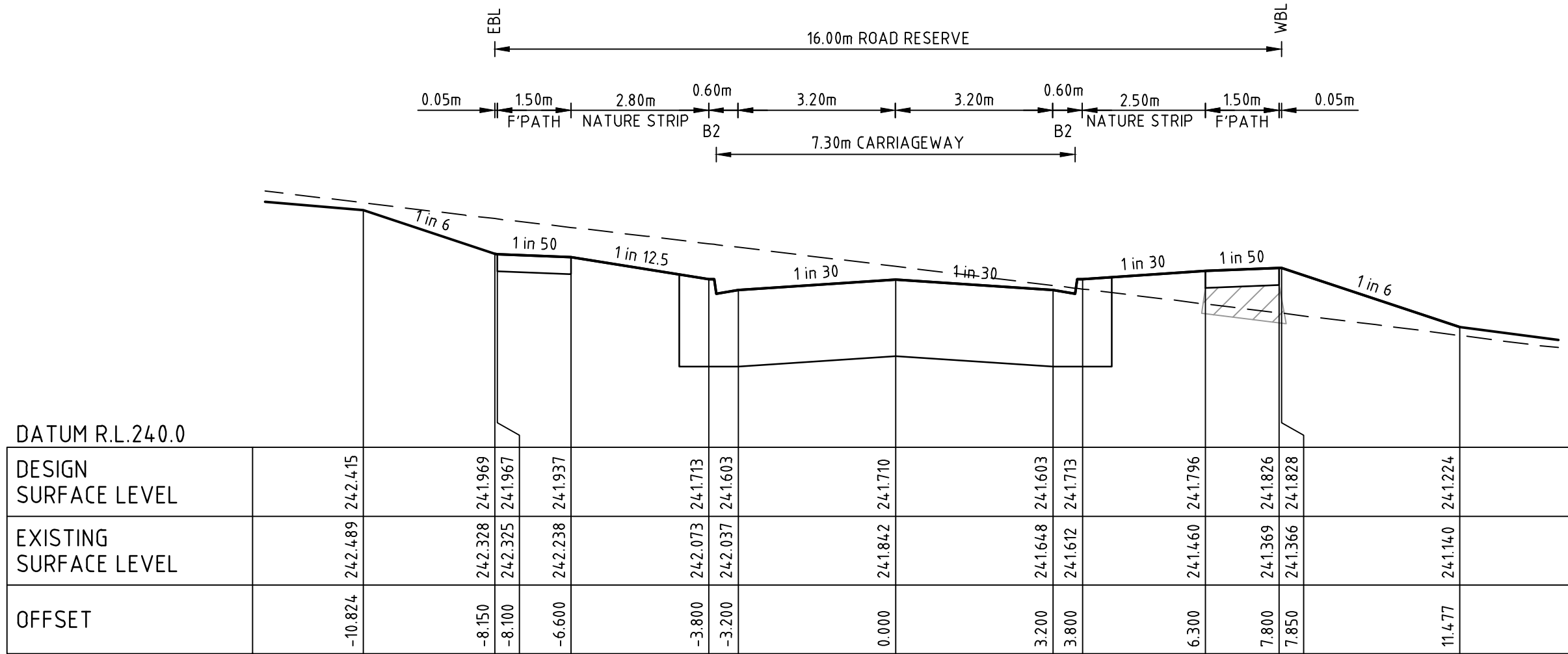
BOOBOOK ROAD

CH 200.90



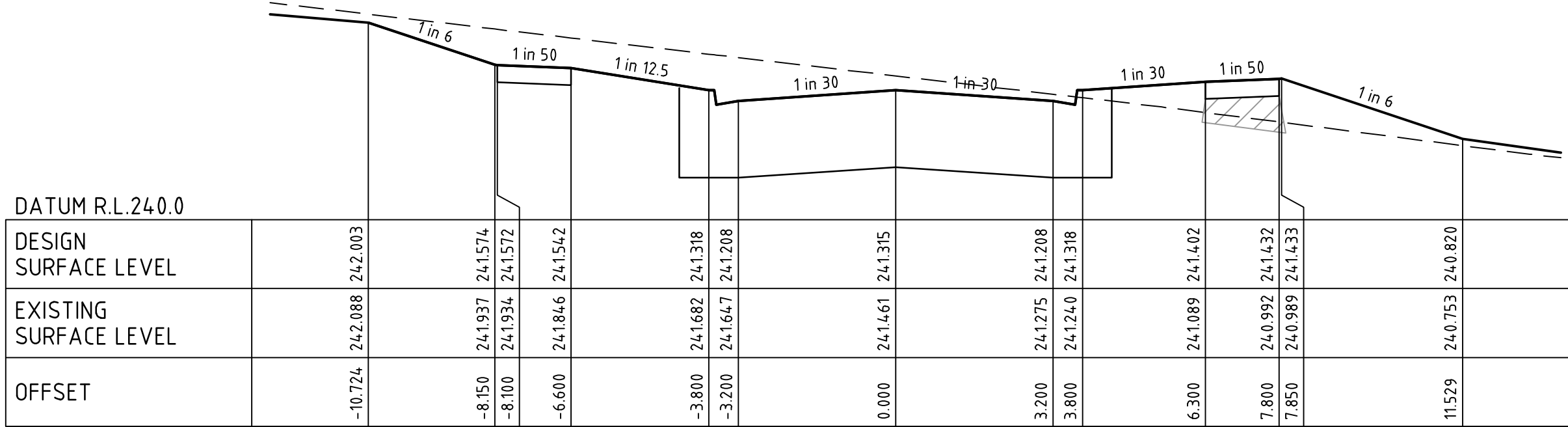
BOOBOOK ROAD

CH 175.90



BOOBOOK ROAD

CH 243.81

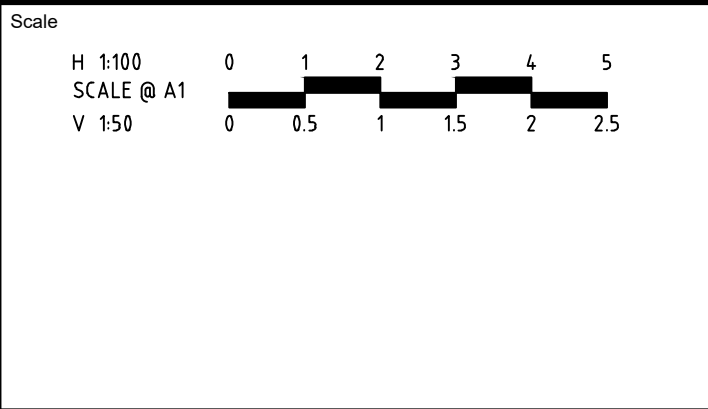


BOOBOOK ROAD

CH 230.23

file name: 310827CR403.dwg layout name: CR403 plotted by: Lilia Tran
file location: G:\31\310827\310827\310827.dwg plot date: 28/04/2025 11:43 PM sheet: 12 of 25 sheets

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
C	FILLING NOTE AMENDED	M.R	23/02/24
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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Authorised
M. RANJANAN

Checked
W. ONG

Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 4**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Drg No
310827CR403

Rev
1

ALL FILLING WITHIN ROAD RESERVES IS TO BE UNDERTAKEN USING
LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH
AS 3798-2007 AND TO THE SATISFACTION OF COUNCIL AND THE
SUPERINTENDENT. FILL AREAS ARE TO BE STRIPPED OF TOPSOIL,
FILLED AND REPLACED WITH TOPSOIL (WHERE REQUIRED) TO
OBTAIN THE FINAL LEVELS SHOWN ON THE DRAWINGS.
FILLING UNDERNEATH FOOTPATH TO BE CLASS 3 CRUSHED ROCK IN
ACCORDANCE WITH COUNCIL STANDARDS.

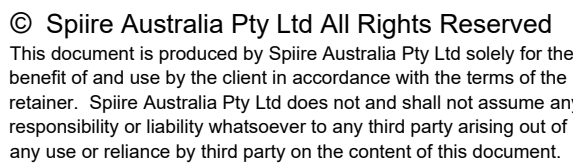


Scale

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SCALE @ A1
V 1:50

0 1 2 3 4 5

0 0.5 1 1.5 2 2.5



L6 414 LA TROBE STREET PO BOX 16084 MELBOURNE
VICTORIA 8007 AUSTRALIA T 61 3 9993 7888
spiire.com.au ABN 55 050 029 635



Designed	L. TRAN
Authorised	M. RANJANAN

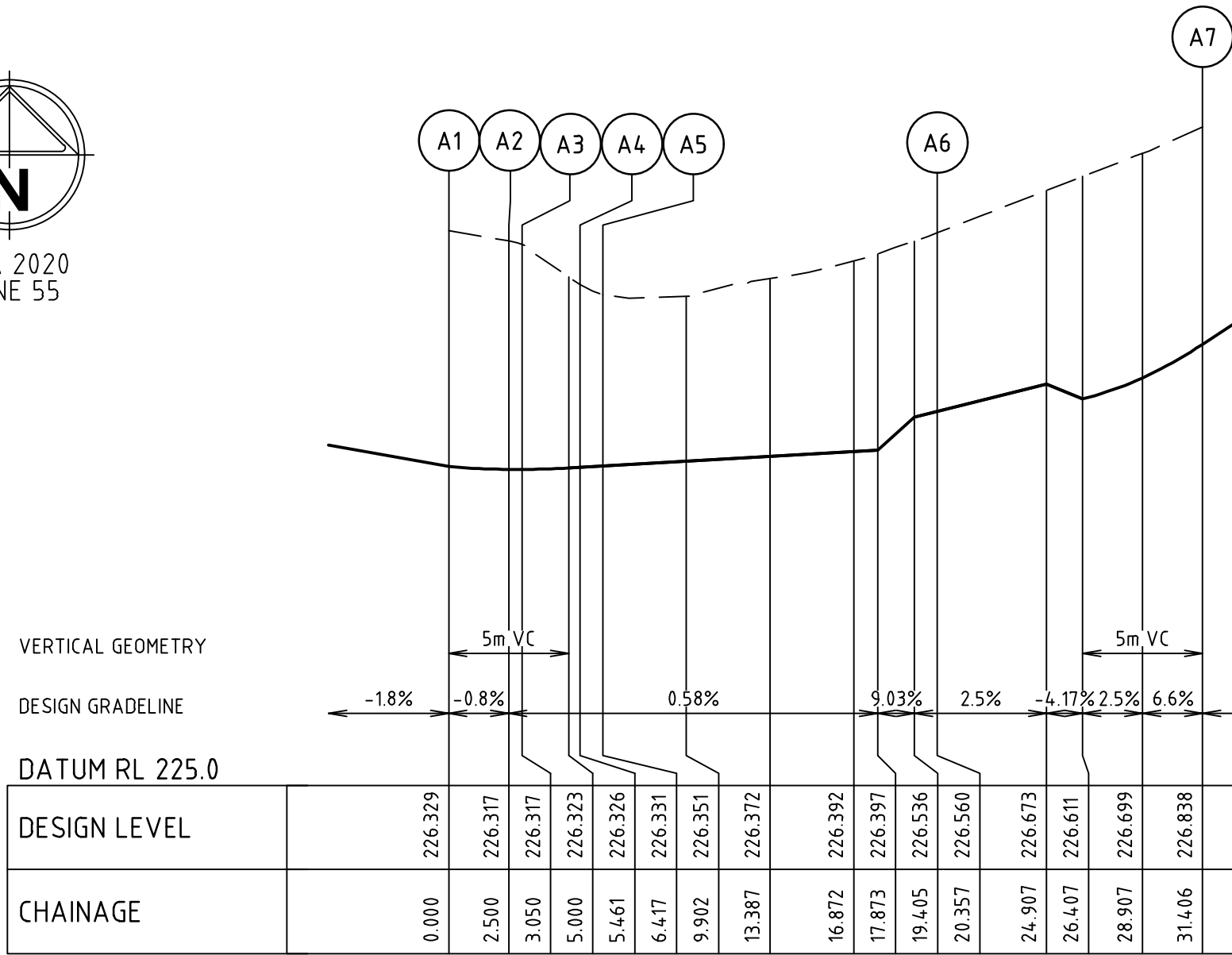
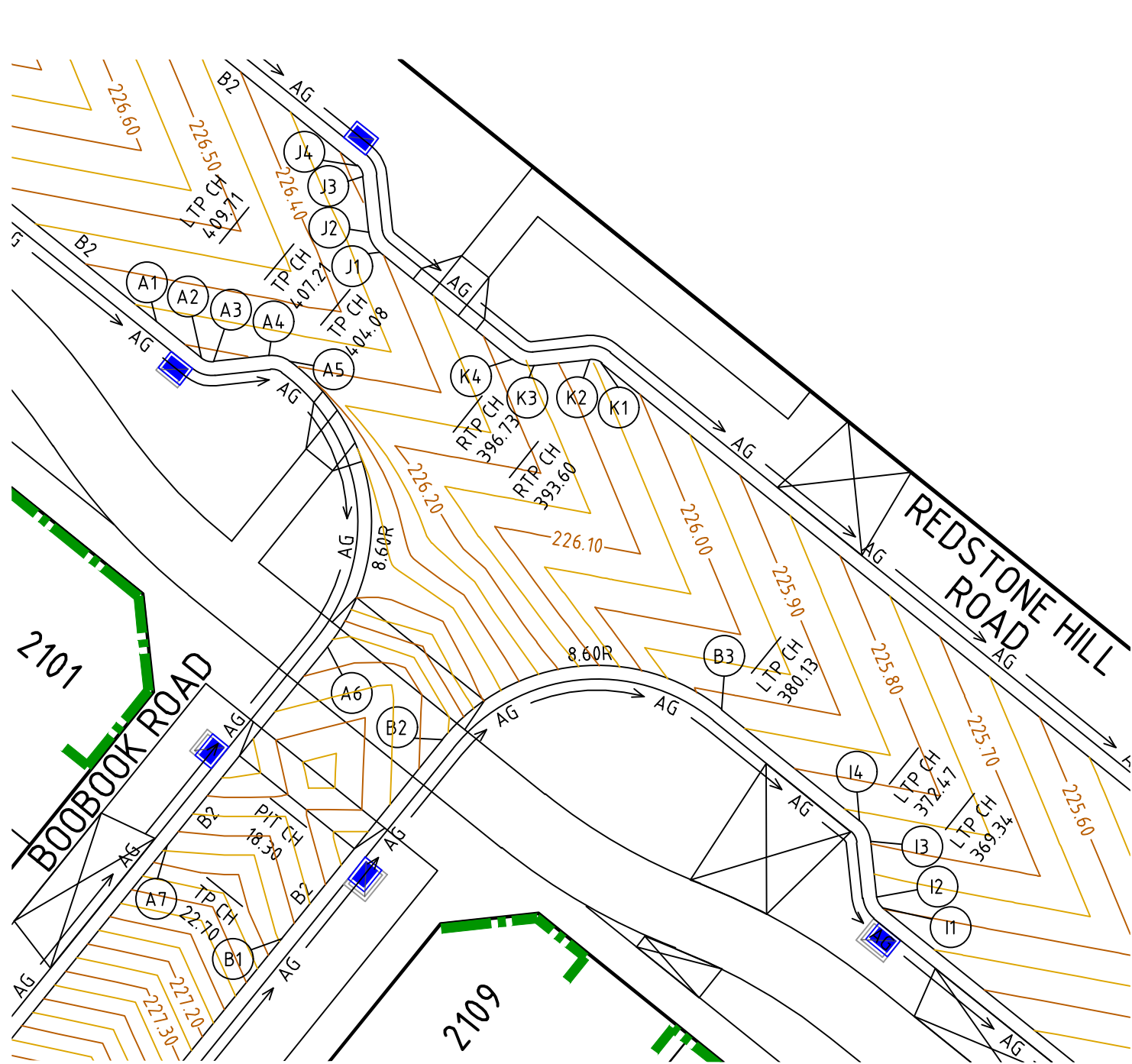
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W. ONG
Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 5
HUME CITY COUNCIL
VILLAWOOD PROPERTIES**

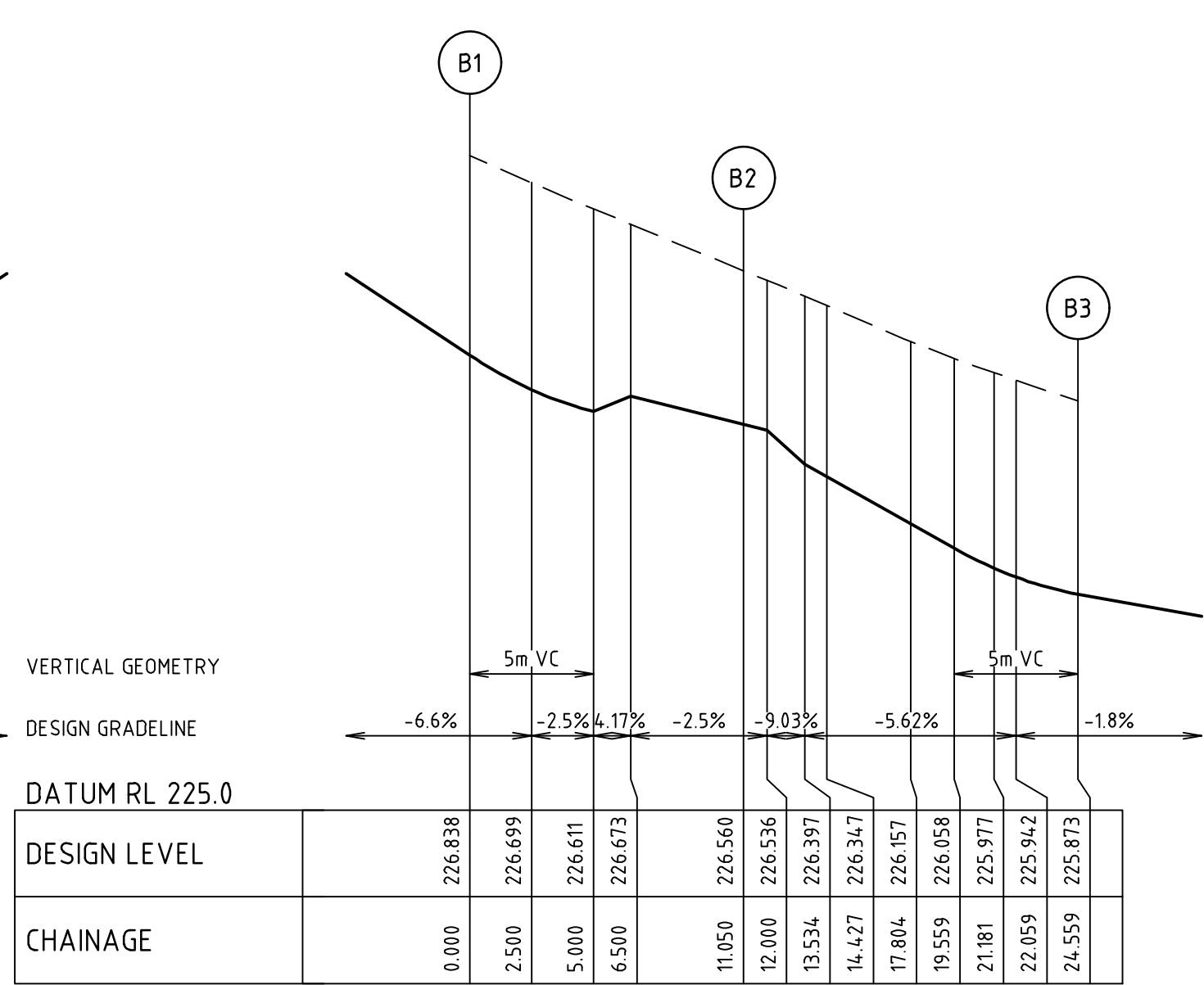
AS CONSTRUCTED Drg No **310827CR404**

Rev 1

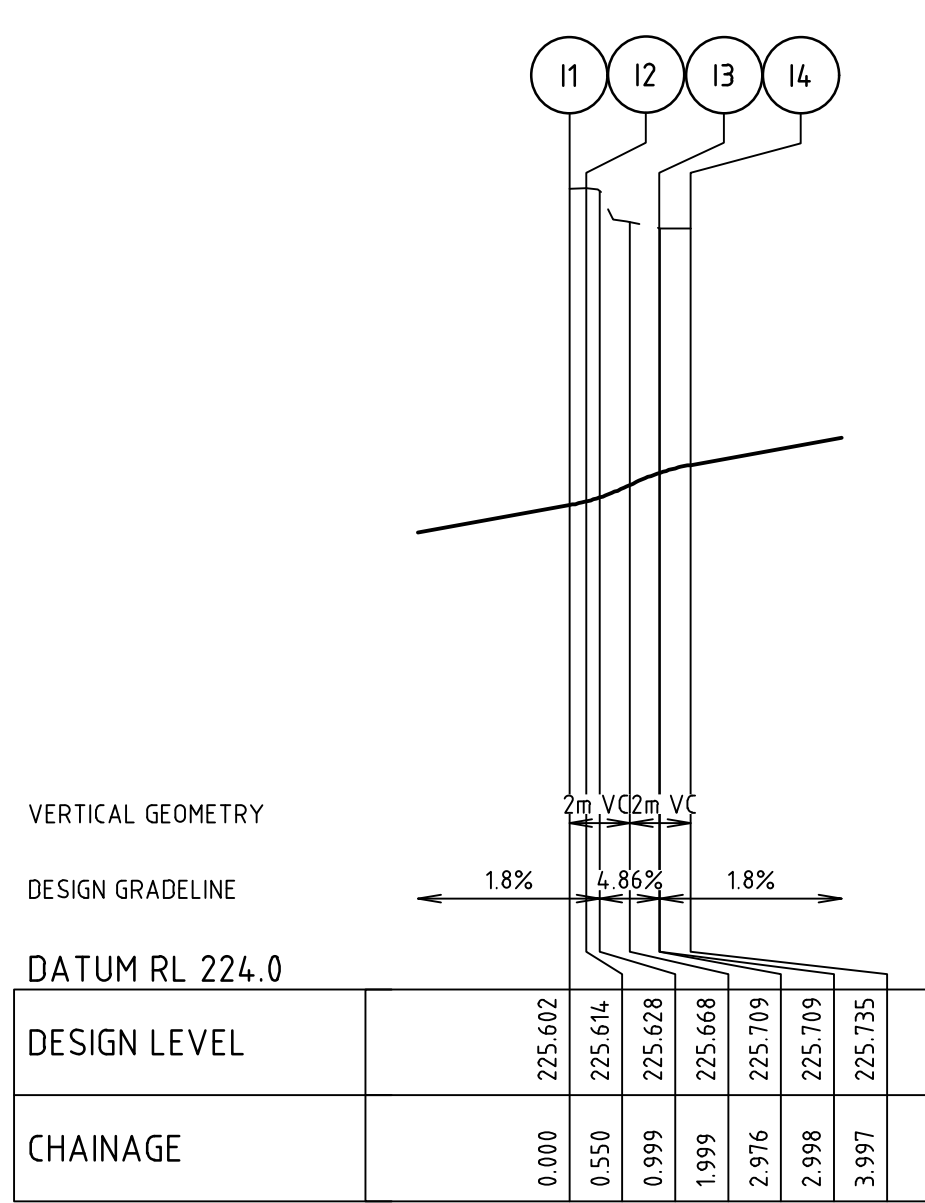
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file location G:\31\310827\Civil\ACAD plot date 28/04/2025 4:43 PM Sheet 13 of 25 Sheets



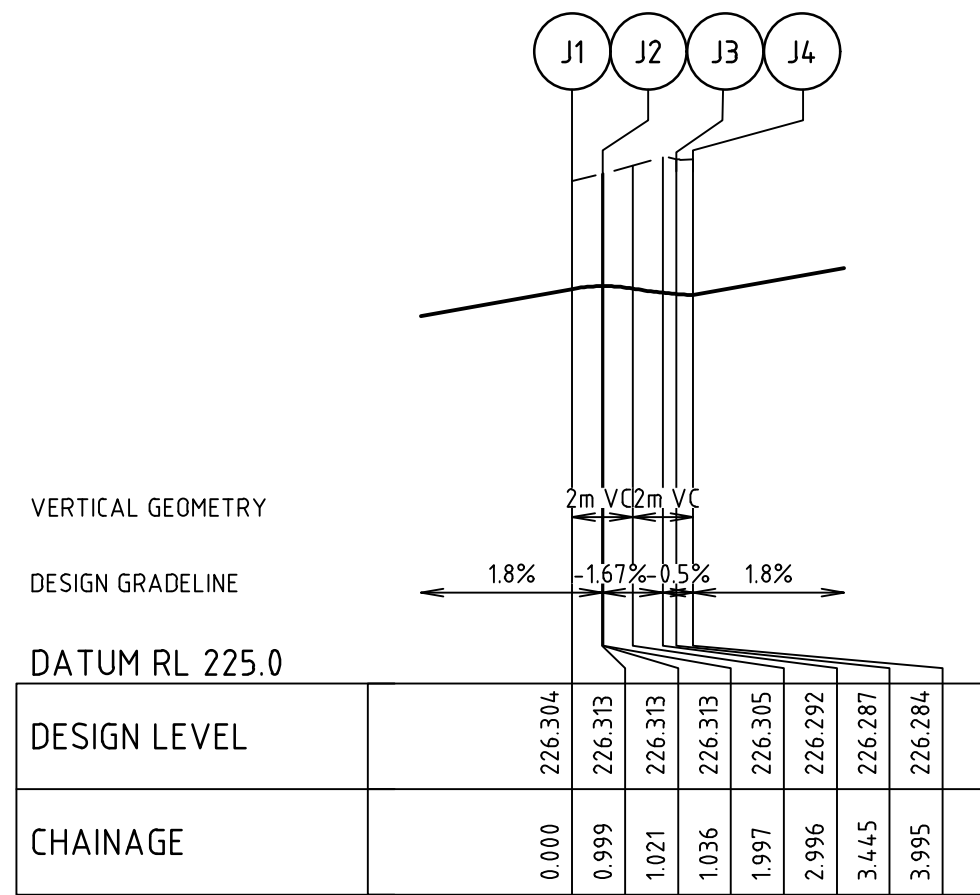
ALIGNMENT A



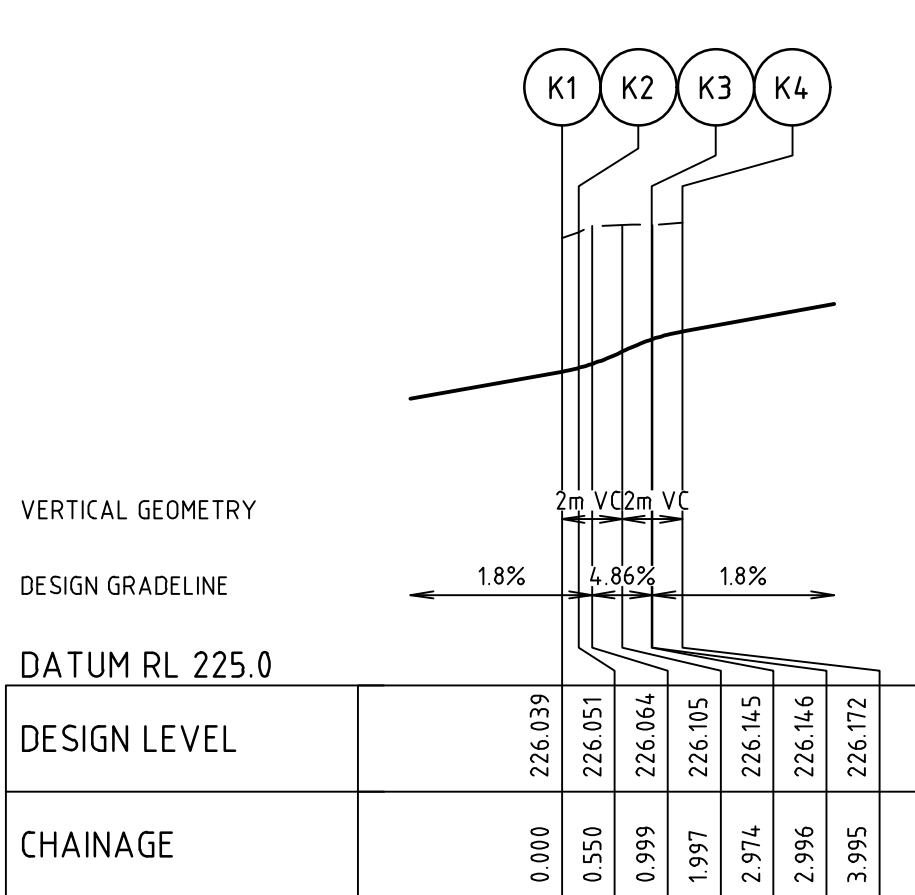
ALIGNMENT B



ALIGNMENT I



ALIGNMENT J



ALIGNMENT K

POINT NO	EASTING	NORTHING	RL
A1	301895.633	5835874.796	226.329
A2	301897.579	5835873.226	226.317
A3	301898.093	5835873.074	226.317
A4	301900.490	5835873.330	226.326
A5	301901.393	5835873.089	226.331
1/4	301903.725	5835870.531	226.351
1/2	301904.860	5835867.261	226.372
3/4	301904.614	5835863.809	226.392
A6	301903.027	5835860.733	226.560
A7	301896.087	5835852.134	226.838

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
A2-A3	0.700	0.550	0.536	0.053	-0.013
A4-A5	1.300	0.956	0.935	0.087	0.022
A5-A6	8.600	13.940	12.463	2.673	0.696

POINT NO	EASTING	NORTHING	RL
B1	301901.067	5835884.115	226.838
B2	301908.007	5835856.714	226.560
1/4	301910.583	5835858.864	226.347
1/2	301913.786	5835859.864	226.157
3/4	301917.128	5835859.563	225.977
B3	301920.100	5835858.005	225.873

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
B2-B3	8.600	13.509	12.162	2.519	0.655

POINT NO	EASTING	NORTHING	RL
J1	301905.289	5835877.798	226.304
J2	301904.813	5835878.671	226.313
J3	301904.555	5835881.082	226.287
J4	301904.299	5835881.552	226.284

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
J1-J2	1.300	1.021	0.995	0.099	0.025
J3-J4	0.700	0.550	0.536	0.053	-0.013

POINT NO	EASTING	NORTHING	RL
I1	301927.051	5835849.438	225.602
I2	301926.795	5835849.908	225.614
I3	301926.537	5835852.321	225.709
I4	301926.061	5835853.195	225.735

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
I1-I2	0.700	0.550	0.536	0.053	0.013
I3-I4	1.300	1.021	0.995	0.099	-0.025

POINT NO	EASTING	NORTHING	RL
K1	301914.892	5835873.003	226.039
K2	301914.378	5835873.154	226.051
K3	301911.968	5835872.896	226.145
K4	301911.014	5835873.177	226.172

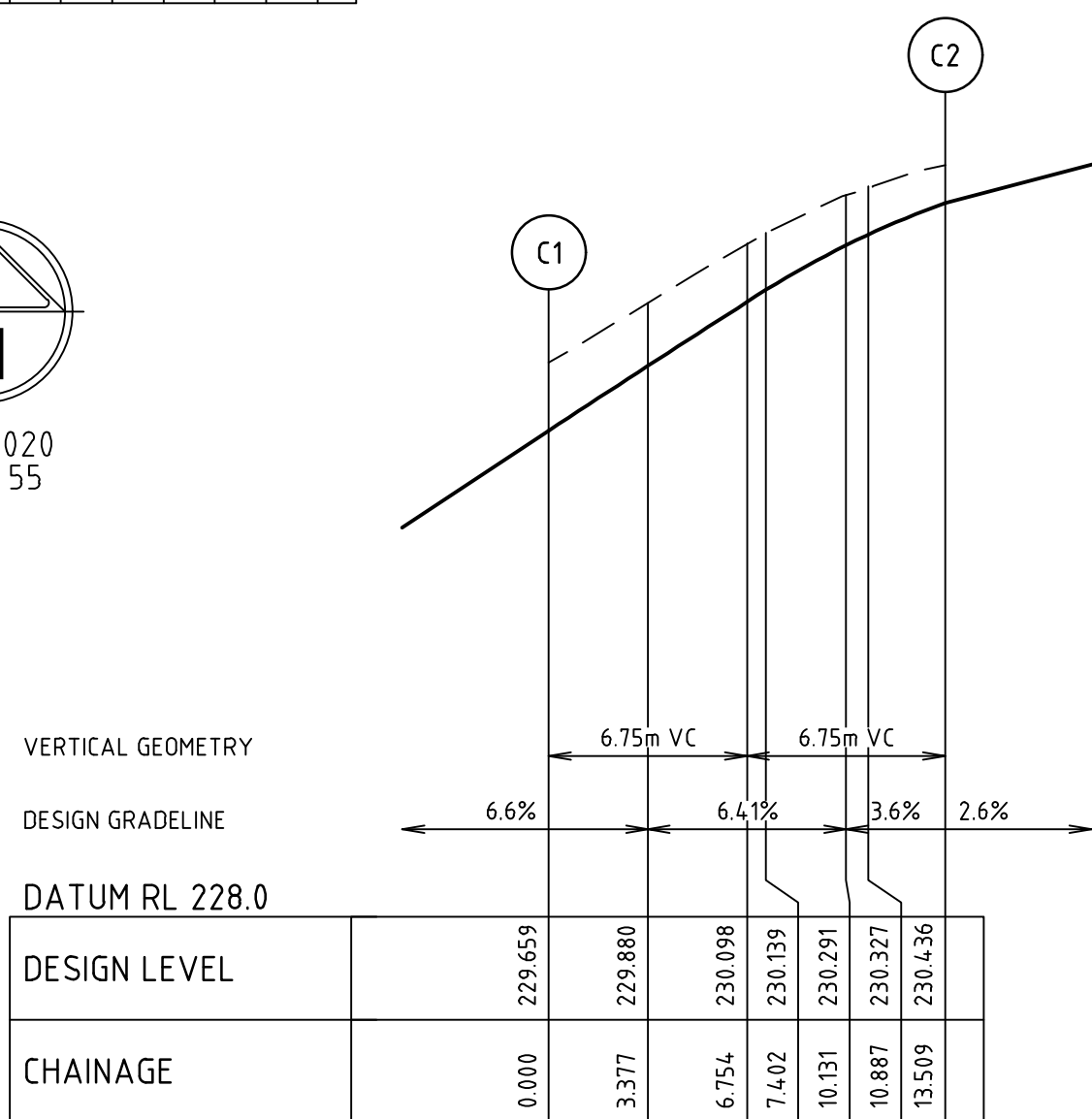
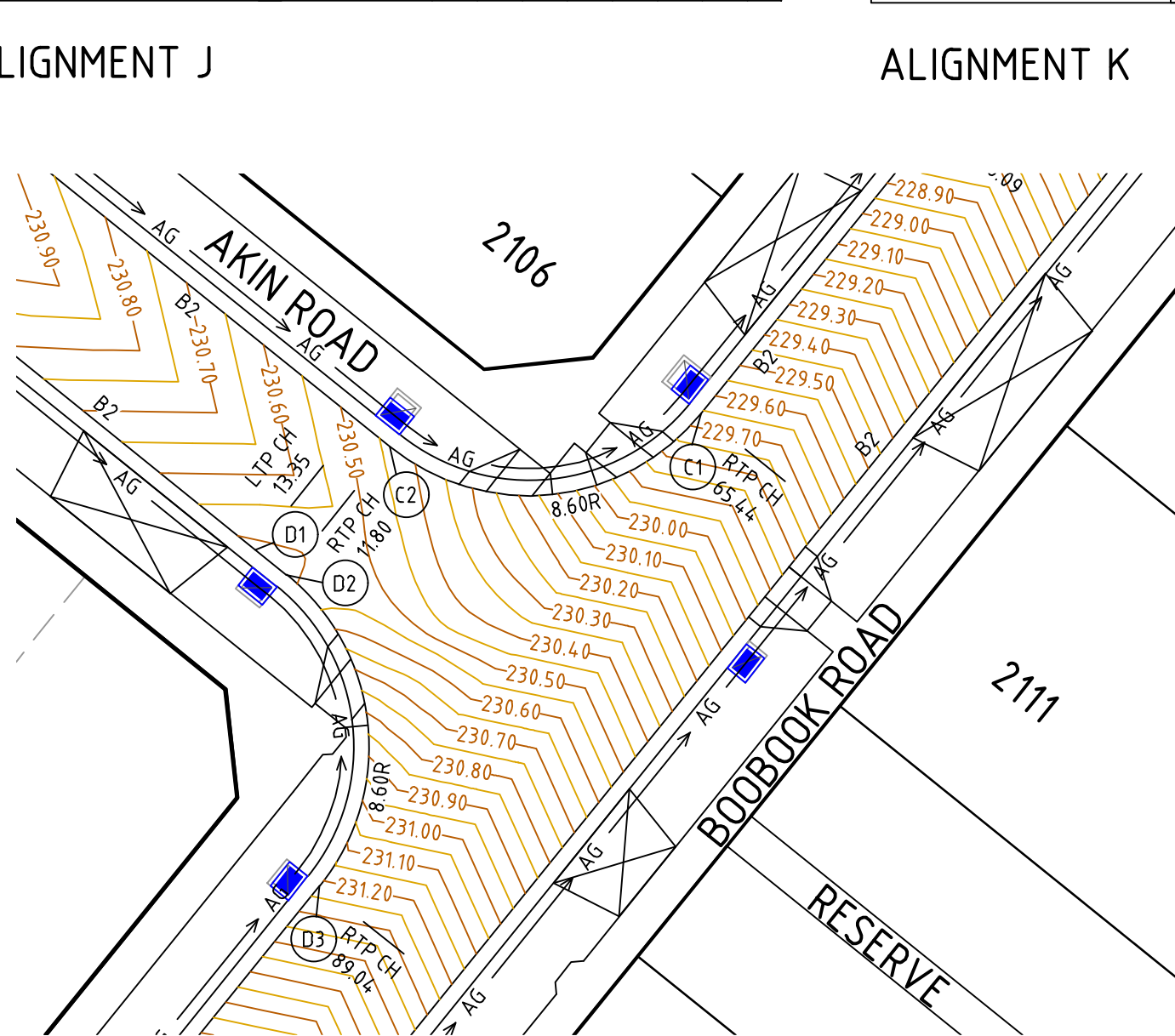
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
K1-K2	0.700	0.550	0.536	0.053	-0.013
K3-K4	1.300	1.021	0.995	0.099	0.025

POINT NO	EASTING	NORTHING	RL
C1	301869.246	5835818.877	229.659
1/4	301866.670	5835816.727	229.880
1/2	301863.467	5835815.727	230.098
3/4	301860.125	5835816.028	230.291
C2	301857.152	5835817.586	230.436

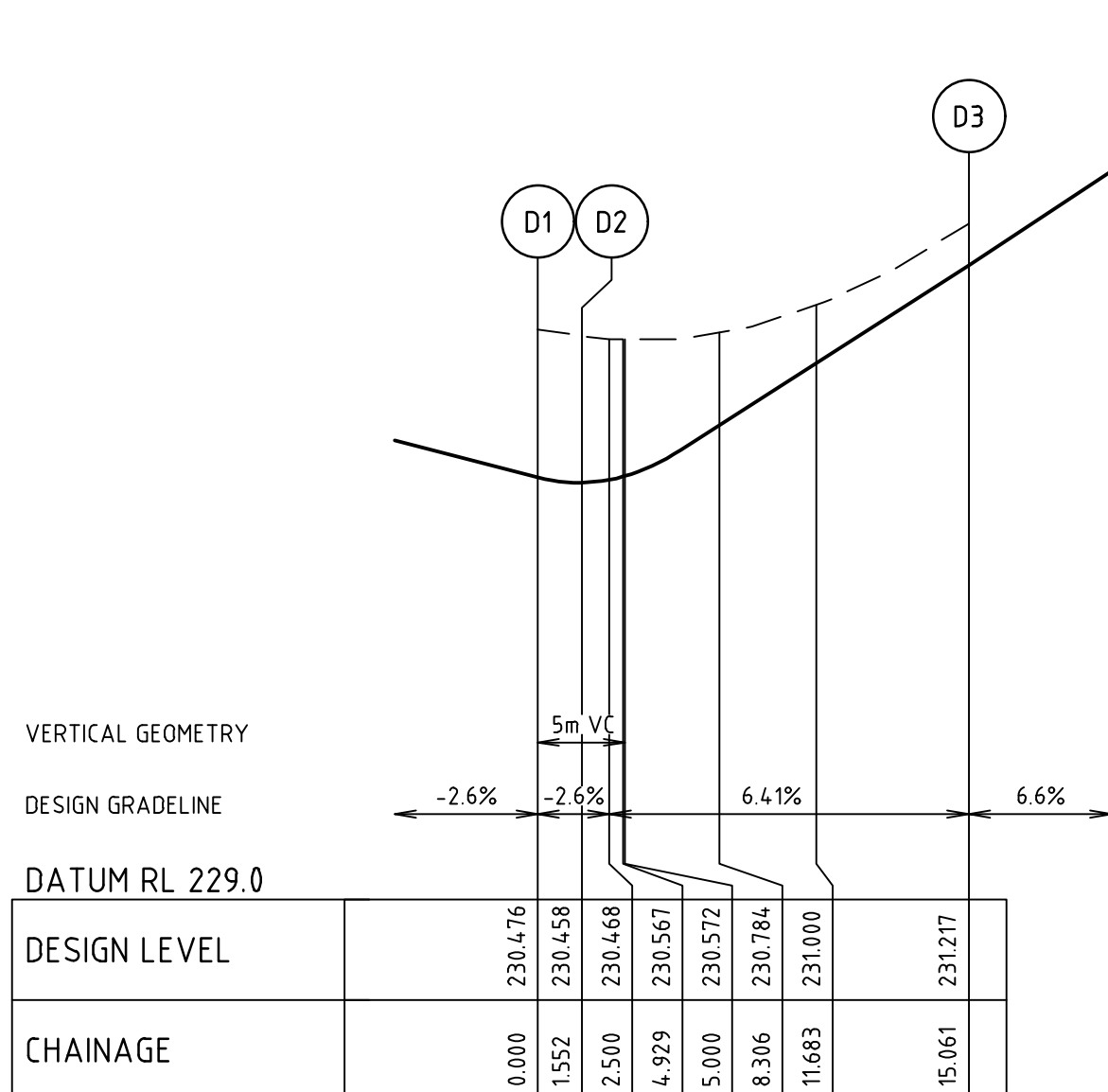
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
C1-C2	8.600	13.509	12.162	2.519	0.655

POINT NO	EASTING	NORTHING	RL
D1	301851.925	5835813.580	230.476
D2	301853.133	5835812.605	230.458
1/4	301855.283	5835810.029	230.567
1/2	301856.283	5835806.826	230.784
3/4	301855.982	5835803.484	231.000
D3	301854.424	5835800.512	231.217

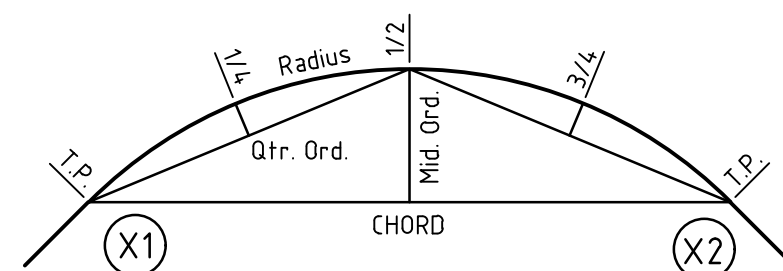
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
D2-D3	8.600	13.509	12.162	2.519	0.655



ALIGNMENT C



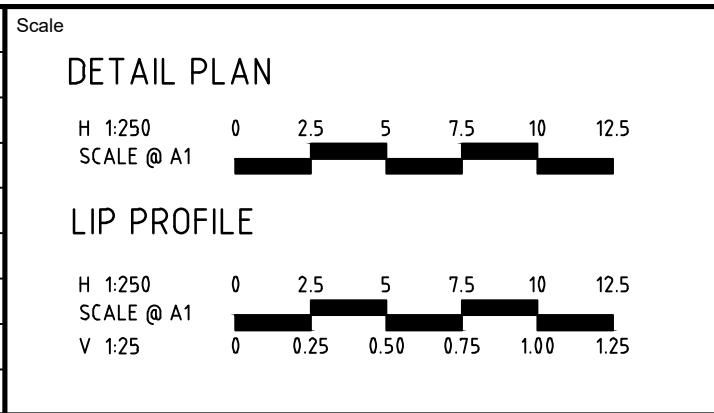
ALIGNMENT D



KERB RETURN SETOUT DETAIL

file name: 310827CR500.dwg, layout name: CR500, plotted by: Lillian Tran, file location: G:\310827\310827_Villawood\310827.dwg, plot date: 18/04/2025 14:43 PM, Sheet 14 of 25 Sheets

Rev	Description	By	Date
1	AS CONSTRUCTED	M.R.	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R.	20/09/24
D	DRIVEWAY ADDED	M.R.	22/05/24
C	KERB RETURN A & B AMENDED	M.R.	20/12/23
B	ISSUED TO COUNCIL	M.R.	26/07/23
A	ISSUED FOR TENDER	M.R.	29/06/23
Rev	Amendments	Approved	Date



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VICTORIA 8007 AUSTRALIA T 61 3 9993 7888
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Designed
L. TRAN
Authorised
M. RANJANAN

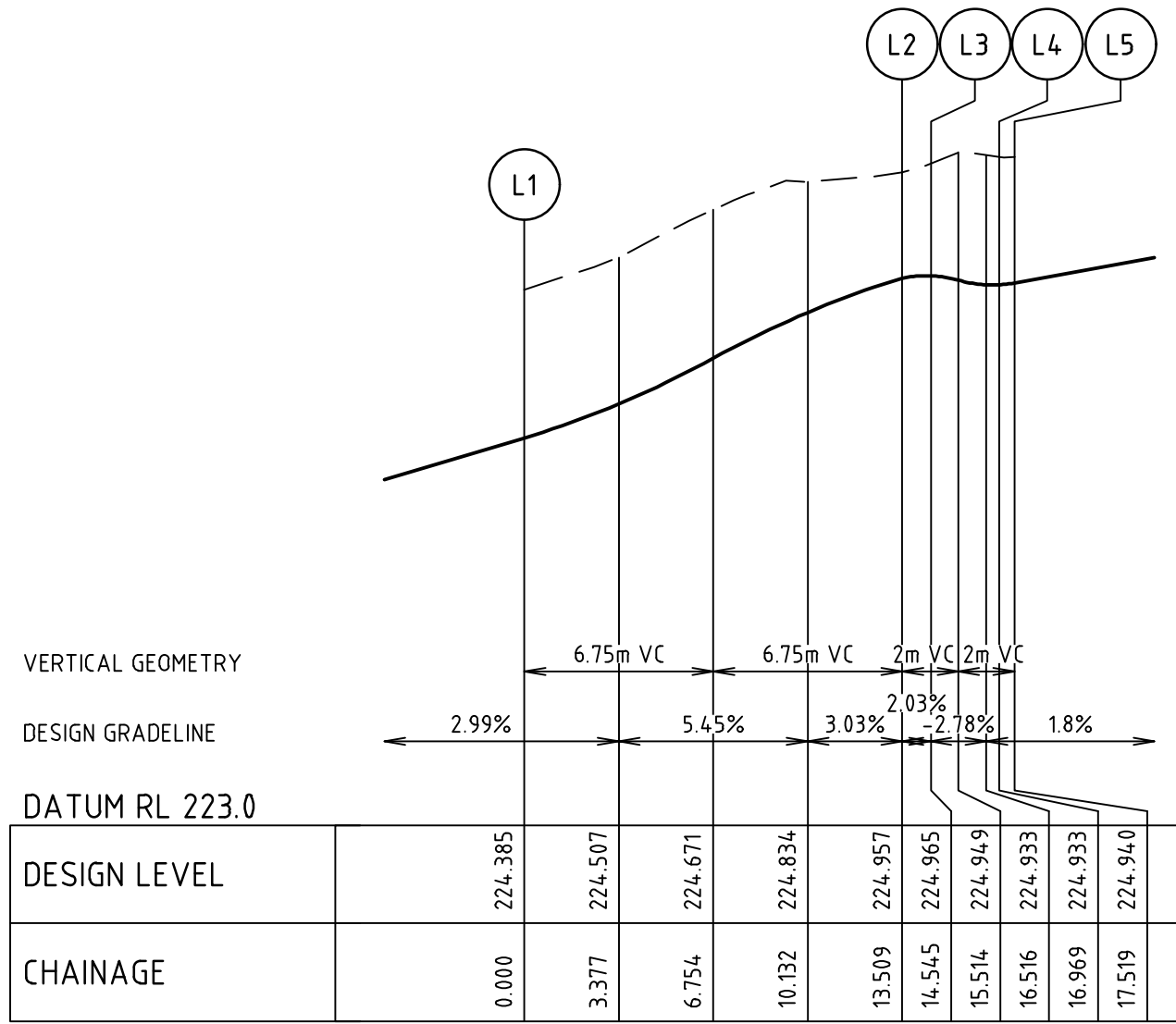
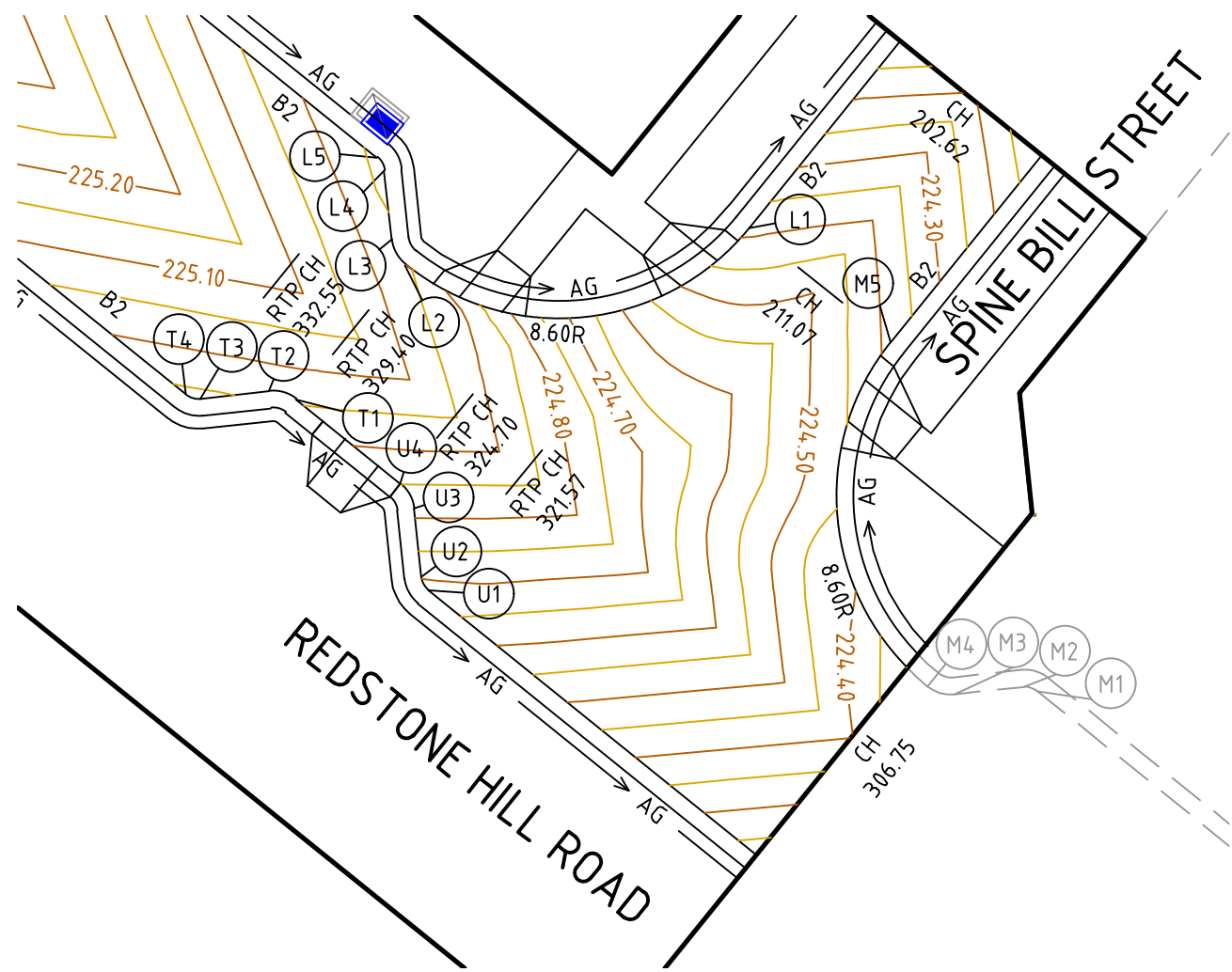


Checked
W. ONG
Date
26/07/23

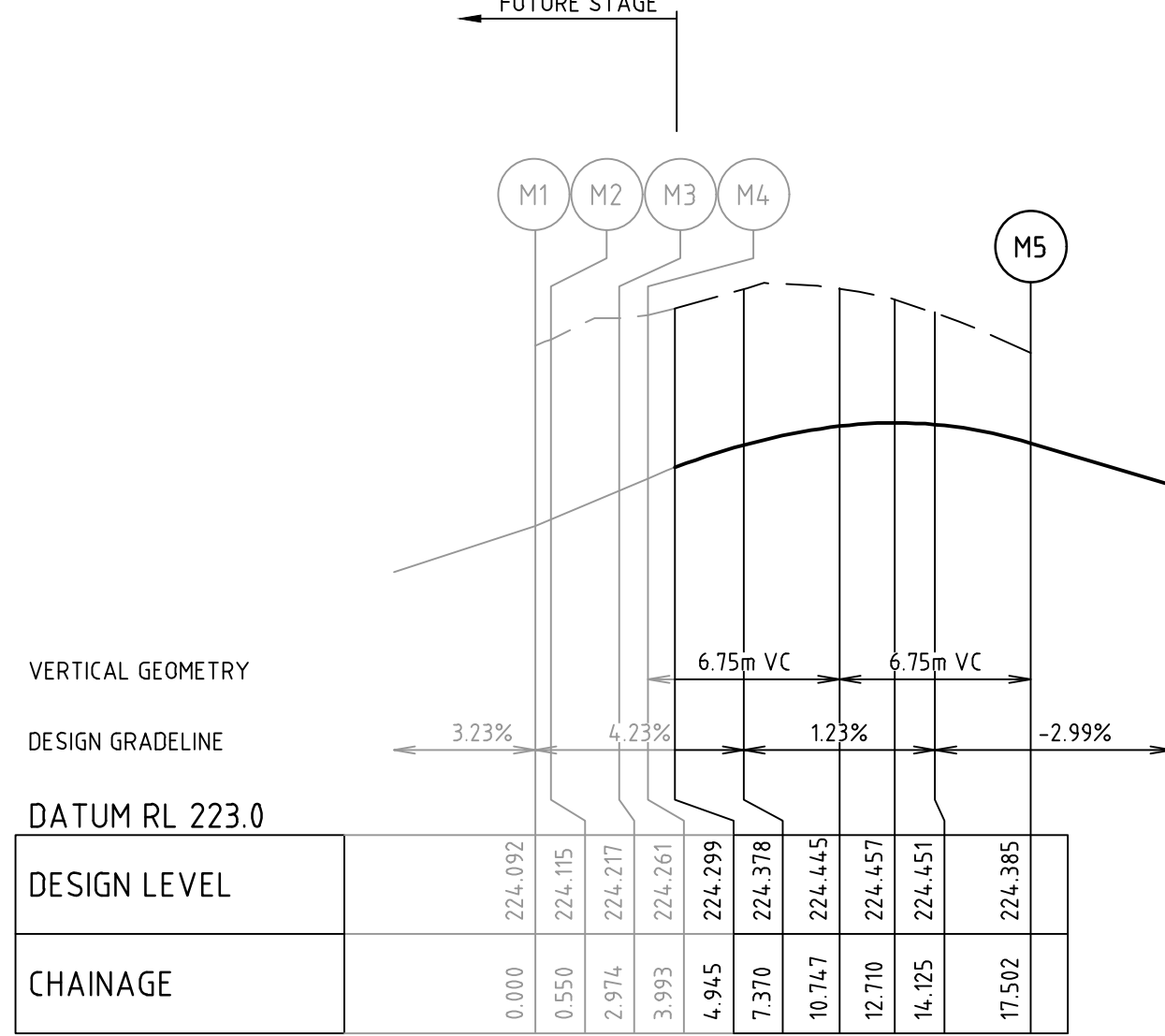
**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
INTERSECTION DETAILS - SHEET 1**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED Drg No **310827CR500** Rev **1**

file name: 310827CR501.dwg layout name: CR501 plotted by: Lillian Tran
file location: G:\310827\310827\310827.dwg plot date: 28/07/2025 4:43 PM Sheet 15 of 25 Sheets



ALIGNMENT L



ALIGNMENT M

ALIGNMENT L

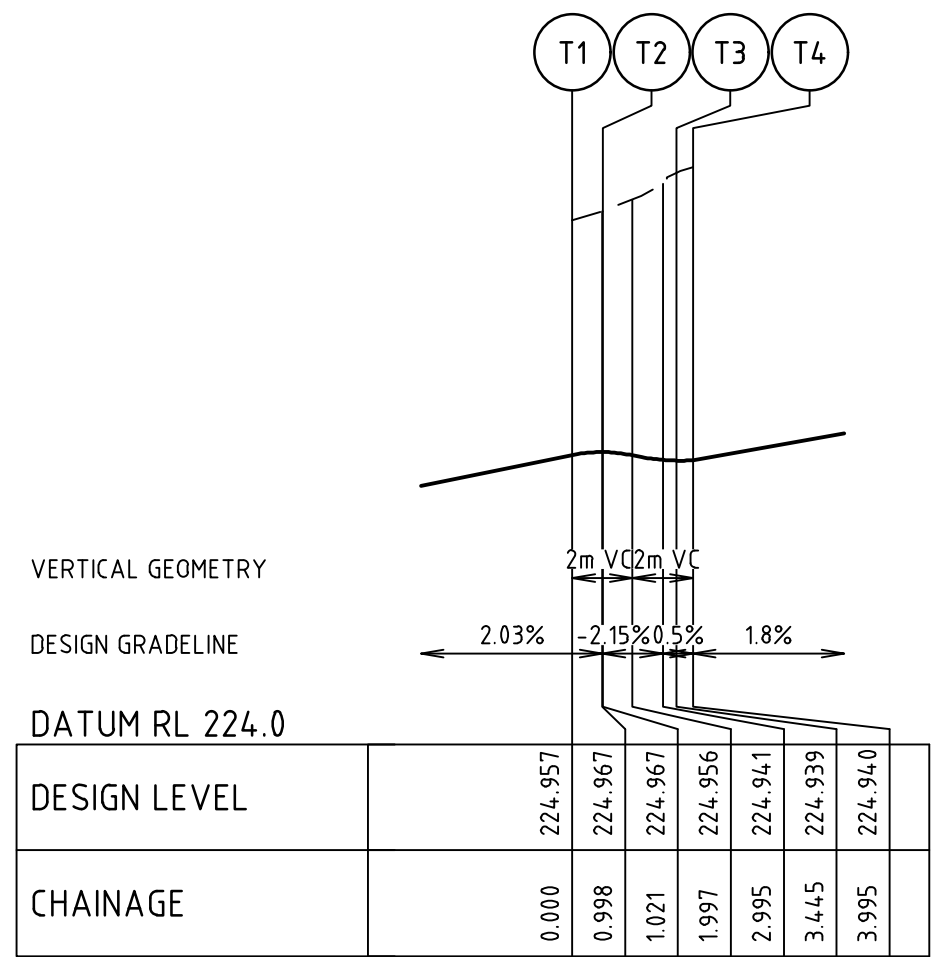
POINT NO	EASTING	NORTHING	RL
L1	301975.498	5835832.186	224.385
1/4	301972.922	5835830.036	224.507
1/2	301969.719	5835829.036	224.671
3/4	301966.377	5835829.337	224.834
L2	301963.405	5835830.895	224.957
L3	301962.917	5835831.778	224.965
L4	301962.660	5835834.188	224.933
L5	301962.403	5835834.659	224.940

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
L1-L2	8.600	13.509	12.162	2.519	0.655
L2-L3	1.300	1.036	1.009	0.102	0.026
L4-L5	0.700	0.550	0.536	0.053	-0.013

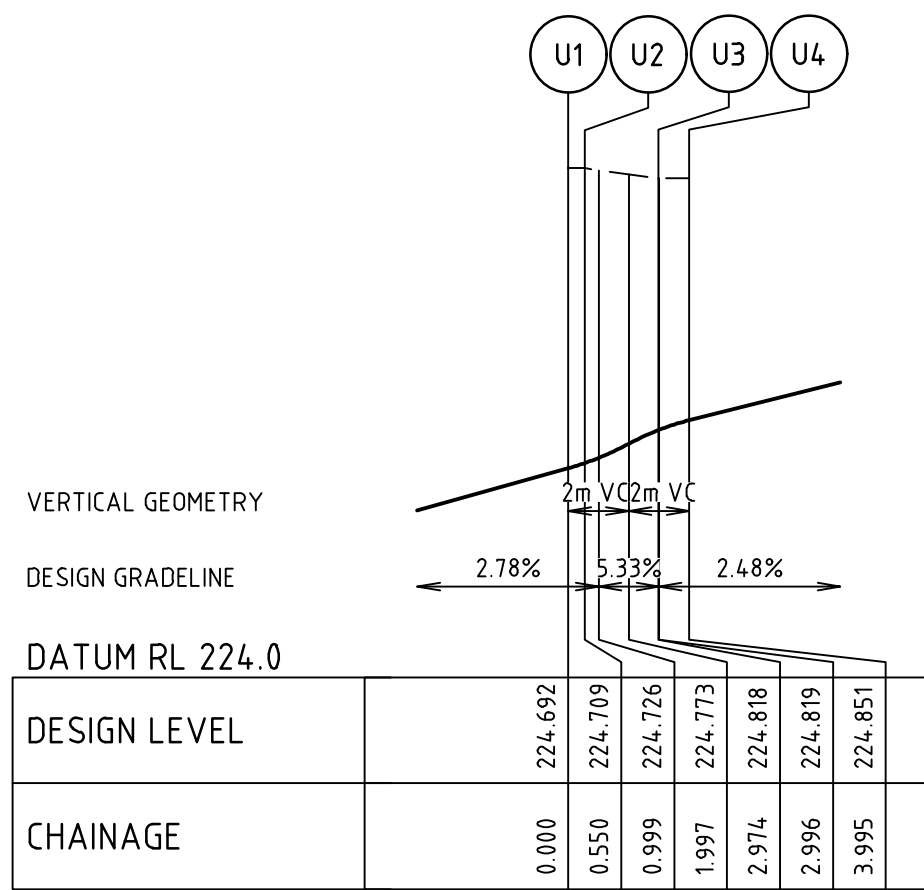
ALIGNMENT M

POINT NO	EASTING	NORTHING	RL
M1	301985.647	5835815.899	224.092
M2	301985.133	5835816.051	224.115
M3	301982.723	5835815.793	224.217
M4	301981.770	5835816.073	224.261
1/4	301979.620	5835818.649	224.299
1/2	301978.620	5835821.852	224.445
3/4	301978.921	5835825.194	224.451
M5	301980.479	5835828.166	224.385

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
M1-M2	0.700	0.550	0.536	0.053	-0.013
M3-M4	1.300	1.019	0.993	0.099	0.025
M4-M5	8.600	13.509	12.162	2.519	0.655



ALIGNMENT T



ALIGNMENT U

ALIGNMENT T

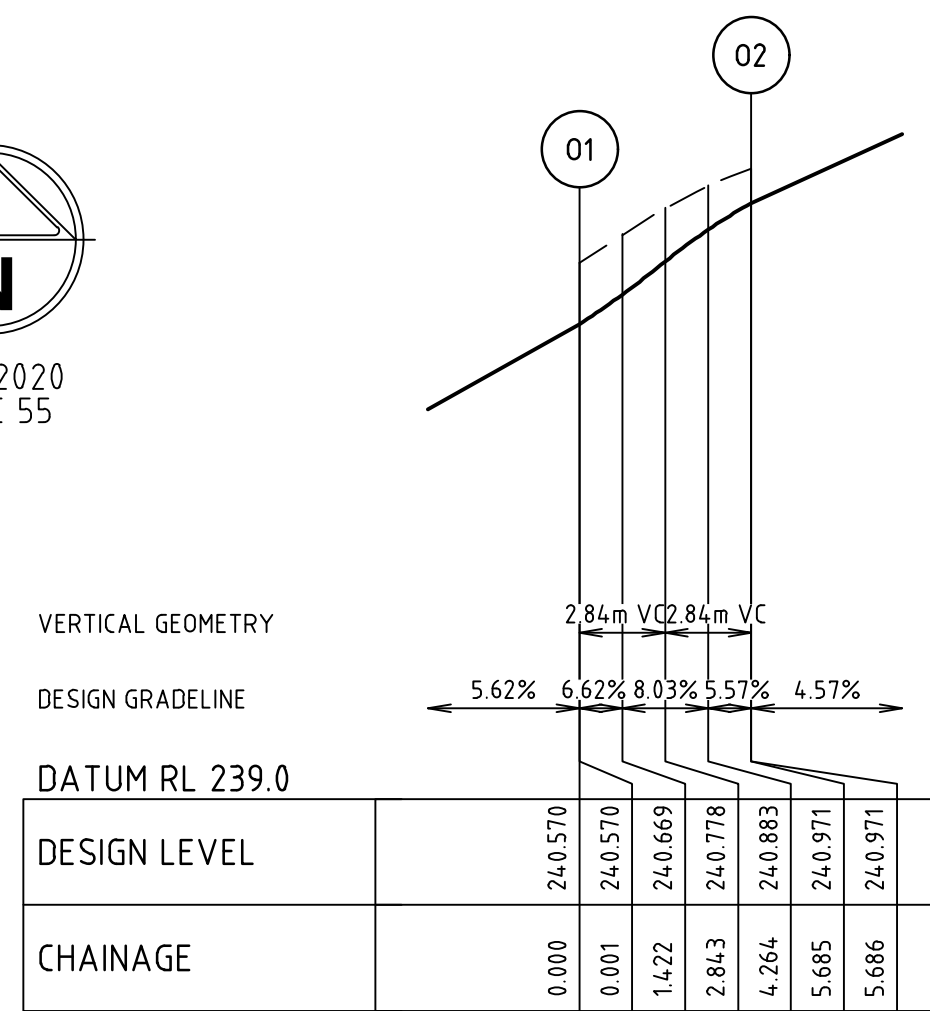
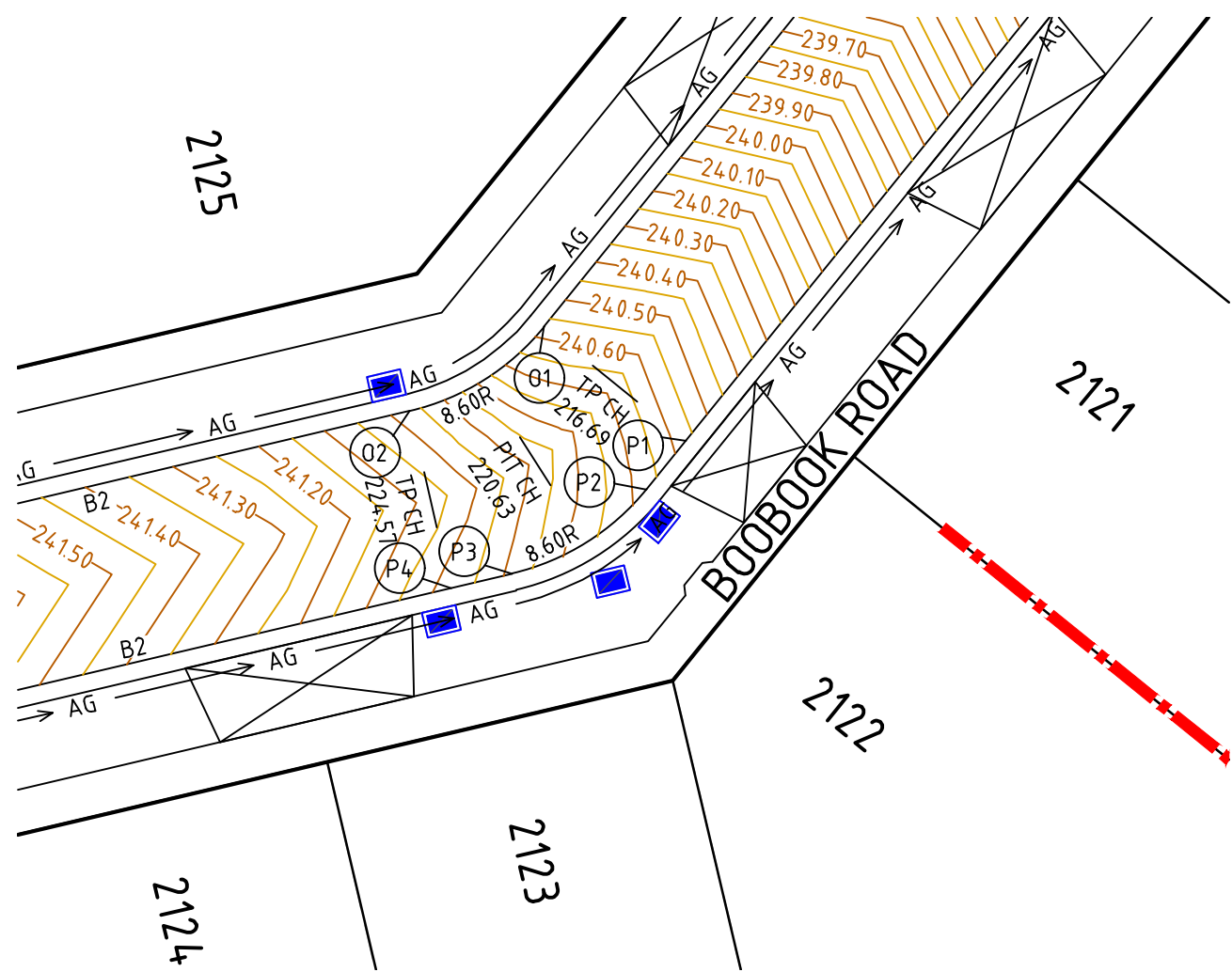
POINT NO	EASTING	NORTHING	RL
T1	301959.562	5835826.157	224.957
T2	301958.608	5835826.438	224.967
T3	301956.197	5835826.181	224.939
T4	301955.683	5835826.332	224.940

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
T1-T2	1.300	1.021	0.995	0.099	-0.025
T3-T4	0.700	0.550	0.536	0.053	0.013

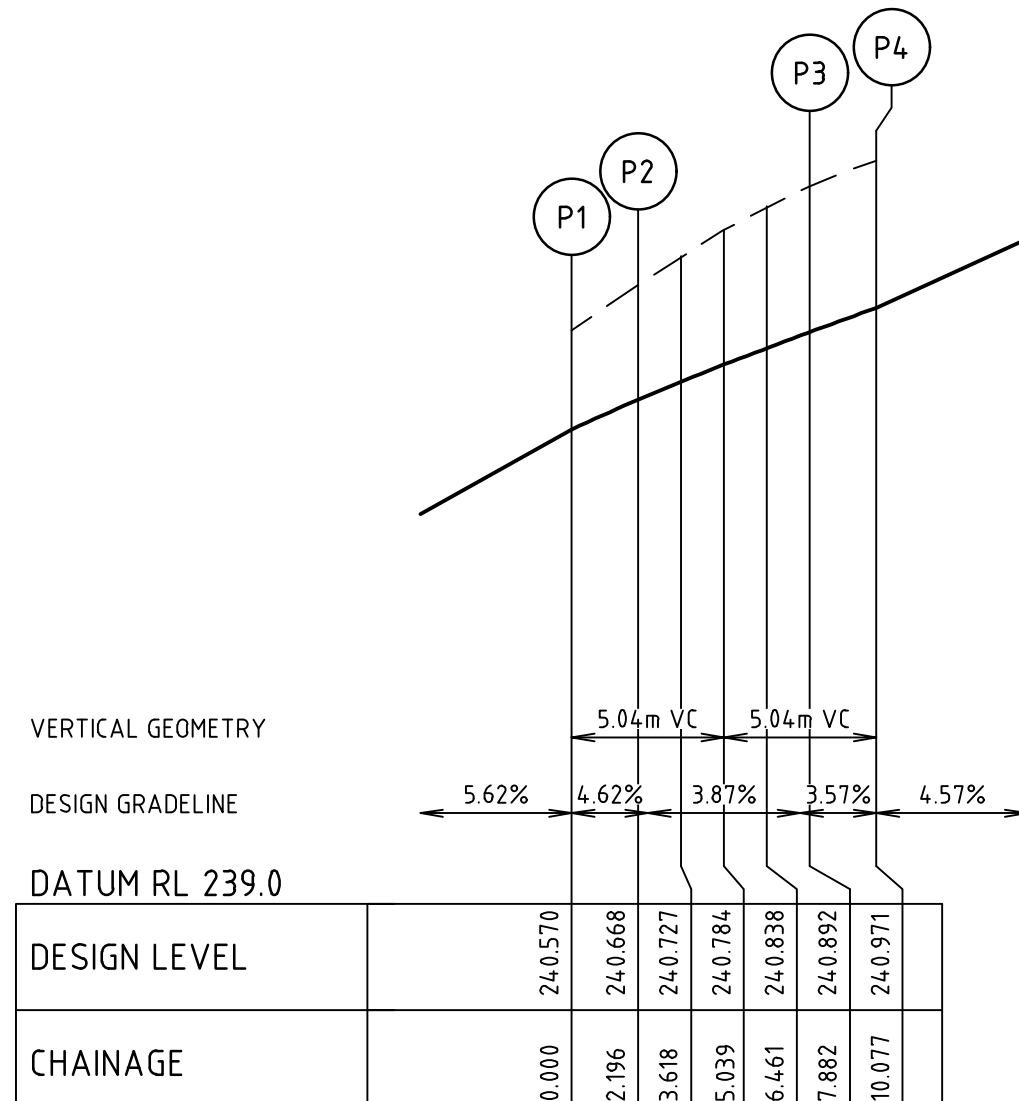
ALIGNMENT U

POINT NO	EASTING	NORTHING	RL
U1	301964.221	5835819.441	224.692
U2	301963.965	5835819.912	224.709
U3	301963.707	5835822.322	224.818
U4	301963.231	5835823.196	224.851

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
U1-U2	0.700	0.550	0.536	0.053	0.013
U3-U4	1.300	1.021	0.995	0.099	-0.025



ALIGNMENT O



ALIGNMENT P

ALIGNMENT O

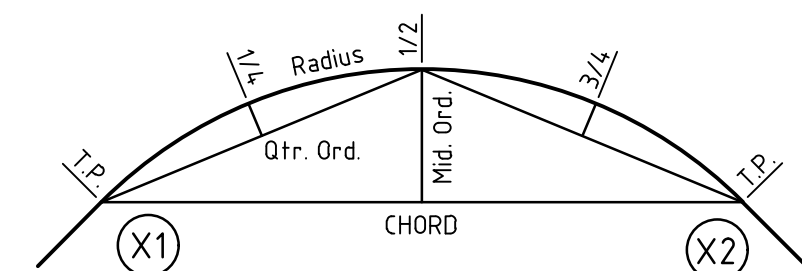
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O1	301774.254	5835701.175	240.570
1/4	301773.274	5835700.148	240.669
1/2	301772.138	5835699.295	240.778
3/4	301770.878	5835698.642	240.883
O2	301769.527	5835698.204	240.971

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
O1-O2	8.600	5.686	5.583	0.466	0.117

ALIGNMENT P

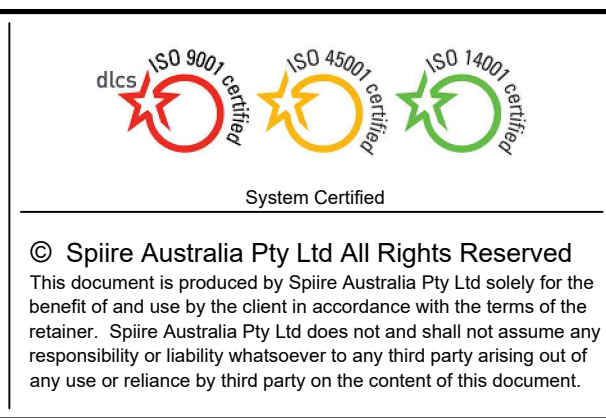
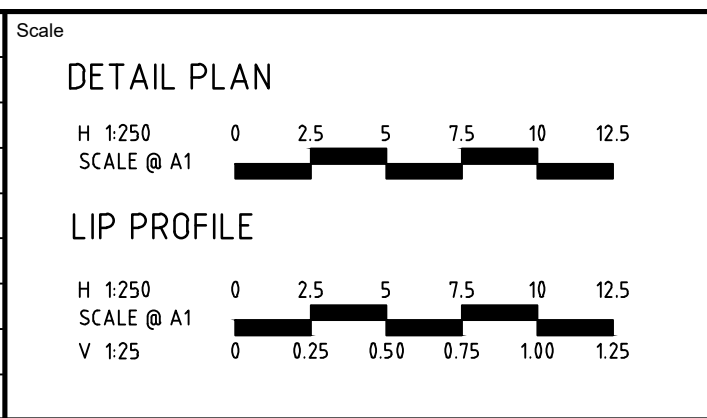
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P1	301779.234	5835697.156	240.570
P2	301777.855	5835695.447	240.668
1/4	301776.875	5835694.419	240.727
1/2	301775.739	5835693.567	240.784
3/4	301774.479	5835692.913	240.838
P3	301773.128	5835692.475	240.892
P4	301770.990	5835691.973	240.971

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
P2-P3	8.600	5.686	5.583	0.466	0.117



KERB RETURN SETOUT DETAIL

Rev	Amendments	Approved	Date
1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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Designed
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Authorised
M. RANJANAN

Checked
W. ONG

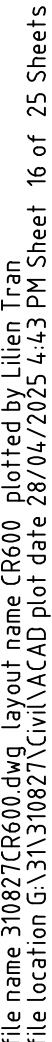
Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
INTERSECTION DETAILS - SHEET 2**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Drg No
310827CR501

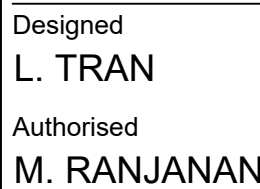
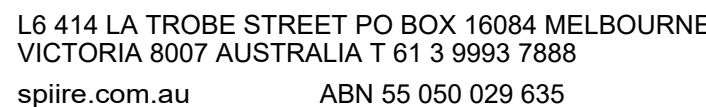
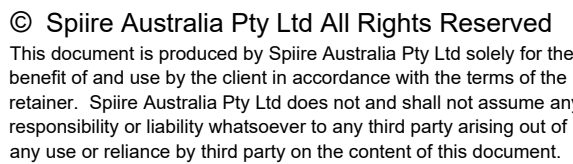
Rev
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Scale

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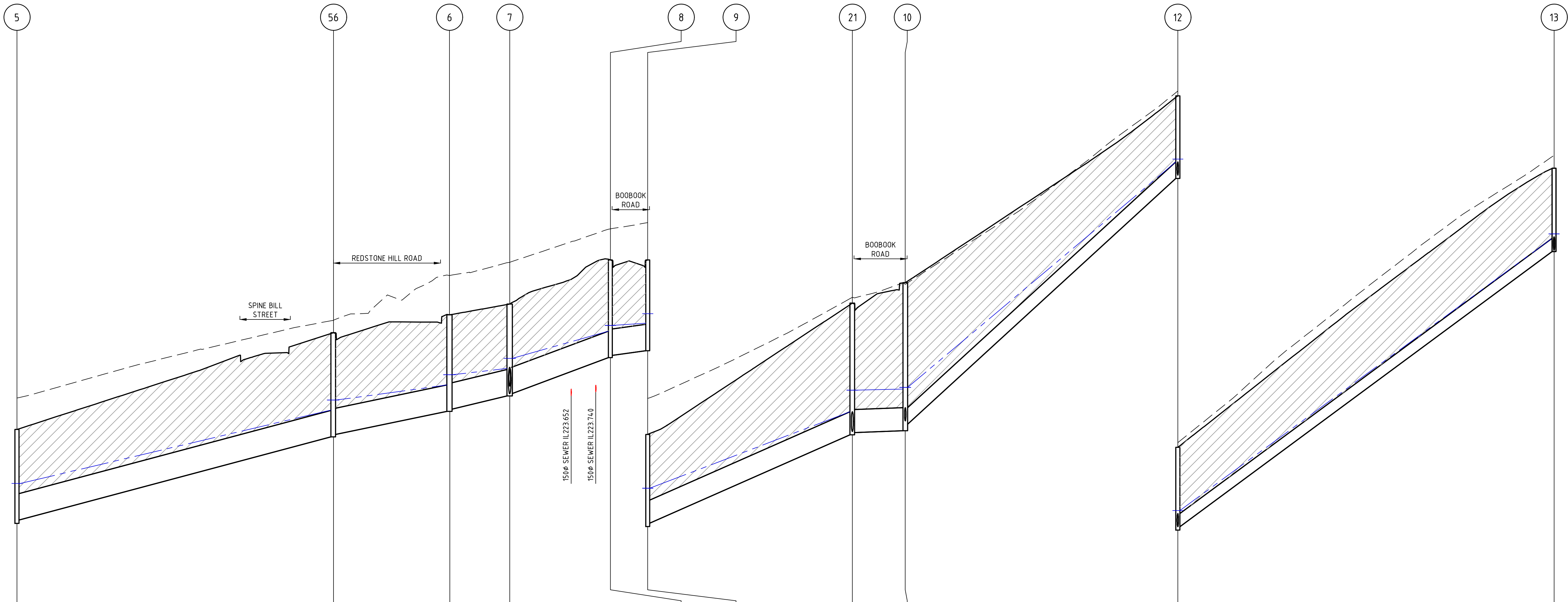
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Checked
W. ONG
Date
26/07/23

AS CONSTRUCTED **310827CR600**

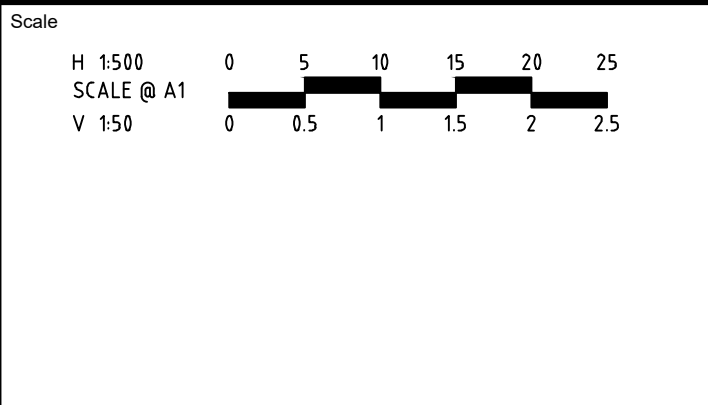
CLASS 2 CRUSHED ROCK BACKFILL



Pipe Diameter	600Ø	600Ø	600Ø	600Ø	600Ø	525Ø	525Ø	375Ø	300Ø
Pipe Class	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2
Pipe Grade	1 in 38	1 in 50	1 in 45	1 in 28	1 in 80	1 in 23	1 in 300	1 in 11	1 in 14
Velocity (m/s)	Vf=3.533	Vf=3.072	Vf=3.222	Vf=4.114	Vf=2.429	Vf=4.133	Vf=1.147	Vf=4.770	Vf=3.702
Pipe Flow (m3/s)	Qa=0.639	Qa=0.635	Qa=0.630	Qa=0.482	Qa=0.473	Qa=0.470	Qa=0.179	Qa=0.157	Qa=0.142
Pipe Capacity (m3/s)	Qcap=0.999	Qcap=0.869	Qcap=0.911	Qcap=1.163	Qcap=0.687	Qcap=0.895	Qcap=0.248	Qcap=0.527	Qcap=0.262
DATUM	217.00							229.00	
DEPTH TO INVERT	2.146	2.370	2.194	2.090	2.255	2.295	3.370	1.881	1.897
DESIGN INVERT LEVEL	220.727	222.706	223.285	223.636	224.508	226.751	226.841	232.584	238.920
HYDRAULIC GRADE LEVEL	221.628	223.306	224.117	224.261	225.108	227.276	227.754	232.959	239.220
FINISHED SURFACE LEVEL	222.873	225.075	225.479	225.726	226.762	229.716	230.212	234.465	240.817
EXISTING SURFACE LEVEL	223.588	225.356	226.376	226.675	227.437	229.878	230.175	234.573	241.108
CHAINAGE	312.126	L=72.000m	L=26.448m	L=13.700m	L=22.902m	L=8.500m	L=46.539m	L=62.001m	L=85.586m

file name: 310827CR600.dwg, layout name: CR600, plotted by: Lillian Tran, file location: G:\310827\310827.dwg, plot date: 28/04/2025 4:45 PM, Sheet 17 of 25 Sheets

2	AS CONSTRUCTED	M.R	28/04/25
1	PIT 6 & CHAINAGES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
E	PIPE FLOW AND HGL AMENDED	M.R	09/04/24
D	CR LEGEND AND DRAINAGE AMENDED	M.R	20/12/23
C	ROAD NOTATION ADDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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Designed
L. TRAN

Authorised
M. RANJANAN

Checked
W. ONG

Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 2**

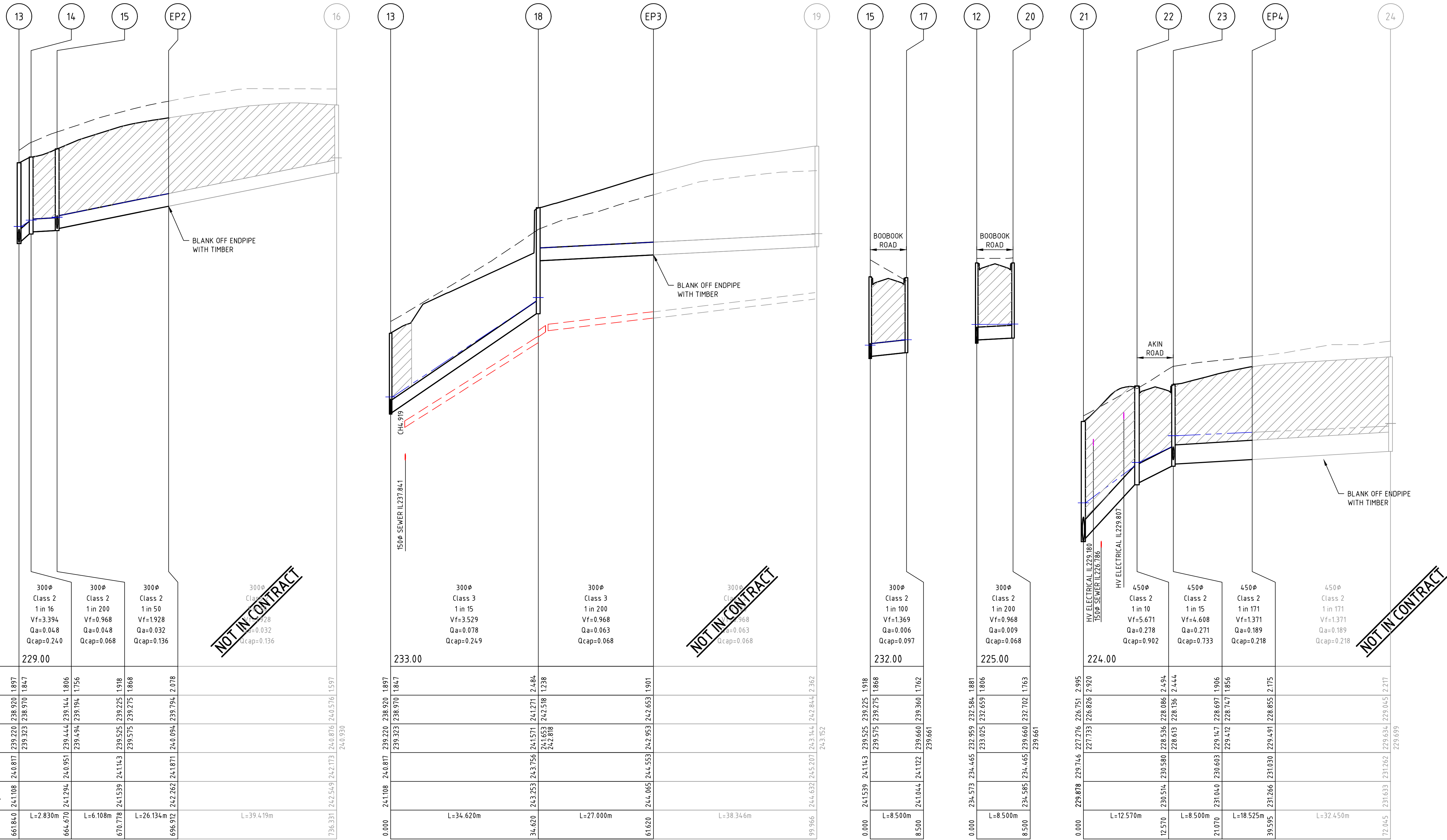
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Drg No
310827CR601

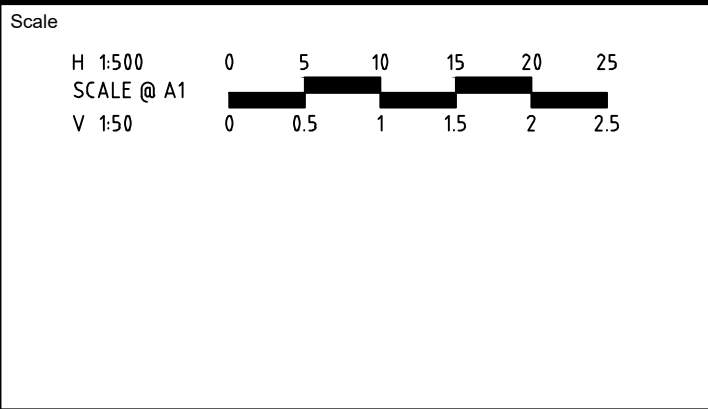
Rev
2

CLASS 2 CRUSHED ROCK BACKFILL



file name: 310827CR602.dwg, layout name: CR602, plotted by: Lillian Tran, plot date: 28/04/2025 14:43 PM, sheet 18 of 25 Sheets

2	AS CONSTRUCTED	M.R	28/04/25
1	CHAINAGES AMENDED	L.T	23/10/24
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
E	EP2 AMENDED	M.R	09/04/24
D	CR LEGEND AND DRAINAGE AMENDED	M.R	20/12/23
C	ROAD NOTATION ADDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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L. TRAN

Authorised
M. RANJANAN

Checked
W. ONG

Date
26/07/23

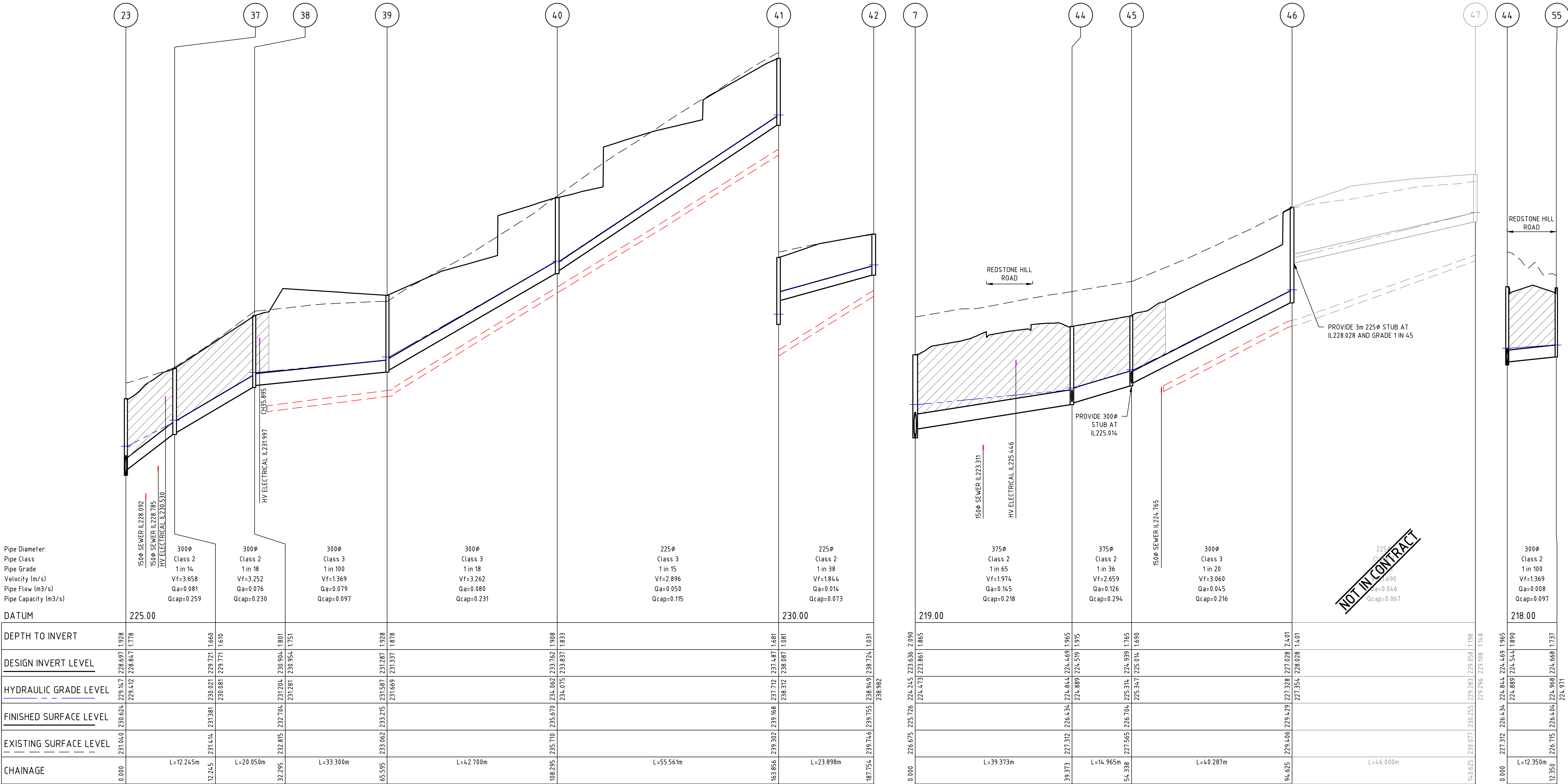
**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 3**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Dwg No
310827CR602

Rev
2

CLASS 2 CRUSHED ROCK BACKFILL

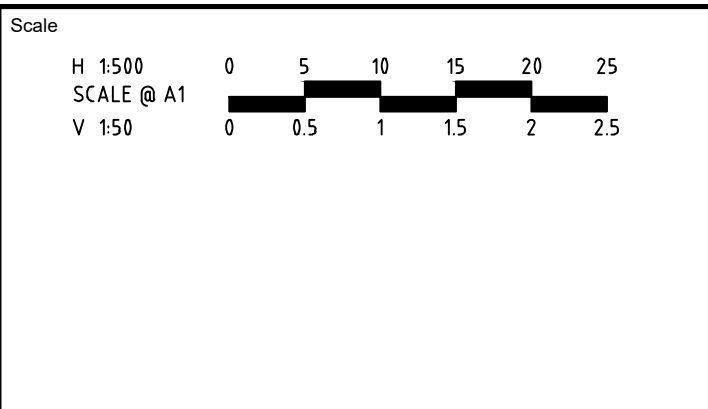


Pipe Diameter	1500	3000	3000	3000	2250	2250
Pipe Class	Class 2	Class 2	Class 3	Class 3	Class 3	Class 2
Pipe Grade	1 in 14	1 in 18	1 in 100	1 in 18	1 in 15	1 in 38
Velocity (m/s)	Vf=3.658	Vf=3.252	Vf=1.369	Vf=2.896	Vf=1.844	Vf=1.974
Pipe Flow (m3/s)	Qa=0.081	Qa=0.076	Qa=0.079	Qa=0.050	Qa=0.014	Qa=0.014
Pipe Capacity (m3/s)	Qcap=0.259	Qcap=0.230	Qcap=0.097	Qcap=0.231	Qcap=0.115	Qcap=0.073
DATUM	225.00				230.00	
DEPTH TO INVERT	1928	1660	1801	1928	1681	1031
DESIGN INVERT LEVEL	228.697	229.721	231.287	233.762	237.487	238.774
HYDRAULIC GRADE LEVEL	228.847	229.771	231.337	233.837	238.087	238.982
FINISHED SURFACE LEVEL	229.412	230.021	231.204	234.062	237.712	238.919
EXISTING SURFACE LEVEL	231.040	231.414	232.815	235.710	239.302	239.746
CHAINAGE	0.000	12.245	32.295	65.595	108.295	187.754

Pipe Diameter	1500	3750	3750	3000	2250	3000
Pipe Class	Class 2	Class 2	Class 2	Class 3	Class 3	Class 2
Pipe Grade	1 in 65	1 in 36	1 in 36	1 in 20	1 in 100	1 in 100
Velocity (m/s)	Vf=1.974	Vf=2.659	Vf=3.060	Vf=3.060	Vf=1.369	Vf=1.369
Pipe Flow (m3/s)	Qa=0.145	Qa=0.126	Qa=0.045	Qa=0.045	Qa=0.008	Qa=0.008
Pipe Capacity (m3/s)	Qcap=0.218	Qcap=0.294	Qcap=0.216	Qcap=0.067	Qcap=0.097	Qcap=0.097
DATUM	219.00				218.00	
DEPTH TO INVERT	2090	1965	1915	1765	1401	1737
DESIGN INVERT LEVEL	223.861	224.469	224.519	225.014	229.058	224.668
HYDRAULIC GRADE LEVEL	224.473	224.844	224.889	225.347	229.283	224.544
FINISHED SURFACE LEVEL	226.726	226.434	226.704	227.328	229.283	224.434
EXISTING SURFACE LEVEL	227.312	227.565	227.565	227.406	227.354	227.312
CHAINAGE	0.000	39.373	54.338	94.625	140.625	227.312

file name: 310827CR603.dwg, layout name: CR603, plotted by: Liliu Tran, file location: G:\310827\310827_VILLAWOOD\A1.dwg, plot date: 28/04/2025 04:45 PM, sheet: 19 of 25 sheets

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
D	CR LEGEND AND DRAINAGE AMENDED	M.R	20/12/23
B	ROAD NOTATION ADDED	M.R	23/10/23
C	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
Rev	Amendments	Approved	Date



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villawood properties
Communities Designed for Living

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Designed
L. TRAN

Authorised
M. RANJANAN

Checked
W. ONG

Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 4**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

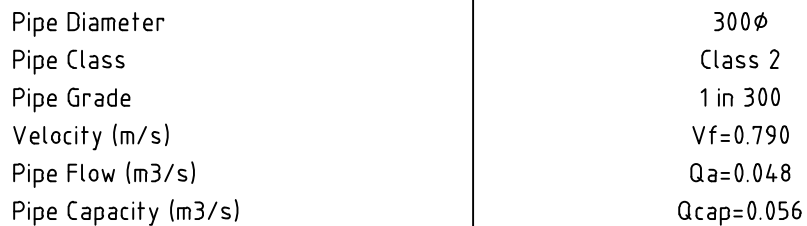
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Drg No
310827CR603

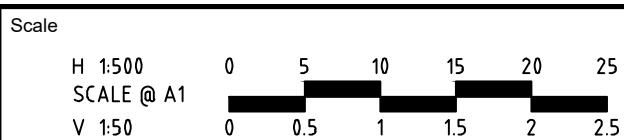
Rev
1



- PITS LIDS AND CRUSHED ROCK BACKFILL ARE TO BE CONSTRUCTED TO EXISTING OR 300mm BELOW FINISHED SURFACE LEVEL, WHICH EVER LEVEL IS LOWER.
- ADDITIONAL FILL REQUIRED ON DRAINAGE PIPES ABOVE CRUSHED ROCK LEVEL TO MATCH BACK INTO EXISTING SURFACE LEVEL OR PROPOSED FINISHED SURFACE LEVEL TO BE ORDINARY FILL COMPACTED TO HUME CITY COUNCIL STANDARDS & SPECIFICATIONS.
- ROAD CONSTRUCTION SURFACE LEVEL ABOVE CRUSHED ROCK SURFACE LEVEL ARE TO HAVE BATTERS GRADED AT 1in 6 BACK TO EXISTING SURFACE LEVEL WITH SILT PREVENTION MEASURES IN PLACE TO MINIMIZE SILT INFILTRATION INTO DRAINAGE NETWORK.
- DRAINAGE PIT LEVELS SHOWN INDICATE ULTIMATE DRAINAGE DESIGN.

[illegible]

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
G	PIT SCHEDULE AMENDED	M.R	01/08/24
F	PIT 11.1 AND PIT SCHEDULE AMENDED	M.R	09/04/24
E	DRAINAGE PIT SCHEDULE AMENDED	M.R	19/01/24
D	CR LEGEND, DRAINAGE & PIT SCHEDULE AMENDED	M.R	20/12/23
C	ROAD NOTATION ADDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
Rev	Amendments	Approved	Date



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Authorised
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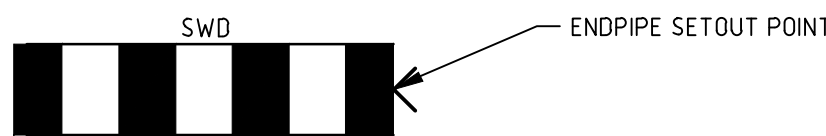


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W. ONG
Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 5
HUME CITY COUNCIL
VILLAWOOD PROPERTIES**

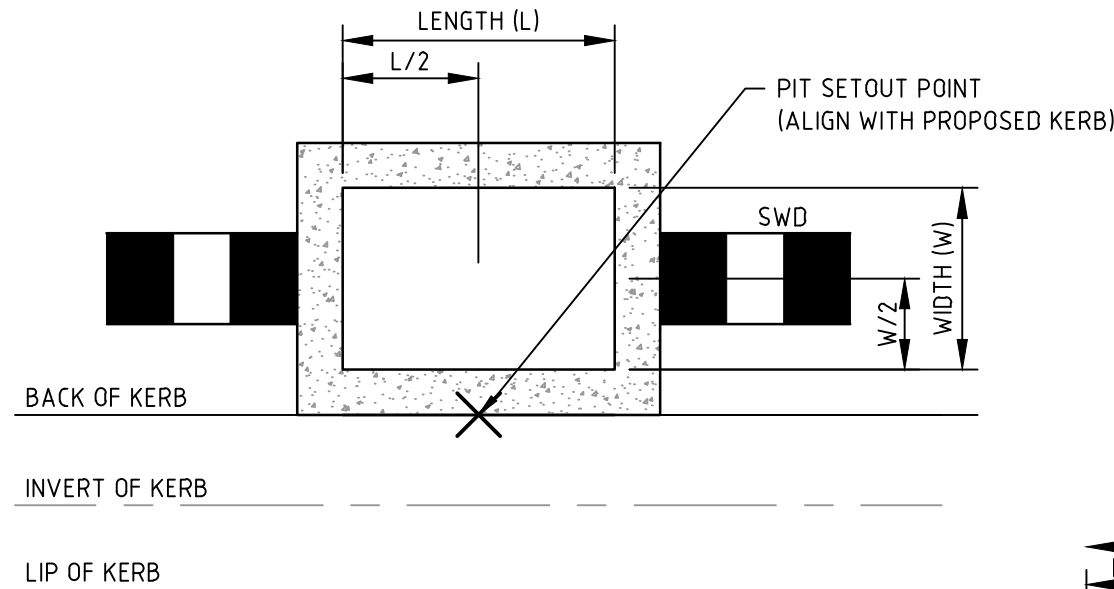
AS CONSTRUCTED **310827CR604**

NAME	POINT	EASTING	NORTHING
1	B	302206.445	5835622.603
2	B	302204.525	5835640.597
3	B	302146.940	5835687.076
3.1	B	302111.129	5835715.978
3.2	B	302106.316	5835716.906
3.3	B	302087.250	5835732.293
4	B	302085.321	5835736.806
5	B	302018.625	5835790.634
14	B	301776.592	5835692.210
45	A	301884.029	5835882.812
46	B	301858.727	5835851.461
EP1	C	302212.670	5835617.579
EP2	C	301745.204	5835684.840
EP3	C	301760.104	5835654.544
EP4	C	301837.649	5835823.752

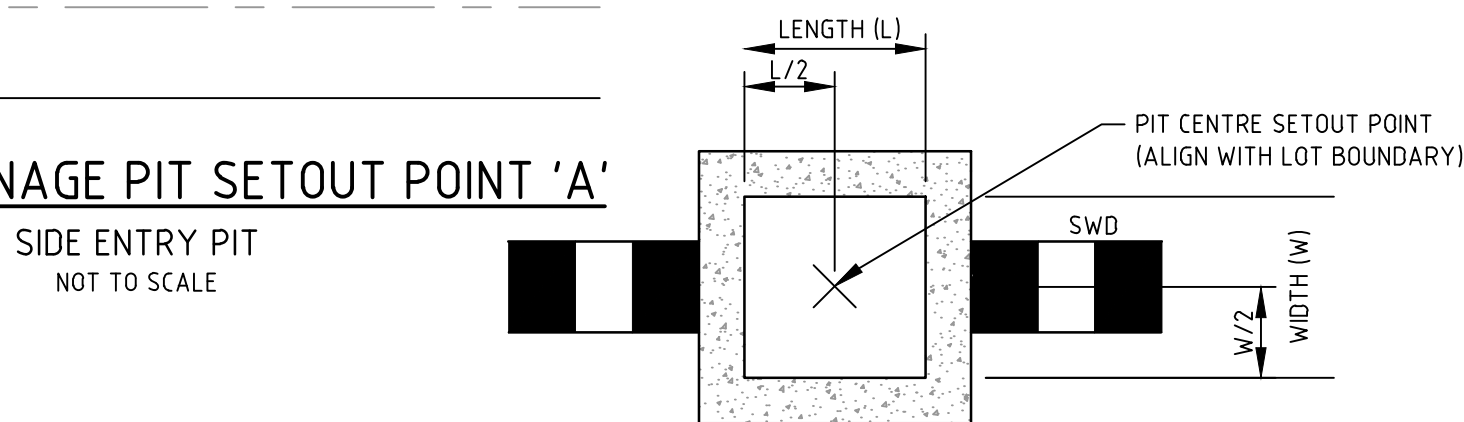


TYPICAL DRAINAGE SETOUT POINT 'C'

ENDPIPE
NOT TO SCALE



TYPICAL DRAINAGE PIT SETOUT POINT 'A'



TYPICAL DRAINAGE PIT SETOUT POINT 'B'

JUNCTION PIT/ EASEMENT PIT
NOT TO SCALE

TYPICAL DRAINAGE SETOUT POINT 'C'

ENDPIPE
NOT TO SCALE

PAVEMENT LAYER	DESCRIPTION	DEPTH (mm)		
		TYPE A	TYPE B	TYPE C
ASPHALT WEARING COURSE	SIZE 10 TYPE N CLASS 320 BINDER	30		
	SIZE 14 TYPE N CLASS 320 BINDER		40	
	SIZE 14 TYPE H CLASS 320 BINDER			40
ASPHALT INTERMEDIATE COURSE	SIZE 20 TYPE SI CLASS 320 BINDER			75
ASPHALT BASE COURSE	SIZE 10 TYPE N CLASS 320 BINDER	30		
	SIZE 14 TYPE HP CLASS A10E BINDER		40	
	SIZE 20 TYPE SF CLASS 320 BINDER			75
	SIZE 10 SAMI SEAL CLASS S18RF	10	10	
	BITUMINOUS PRIMECOAT	Y	Y	Y
BASE COURSE	VICROADS 20mm CLASS 2 FCR	130	110	
	VICROADS 20mm 3% CEMENT TREATED CLASS 3 FCR			110
UPPER SUBBASE COURSE	VICROADS 20mm CLASS 3 FCR	140	150	
LOWER SUBBASE COURSE	VICROADS 20mm CLASS 4 FCR	100	130	100
CAPPING LAYER	VICROADS TYPE A CAPPING LAYER (CBR OF ≥8%, SWELL <15%, K-5 x 10 ⁹ m/s)	150	150	150
CONSTRUCTION LAYER	VICROADS TYPE A CAPPING LAYER (CBR OF ≥8%, SWELL <15%, K-5 x 10 ⁹ m/s)	150	150	150
TOTAL PAVEMENT DEPTH		740	780	700

- ### TARGET COMPACTION LEVELS FOR PAVEMENT MATERIALS:

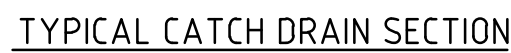
CONCRETE PAVEMENT NOTES:		ROAD NAME	TYPE
1.	ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND CCAA LITERATURE; OR VIC ROADS STANDARDS FOR NON RESIDENTIAL STREETS.	AKIN ROAD	A
		SPINE BILL STREET	A
		BOOBOOK ROAD	B
2.	ALL CONCRETE TO BE MINIMUM 32MPa COMPRESSIVE STRENGTH.	REDSTONE HILL ROAD	C

1. ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND CCAA LITERATURE, OR VIC ROADS STANDARDS FOR NON RESIDENTIAL STREETS.
2. ALL CONCRETE TO BE MINIMUM 32MPa COMPRESSIVE STRENGTH
3. CONCRETE TO BE THOROUGHLY COMPACTED USING EITHER SURFACE AND/OR IMMERSSION VIBRATORS, PARTICULARLY AROUND REINFORCEMENT AND IN CORNERS OF FORMS.
4. PRIOR TO CASTING, THE UNBOUND GRANULAR SUBBASE MUST BE DAMP TO ENSURE NO EARLY "DRYING OUT" OF THE CONCRETE.
5. CURING OF CONCRETE IS ESSENTIAL - IDEALLY BY MAINTAINING WET HESSIAN OR SEALING WITH PLASTIC SHEETING.
6. SAW CUTTING OF CONCRETE SHOULD BE COMMENCED AS SOON AS CONCRETE PERMITS BY EXPERIENCED CONTRACTORS, BUT NO LATER THAN 12 HOURS AFTER POUR.
7. ALL DOWELS TO BE GRADE 250R STEEL BARS, 450mm LONG AND PLACED AT 300mm CENTRES. REFER CCAA - "CONCRETE PAVEMENT DESIGN FOR RESIDENTIAL STREETS" FOR DOWEL DIAMETERS. DOWELS MUST BE ACCURATELY PLACED TO ENSURE THE JOINT DOES NOT "LOCK". INSERTION OF DOWELS DURING THE PLACING OF CONCRETE IS NOT ACCEPTABLE. DOWELS MUST BE SAWN AND NOT CROPPED.
8. ALL JOINTS TO BE APPROPRIATELY SEALED TO RESIST THE INTRUSION OF SAND AND GRAVEL AND TO MINIMISE THE INGRESS OF WATER.

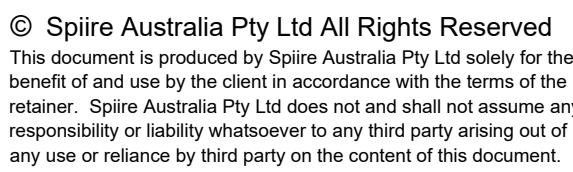


H 1:100
SCALE @ A1

SPiIRE DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY, ADEQUACY OR APPROPRIATENESS OF THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS.
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Designed	L. TRAN
Authorised	M. RANJANAN

Checked
W. ONG
Date
26/07/23

AS CONSTRUCTED **310827CR700**

file name: 310827CR701.dwg, layout name: CR701, plotted by: Lillian Tran, plot date: 08/04/2025 4:43 PM, sheet 22 of 25 Sheets

SODIC SOIL RECOMMENDATIONS

- NOTES:
- WHERE SODIC SOILS ARE ENCOUNTERED, SODIC SOIL INVESTIGATIONS SHOULD BE CARRIED OUT BY A QUALIFIED SOIL SCIENTIST AND THE RECOMMENDATIONS OF THE REPORT SHOULD BE APPLIED DURING ROAD & DRAINAGE DESIGN AND CONSTRUCTION.
 - REFER TO RECOMMENDATIONS ON SODIC SOIL ASSESSMENT REPORT "J004872 REDSTONE ESTATE, SUNBURY SODIC SOIL INVESTIGATION V-3" DATED JANUARY 2024 BY SESL AUSTRALIA

The following practices should be adopted for dispersive soils on-site that will not be resealed within one month or topsoiled and hydroseeded:

- Soils from different horizons must be stripped and stockpiled separately in view of the variation in amelioration requirements.
- Any soils excavated from below 1.5 m should treated as recommended below then be kept aside separately and the resulting stockpiles checked for salinity.
- Soil stockpiles should not exceed 2 metres in height and must never be trafficked.
- Stockpiled soils should have gypsum applied as follows:

Table 5 - Stockpiled Soil Gypsum and Lime Rates

Soil depth	Gypsum application rate (kg/m ²)	Lime Application Rate (kg/m ²)
0-5 cm	8.7	Nil
5-50 cm	14.5	Nil
50-100 cm	12.5	Nil
100-150 cm	15.0	Nil
150-200 cm	16.0	Nil

- Where potentially dispersive soils have been exposed but not excavated (e.g., soil remaining post-stripping), the following rates of gypsum should be applied subject to the comments below:
- Gypsum/lime application is not required under road pavements and footpaths that are sealed within a short time from disturbance (approximately 2-4 weeks).
- An alternative to gypsum treatment on house blocks that have been stripped and contoured is to re-topsoil the scalped land with gypsum treated topsoil and hydroseed with grass species able to tolerate the soil conditions.

Table 6 - In-Situ Soil Gypsum and Lime Rates (please note the units)

Soil depth	Gypsum application rate (g/m ²)	Lime Application Rate (g/m ²)
0-5cm	870	Nil
5-50cm	1450	Nil
50-100cm	1250	Nil
100-150cm	1500	Nil
150-200cm	1600	Nil

(NOTE gypsum application rate units differ between the two tables)

- Gypsum applied to stockpiled soils must be thoroughly incorporated throughout the soil matrix. Following incorporation, the soils should be watered well (via irrigation or rainfall) to allow the gypsum to stabilise the soil.
- Gypsum applied to exposed *in situ* soils must be surface applied and worked into the top 10 cm using a rotary hoe or equivalent and watered in well.

- There is no withholding period following incorporation of gypsum and soils may be placed immediately making sure that subsoils are again placed at depth and topsoils are placed on top of the subsoil. Applications of such high gypsum levels will temporarily raise salinity levels due to displaced sodium and magnesium so plantings should be adequately watered or irrigated to prevent stress during establishment. With time salinity will leach out.
- Deep excavation soil, kept separately in stockpile should be checked for salinity. Where salinity occurs, such material should only be used for soil placements covered with a minimum of 1.0 m of non-saline soil. Exposure of such material in the rootzone of plants (<1.0m depth) will result in high risk of landscape failure through salinity effects.

5.4 Hydroseeding

The following process could be used when topsoiling and hydroseeding is to be used as a soil stabiliser.

- After sculpting and shaping place 100 - 150 mm topsoil back onto the house blocks.
- Broadcast gypsum at rates required in Table 6 onto soil surface.
- Incorporate by use of a tyned instrument or water by using a water truck.
- Spread hydroseed using a salt tolerant species because the use of gypsum will cause a short-term spike in salinity.

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
A	ISSUED TO COUNCIL	M.R	09/04/24
Rev	Amendments	Approved	Date

Scale	



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L. TRAN

Authorised
M. RANJANAN

Checked
W. ONG

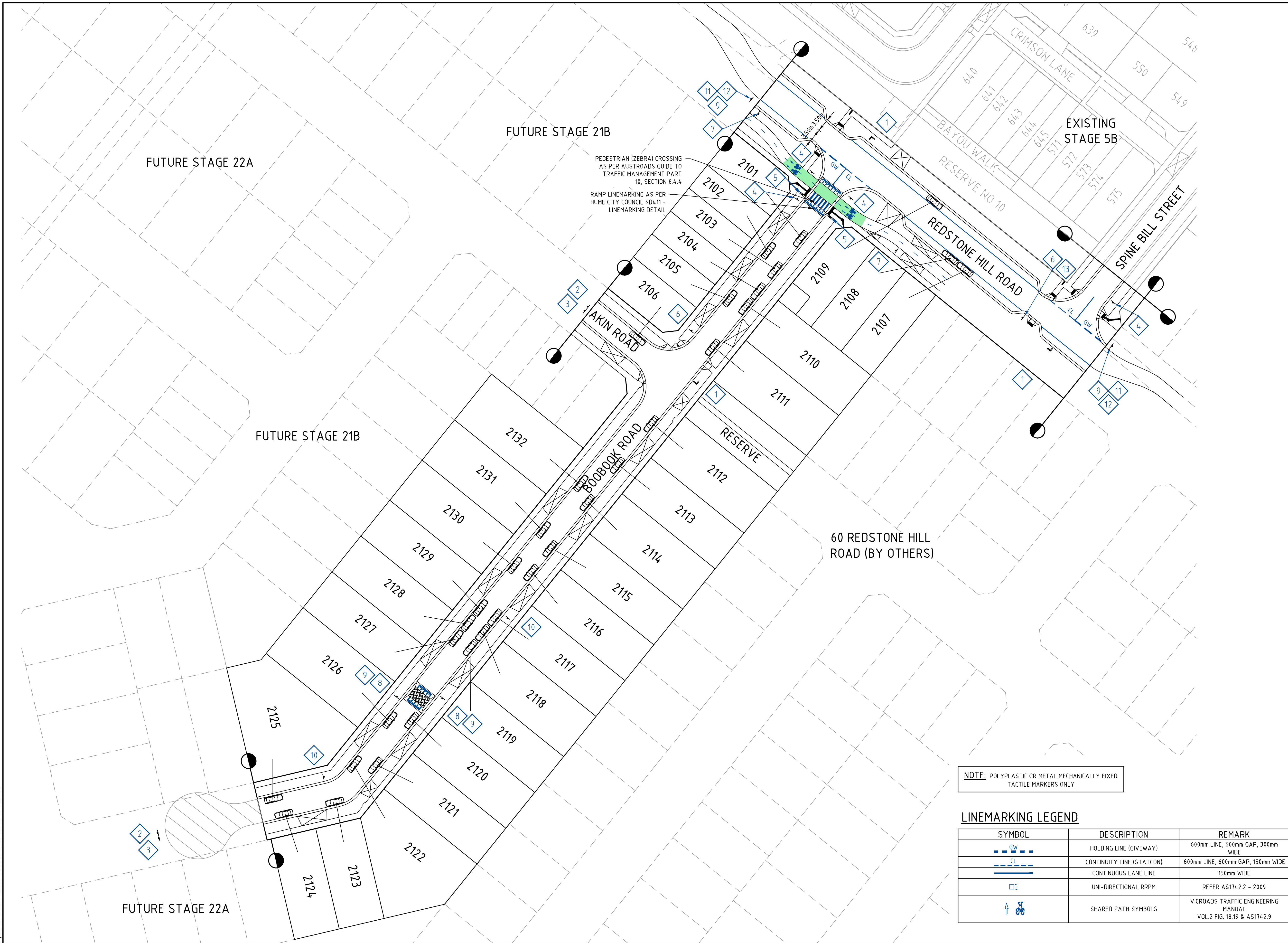
Date
09/04/24

REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
SODIC SOIL RECOMMENDATIONS
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED

Drg No
310827CR701

Rev
1



SIGNAGE SCHEDULE

REFERENCE	SIGN
1	
2	
3	
4	R1-2
5	R3-1
6	W6-9 W8-23
7	W6-8
8	W5-10
9	W8-2
10	W3-4
11	W5-19
12	W1-4
13	W8-3

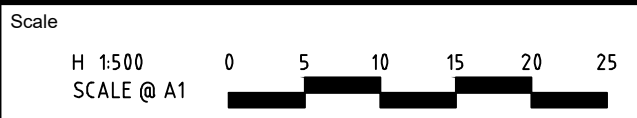
NOTE: STREET SIGNS ARE TO BE MOUNTED ON LIGHT POLES, WITH A COUNCIL APPROVED BRACKET, IN LIEU OF SIGN POLES WHERE THE TWO POLES ARE IN CLOSE PROXIMITY AND WHERE THE STREET SIGN WOULD NOT BE COMPROMISED IN ITS PURPOSE BY THE RELOCATION.

NOTE: POLYPLASTIC OR METAL MECHANICALLY FIXED TACTILE MARKERS ONLY

LINEMARKING LEGEND

SYMBOL	DESCRIPTION	REMARK
	HOLDING LINE (GIVEWAY)	600mm LINE, 600mm GAP, 300mm WIDE
	CONTINUITY LINE (STATCON)	600mm LINE, 600mm GAP, 150mm WIDE
	CONTINUOUS LANE LINE	150mm WIDE
	UNI-DIRECTIONAL RRPM	REFER AS1742.2 - 2009
	SHARED PATH SYMBOLS	VICROADS TRAFFIC ENGINEERING MANUAL VOL.2 FIG. 18.19 & AS1742.9

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
H	DRIVEWAY ADDED	M.R	22/05/24
G	DRIVEWAY ADDED	M.R	22/05/24
F	DRIVEWAY ADDED	M.R	22/05/24
E	SIGNAGE AMENDED	M.R	19/01/24
D	SIGNAGE AMENDED	M.R	20/12/23
C	SIGNAGE AMENDED	M.R	23/10/23
Rev	Amendments	Approved	Date



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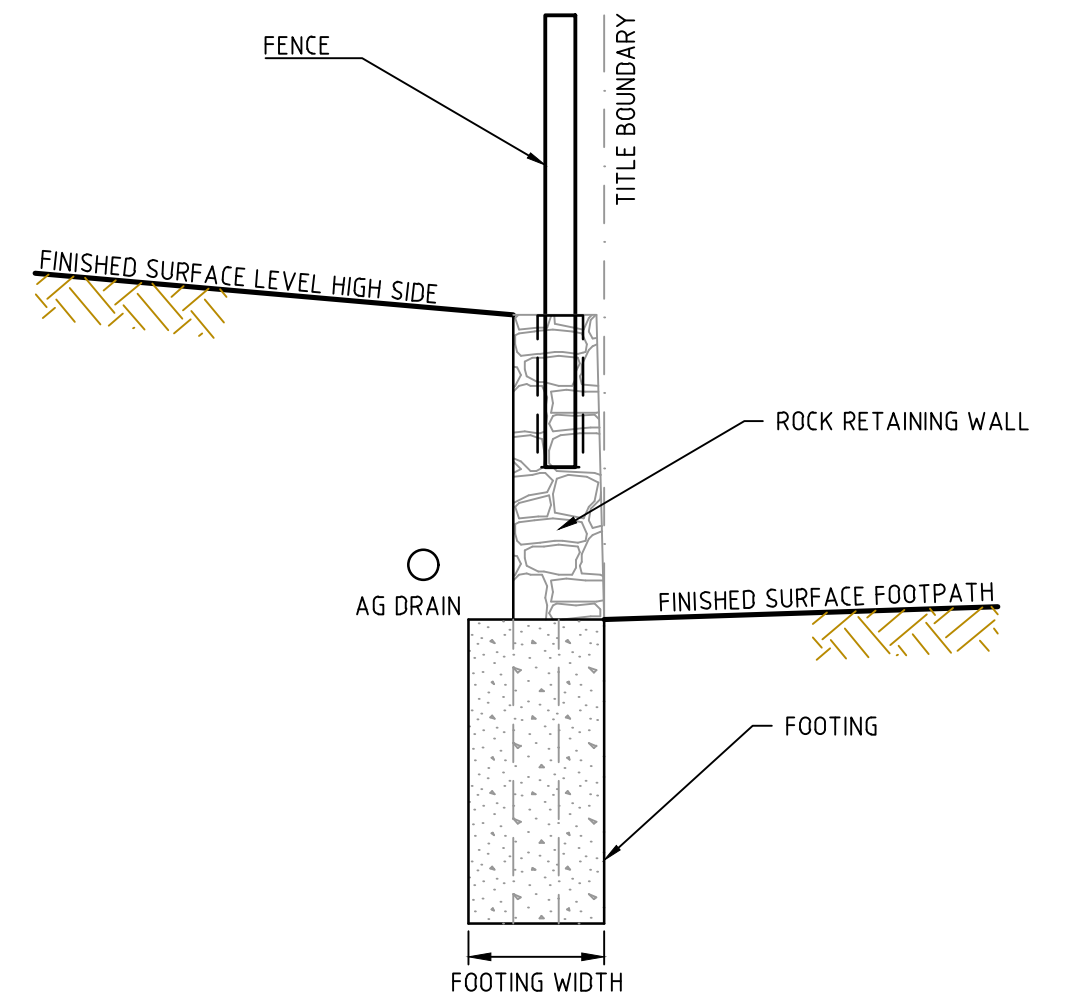
Designed
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Authorised
M. RANJANAN

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W. ONG
Date
26/07/23

REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
SIGNAGE AND LINEMARKING
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

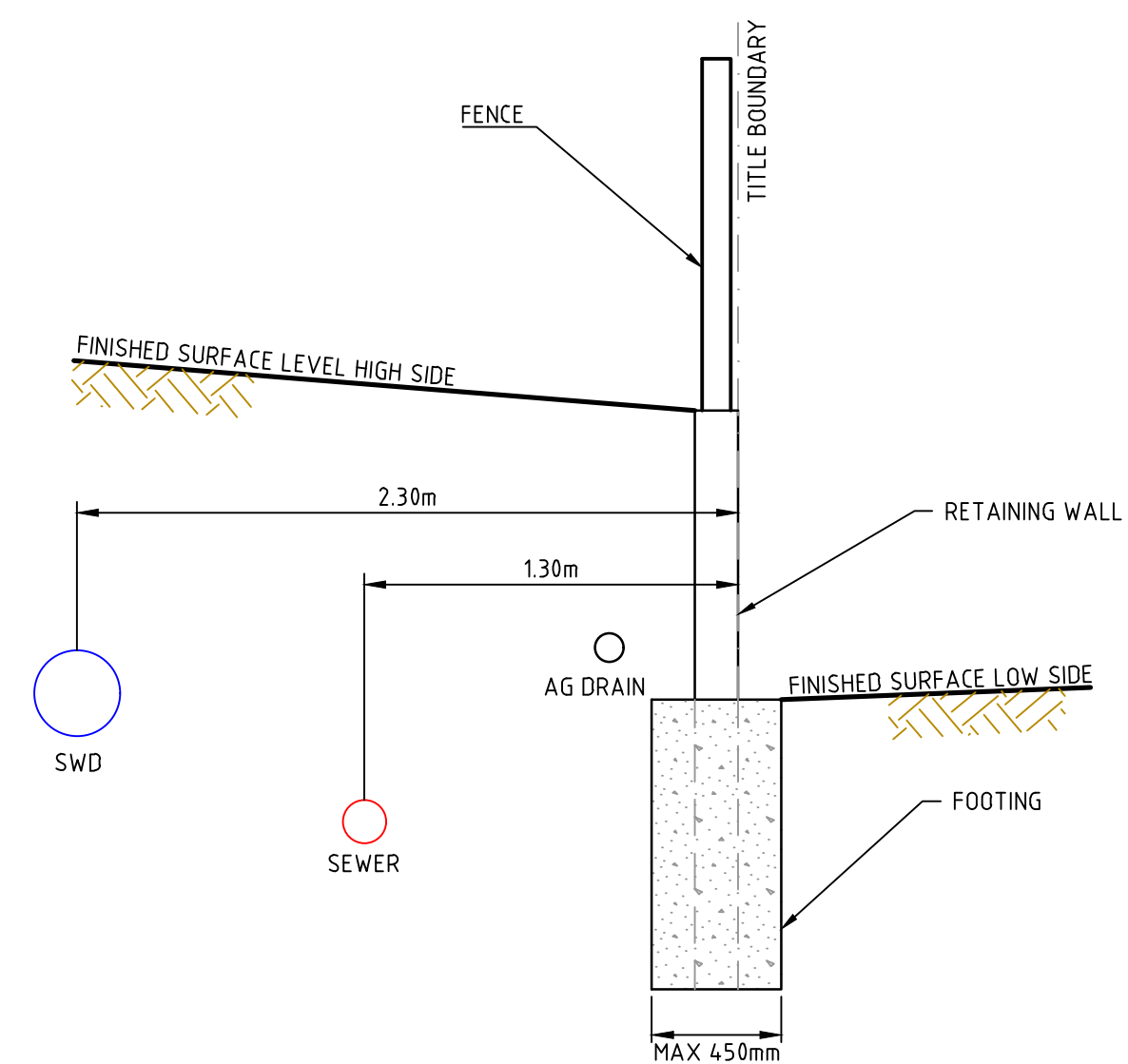
AS CONSTRUCTED Drg No 310827CR800 Rev 1

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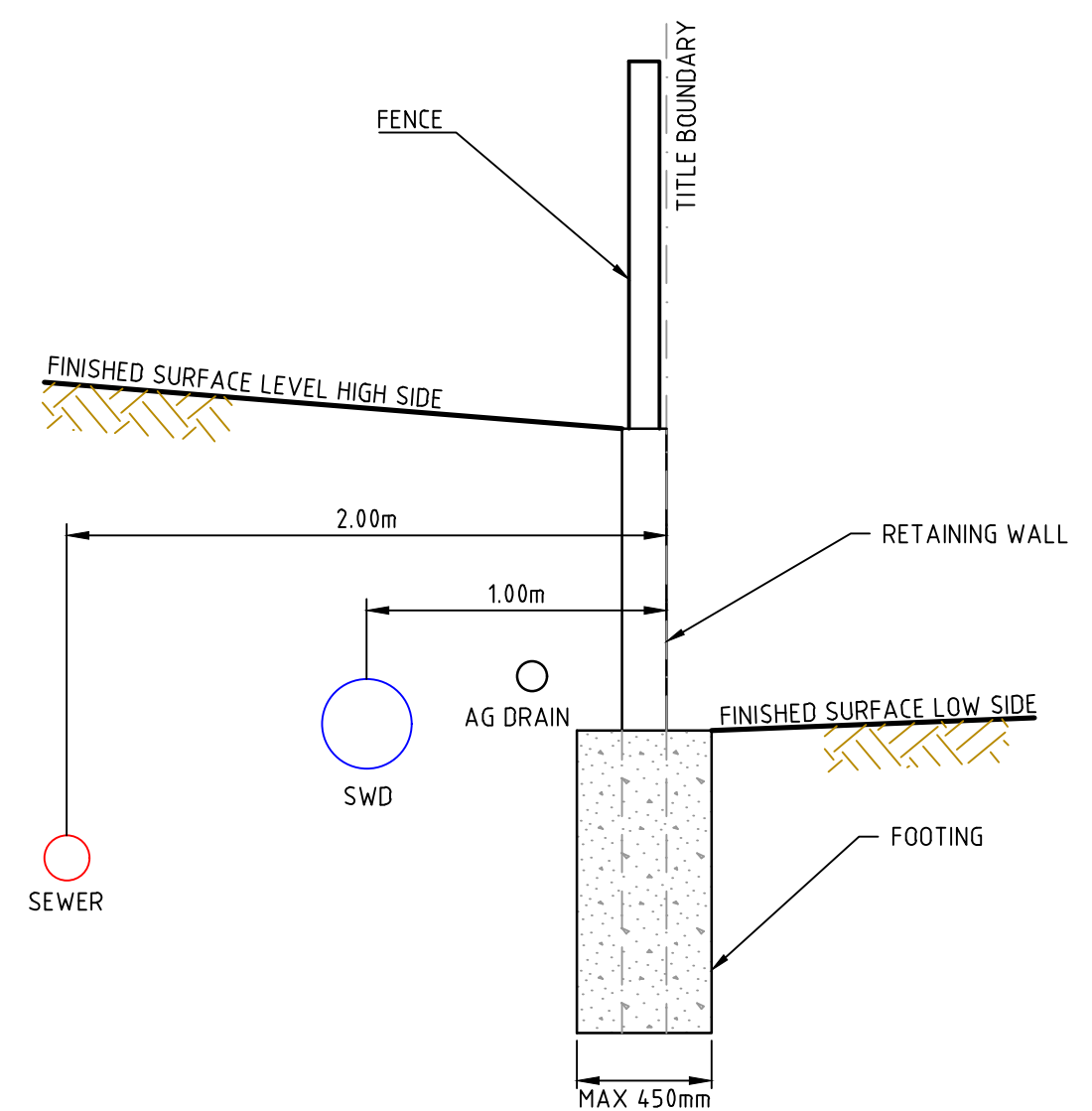
ROCK RETAINING WALL TYPICAL DETAIL

NOT TO SCALE



SLEEPER RETAINING WALL TYPICAL DETAIL

NOT TO SCALE



SLEEPER RETAINING WALL TYPICAL DETAIL

NOT TO SCALE

NOTES:

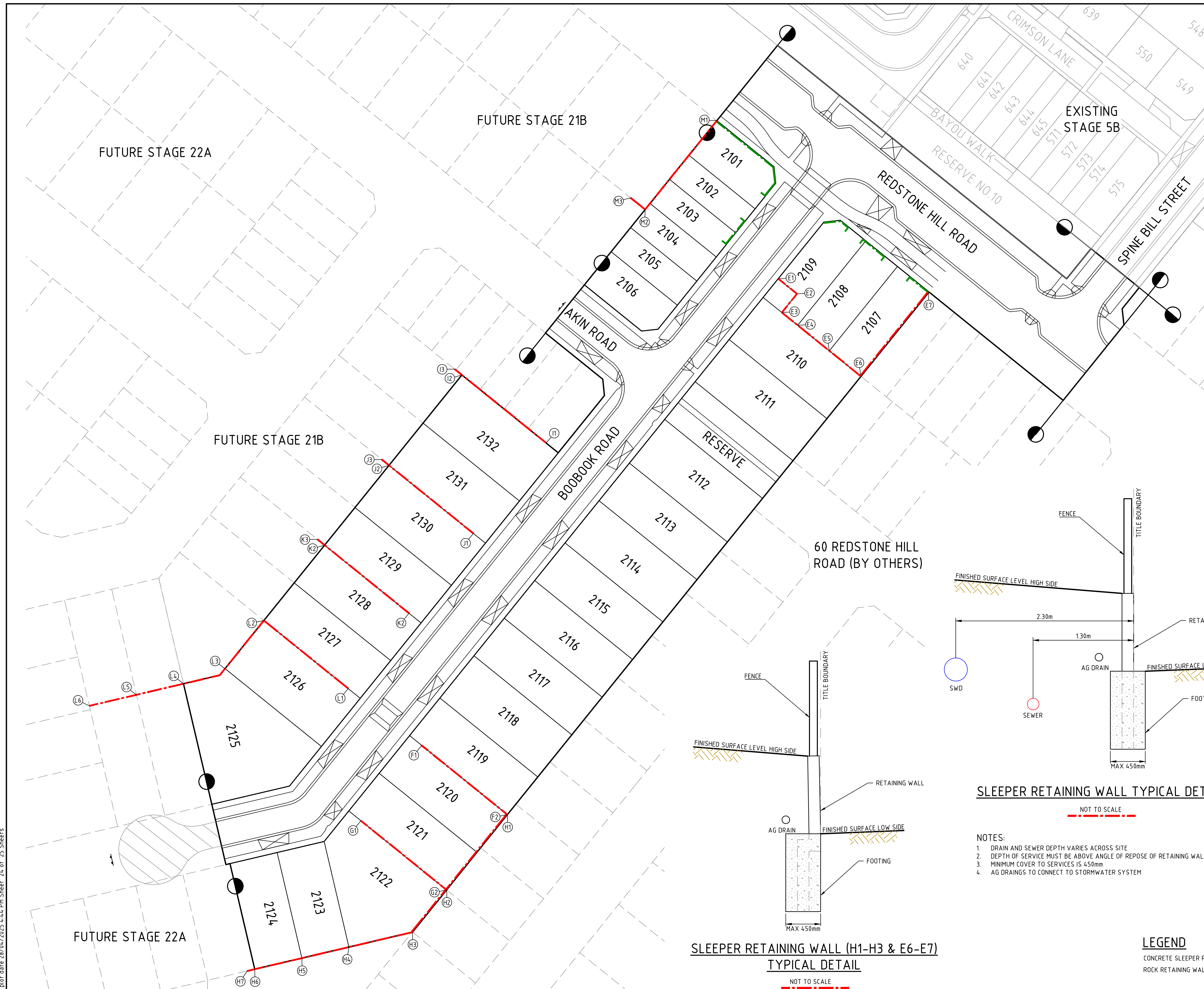
1. DRAIN AND SEWER DEPTH VARIES ACROSS SITE
2. DEPTH OF SERVICE MUST BE ABOVE ANGLE OF REPOSE OF RETAINING WALL FOOTING
3. MINIMUM COVER TO SERVICES IS 450mm
4. AG DRAINS TO CONNECT TO STORMWATER SYSTEM

LEGEND

CONCRETE SLEEPER RETAINING WALL
ROCK RETAINING WALL

NOTE:
THE RETAINING WALL PLAN IS NOT PART OF THE
SUBDIVISIONAL WORKS OR APPROVAL. IT IS SUBJECT TO
SEPARATE APPROVAL, THIS SHEET IS SUPPLEMENTARY
TO THE ENGINEERING DRAWINGS.

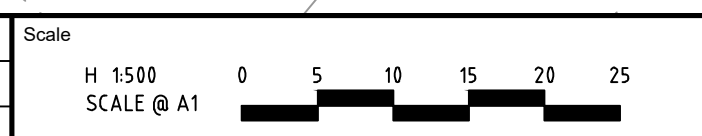
NOTE:
FOR LEVELS OF RETAINING WALLS FRONTING STREETS,
REFER TO RELEVANT ROAD/STREET LONGITUDINAL
SECTIONS



SLEEPER RETAINING WALL (H1-H3 & E6-E7)
TYPICAL DETAIL

NOT TO SCALE

1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
H	SLEEPER RETAINING WALL REFERENCE AMENDED	M.R	01/08/24
G	RETAINING WALL E ADDED	M.R	13/05/24
F	SLEEPER RETAINING WALL DETAIL ADDED	M.R	19/01/24
E	TYPICAL DETAILS ADDED	M.R	20/12/23
D	RETAINING WALL B AMENDED	M.R	23/10/23
C	RETAINING WALLS A, B & H AMENDED	M.R	11/09/23
Rev	Amendments	Approved	Date



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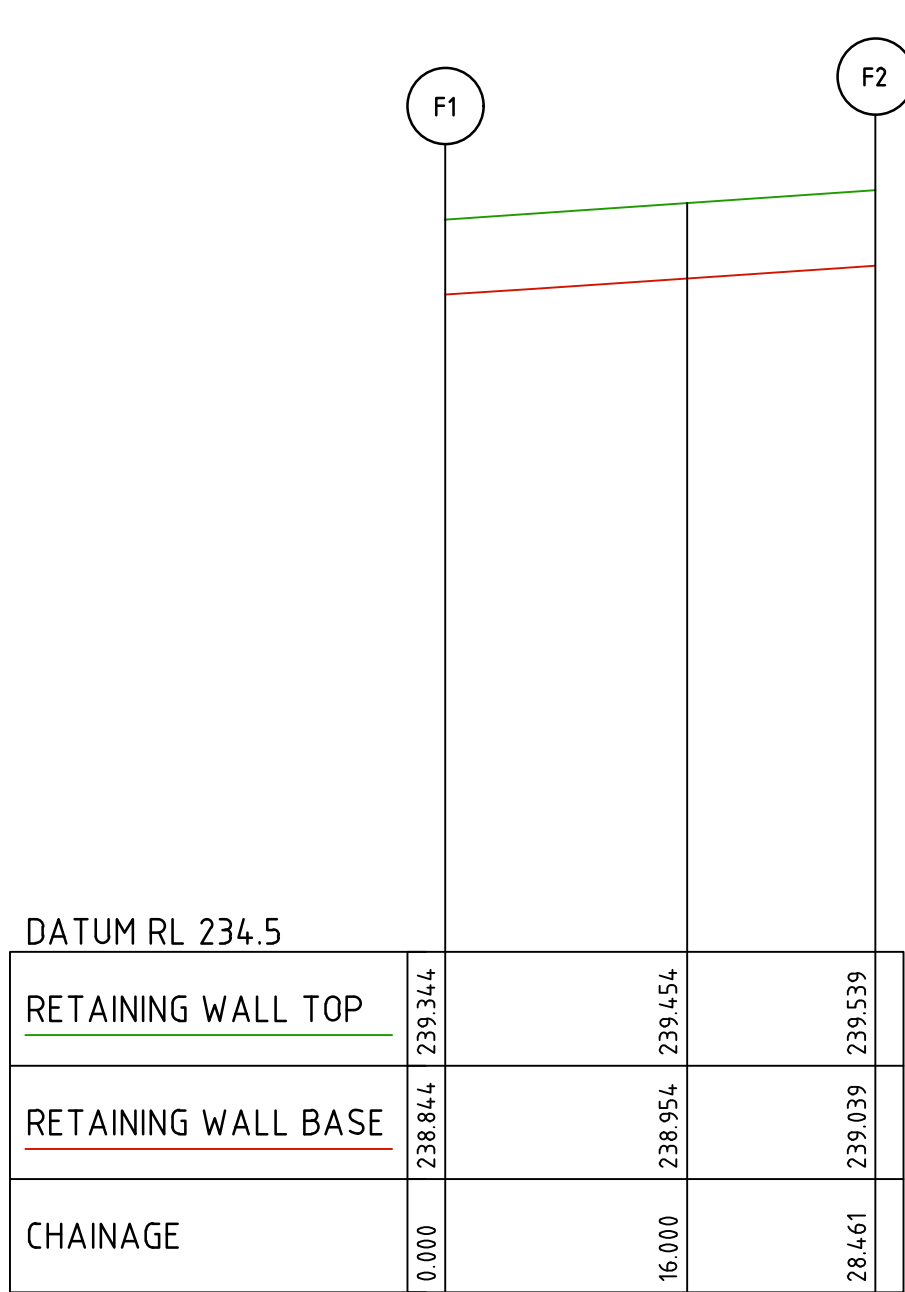


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W. ONG
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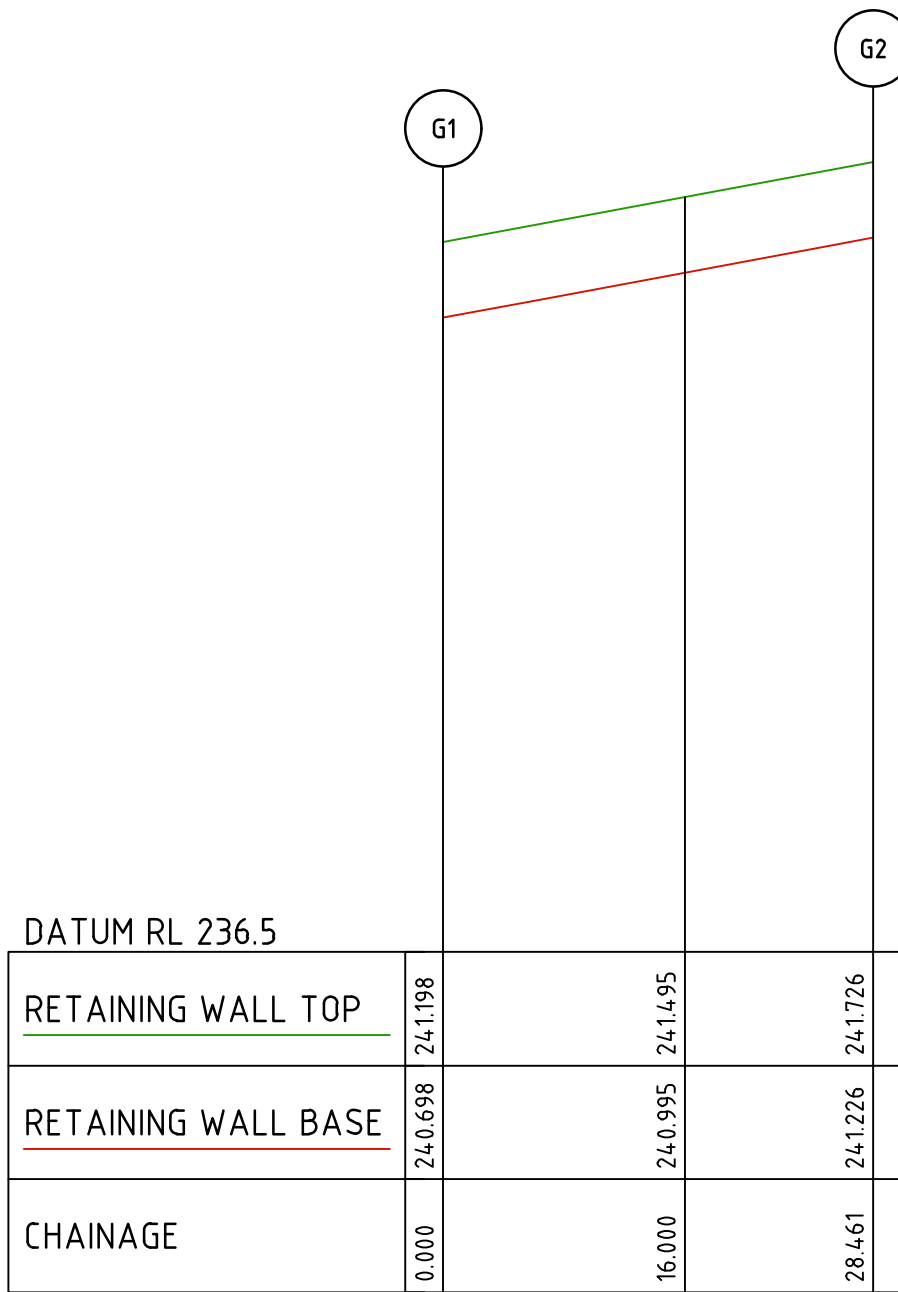
REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
RETAINING WALLS - SHEET 1
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

AS CONSTRUCTED
310827CR900
1

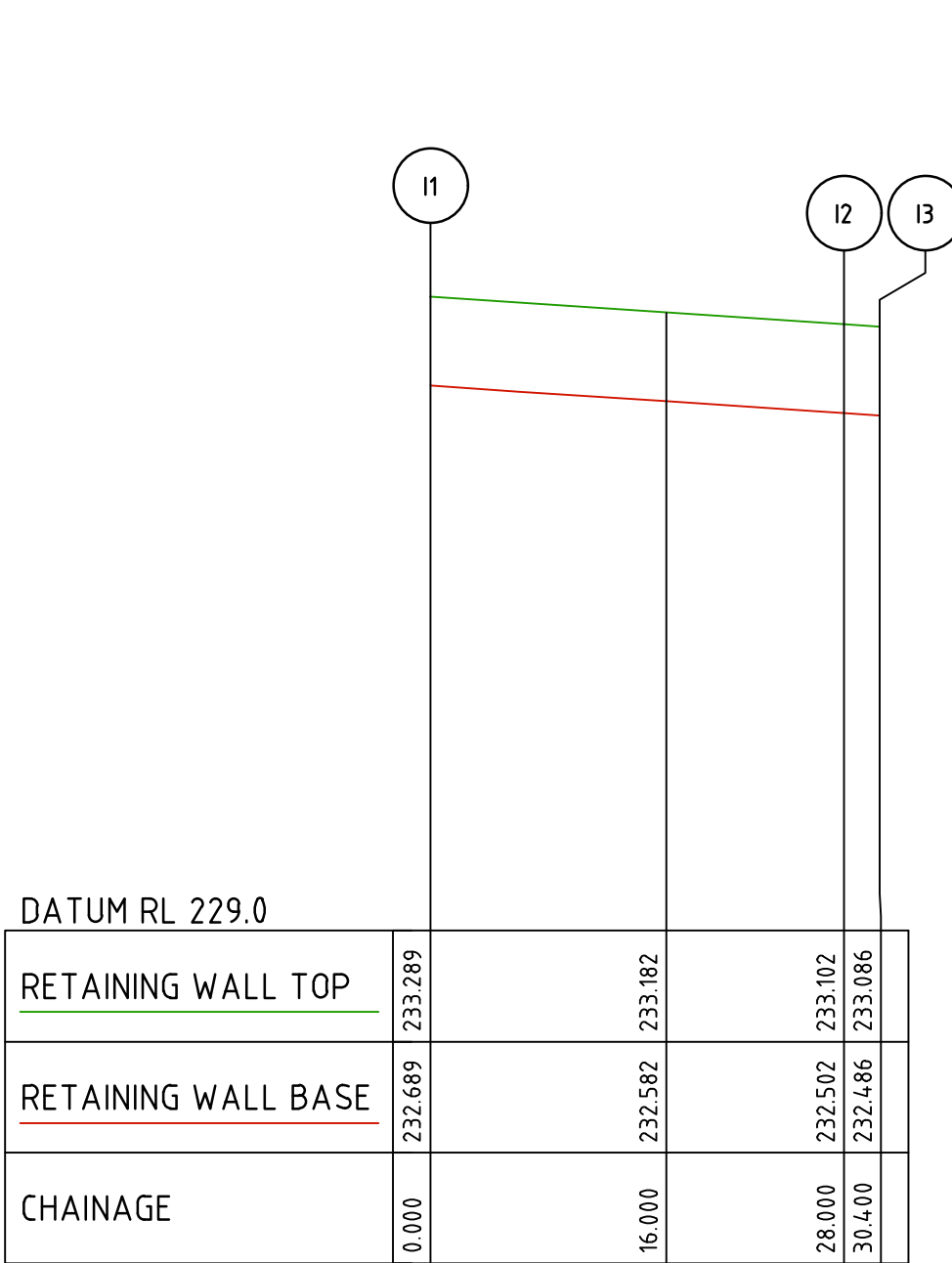
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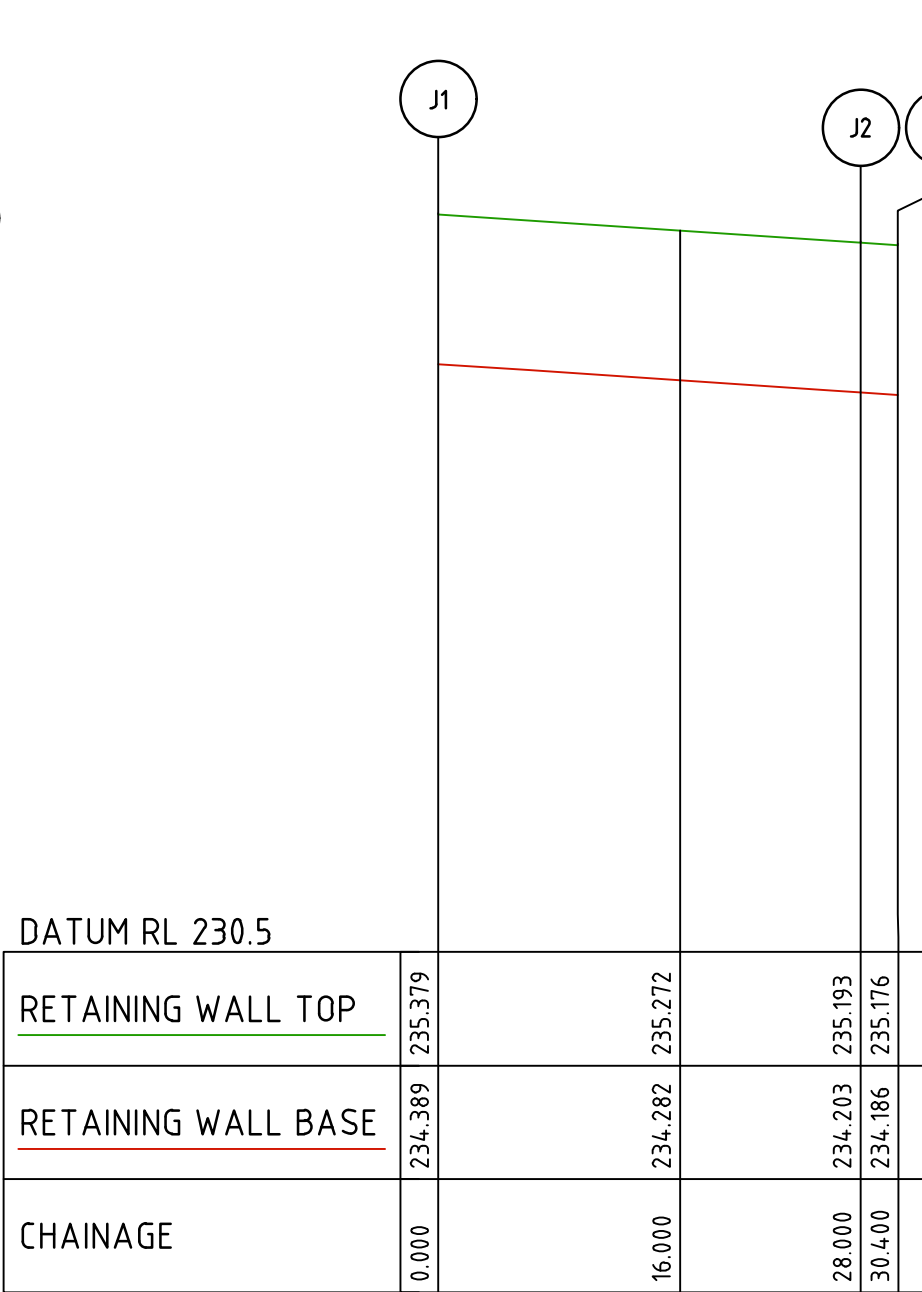
RETAINING WALL F



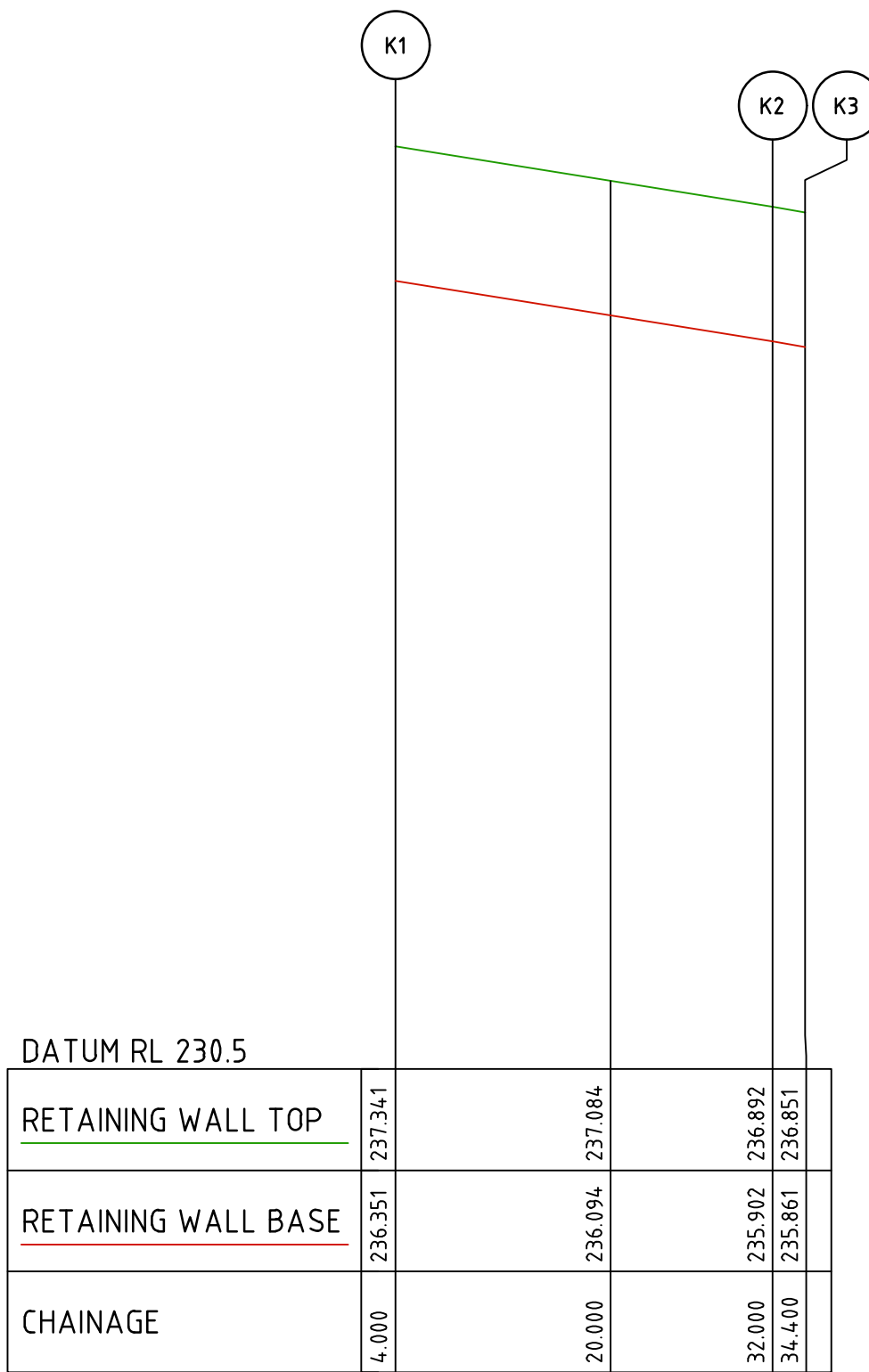
RETAINING WALL G



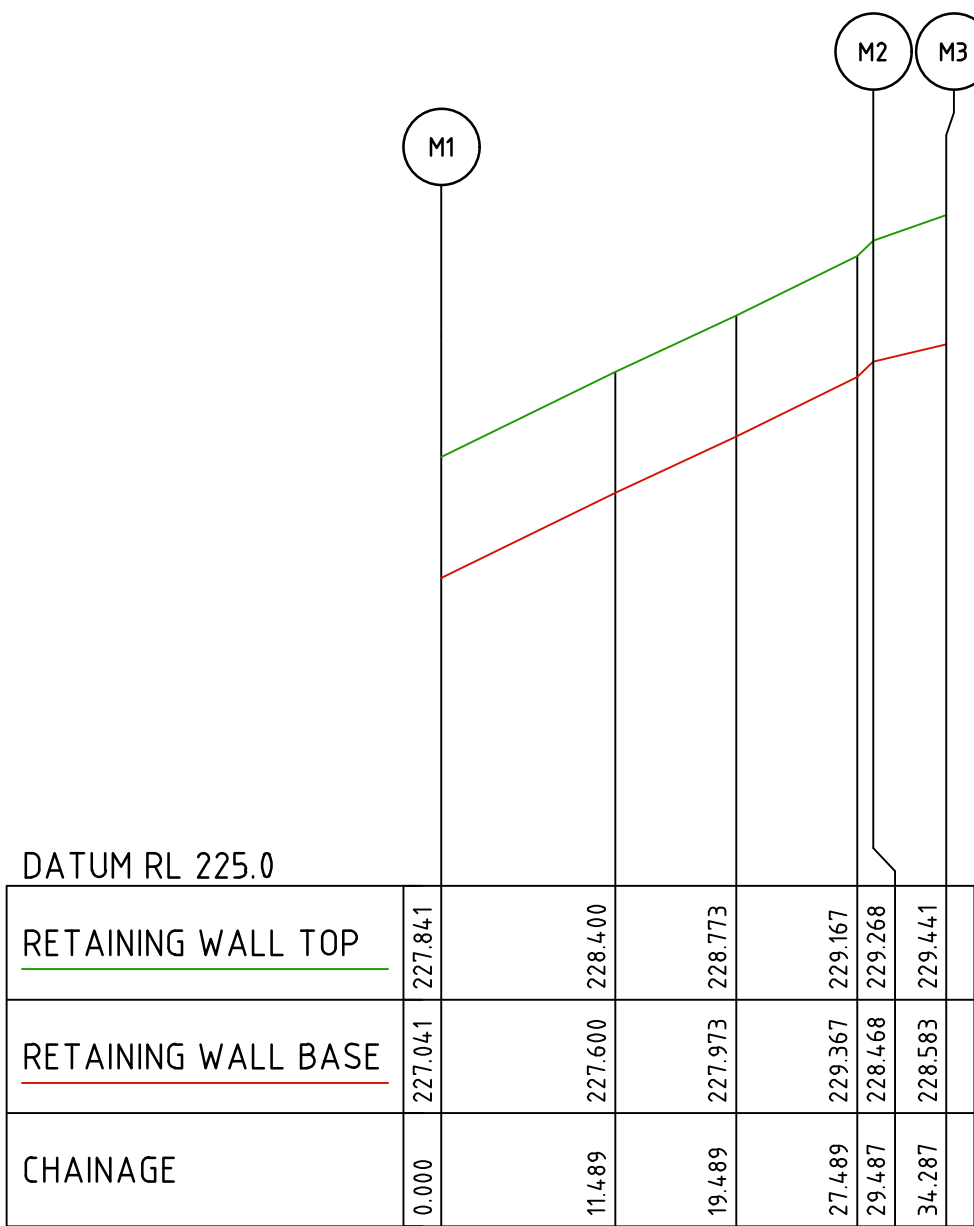
RETAINING WALL I



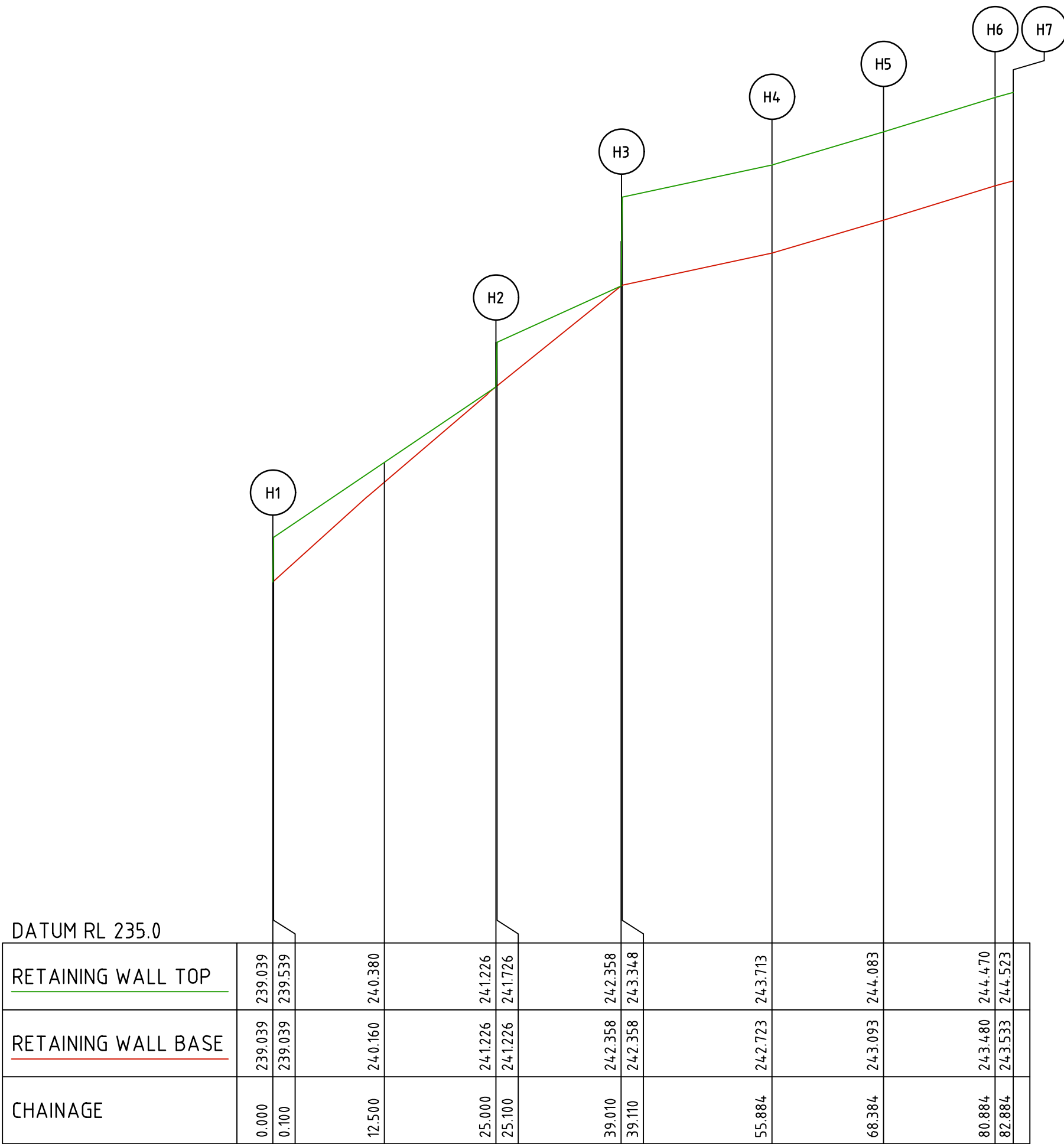
RETAINING WALL J



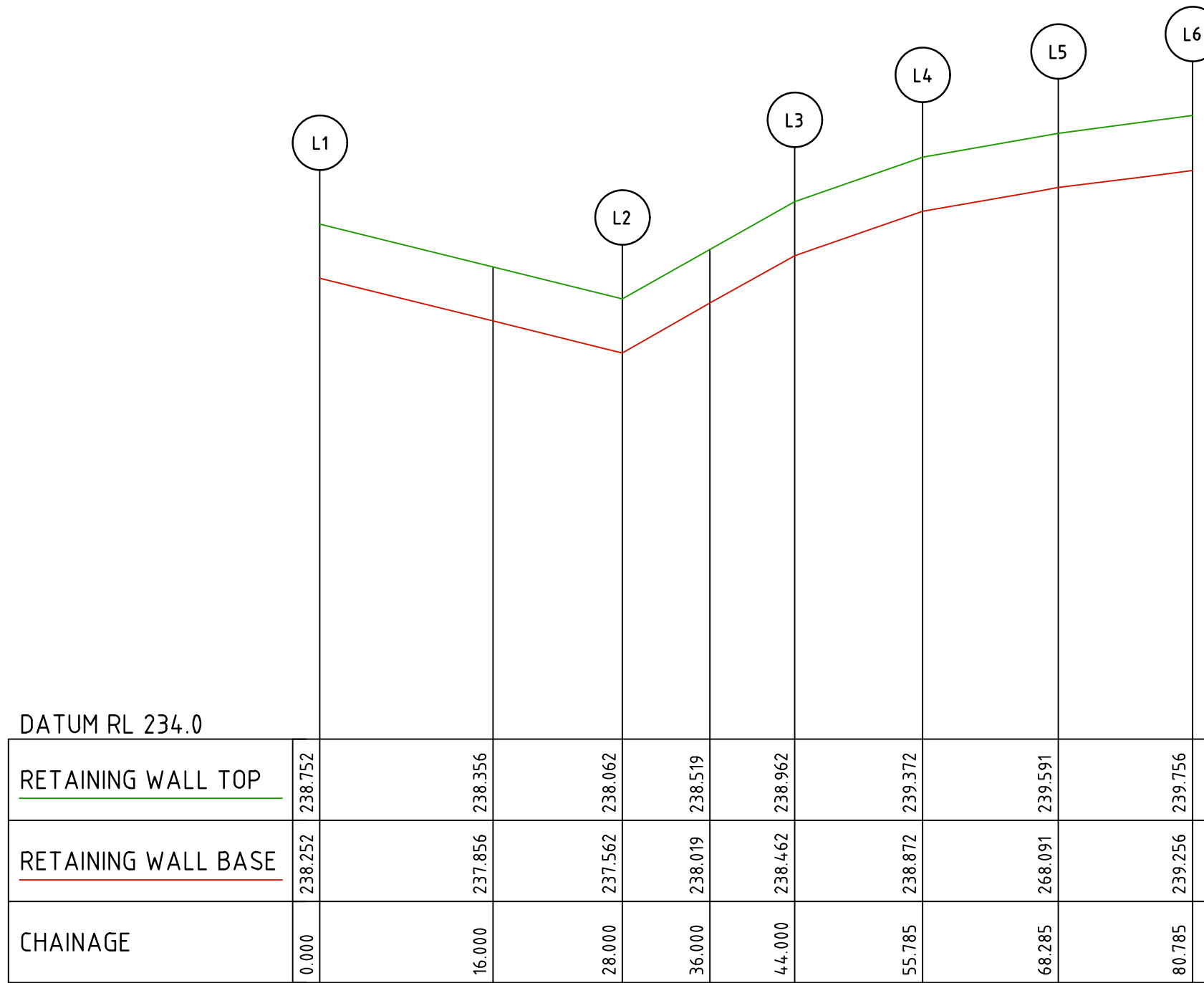
RETAINING WALL K



RETAINING WALL M



RETAINING WALL H

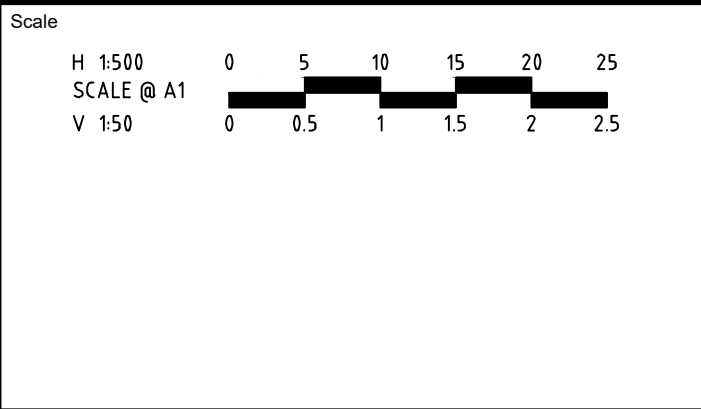


RETAINING WALL L



RETAINING WALL E

Rev	Amendments	Approved	Date
1	AS CONSTRUCTED	M.R	28/04/25
0	ISSUED FOR CONSTRUCTION	M.R	20/09/24
E	RETAINING WALL E ADDED	M.R	13/05/24
D	RETAINING WALL B AMENDED	M.R	23/10/23
C	RETAINING WALLS A, B & H AMENDED	M.R	11/09/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



System Certified

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Authorised
M. RANJANAN

Checked
W. ONG

Date
26/07/23

**REDSTONE ESTATE
STAGE 21
ROAD AND DRAINAGE
RETAINING WALLS - SHEET 2
HUME CITY COUNCIL
VILLAWOOD PROPERTIES**

AS CONSTRUCTED

Dwg No
310827CR901

Rev
1