

REDSTONE ESTATE STAGE 21A VILLAWOOD PROPERTIES

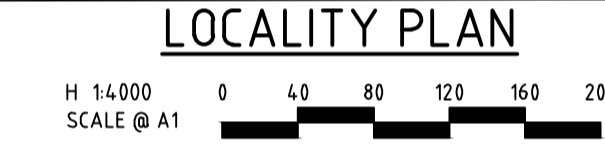
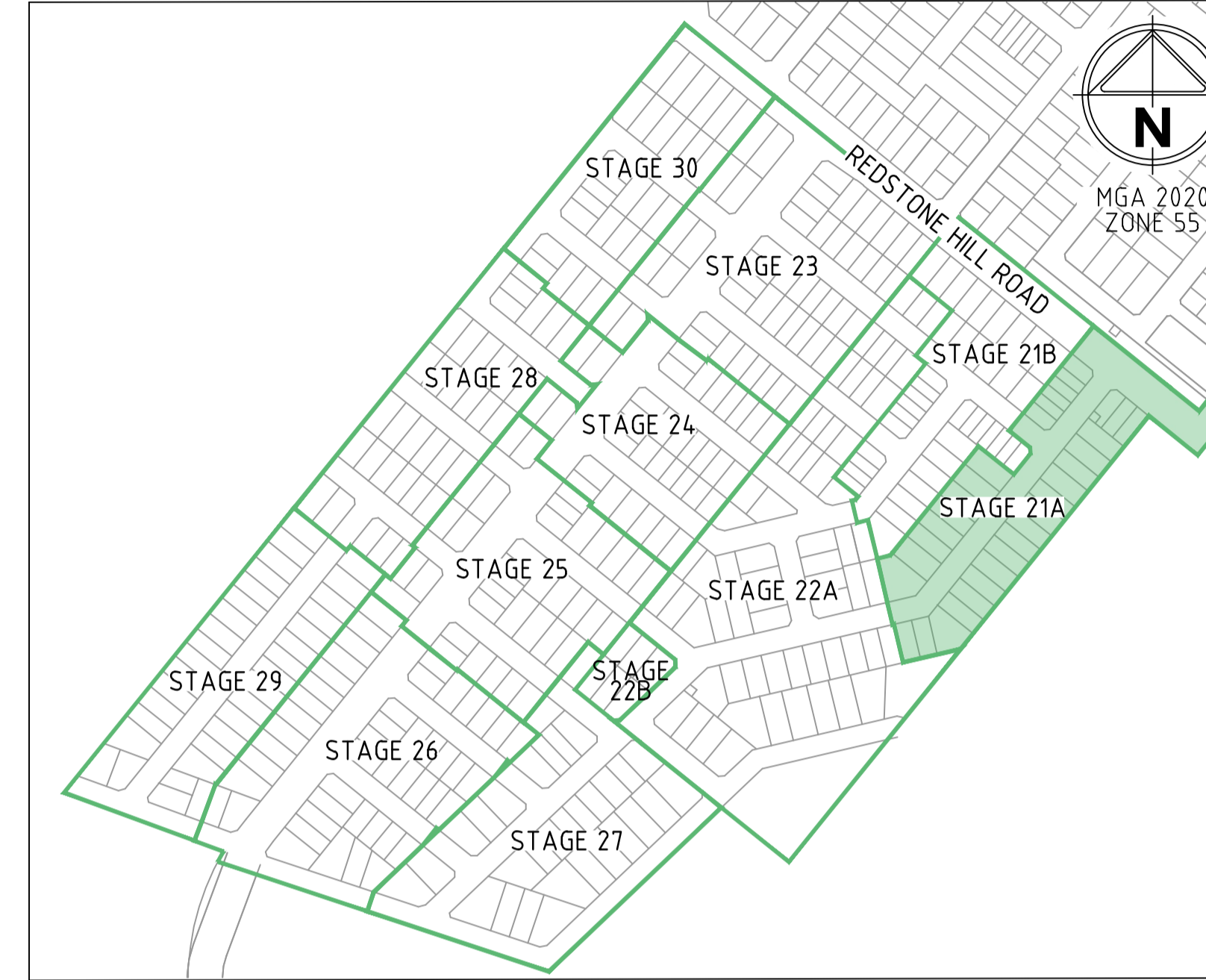
HUME CITY COUNCIL GENERAL NOTES:

- 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.1289.5.11-2003.
- 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 ADCL 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 CLEANED 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.1289.5.11-2003.

- 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, TRENCHES, 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:
 850mm CLASS 12 P.V.C. - SINGLE SERVICE
 8100mm 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.

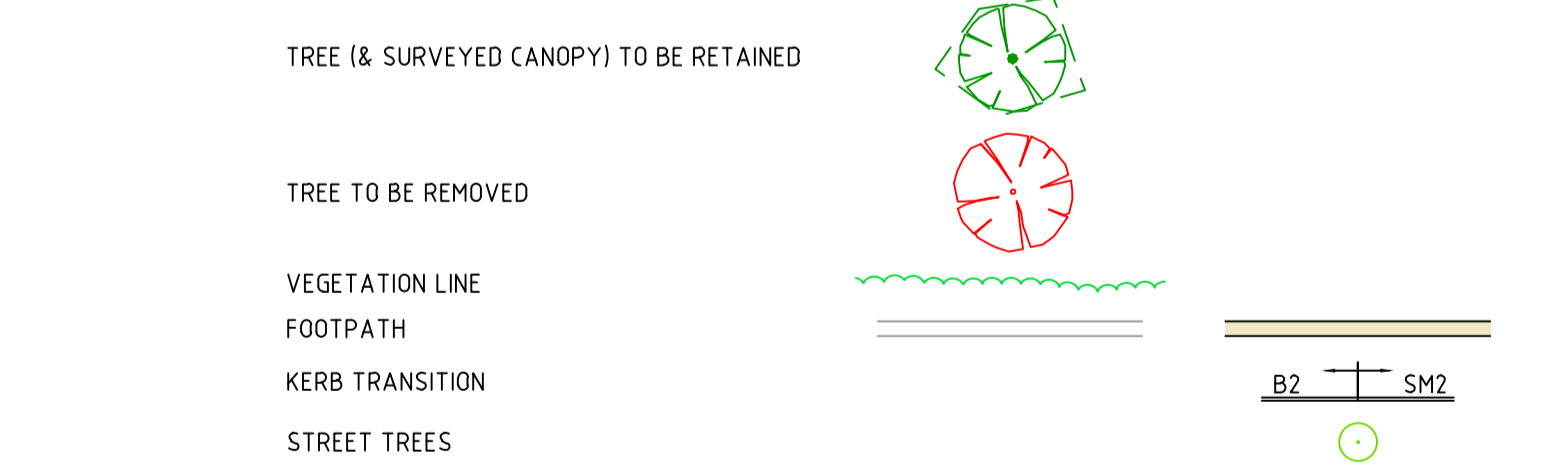
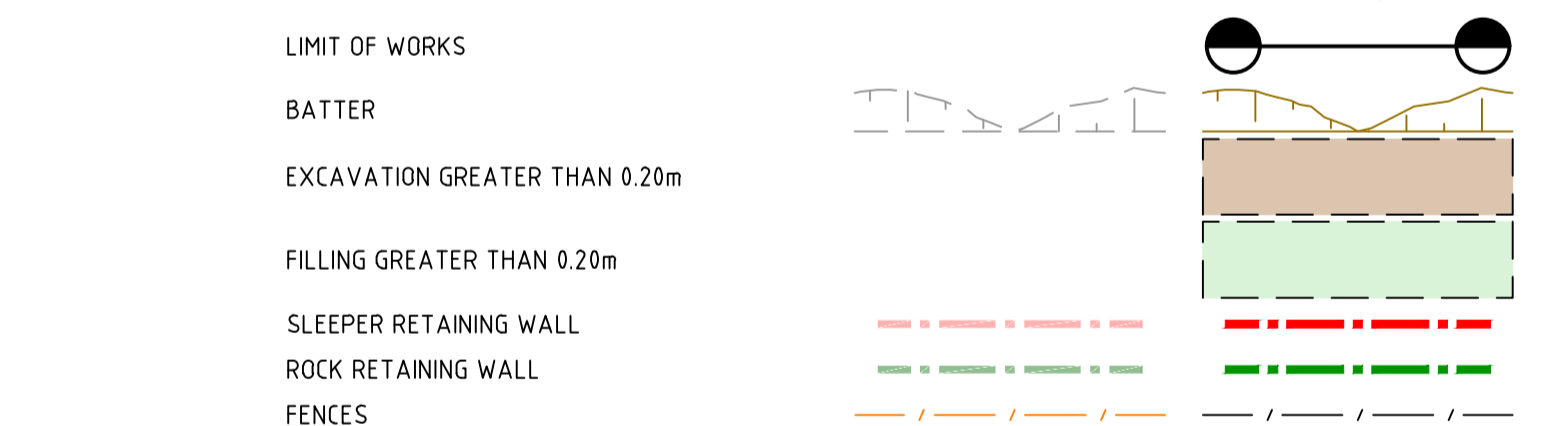
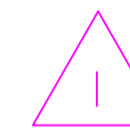


DRAWING SCHEDULE

DRAWING	DESCRIPTION	SHEET No.	REVISION
CR100	FACE SHEET	1	I
CR200	FACE PLAN - SHEET 1	2	H
CR201	FACE PLAN - SHEET 2	3	C
CR202	SERVICES PLAN - SHEET 3	4	F
CR203	TREE REMOVAL PLAN - SHEET 4	5	F
CR300	ROAD LONG SECTIONS - SHEET 1	6	D
CR301	ROAD LONG SECTIONS - SHEET 2	7	E
CR302	ROAD LONG SECTIONS - SHEET 3	8	B
CR400	ROAD CROSS SECTIONS - SHEET 1	9	E
CR401	ROAD CROSS SECTIONS - SHEET 2	10	F
CR402	ROAD CROSS SECTIONS - SHEET 3	11	F
CR403	ROAD CROSS SECTIONS - SHEET 4	12	C
CR404	ROAD CROSS SECTIONS - SHEET 5	13	D
CR500	INTERSECTION DETAILS - SHEET 1	14	C
CR501	INTERSECTION DETAILS - SHEET 2	15	B
CR600	DRAINAGE LONG SECTIONS - SHEET 1	16	E
CR601	DRAINAGE LONG SECTIONS - SHEET 2	17	E
CR602	DRAINAGE LONG SECTIONS - SHEET 3	18	E
CR603	DRAINAGE LONG SECTIONS - SHEET 4	19	D
CR604	DRAINAGE LONG SECTIONS & PIT SCHEDULE - SHEET 5	20	F
CR700	PAVEMENT AND TYPICAL DETAILS	21	C
CR701	PASSIVE IRRIGATION TYPICAL DETAILS - SHEET 1	22	A
CR702	PASSIVE IRRIGATION TYPICAL DETAILS - SHEET 2	23	A
CR703	SODIC SOIL RECOMMENDATIONS	24	A
CR800	SIGNAGE AND LINEMARKING	25	D
CR900	RETAINING WALLS - SHEET 1	26	F
CR901	RETAINING WALLS - SHEET 2	27	D

LEGEND

DESCRIPTION	EXISTING	PROPOSED
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)		
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
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.

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Rev	Amendments	M.R	Date	Scale
I	AMENDED AS PER COUNCIL COMMENTS	M.R	09/04/24	
H	AMENDED AS PER COUNCIL COMMENTS	M.R	23/02/24	
G	AMENDED AS PER COUNCIL COMMENTS	M.R	19/01/24	
F	AMENDED AS PER COUNCIL COMMENTS	M.R	20/12/23	
E	LOTS 2101-2109 AMENDED	M.R	03/11/23	
D	AMENDED AS PER COUNCIL COMMENTS	M.R	23/10/23	
C	LOTS 2107-2118 AMENDED	M.R	11/09/23	
B	ISSUED TO COUNCIL	M.R	26/07/23	
Rev	Amendments	Approved	Date	

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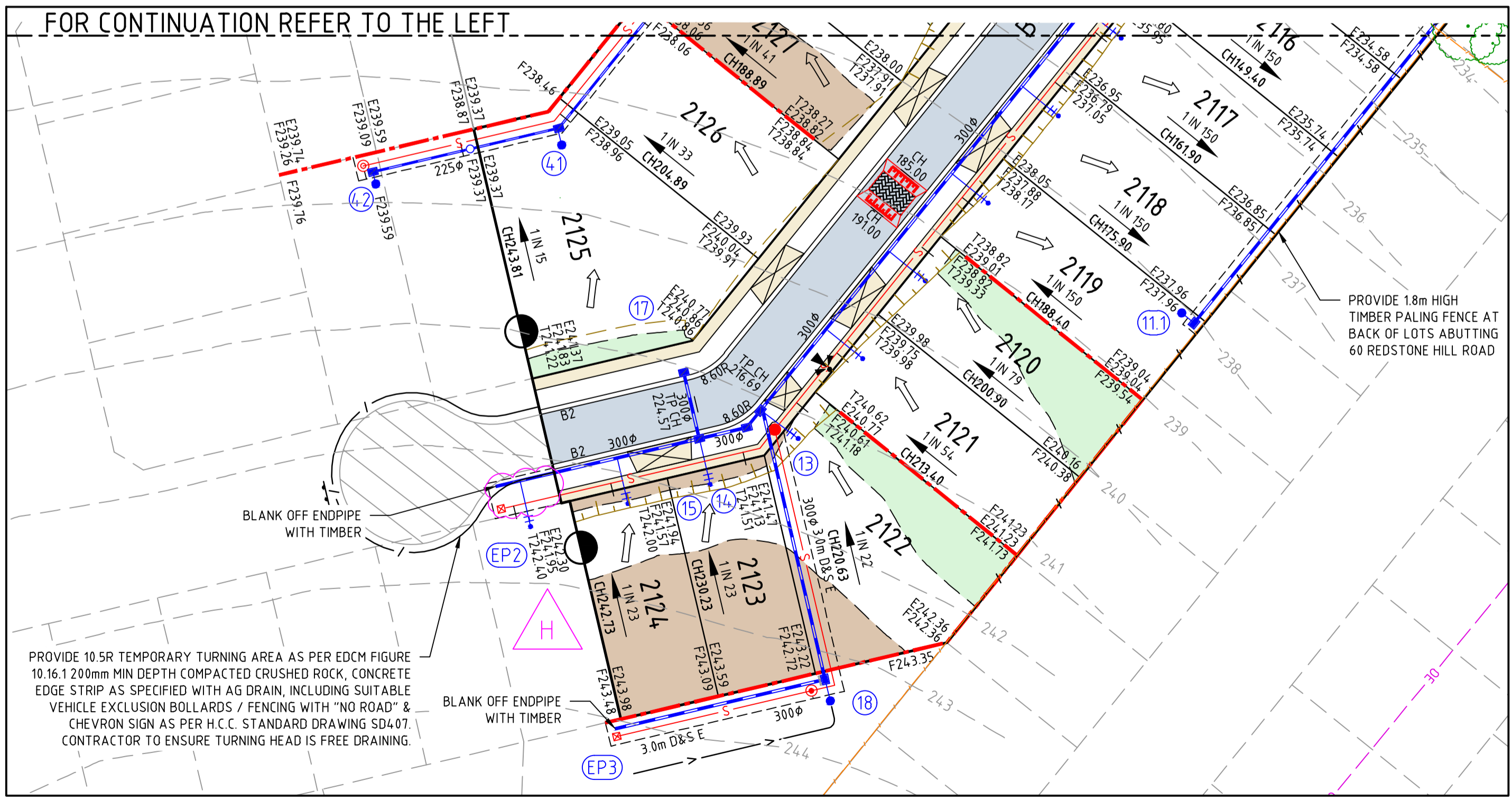
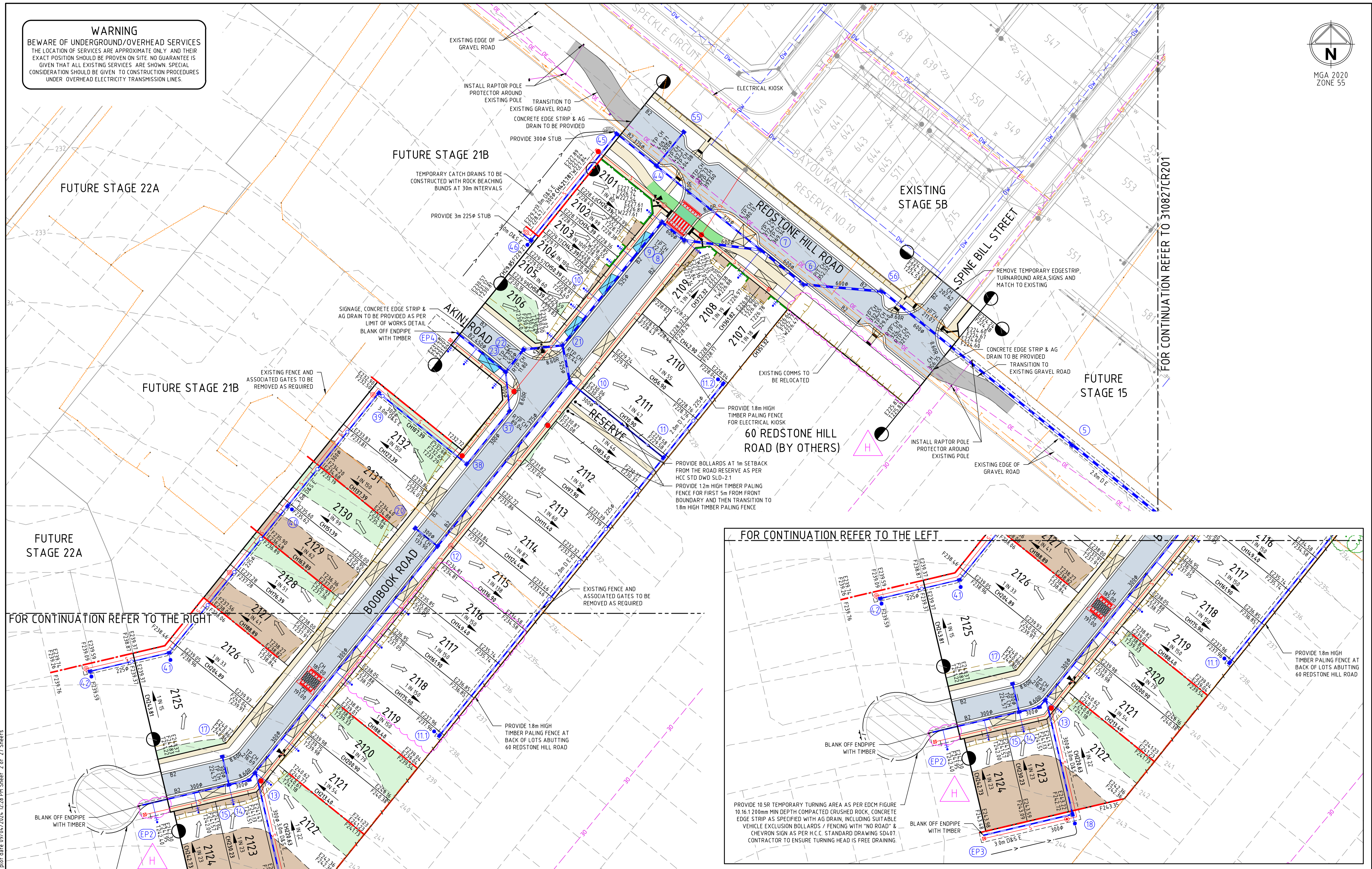
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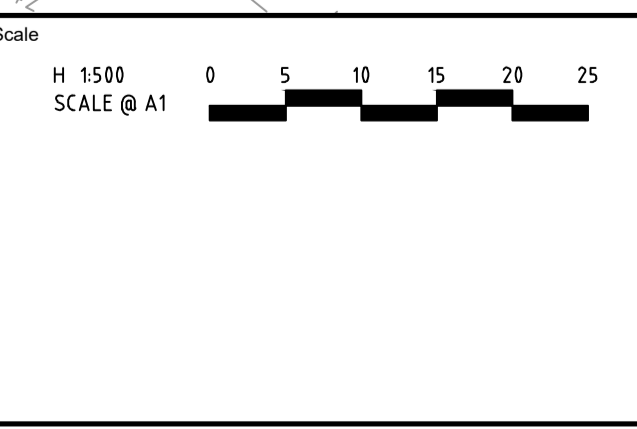
**REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
FACE SHEET**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

PRELIMINARY Drg No **310827CR100** Rev **I**

WARNING
 BEWARE OF UNDERGROUND/OVERHEAD SERVICES
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Rev	Description	M.R	Date
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
F	DRIVEWAYS, LOTS 2110-2115 AMENDED AND NOTE ADDED	M.R	20/12/23
E	LOTS 2101-2109 AMENDED	M.R	03/11/23
D	LOTS 2113-2118 AMENDED & NOTES ADDED	M.R	23/10/23
C	LOTS 2107-2118 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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L6 414 LA TROBE STREET PO BOX 16084 MELBOURNE
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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

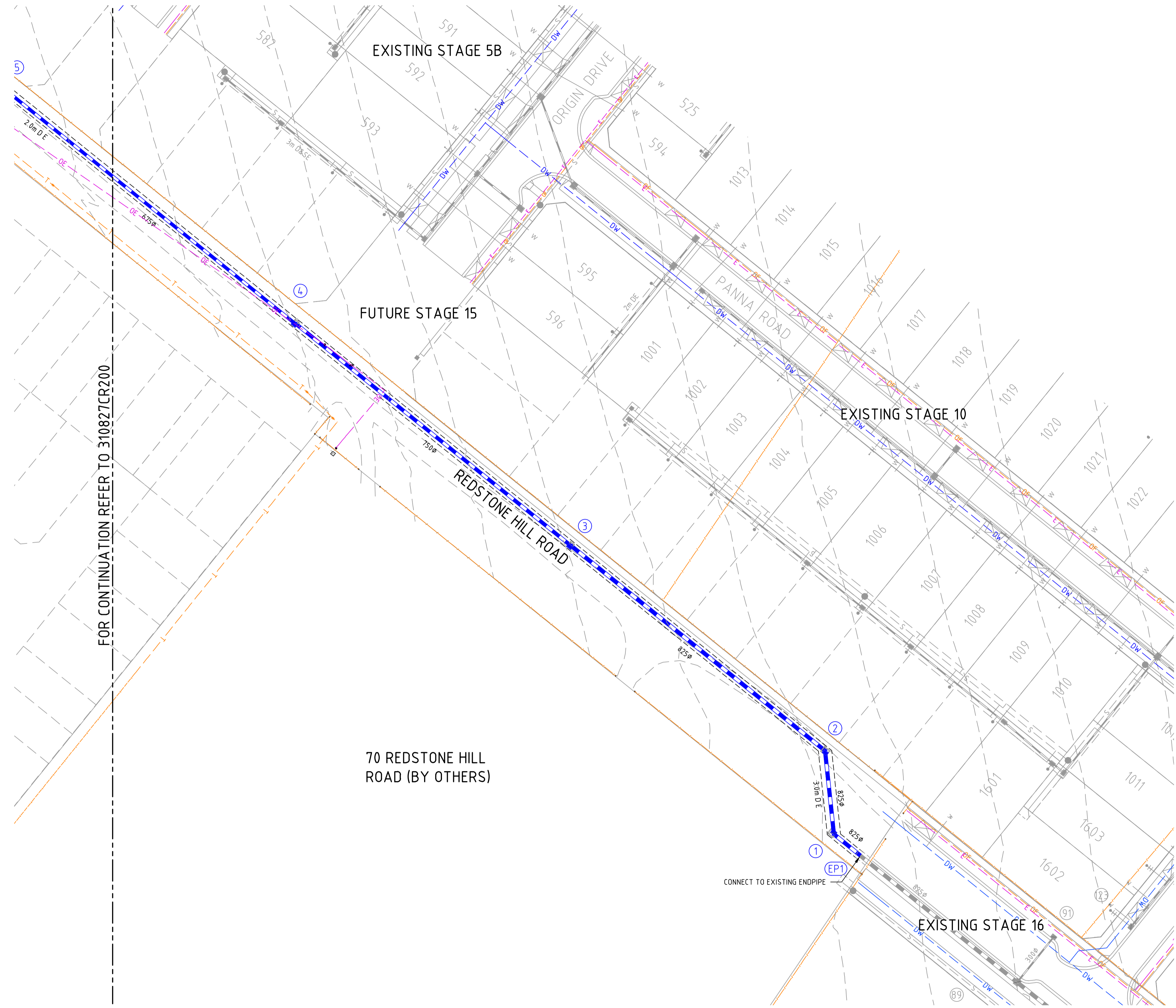
**REDSTONE ESTATE
 STAGE 21A**
 ROAD AND DRAINAGE
 FACE PLAN - SHEET 1
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY

Dwg No
310827CR200

Rev
H

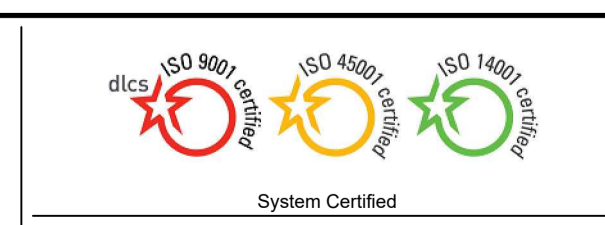
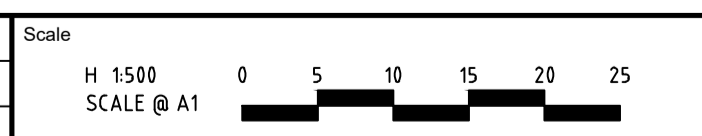
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WARNING
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file name: 310827CR200.dwg, layout: rans_GD201, plotted by: Ilian Tran, plot date: 09/04/2024 10:29 PM, sheet: 3 of 27, sheets: 310827CR200.dwg, location: \\spiremedia\data\310827\310827\civil\ACAD.plt, date: 09/04/2024 10:29 PM, sheet: 3 of 27, sheets: 310827CR200.dwg

Rev	Amendments	Approved	Date
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



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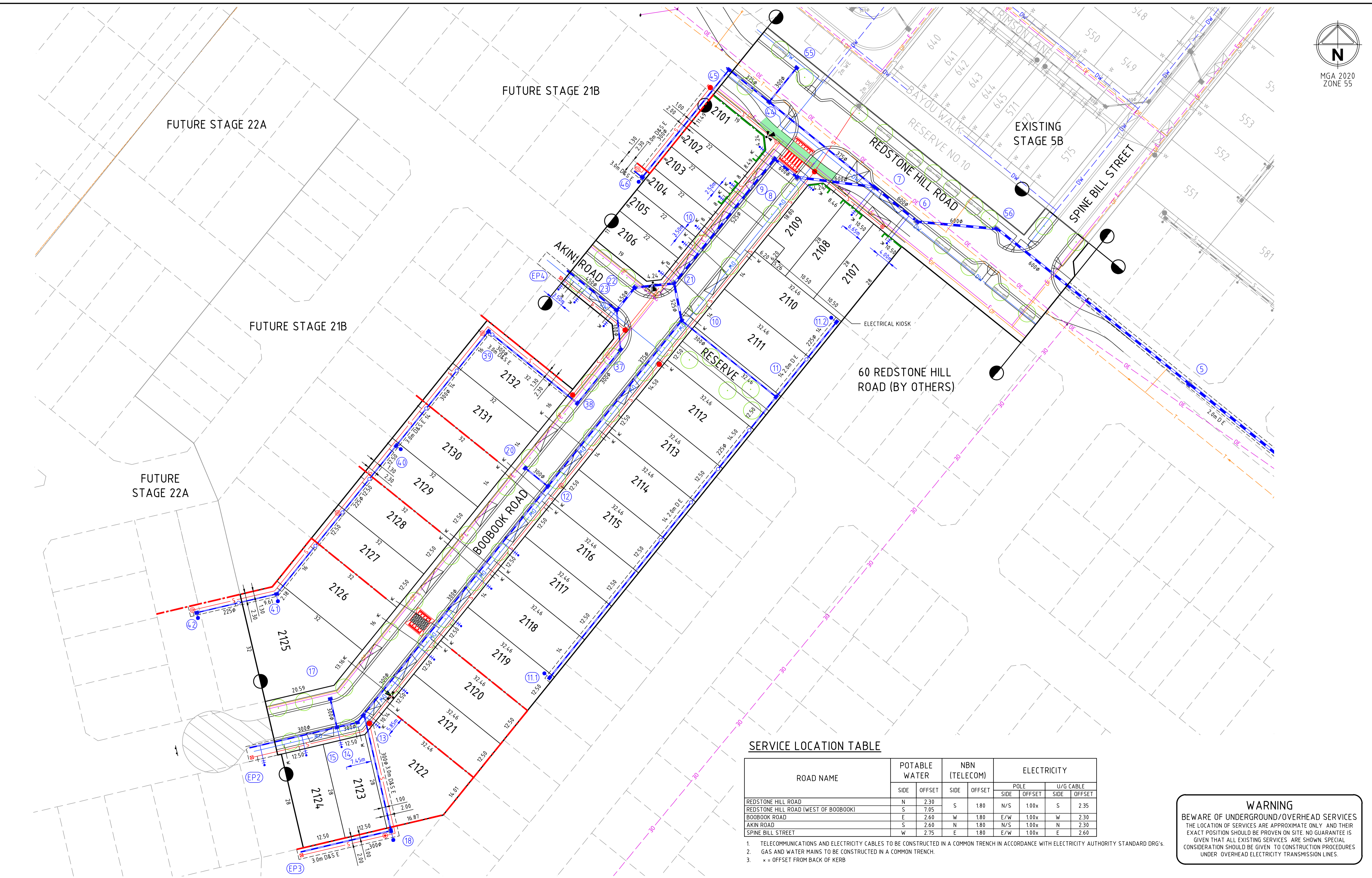
Designed
 L. TRAN
 Authorised
 M. RANJANAN



Checked
 W. ONG
 Date
 26/07/23

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

PRELIMINARY Dwg No **310827CR201** Rev **C**



SERVICE LOCATION TABLE

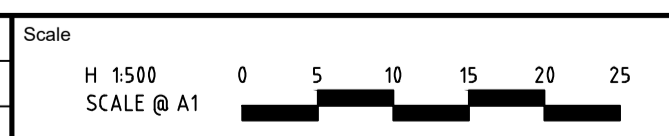
ROAD NAME	POTABLE WATER		NBN (TELECOM)		ELECTRICITY			
	SIDE	OFFSET	SIDE	OFFSET	POLE SIDE	POLE OFFSET	U/G CABLE SIDE	U/G CABLE OFFSET
REDSTONE HILL ROAD	N	2.30	S	1.80	N/S	1.00x	S	2.35
REDSTONE HILL ROAD (WEST OF BOOBOOK)	S	7.05						
BOOBOOK ROAD	E	2.60	W	1.80	E/W	1.00x	W	2.30
AKIN ROAD	S	2.60	N	1.80	N/S	1.00x	N	2.30
SPINE BILL STREET	W	2.75	E	1.80	E/W	1.00x	E	2.60

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

WARNING
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file name: 310827CR202.dwg, layout: rans_GD202, plotted by: Lillian Tran, file location: \\spire\media\data\310827\310827.dwg, plot date: 09/04/2024, 10:29 PM, Sheet: 4 of 21 Sheets

Rev	Amendments	Approved	Date
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
C	LOTS 2107-2118 AMENDED	M.R	11/09/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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Designed
L. TRAN
Authorised
M. RANJANAN



Checked
W. ONG
Date
26/07/23

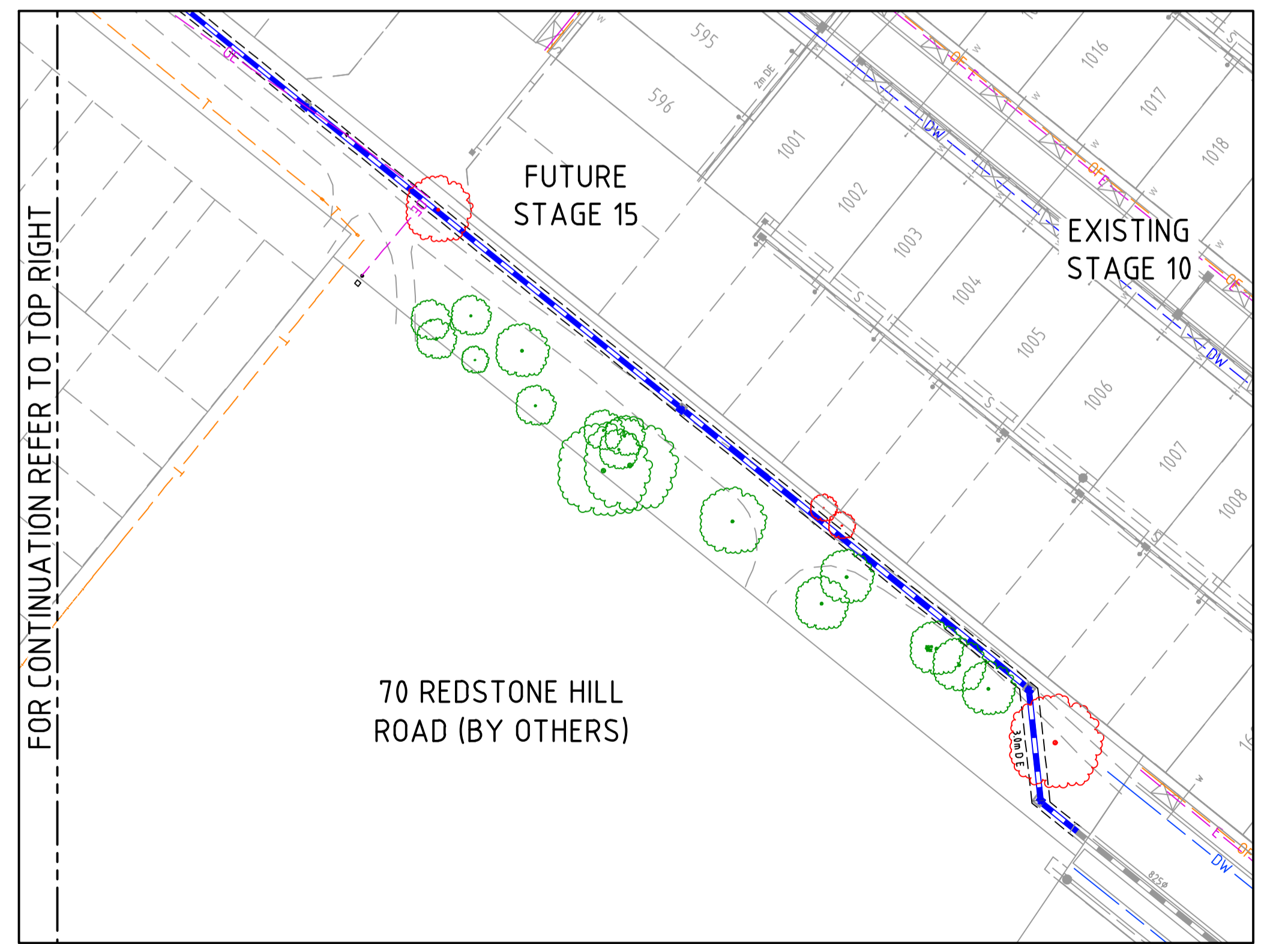
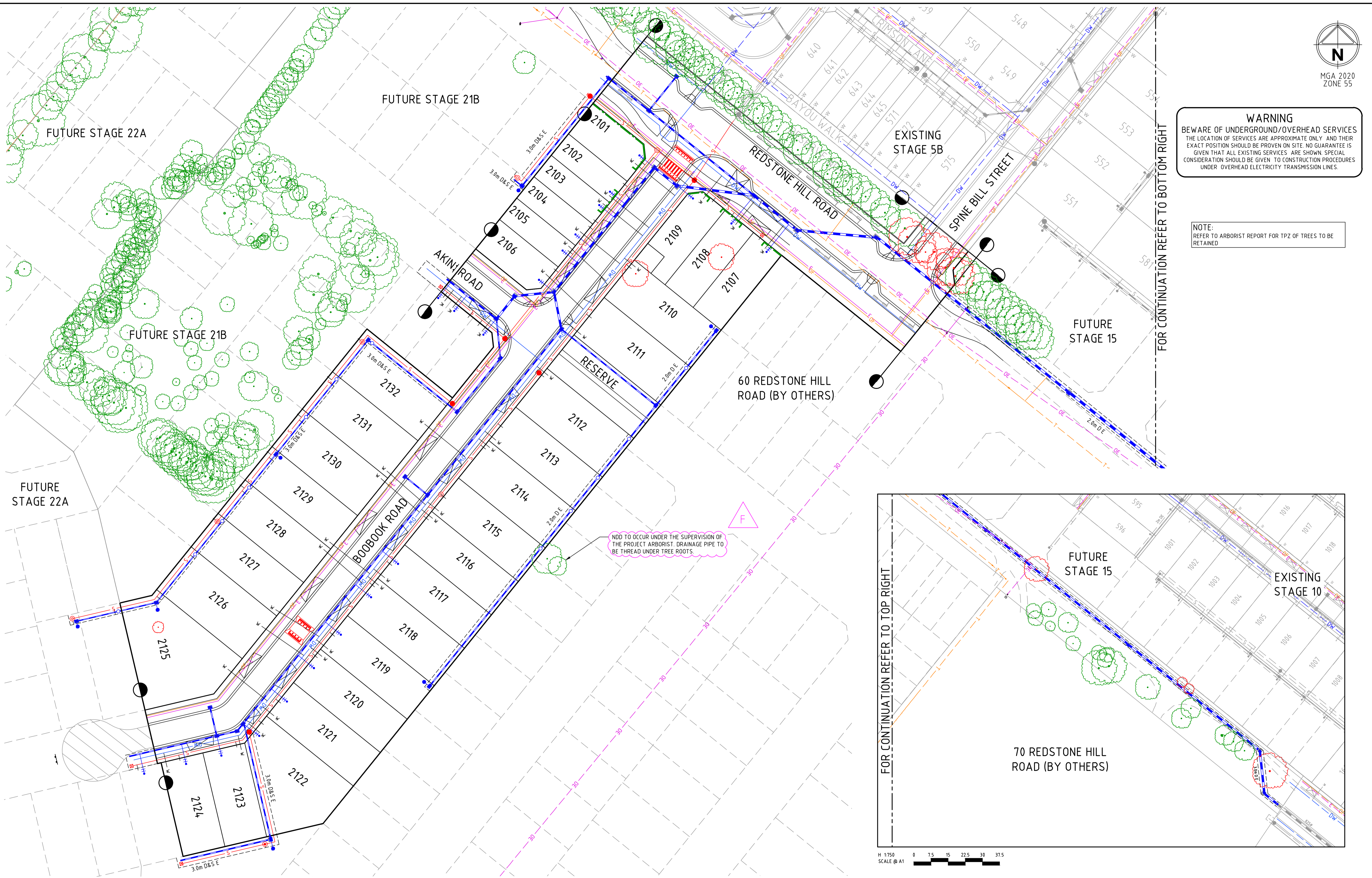
**REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
SERVICES PLAN**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

PRELIMINARY Drg No 310827CR202 Rev F

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NOTE:
REFER TO ARBORIST REPORT FOR TPZ OF TREES TO BE RETAINED

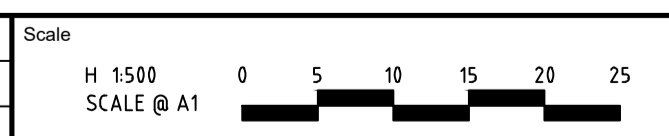
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H 1:750
SCALE @ A1

file name: 310827CR203.dwg, layout: rans_GD203, plotted by: Lilia Tran, plot date: 09/04/2024 10:29 PM, sheet: 5 of 27 sheets

Rev	Amendments	Approved	Date
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
C	LOTS 2107-2118 AMENDED	M.R	11/09/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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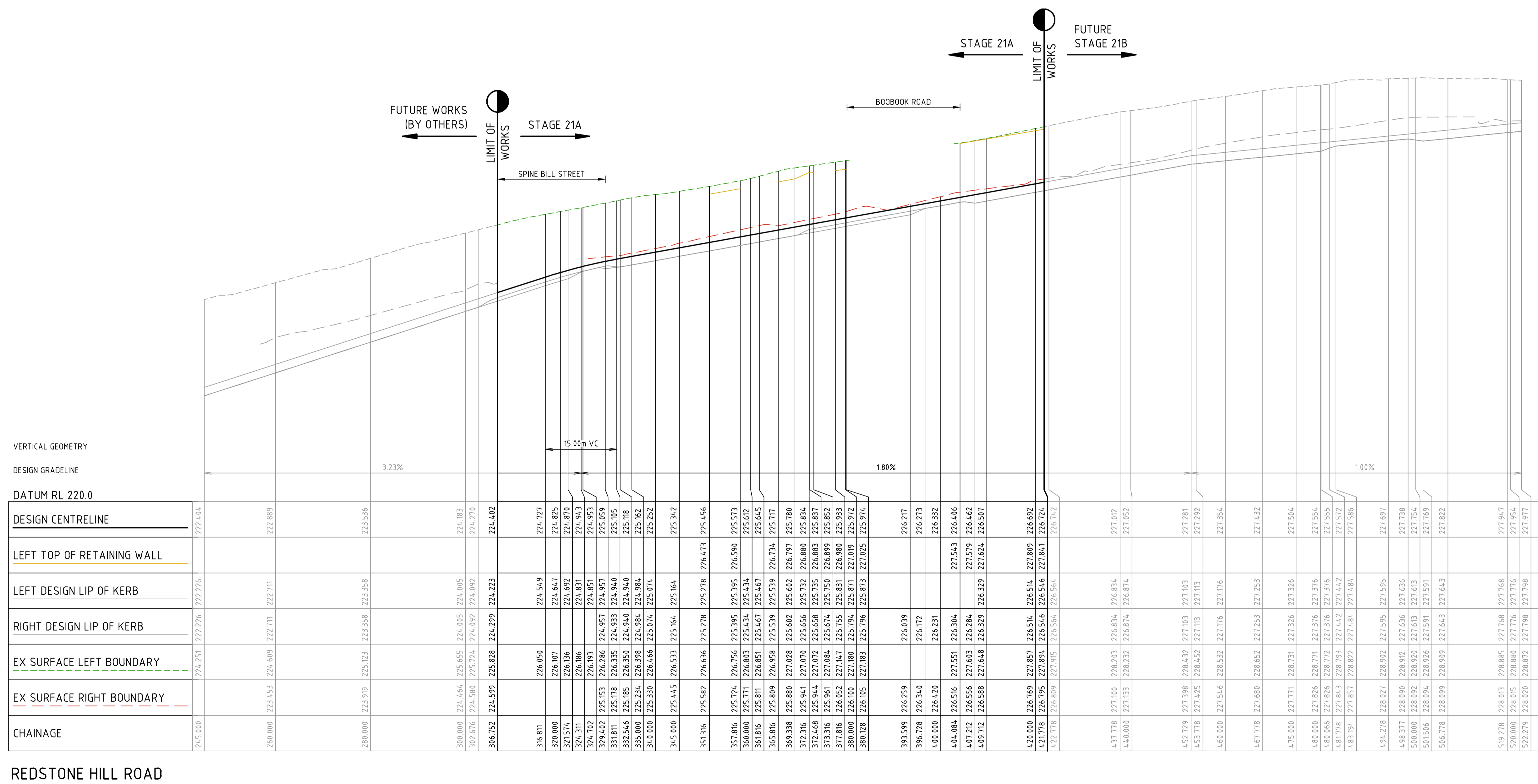


Checked
W. ONG
Date
26/07/23

**REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
TREE REMOVAL PLAN - SHEET 4**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

PRELIMINARY Drg No **310827CR203** Rev **F**

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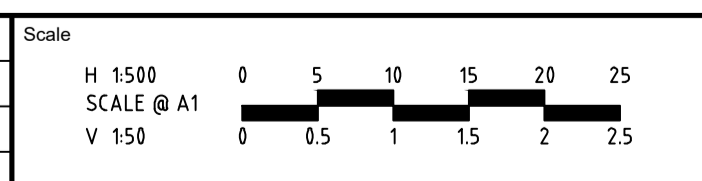


VERTICAL GEOMETRY
DESIGN GRADELINE
DATUM RL 220.0

CHAINAGE	DESIGN CENTRELINE	LEFT TOP OF RETAINING WALL	LEFT DESIGN LIP OF KERB	RIGHT DESIGN LIP OF KERB	EX SURFACE LEFT BOUNDARY	EX SURFACE RIGHT BOUNDARY
245.000	222.404		222.226	222.226	224.251	
260.000	222.889		222.711	222.711	224.609	
280.000	223.536		223.358	223.358	225.123	
300.000	224.183		224.005	224.005	225.655	
302.676	224.270		224.092	224.092	225.724	
306.752	224.402		224.223	224.223	225.828	
316.811	224.727	224.549	224.549	224.549	226.050	
320.000	224.895	224.647	224.647	224.647	226.107	
321.574	224.870	224.692	224.692	224.692	226.136	
324.311	224.943	224.831	224.831	224.831	226.186	
324.702	224.953	224.851	224.851	224.851	226.193	
329.402	225.059	224.957	224.957	224.957	226.286	
331.811	225.105	224.933	224.940	224.940	226.335	
332.546	225.118	224.940	224.940	224.940	226.350	
335.000	225.162	224.984	224.984	224.984	226.398	
340.000	225.252	225.074	225.074	225.074	226.466	
345.000	225.342	225.164	225.164	225.164	226.533	
351.316	225.456	226.473	225.278	225.278	226.636	
357.816	225.573	226.590	225.395	225.395	226.756	
360.000	225.612	226.634	225.434	225.434	226.803	
361.816	225.645	226.667	225.467	225.467	226.851	
365.816	225.717	226.734	225.539	225.539	226.958	
369.338	225.780	226.797	225.602	225.602	227.028	
372.316	225.834	226.880	225.732	225.732	227.070	
372.468	225.837	226.883	225.735	225.735	227.072	
373.316	225.852	226.899	225.852	225.852	227.084	
377.816	225.933	226.980	225.831	225.831	227.147	
380.000	225.974	227.019	225.871	225.871	227.180	
380.128	225.974	227.025	225.873	225.873	227.183	
393.599	226.217		226.039	226.039	227.915	
396.728	226.273		226.172	226.172	228.009	
400.000	226.332		226.231	226.231	228.133	
404.084	226.406	227.543	226.304	226.304	228.203	
407.212	226.462	227.579	226.462	226.462	228.232	
409.712	226.507	227.624	226.507	226.507	228.282	
420.000	226.692	227.809	226.514	226.514	228.326	
421.718	226.724	227.841	226.546	226.546	228.371	
422.718	226.742	227.854	226.564	226.564	228.384	
437.718	227.012		226.834	226.834	228.674	
440.000	227.052		226.874	226.874	228.716	
452.729	227.281		227.103	227.103	228.822	
453.718	227.292		227.113	227.113	228.852	
460.000	227.354		227.176	227.176	228.902	
467.718	227.432		227.253	227.253	228.920	
475.000	227.504		227.326	227.326	228.970	
480.000	227.554		227.376	227.376	229.012	
480.066	227.555		227.376	227.376	229.020	
481.718	227.572		227.442	227.442	229.044	
483.194	227.586		227.484	227.484	229.056	
494.278	227.697		227.595	227.595	229.112	
498.377	227.738		227.636	227.636	229.124	
500.000	227.754		227.643	227.643	229.133	
501.536	227.769		227.659	227.659	229.142	
506.718	227.822		227.643	227.643	229.169	
519.278	227.947		227.768	227.768	229.285	
520.000	227.954		227.776	227.776	229.288	
522.719	227.971		227.798	227.798	229.312	

REDSTONE HILL ROAD

Rev	Amendments	Approved	Date
D	LONG SECTION AMENDED	M.R	20/12/23
C	RETAINING WALL ADDED	M.R	03/11/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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Checked
W. ONG

Date
26/07/23

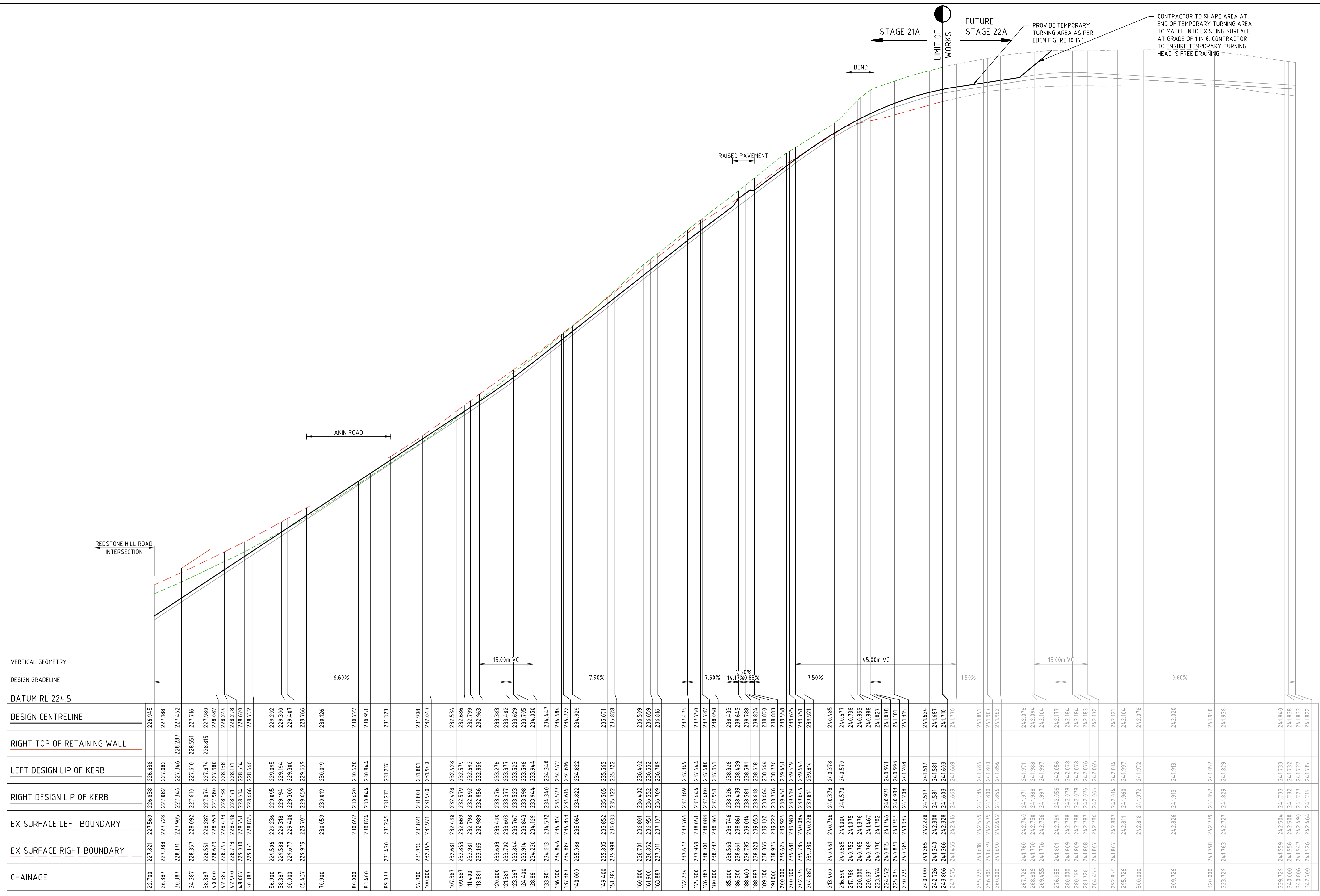
REDSTONE ESTATE
STAGE 21A
 ROAD AND DRAINAGE
ROAD LONG SECTIONS - SHEET 1
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY

Drg No
310827CR300

Rev
D

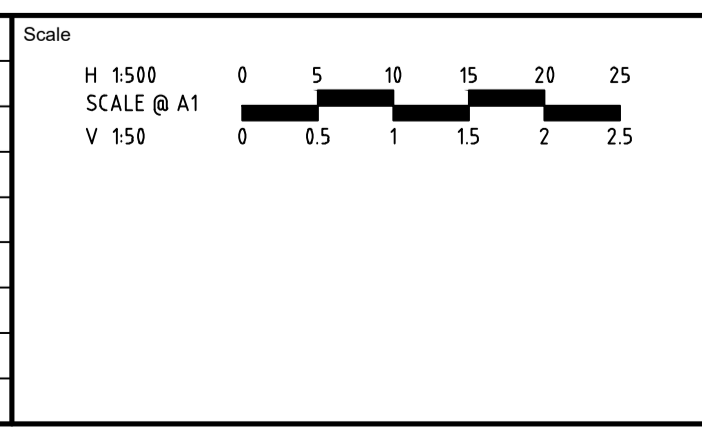
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CHAINAGE	EX SURFACE RIGHT BOUNDARY	EX SURFACE LEFT BOUNDARY	RIGHT DESIGN LIP OF KERB	LEFT DESIGN LIP OF KERB	RIGHT TOP OF RETAINING WALL	DESIGN CENTRELINE
22.700	227.821	227.569	226.838	226.838	226.945	226.945
26.387	227.988	227.728	227.082	227.082	227.188	227.188
30.387	228.171	227.905	227.346	227.346	227.452	227.452
34.387	228.357	228.092	227.610	227.610	227.716	227.716
38.387	228.551	228.282	227.874	227.874	227.881	227.881
40.000	228.629	228.359	227.980	227.980	228.087	228.087
42.387	228.747	228.473	228.138	228.138	228.244	228.244
42.900	228.773	228.498	228.171	228.171	228.278	228.278
48.087	229.030	228.751	228.514	228.514	228.620	228.620
50.387	229.151	228.875	228.666	228.666	228.772	228.772
56.900	229.506	229.236	229.095	229.095	229.202	229.202
58.387	229.588	229.318	229.194	229.194	229.300	229.300
60.000	229.677	229.408	229.300	229.300	229.407	229.407
65.437	229.979	229.707	229.659	229.659	229.766	229.766
70.900		230.059	230.019	230.019	230.126	230.126
80.000		230.652	230.620	230.620	230.727	230.727
83.400		230.874	230.844	230.844	230.951	230.951
89.037	231.420	231.245	231.217	231.217	231.323	231.323
97.900	231.996	231.821	231.801	231.801	231.908	231.908
100.000	232.145	231.971	231.940	231.940	232.047	232.047
107.387	232.681	232.498	232.428	232.428	232.534	232.534
109.687	232.853	232.669	232.579	232.579	232.686	232.686
111.400	232.981	232.798	232.692	232.692	232.799	232.799
113.881	233.165	232.989	232.856	232.856	232.963	232.963
120.000	233.603	233.490	233.276	233.276	233.383	233.383
121.381	233.702	233.603	233.377	233.377	233.482	233.482
123.387	233.844	233.767	233.523	233.523	233.629	233.629
124.400	233.914	233.843	233.598	233.598	233.705	233.705
128.881	234.226	234.169	233.944	233.944	234.050	234.050
133.901	234.613	234.572	234.340	234.340	234.447	234.447
136.900	234.846	234.814	234.577	234.577	234.684	234.684
137.387	234.884	234.853	234.616	234.616	234.722	234.722
140.000	235.088	235.064	234.822	234.822	234.929	234.929
145.400	235.835	235.852	235.565	235.565	235.671	235.671
151.387	235.998	236.033	235.722	235.722	235.828	235.828
160.000	236.701	236.801	236.402	236.402	236.509	236.509
161.900	236.852	236.951	236.552	236.552	236.659	236.659
163.887	237.011	237.107	236.709	236.709	236.816	236.816
172.234	237.677	237.764	237.369	237.369	237.475	237.475
175.900	237.969	238.051	237.644	237.644	237.750	237.750
176.387	238.001	238.088	237.680	237.680	237.787	237.787
180.000	238.237	238.364	237.951	237.951	238.058	238.058
185.000	238.563	238.746	238.326	238.326	238.433	238.433
186.500	238.661	238.861	238.439	238.439	238.645	238.645
188.400	238.805	239.014	238.581	238.581	238.788	238.788
188.887	238.820	239.053	238.618	238.618	238.824	238.824
189.500	238.865	239.102	238.664	238.664	238.870	238.870
191.000	238.975	239.222	238.776	238.776	238.883	238.883
200.000	239.625	239.924	239.451	239.451	239.558	239.558
200.900	239.681	239.980	239.519	239.519	239.625	239.625
202.575	239.885	240.084	239.644	239.644	239.751	239.751
204.887	239.930	240.228	239.814	239.814	239.921	239.921
215.400	240.461	240.766	240.378	240.378	240.485	240.485
216.690	240.685	241.000	240.570	240.570	240.677	240.677
217.788	240.753	241.075			240.738	240.738
220.000	240.965	241.376			240.855	240.855
226.631	240.969	241.467			240.888	240.888
228.474	240.978	241.702			241.027	241.027
228.572	240.895	241.746	240.971	240.971	241.078	241.078
235.075	240.831	241.763	240.993	240.993	241.101	241.101
236.226	240.989	241.937	241.208	241.208	241.315	241.315
240.000	241.285	242.228	241.517	241.517	241.624	241.624
242.726	241.340	242.300	241.581	241.581	241.667	241.667
243.806	241.366	242.328	241.603	241.603	241.710	241.710
247.575	241.455	242.416	241.669	241.669	241.776	241.776
255.226	241.618	242.559	241.784	241.784	241.891	241.891
256.306	241.639	242.579	241.800	241.800	241.907	241.907
260.000	241.690	242.642	241.856	241.856	241.962	241.962
267.726	241.760	242.740	241.971	241.971	242.078	242.078
268.806	241.770	242.750	241.988	241.988	242.094	242.094
269.455	241.776	242.756	241.997	241.997	242.104	242.104
276.955	241.801	242.789	242.056	242.056	242.177	242.177
280.000	241.809	242.788	242.078	242.078	242.184	242.184
280.169	241.809	242.788	242.078	242.078	242.184	242.184
281.726	241.808	242.787	242.076	242.076	242.183	242.183
284.455	241.807	242.786	242.065	242.065	242.172	242.172
292.856	241.807	242.807	242.014	242.014	242.121	242.121
295.726	241.811	242.811	241.960	241.960	242.104	242.104
300.000	242.818	242.818	241.972	241.972	242.078	242.078
309.726	242.826	242.826	241.913	241.913	242.020	242.020
320.000	241.798	242.779	241.852	241.852	241.958	241.958
323.726	241.763	242.727	241.829	241.829	241.936	241.936
335.726	241.559	242.504	241.733	241.733	241.840	241.840
340.000	241.556	242.500	241.732	241.732	241.838	241.838
340.806	241.547	242.490	241.727	241.727	241.833	241.833
342.700	241.526	242.464	241.715	241.715	241.822	241.822

BOOBOOK ROAD

Rev	Amendments	Approved	Date
E	RETAINING WALL ADDED	M.R	03/11/23
D	CHAINAGES AMENDED	M.R	23/10/23
C	LONG SECTION AMENDED	M.R	11/09/23
B	ISSUED TO COUNCIL	M.R	26/07/23
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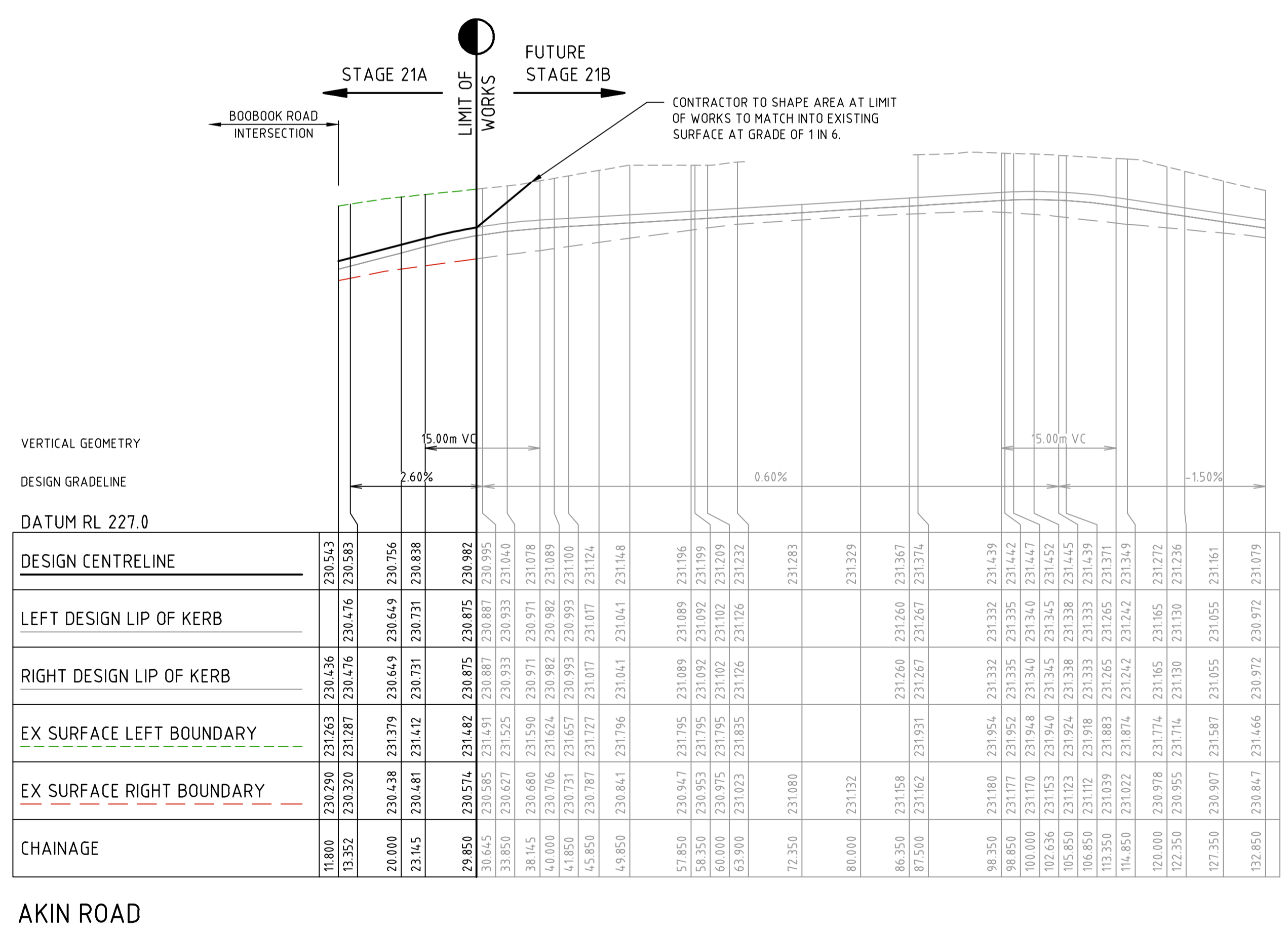
Designed: L. TRAN
 Authorised: M. RANJANAN
 Checked: W. ONG
 Date: 26/07/23

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

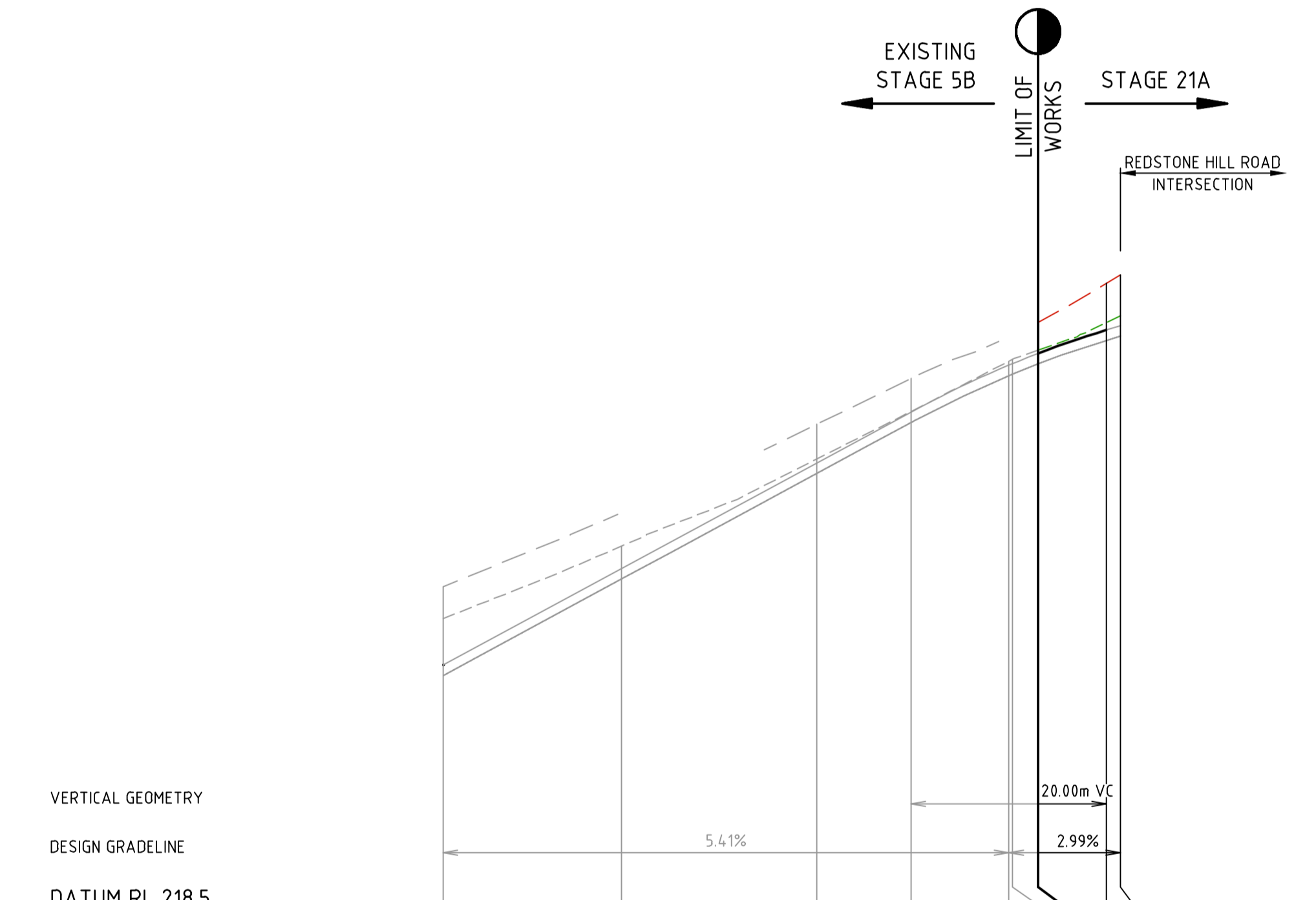
PRELIMINARY

 Drg No
310827CR301

file name: 310827CR302.dwg, layout: rans: CR302, plotted by: Ullas, Tran, file location: G:\310827\310827\WILLWOOD\A1.dwg, plot date: 09/07/2024, 12:29 PM, Sheet: 8 of 27 Sheets

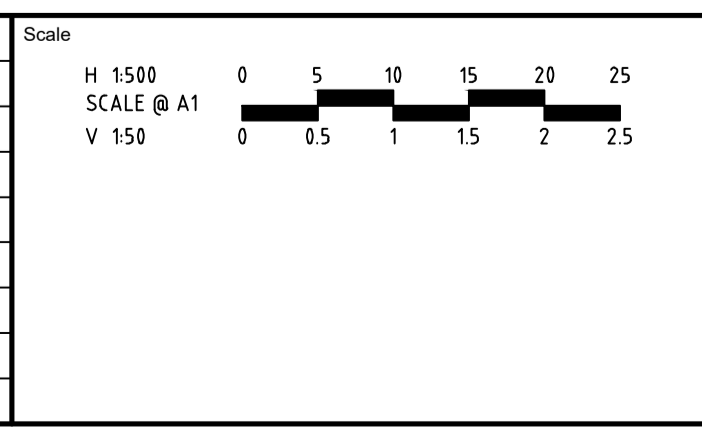


AKIN ROAD



SPINE BILL STREET

Rev	Amendments	Approved	Date
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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 Date 26/07/23

REDSTONE ESTATE

STAGE 21A

ROAD AND DRAINAGE

ROAD LONG SECTIONS - SHEET 3

 HUME CITY COUNCIL

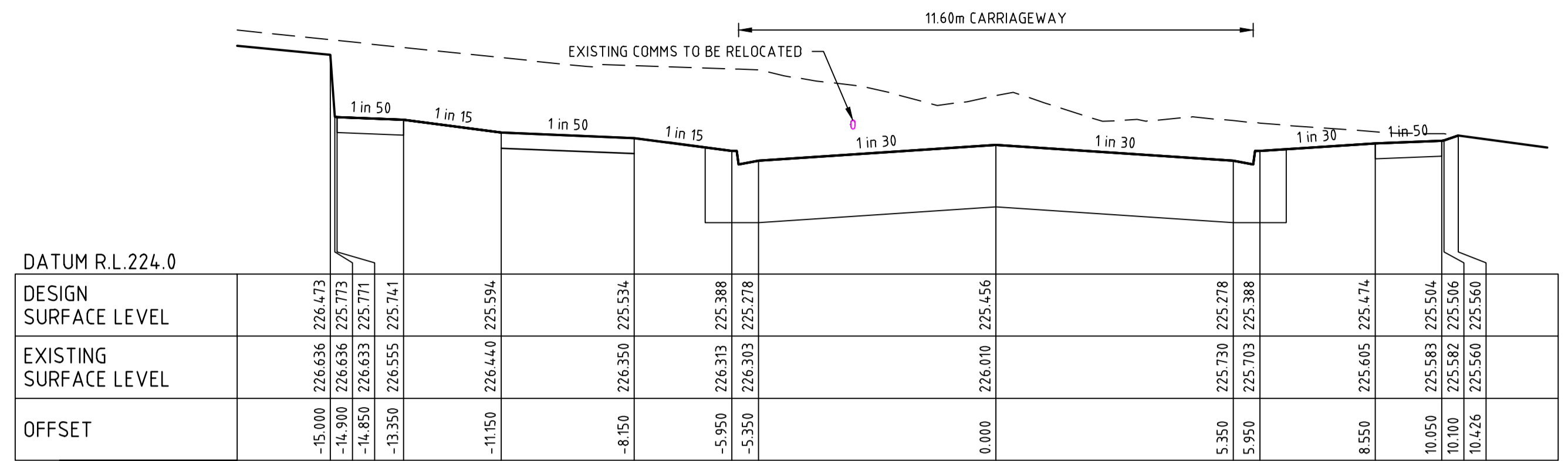
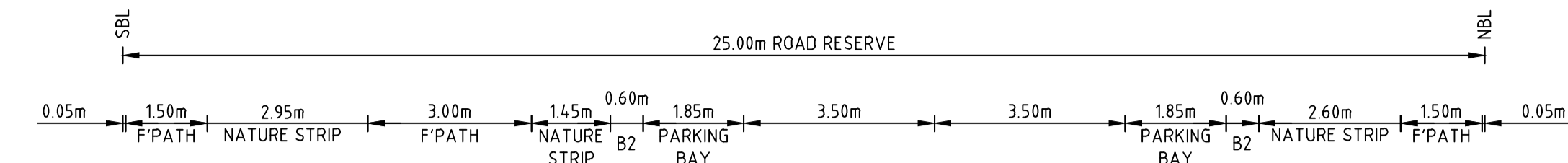
 VILLAWOOD PROPERTIES

PRELIMINARY

 Drg No 310827CR302

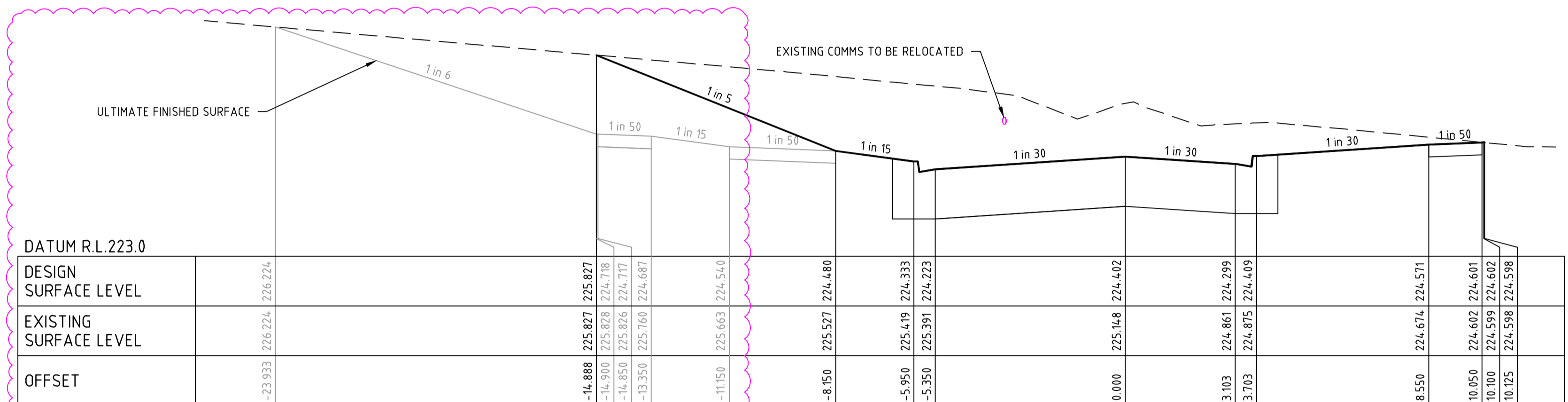
 Rev B

FILLING NOTE
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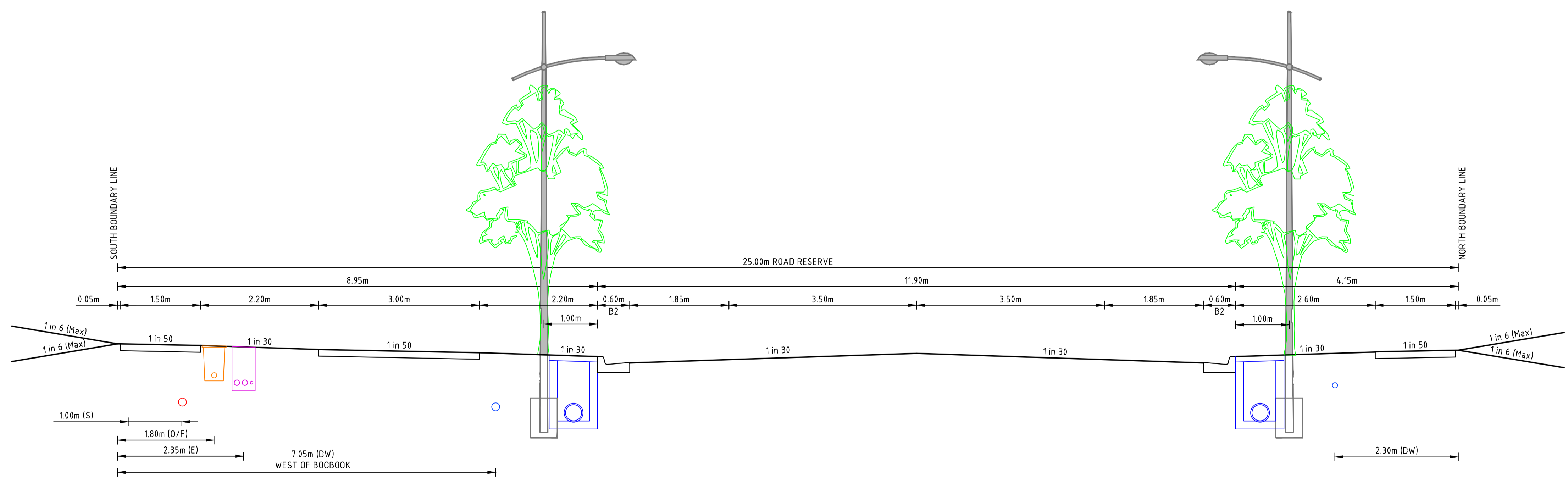


REDSTONE HILL ROAD CH 351.32

E



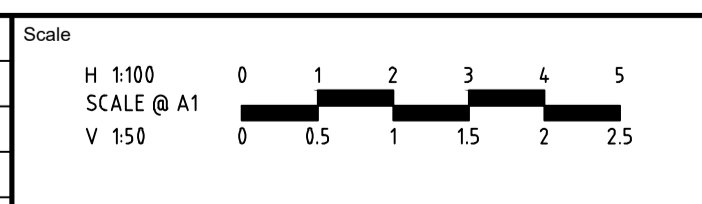
REDSTONE HILL ROAD CH 306.75



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

file name: 310827CR400.dwg, layout: ransp, cdu:00, plotted by: Lillian Tran, plot date: 09/04/2024, 12:29 PM, Sheet: 9 of 27 Sheets

Rev	Description	Approved	Date
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
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23
	Amendments	Approved	Date



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Designed
 L. TRAN
 Authorised
 M. RANJANAN

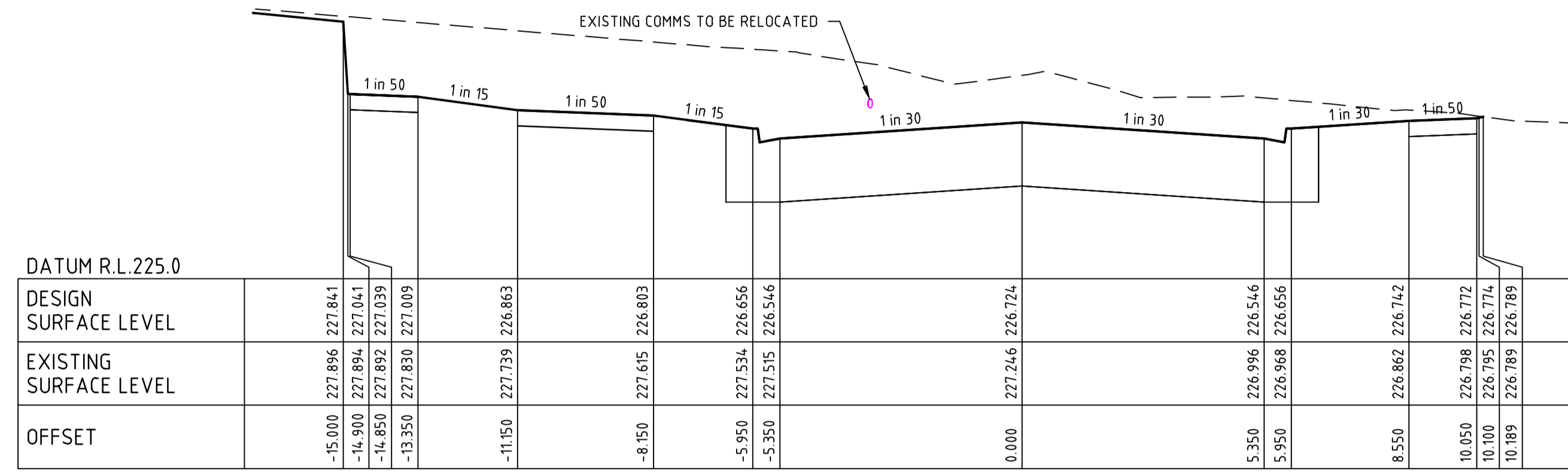
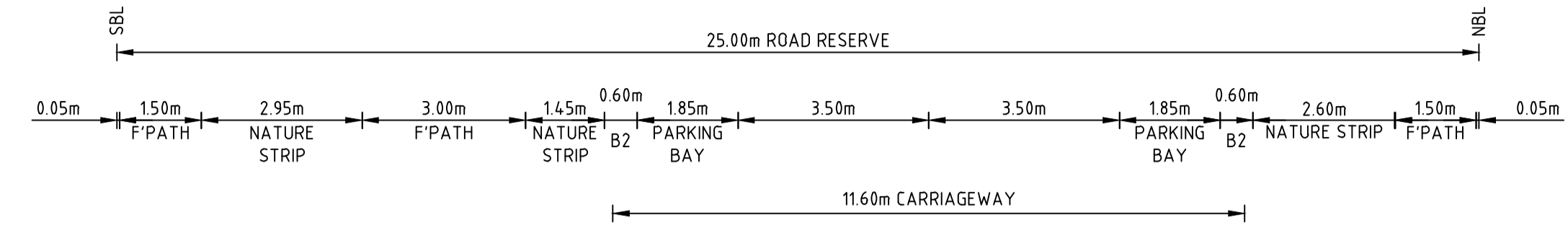


Checked
 W. ONG
 Date
 26/07/23

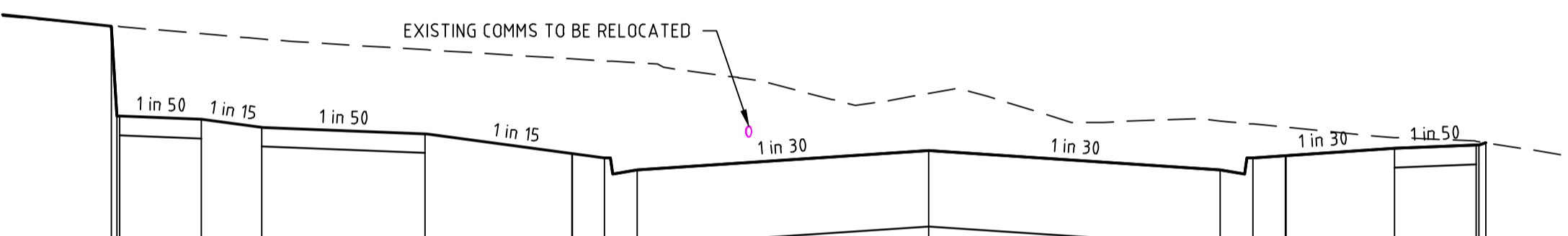
REDSTONE ESTATE
 STAGE 21A
 ROAD AND DRAINAGE
 ROAD CROSS SECTIONS - SHEET 1
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY Drg No 310827CR400 Rev E

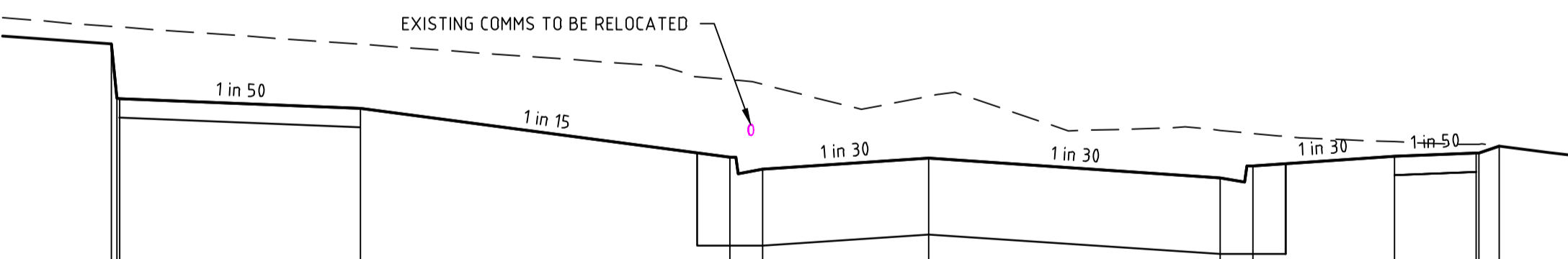
FILLING NOTE
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REDSTONE HILL ROAD CH 421.78



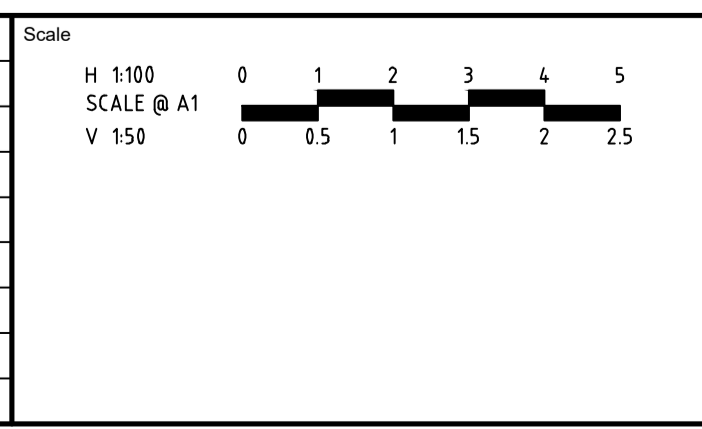
REDSTONE HILL ROAD CH 409.71



REDSTONE HILL ROAD CH 380.13

file name: 310827CR401.dwg, layout: name: CD/01, plotted by: Ullis, Tran, file location: G:\310827\310827\CD\01\CD\01.dwg, plot date: 09/10/2024, 12:29 PM, Sheet: 10 of 27, Sheets

Rev	Amendments	Approved	Date
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
A	ISSUED FOR TENDER	M.R	29/06/23



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Designed
 L. TRAN

Checked
 W. ONG

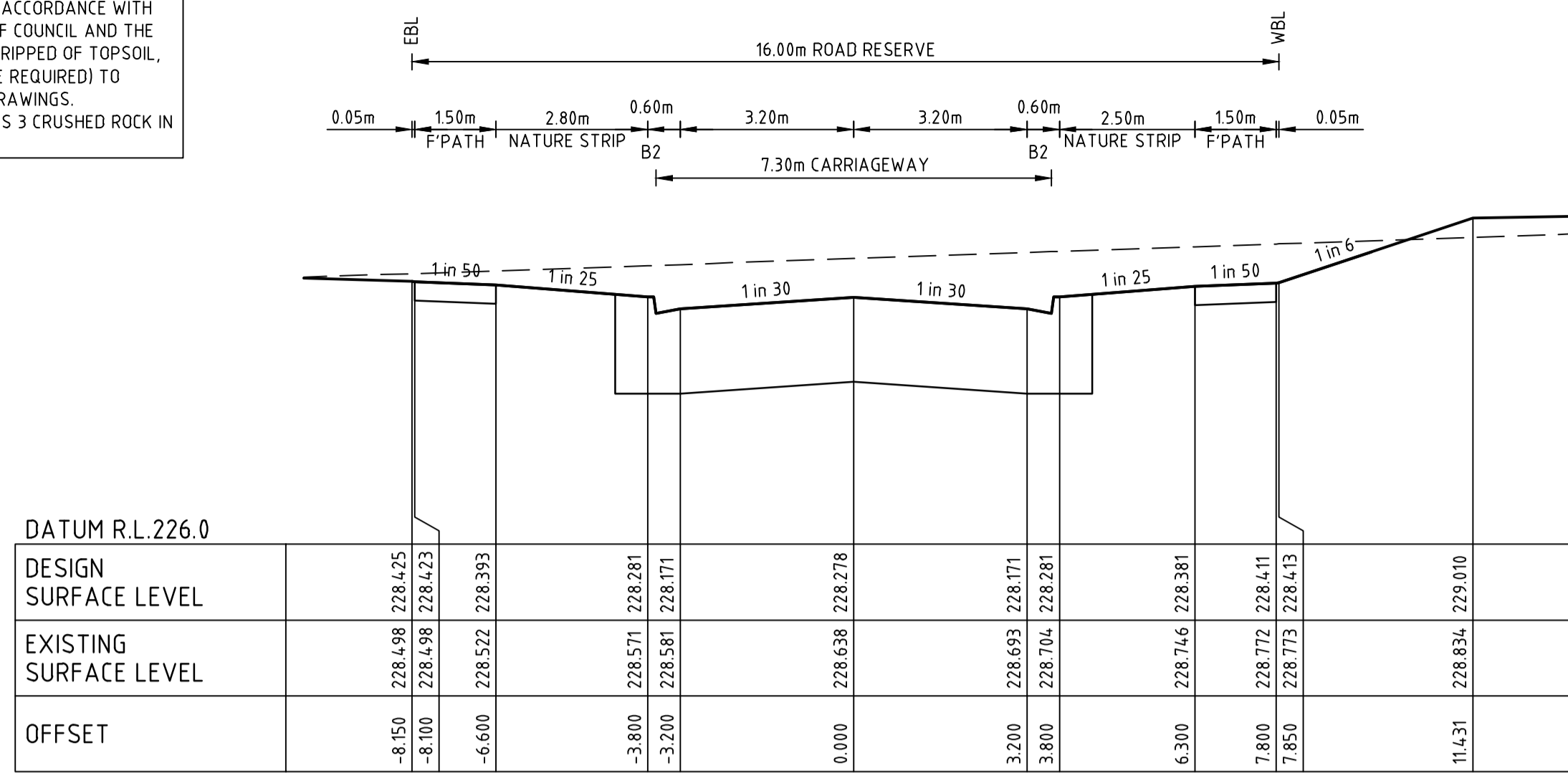
Authorised
 M. RANJANAN

Date
 26/07/23

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

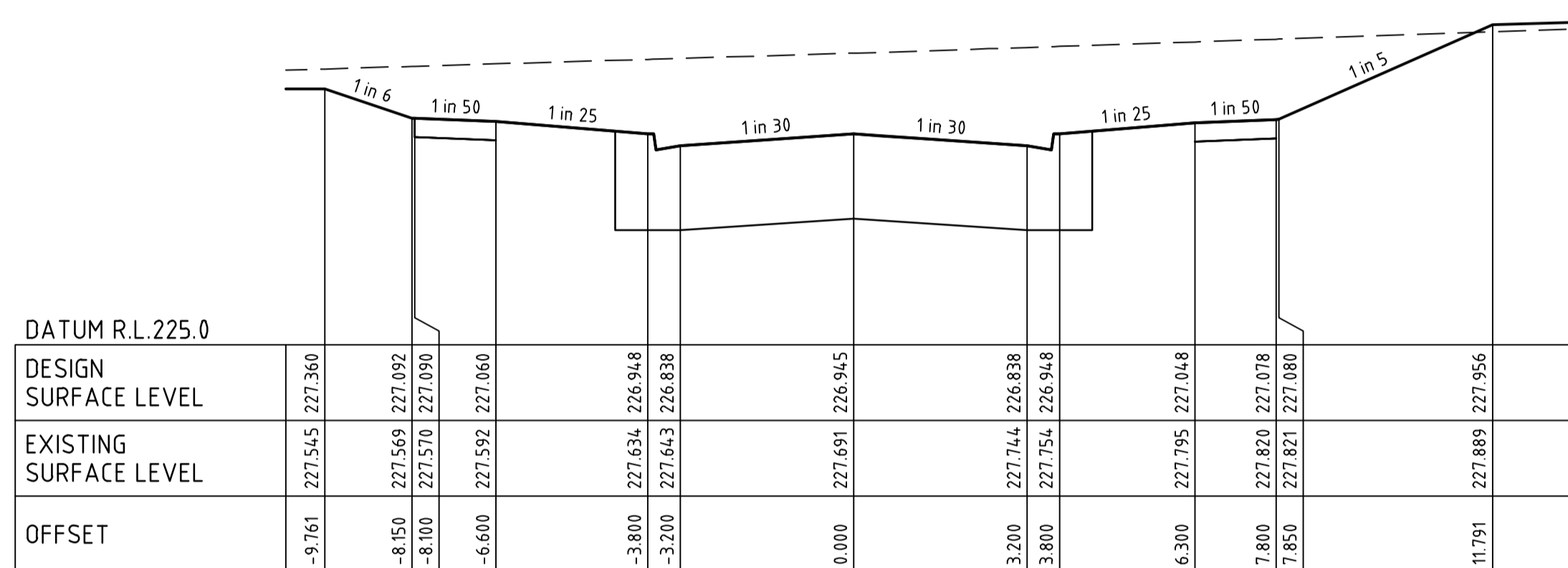
PRELIMINARY Drg No **310827CR401** Rev **F**

FILLING NOTE
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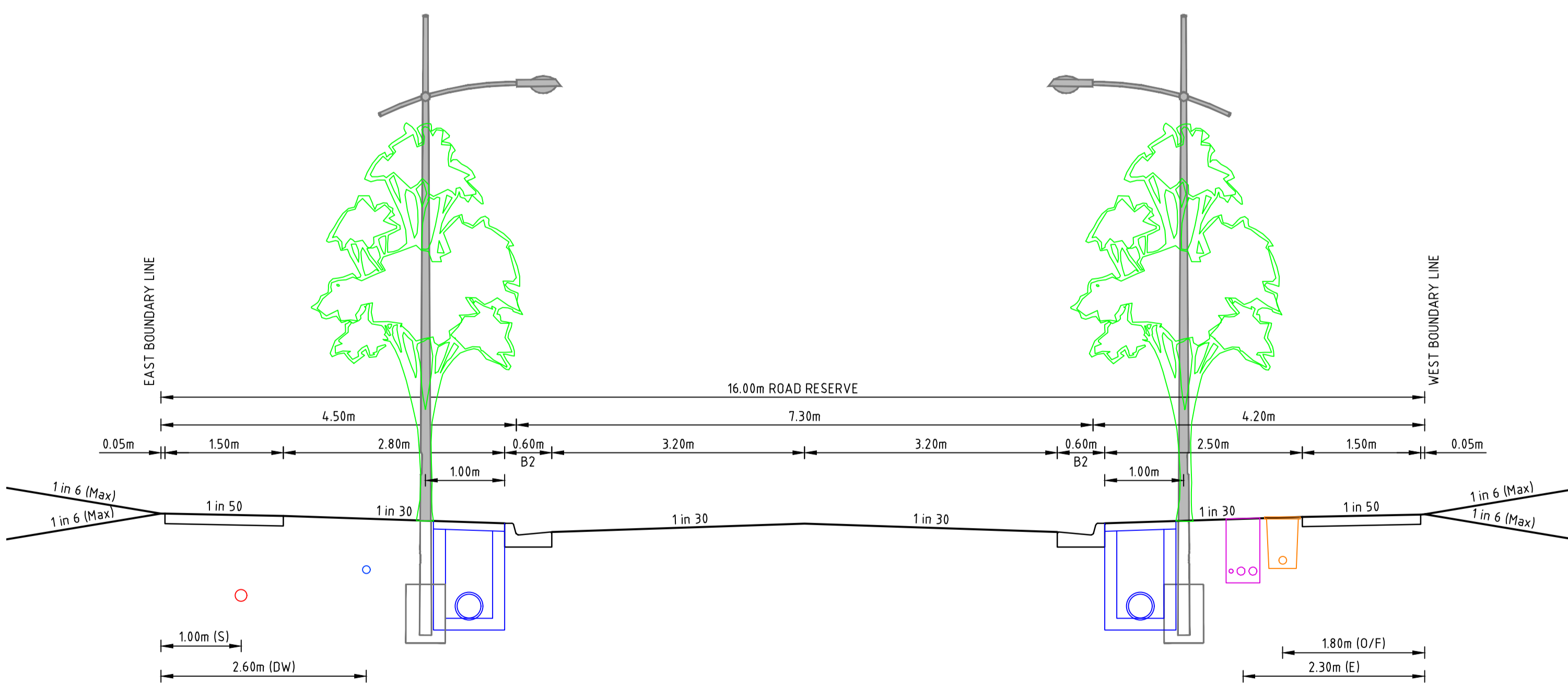
BOOBOOK ROAD

CH 42.90



BOOBOOK ROAD

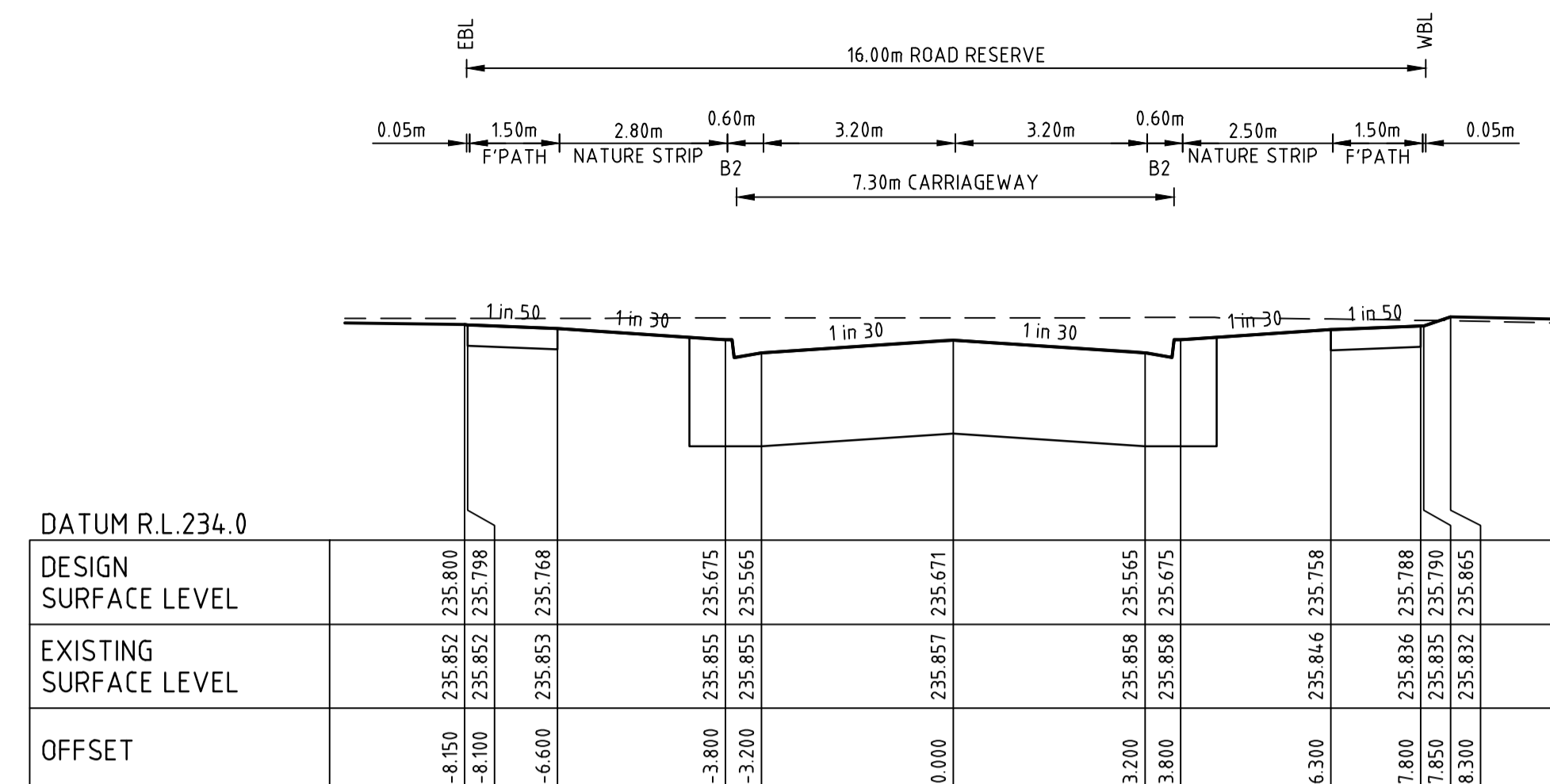
CH 22.70



BOOBOOK ROAD TYPICAL CROSS SECTION

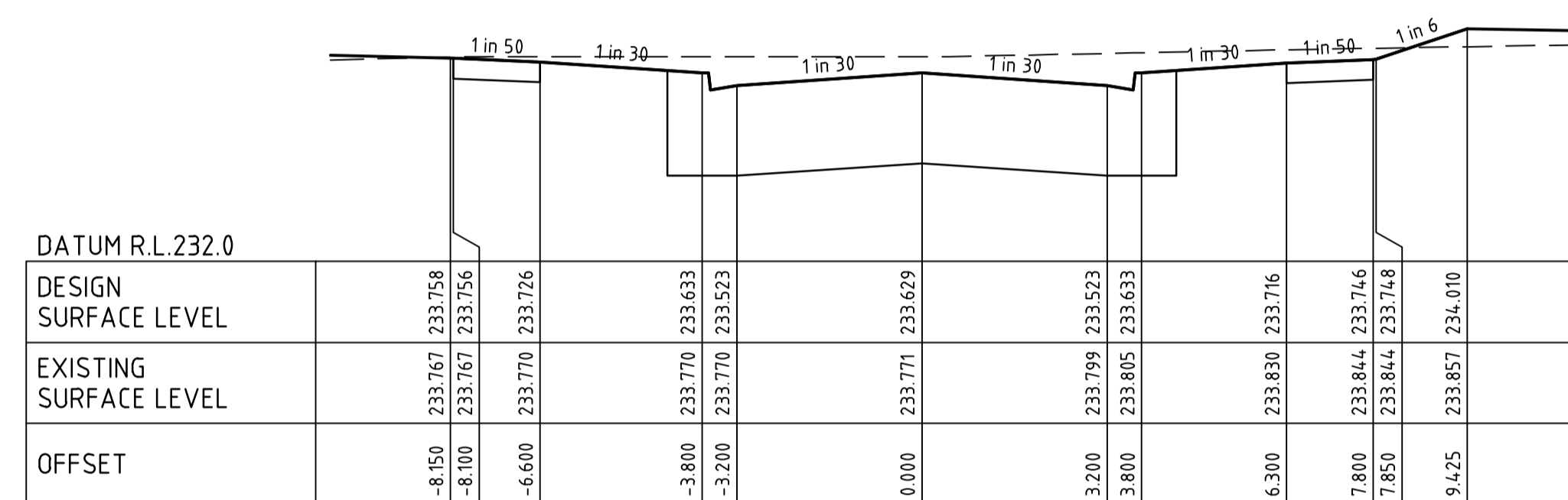
16m WIDE ACCESS STREET

SCALE 1: 50 @ A1



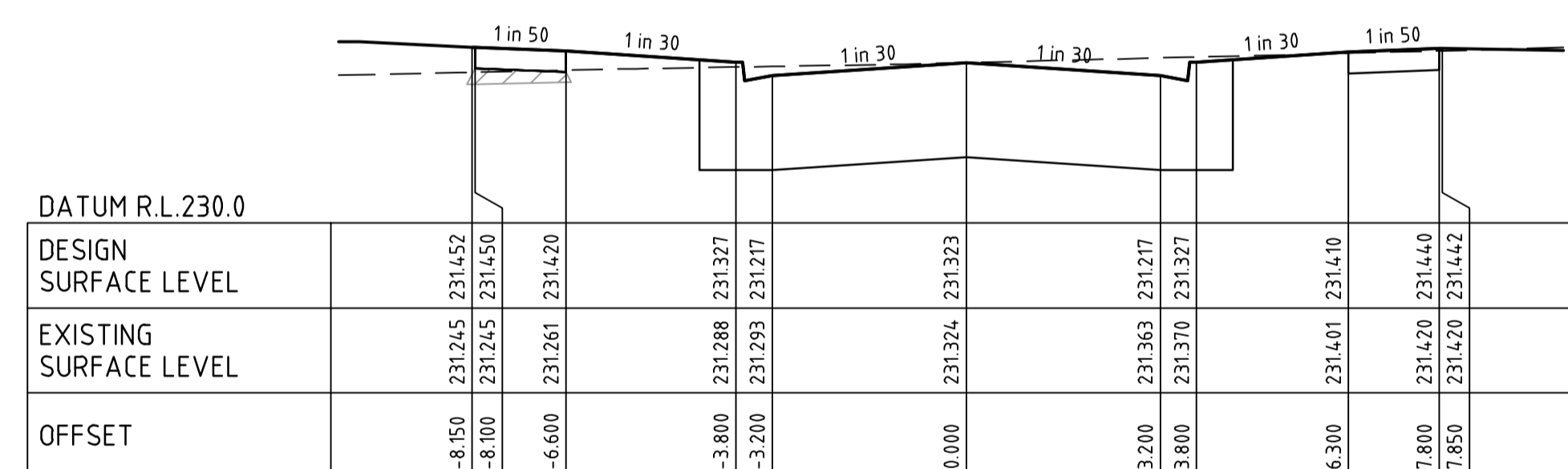
BOOBOOK ROAD

CH 149.40



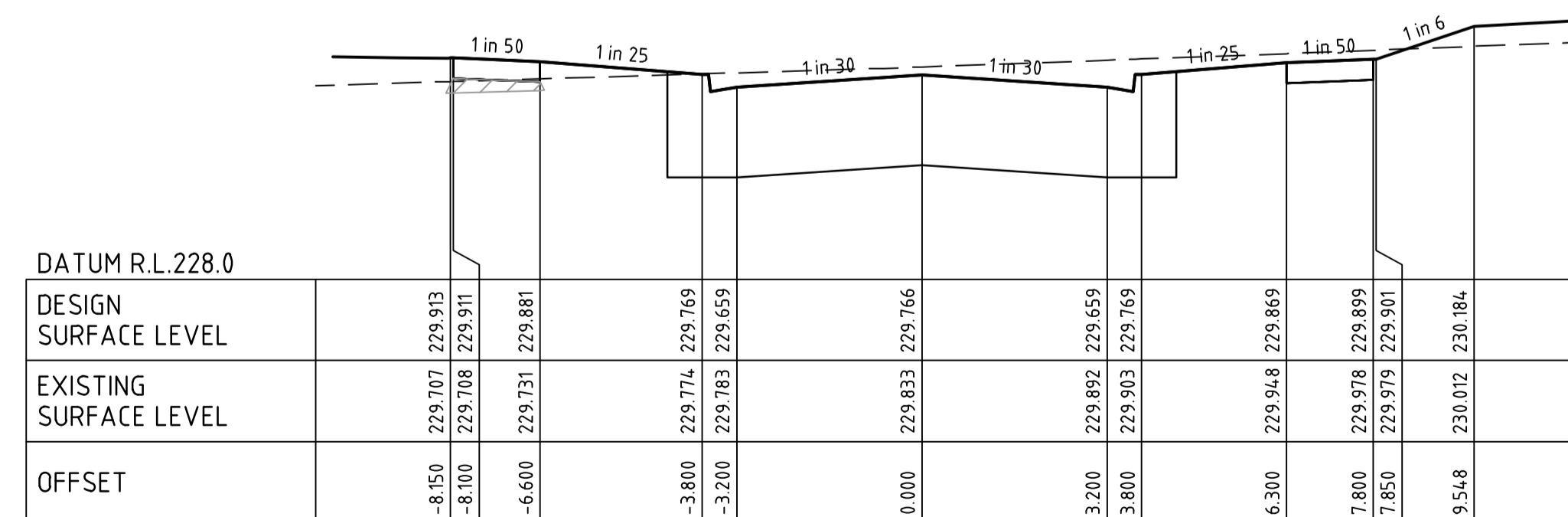
BOOBOOK ROAD

CH 123.39



BOOBOOK ROAD

CH 89.04

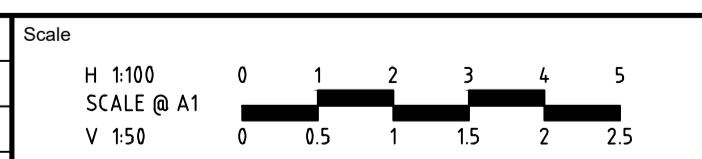


BOOBOOK ROAD

CH 65.44

file name: 310827CR402.dwg, layout name: CR402, plotted by: Lillian Tran, plot date: 09/04/2024, 12:29 PM, Sheet: 11 of 27 Sheets

Rev	Amendments	Approved	Date
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



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Designed
 L. TRAN
 Authorised
 M. RANJANAN



Checked
 W. ONG
 Date
 26/07/23

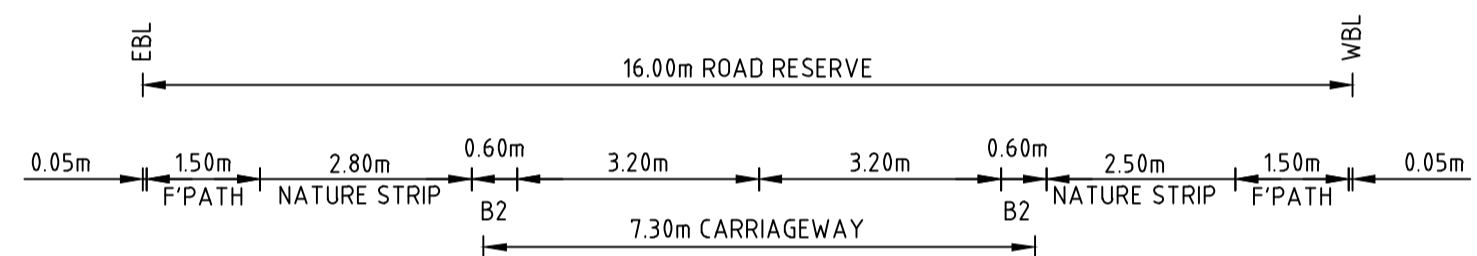
REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 3
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY

Drg No
310827CR402

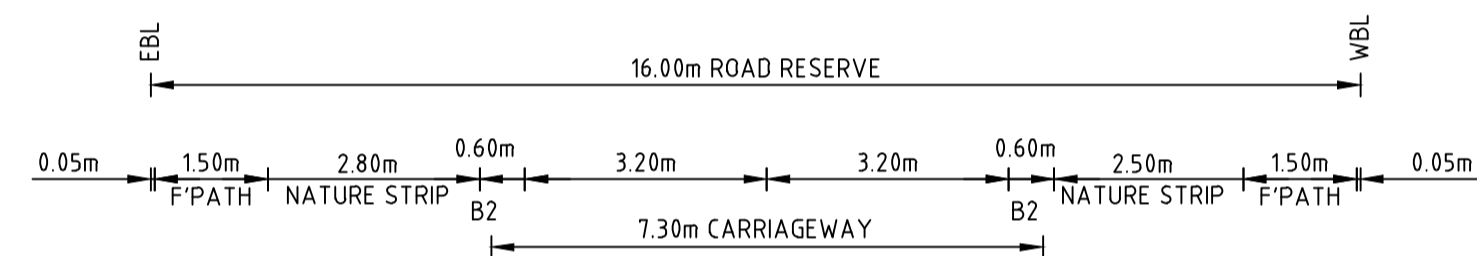
Rev
F

FILLING NOTE
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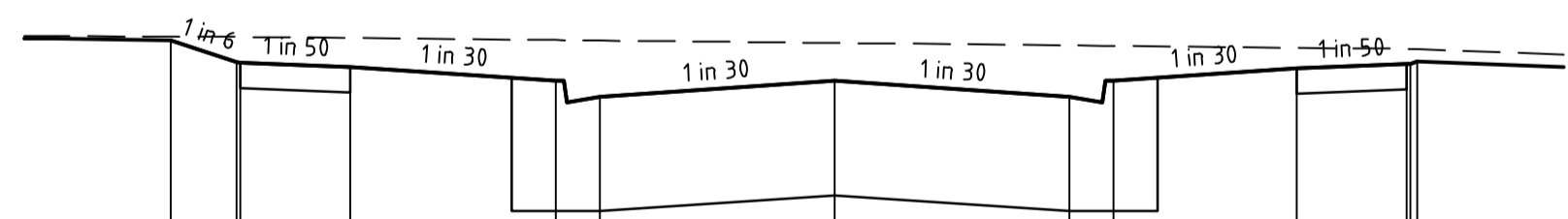
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DESIGN SURFACE LEVEL	240.002 239.984 -8.150 239.980 239.154 -8.100 239.979 239.152 -6.600 239.952 239.722 -3.800 239.900 239.629 -3.200 239.888 239.519 0.000 239.828 239.625 3.200 239.768 239.519 3.800 239.757 239.629 6.300 239.710 239.712 7.800 239.682 239.742 7.850 239.681 239.744 8.270 239.669 239.640
EXISTING SURFACE LEVEL	
OFFSET	

BOOBOOK ROAD CH 200.90



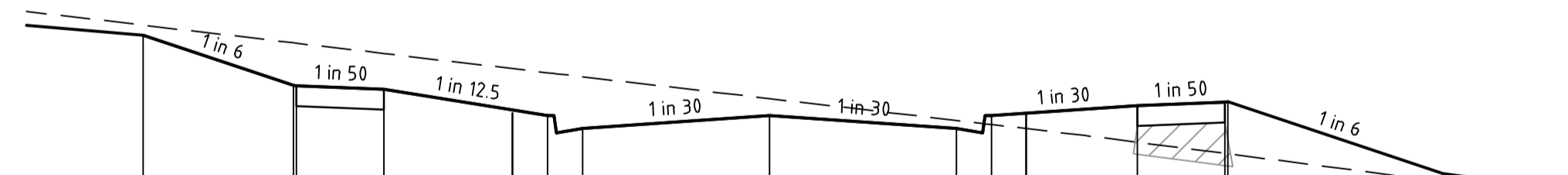
DATUM R.L. 240.0	
DESIGN SURFACE LEVEL	242.689 242.415 -8.150 242.328 241.969 -8.100 242.325 241.967 -6.600 242.238 241.937 -3.800 242.073 241.713 -3.200 242.037 241.603 0.000 241.862 241.710 3.200 241.648 241.603 3.800 241.612 241.713 6.300 241.460 241.796 7.800 241.389 241.826 7.850 241.386 241.828 11.477 241.140 241.224
EXISTING SURFACE LEVEL	
OFFSET	

BOOBOOK ROAD CH 243.81



DATUM R.L. 236.0	
DESIGN SURFACE LEVEL	238.053 238.028 -8.150 238.051 237.879 -8.100 238.051 237.877 -6.600 238.044 237.847 -3.800 238.030 237.754 -3.200 238.027 237.644 0.000 238.010 237.750 3.200 237.993 237.644 3.800 237.990 237.754 6.300 237.977 237.837 7.800 237.969 237.867 7.850 237.969 237.869 7.943 237.968 237.864
EXISTING SURFACE LEVEL	
OFFSET	

BOOBOOK ROAD CH 175.90

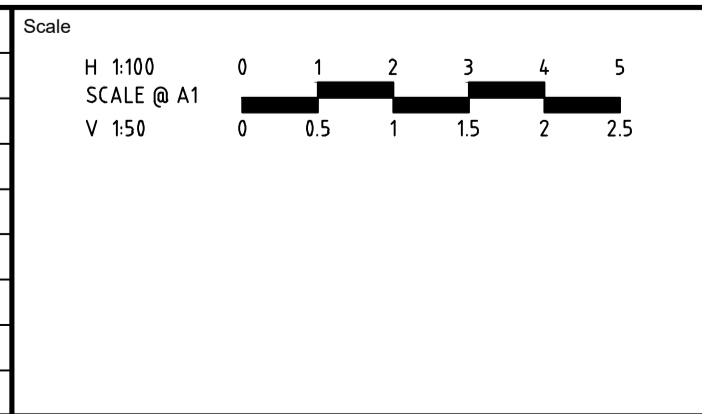


DATUM R.L. 240.0	
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EXISTING SURFACE LEVEL	
OFFSET	

BOOBOOK ROAD CH 230.23

file name: 310827CR403.dwg, layout name: CR403, plotted by: Lillian Tran, file location: G:\310827\310827\310827.dwg, plot date: 09/04/2024, 12:30 PM, Sheet: 12 of 27, Sheets

Rev	Amendments	Approved	Date
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



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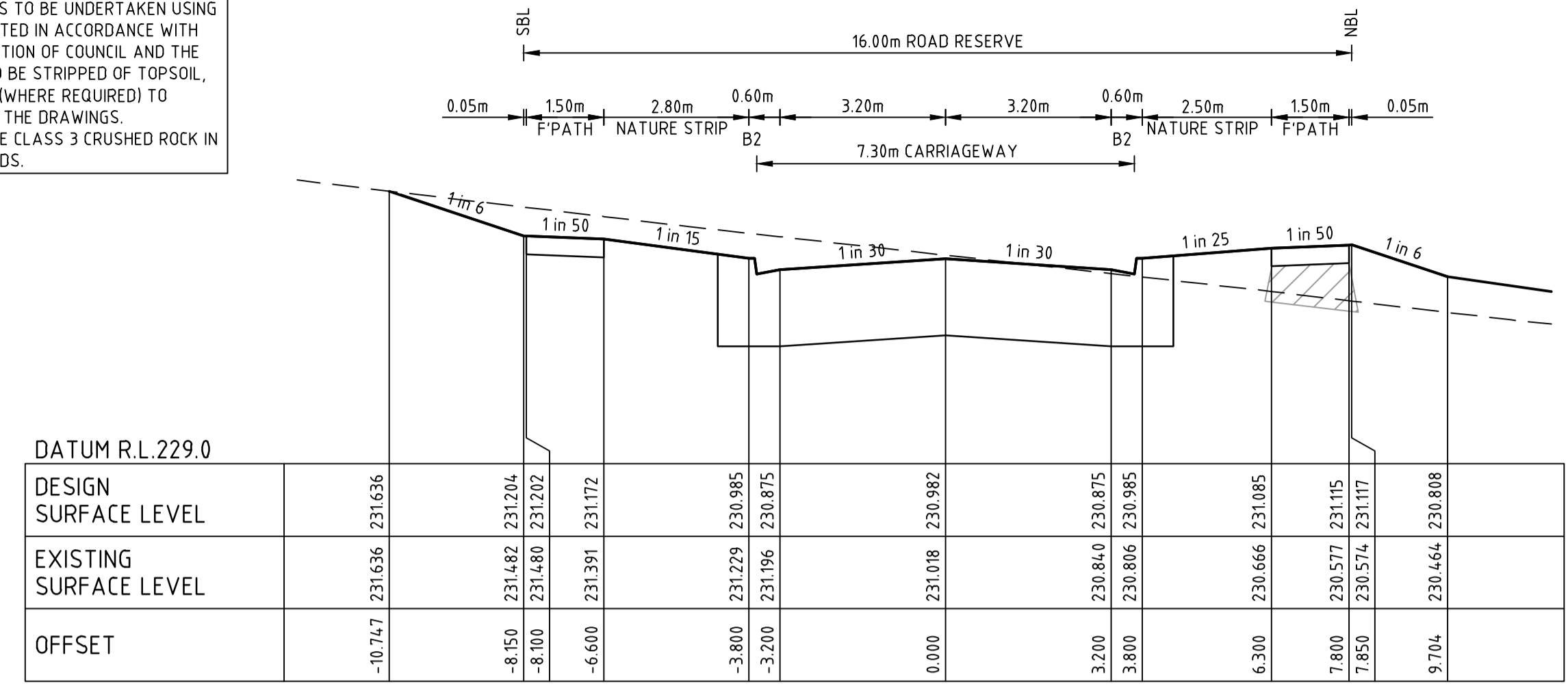
Checked: W. ONG
 Date: 26/07/23

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

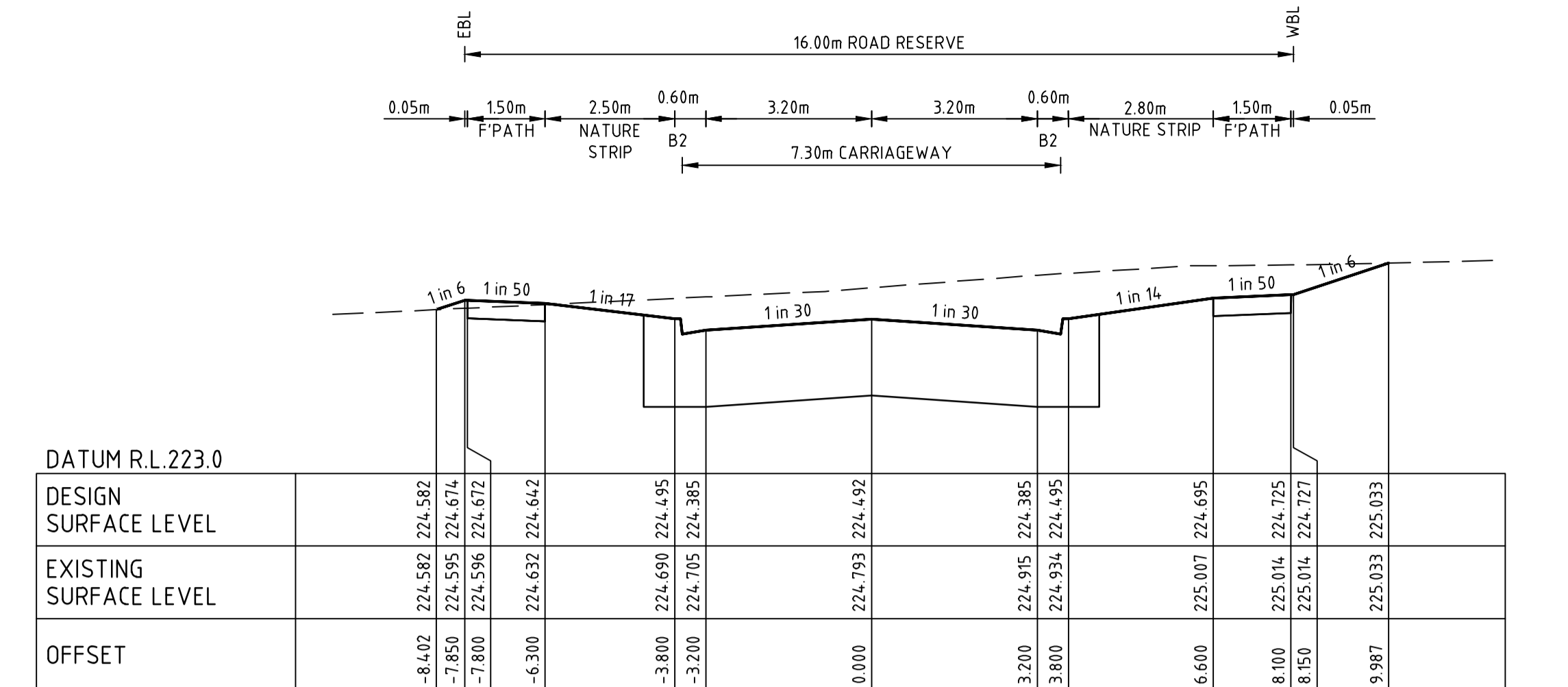
PRELIMINARY

Drg No: 310827CR403 Rev: C

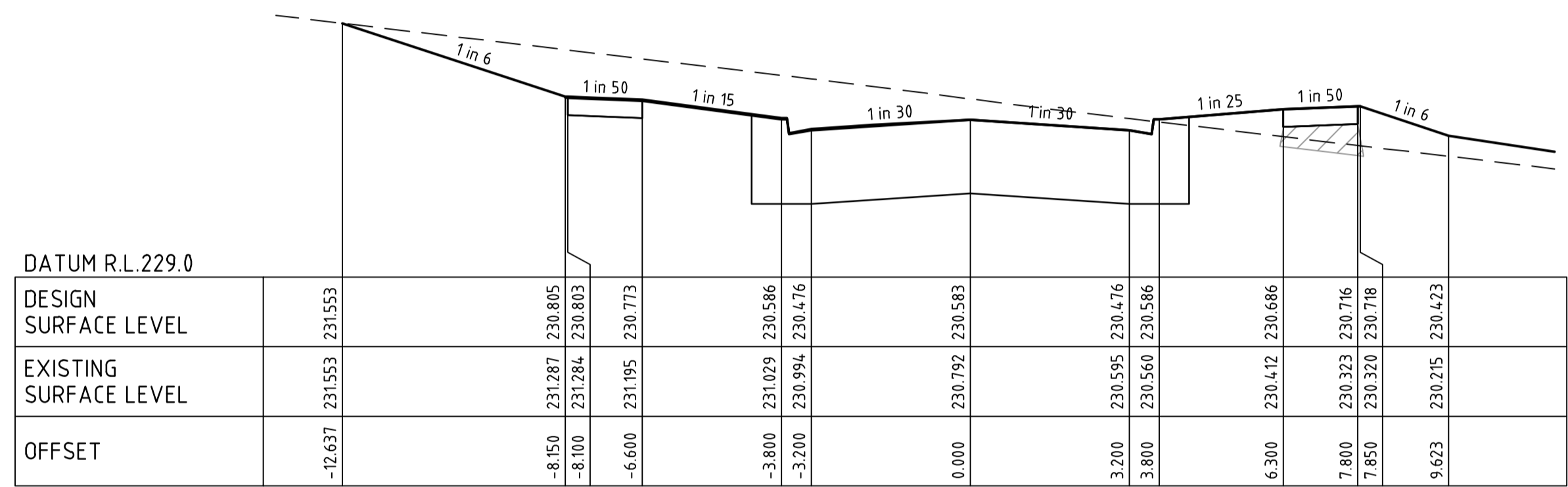
FILLING NOTE
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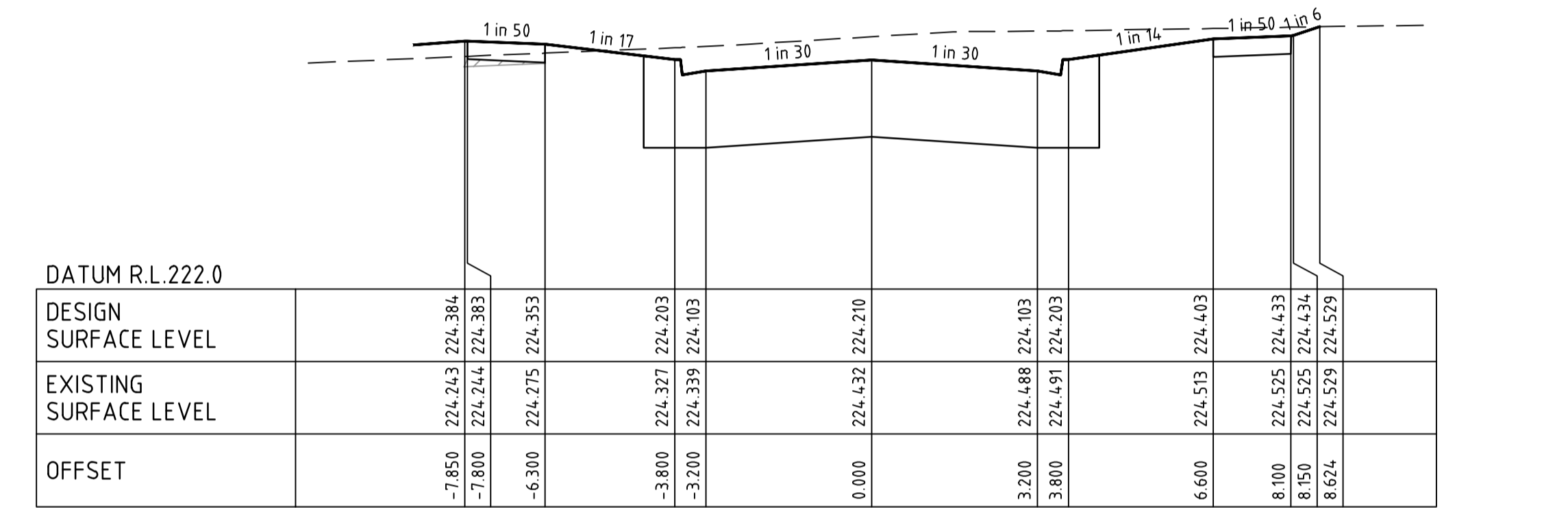
AKIN ROAD CH 29.85



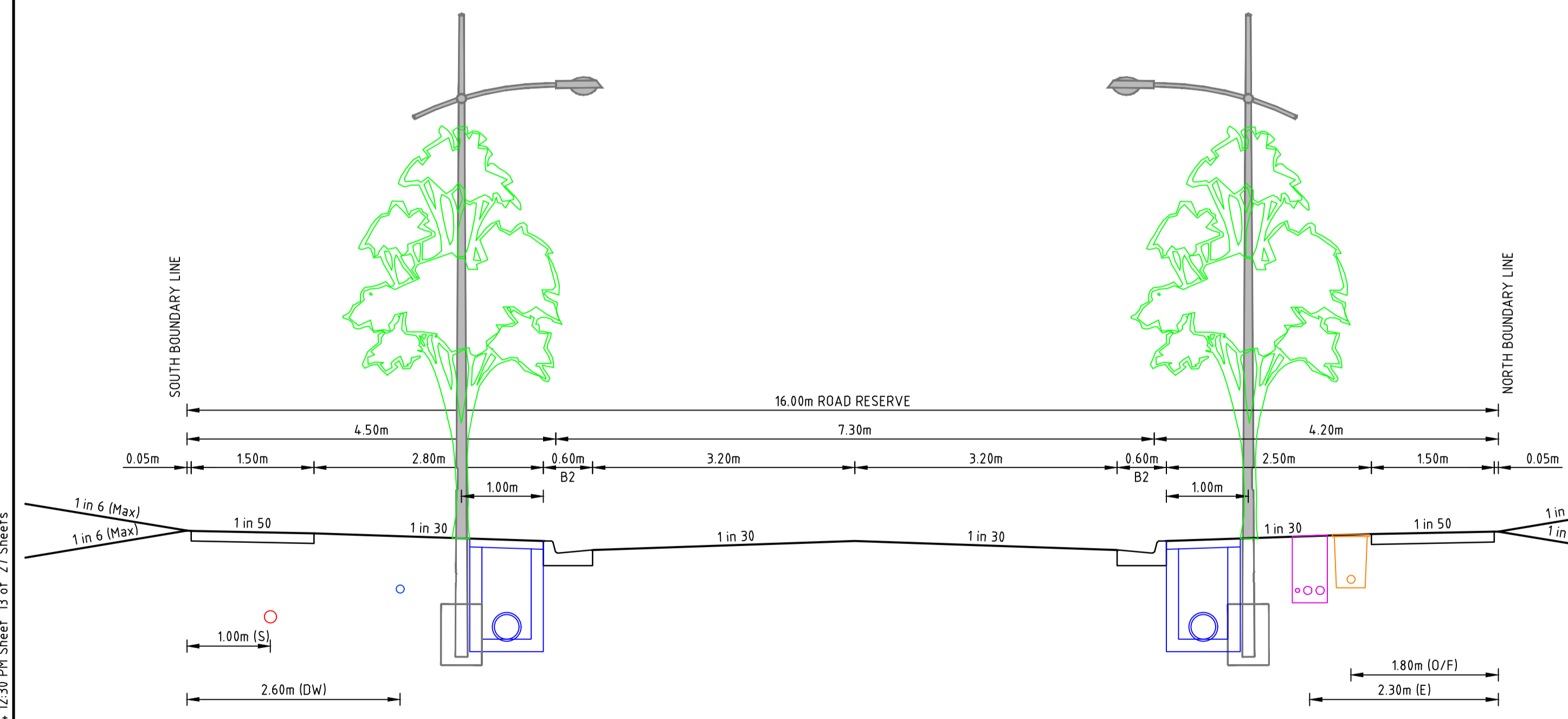
SPINE BILL STREET CH 211.07



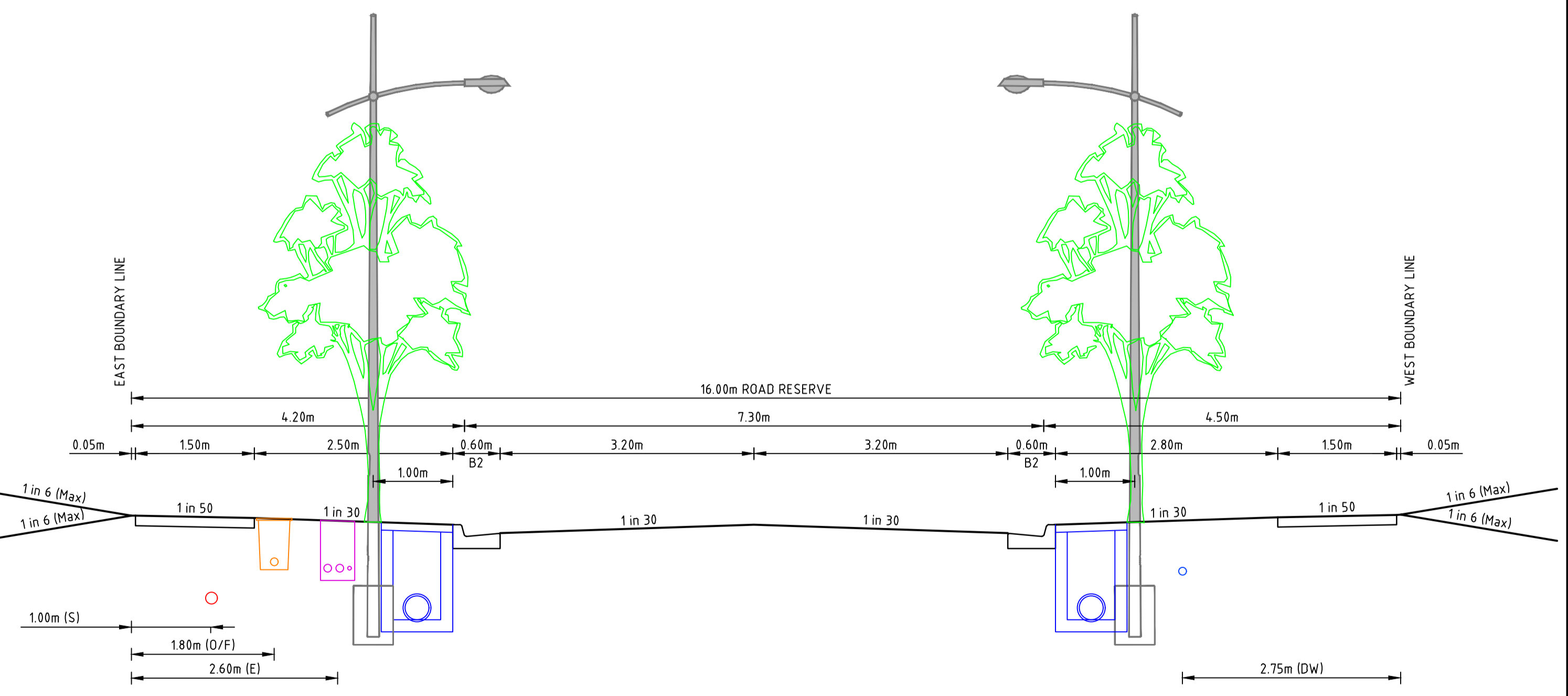
AKIN ROAD CH 13.35



SPINE BILL STREET CH 202.62



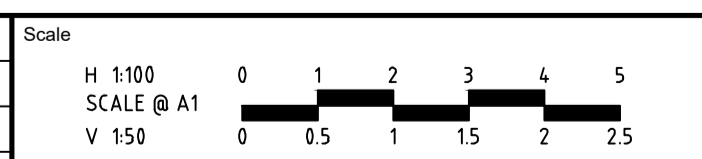
AKIN ROAD TYPICAL CROSS SECTION
 16m WIDE ACCESS STREET
 SCALE 1:50 @ A1



SPINE BILL STREET TYPICAL CROSS SECTION
 16m WIDE ACCESS STREET
 SCALE 1:50 @ A1

file name: 310827CR404.dwg, layout: rans, cdu, file location: G:\310827\310827\AKAD\plot date: 09/04/2024, 12:30 PM, Sheet: 13 of 27, Sheets

Rev	Amendments	Approved	Date
D	FILLING NOTE AMENDED	M.R	23/02/24
C	TYPICAL SECTION AMENDED	M.R	20/12/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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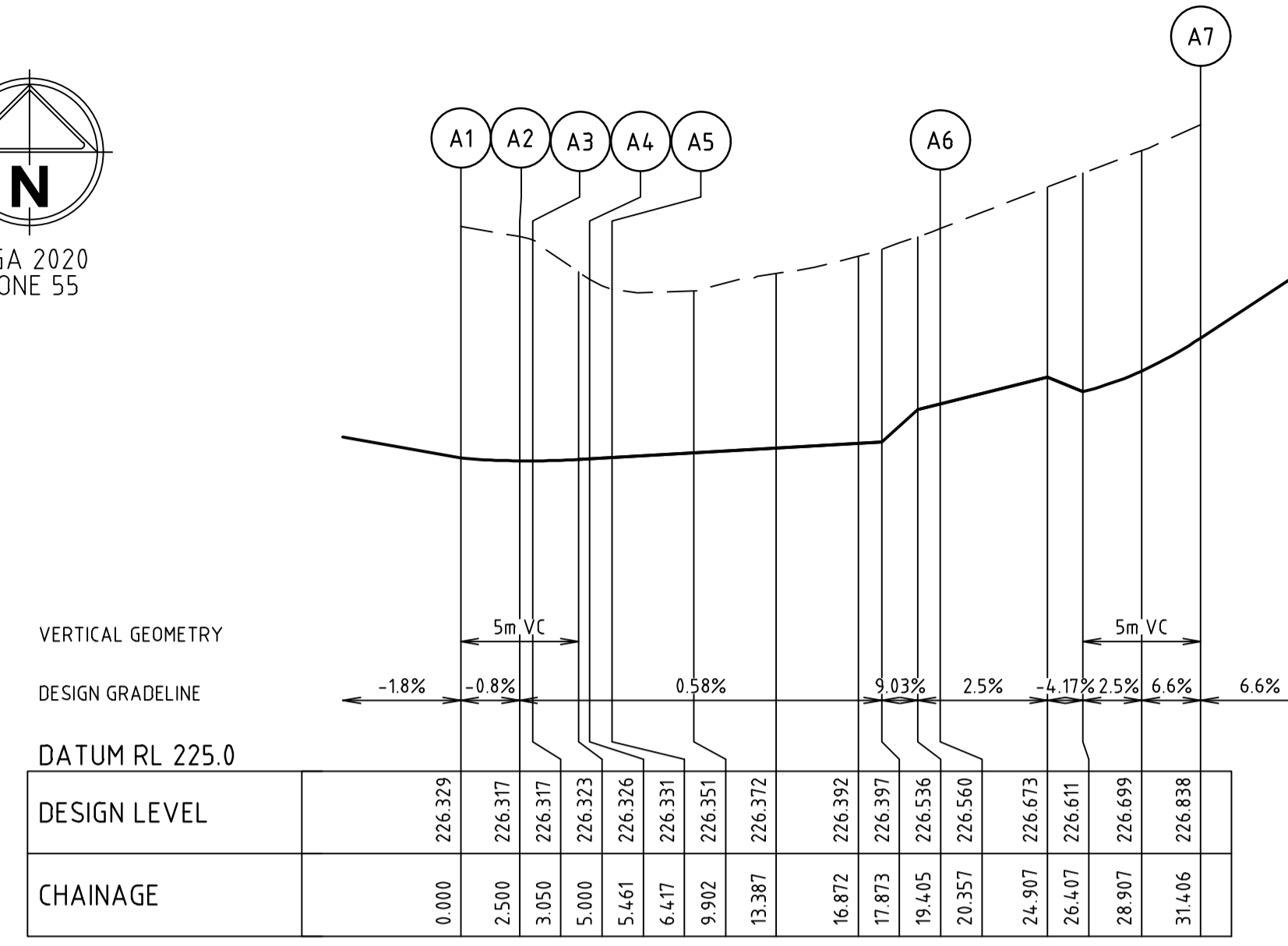
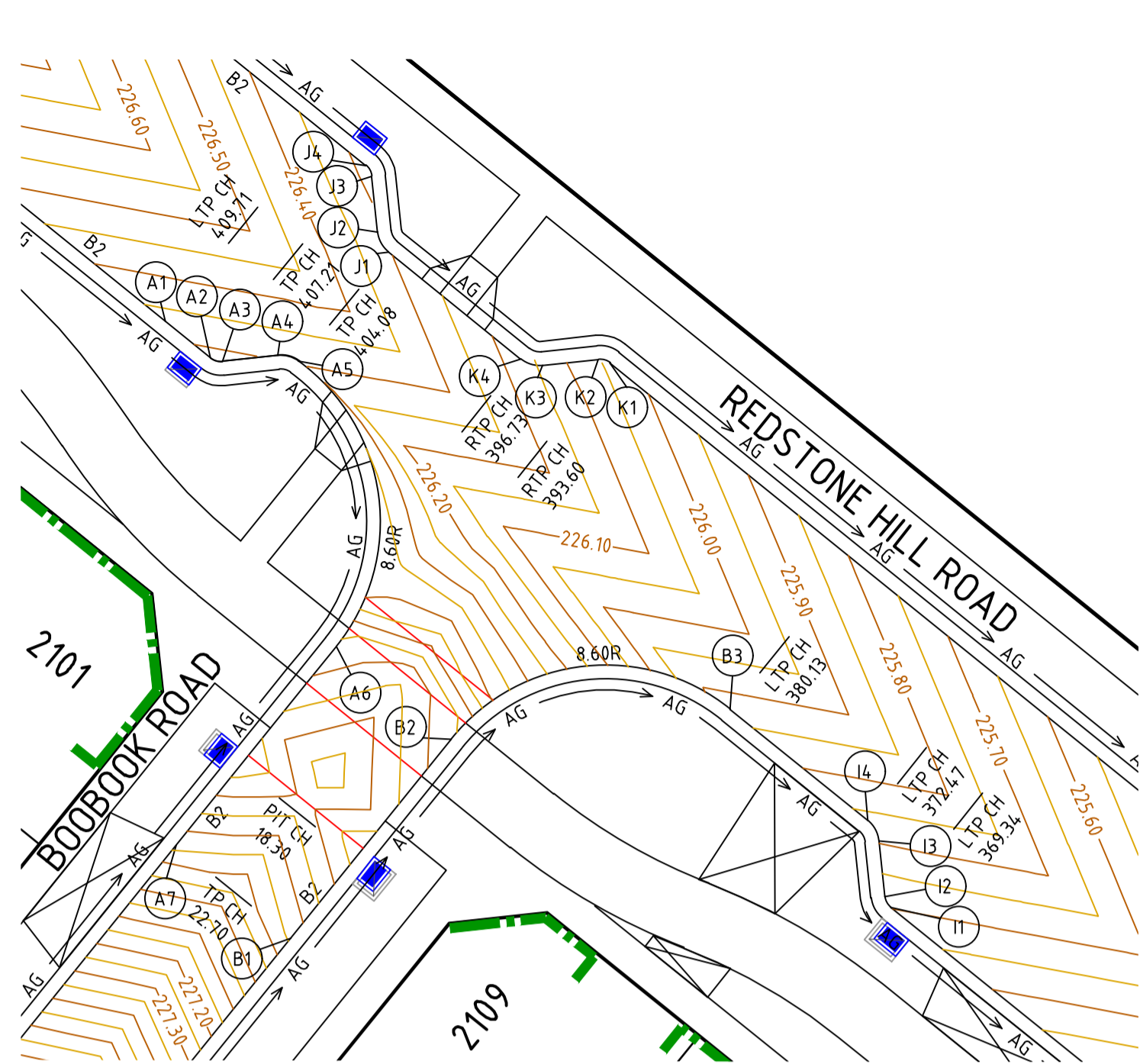
Designed: L. TRAN
 Authorised: M. RANJANAN

Checked: W. ONG
 Date: 26/07/23

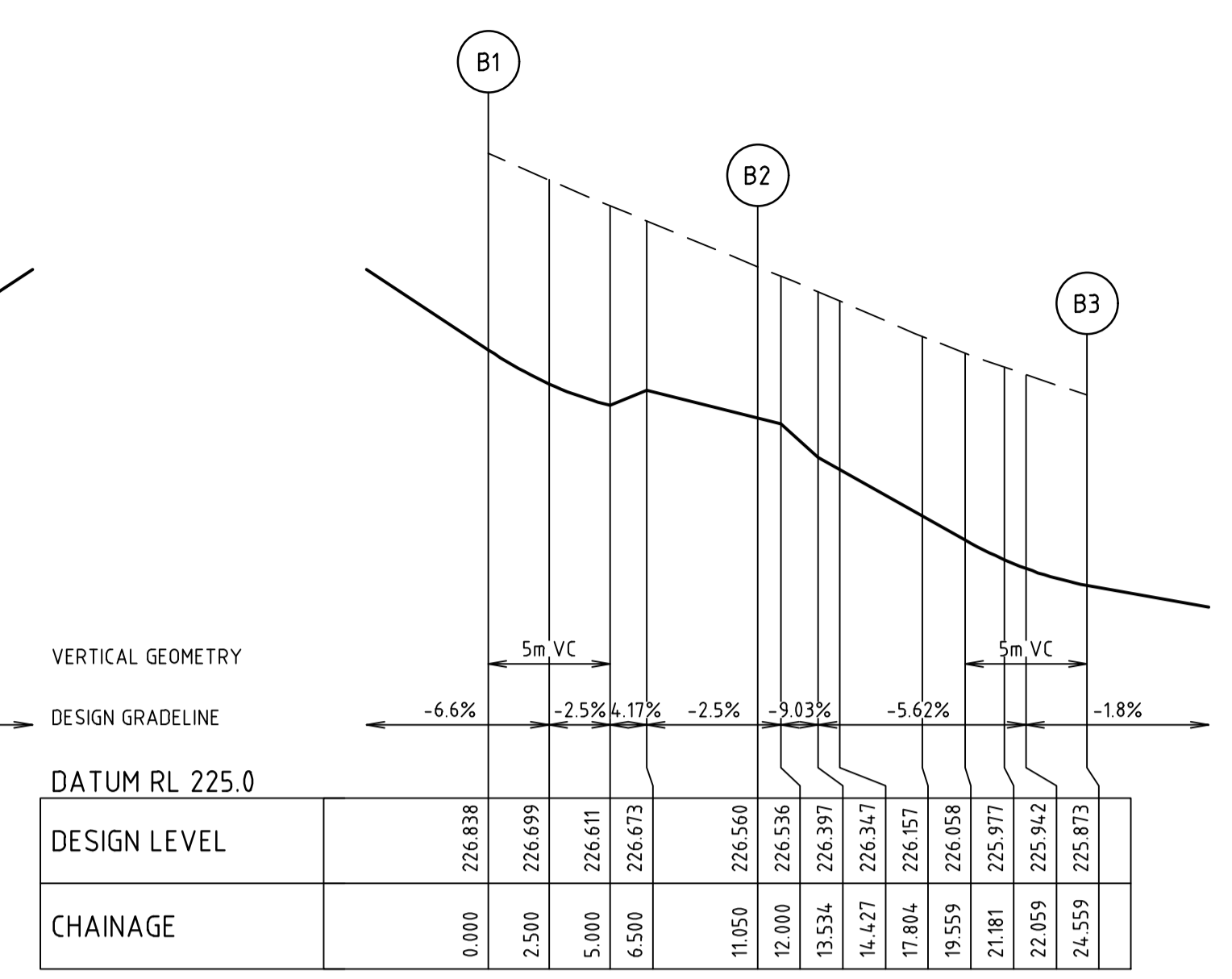
REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
ROAD CROSS SECTIONS - SHEET 5
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY

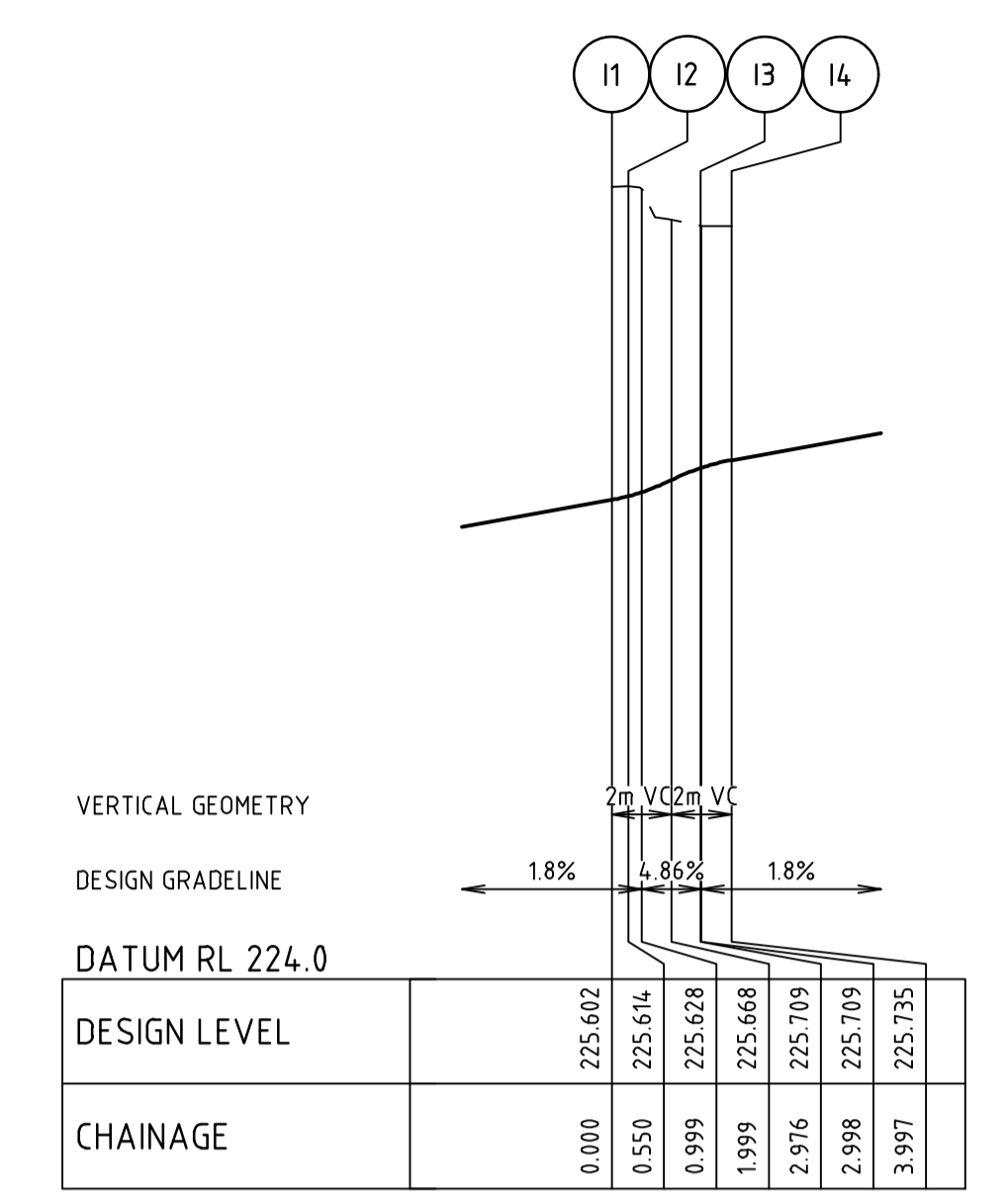
Drg No: 310827CR404 Rev: D



ALIGNMENT A



ALIGNMENT B



ALIGNMENT I

ALIGNMENT A

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

ALIGNMENT B

POINT NO	EASTING	NORTHING	RL
B1	301901.067	5835848.115	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

ALIGNMENT J

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

ALIGNMENT I

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

ALIGNMENT K

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

ALIGNMENT C

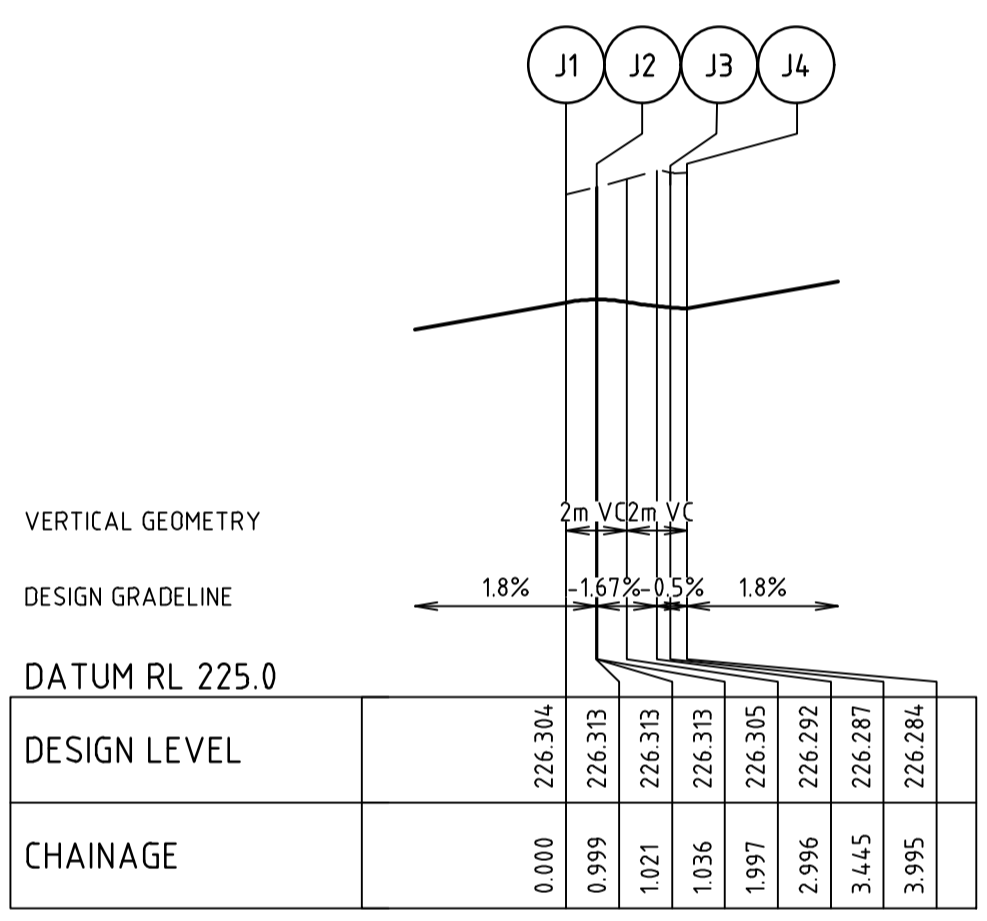
POINT NO	EASTING	NORTHING	RL
C1	301869.246	5835818.877	229.659
1/4	301866.670	5835816.727	229.880
1/2	301863.467	5835815.727	230.098
3/4	301860.125	5835816.028	230.291
C2	301857.152	5835817.586	230.436

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

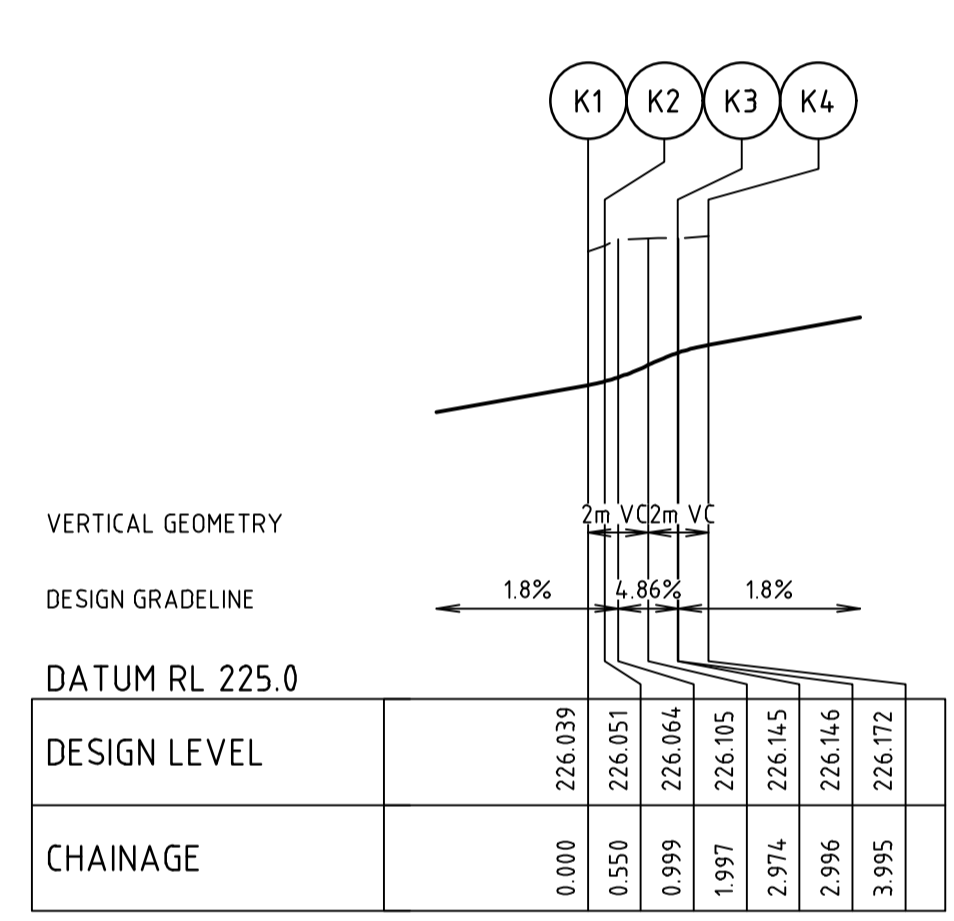
ALIGNMENT D

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

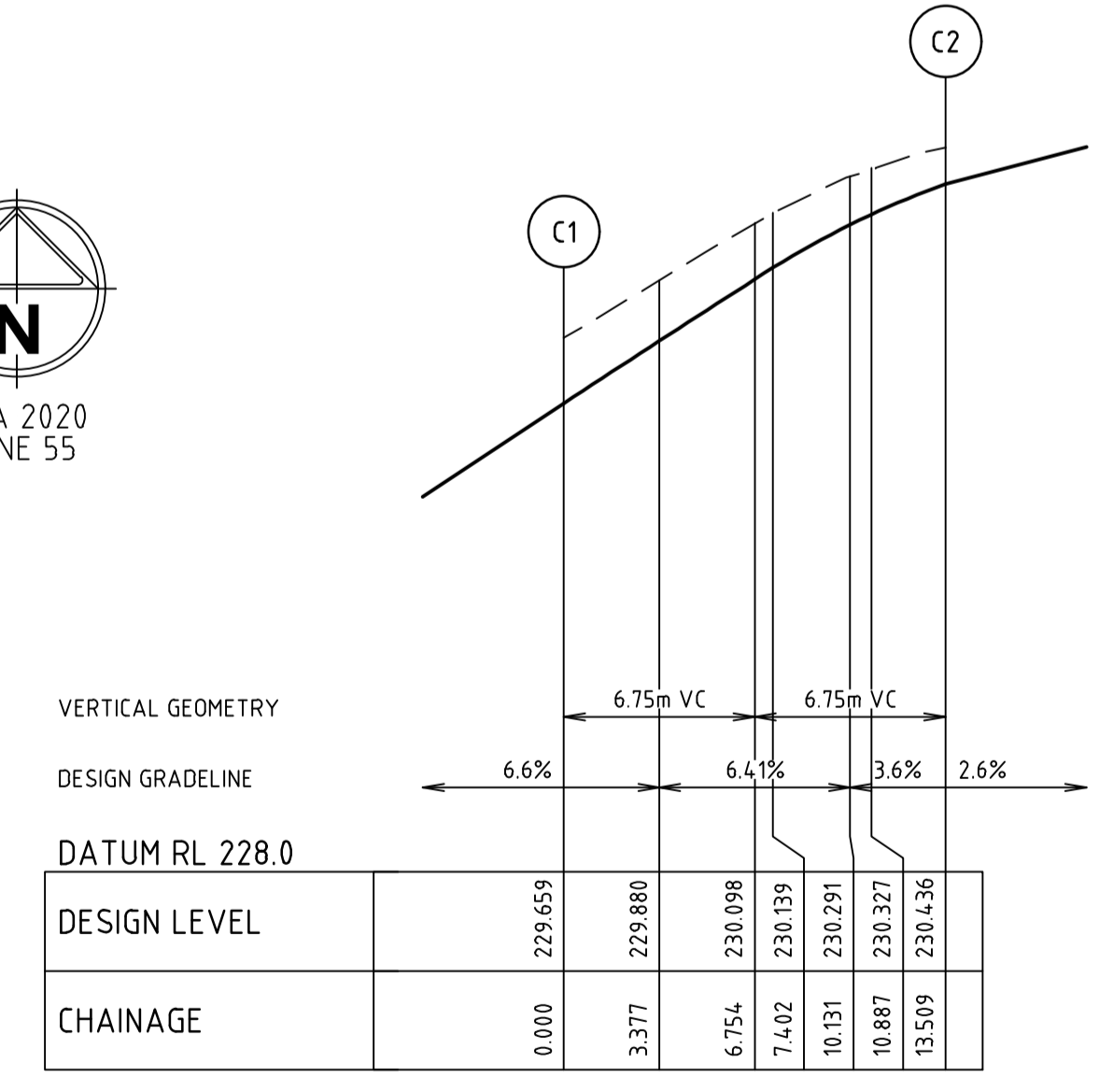
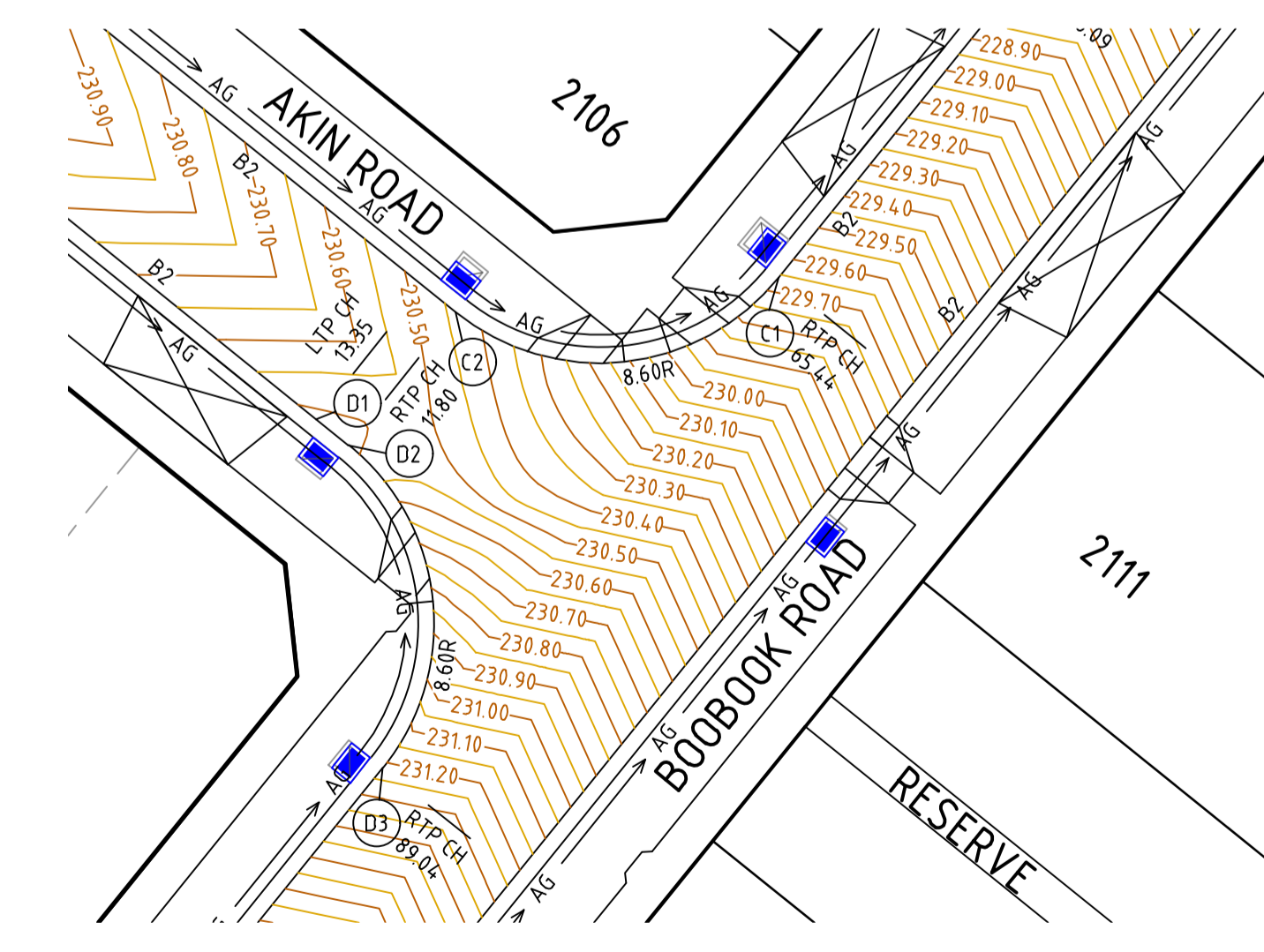
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
D2-D3	8.600	13.509	12.162	2.519	0.655



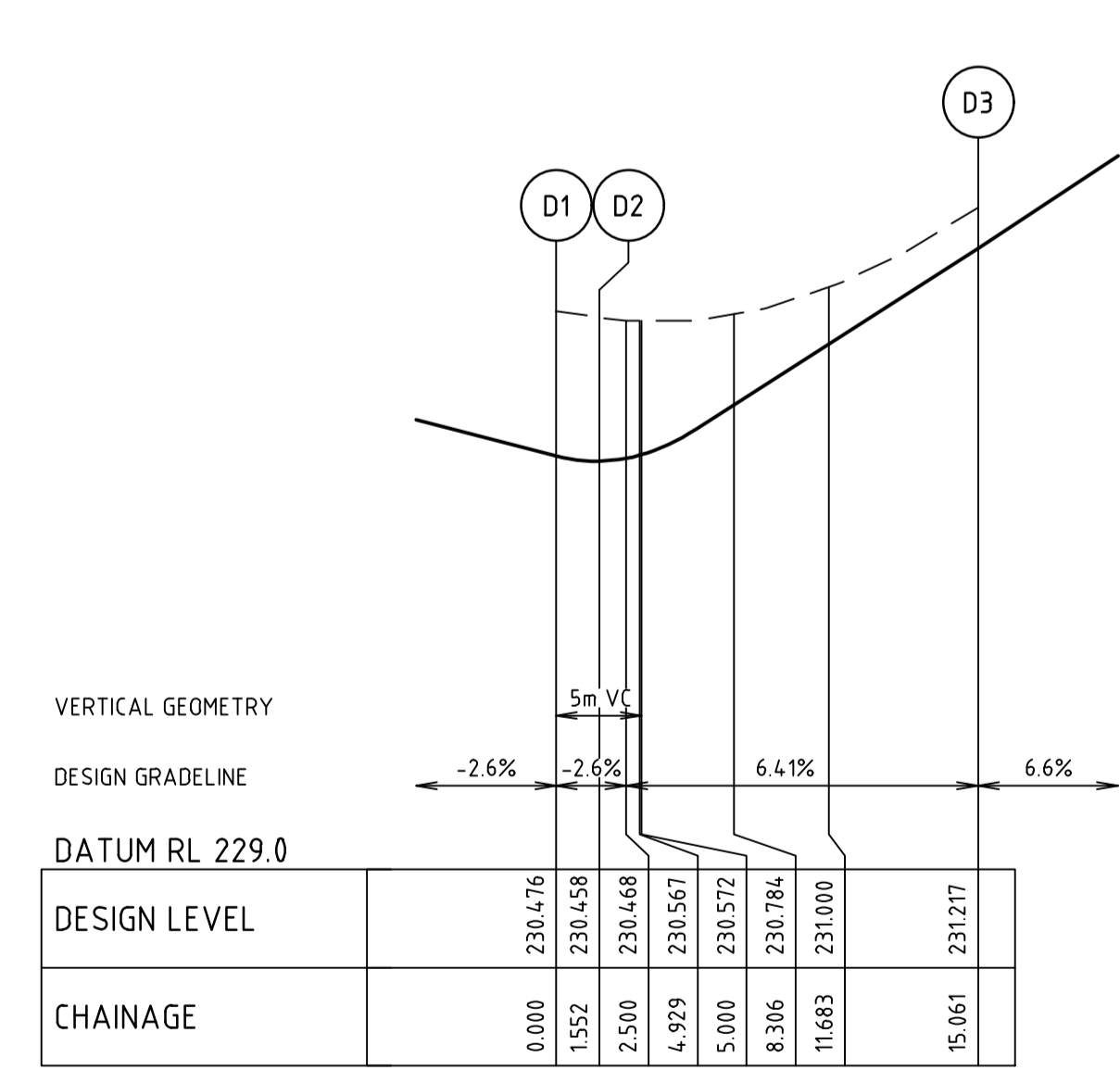
ALIGNMENT J



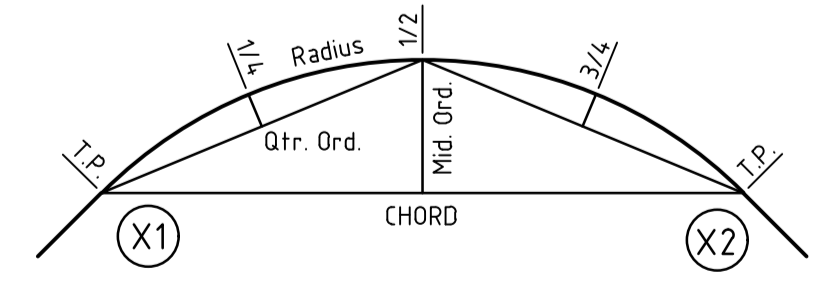
ALIGNMENT K



ALIGNMENT C



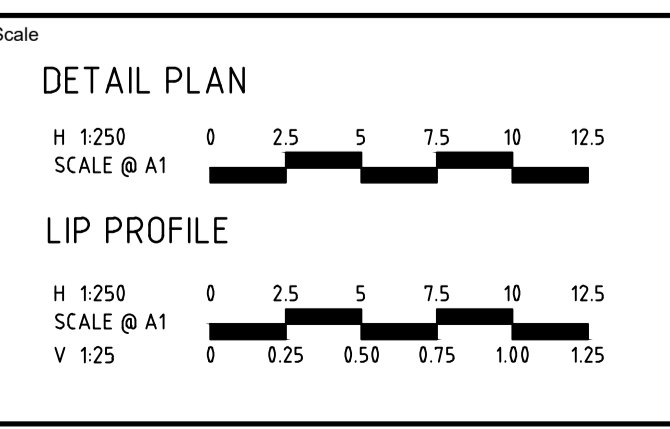
ALIGNMENT D



KERB RETURN SETOUT DETAIL

file name: 310827CR500.dwg, layout: name: CR500, plotted by: Ullian Tran, file location: G:\310827\310827\WILLAKAD\plot date: 09/04/2024, 12:30 PM, Sheet: 14 of 27, Sheets

Rev	Amendments	Approved	Date
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

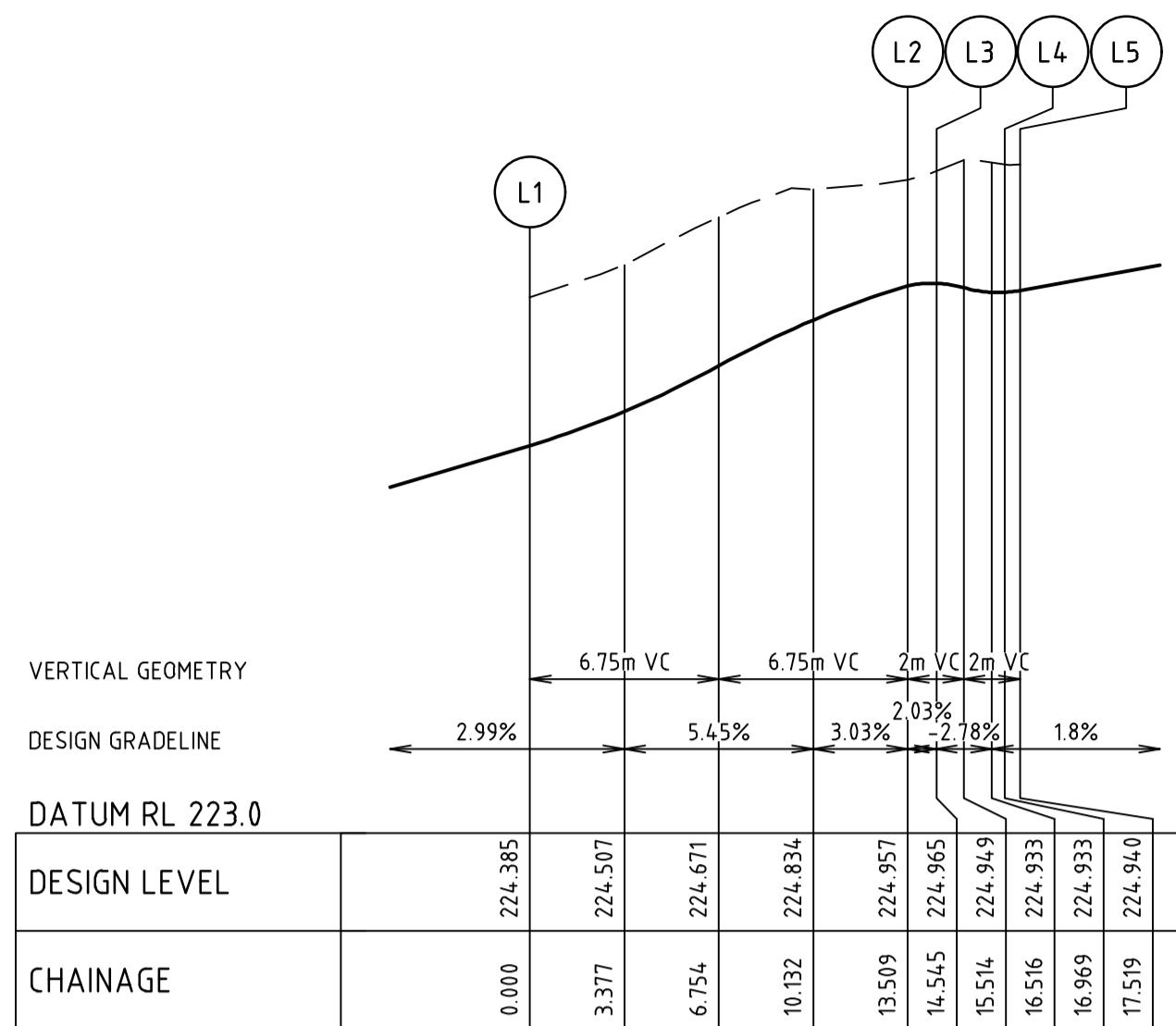
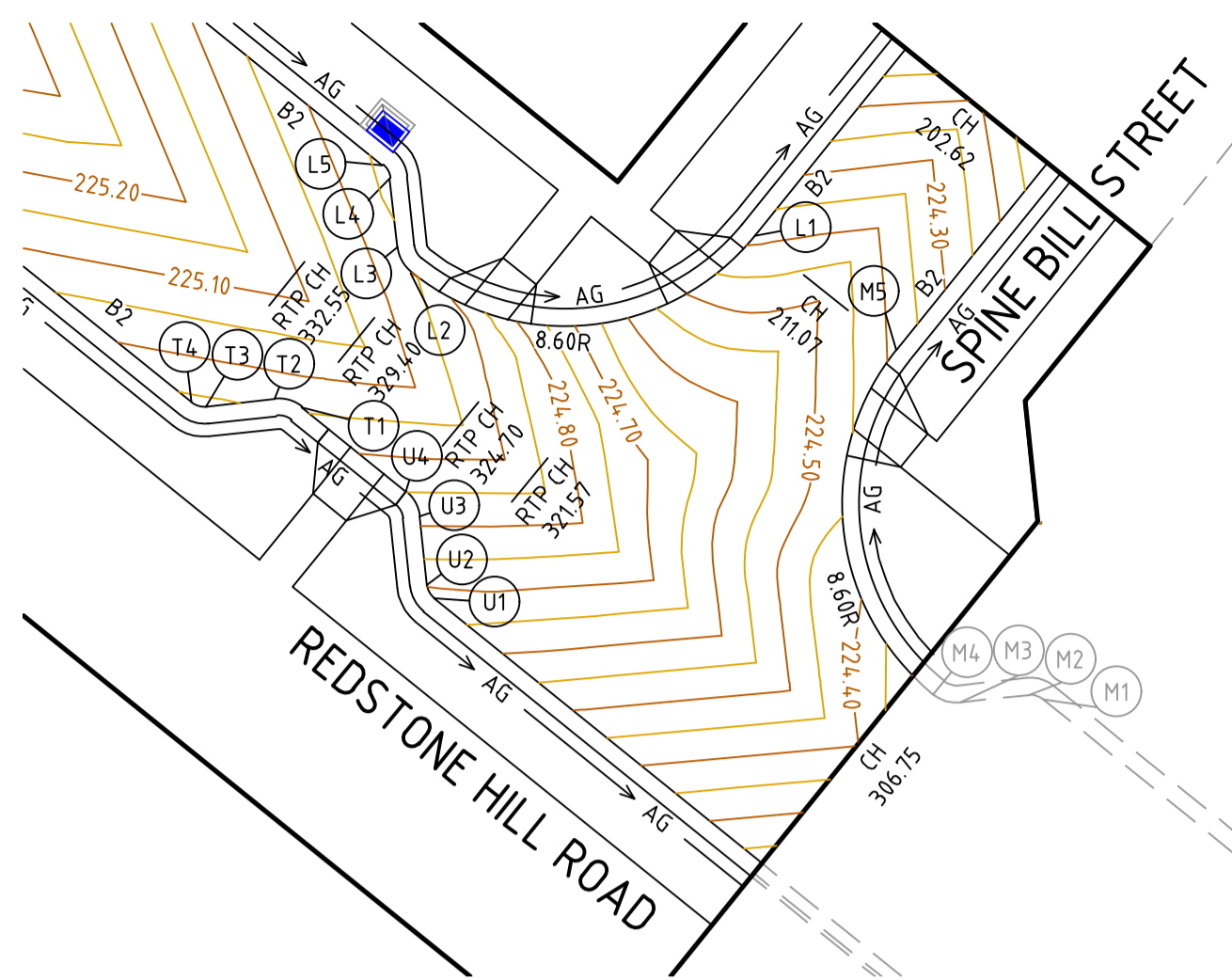


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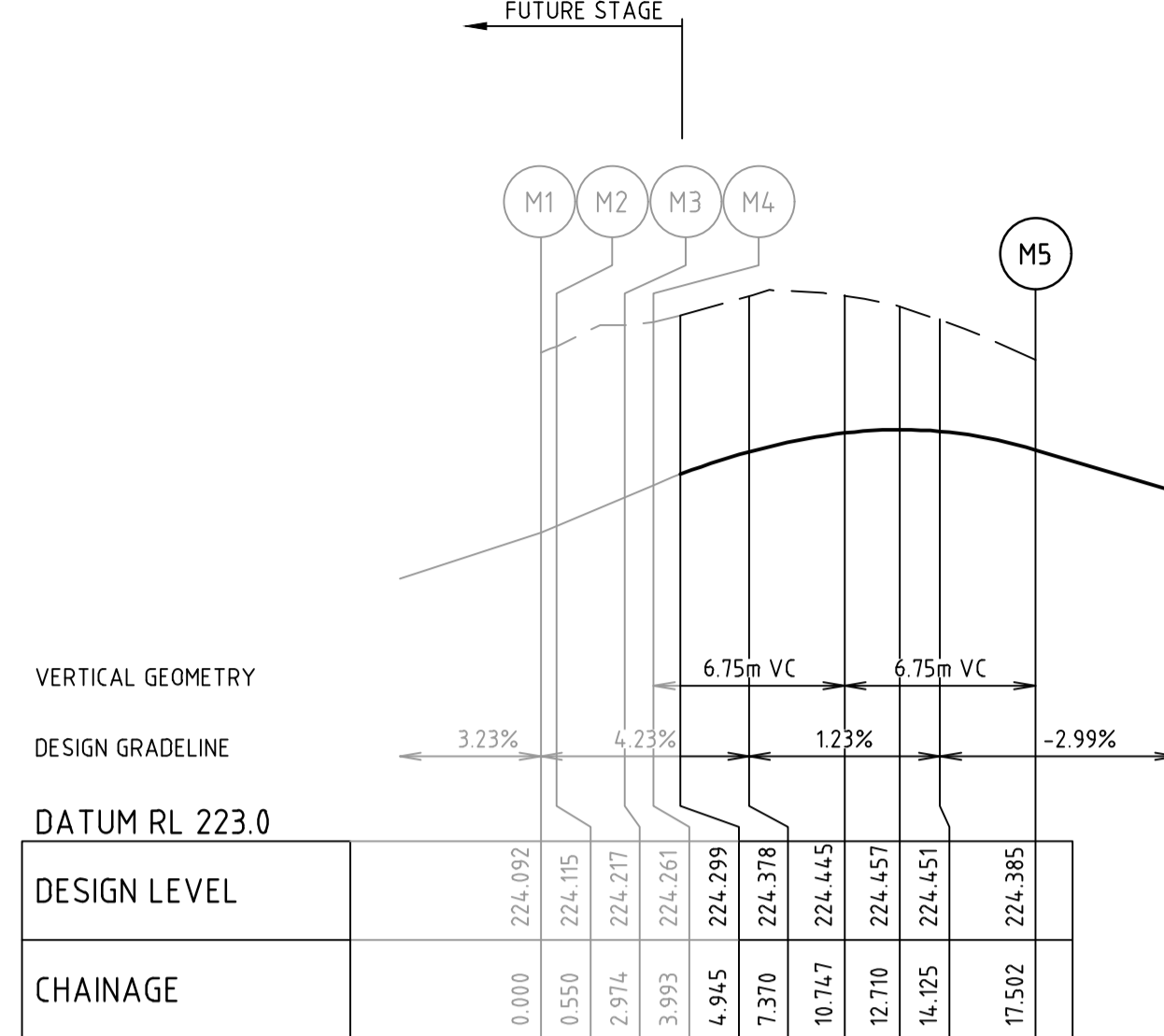
L6 414 LA TROBE STREET PO BOX 16084 MELBOURNE VICTORIA 3007 AUSTRALIA T 61 3 9993 7888
spiire.com.au ABN 55 050 029 635

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

REDSTONE ESTATE STAGE 21A
ROAD AND DRAINAGE INTERSECTION DETAILS - SHEET 1
HUME CITY COUNCIL VILLAWOOD PROPERTIES
PRELIMINARY Drg No: 310827CR500 Rev: C



ALIGNMENT L



ALIGNMENT M

ALIGNMENT L

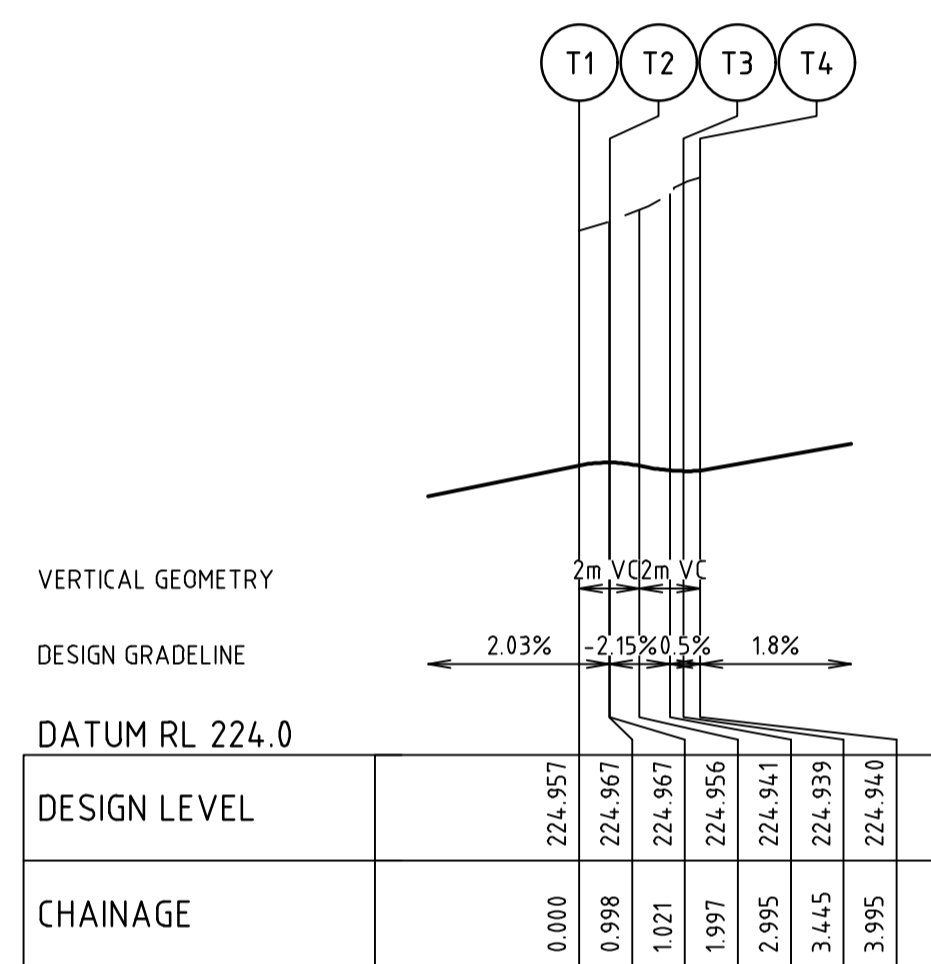
POINT NO	EASTING	NORTHING	RL
L1	301975.498	5835832.186	224.385
1/4	301972.922	5835830.036	224.507
1/2	301969.719	5835829.036	224.671
3/4	301966.377	5835829.337	224.834
L2	301963.405	5835830.895	224.957
L3	301962.917	5835831.778	224.965
L4	301962.660	5835834.188	224.933
L5	301962.403	5835834.659	224.940

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

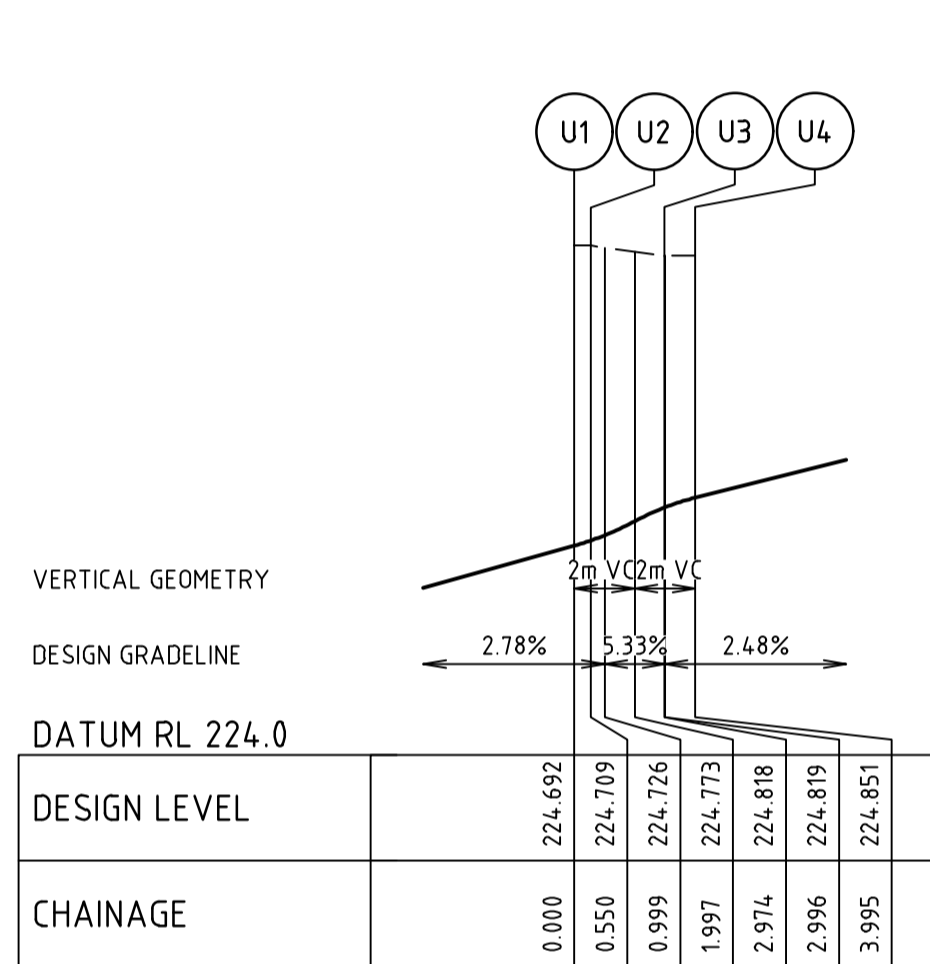
ALIGNMENT M

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	301981.710	5835816.073	224.261
1/4	301979.620	5835818.649	224.378
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

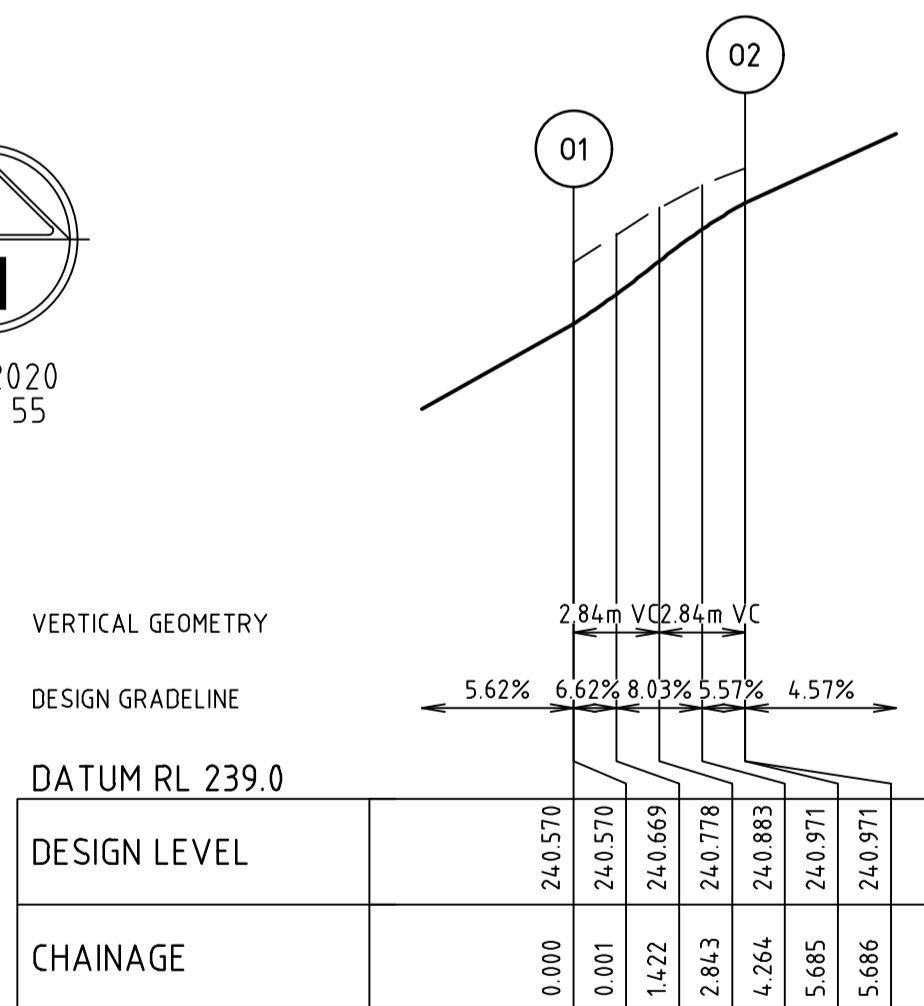
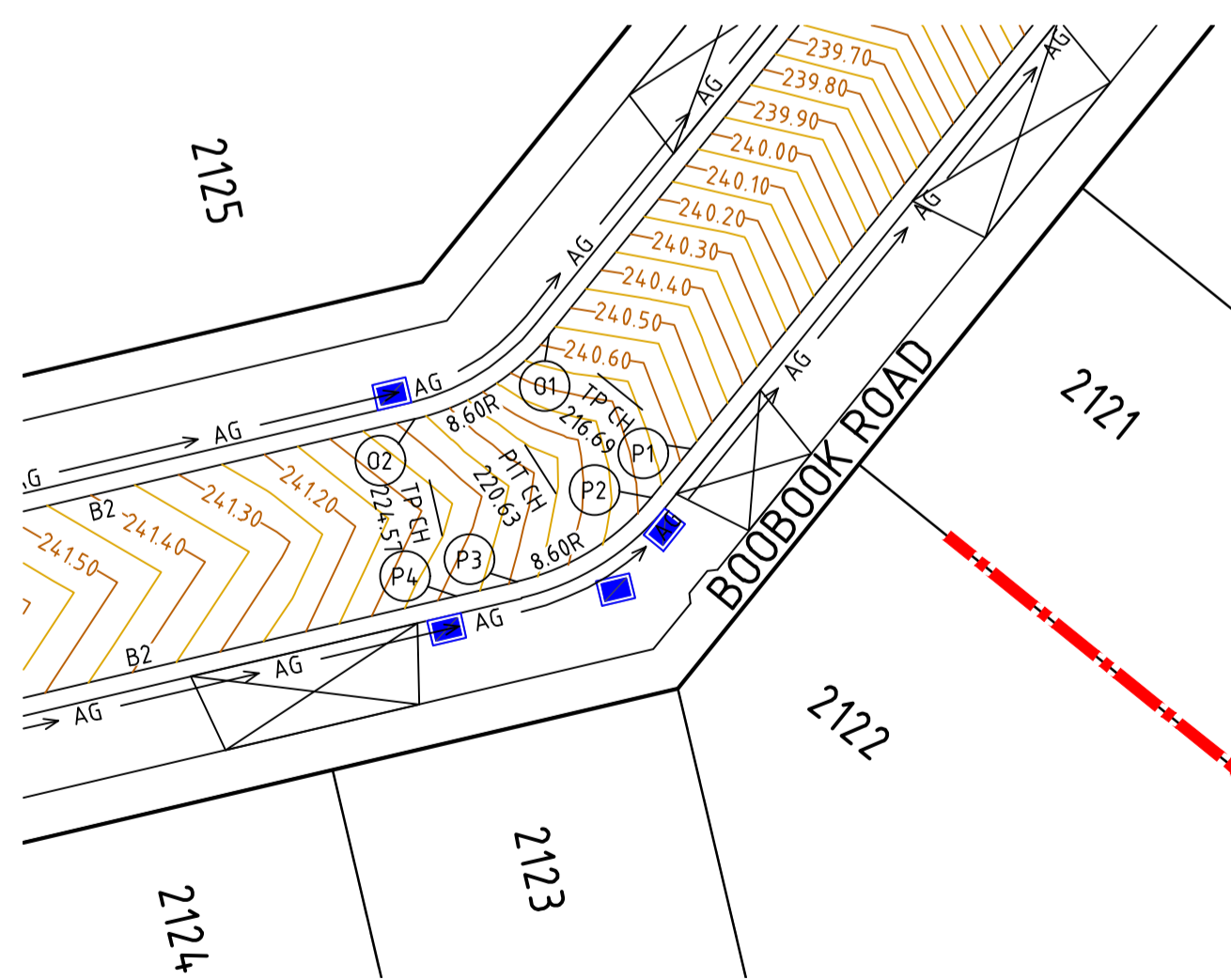
POINT NO	EASTING	NORTHING	RL
T1	301959.562	5835826.157	224.957
T2	301958.608	5835826.438	224.967
T3	301956.197	5835826.181	224.939
T4	301955.683	5835826.332	224.940

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

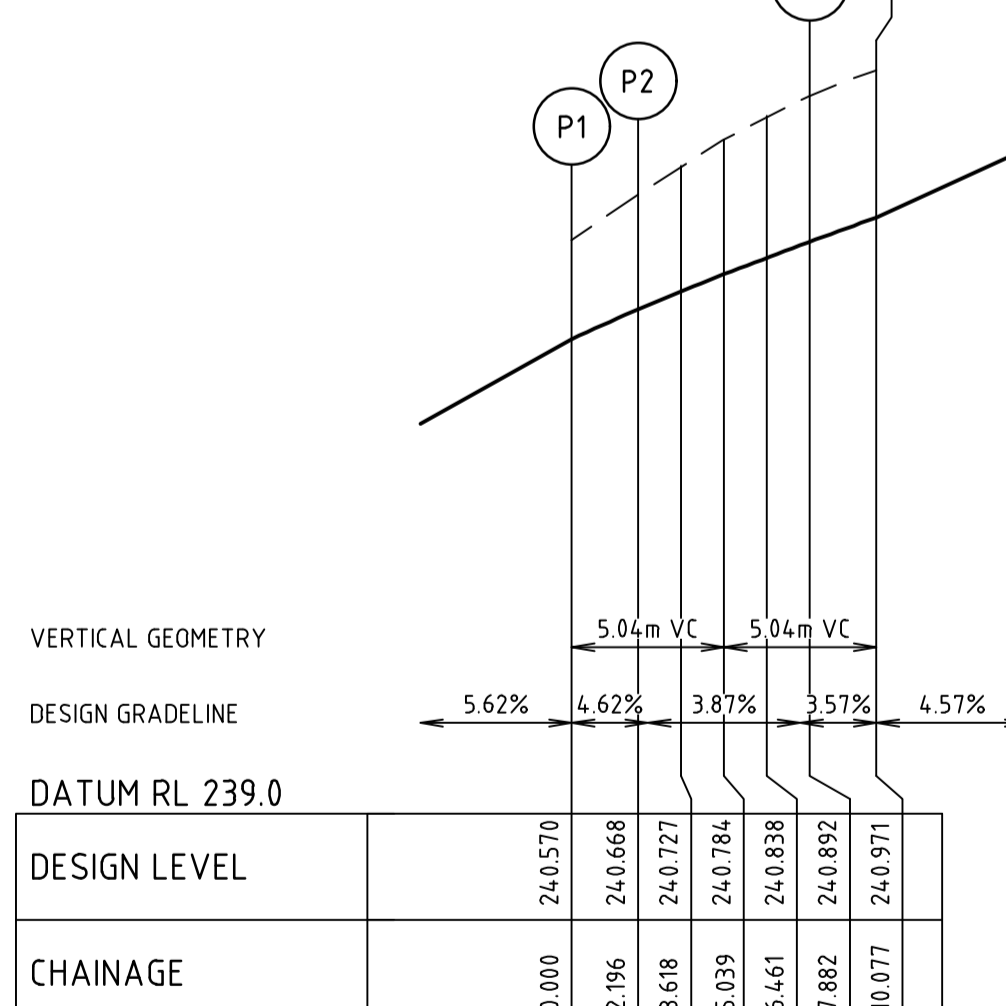
ALIGNMENT U

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

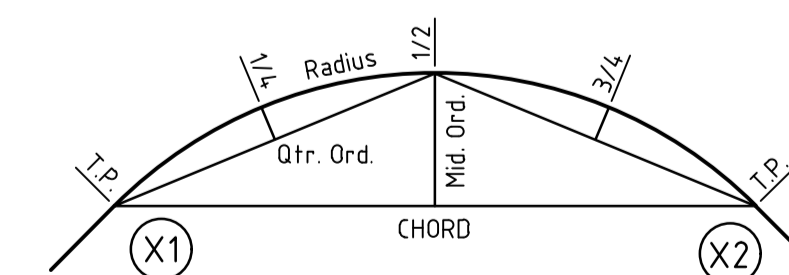
POINT NO	EASTING	NORTHING	RL
O1	301774.254	5835701.175	240.570
1/4	301773.274	5835700.148	240.669
1/2	301772.138	5835699.295	240.778
3/4	301770.878	5835698.642	240.883
O2	301769.527	5835698.204	240.971

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

ALIGNMENT P

POINT NO	EASTING	NORTHING	RL
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

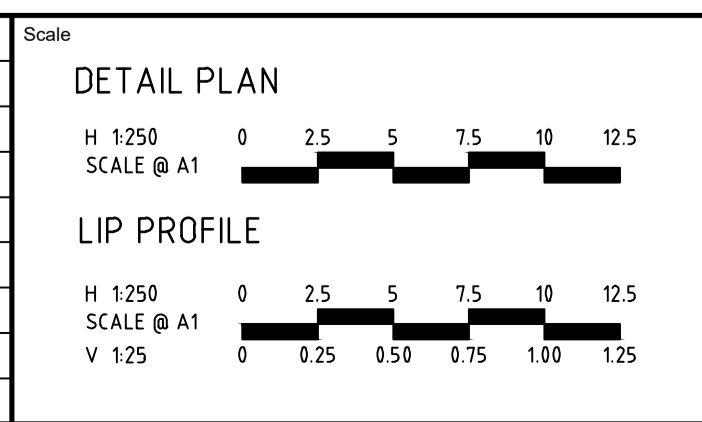
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
P2-P3	8.600	5.686	5.583	0.466	0.117



KERB RETURN SETOUT DETAIL

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Rev	Amendments	Approved	Date
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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 Designed: L. TRAN

 Authorised: M. RANJANAN

 Checked: W. ONG

 Date: 26/07/23

REDSTONE ESTATE

STAGE 21A

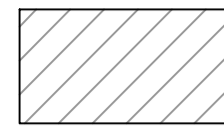
ROAD AND DRAINAGE

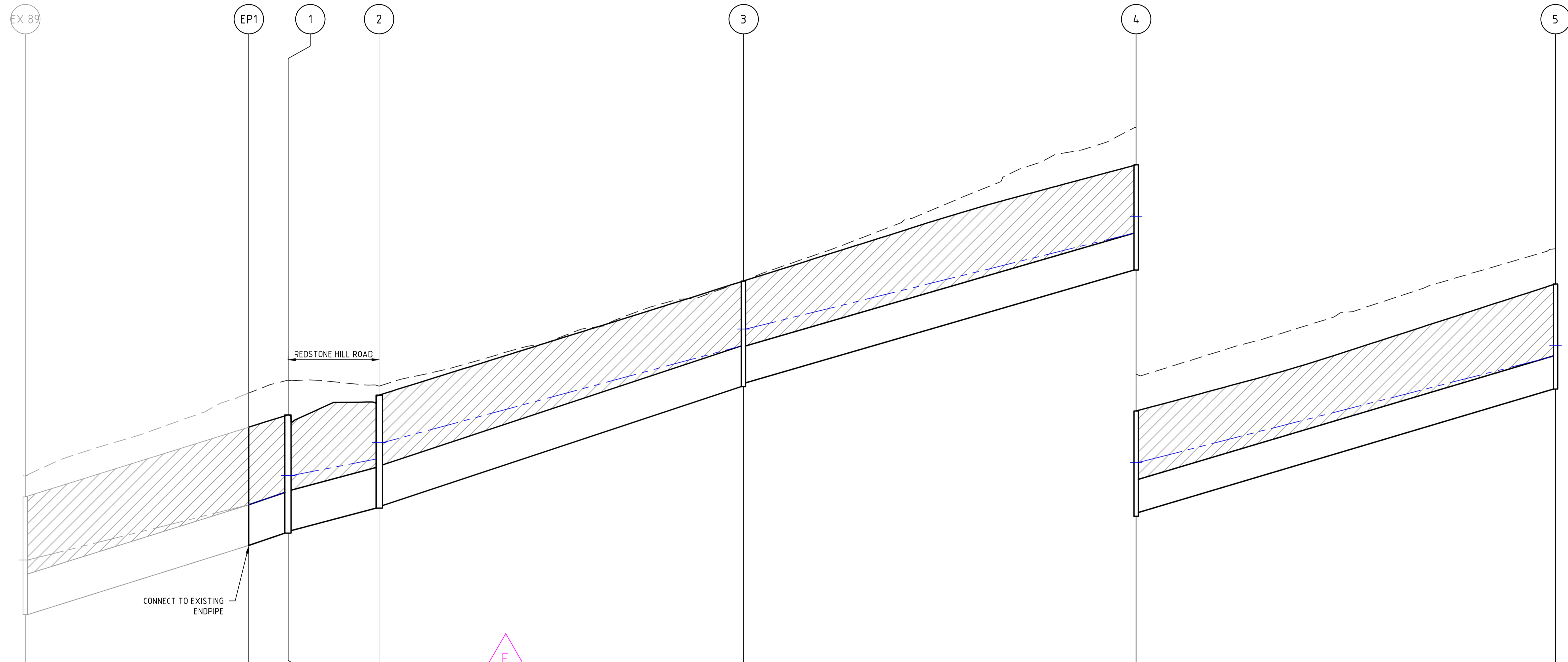
INTERSECTION DETAILS - SHEET 2

 HUME CITY COUNCIL

 VILLAWOOD PROPERTIES

PRELIMINARY
Drg No: 310827CR501 Rev: B

 CLASS 2 CRUSHED ROCK BACKFILL



Pipe Diameter
Pipe Class
Pipe Grade
Velocity (m/s)
Pipe Flow (m3/s)
Pipe Capacity (m3/s)

825φ
Class 2
1 in 32
Vf=4.730
Qa=1.969
Qcap=2.528

825φ
Class 2
1 in 32
Vf=4.730
Qa=1.969
Qcap=2.528

825φ
Class 2
1 in 40
Vf=4.242
Qa=1.931
Qcap=2.268

E

825φ
Class 2
1 in 31
Vf=4.856
Qa=1.958
Qcap=2.596

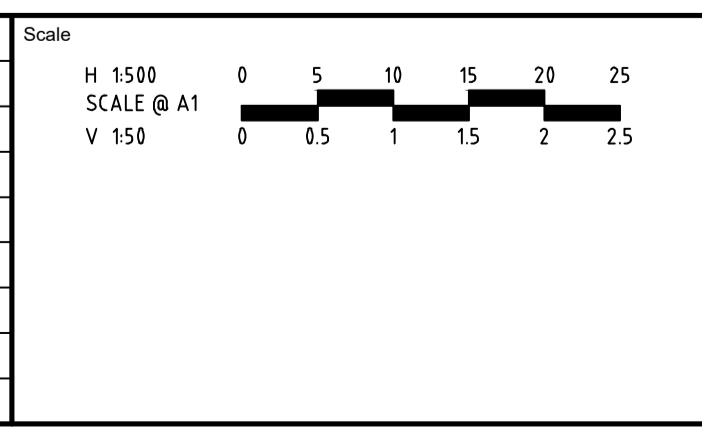
750φ
Class 2
1 in 35
Vf=4.274
Qa=1.617
Qcap=1.888


675φ
Class 2
1 in 36
Vf=4.024
Qa=1.064
Qcap=1.440

DATUM	208.00										213.00										
DEPTH TO INVERT	2.443	2.393	2.402	2.404	2.354	2.293	2.243	2.143	2.068	2.136	2.061	2.136	2.061	2.136	2.061	2.136	2.061	2.136	2.061	2.136	2.061
DESIGN INVERT LEVEL	211.06	211.56	212.563	212.811	212.861	213.321	213.371	215.789	215.864	218.156	218.231	218.156	218.231	220.737	220.737	220.737	220.737	220.737	220.737	220.737	220.737
HYDRAULIC GRADE LEVEL	212.266	211.156	213.388	213.636	213.992	214.315	214.648	216.614	216.957	219.248	219.248	219.248	219.248	221.402	221.402	221.402	221.402	221.402	221.402	221.402	221.628
FINISHED SURFACE LEVEL	213.549	211.894	215.964	215.214	215.918	215.614	215.321	217.932	217.932	220.292	220.292	220.292	220.292	222.873	222.873	222.873	222.873	222.873	222.873	222.873	222.873
EXISTING SURFACE LEVEL	213.977	213.549	215.657	215.918	215.918	215.918	215.918	217.930	217.930	221.042	221.042	221.042	221.042	223.588	223.588	223.588	223.588	223.588	223.588	223.588	223.588
CHAINAGE	0.000	L=45.366m	L=8.000m	L=18.468m	L=18.468m	L=18.468m	L=18.468m	L=74.003m	L=74.003m	L=74.003m	L=74.003m	L=74.003m	L=74.003m	L=85.150m	L=85.150m	L=85.150m	L=85.150m	L=85.150m	L=85.150m	L=85.150m	L=85.150m

file name: 310827CR600.dwg, layout: cr600, created by: Ullis Tran, date: 09/04/2024, 12:30 PM, sheet: 16 of 27, sheets: 310827CR600.dwg, plot date: 09/04/2024, 12:30 PM, sheet: 16 of 27, sheets: 310827CR600.dwg

Rev	Amendments	Approved	Date
E	PIPE FLOW AND HGL AMENDED	M.R	09/04/24
D	CR LEGEND 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



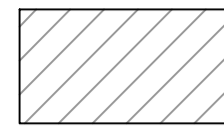

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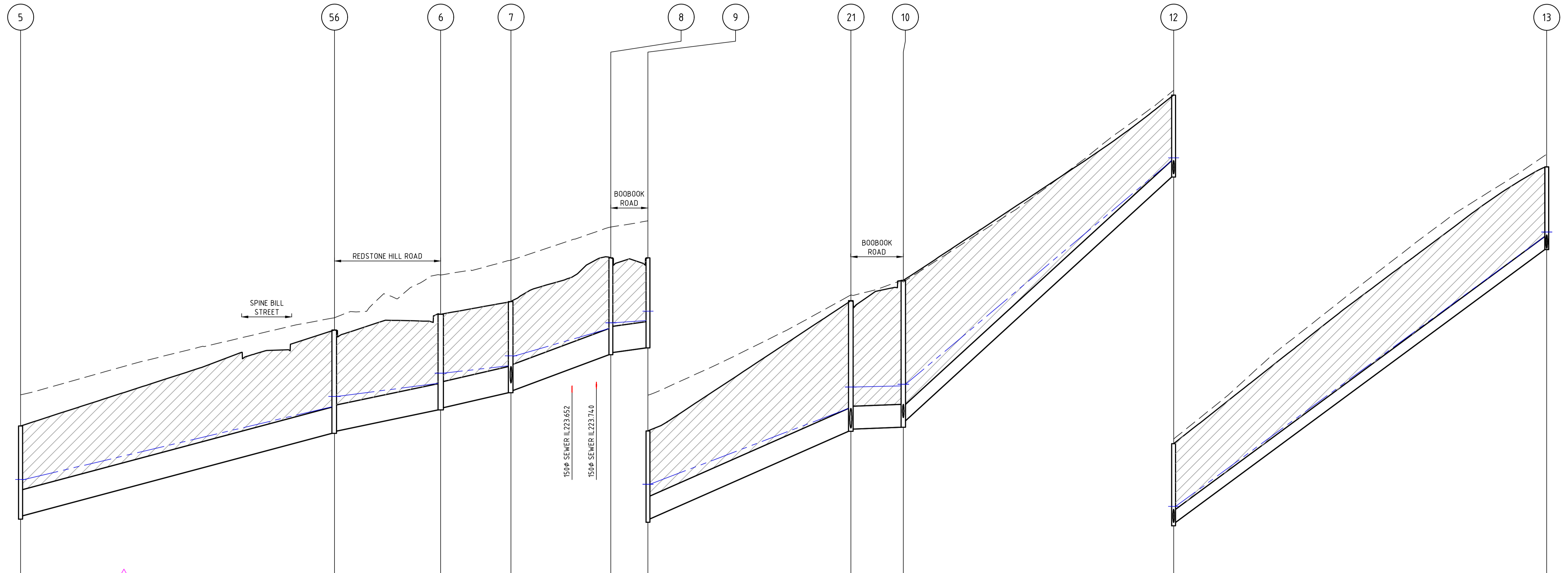

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 Checked: W. ONG
 Date: 26/07/23

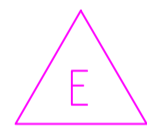
REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 1
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES
PRELIMINARY Drg No: 310827CR600 Rev: E

 CLASS 2 CRUSHED ROCK BACKFILL



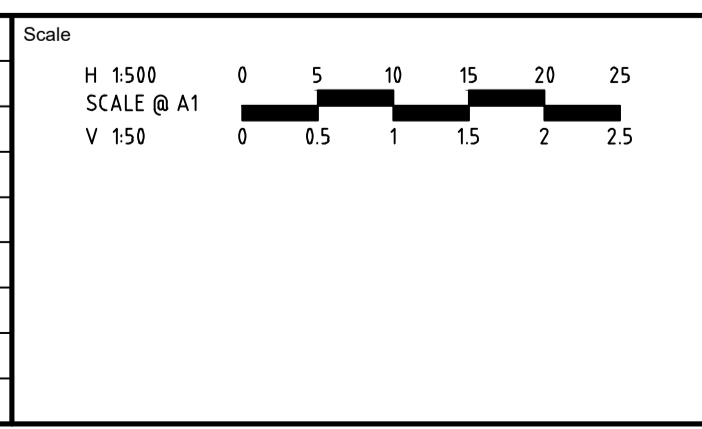
Pipe Diameter	600φ	600φ	600φ	600φ	600φ	525φ	525φ	375φ	300φ
Pipe Class	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2
Pipe Grade	1 in 38	1 in 50	1 in 47	1 in 28	1 in 80	1 in 23	1 in 300	1 in 11	1 in 14
Velocity (m/s)	Vf=3.533	Vf=3.072	Vf=3.169	Vf=4.114	Vf=2.429	Vf=4.133	Vf=1.147	Vf=4.770	Vf=3.702
Pipe Flow (m3/s)	Qa=0.639	Qa=0.635	Qa=0.631	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=0.896	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	2.136	2.370	2.192	2.090	2.255	2.995	3.370	1.881	1.897
DESIGN INVERT LEVEL	220.737	222.706	223.243	223.636	224.558	226.751	226.801	228.584	230.877
HYDRAULIC GRADE LEVEL	221.602	223.306	223.843	224.245	225.245	227.276	227.733	229.959	232.659
FINISHED SURFACE LEVEL	222.588	225.075	225.436	225.726	226.760	227.746	230.212	234.465	241.108
EXISTING SURFACE LEVEL	223.588	225.356	226.337	226.675	227.437	228.878	230.175	234.573	241.108
CHAINAGE	300.727	380.727	407.089	423.212	446.114	501.153	513.191	575.192	660.778
		L=72.000m	L=24.361m	L=16.123m	L=22.902m	L=8.500m	L=46.539m	L=12.038m	L=85.586m



file name: 310827CR601.dwg, layout: cr601, name: CR601, plotted by: ilian, time: 09/11/2024 12:30 PM, sheet: 17 of 27, sheets

Rev	Amendments	Approved	Date
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





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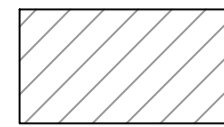
 Designed L. TRAN
 Authorised M. RANJANAN
 Checked W. ONG
 Date 26/07/23

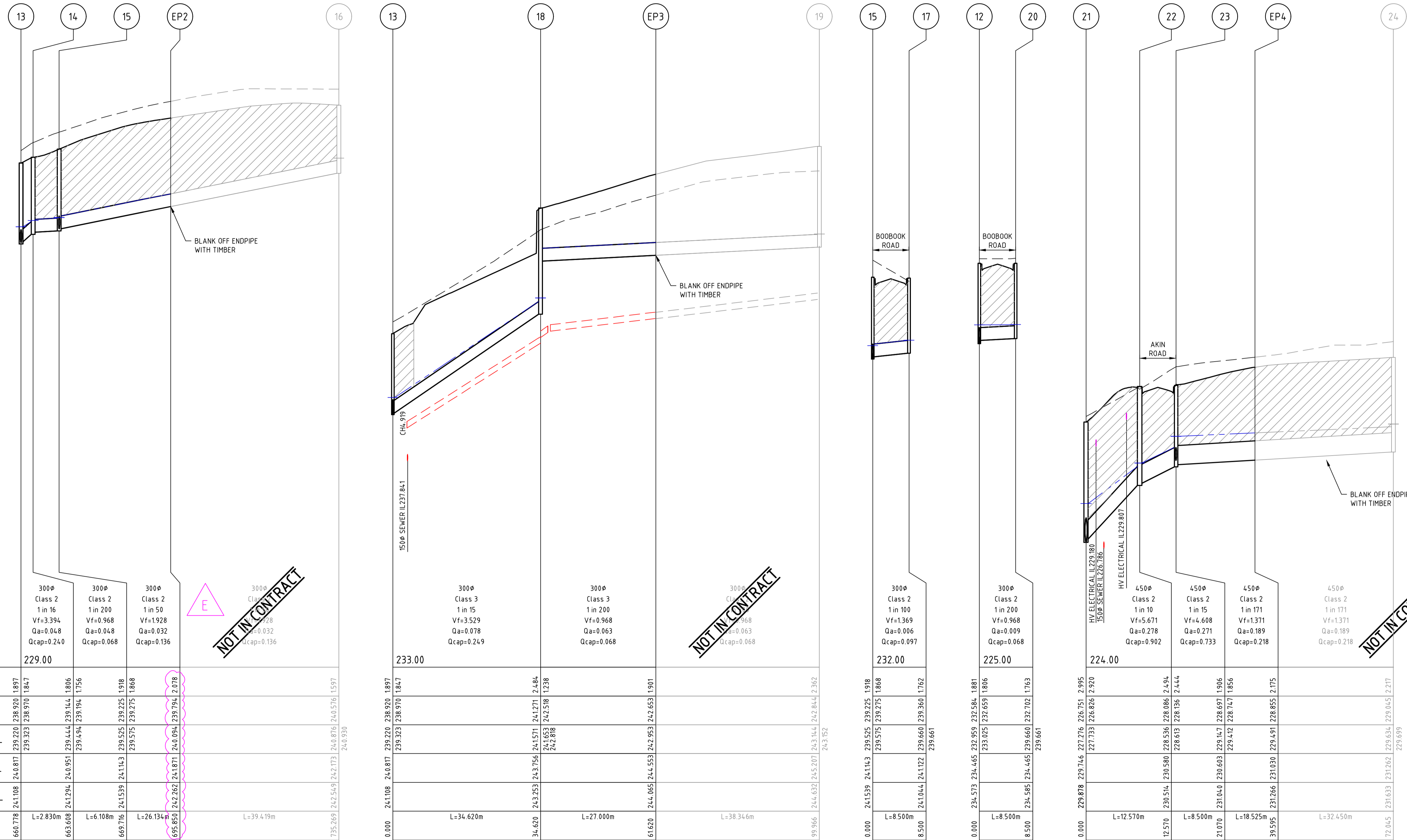
REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
DRAINAGE LONG SECTIONS - SHEET 2
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY

Dwg No **310827CR601**

Rev **E**

 CLASS 2 CRUSHED ROCK BACKFILL



Pipe Diameter	300φ	300φ	300φ	300φ
Pipe Class	Class 2	Class 2	Class 2	Class 2
Pipe Grade	1 in 16	1 in 200	1 in 50	1 in 100
Velocity (m/s)	Vf=3.394	Vf=0.968	Vf=1.928	Vf=0.968
Pipe Flow (m ³ /s)	Qa=0.048	Qa=0.048	Qa=0.032	Qa=0.063
Pipe Capacity (m ³ /s)	Qcap=0.240	Qcap=0.068	Qcap=0.136	Qcap=0.068
DATUM	229.00			
DEPTH TO INVERT	1.897	1.847	1.887	1.868
DESIGN INVERT LEVEL	238.920	238.970	238.970	238.970
HYDRAULIC GRADE LEVEL	239.323	239.323	239.323	239.323
FINISHED SURFACE LEVEL	241.108	241.108	241.108	241.108
EXISTING SURFACE LEVEL	241.108	241.108	241.108	241.108
CHAINAGE	L=2.830m	L=6.108m	L=26.134m	L=39.419m

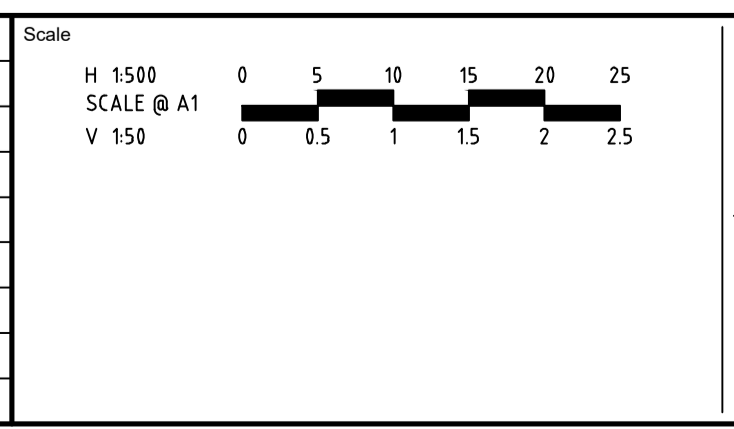
NOT IN CONTRACT


NOT IN CONTRACT

NOT IN CONTRACT

file name: 310827CR602.dwg, layout name: CR602, plotted by: Ullas Tran, plot date: 09/07/2024, 12:30 PM, Sheet: 18 of 27, Sheets

Rev	Amendments	Approved	Date
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






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 Authorised M. RANJANAN

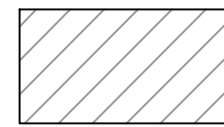
 Checked W. ONG

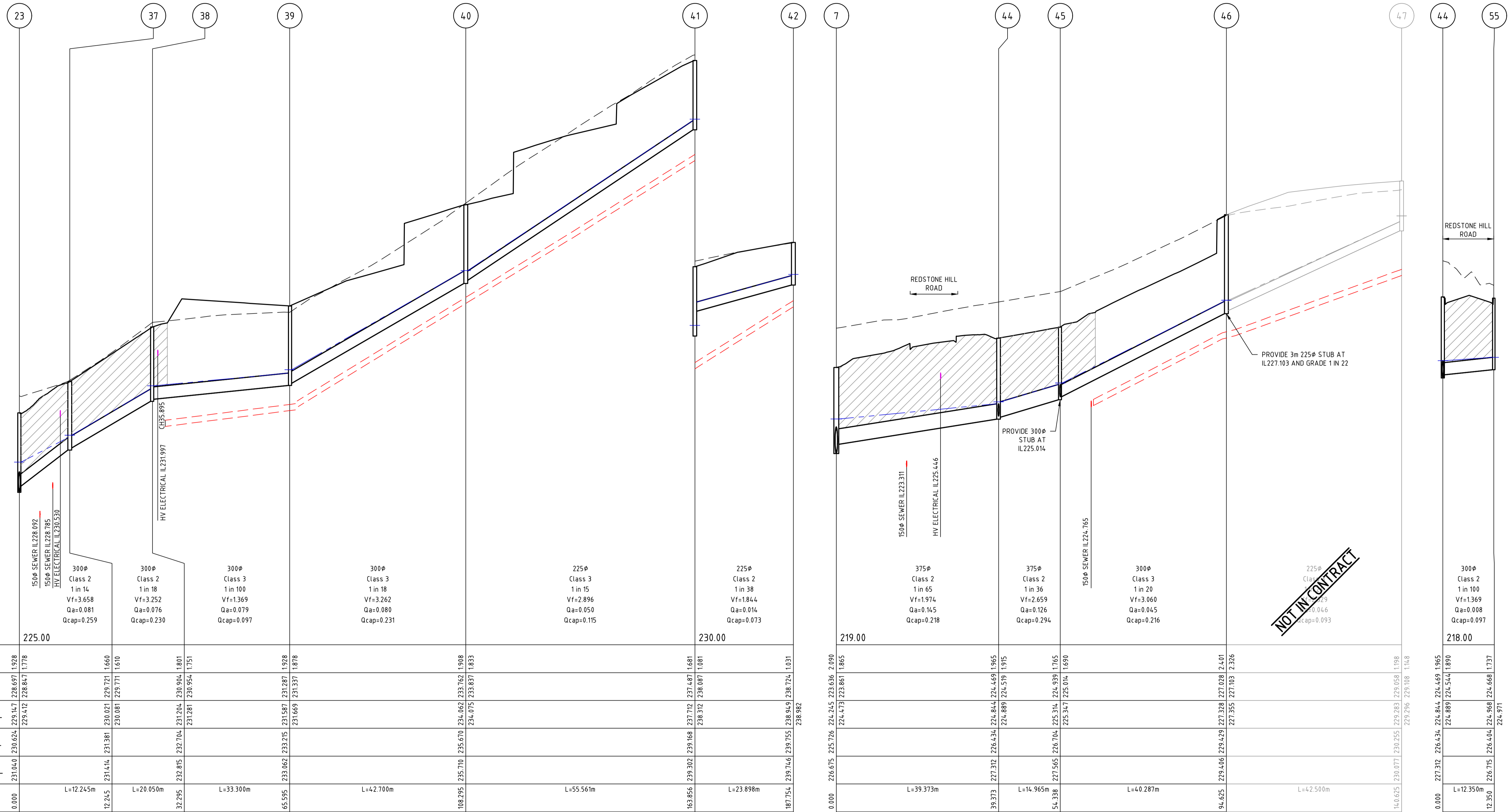
 Date 26/07/23

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

PRELIMINARY

 Drg No 310827CR602 Rev E

 CLASS 2 CRUSHED ROCK BACKFILL

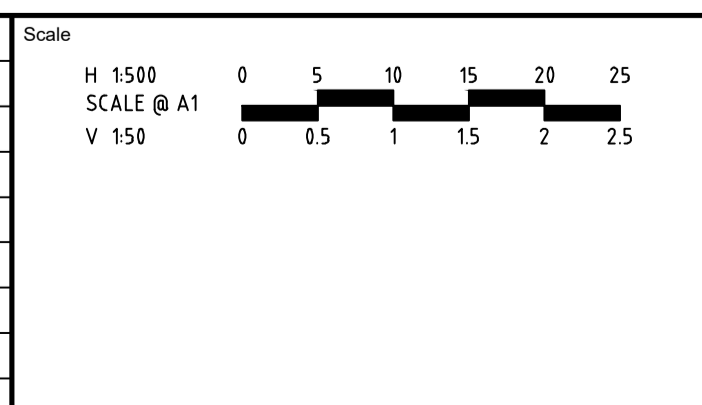



PIPE DIAMETER	PIPE CLASS	PIPE GRADE	VELOCITY (M/S)	PIPE FLOW (M ³ /S)	PIPE CAPACITY (M ³ /S)	DATUM
150φ SEWER IL 228.092	Class 2	1 in 14	Vf=3.658	Qa=0.081	Qcap=0.259	225.00
150φ SEWER IL 228.785	Class 2	1 in 14	Vf=3.658	Qa=0.081	Qcap=0.259	225.00
150φ SEWER IL 230.530	Class 2	1 in 14	Vf=3.658	Qa=0.081	Qcap=0.259	225.00
300φ Class 2	Class 2	1 in 18	Vf=1.369	Qa=0.076	Qcap=0.230	225.00
300φ Class 3	Class 3	1 in 100	Vf=1.369	Qa=0.079	Qcap=0.097	225.00
300φ Class 3	Class 3	1 in 18	Vf=3.262	Qa=0.080	Qcap=0.231	225.00
225φ Class 3	Class 3	1 in 15	Vf=1.974	Qa=0.050	Qcap=0.115	230.00
225φ Class 2	Class 2	1 in 38	Vf=1.844	Qa=0.014	Qcap=0.073	230.00
375φ Class 2	Class 2	1 in 65	Vf=1.974	Qa=0.145	Qcap=0.218	219.00
375φ Class 2	Class 2	1 in 36	Vf=2.659	Qa=0.126	Qcap=0.294	219.00
150φ SEWER IL 224.765	Class 2	1 in 20	Vf=3.060	Qa=0.045	Qcap=0.216	219.00
225φ Class 3	Class 3	1 in 100	Vf=1.369	Qa=0.008	Qcap=0.097	218.00

DEPTH TO INVERT	DESIGN INVERT LEVEL	HYDRAULIC GRADE LEVEL	FINISHED SURFACE LEVEL	EXISTING SURFACE LEVEL	CHAINAGE
1.928	228.697	229.147	230.624	231.040	0.000
1.778	228.847	229.412	230.624	231.040	12.245
1.660	229.721	230.021	231.381	231.414	12.245
1.610	229.771	230.081	232.704	232.815	32.295
1.801	230.904	231.204	232.704	232.815	32.295
1.751	230.954	231.281	232.704	232.815	32.295
1.928	231.287	231.587	233.215	233.062	65.595
1.878	231.337	231.669	233.215	233.062	65.595
1.908	233.762	234.062	235.670	235.710	108.295
1.833	233.837	234.075	235.670	235.710	108.295
1.681	237.487	237.712	239.168	239.302	163.856
1.081	238.087	238.312	239.168	239.302	163.856
1.031	238.774	238.949	239.755	239.754	187.754
1.865	223.861	224.473	225.255	225.726	0.000
1.965	224.469	224.844	226.434	226.312	39.373
1.915	224.519	224.889	226.434	226.312	39.373
1.765	224.939	225.314	226.704	227.505	54.338
1.690	225.014	225.347	226.704	227.505	54.338
2.401	227.028	227.328	229.429	229.406	94.625
2.326	227.103	227.355	229.429	229.406	94.625
1.198	229.058	229.283	229.283	230.077	140.625
1.148	229.108	229.296	229.283	230.077	140.625
1.890	224.544	224.844	226.434	226.312	0.000
1.737	224.688	224.968	226.434	226.312	12.250

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Rev	Amendments	Approved	Date
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





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Authorised
 M. RANJANAN

Checked
 W. ONG

Date
 26/07/23

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

PRELIMINARY

Drg No
310827CR603

Rev
D

DRAINAGE PIPES AND PITS IN FUTURE STAGES NOTES

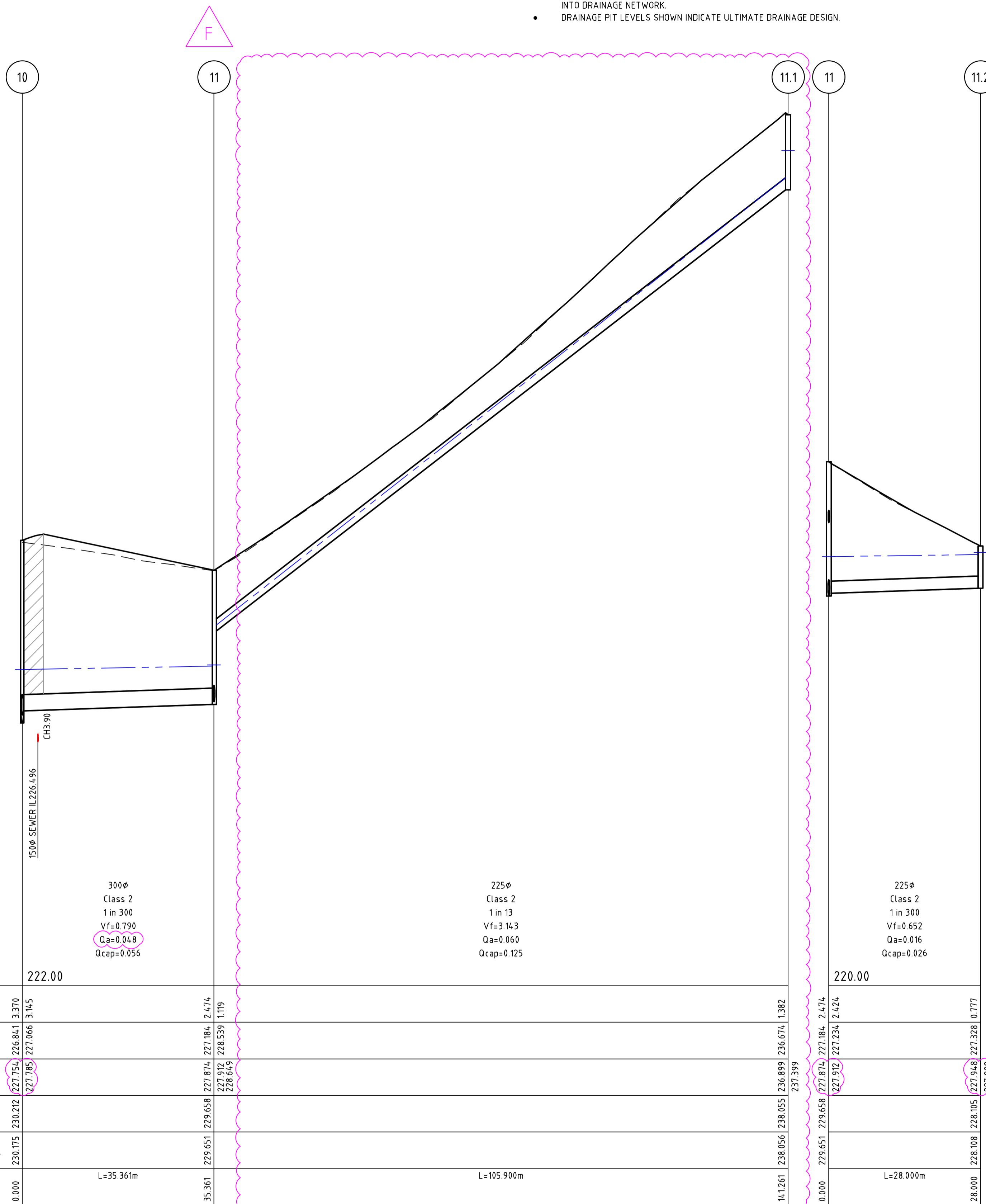
- PITS LIDS AND CRUSHED ROCK BACKFILL ARE TO BE CONSTRUCTED TO EXISTING OR 300mm BELOW FINISHED SURFACE LEVEL, WHICHEVER LEVEL IS LOWER.
- ADDITIONAL FILL REQUIRED ON DRAINAGE PIPES ABOVE CRUSHED ROCK LEVEL TO MATCH BACK INTO EXISTING SURFACE LEVEL OR PROPOSED FINISHED SURFACE LEVEL TO BE ORDINARY FILL COMPACTED TO HUME CITY COUNCIL STANDARDS & SPECIFICATIONS.
- PITS LIDS CONSTRUCTED BELOW EXISTING SURFACE LEVEL ARE TO HAVE BATTERS GRADED AT 1 IN 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.

DRAINAGE PIT SCHEDULE

NAME	PIT TYPE	INTERNAL		INLET		OUTLET		PIT		REMARKS
		WIDTH	LENGTH	DIA	INV LEVEL	DIA	INV LEVEL	FS LEVEL	DEPTH	
EP1	ENDPIPE									CONNECT TO EXISTING ENDPIT
1	JUNCTION PIT	1200	1350	825	212.861	825	212.811	215.214	2.404	REFER TO EDM STD FIG 607. TO BE CONVERTED TO GRATED SIDE ENTRY PIT IN FUTURE STAGE
2	JUNCTION PIT	1200	1350	825	213.371	825	213.321	215.614	2.293	REFER TO EDM STD FIG 607.
3	JUNCTION PIT	900	1200	750	215.864	825	215.789	217.932	2.143	REFER TO EDM STD FIG 607. TO BE CONVERTED TO GRATED SIDE ENTRY PIT IN FUTURE STAGE
4	JUNCTION PIT	900	1200	675	218.231	750	218.156	220.292	2.136	REFER TO EDM STD FIG 607. TO BE CONVERTED TO GRATED SIDE ENTRY PIT IN FUTURE STAGE
5	JUNCTION PIT	900	1050	600	220.812	675	220.737	222.873	2.136	REFER TO EDM STD FIG 607. TO BE CONVERTED TO GRATED SIDE ENTRY PIT IN FUTURE STAGE
6	GRATED SIDE ENTRY PIT	900	1200	600	222.293	600	223.243	225.436	2.192	REFER TO EDM STD FIG 601 & 607
7	GRATED SIDE ENTRY PIT	900	1200	600	223.686	600	223.636	225.726	2.090	REFER TO EDM STD FIG 601 & 607
				375	223.861					
8	GRATED SIDE ENTRY PIT	900	1200	600	224.558	600	224.508	226.762	2.255	REFER TO EDM STD FIG 601 & 607
9	GRATED SIDE ENTRY PIT	900	900	525	224.739	600	224.664	226.760	2.096	REFER TO EDM STD FIG 601 & 607
10	GRATED SIDE ENTRY PIT	600	1050	375	226.991	525	226.841	230.212	3.370	REFER TO EDM STD FIG 601 & 607
				300	227.066					
11	GRATED ENTRY PIT	900	900	225	228.539	300	227.184	229.658	2.474	REFER TO EDM STD FIG 607 & HCC SD225
				225	227.234					
11.1	JUNCTION PIT	600	900			225	236.674	238.055	1.382	REFER TO EDM STD FIG 605
11.2	JUNCTION PIT	600	900			225	227.328	228.105	0.777	REFER TO EDM STD FIG 605
12	GRATED SIDE ENTRY PIT	600	900	300	232.659	375	232.584	234.465	1.881	REFER TO EDM STD FIG 601 & 605
				300	232.659					
13	JUNCTION PIT	600	900	300	238.970	300	238.920	240.817	1.897	REFER TO EDM STD FIG 605. PROVIDE HEAVY DUTY COVER.
				300	238.970					
14	JUNCTION PIT	600	900	300	239.194	300	239.144	240.951	1.806	REFER TO EDM STD FIG 605
15	GRATED SIDE ENTRY PIT	600	900	300	239.275	300	239.225	241.143	1.918	REFER TO EDM STD FIG 601 & 605. PROVIDE HEAVY DUTY COVER.
				300	239.275					
EP2	ENDPIPE					300	239.794	241.871	2.078	BLANK OFF ENDPIT WITH TIMBER
17	GRATED SIDE ENTRY PIT	600	900			300	239.360	241.122	1.762	REFER TO EDM STD FIG 601 & 605
18	JUNCTION PIT	900	900	300	242.518	300	242.121	243.756	2.484	REFER TO EDM STD FIG 607
EP3	ENDPIPE					300	242.653	244.553	1.901	BLANK OFF ENDPIT WITH TIMBER
20	GRATED SIDE ENTRY PIT	600	900			300	232.702	234.465	1.763	REFER TO EDM STD FIG 601 & 605
21	GRATED SIDE ENTRY PIT	1050	1050	525	226.801	525	227.751	229.746	2.995	REFER TO EDM STD FIG 601 & 607
				450	227.826					
22	GRATED SIDE ENTRY PIT	1050	900	450	228.136	450	228.086	230.580	2.494	REFER TO EDM STD FIG 601 & 607
23	GRATED SIDE ENTRY PIT	750	900	450	228.747	450	228.697	230.603	1.906	REFER TO EDM STD FIG 601 & 607
				300	228.847					
EP4	ENDPIPE					450	228.855	231.030	2.175	BLANK OFF ENDPIT WITH TIMBER
37	GRATED SIDE ENTRY PIT	750	900	300	229.771	300	229.721	231.381	1.660	REFER TO EDM STD FIG 601 & 607
38	JUNCTION PIT	600	900	300	230.954	300	230.904	232.704	1.801	REFER TO EDM STD FIG 605
39	JUNCTION PIT	600	900	300	231.337	300	231.287	233.215	1.928	REFER TO EDM STD FIG 605
40	JUNCTION PIT	600	900	225	233.837	300	233.762	235.670	1.908	REFER TO EDM STD FIG 605
41	JUNCTION PIT	600	900	225	238.087	225	237.487	239.168	1.681	REFER TO EDM STD FIG 605
42	JUNCTION PIT	600	900	225	238.724	225	238.724	239.755	1.031	REFER TO EDM STD FIG 605
44	GRATED SIDE ENTRY PIT	750	900	375	224.519	375	224.469	226.434	1.965	REFER TO EDM STD FIG 601 & 607
				300	224.544					
45	JUNCTION PIT	600	900	300	225.014	375	224.939	226.704	1.765	REFER TO EDM STD FIG 605
				300	225.014					
46	JUNCTION PIT	900	900	225	227.103	300	227.028	229.429	2.401	REFER TO EDM STD FIG 607
55	GRATED SIDE ENTRY PIT	600	900			300	224.668	226.404	1.737	REFER TO EDM STD FIG 601 & 605
56	GRATED SIDE ENTRY PIT	900	1200	600	222.756	600	222.706	225.075	2.370	REFER TO EDM STD FIG 601 & 607

NOTE: PROVIDE DEFLECTION IN DRAINAGE PIT FLOOR WHEN DRAINAGE PIPE DEFLECTION THROUGH PIT IS BETWEEN 50° TO 90° FOR PIPE DIAMETERS LESS THAN 675mm.

CLASS 2 CRUSHED ROCK BACKFILL

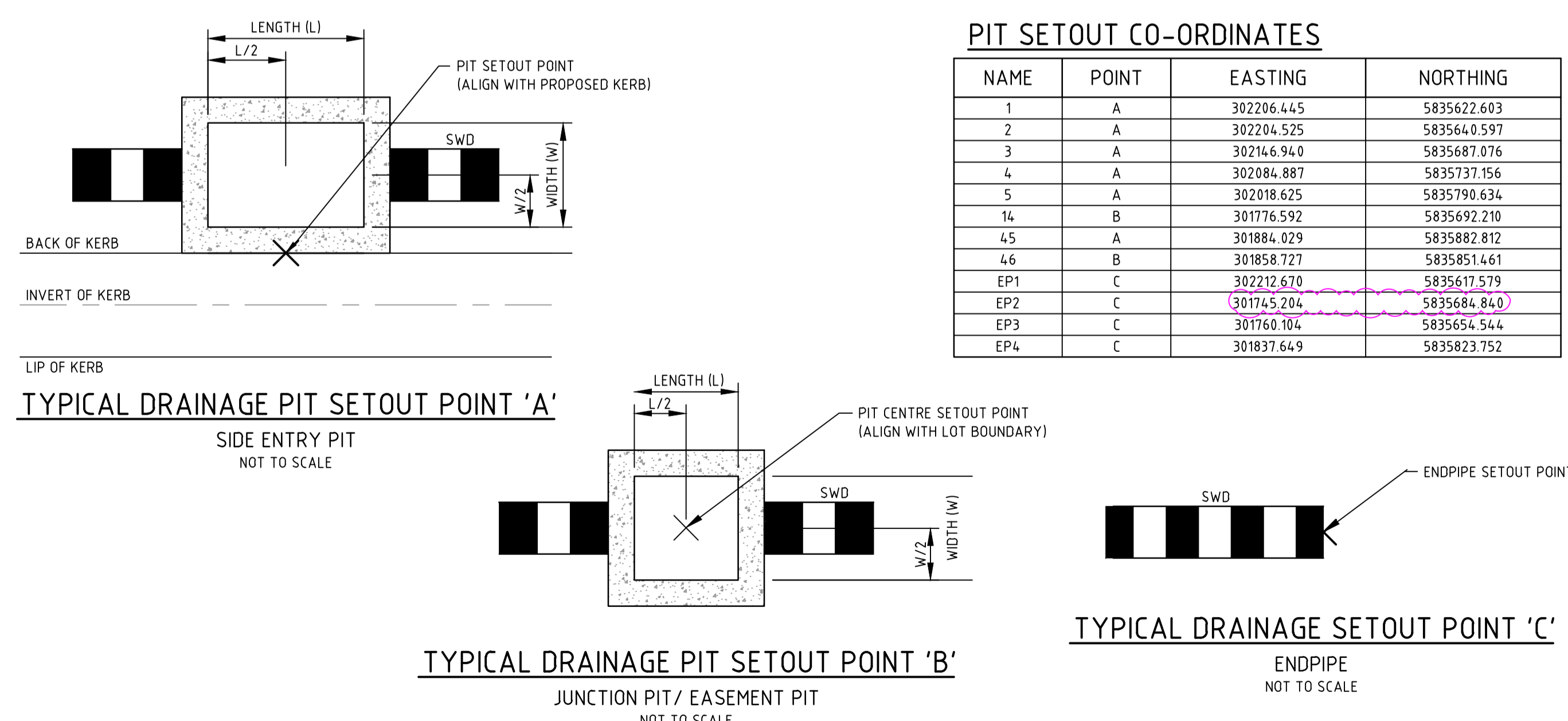


Pipe Diameter 300φ
Pipe Class Class 2
Pipe Grade 1 in 300
Velocity (m/s) Vf=3.143
Pipe Flow (m3/s) Qa=0.048
Pipe Capacity (m3/s) Qcap=0.056

225φ Class 2
1 in 300
Vf=3.143
Qa=0.060
Qcap=0.125

225φ Class 2
1 in 300
Vf=0.652
Qa=0.016
Qcap=0.026

DATUM	222.00					
DEPTH TO INVERT	3.370	3.145	2.474	1.119	1.382	0.777
DESIGN INVERT LEVEL	227.706	227.855	228.539	226.649	227.339	227.948
HYDRAULIC GRADE LEVEL	227.706	227.706	227.706	227.706	227.706	227.706
FINISHED SURFACE LEVEL	230.212	230.212	229.658	227.874	227.874	227.874
EXISTING SURFACE LEVEL	230.175	229.651	229.651	228.184	228.184	228.184
CHAINAGE	0.000	L=35.361m	35.361	141.261	141.261	282.000
				L=105.900m		L=28.000m

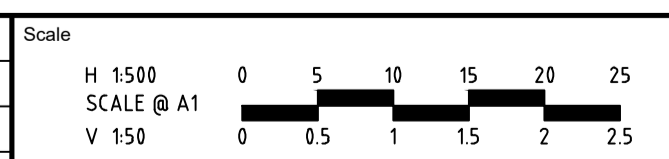


PIT SETOUT CO-ORDINATES

NAME	POINT	EASTING	NORTHING
1	A	302206.445	5835622.603
2	A	302204.525	5835640.597
3	A	302166.940	5835687.076
4	A	302084.887	5835737.156
5	A	302018.625	5835790.634
16	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

file name: 310827CR604.dwg; layout: name: CR604; plotted by: Lilia Tran; plot date: 09/10/2024; 12:30 PM; Sheet: 20 of 27 Sheets

Rev	Amendments	Approved	Date
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
A	ISSUED FOR TENDER	M.R.	29/06/23



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Designed L. TRAN
Authorised M. RANJANAN

Checked W. ONG
Date 26/07/23

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

PRELIMINARY Dwg No 310827CR604 Rev F

DESIGN PAVEMENT PROFILE

PAVEMENT LAYER	DESCRIPTION	DEPTH (mm)		
		TYPE A	TYPE B	TYPE C
ASPHALT WEARING COURSE	SIZE 10 TYPE N CLASS 320 BINDER	30	40	
	SIZE 14 TYPE N CLASS 320 BINDER			40
	SIZE 14 TYPE H CLASS 320 BINDER			75
ASPHALT INTERMEDIATE COURSE	SIZE 20 TYPE SI CLASS 320 BINDER			
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	N
BASE COURSE	VICROADS 20mm CLASS 2 FCR	130	110	
	VICROADS 20mm 3% CEMENT TREATED CLASS 3 FCR			110
UPPER SUBBASE COURSE	VICROADS 20mm CLASS 4 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 ⁻⁴ m/s)	150	150	150
CONSTRUCTION LAYER	VICROADS TYPE A CAPPING LAYER (CBR OF ≥8%, SWELL+15%, K<5 x 10 ⁻⁴ m/s)	150	150	150
TOTAL PAVEMENT DEPTH		740	780	700

* REFER PAVEMENT PLAN FOR LOCATION OF PAVEMENT TYPES
 * TO ACCOMMODATE THE ASPHALT LAYERS, SAMI AND BASE COURSE SHOWN, THE DIMENSION OF THE KERB AND CHANNEL AT THE LIP, AS SHOWN ON THE STANDARD KERB PROFILE AS 190mm, MUST BE INCREASED TO 200mm FROM THE LIP OF THE TRAY TO THE UNDERSIDE OF THE KERB (OR TOP OF SUBBASE)

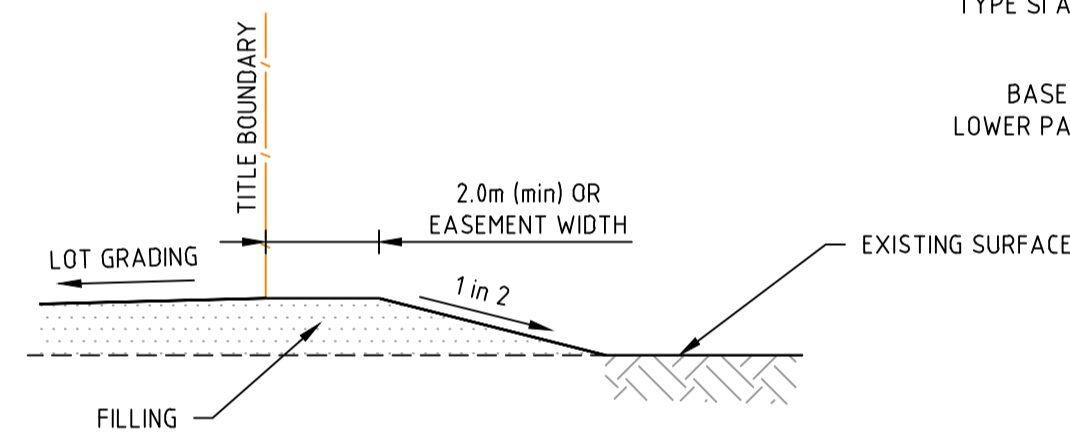
TARGET COMPACTION LEVELS FOR PAVEMENT MATERIALS:

LAYER	TARGET DENSITY RATIO	MOISTURE RATIO
PAVEMENT BASE	100% MODIFIED COMPACTION	+/- 1% OF OMC
PAVEMENT SUBBASE	98% MODIFIED COMPACTION	+/- 1% OF OMC
SUBGRADE LAYER PROTECTION	98% STANDARD OR 95% MODIFIED COMPACTION	+/- 3% OF OMC
SUBGRADE (COHESIVE) TOP 300mm	98% MODIFIED COMPACTION	+/- 3% OF OMC
SUBGRADE (COHESIVE) - 300mm	95% MODIFIED COMPACTION	+/- 3% OF OMC

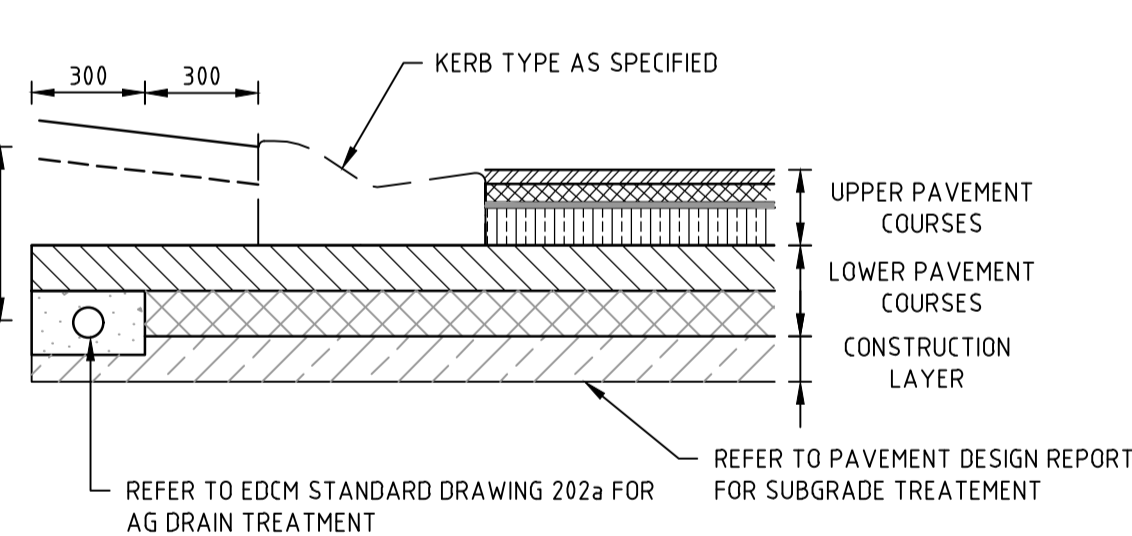
CONCRETE PAVEMENT NOTES:

- ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND CCAA LITERATURE, OR VIC ROADS STANDARDS FOR NON RESIDENTIAL STREETS.
- ALL CONCRETE TO BE MINIMUM 32MPa COMPRESSIVE STRENGTH
- CONCRETE TO BE THOROUGHLY COMPACTED USING EITHER SURFACE AND/OR IMMERSION VIBRATORS, PARTICULARLY AROUND REINFORCEMENT AND IN CORNERS OF FORMS.
- PRIOR TO CASTING, THE UNBOUND GRANULAR SUBBASE MUST BE DAMP TO ENSURE NO EARLY "DRYING OUT" OF THE CONCRETE.
- CURING OF CONCRETE IS ESSENTIAL - IDEALLY BY MAINTAINING WET HESSIAN OR SEALING WITH PLASTIC SHEETING.
- SAW CUTTING OF CONCRETE SHOULD BE COMMENCED AS SOON AS CONCRETE PERMITS BY EXPERIENCED CONTRACTORS, BUT NO LATER THAN 12 HOURS AFTER POUR.
- 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.
- ALL JOINTS TO BE APPROPRIATELY SEALED TO RESIST THE INTRUSION OF SAND AND GRAVEL AND TO MINIMISE THE INGRESS OF WATER.

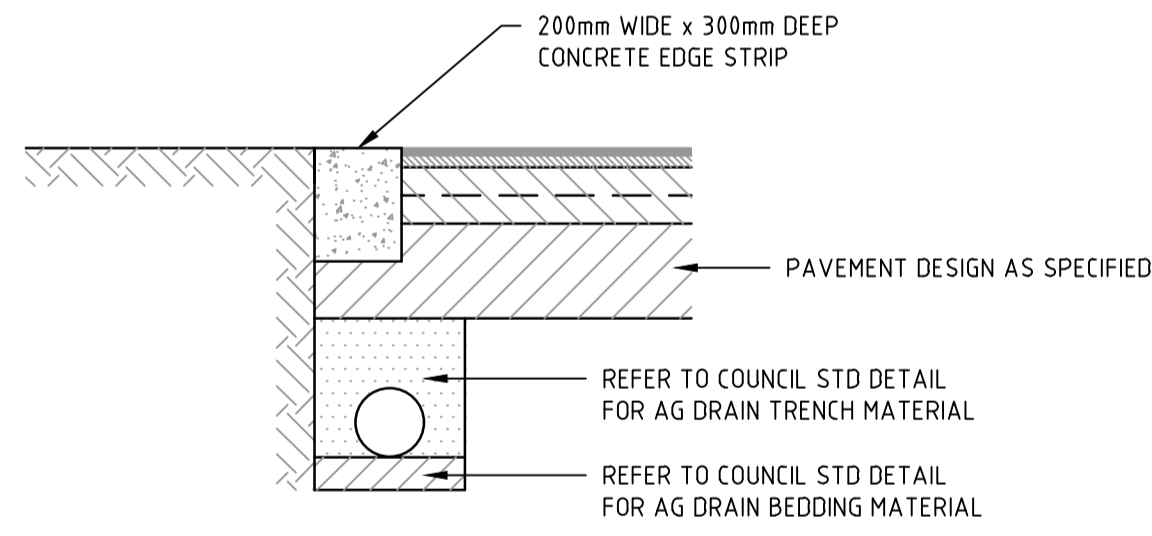
ROAD NAME	TYPE
AKIN ROAD	A
SPINE BILL STREET	A
BOOBOOK ROAD	B
REDSTONE HILL ROAD	C



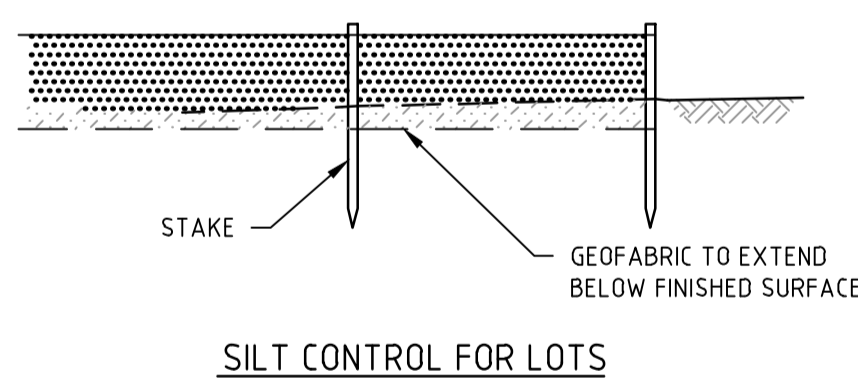
LOT FILLING AT STAGE BOUNDARY



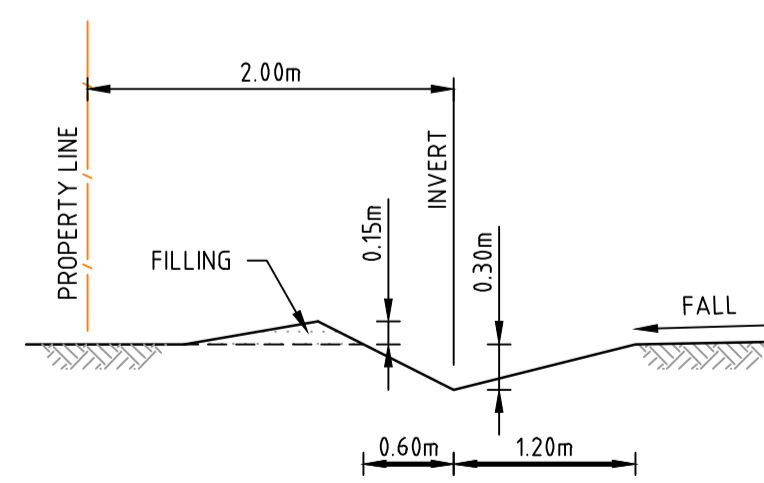
TYPICAL SUBSURFACE DRAINAGE DETAIL



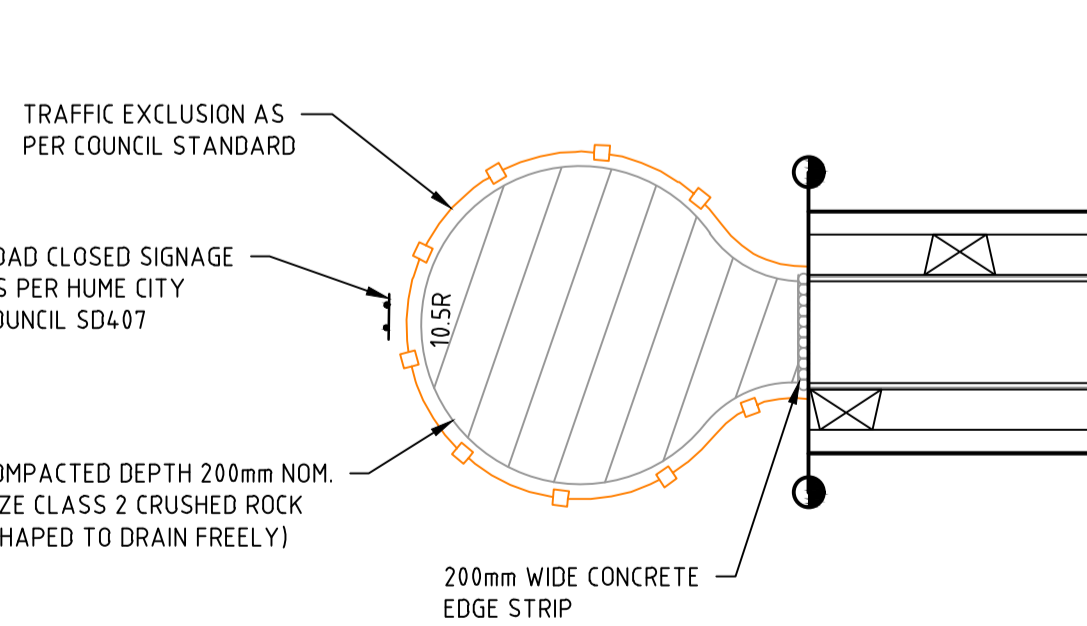
LIMIT OF WORKS CONCRETE EDGE STRIP & PAVEMENT INTERFACE DETAIL



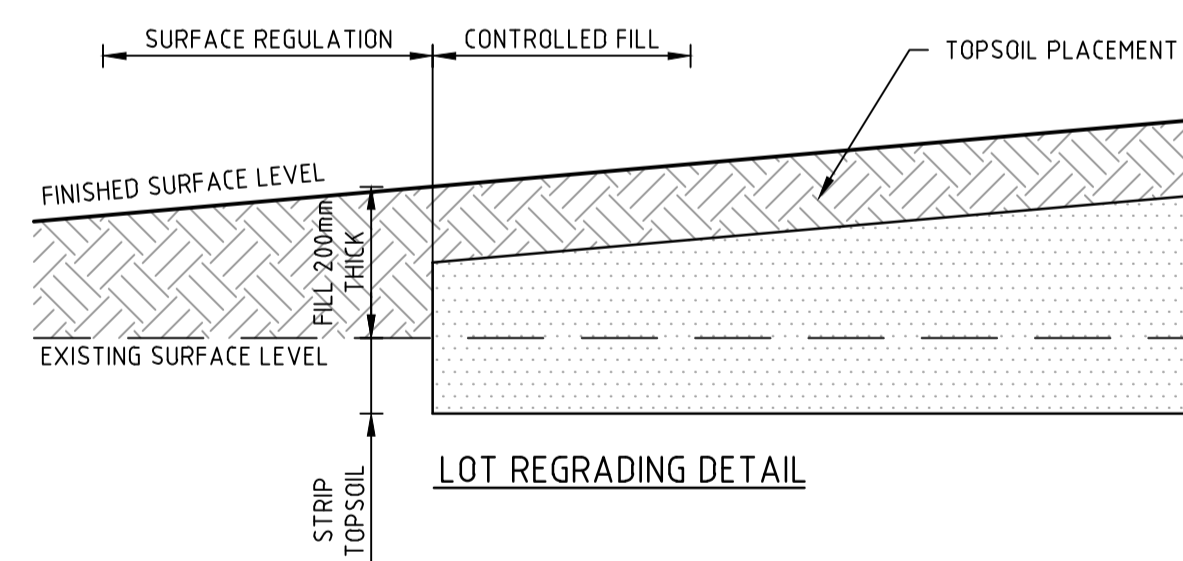
SILT CONTROL FOR LOTS



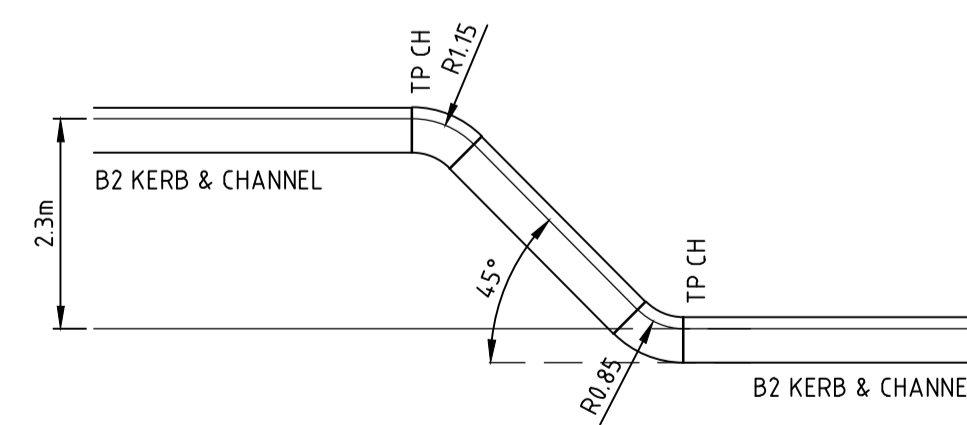
TYPICAL CATCH DRAIN SECTION



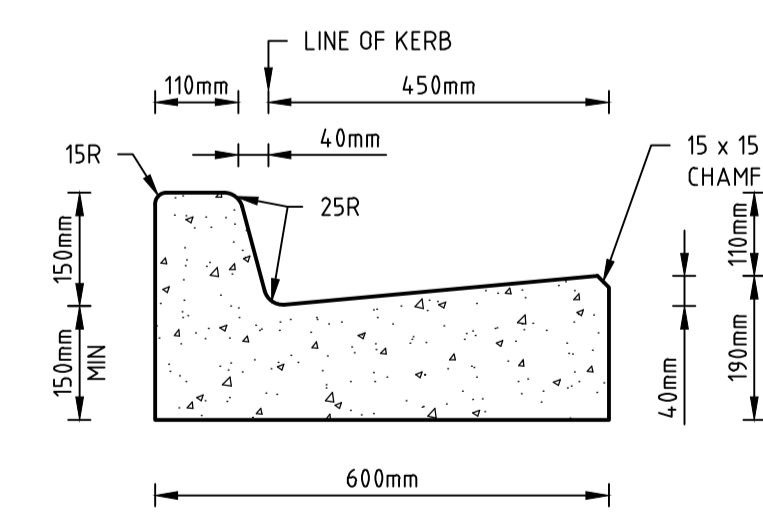
TEMPORARY TURNING AREA DETAIL



LOT REGRADING DETAIL

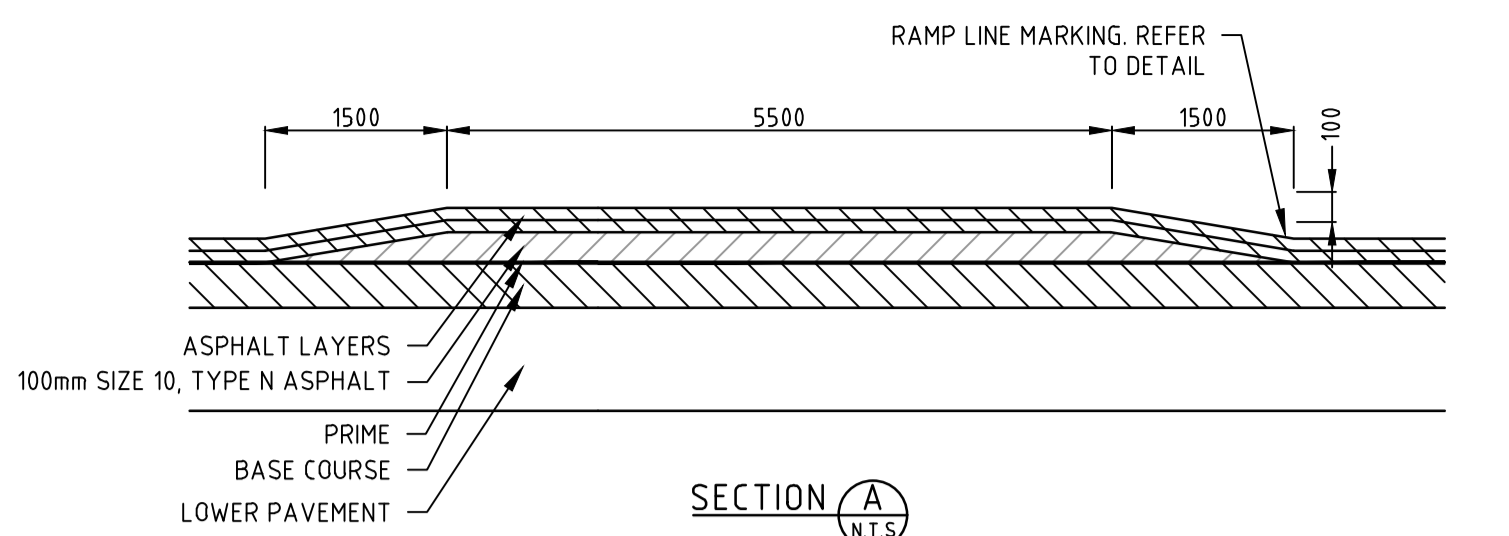


TYPICAL PARKING BAY DETAIL

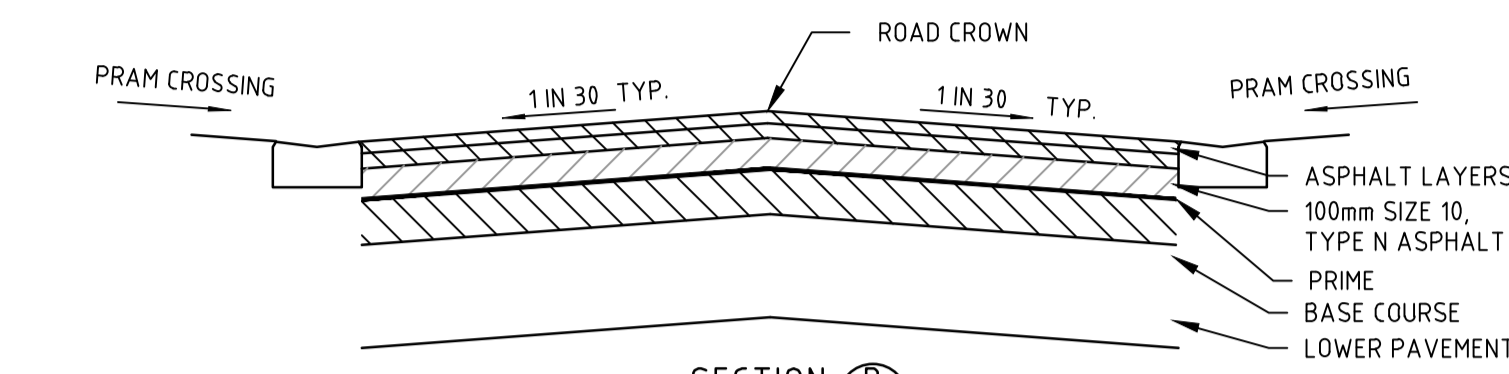


STANDARD KERB PROFILES

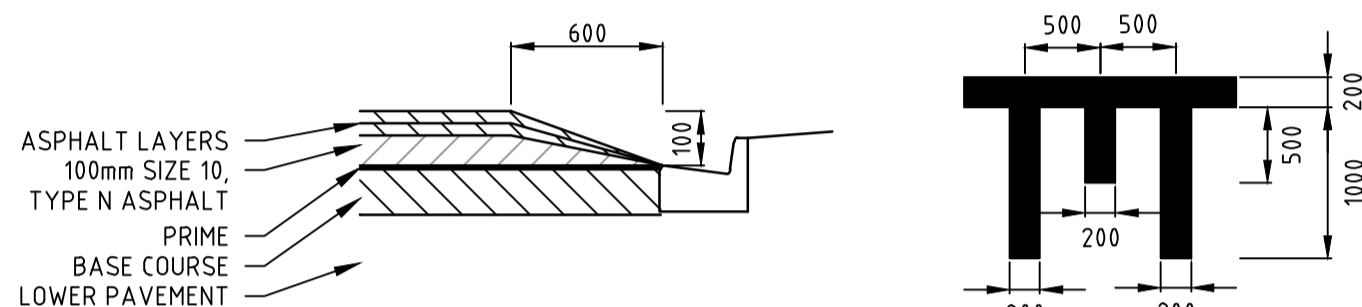
NOTE: ALL KERB & CHANNEL AS PER EDCM STD DRAWING EDCM 301



SECTION A



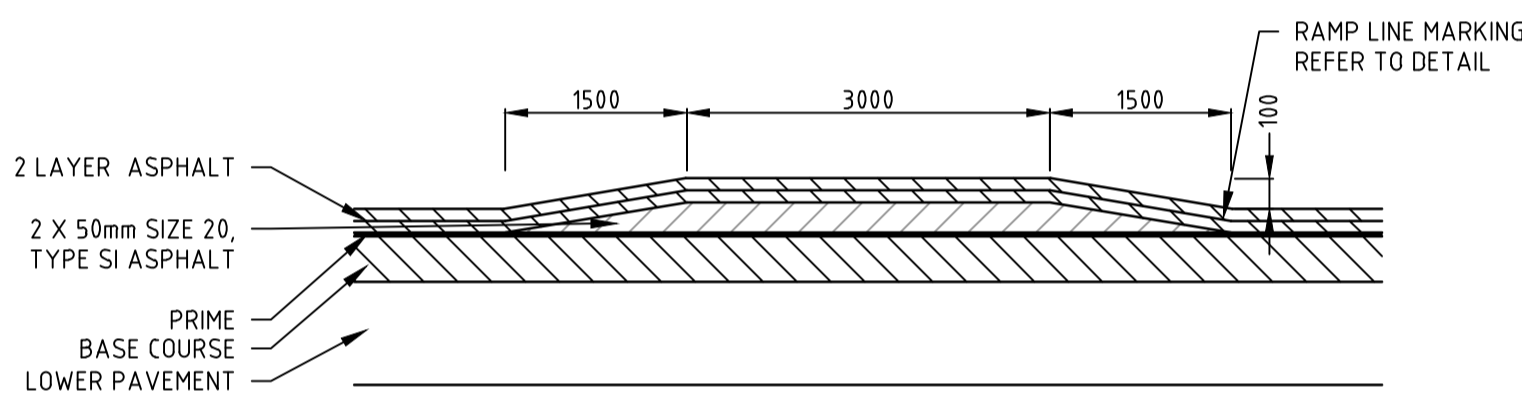
SECTION B



SECTION C

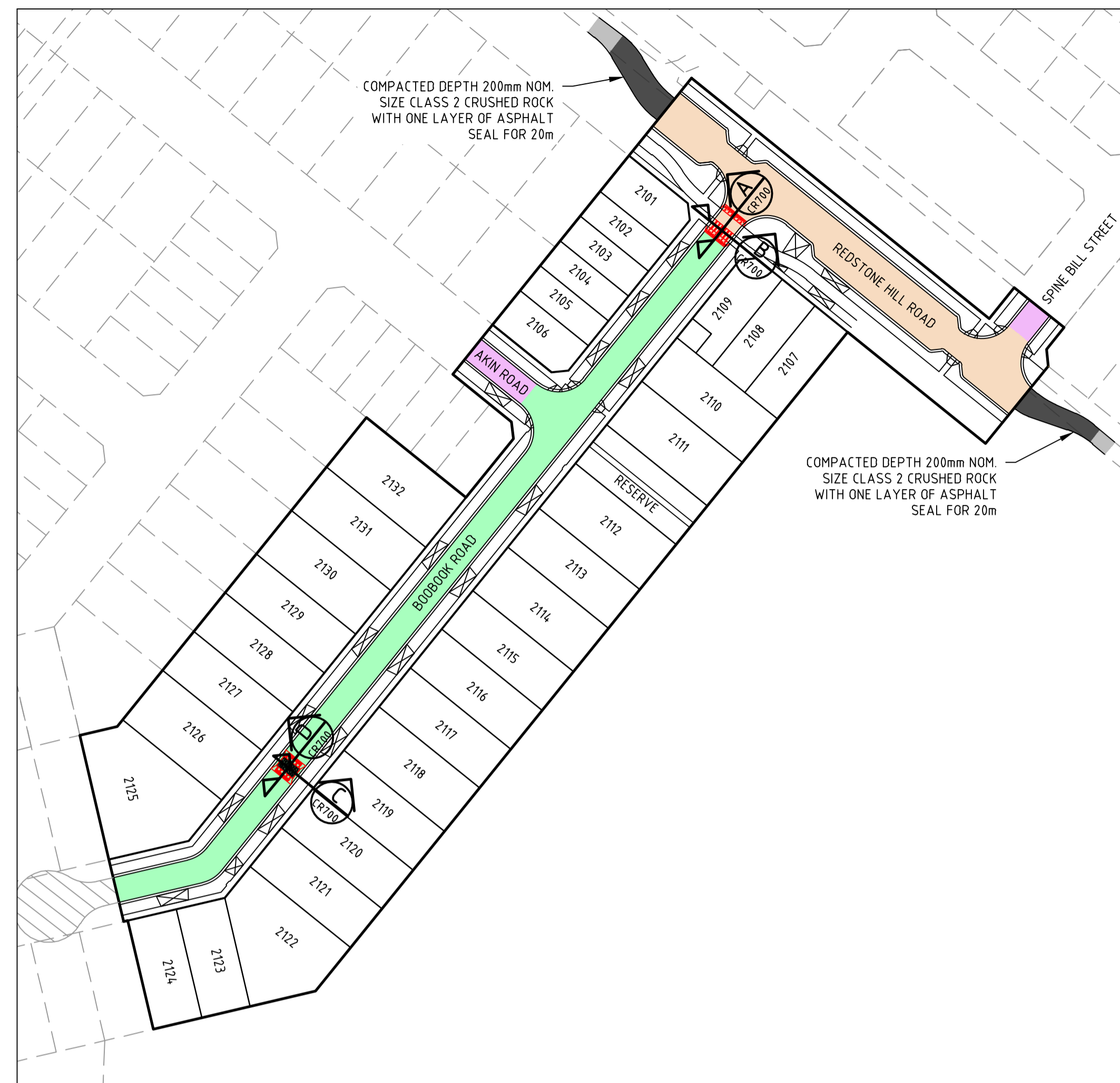
RAMP LINE MARKING

(DIMENSION IN MILLIMETERS)



SECTION D

* REFER TO HCC SD411 FOR FLAT TOP ROAD HUMPS DETAILS



PAVEMENT PLAN



PAVEMENT DETAILS

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Rev	Amendments	Approved	Date
C	NOTES AMENDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23

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Designed
 L. TRAN
 Authorised
 M. RANJANAN

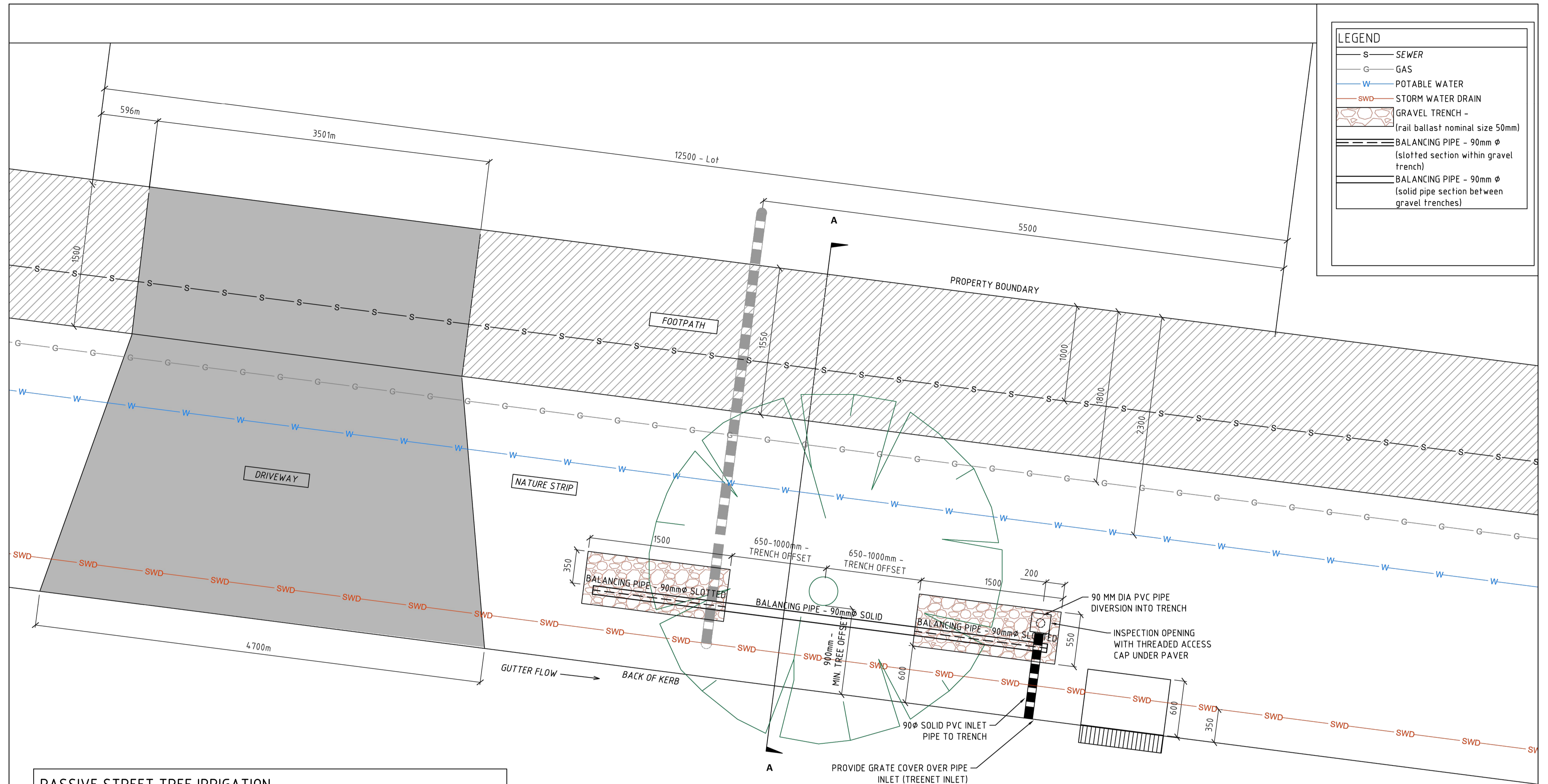


Checked
 W. ONG
 Date
 26/07/23

REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
PAVEMENT AND TYPICAL DETAILS
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY Drg No **310827CR700** Rev **C**

LEGEND	
S	SEWER
G	GAS
W	POTABLE WATER
SWD	STORM WATER DRAIN
	GRAVEL TRENCH - (rail ballast nominal size 50mm)
	BALANCING PIPE - 90mm ϕ (stuffed section within gravel trench)
	BALANCING PIPE - 90mm ϕ (solid pipe section between gravel trenches)



PASSIVE STREET TREE IRRIGATION

REFER TO THE PASSIVE STREET TREE IRRIGATION GRAVEL TRENCH (KERB CUT SURFACE INFILTRATION) PROVIDED BY MELTON CITY COUNCIL WHO ARE RESPONSIBLE FOR THE STANDARD DETAILS. SPIRE IS NOT RESPONSIBLE FOR THE WORK OF MELTON CITY COUNCIL.

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ANY QUERIES IN RESPECT TO THE STRUCTURAL DESIGNS SHOULD BE ADDRESSED TO MELTON CITY COUNCIL AND SENT TO SPIRE.

GENERAL NOTES:

1 AT HIGHLY CONSTRAINED SITES, GRAVEL TRENCHES CAN BE MODIFIED IN THE FOLLOWING WAYS:

- REDUCED OFFSET OF 0.75 M FROM TREE CENTRELINE
- DIMENSION 1.0 M LONG x 0.6 M WIDE x 0.75 M DEEP

REV	DESCRIPTION	APP'D	DATE
F	UPDATED DESIGN - REISSUE	L.S.	29.04.20
D	REVISED DESIGN - REISSUE	JMcL	01.03.19
C	REVISED DESIGN - REISSUE	JMcL	31.10.18
B	REVISED DESIGN	JMcL	09.10.18
A	PRELIMINARY ISSUE	HV	27.09.18



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MELTON CITY COUNCIL
 PASSIVE STREET TREE IRRIGATION
 GRAVEL TRENCH (KERB INLET DIVERSION)
 PLAN

DESIGNED: H. VIRAHSAWMY	DRAWN: K. STANHOPE	CHECKED: J. MCLEAN	APPROVED: PROJECT No: P118105
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REVISION: F	SHEET No.: 4	ORIGINAL SIZE: A1	SCALE: 1:20 (A1) or 1:40 (A3)
DATUM: m AHD (MGA 255)			

file name: 310827CR701.dwg, layout: cr701, saved by: Ilian Tran, file location: G:\310827\310827.dwg, plot date: 09/01/2024, 12:31 PM, Sheet: 22 of 27, Sheets

Rev	DESCRIPTION	APP'D	DATE
A	ISSUED TO COUNCIL	M.R	19/01/24
Rev	Amendments	Approved	Date



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Designed: L. TRAN
 Authorised: M. RANJANAN



Checked: W. ONG
 Date: 19/01/24

REDSTONE ESTATE
STAGE 21A
 ROAD AND DRAINAGE
 PASSIVE IRRIGATION TYPICAL DETAILS - SHEET 1
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY Dwg No: 310827CR701 Rev: A

NOTES:
 TOP OF GRAVEL TRENCH TO BE LINED WITH NON-WOVEN GEOTEXTILE MATERIAL AS SHOWN TO PREVENT FINE MIGRATION INTO THE TRENCH
 PASSIVE IRRIGATION PIPES AND FITTINGS TO BE 90 MM DIAMETER PVC SEWER CLASS
 ALL PVC JOINTS TO BE SEALED WITH SOLVENT CEMENT
 ALL GRASSED AREAS TO BE TOP DRESSED WITH 100 MM TOPSOIL AND SEEDED AS SPECIFIED
 SERVICE DEPTHS AND LOCATIONS ARE INDICATIVE ONLY
 WHERE THE VERGE IS LESS THAN 4.2m (TYPICAL) A SPECIFIC DETAIL SHALL BE SHOWN ON THE ENGINEERING DRAWINGS THAT RETAINS THE PRINCIPALS AND

PASSIVE STREET TREE IRRIGATION

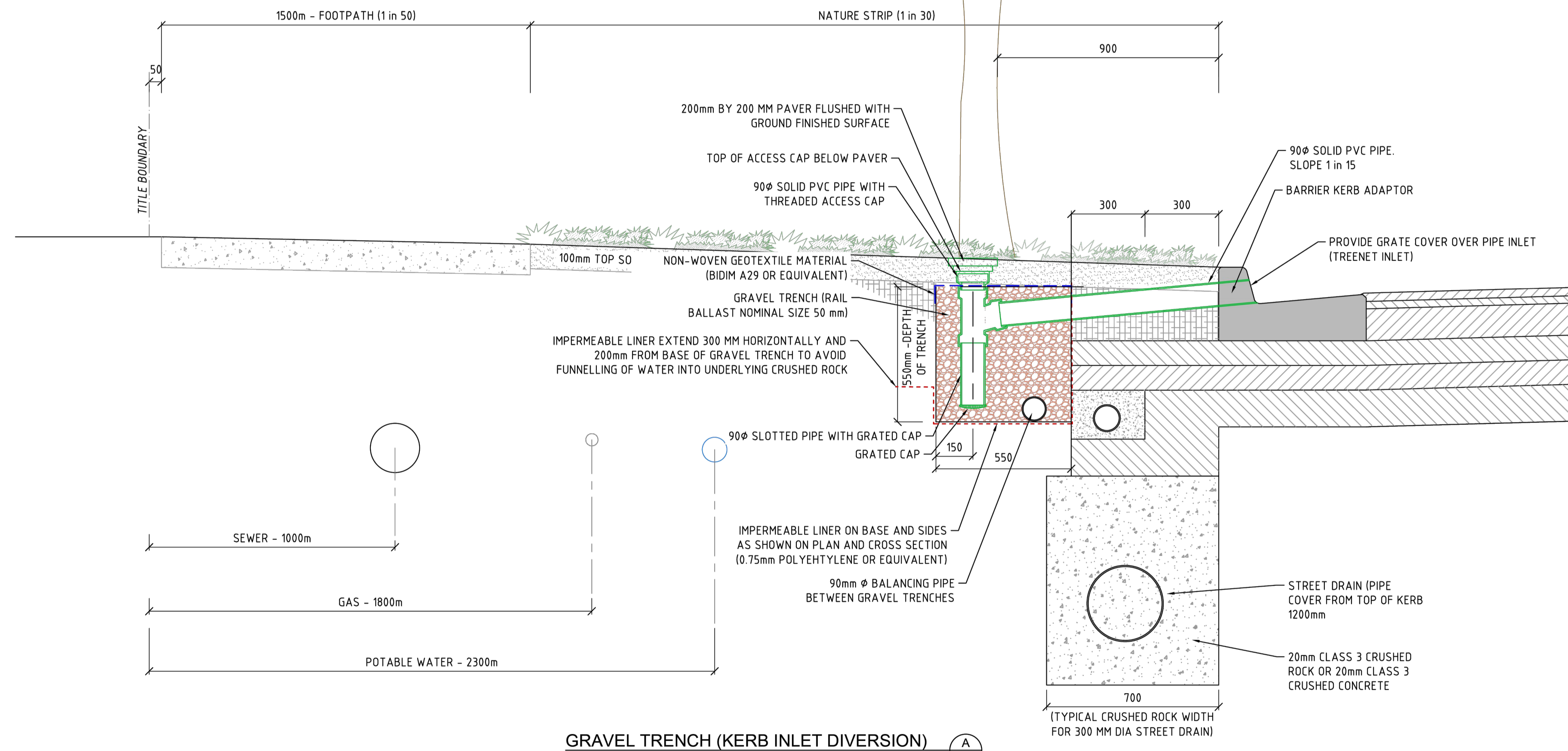
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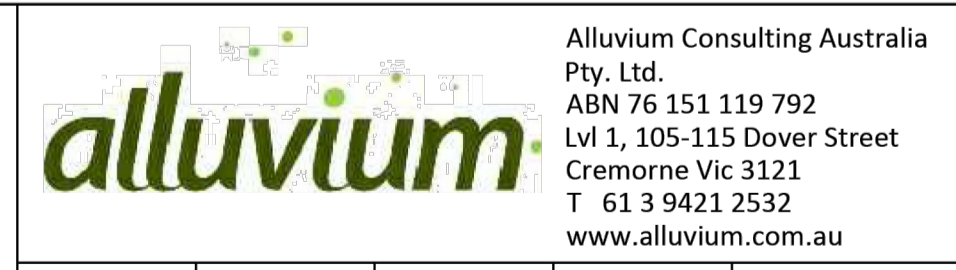


TREENET INLET



GRAVEL TRENCH (KERB INLET DIVERSION)
 1:10 (A1) A 3

REV	DESCRIPTION	APP'D	DATE
F	UPDATED DESIGN	L.S.	29.04.20
D	REVISED DESIGN - REISSUE	JMcL	30.11.18
C	REVISED DESIGN - REISSUE	JMcL	31.10.18
B	REVISED DESIGN	JMcL	09.10.18
A	PRELIMINARY ISSUE	HV	27.09.18



MELTON CITY COUNCIL
 PASSIVE STREET TREE IRRIGATION
 GRAVEL TRENCH (KERB INLET DIVERSION)
 CROSS SECTION

DESIGNED: H. VIRAHSAWMI	DRAWN: K. STANHOPE	CHECKED: J. MCLEAN	APPROVED: P118105	PROJECT No: P118105
REVISION: F	SHEET No.: 5	ORIGINAL SIZE: A1	SCALE: 1:10 (A1) or 1:20 (A3)	DATUM: m AHD (MGA 255)

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Rev	Amendments	Approved	Date
A	ISSUED TO COUNCIL	M.R.	19/01/24

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Communities Designed for Living

Designed: L. TRAN
 Authorised: M. RANJANAN

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 Date: 19/01/24

REDSTONE ESTATE
 STAGE 21A
 ROAD AND DRAINAGE
 PASSIVE IRRIGATION TYPICAL DETAILS - SHEET 2
 HUME CITY COUNCIL
 VILLAWOOD PROPERTIES

PRELIMINARY Drg No: 310827CR702 Rev: A

SODIC SOIL RECOMMENDATIONS

NOTES:

1. 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.
2. 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 be 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 tined 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.

file name: 310827CR703.dwg, layout: name: CD703, plotted by: Lillian Tran, file location: G:\310827\ Villawood\A4\plot date: 09/04/2024, 10:31 PM, Sheet: 24 of 27 Sheets

Rev	Amendments	Approved	Date
A	ISSUED TO COUNCIL	M.R	09/04/24

Scale



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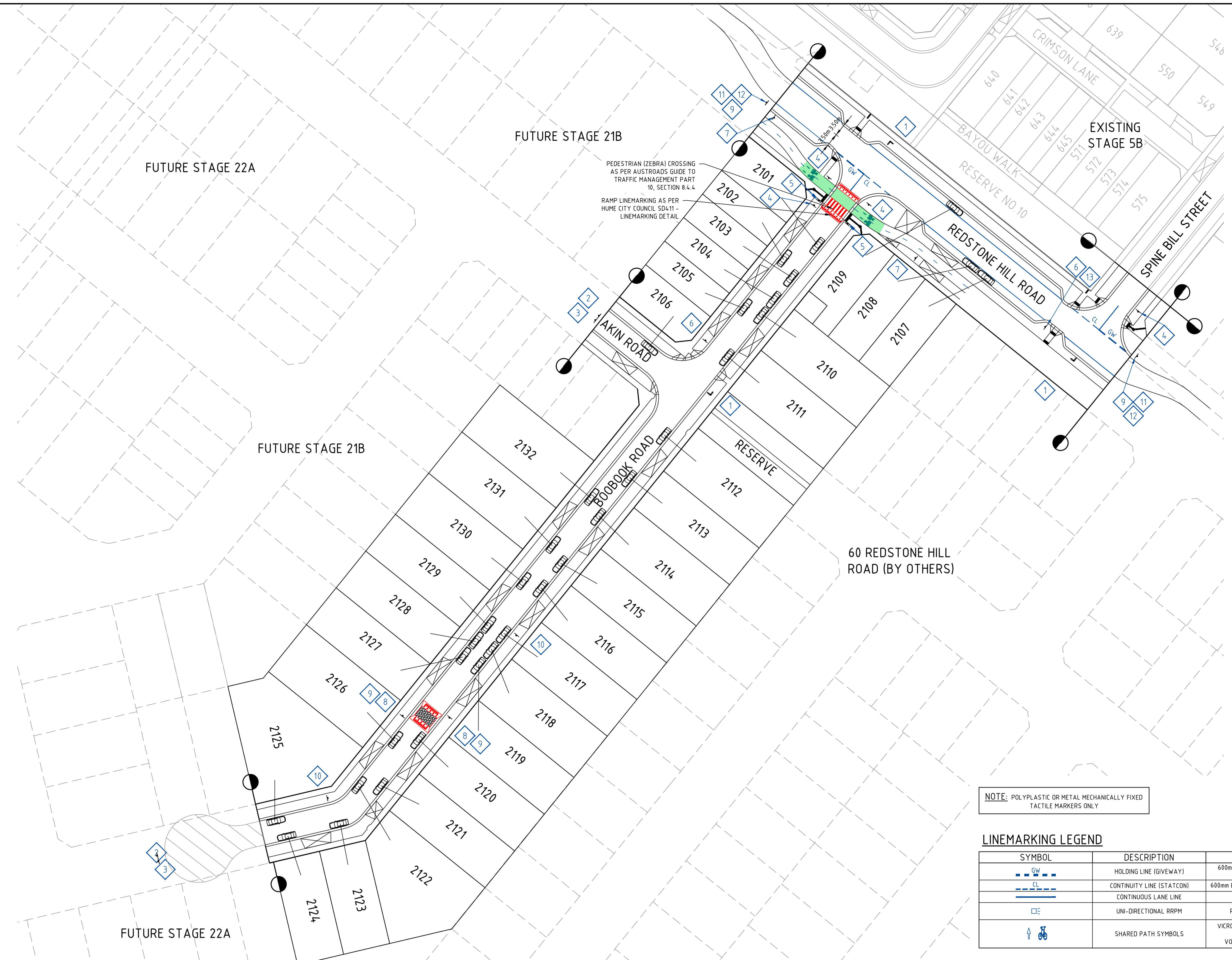


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Designed L. TRAN	Checked W. ONG
Authorised M. RANJANAN	Date 09/04/24

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

PRELIMINARY Drg No **310827CR703** Rev **A**



FUTURE STAGE 21B

EXISTING STAGE 5B

FUTURE STAGE 22A

FUTURE STAGE 21B

60 REDSTONE HILL ROAD (BY OTHERS)

PEDESTRIAN (ZEBRA) CROSSING
AS PER AUSTRROADS GUIDE TO
TRAFFIC MANAGEMENT PART
10, SECTION 8.4.4
RAMP LINEMARKING AS PER
HUME CITY COUNCIL SD4-11 -
LINEMARKING DETAIL

SIGNAGE SCHEDULE

REFERENCE	SIGN
1	R1-2
2	NO ROAD
3	D4-5
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: POLYPLASTIC OR METAL MECHANICALLY FIXED
TACTILE MARKERS ONLY

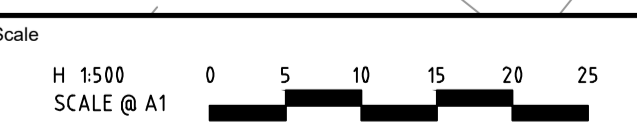
LINEMARKING LEGEND

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 AS174.2.2 - 2009
	SHARED PATH SYMBOLS	VICROADS TRAFFIC ENGINEERING MANUAL VOL.2 FIG. 18.19 & AS174.2.9

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.

file name: 310827CR800.dwg, layout: rans, c8000, plotted by: Ilic, Tran, plot date: 09/07/2024, 12:31 PM, sheet: 25 of 27, sheets

Rev	Amendments	Approved	Date
E	SIGNAGE AMENDED	M.R	19/01/24
D	SIGNAGE AMENDED	M.R	20/12/23
C	SIGNAGE AMENDED	M.R	23/10/23
B	ISSUED TO COUNCIL	M.R	26/07/23
A	ISSUED FOR TENDER	M.R	29/06/23



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L. TRAN

Authorised
M. RANJANAN

Checked
W. ONG

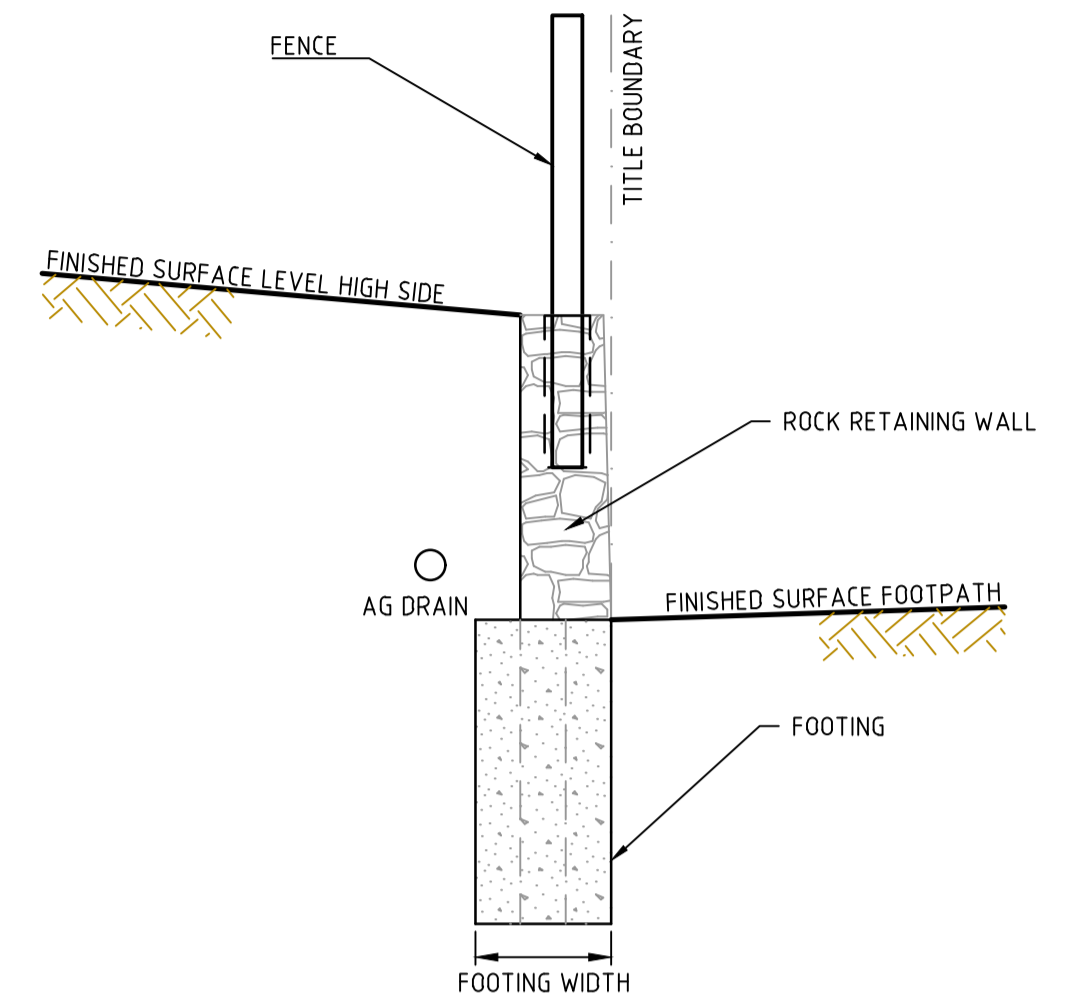
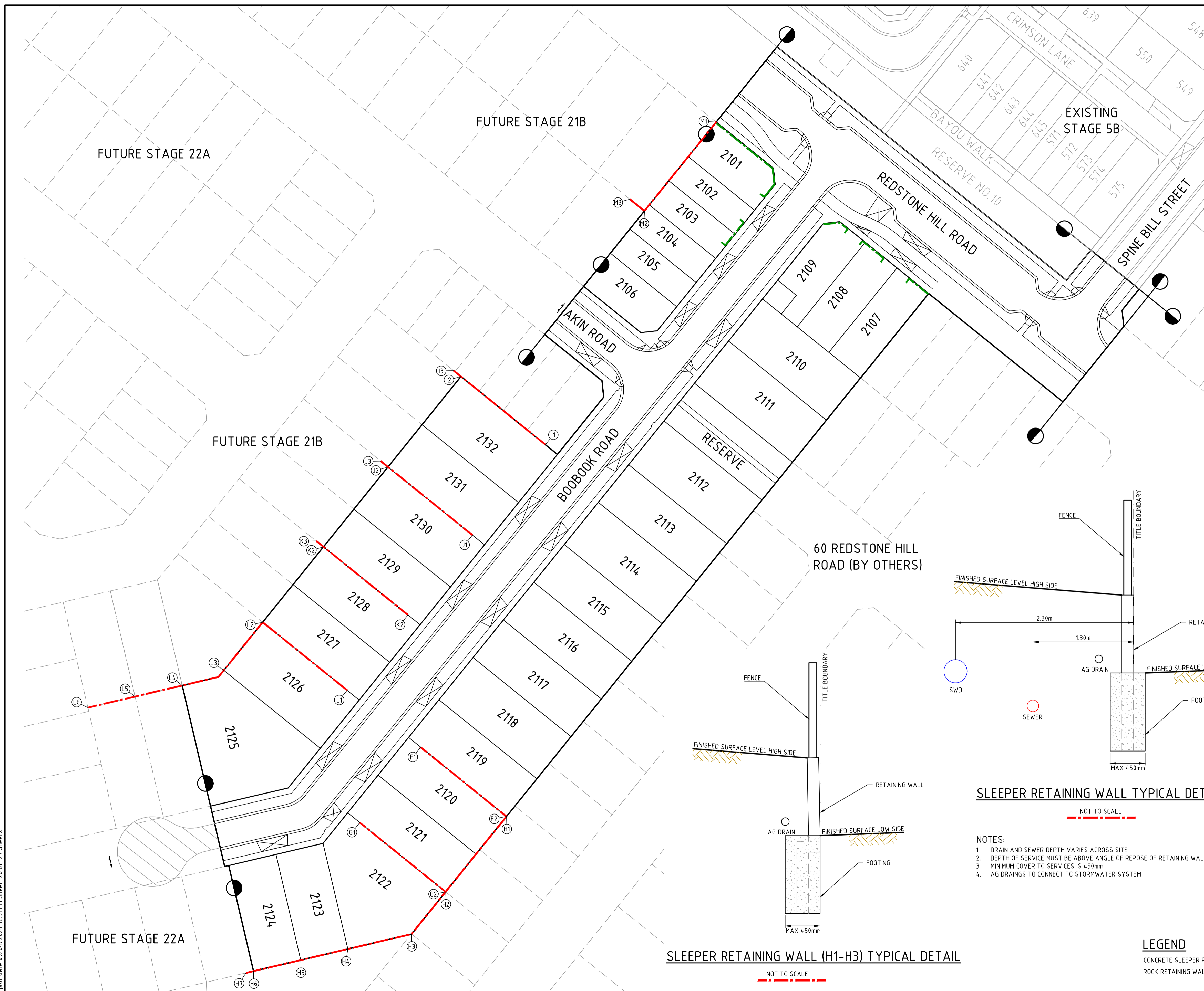
Date
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**REDSTONE ESTATE
STAGE 21A
ROAD AND DRAINAGE
SIGNAGE AND LINEMARKING**
HUME CITY COUNCIL
VILLAWOOD PROPERTIES

PRELIMINARY

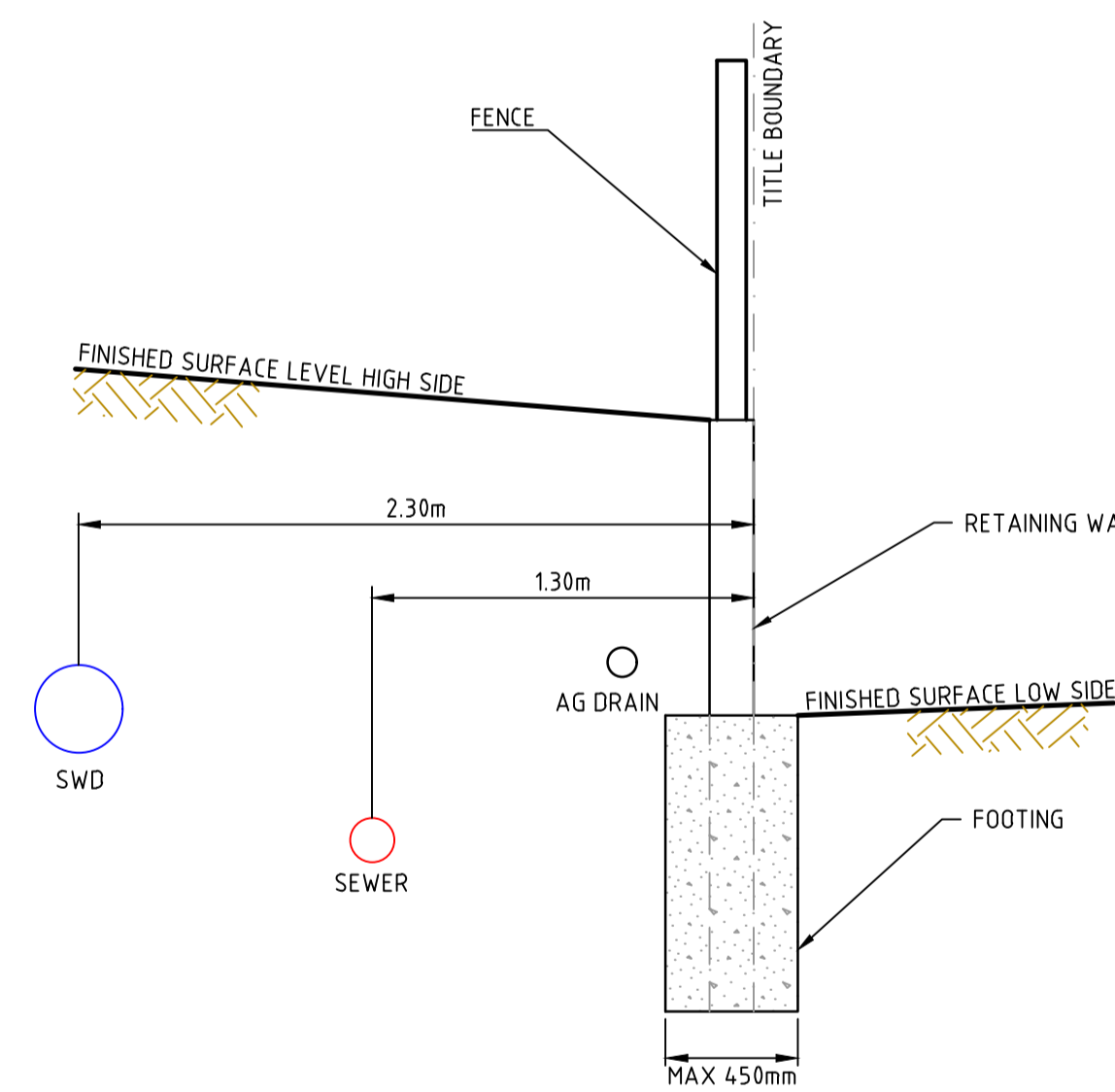
Drg No
310827CR800

Rev
E



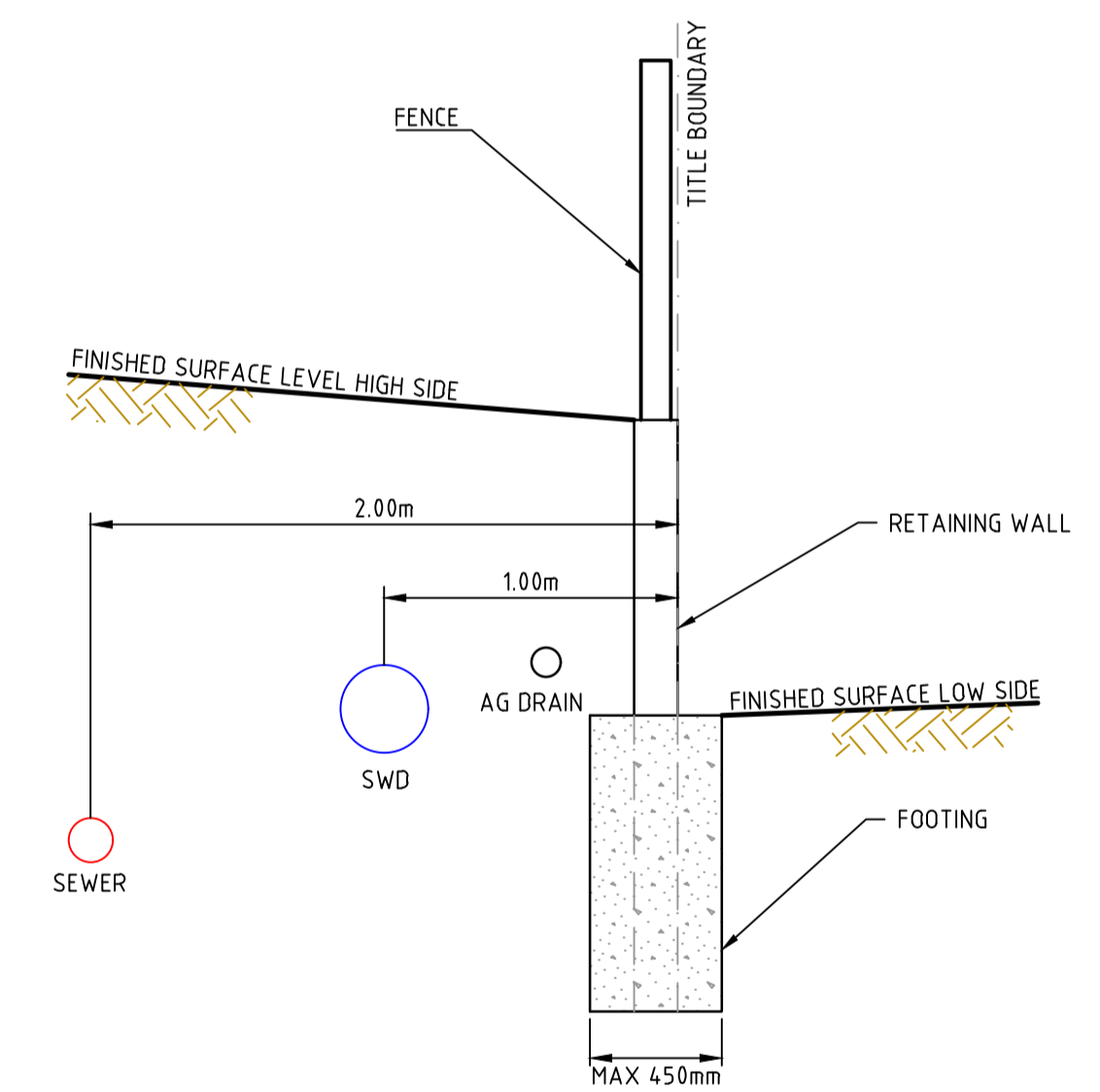
ROCK RETAINING WALL TYPICAL DETAIL

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

SLEEPER RETAINING WALL (H1-H3) TYPICAL DETAIL

NOT TO SCALE

LEGEND

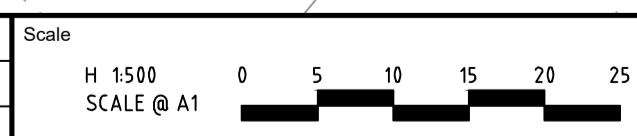
- CONCRETE SLEEPER RETAINING WALL
- ROCK RETAINING WALL

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

file name: 310827CR900.dwg, layout: name: CR900, plotted by: Ilic, Tran, file location: G:\310827\310827\WV\AKAD\plot date: 09/07/2024, 10:31 PM, sheet: 26 of 27, sheets

Rev	Amendments	Approved	Date
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
B	ISSUED TO COUNCIL	M.R.	26/07/23
A	ISSUED FOR TENDER	M.R.	29/06/23



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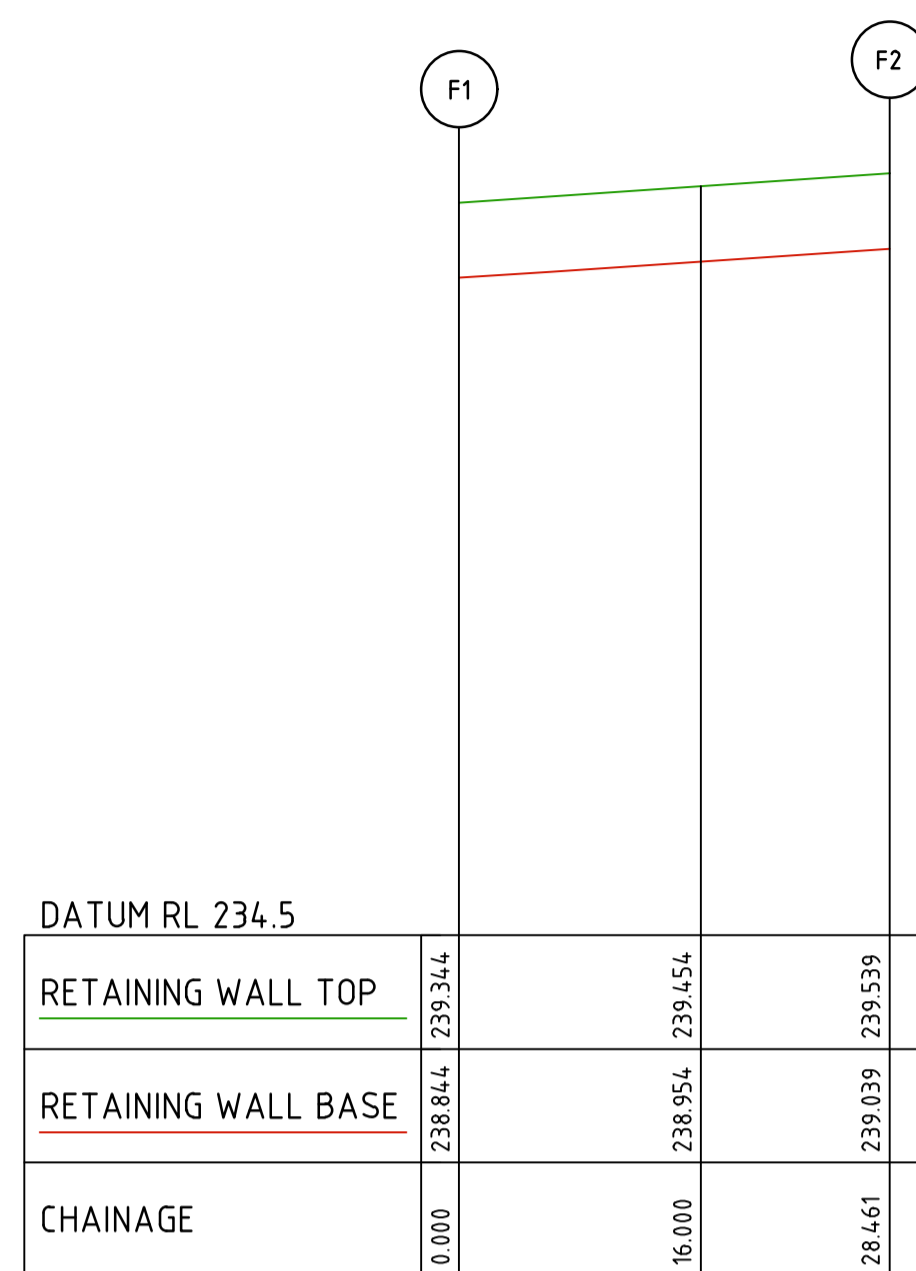
Designed
L. TRAN
Authorised
M. RANJANAN



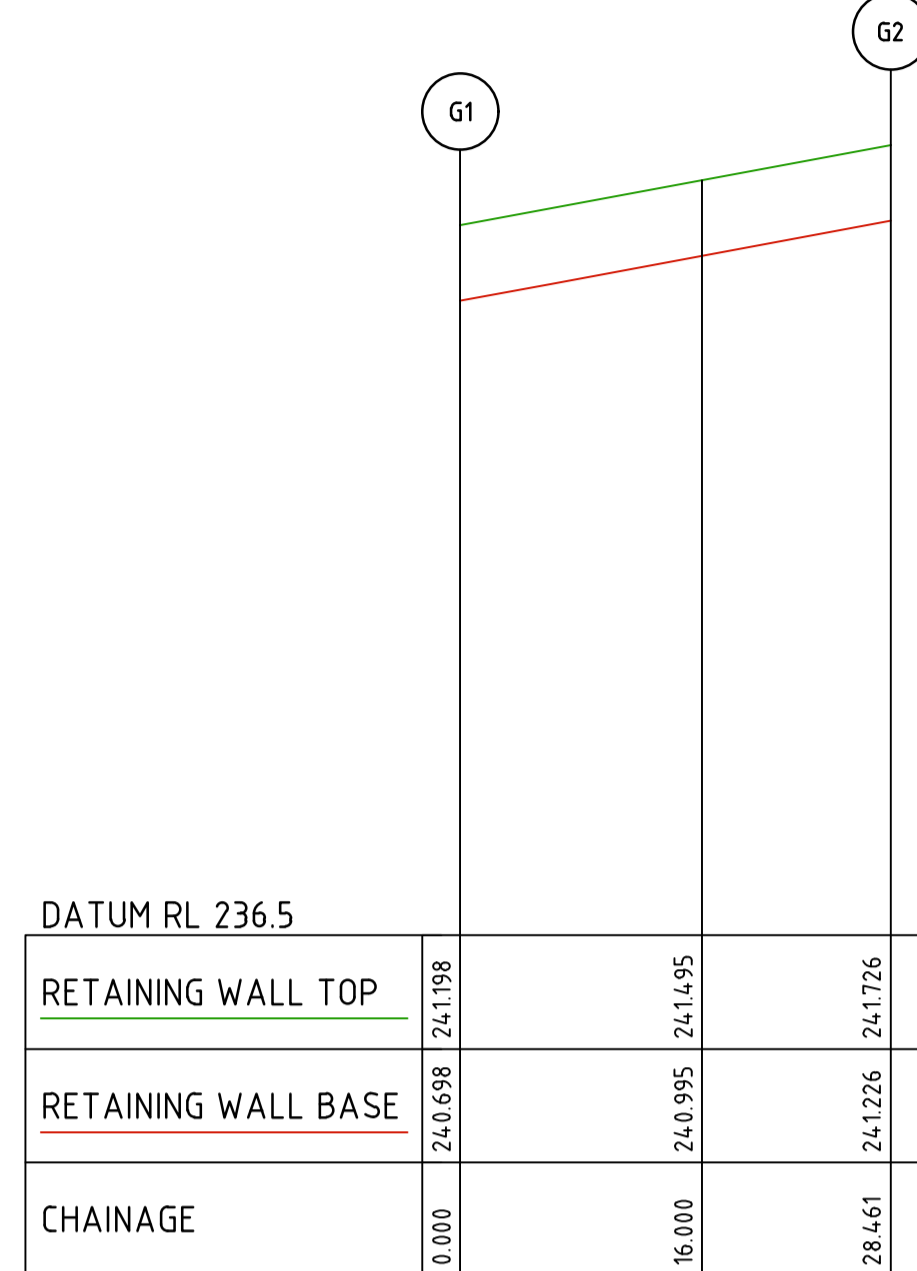
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Date
26/07/23

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

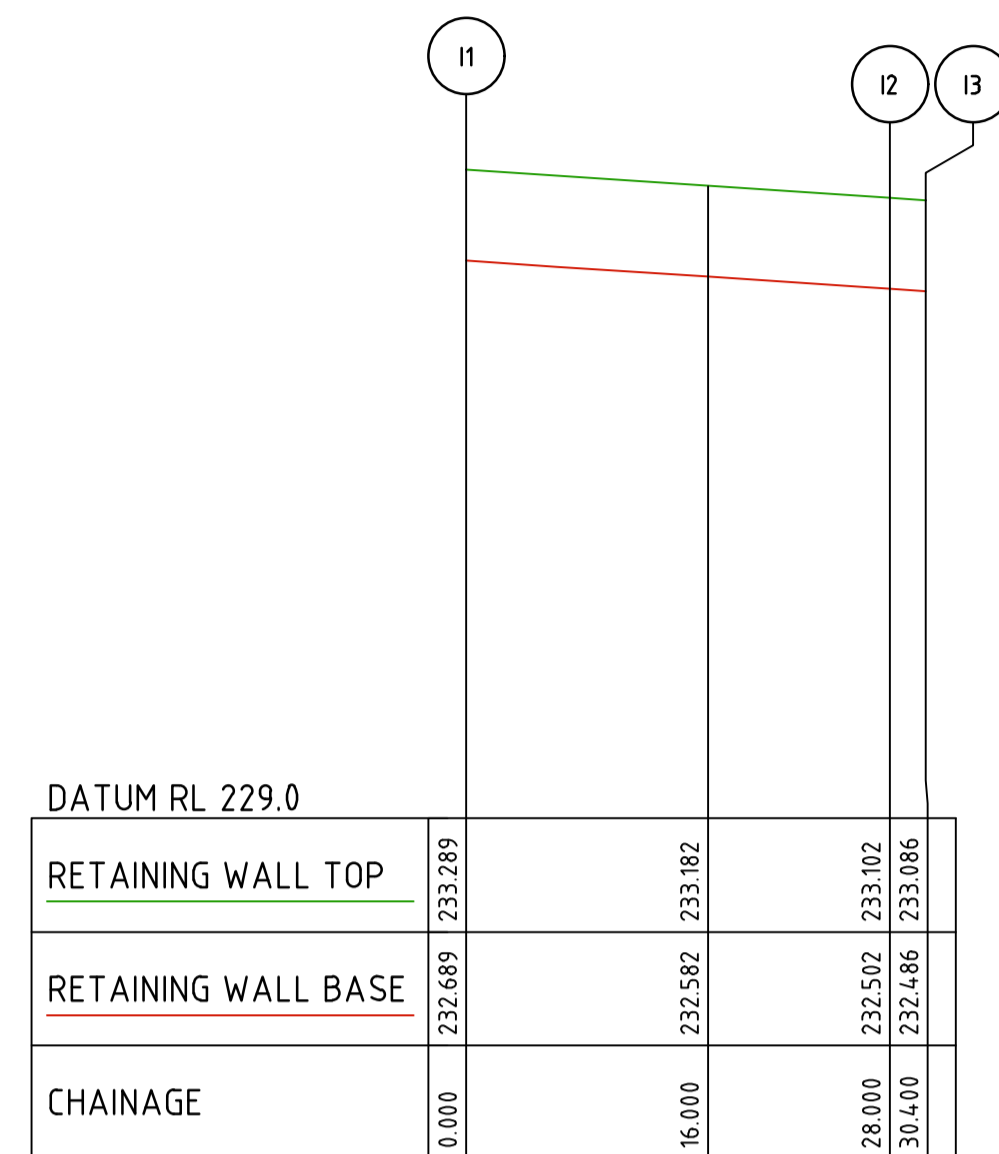
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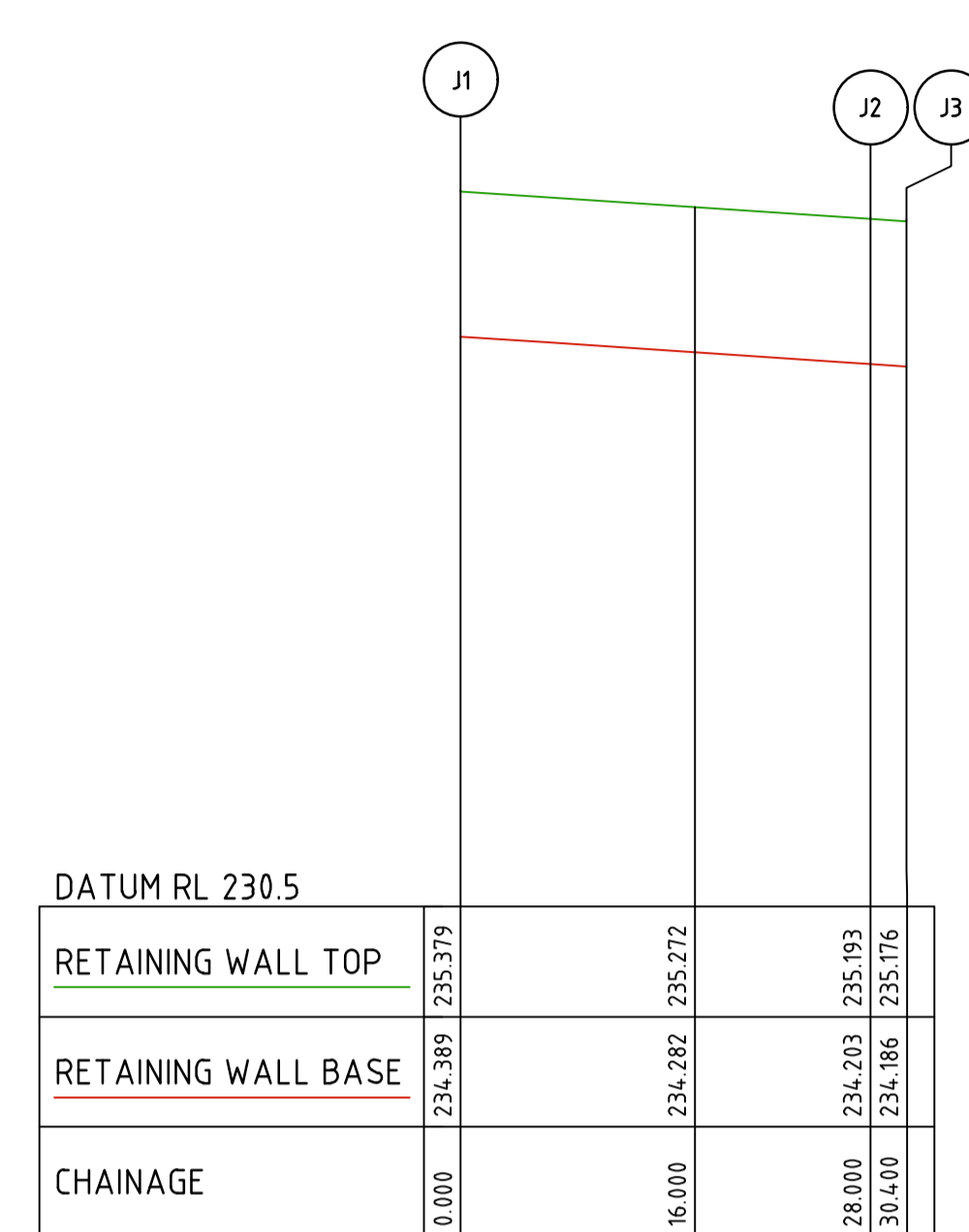
RETAINING WALL F



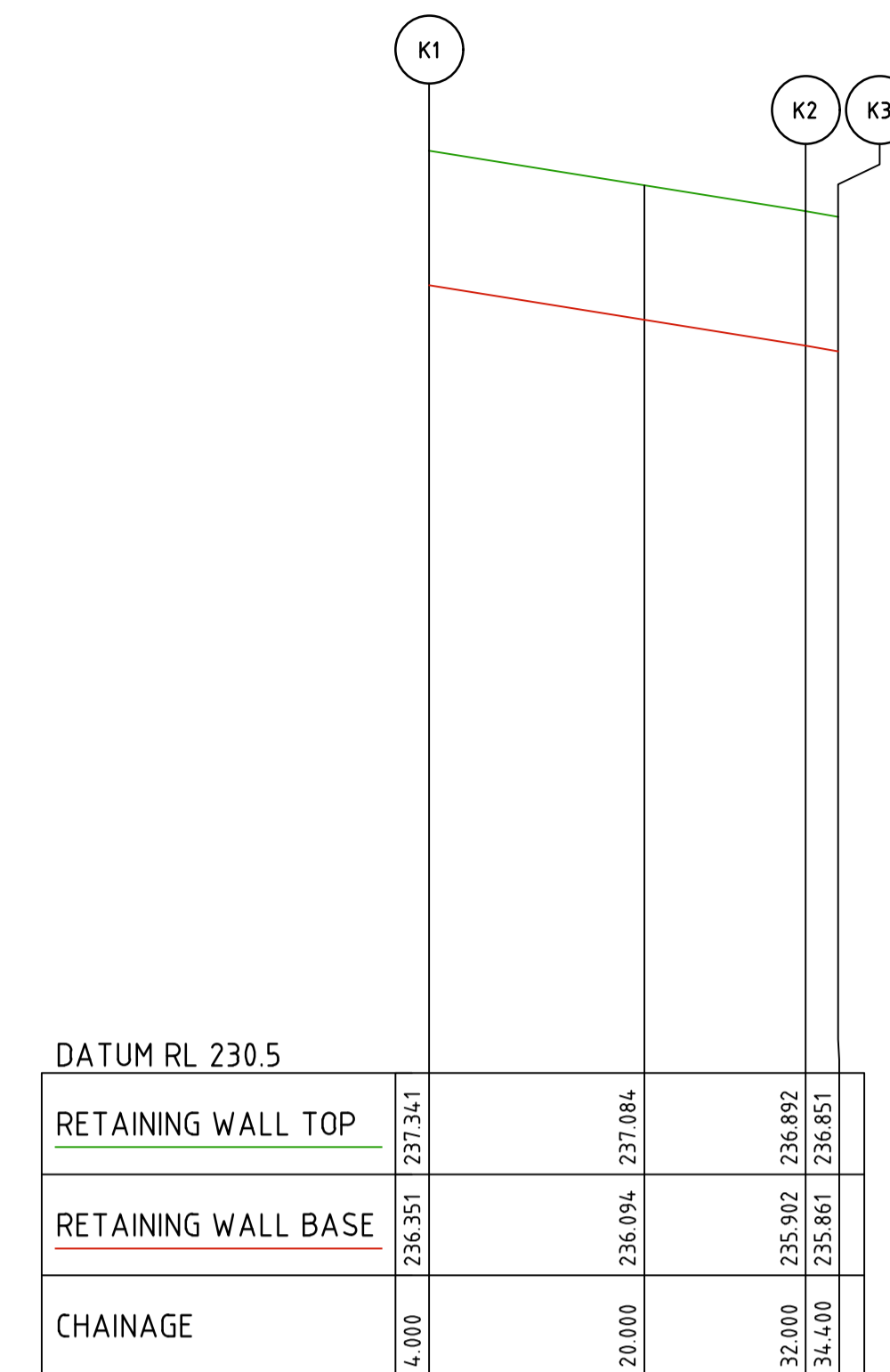
RETAINING WALL G



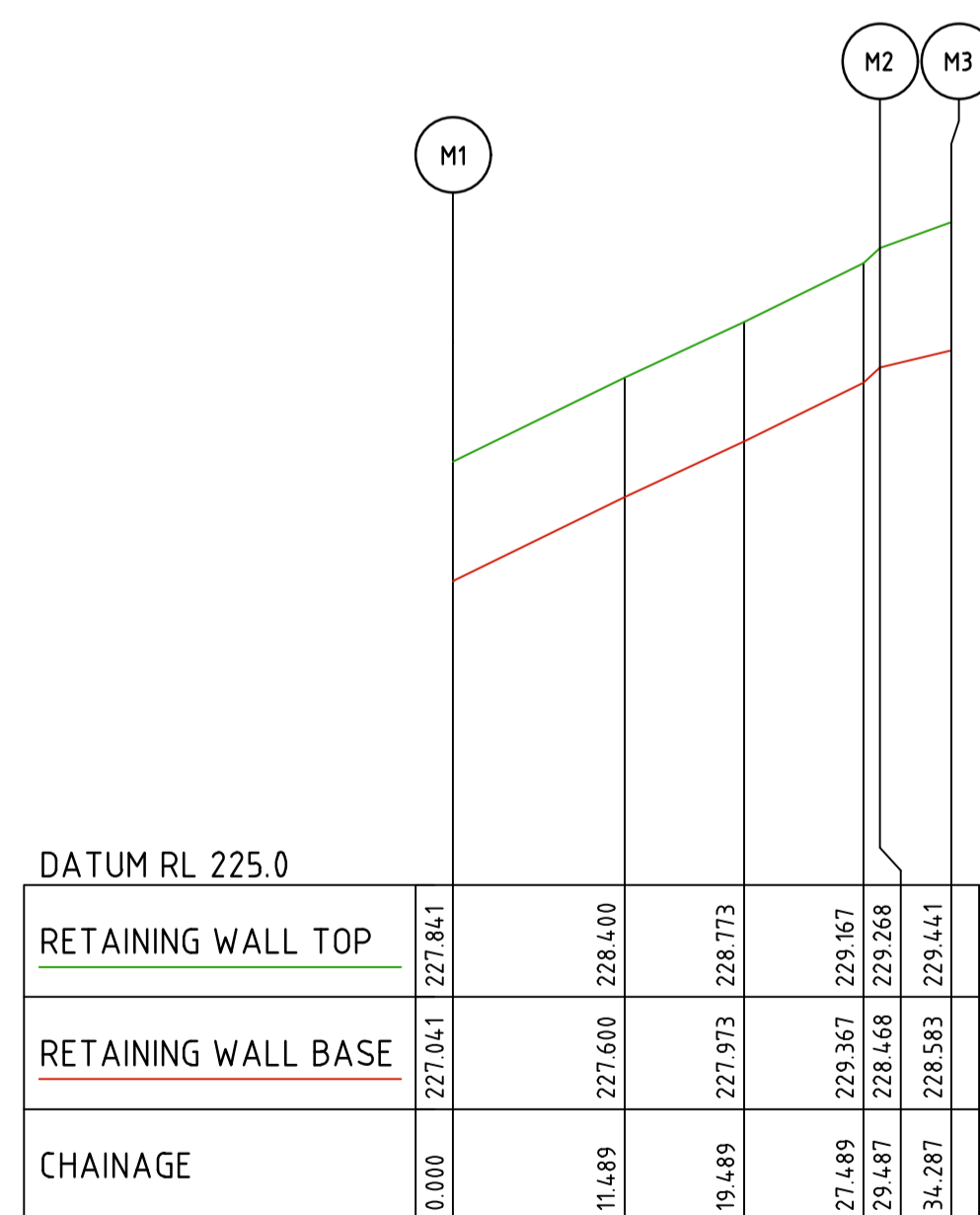
RETAINING WALL I



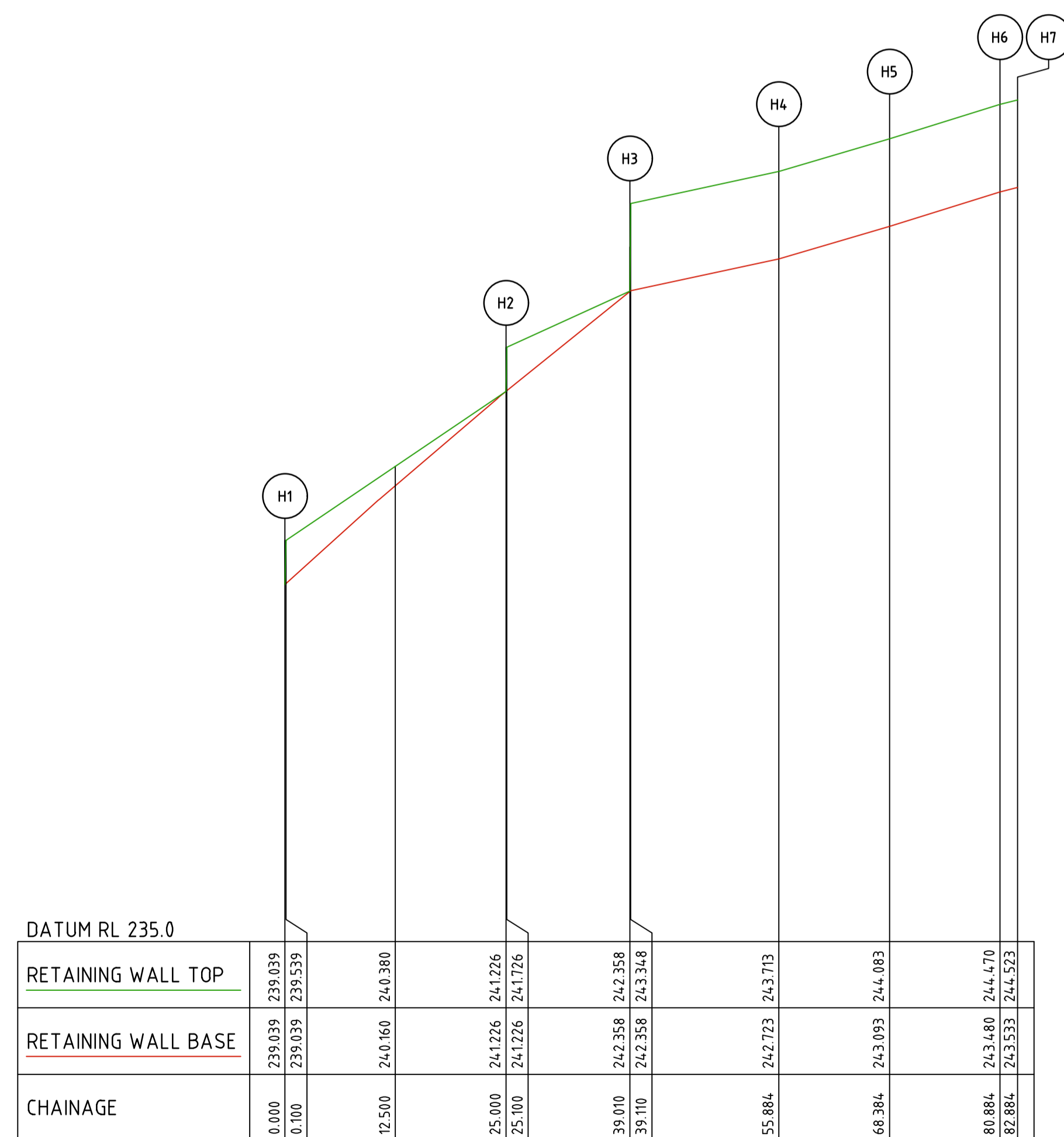
RETAINING WALL J



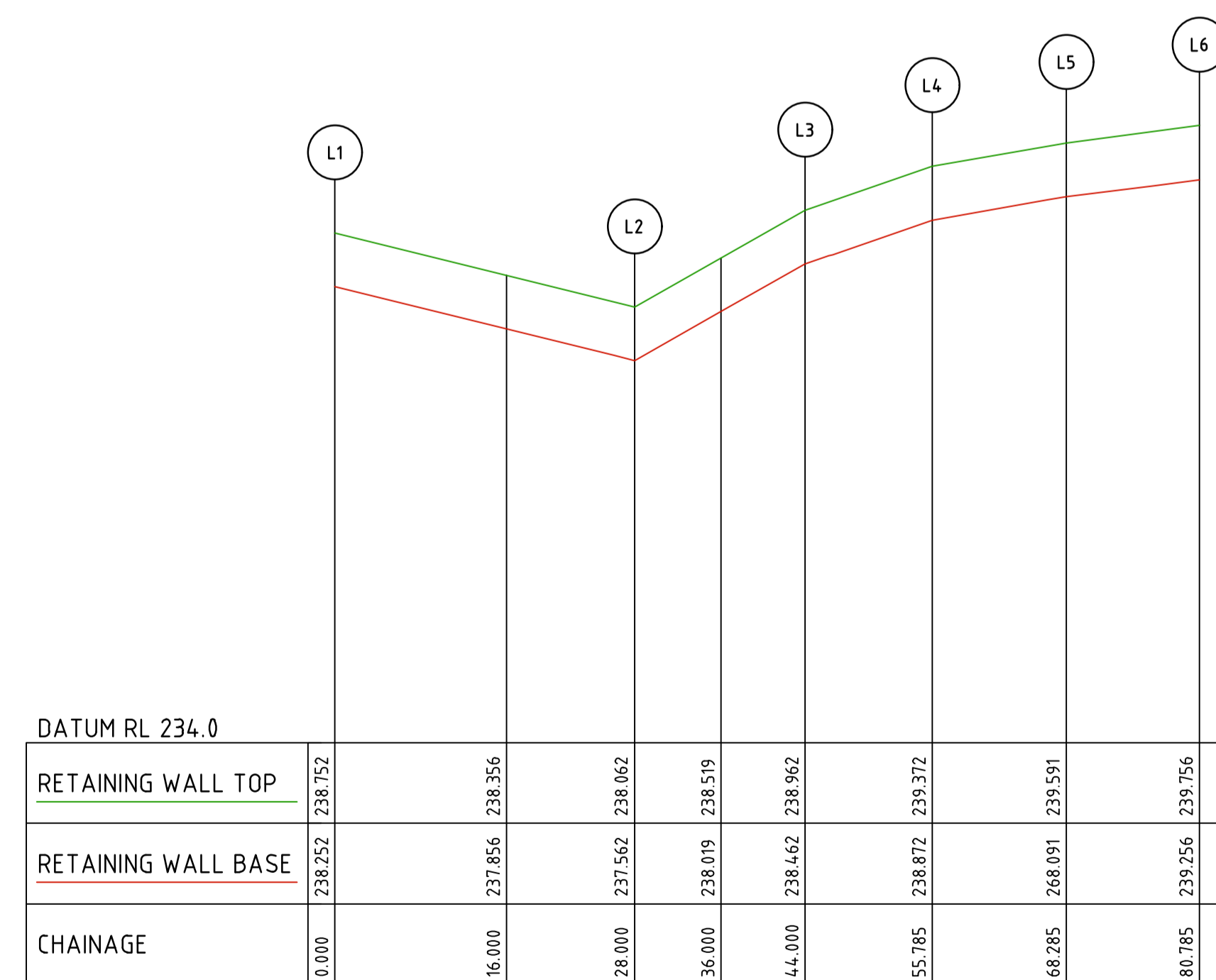
RETAINING WALL K



RETAINING WALL M



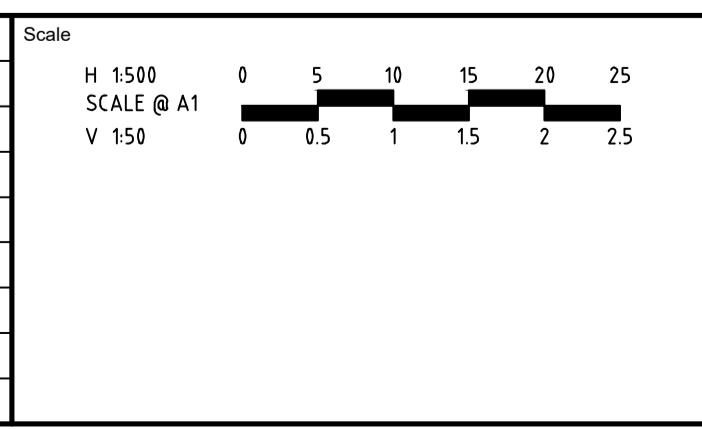
RETAINING WALL H



RETAINING WALL L

file name: 310827CR901.dwg, layout: name: CR901, plotted by: Ilic, Tran, file location: G:\311_310827\work\310827\work\310827.dwg, plot date: 09/10/2024, 12:31 PM, Sheet: 27 of 27, Sheets

Rev	Amendments	Approved	Date
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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M. RANJANAN

Checked
W. ONG

Date
26/07/23

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

PRELIMINARY Drg No **310827CR901** Rev **D**