

# REDSTONE ESTATE STAGE 4 VILLAWOOD PROPERTIES

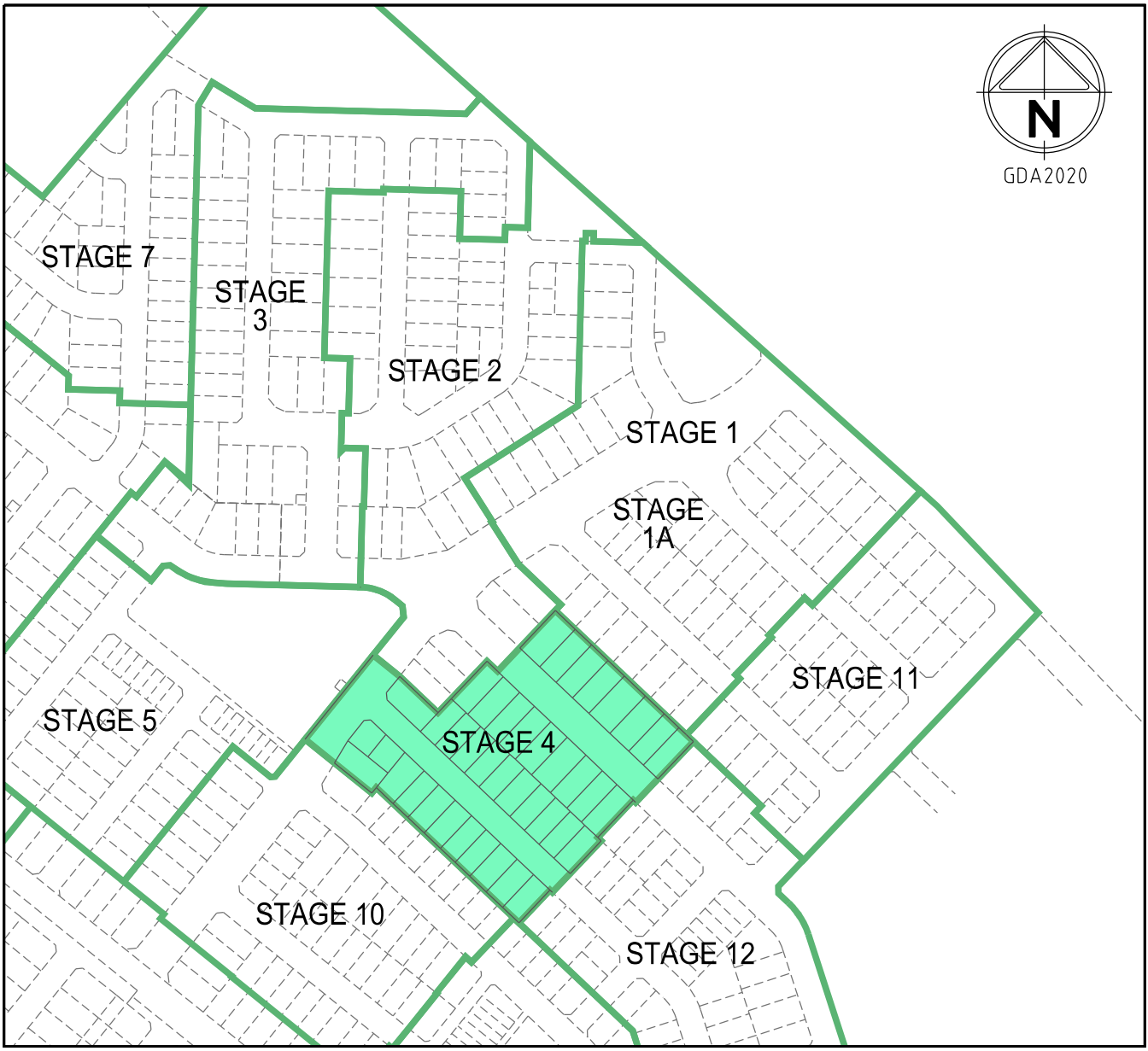
## HUME CITY COUNCIL GENERAL NOTES:

1. 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.
2. 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.
3. 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
4. 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.
5. 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."
6. 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.
7. 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.
8. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
9. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.).
10. ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA 2020 (GDA 2020).
11. 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.
12. 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.
13. FILLING TO COMPLY WITH A.S. 3798-2007, LEVEL 1 UNLESS SPECIFIED OTHERWISE.
14. 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.
15. 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.
16. 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.
17. 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.
18. THE CONTRACTOR IS TO OBTAIN A BUILDING PERMIT FOR ANY STRUCTURES / FENCES AND FOR ANY RETAINING WALLS OVER 1.0m IN HEIGHT.
19. 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.
20. PRIOR TO STATEMENT OF COMPLIANCE ALL DISTURBED AREAS (INCLUDING NATURE STRIPS, BATTERS, ALLOTMENTS WITH GRADES OF 1% 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.
21. FOOTPATHS ARE TO BE 50mm OFFSET FROM TITLE BOUNDARIES UNLESS NOTED OTHERWISE. VEHICLE CROSSING ALIGNMENTS ARE GENERALLY TO BE PARALLEL TO THE SIDE BOUNDARY.
22. ALL NEW CONCRETE WORKS SHALL BE JOINED INTO ABUTTING EXISTING CONCRETE WITH 450mm LONG Y20 DOWEL BARS @ 600 CENTRES, UNLESS OTHERWISE SPECIFIED.
23. ANY EXPOSED AGGREGATE CONCRETE WORKS TO BE ACHIEVED BY SAND-BLASTING ONLY. WASHING AGGREGATE OFF WITH WATER IS NOT PERMITTED.
24. 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.
25. ALL STORMWATER DRAINS ARE TO BE CLASS 2 R.C. OR RIGID F.R.C. PIPES WITH ADCOL FLEXIBLE COLLARS UNLESS NOTED OTHERWISE. ALL PIPES UP TO AND INCLUDING 750mm DIAMETER ARE TO BE RUBBER RING JOINTED. INTERLOCKING / FLUSH JOINTS WITH EXTERNAL BANDS CAN ONLY BE USED ON PIPE SIZES OVER 750mm DIAMETER.
26. WHERE NEW ASPHALT, CONCRETE KERB & CHANNEL, PATHS AND DRIVEWAYS MATCH INTO EXISTING, THE EXISTING SURFACE IS TO BE SAW CUT AND MATCHED NEATLY.
27. ALL REDUNDANT ASSETS ARE TO BE REMOVED AND DISPOSED OFF SITE.
28. ALL TREES AND SHRUBS ARE TO BE RETAINED UNLESS OTHERWISE SHOWN OR DIRECTED BY THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
29. AT THE COMPLETION OF ALL WORKS, ALL RUBBISH, DEBRIS AND SURPLUS SPOIL SHALL BE REMOVED AND THE SITE SHALL BE CLEARED TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
30. 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.
31. 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.

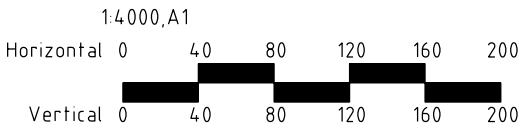
32. ALL EXISTING ASSETS AFFECTED BY THE WORKS, E.G. SIGNS, VEHICLE CROSSINGS, FOOTPATHS, KERB AND LINEMARKING SHALL BE REINSTATED BY THE CONTRACTOR PRIOR TO THE COMPLETION OF THE WORKS TO THE SATISFACTION OF THE CHIEF EXECUTIVE OFFICER AND/OR THEIR REPRESENTATIVE.
33. PRIOR TO THE COMPLETION OF WORKS 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.
34. AGRICULTURAL DRAINS ARE TO BE PLACED BEHIND ALL KERB AND CHANNEL, KERB ONLY AND EDGE STRIPS IN ACCORDANCE WITH COUNCIL STANDARD DRAWING SD022.
35. 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.
36. 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.
37. 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.
38. ALL SIGNS TO BE CLASS 1 HIGH INTENSITY TYPE AND TO COMPLY WITH THE REQUIREMENTS OF A.S. 1743 - 2001.
39. 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.
40. 100mm HOUSE DRAIN CONNECTIONS TO BE LAID AT AN OFFSET OF 5.5m FROM THE LOW SIDE TITLE BOUNDARY AND PROPERTY INLETS 10m FROM THE LOW CORNER OF THE LOT UNLESS OTHERWISE SHOWN.
41. 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.

## ADDITIONAL GENERAL NOTES:

42. 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.
43. ANY EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
44. WHERE REQUIRED ANY BUILDINGS, TROUGHS, FENCES AND OTHER STRUCTURES ON SITE ARE TO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVAL IS TO BE INCLUDED IN THE OVERALL EARTHWORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DENOTED IN THE SCHEDULE.
45. 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.
46. ALL BATTERS SHALL BE 1 IN 5, UNLESS OTHERWISE SHOWN.
47. 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.
48. IF 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 B.M.'S THEREAFTER.
49. WHERE REQUIRED, ALL EXISTING DAMS, DEPRESSIONS AND DRAINS ARE TO BE BREACHED, DRAINED, DE-SLUGGED 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.
50. GAS AND WATER CONDUITS SIZES ARE AS FOLLOWS:
- Ø50mm CLASS 12 P.V.C. - SINGLE SERVICE
  - Ø100mm CLASS 12 P.V.C. - DUAL SERVICE (DRINKING AND NON DRINKING WATER)
- WITH THE FOLLOWING MINIMUM COVER TO FINISHED SURFACE LEVELS:
- ROAD PAVEMENT - 0.80m
  - VERGE & FOOTPATHS - 0.45m
51. 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.
52. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS2124-1992 GENERAL CONDITIONS OF CONTRACT.
53. 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.
54. 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.
55. ALL TEMPORARY WARNING SIGNS USED DURING CONSTRUCTION SHALL BE SUPPLIED AND MAINTAINED IN ACCORDANCE WITH A.S. 1742-3.
56. CONTRACTOR TO ENSURE SEWER MANHOLE COVERS ARE WHOLLY LOCATED IN PROPOSED FOOTPATHS.
57. 100mm HOUSE DRAIN CONNECTIONS TO BE LAID AT AN OFFSET OF 5.5m FROM THE LOW SIDE TITLE UNLESS DIMENSIONED OTHERWISE.



## LOCALITY PLAN



## DRAWING SCHEDULE

| DRAWING   | DESCRIPTION   | SHEET No. | REVISION |
|-----------|---|-----------|----------|
| 305915R01 | FACE SHEET  | 1         | A        |
| 305915R02 | ROAD & DRAINAGE FACE PLAN                             | 2         | A        |
| 305915R03 | LONGITUDINAL SECTION - SACRED ROAD & EAGLEHAWK STREET | 3         | A        |
| 305915R04 | LONGITUDINAL SECTION - RINDLE DRIVE                   | 4         | A        |
| 305915R05 | CROSS SECTIONS - EAGLEHAWK STREET                     | 5         | A        |
| 305915R06 | CROSS SECTIONS - RINDLE DRIVE                         | 6         | A        |
| 305915R07 | CROSS SECTIONS - ORIGIN DRIVE                         | 7         | A        |
| 305915R08 | INTERSECTION DETAIL AND PIT SCHEDULE                  | 8         | A        |
| 305915R09 | DRAINAGE LONGSECTIONS - SHEET 1 OF 4                  | 9         | A        |
| 305915R10 | DRAINAGE LONGSECTIONS - SHEET 2 OF 4                  | 10        | A        |
| 305915R11 | DRAINAGE LONGSECTIONS - SHEET 3 OF 4                  | 11        | A        |
| 305915R12 | DRAINAGE LONGSECTIONS - SHEET 4 OF 4                  | 12        | A        |
| 305915R13 | TYPICAL CROSS SECTIONS AND TYPICAL DETAILS            | 13        | A        |
| 305915R14 | PAVEMENT DETAILS                                      | 14        | A        |
| 305915R15 | SIGNAGE, LINEMARKING & CARPARKING PLAN                | 15        | A        |

## LEGEND

### DESCRIPTION

| DESCRIPTION                              | EXISTING | PROPOSED |
|--|----------|----------|
| WATER MAIN, VALVE AND HYDRANT            |          |          |
| WATER RECYCLED                           |          |          |
| UNDERGROUND ELECTRICITY                  |          |          |
| OVERHEAD ELECTRICITY & POLE              |          |          |
| TELECOMMUNICATIONS & SERVICE PIT         |          |          |
| OPTIC FIBRE                              |          |          |
| OVERHEAD TELECOMMUNICATIONS              |          |          |
| GAS MAIN                                 |          |          |
| BRANCH SEWER & MAINTENANCE STRUCTURE     |          |          |
| SEWER & MAINTENANCE STRUCTURE            |          |          |
| SEWER RISING MAIN                        |          |          |
| CENTRAL INVERT                           |          |          |
| COUNCIL STORMWATER DRAIN AND PIT         |          |          |
| STORM WATER DRAINAGE PROPERTY INLETS     |          |          |
| COUNCIL STORM WATER PITS                 |          |          |
| HOUSE DRAIN                              |          |          |
| AG DRAIN AND FLUSHER                     |          |          |
| MWC STORM WATER DRAIN & PIT              |          |          |
| MWC STORM WATER PITS                     |          |          |
| STORM WATER DRAINAGE PIT NUMBER          |          |          |
| GAS & WATER CONDUITS                     |          |          |
| CONCRETE VEHICLE CROSSING                |          |          |
| PAVEMENT SAWCUT LINE                     |          |          |
| 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                     |          |          |
| BOLLARD                                  |          |          |
| STREET LIGHT                             |          |          |
| ROAD CHAINAGES                           |          |          |
| LOT CHAINAGES                            |          |          |
| SETOUT POINT                             |          |          |
| LIMIT OF WORKS                           |          |          |
| BATTER                                   |          |          |
| EXCAVATION GREATER THAN 0.20m            |          |          |
| FILLING GREATER THAN 0.20m               |          |          |
| ROCK BEACHING                            |          |          |
| RETAINING WALL                           |          |          |
| FENCE - TREE PROTECTION                  |          |          |
| FENCE - VEHICLE EXCLUSION                |          |          |
| FENCES                                   |          |          |
| GUARD RAIL                               |          |          |
| TREE ( & SURVEYED CANOPY) TO BE RETAINED |          |          |
| TREE TO BE PROTECTED                     |          |          |
| TREE TO BE REMOVED                       |          |          |
| VEGETATION LINE                          |          |          |
| FOOTPATH                                 |          |          |
| TACTILE GROUND SURFACE INDICATOR         |          |          |
| KERB TRANSITION                          |          |          |



**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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| A   | PRELIMINARY ISSUE | M.L      | 5/6/20 |  |
| Rev | Amendments        | Approved | Date   |  |

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Communities Designed for Living

|                                |                             |
|--------------------------------|-----------------------------|
| Designed<br><b>R. WEINBER</b>  | Checked<br><b>D CAMERON</b> |
| Authorised<br><b>M. LETSON</b> | Date<br><b>4/05/20</b>      |

**REDSTONE ESTATE  
STAGE 4  
FACE SHEET**

VILLAWOOD PROPERTIES  
HUME CITY COUNCIL

**PRELIMINARY**

Drg No  
**305915R01**

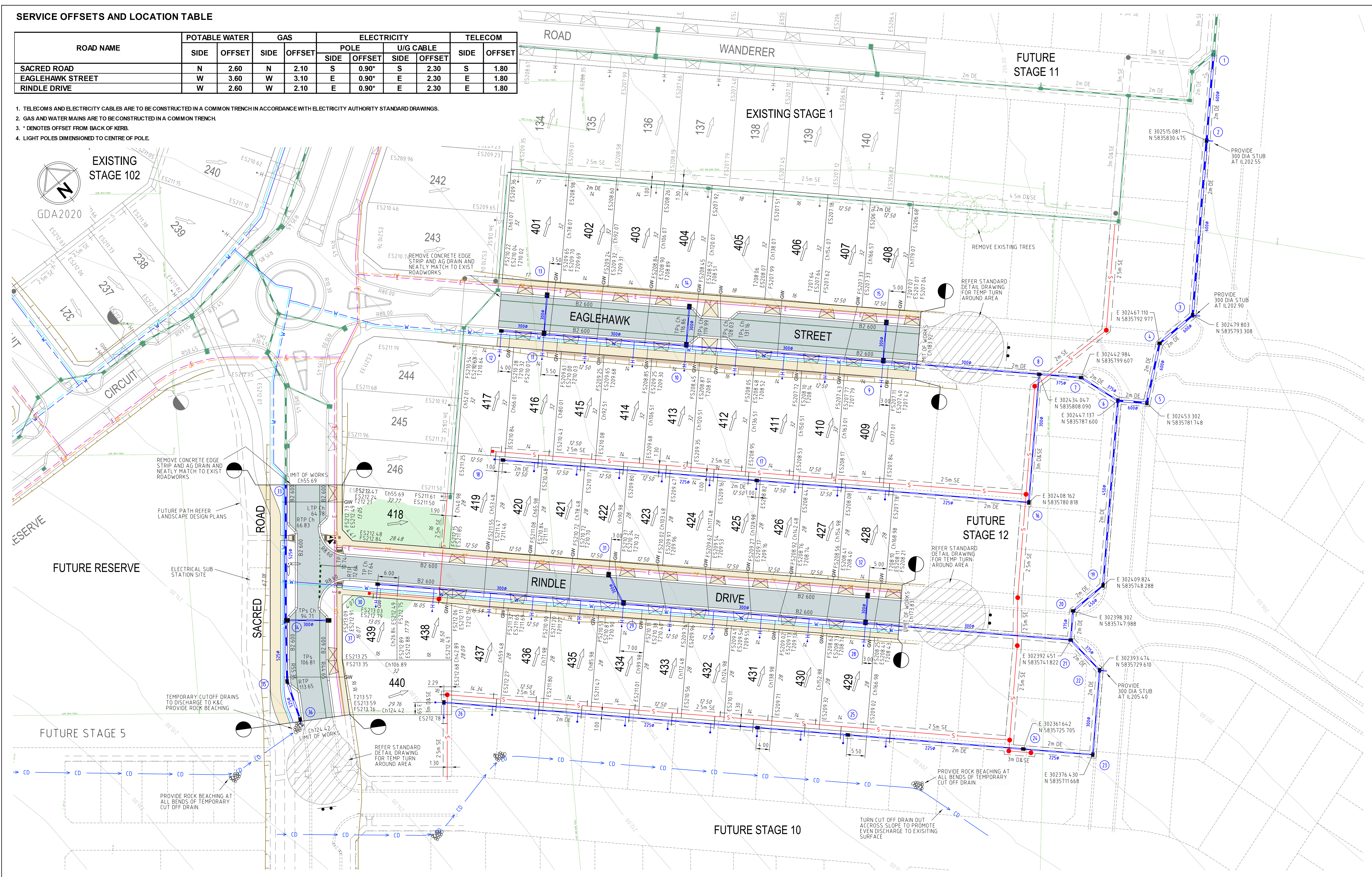
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SERVICE OFFSETS AND LOCATION TABLE

| ROAD NAME        | POTABLE WATER |        | GAS  |        | ELECTRICITY |             |                |                  | TELECOM |        |
|------------------|---------------|--------|------|--------|-------------|-------------|----------------|------------------|---------|--------|
|                  | SIDE          | OFFSET | SIDE | OFFSET | POLE SIDE   | POLE OFFSET | U/G CABLE SIDE | U/G CABLE OFFSET | SIDE    | OFFSET |
| SACRED ROAD      | N             | 2.60   | N    | 2.10   | S           | 0.90*       | S              | 2.30             | S       | 1.80   |
| EAGLEHAWK STREET | W             | 3.60   | W    | 3.10   | E           | 0.90*       | E              | 2.30             | E       | 1.80   |
| RINDLE DRIVE     | W             | 2.60   | W    | 2.10   | E           | 0.90*       | E              | 2.30             | E       | 1.80   |

1. TELECOMS AND ELECTRICITY CABLES ARE TO BE CONSTRUCTED IN A COMMON TRENCH IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARD DRAWINGS.  
2. GAS AND WATER MAINS ARE TO BE CONSTRUCTED IN A COMMON TRENCH.  
3. \* DENOTES OFFSET FROM BACK OF KERB.  
4. LIGHT POLES DIMENSIONED TO CENTRE OF POLE.



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villawood properties

Communities Designed for Living

Designed  
R. WEINBER

Authorised  
M. LETSON

Redstone.

Your world awaits

Checked  
D CAMERON

Date  
4/05/20

REDSTONE ESTATE  
STAGE 104  
ROAD AND DRAINAGE FACE PLAN

VILLAWOOD PROPERTIES  
HUME CITY COUNCIL

**PRELIMINARY**

Drg No  
**305915R02**

Rev  
**A**



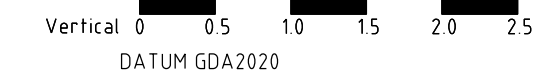
EAGLEHAWK STREET

SACRED ROAD



SACRED ROAD

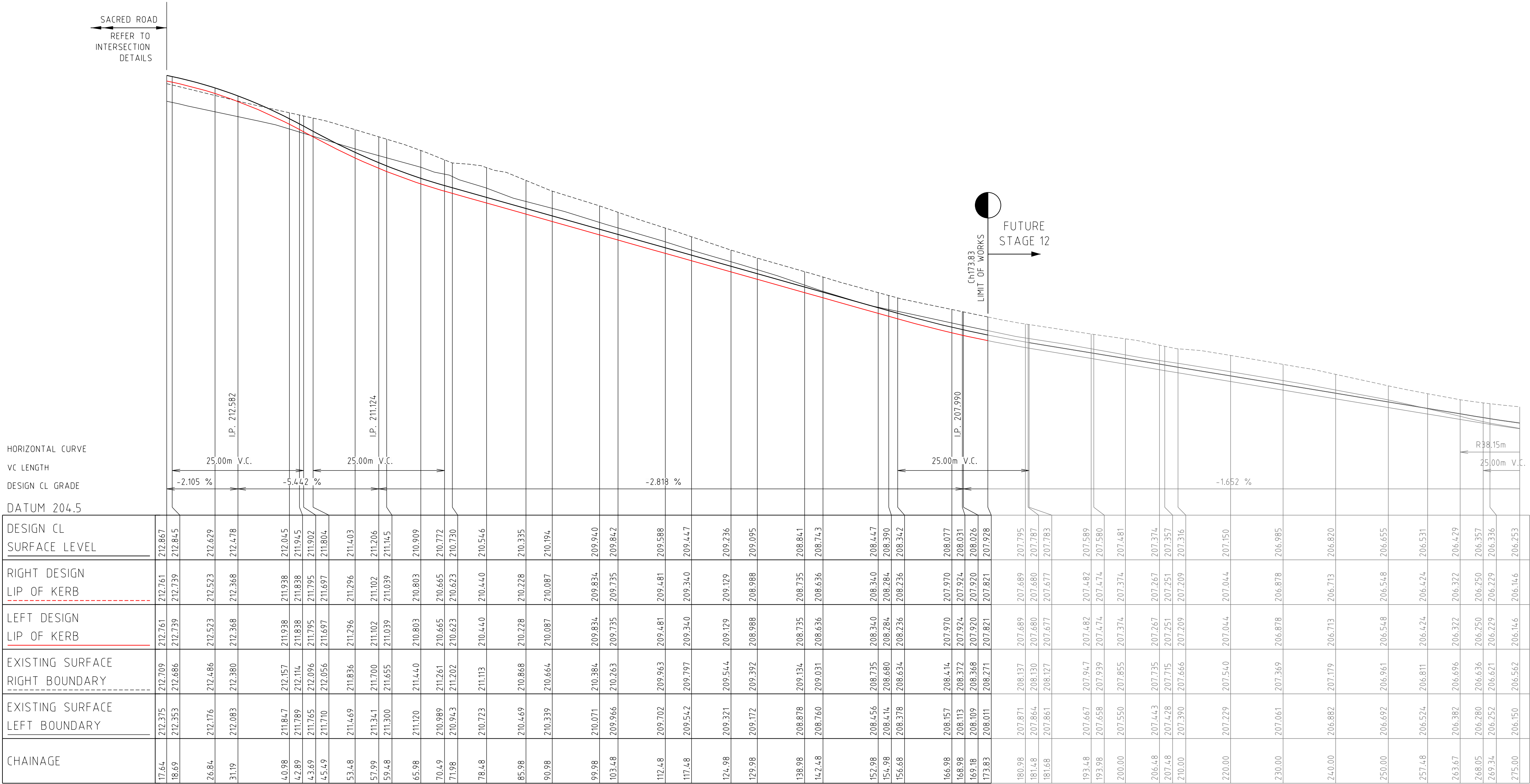
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| Approved | Date   |



Checked  
D. CAMERON  
Date  
4/05/20

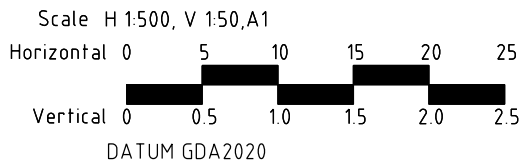
**PRELIMINARY** Drg No  
**305915R03**

Rev  
**A**



RINDLE DRIVE

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| A   | PRELIMINARY ISSUE | M.L      | 5/6/20 |  |
| Rev | Amendments        | Approved | Date   |  |



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| Designed<br><b>R. WEINBER</b>  | Checked<br><b>D. CAMERON</b> |
| Authorised<br><b>M. LETSON</b> | Date<br><b>4/05/20</b>       |

**REDSTONE ESTATE  
STAGE 4**  
LONGITUDINAL SECTION - RINDLE DRIVE

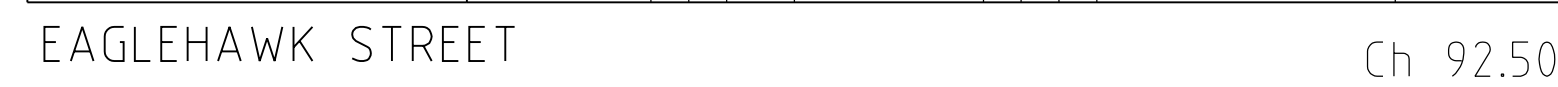
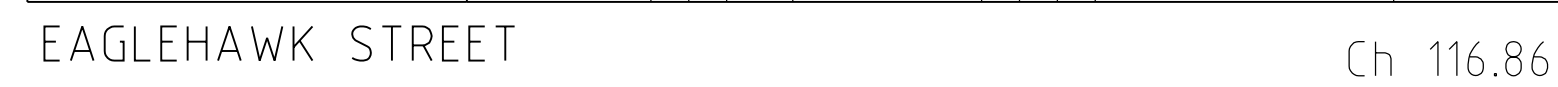
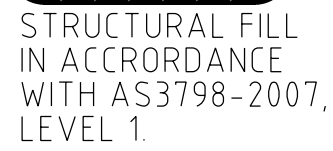
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL

**PRELIMINARY**

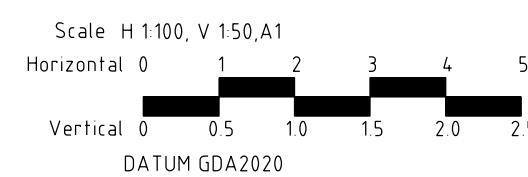
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Authorised  
**M. LETSON**

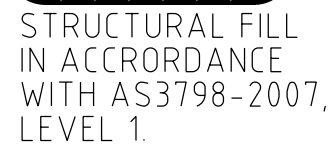
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Date  
4/05/20

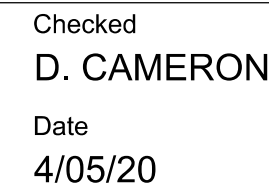
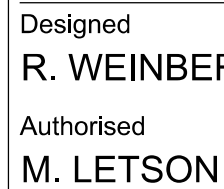
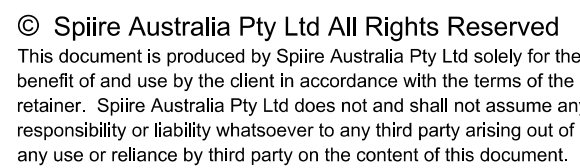
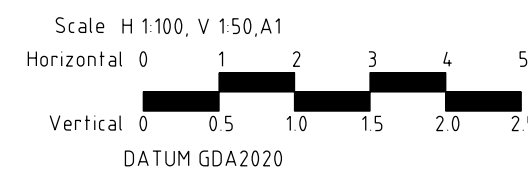
**REDSTONE ESTATE**  
**STAGE 4**  
**CROSS SECTIONS - EAGLEHAWK STREET**  
**SHEET 1 OF 3**  
**VILLAWOOD PROPERTIES**  
**HUME CITY COUNCIL**

**PRELIMINARY** Drg No  
**305915R05**

v



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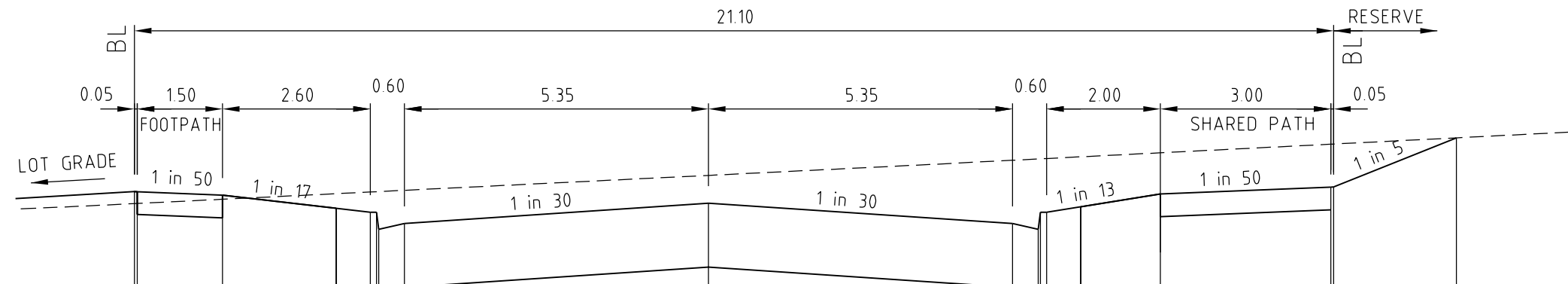
**PRELIMINARY** Drg No  
**305915R06**

Drg No **305915R06**





STRUCTURAL FILL  
IN ACCORDANCE  
WITH AS3798-2007,  
LEVEL 1.

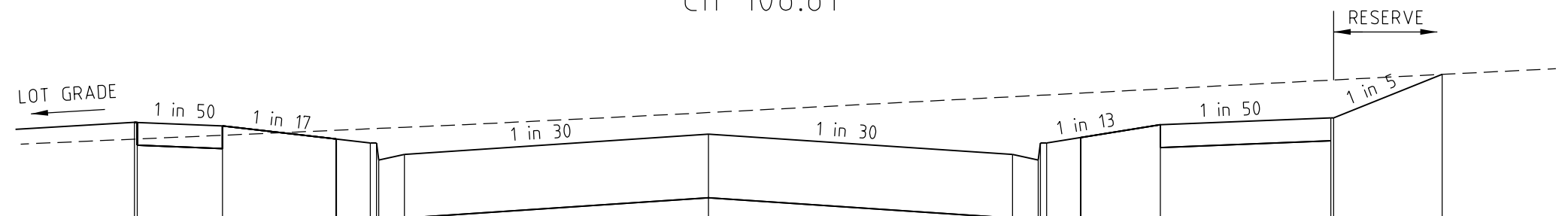


DATUM 212

| DESIGN<br>SURFACE LEVEL   | 213.349 | 213.348 |         | 213.168 | 213.018 | 213.068 | 213.328 | 213.388 | 213.821 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| EXISTING<br>SURFACE LEVEL | 213.244 | 213.245 | 213.318 | 213.345 | 213.348 | 213.349 | 213.639 | 213.765 | 213.821 |
| OFFSET                    | -10.100 | -10.950 | -8.550  | -5.950  | -5.840  | -5.800  | 5.350   | 10.950  | 13.159  |

SACRED ROAD

Ch 106.81

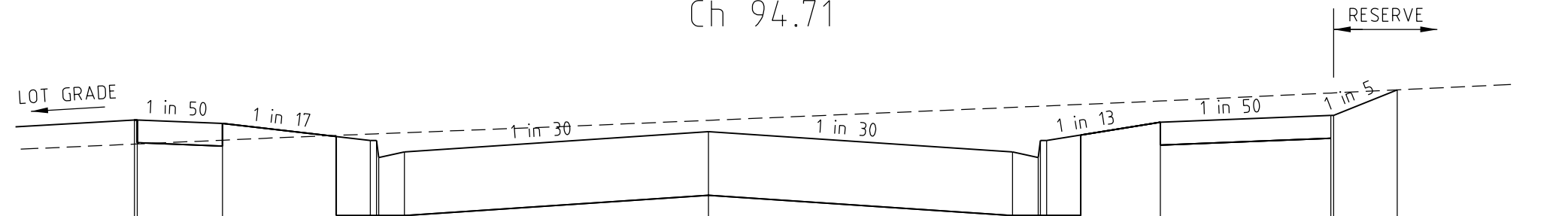


DATUM 212

| DESIGN<br>SURFACE LEVEL   | 213.136 | 213.135 |         | 212.955 | 212.805 | 212.855 | 213.115 | 213.175 | 213.558 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| EXISTING<br>SURFACE LEVEL | 213.089 | 213.090 | 213.023 | 213.080 | 213.082 | 213.083 | 213.377 | 213.508 | 213.558 |
| OFFSET                    | -10.100 | -10.950 | -8.550  | -5.950  | -5.840  | -5.800  | 5.350   | 10.950  | 12.909  |

SACRED ROAD

Ch 94.71

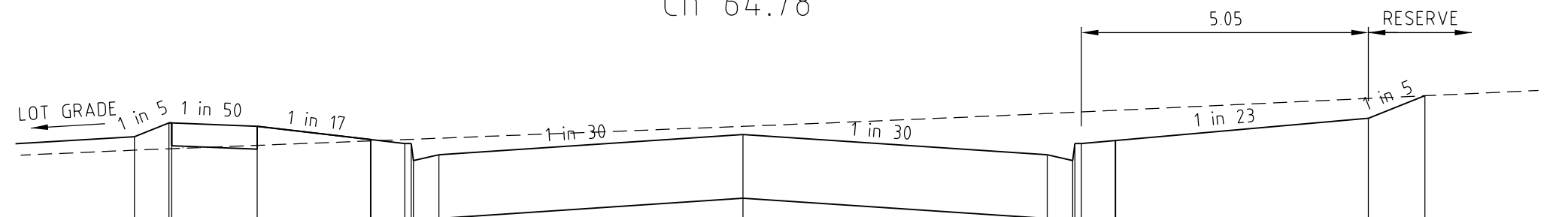


DATUM 211

| DESIGN<br>SURFACE LEVEL   | 212.624 | 212.623 |         | 212.443 | 212.493 | 212.443 | 212.603 | 212.663 | 212.888 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| EXISTING<br>SURFACE LEVEL | 212.411 | 212.413 | 212.446 | 212.500 | 212.502 | 212.502 | 212.790 | 212.860 | 212.888 |
| OFFSET                    | -10.100 | -10.950 | -8.550  | -5.950  | -5.840  | -5.800  | 0.000   | 10.950  | 12.119  |

SACRED ROAD

Ch 64.78

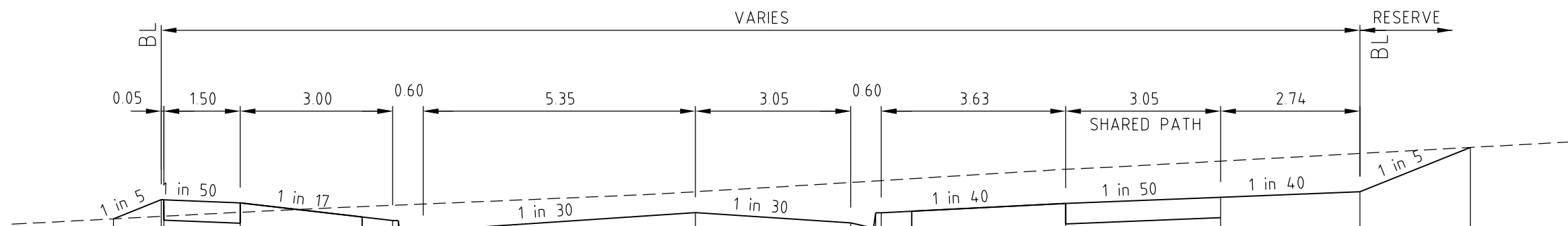


DATUM 211

| DESIGN<br>SURFACE LEVEL   | 212.347 | 212.469 |         | 212.288 | 212.288 | 212.288 | 212.509 | 212.708 |  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| EXISTING<br>SURFACE LEVEL | 212.228 | 212.240 | 212.241 | 212.324 | 212.324 | 212.325 | 212.566 | 212.684 |  |
| OFFSET                    | -10.708 | -10.100 | -10.950 | -8.550  | -5.950  | -5.800  | 0.000   | 11.995  |  |

SACRED ROAD

Ch 55.69



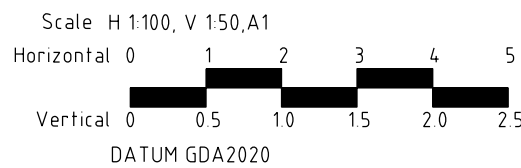
DATUM 212

| DESIGN<br>SURFACE LEVEL   | 213.569 | 213.757 |         | 213.553 | 213.553 | 213.403 | 213.453 | 213.632 | 213.781 | 213.840 | 214.270 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| EXISTING<br>SURFACE LEVEL | 213.570 | 213.594 | 213.595 | 213.702 | 213.705 | 213.705 | 213.715 | 213.836 | 214.056 | 214.211 | 214.270 |
| OFFSET                    | -114.39 | -10.498 | -10.448 | -8.948  | -5.950  | -5.840  | -5.350  | 0.000   | 7.775   | 13.059  | 15.228  |

SACRED ROAD

Ch 124.42

| Rev | Amendments        | Approved | Date   |
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Authorised  
M. LETSON

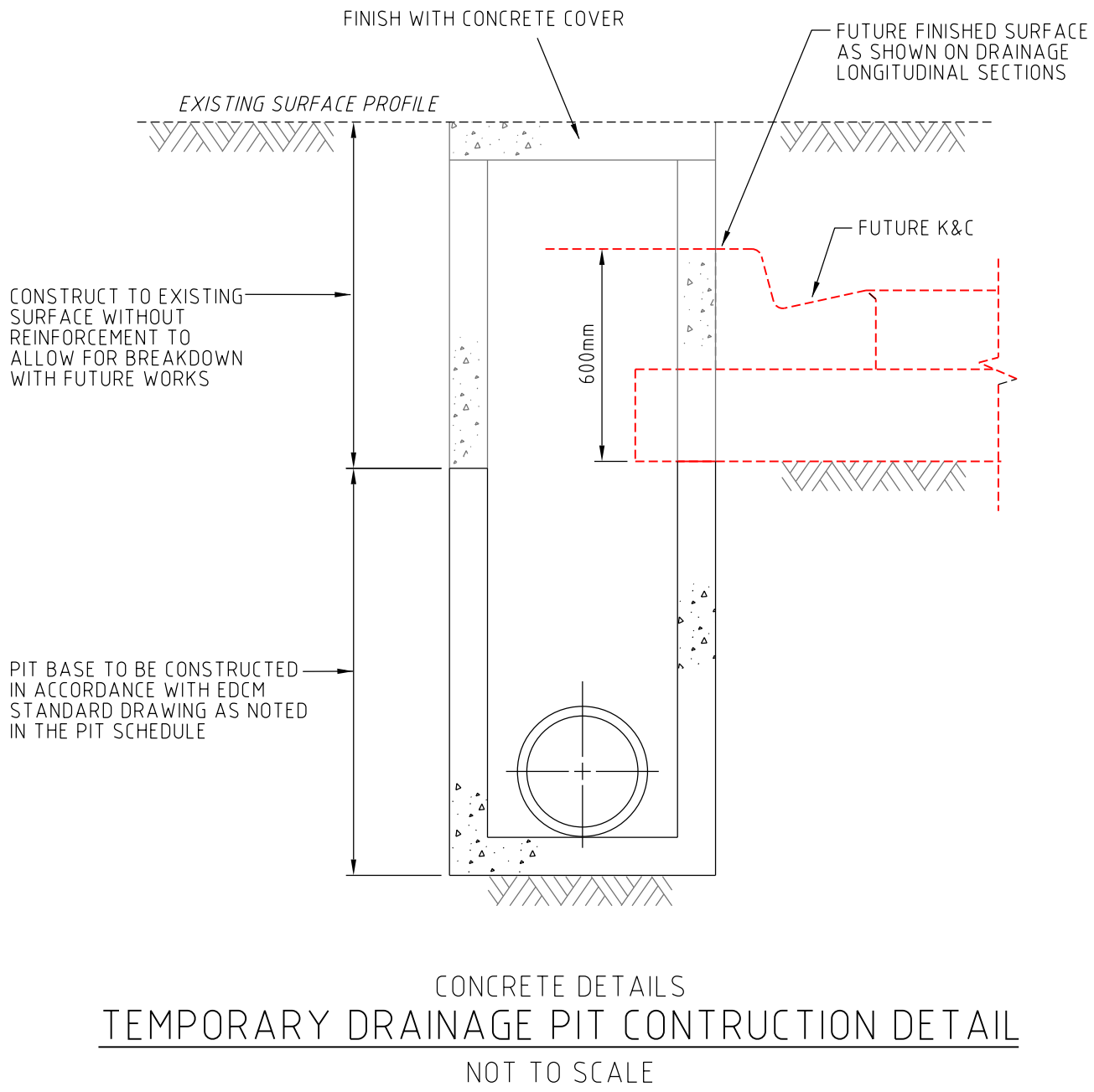
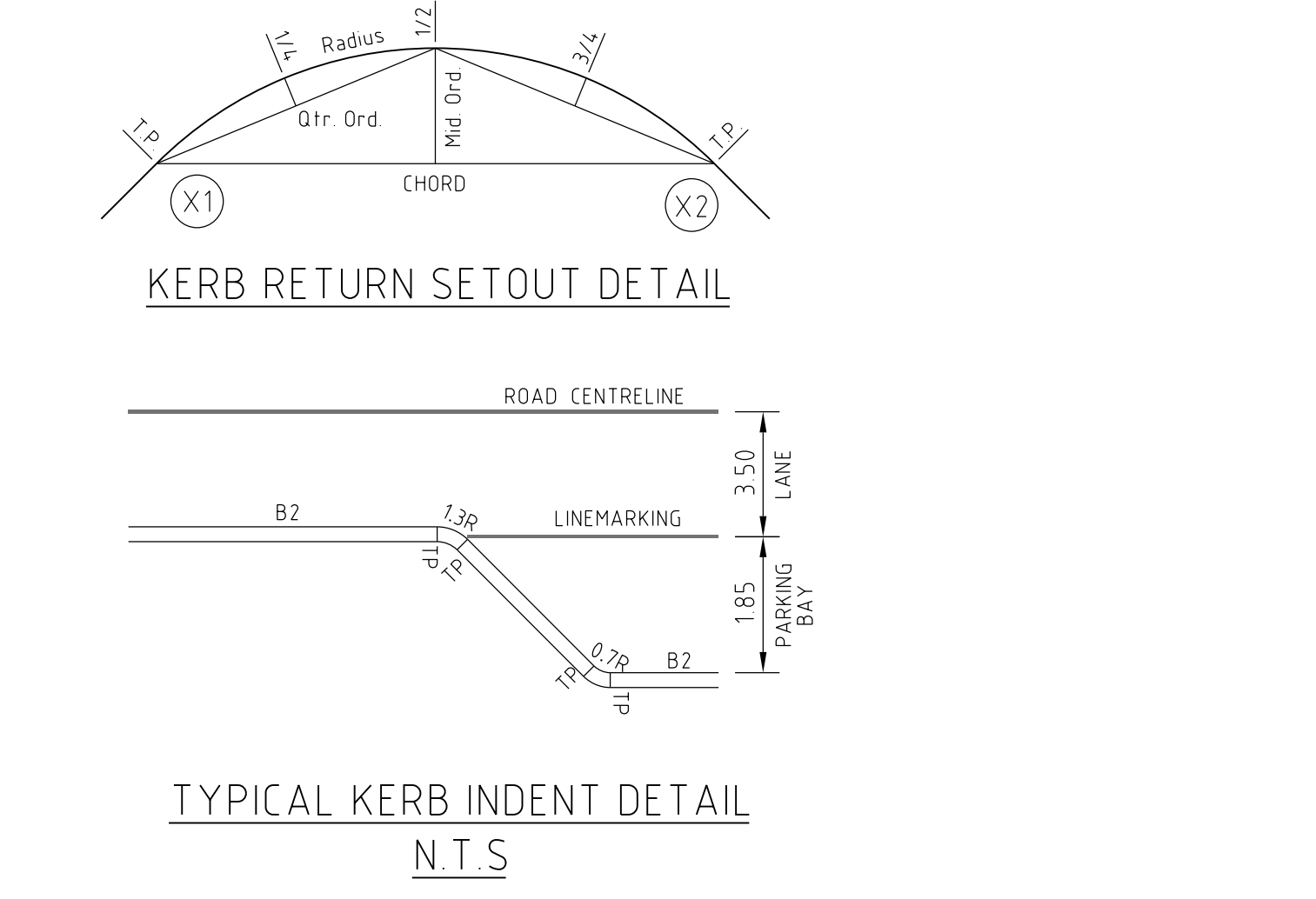
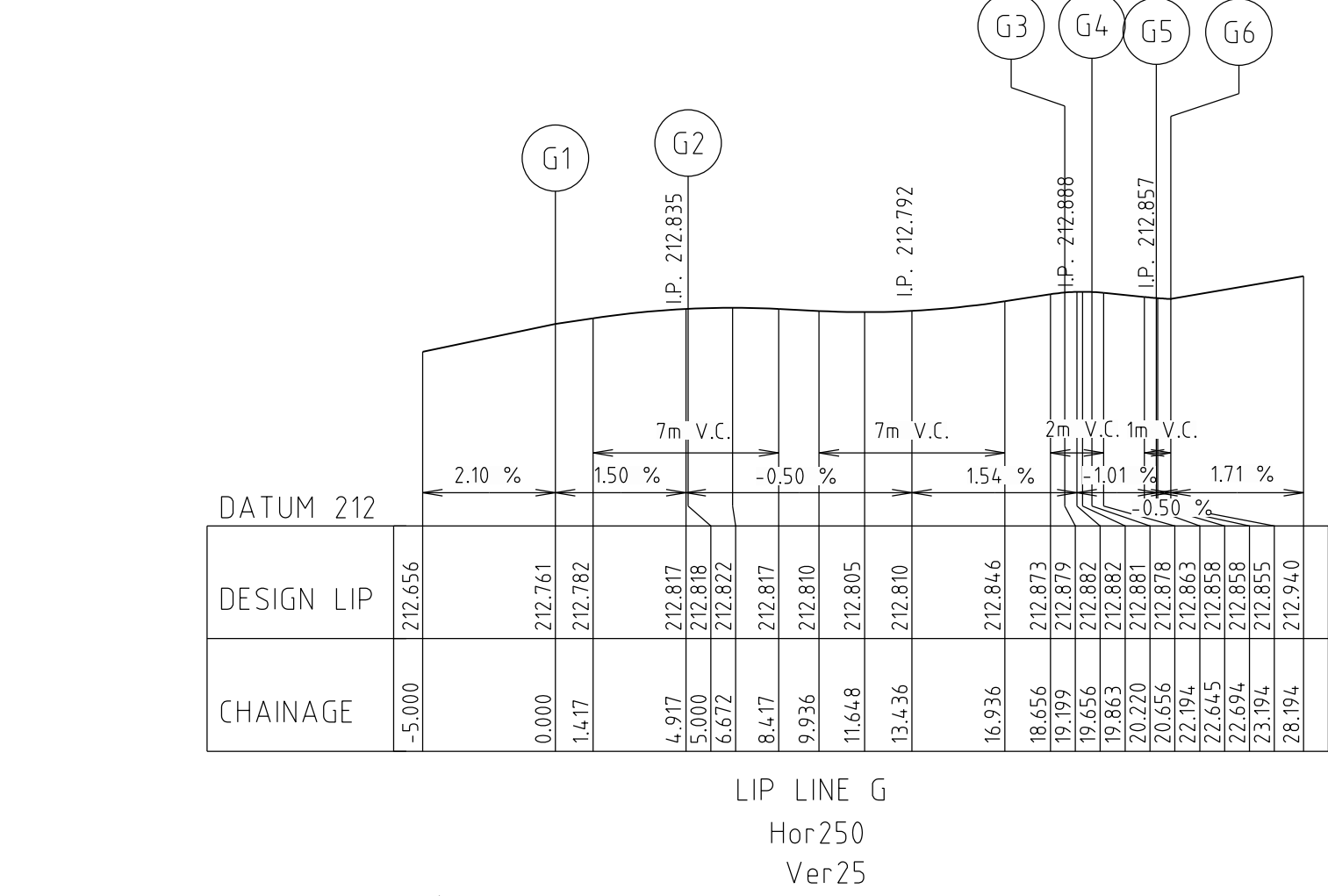
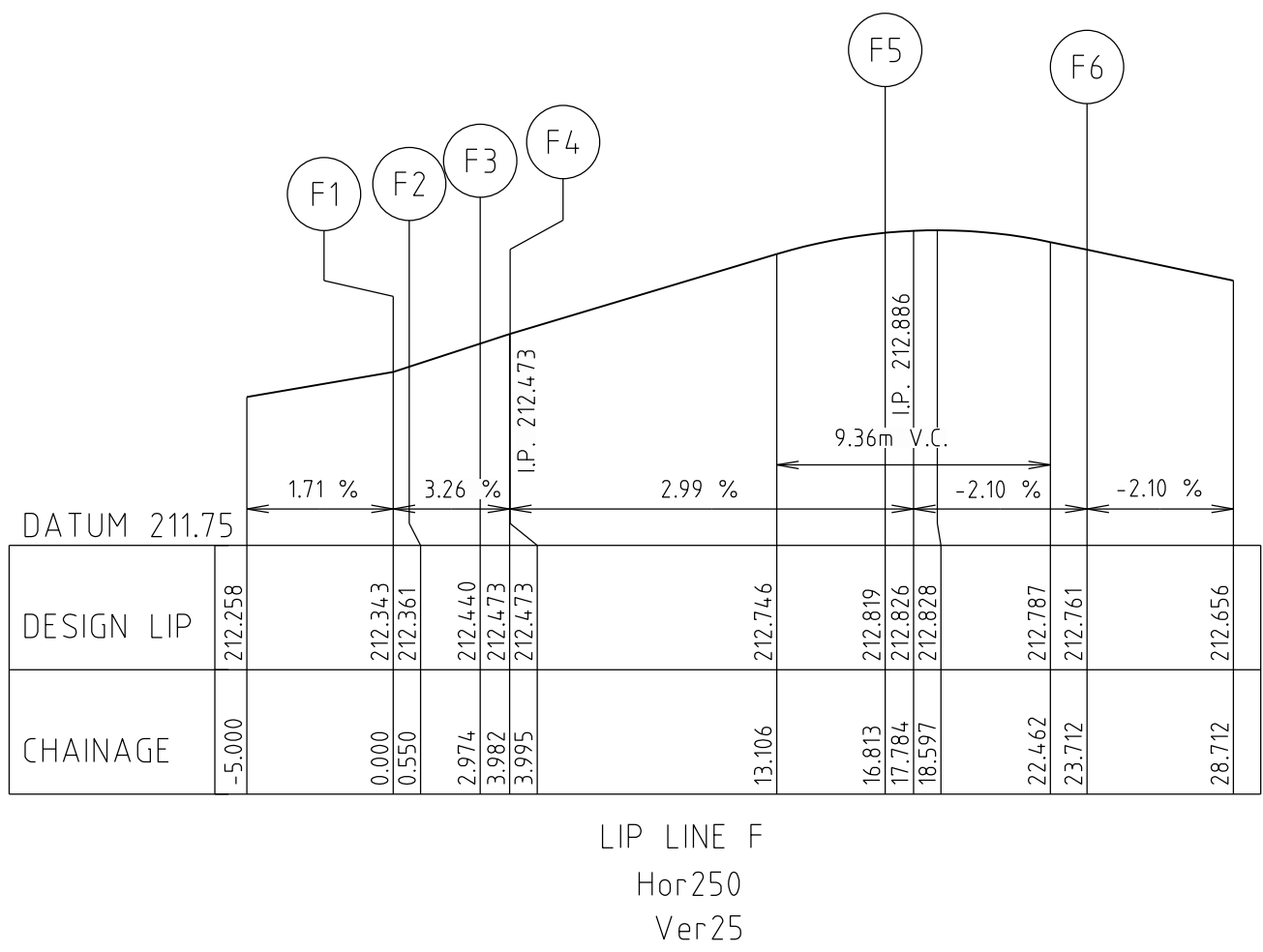
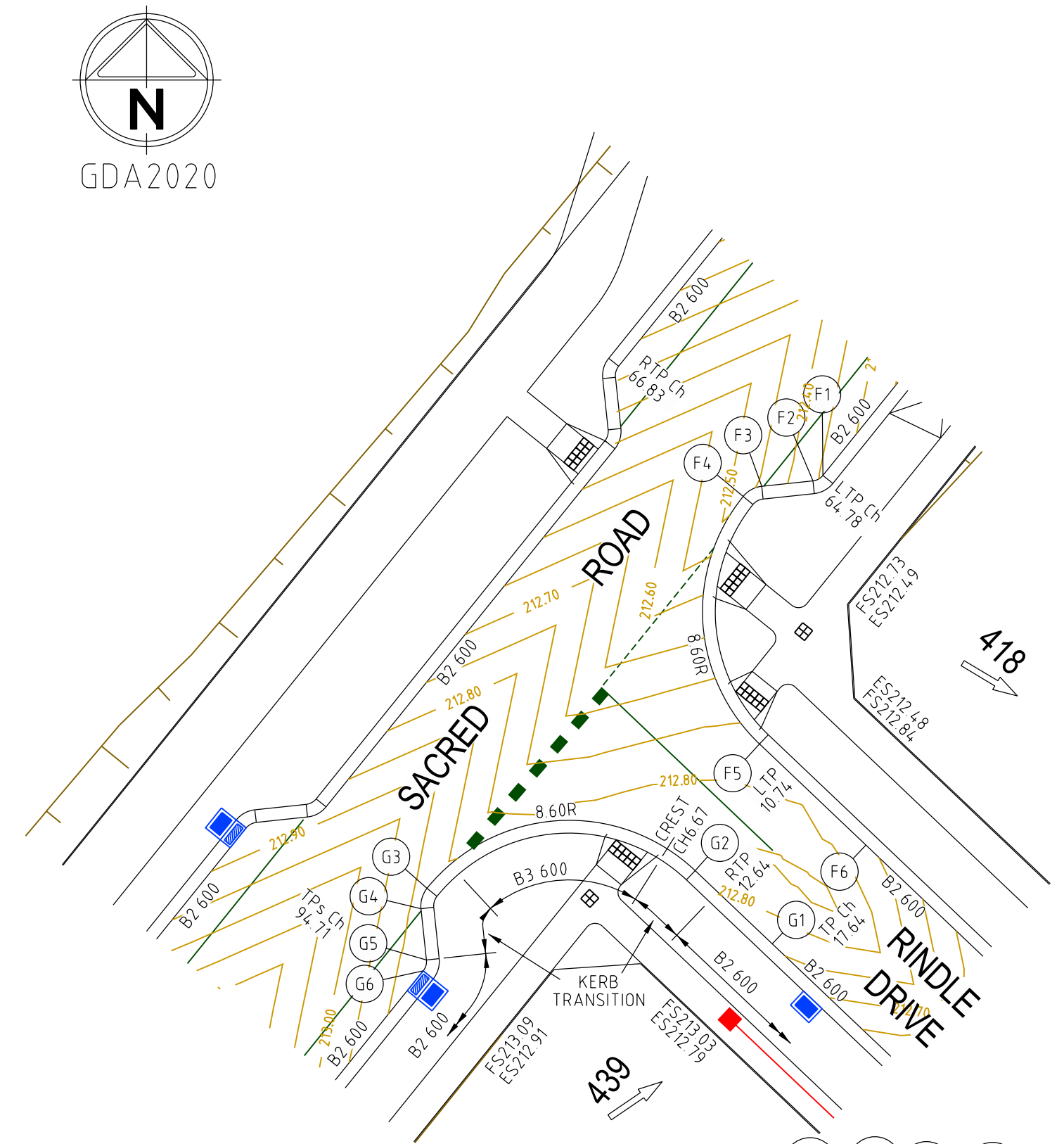


Checked  
D. CAMERON  
Date  
4/05/20

REDSTONE ESTATE  
STAGE 4  
CROSS SECTIONS - ORIGIN DRIVE  
SHEET 3 OF 3  
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL

**PRELIMINARY** Drg No  
**305915R07**

Rev  
**A**



DRAINAGE PIT SCHEDULE

| PIT  |                       | INTERNAL |       | INLET |           | OUTLET |           | PIT      |       | REMARKS  |
|------|-----------------------|----------|-------|-------|-----------|--------|-----------|----------|-------|--|
| NAME | TYPE                  | LENGTH   | WIDTH | DIA   | INV LEVEL | DIA    | INV LEVEL | FS LEVEL | DEPTH |  |
| 1    | EXISTING STUB         |          |       | 600   | 202.330   |        |           | 204.771  | 2.521 | CONNECT TO EXISTING STUB CONSTRUCTED WITH STAGE 1  |
| # 2  | JUNCTION PIT          | 900      | 900   | 600   | 202.550   | 600    | 202.500   | 204.945  | 2.445 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 3  | JUNCTION PIT          | 900      | 900   | 600   | 202.900   | 600    | 202.850   | 205.338  | 2.488 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 4  | JUNCTION PIT          | 900      | 900   | 600   | 203.050   | 600    | 203.000   | 205.631  | 2.631 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 5  | JUNCTION PIT          | 900      | 900   | 600   | 203.250   | 600    | 203.200   | 205.933  | 2.733 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 6  | JUNCTION PIT          | 900      | 900   | 375   | 203.500   | 600    | 203.330   | 206.102  | 2.772 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 7  | JUNCTION PIT          | 900      | 900   | 375   | 203.600   | 375    | 203.700   | 206.102  | 2.772 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 8  | JUNCTION PIT          | 900      | 900   | 375   | 203.780   | 375    | 203.700   | 206.257  | 2.557 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| # 9  | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 204.100   | 375    | 204.050   | 206.481  | 2.431 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)   |
| 10   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 204.200   | 300    | 204.200   | 206.481  | 2.431 | REFER DRAWING - EDCM 601   |
| 11   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 205.200   | 300    | 205.150   | 207.005  | 1.855 | REFER DRAWING - EDCM 601   |
| 12   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 205.200   | 300    | 205.150   | 207.005  | 1.855 | REFER DRAWING - EDCM 601   |
| 13   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 206.650   | 300    | 206.600   | 208.397  | 1.797 | REFER DRAWING - EDCM 601   |
| 14   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 206.650   | 300    | 206.600   | 208.397  | 1.797 | REFER DRAWING - EDCM 601   |
| 15   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 207.900   | 300    | 207.850   | 209.611  | 1.761 | REFER DRAWING - EDCM 601   |
| 16   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 207.900   | 300    | 207.850   | 209.611  | 1.761 | REFER DRAWING - EDCM 601   |
| 17   | JUNCTION PIT          | 900      | 600   | 300   | 208.250   | 300    | 208.250   | 210.034  | 1.784 | REFER DRAWING - EDCM 605   |
| 18   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 208.050   | 300    | 208.050   | 209.611  | 1.561 | REFER DRAWING - EDCM 601   |
| 19   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 206.770   | 300    | 206.770   | 208.397  | 1.627 | REFER DRAWING - EDCM 601   |
| 20   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 205.320   | 300    | 205.320   | 207.003  | 1.683 | REFER DRAWING - EDCM 601   |
| 21   | JUNCTION PIT          | 900      | 600   | 225   | 205.950   | 300    | 205.900   | 206.991  | 1.091 | REFER DRAWING - EDCM 605   |
| 22   | JUNCTION PIT          | 900      | 600   | 225   | 207.930   | 225    | 207.850   | 208.863  | 1.013 | REFER DRAWING - EDCM 605   |
| 23   | JUNCTION PIT          | 900      | 600   | 225   | 210.000   | 225    | 210.000   | 210.876  | 0.876 | REFER DRAWING - EDCM 605   |
| 24   | JUNCTION PIT          | 900      | 900   | 450   | 204.850   | 450    | 204.800   | 206.938  | 2.138 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)   |
| 25   | JUNCTION PIT          | 900      | 900   | 375   | 205.100   | 450    | 205.050   | 207.230  | 2.180 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| 26   | JUNCTION PIT          | 900      | 900   | 375   | 205.250   | 375    | 205.200   | 207.396  | 2.196 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| 27   | JUNCTION PIT          | 900      | 900   | 300   | 205.400   | 375    | 205.350   | 207.395  | 2.045 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)<br>TO BE CONVERTED TO GRATED SIDE ENTRY PIT WITH FUTURE WORKS |
| 28   | JUNCTION PIT          | 900      | 600   | 225   | 206.000   | 300    | 205.950   | 207.925  | 1.975 | REFER DRAWING - EDCM 605   |
| 29   | JUNCTION PIT          | 900      | 600   | 225   | 207.050   | 225    | 207.000   | 208.272  | 1.272 | REFER DRAWING - EDCM 605   |
| 30   | JUNCTION PIT          | 900      | 600   | 225   | 208.150   | 225    | 208.100   | 209.154  | 1.054 | REFER DRAWING - EDCM 605   |
| 31   | JUNCTION PIT          | 900      | 600   | 225   | 211.850   | 225    | 211.800   | 212.674  | 0.874 | REFER DRAWING - EDCM 605   |
| 32   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 206.400   | 300    | 206.350   | 208.167  | 1.817 | REFER DRAWING - EDCM 601   |
| 33   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 206.400   | 300    | 206.350   | 208.167  | 1.817 | REFER DRAWING - EDCM 601   |
| 34   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 208.400   | 300    | 208.350   | 210.155  | 1.805 | REFER DRAWING - EDCM 601   |
| 35   | SIDE ENTRY PIT GRATED | 900      | 600   | 300   | 208.400   | 300    | 208.350   | 210.155  | 1.805 | REFER DRAWING - EDCM 601   |
| 36   | JUNCTION PIT          | 900      | 600   | 225   | 211.000   | 300    | 211.000   | 212.826  | 1.826 | REFER DRAWING - EDCM 605   |
| 37   | SIDE ENTRY PIT GRATED | 900      | 600   | 225   | 208.000   | 300    | 208.000   | 210.299  | 1.799 | REFER DRAWING - EDCM 601   |
| 38   | SIDE ENTRY PIT GRATED | 900      | 600   | 225   | 207.050   | 300    | 207.000   | 208.170  | 1.680 | REFER DRAWING - EDCM 601   |
| 39   | EXISTING ENDPIPE      |          |       | 525   | 210.160   |        |           | 212.323  | 2.162 | CONNECT TO EXISTING END PIPE CONSTRUCTED WITH STAGE 2  |
| 40   | SIDE ENTRY PIT GRATED | 900      | 900   | 525   | 210.800   | 525    | 210.750   | 212.982  | 2.232 | REFER DRAWING - EDCM 605 (PROVIDE HAUNCHING AS PER EDCM 607)   |
| 41   | SIDE ENTRY PIT GRATED |          |       | 300   | 211.000   |        |           |          |       |  |
| 42   | JUNCTION PIT          | 900      | 900   | 525   | 211.200   | 525    | 211.150   | 213.299  | 2.149 | REFER DRAWING - EDCM 601 (PROVIDE HAUNCHING AS PER EDCM 607)   |
| 43   | JUNCTION PIT          | 900      | 900   | 525   | 211.200   | 525    | 211.150   | 213.299  | 2.149 | REFER DRAWING - EDCM 601 (PROVIDE HAUNCHING AS PER EDCM 607)   |
| 44   | SIDE ENTRY PIT GRATED | 900      | 600   |       |           | 300    | 211.200   | 212.991  | 1.791 | REFER DRAWING - EDCM 601   |

NOTE: ALL PITS DE NOTED THUS "# " TO BE CONSTRUCTED AS PER TEMPORARY DRAINAGE PIT CONTRUCTION DETAIL BELOW

|     |                   |          |        |
|-----|-------------------|----------|--------|
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ABN 55 050 029 635

Communities Designed for Living

Designed  
R. WEINBER

Authorised  
M. LETSON

Redstone.

Your world awaits

Checked  
D. CAMERON

Date  
4/05/20

REDSTONE ESTATE

STAGE 4

INTERSECTION DETAIL

AND PIT SCHEDULE

VILLAWOOD PROPERTIES

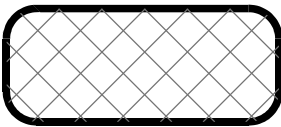
HUME CITY COUNCIL

PRELIMINARY

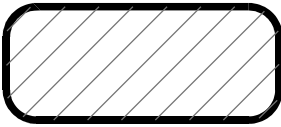
Drg No  
305915R08

Rev  
A





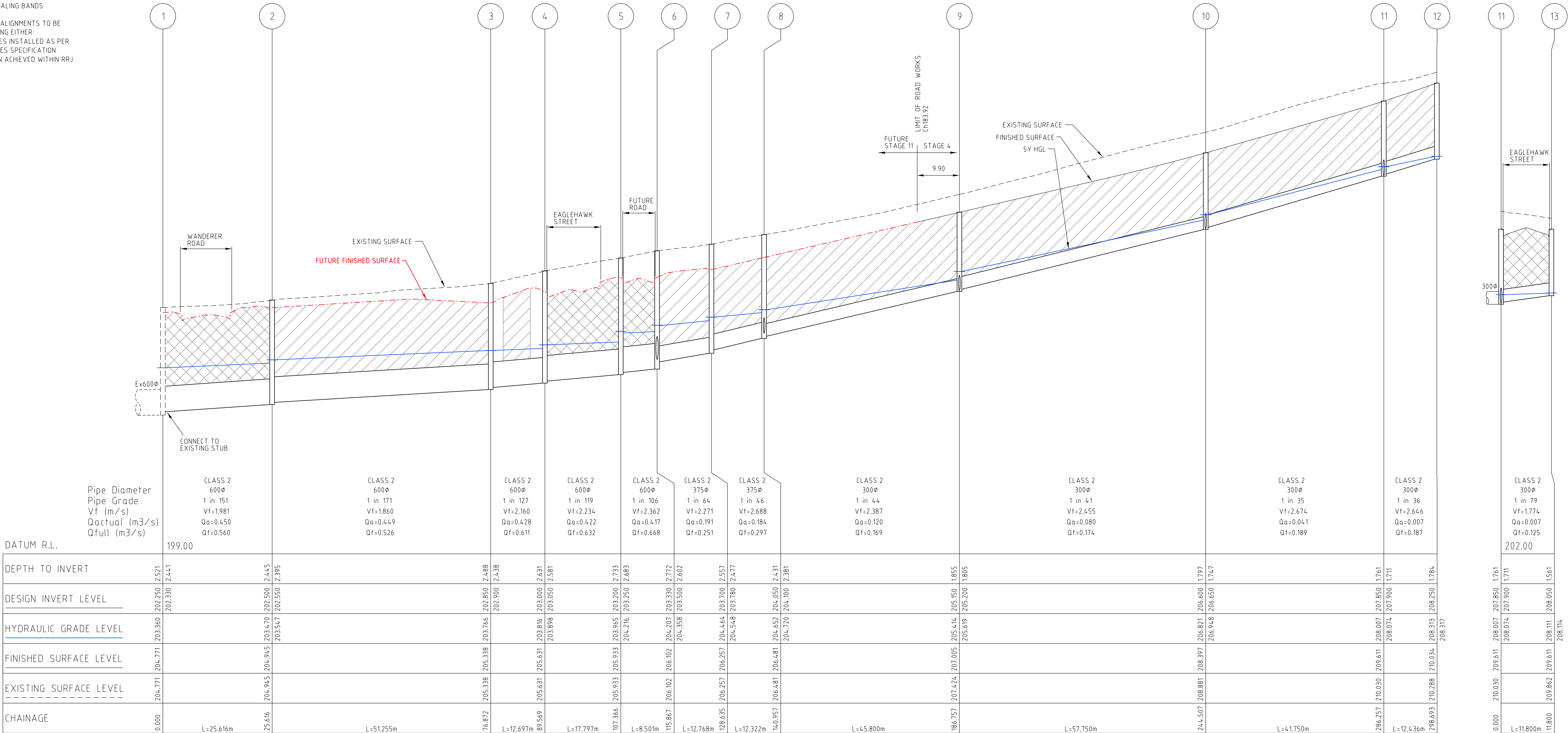
CLASS 2 CRUSHED ROCK



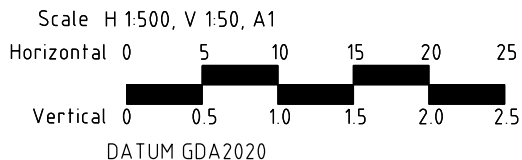
CLASS 3 CRUSHED ROCK

NOTE:

- ALL PIPES TO BE RUBBER RING JOINTED (RRJ) UNLESS NOTED OTHERWISE
- DRAINAGE PIPES GREATER THAN 750 $\phi$  ARE TO BE FLUSH JOINTED (FJ) WITH EXTERNAL SEALING BANDS
- CURVED PIPE ALIGNMENTS TO BE ACHIEVED USING EITHER:  
a) SPLAY PIPES INSTALLED AS PER MANUFACTURES SPECIFICATION  
b) DEFLECTION ACHIEVED WITHIN RRJ.



|     |                   |          |        |
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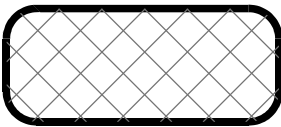
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**villawood properties**  
Communities Designed for Living  
Designed  
R. WEINBER  
Authorised  
M. LETSON

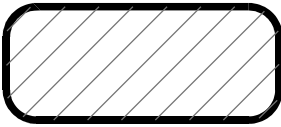
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D. CAMERON  
Date  
4/05/20

**REDSTONE ESTATE  
STAGE 4  
DRAINAGE LONG SECTION  
SHEET 1 OF 4  
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL**  
**PRELIMINARY**  
Drg No  
**305915R09**  
Rev  
**A**





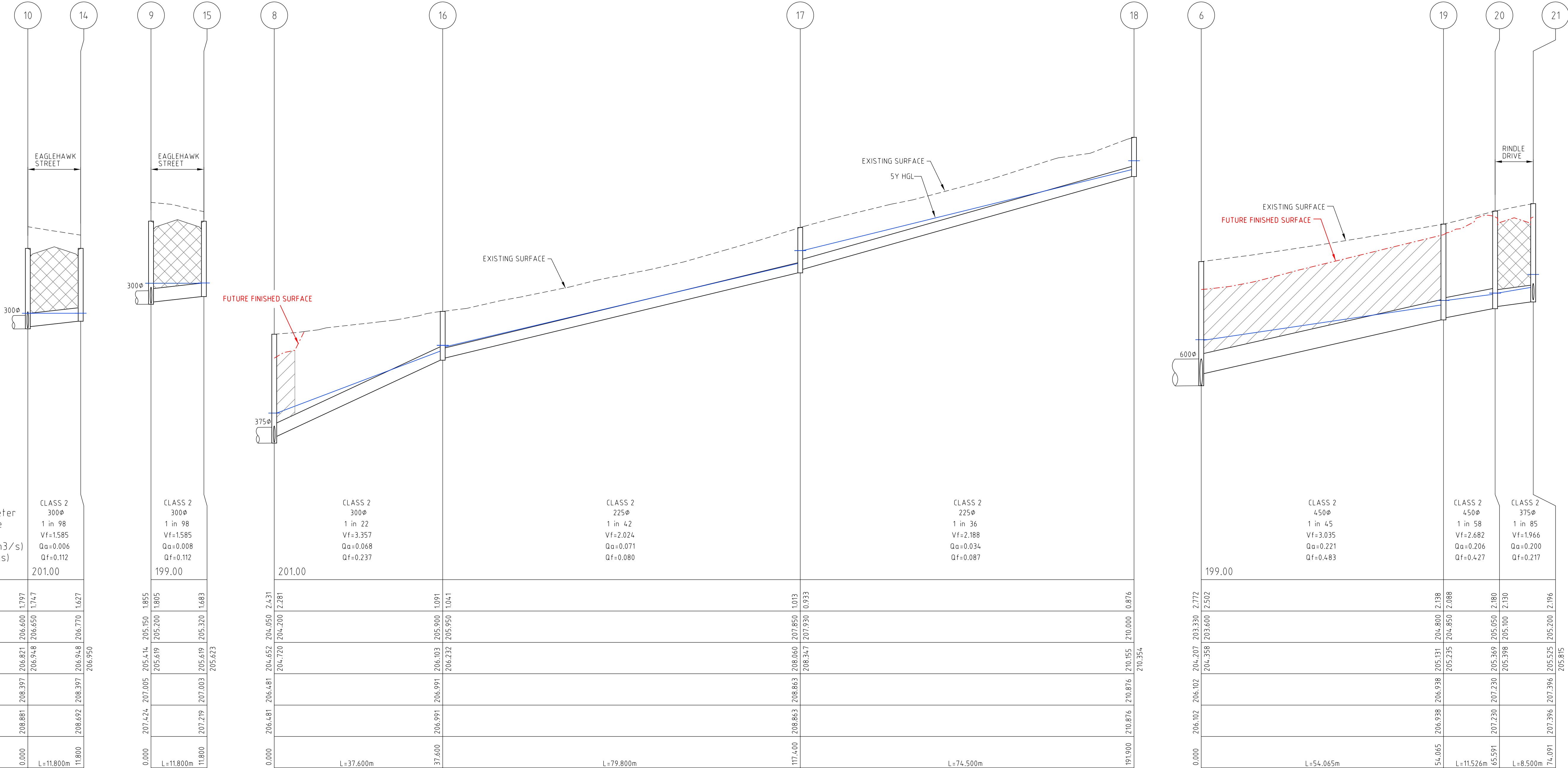
CLASS 2 CRUSHED ROCK



CLASS 3 CRUSHED ROCK

NOTE:

- 1 ALL PIPES TO BE RUBBER RING JOINTED (RRJ) UNLESS NOTED OTHERWISE
- 2 DRAINAGE PIPES GREATER THAN 750Ø ARE TO BE FLUSH JOINTED (FJ) WITH EXTERNAL SEALING BANDS.
- 3 CURVED PIPE ALIGNMENTS TO BE ACHIEVED USING EITHER:  
a) SPLAY PIPES INSTALLED AS PER MANUFACTURES SPECIFICATION  
b) DEFLECTION ACHIEVED WITHIN RRJ.



|                        |          |
|------------------------|----------|
| Pipe Diameter          | 300Ø     |
| Pipe Grade             | 1 in 98  |
| Vf (m/s)               | Vf=1.585 |
| Qactual (m3/s)         | Qa=0.006 |
| Qfull (m3/s)           | Qf=0.112 |
| DATUM R.L.             | 201.00   |
| DEPTH TO INVERT        | 1.797    |
| DESIGN INVERT LEVEL    | 206.600  |
| HYDRAULIC GRADE LEVEL  | 206.821  |
| FINISHED SURFACE LEVEL | 208.397  |
| EXISTING SURFACE LEVEL | 208.881  |
| CHAINAGE               | 0.000    |

|                        |          |
|------------------------|----------|
| CLASS 2                | 300Ø     |
| Pipe Grade             | 1 in 98  |
| Vf (m/s)               | Vf=1.585 |
| Qa=0.008               |          |
| Qf=0.112               |          |
| DATUM R.L.             | 199.00   |
| DEPTH TO INVERT        | 1.805    |
| DESIGN INVERT LEVEL    | 205.200  |
| HYDRAULIC GRADE LEVEL  | 205.416  |
| FINISHED SURFACE LEVEL | 207.421  |
| EXISTING SURFACE LEVEL | 207.421  |
| CHAINAGE               | 0.000    |

|                        |          |
|------------------------|----------|
| CLASS 2                | 300Ø     |
| Pipe Grade             | 1 in 22  |
| Vf (m/s)               | Vf=3.357 |
| Qa=0.068               |          |
| Qf=0.237               |          |
| DATUM R.L.             | 201.00   |
| DEPTH TO INVERT        | 2.431    |
| DESIGN INVERT LEVEL    | 204.720  |
| HYDRAULIC GRADE LEVEL  | 204.652  |
| FINISHED SURFACE LEVEL | 206.481  |
| EXISTING SURFACE LEVEL | 206.481  |
| CHAINAGE               | 0.000    |

|                        |          |
|------------------------|----------|
| CLASS 2                | 225Ø     |
| Pipe Grade             | 1 in 42  |
| Vf (m/s)               | Vf=2.024 |
| Qa=0.071               |          |
| Qf=0.080               |          |
| DATUM R.L.             | 201.00   |
| DEPTH TO INVERT        | 1.091    |
| DESIGN INVERT LEVEL    | 205.900  |
| HYDRAULIC GRADE LEVEL  | 206.103  |
| FINISHED SURFACE LEVEL | 206.991  |
| EXISTING SURFACE LEVEL | 206.991  |
| CHAINAGE               | 37.600   |

|                        |          |
|------------------------|----------|
| CLASS 2                | 225Ø     |
| Pipe Grade             | 1 in 36  |
| Vf (m/s)               | Vf=2.188 |
| Qa=0.034               |          |
| Qf=0.087               |          |
| DATUM R.L.             | 201.00   |
| DEPTH TO INVERT        | 1.013    |
| DESIGN INVERT LEVEL    | 207.850  |
| HYDRAULIC GRADE LEVEL  | 208.060  |
| FINISHED SURFACE LEVEL | 208.863  |
| EXISTING SURFACE LEVEL | 208.863  |
| CHAINAGE               | 117.400  |

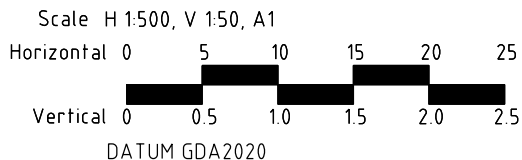
|                        |          |
|------------------------|----------|
| CLASS 2                | 225Ø     |
| Pipe Grade             | 1 in 36  |
| Vf (m/s)               | Vf=2.188 |
| Qa=0.034               |          |
| Qf=0.087               |          |
| DATUM R.L.             | 201.00   |
| DEPTH TO INVERT        | 1.013    |
| DESIGN INVERT LEVEL    | 207.850  |
| HYDRAULIC GRADE LEVEL  | 208.060  |
| FINISHED SURFACE LEVEL | 208.863  |
| EXISTING SURFACE LEVEL | 208.863  |
| CHAINAGE               | 117.400  |

|                        |          |
|------------------------|----------|
| CLASS 2                | 450Ø     |
| Pipe Grade             | 1 in 45  |
| Vf (m/s)               | Vf=3.035 |
| Qa=0.221               |          |
| Qf=0.483               |          |
| DATUM R.L.             | 199.00   |
| DEPTH TO INVERT        | 2.502    |
| DESIGN INVERT LEVEL    | 203.600  |
| HYDRAULIC GRADE LEVEL  | 204.358  |
| FINISHED SURFACE LEVEL | 206.102  |
| EXISTING SURFACE LEVEL | 206.102  |
| CHAINAGE               | 0.000    |

|                        |          |
|------------------------|----------|
| CLASS 2                | 450Ø     |
| Pipe Grade             | 1 in 58  |
| Vf (m/s)               | Vf=2.682 |
| Qa=0.206               |          |
| Qf=0.427               |          |
| DATUM R.L.             | 199.00   |
| DEPTH TO INVERT        | 2.138    |
| DESIGN INVERT LEVEL    | 204.800  |
| HYDRAULIC GRADE LEVEL  | 205.131  |
| FINISHED SURFACE LEVEL | 206.938  |
| EXISTING SURFACE LEVEL | 206.938  |
| CHAINAGE               | 54.065   |

|                        |          |
|------------------------|----------|
| CLASS 2                | 375Ø     |
| Pipe Grade             | 1 in 85  |
| Vf (m/s)               | Vf=1.966 |
| Qa=0.200               |          |
| Qf=0.217               |          |
| DATUM R.L.             | 199.00   |
| DEPTH TO INVERT        | 2.196    |
| DESIGN INVERT LEVEL    | 205.200  |
| HYDRAULIC GRADE LEVEL  | 205.525  |
| FINISHED SURFACE LEVEL | 207.396  |
| EXISTING SURFACE LEVEL | 207.396  |
| CHAINAGE               | 74.091   |

|     |                   |          |        |
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| Rev | Amendments        | Approved | Date   |



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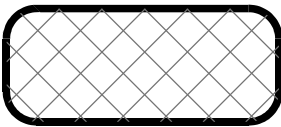
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D. CAMERON  
Date  
4/05/20

**REDSTONE ESTATE  
STAGE 4  
DRAINAGE LONG SECTION  
SHEET 2 OF 4  
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL**

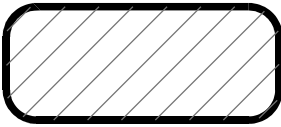
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305915R10

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A





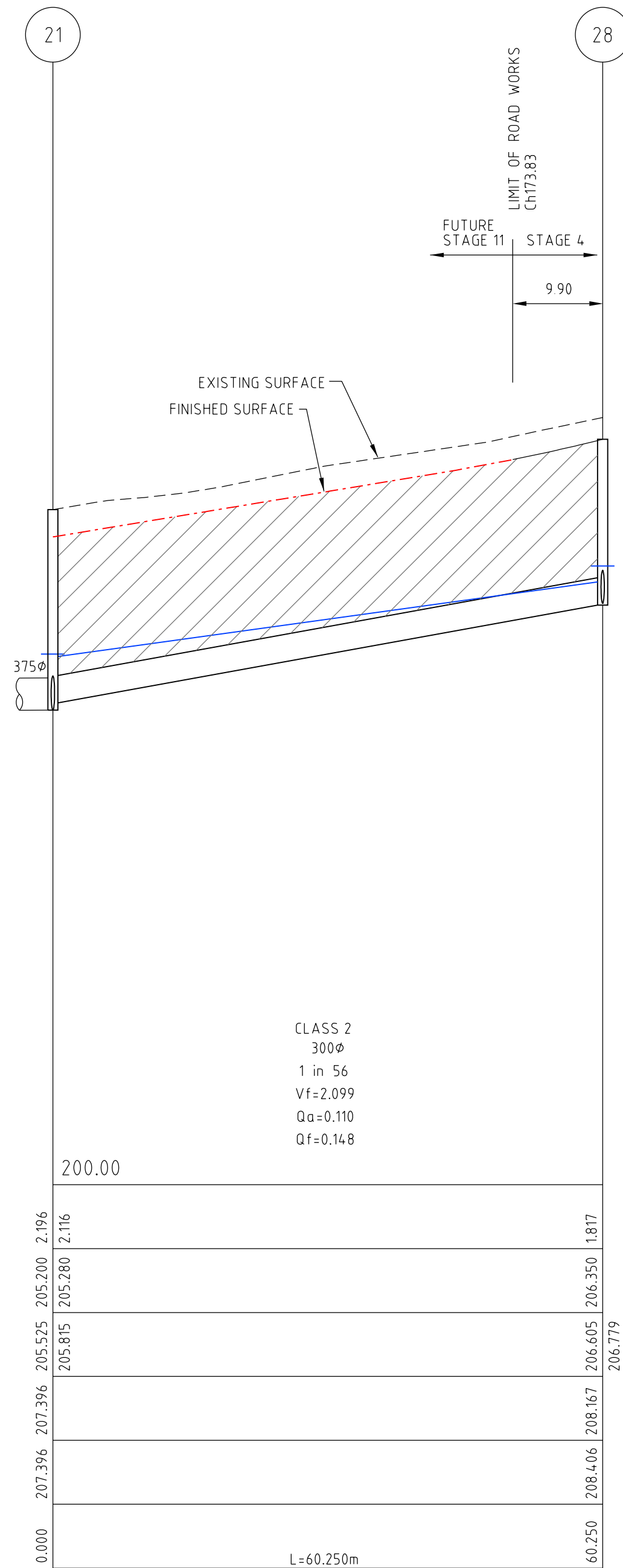
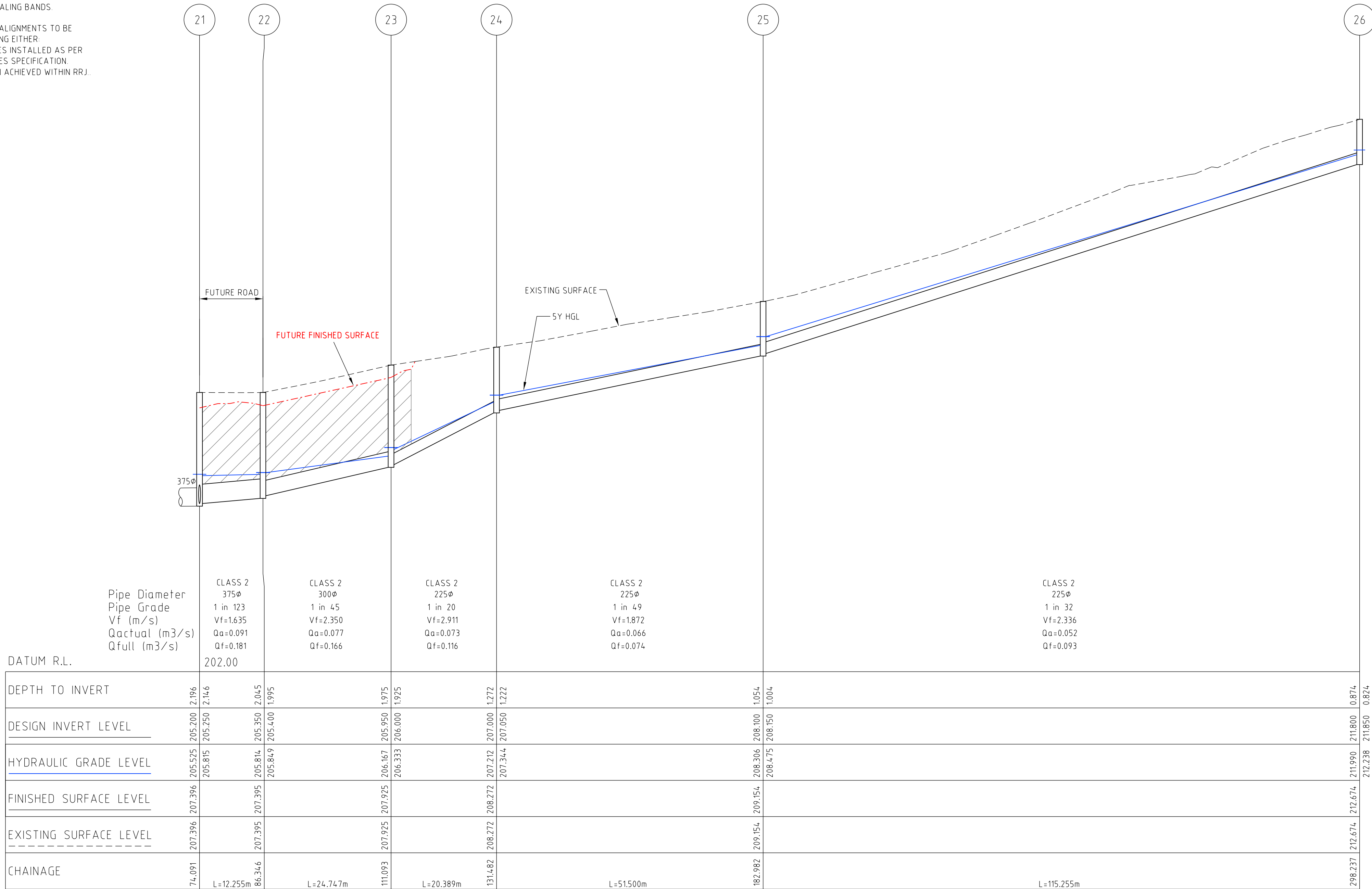
CLASS 2 CRUSHED ROCK



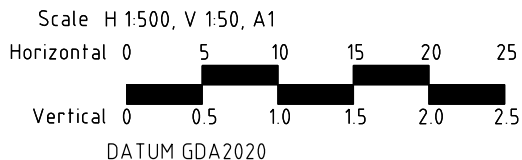
CLASS 3 CRUSHED ROCK

NOTE:

1. ALL PIPES TO BE RUBBER RING JOINTED (RRJ) UNLESS NOTED OTHERWISE
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3. CURVED PIPE ALIGNMENTS TO BE ACHIEVED USING EITHER:  
a) SPLAY PIPES INSTALLED AS PER MANUFACTURES SPECIFICATION  
b) DEFLECTION ACHIEVED WITHIN RRJ.



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**M. LETSON**

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**D. CAMERON**  
Date  
**4/05/20**

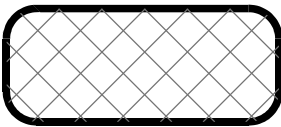
**REDSTONE ESTATE  
STAGE 4  
DRAINAGE LONG SECTION  
SHEET 3 OF 4  
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL**

**PRELIMINARY**

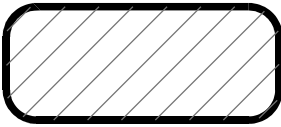
Drg No  
**305915R11**

Rev  
**A**





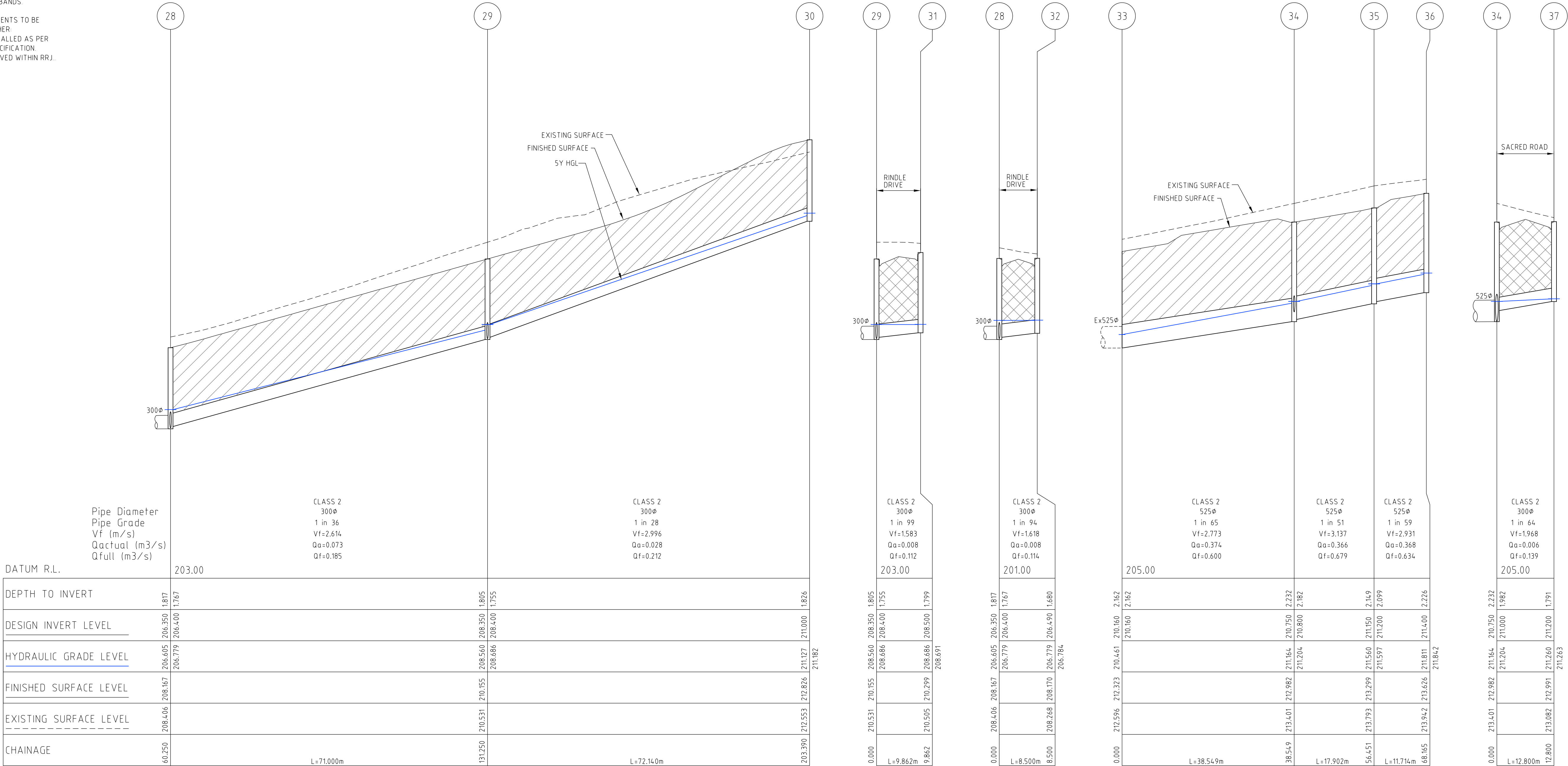
CLASS 2 CRUSHED ROCK



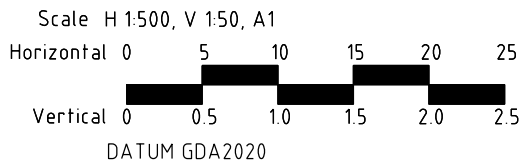
CLASS 3 CRUSHED ROCK

NOTE:

1. ALL PIPES TO BE RUBBER RING JOINTED (RRJ) UNLESS NOTED OTHERWISE
2. DRAINAGE PIPES GREATER THAN 750 $\phi$  ARE TO BE FLUSH JOINTED (FJ) WITH EXTERNAL SEALING BANDS.
3. CURVED PIPE ALIGNMENTS TO BE ACHIEVED USING EITHER:  
a) SPLAY PIPES INSTALLED AS PER MANUFACTURES SPECIFICATION  
b) DEFLECTION ACHIEVED WITHIN RRJ.



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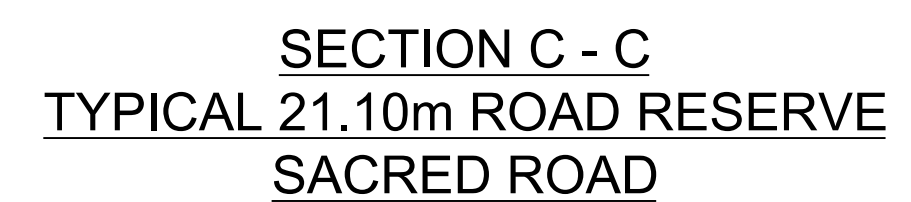
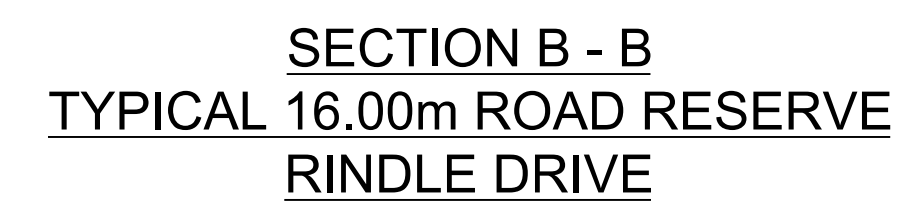
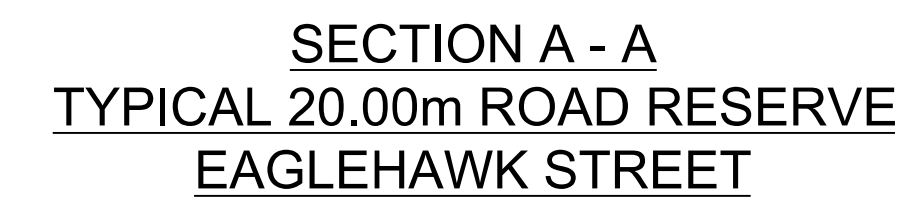
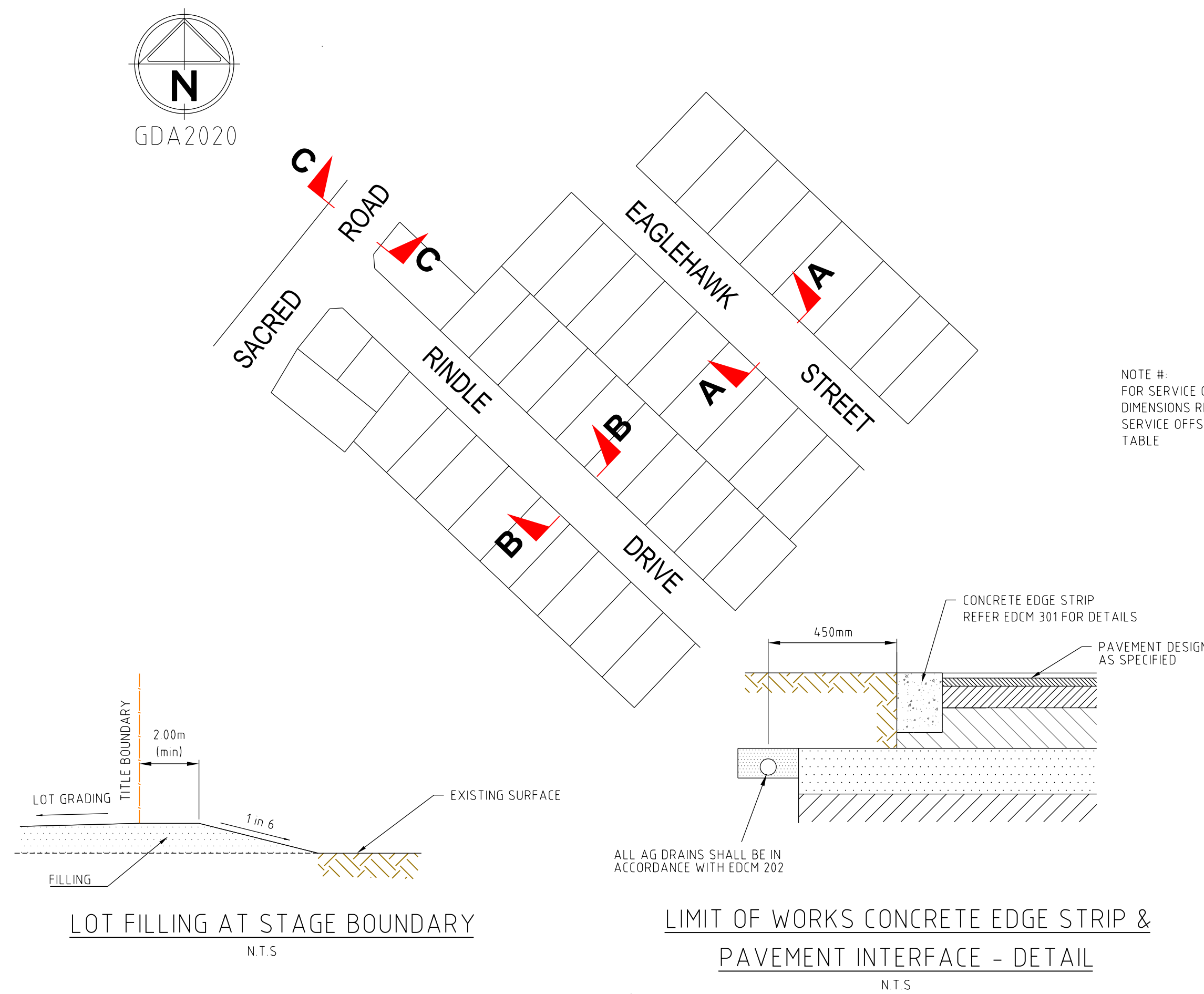
**REDSTONE ESTATE**  
**STAGE 4**  
**DRAINAGE LONG SECTION**  
**SHEET 4 OF 4**  
**VILLAWOOD PROPERTIES**  
**HUME CITY COUNCIL**

**PRELIMINARY**

Drg No  
**305915R12**

Rev  
**A**





NOTES:

- 1 ALL KERBS AND KERB & CHANNEL TO BE REINFORCED IN ACCORDANCE WITH MUNICIPALITY STD DRAWINGS.
- 2 ALL KERBS AND KERB & CHANNEL TO HAVE 190mm DEPTH OF CONCRETE BELOW TOP OF PAVEMENT LEVEL.
- 3 DIMENSION SHOWN # DEPTH TO BE ADJUSTED TO ACCOMMODATE SAMI SEAL LAYER

|     |                   |          |        |
|-----|-------------------|----------|--------|
|     |                   |          |        |
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4/05/20

# REDSTONE ESTATE STAGE 4

## TYPICAL CROSS SECTIONS AND TYPICAL DETAILS

### VILLAWOOD PROPERTIES HUME CITY COUNCIL

**PRELIMINARY** Drg No  
**305915R13**

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DESIGN PAVEMENT PROFILE FOR AREA 2

| PAVEMENT LAYER         | DESCRIPTION  | DEPTH (mm) |
|------------------------|--|------------|
|                        |  | AREA 2     |
| WEARING COURSE         | Size 10mm Type N Asphalt with a C170 binder  | 30         |
| STRUCTURAL COURSE      | Size 10mm Type N Asphalt with a C170 binder  | 30         |
| WATER-PROOFING COURSE  | SAMI seal with Class S18RF binder and bituminous prime   | 10         |
| BASE COURSE            | 20mm nominal size Class 2 FCR, compacted to at least 98% Modified Dry Density Ratio with a mean value of at least 100% Modified Dry Density Ratio and within 1% of the Modified Optimum Moisture Content   | 130        |
| UPPER PAVEMENT TOTAL   |  | 200        |
| SUB-BASE COURSE        | 20mm nominal size Class 3 FCR, compacted to at least 90% Modified Dry Density Ratio with a mean value of at least 98% Modified Dry Density Ratio and within 1% of the modified Optimum Moisture Content  | 100        |
| LOWER SUB-BASE COURSE  | 20mm nominal size Class 4 CR, compacted to at least 98% Modified Dry Density Ratio with a mean value of at least 100% Modified Dry Density Ratio and within 1% of the Modified Optimum Moisture Content  | 100        |
| SELECT SUB-BASE COURSE | Select granular material with a minimum soaked CBR of 10% compacted to 98% Standard Dry Density Ratio with a mean value of at least 100% Standard Dry Density Ratio and within 1% of the Standard Optimum Moisture Content and a percentage swell of less than 15% | 190        |
| TOTAL PAVEMENT DEPTH   |  | 600        |
| SUBGRADE               | Natural Silty CLAY tested to confirm an in-situ CBR of at least 2.0% OR approved FILL compacted to at least 100% Standard Dry Density ratio (soaked CBR ≥ 2.0%) within 2% of the Standard Optimum Moisture Content   |            |

DESIGN PAVEMENT PROFILE FOR AREA 3

| PAVEMENT LAYER         | DESCRIPTION  | DEPTH (mm) |
|------------------------|--|------------|
|                        |  | AREA 3     |
| WEARING COURSE         | Size 10mm Type N Asphalt with a C170 binder  | 30         |
| STRUCTURAL COURSE      | Size 10mm Type N Asphalt with a C170 binder  | 30         |
| WATER-PROOFING COURSE  | SAMI seal with Class S18RF binder and bituminous prime   | 10         |
| BASE COURSE            | 20mm nominal size Class 2 FCR, compacted to at least 100% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content   | 130        |
| UPPER PAVEMENT TOTAL   |  | 200        |
| SUB-BASE COURSE        | 20mm nominal size Class 3 FCR, compacted to at least 98% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content  | 100        |
| LOWER SUB-BASE COURSE  | 20mm nominal size Class 4 FCR, compacted to at least 98% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content  | 130        |
| SELECT SUB-BASE COURSE | Select granular material with a minimum soaked CBR of 10% compacted to 98% Standard Dry Density Ratio with a mean value of at least 100% Standard Dry Density Ratio and within 1% of the Standard Optimum Moisture Content and a percentage swell of less than 15% | 200        |
| TOTAL PAVEMENT DEPTH   |  | 630        |
| SUBGRADE               | Natural Silty CLAY tested to confirm an in-situ CBR of at least 2.0% OR approved FILL compacted to at least 100% Standard Dry Density ratio (soaked CBR ≥ 2.0%) within 2% of the Standard Optimum Moisture Content   |            |

DESIGN PAVEMENT PROFILE FOR AREA 4

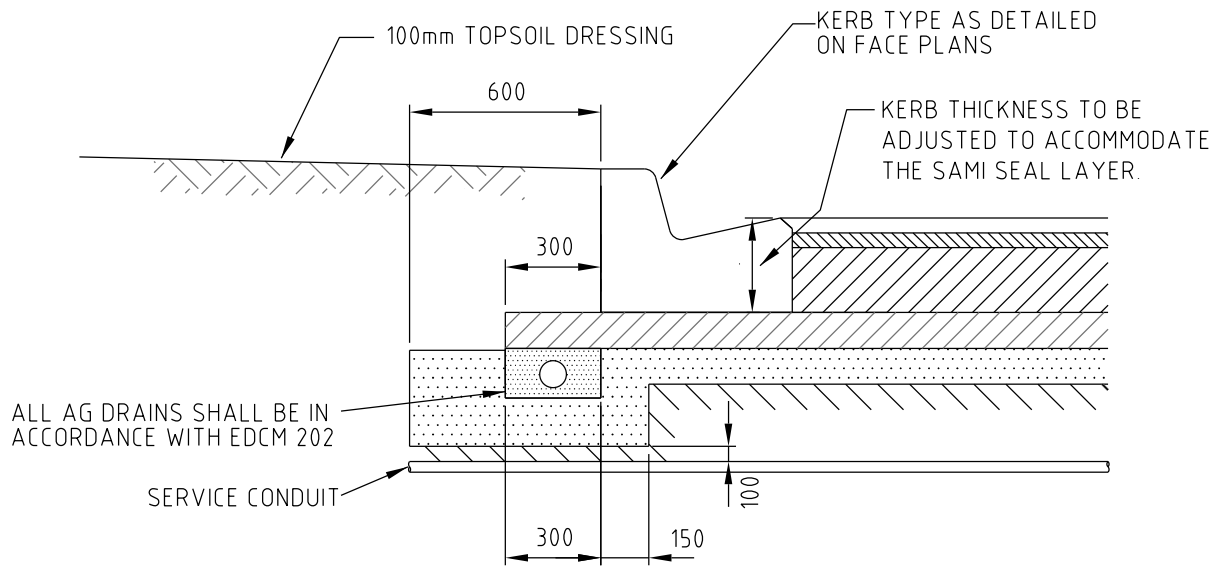
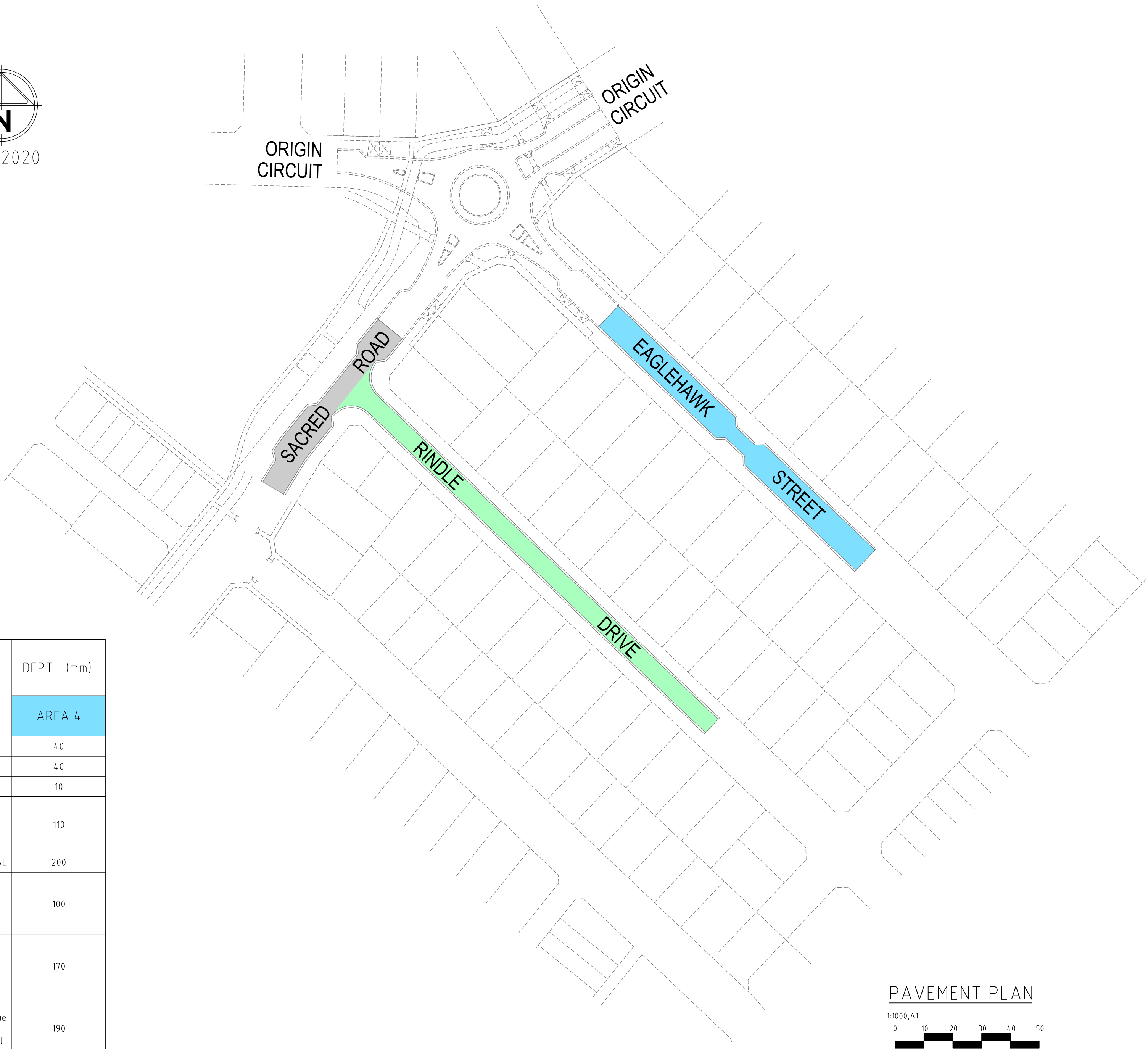
| PAVEMENT LAYER         | DESCRIPTION  | DEPTH (mm) |
|------------------------|--|------------|
|                        |  | AREA 4     |
| WEARING COURSE         | Size 14mm Type N Asphalt with a C170 binder  | 40         |
| STRUCTURAL COURSE      | Size 14mm Type HP Asphalt with a A10E binder   | 40         |
| WATER-PROOFING COURSE  | SAMI seal with Class S18RF binder and bituminous prime   | 10         |
| BASE COURSE            | 20mm nominal size Class 2 FCR, compacted to at least 100% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content   | 110        |
| UPPER PAVEMENT TOTAL   |  | 200        |
| UPPER SUB-BASE COURSE  | 20mm nominal size Class 3 FCR, compacted to at least 100% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content   | 100        |
| LOWER SUB-BASE COURSE  | 20mm nominal size Class 4 FCR, compacted to at least 100% Characteristic Modified Dry Density Ratio within 1% of the Modified Optimum Moisture Content   | 170        |
| SELECT SUB-BASE COURSE | Select granular material with a minimum soaked CBR of 10% compacted to 98% Standard Dry Density Ratio with a mean value of at least 100% Standard Dry Density Ratio and within 1% of the Standard Optimum Moisture Content and a percentage swell of less than 15% | 190        |
| TOTAL PAVEMENT DEPTH   |  | 660        |
| SUBGRADE               | Natural Silty CLAY tested to confirm an in-situ CBR of at least 2.0% OR approved FILL compacted to at least 100% Standard Dry Density ratio (soaked CBR ≥ 2.0%) within 2% of the Standard Optimum Moisture Content   |            |

PAVEMENT DETAILS

THE PAVEMENT DESIGNS SHOWN HERE HAVE BEEN DESIGNED/PROVIDED BY CARDNO VICTORIA PTY LTD WHO ARE RESPONSIBLE FOR THE GEOTECHNICAL WORK ON THIS PROJECT. SPIIRE IS NOT RESPONSIBLE FOR THE WORK OF CARDNO VICTORIA PTY LTD.

THE DESIGN HAS BEEN EXTRACTED FROM THE CARDNO VICTORIA PTY LTD REPORT TITLED "GEOTECHNICAL INVESTIGATION FOR PROPOSED RESIDENTIAL SUBDIVISION REDSTONE HILL SUNBURY SOUTH" V180556 REPORT 012. THIS DOCUMENT SHOULD BE REVIEWED TO ENSURE THAT THE DESIGN HAS BEEN ACCURATELY REPRODUCED. A COPY OF THE DOCUMENT WILL BE PROVIDED TO YOU ON REQUEST.

SPIIRE DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY, ADEQUACY OR APPROPRIATENESS OF THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS. ANY QUERIES IN RESPECT TO THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS SHOULD BE ADDRESSED TO CARDNO VICTORIA PTY LTD AND SENT TO SPIIRE.



NOTE FOR SAMI TREATMENT  
DESIGN AND APPLICATION OF SAMI, INCLUDING MATERIAL REQUIREMENTS, SHOULD COMPLY WITH VICROADS STANDARD SPECIFICATION FOR ROADWORKS AND BRIDGEWORKS SECTION 408 AND THE CURRENT AUSTRROADS SPRAYED SEAL DESIGN METHOD.

NEW CONSTRUCTION  
N.T.S.


|     |                   |          |        |
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Authorised  
**M. LETSON**

Checked  
**D. CAMERON**

Date  
**4/05/20**

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*Your world awaits*

**REDSTONE ESTATE  
STAGE 4  
PAVEMENT DETAILS**

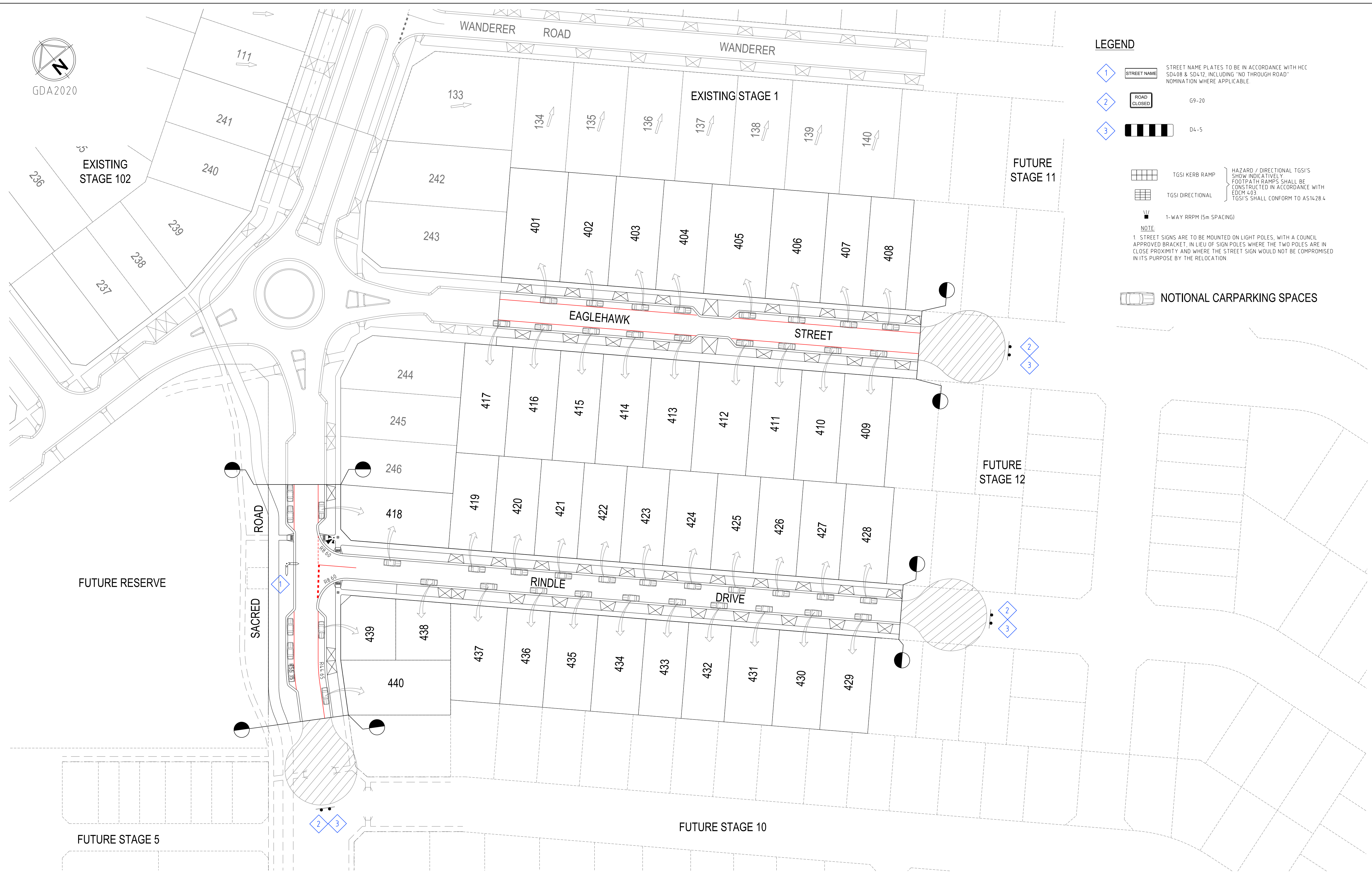
VILLAWOOD PROPERTIES  
HUME CITY COUNCIL

**PRELIMINARY**

Drg No  
**305915R14**

Rev  
**A**





**LEGEND**

1

STREET NAME

STREET NAME PLATES TO BE IN ACCORDANCE WITH HCC SD408 & SD412, INCLUDING "NO THROUGH ROAD" NOMINATION WHERE APPLICABLE.

2

ROAD CLOSED

G9-20

3

D4-5

TGSI KERB RAMP

HAZARD / DIRECTIONAL TGSI'S SHOW INDICATIVELY. FOOTPATH RAMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH EDM 403. TGSI'S SHALL CONFORM TO AS1428.4

TGSI DIRECTIONAL

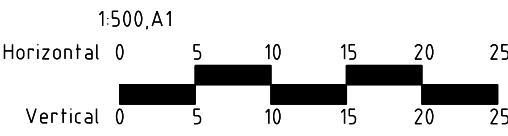
1-WAY RRPM (5m SPACING)

NOTE:

1. 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.

NOTIONAL CARPARKING SPACES

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