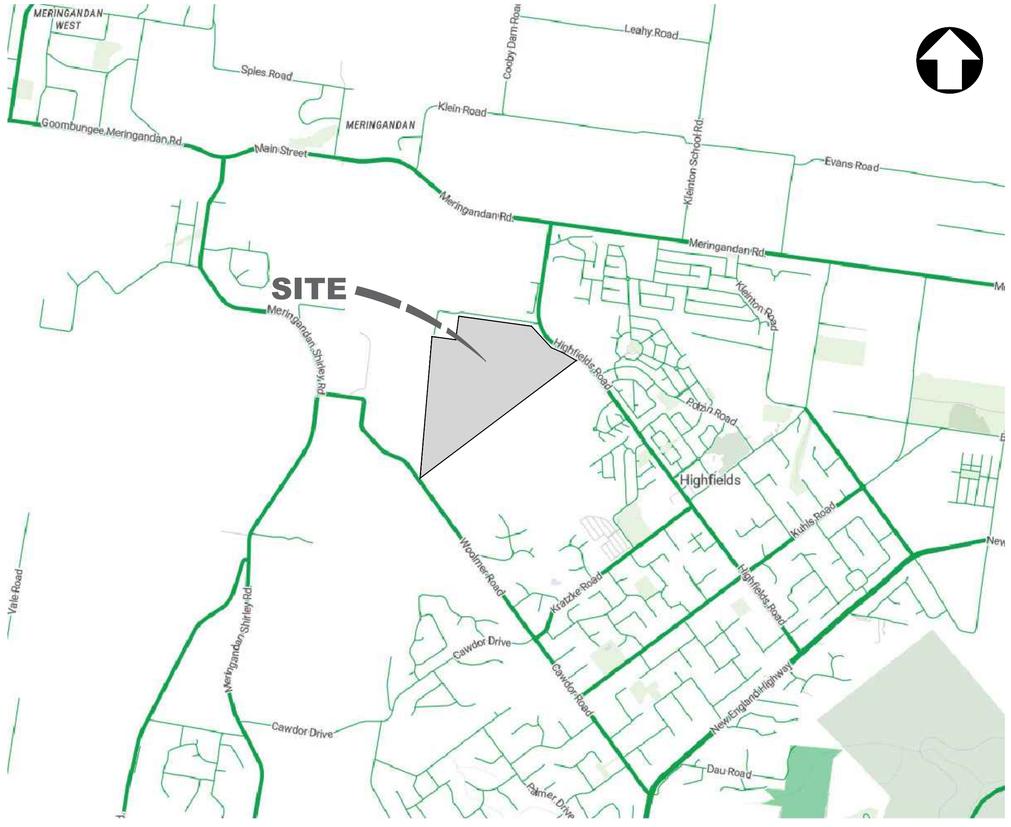
BIRD IN HAND 3 PTY LTD
BOTANIC HIGHFIELDS
STAGE 7

BROWNE ROAD, HIGHFIELDS



LOCALITY PLAN
SCALE N.T.S.

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GS562-07-600	0	ESC LAYOUT PLAN
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ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature	Egnyte Sign	Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: LOCALITY PLAN AND DRAWING INDEX

SHEET	SCALE	JOB No	SHEET No	
A1	AS SHOWN	GS562-07	001	0

GENERAL NOTES

1. ALL DIMENSIONS AND SETOUT ARE TO BE CHECKED ON-SITE BEFORE WORK COMMENCES.
2. CONSTRUCTION CONTRACTOR TO CONFIRM THE LEVELS AND POSITION OF ALL SURVEY MARKS PRIOR TO CONSTRUCTION.
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS.
4. DRAWINGS SHALL BE PLOTTED IN COLOUR SO ALL DESIGN ELEMENTS ARE SHOWN.
5. THE CONTRACTOR SHALL LIAISE WITH ALL RELEVANT UTILITY AUTHORITIES AND THEIR AGENTS TO LOCATE ALL EXISTING SERVICES, CO-ORDINATE PROTECTION OF AND/OR RELOCATION OF ANY EXISTING SERVICES WITHIN THE CONSTRUCTION AREA FOOTPRINT AS REQUIRED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY SERVICES DAMAGED AS A RESULT OF THE WORKS.
7. OVERHEAD POWER MAY EXIST IN THIS AREA. ALL CONSTRUCTION WITHIN 3m OF OVERHEAD POWER LINES TO BE IN ACCORDANCE WITH SAFETY ADVICE FROM ERGON ENERGY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AUTHORITIES AND PAYING ALL FEES NECESSARY BEFORE COMMENCING WORK.
9. ALL NEW SURFACES TO MATCH NEATLY TO EXISTING SURFACES IN LEVEL AND FINISH. CONCRETE SHALL BE SAW CUT AND REINSTATED TO MATCHING FINISH.
10. CONSTRUCTION CONTRACTOR TO ARRANGE ALL NECESSARY PERMITS AND APPROVALS FOR THE CLEARING OF ANY TREES PROPOSED UNDER THIS DESIGN.
11. DURING CONSTRUCTION TRAFFIC BARRIERS, LIGHTS & SIGNS SHALL BE MAINTAINED TO ENSURE SAFE PASSAGE OF TRAFFIC AND PEDESTRIANS IN ACCORDANCE WITH THE REQUIREMENTS OF TOOWOOMBA REGIONAL COUNCIL AND THE DEPARTMENT OF TRANSPORT AND MAIN ROADS.
12. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SEDIMENT & EROSION CONTROL DEVICES TO COMPLY WITH REQUIREMENTS OF TOOWOOMBA REGIONAL COUNCIL, DEPARTMENT OF TRANSPORT AND MAIN ROADS, AND IECA.
13. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH S.A.A CODES, BY-LAWS AND ORDINANCES OF THE TOOWOOMBA REGIONAL COUNCIL AND WORKPLACE HEALTH AND SAFETY REQUIREMENTS.
14. PRIOR TO CONSTRUCCTION, A REGISTERED SURVEYOR SHOULD STAKE R.P. BOUNDARIES, SETOUT AND CHECK CONSTRUCTION EXTENTS, LINES AND LEVELS OF ALL PROPOSED WORKS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SURVEY MARK PEGS DURING THE COURSE OF THE CONTRACT.
16. ANY ROADS, FOOTPATHS AND PRIVATE PROPERTY DAMAGED DURING CONSTRUCTION SHALL BE REINSTATED TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE SUPERINTENDENT.
17. THE CONTRACTORS ATTENTION IS DRAWN TO THE REQUIREMENTS OF THE CURRENT WORKPLACE HEALTH AND SAFETY ACT. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THIS ACT AND IN PARTICULAR THE CONTRACTOR IS TO ENSURE THE REQUIREMENTS OF THIS SPECIFICATION WITH REGARD TO " NOTIFICATION IN RELATION TO A NOTIFIABLE PROJECT" ARE FULFILLED.
18. ANY CONFLICTING INFORMATION IN THE DRAWINGS AND SPECIFICATION MUST BE REFERRED TO THE SUPERINTENDENT FOR RESOLUTION PRIOR TO PROCEEDING.
19. ALL WORKS ARE TO BE GRADED TO PROVIDE ADEQUATE DRAINAGE DURING CONSTRUCTION.
20. ALL VEHICLES LEAVING THE WORK SITE TO COMPLY WITH ENVIRONMENTAL MANAGEMENT PLAN AND ENSURE NO MATERIAL IS DEPOSITED ON ROADWAYS.
21. ELECTRICAL ALIGNMENT SHOWN IS INDICATIVE ONLY FOR THE PURPOSES OF SETTING OUT OTHER CIVIL SERVICES AND IS BASED ON STANDARD OFFSETS. REFER PLANS BY ROBIN RUSSELL FOR DESIGN AND FURTHER DETAILS.

DESIGN NOTES

1. DESIGN IS BASED ON SURVEY DATA SUPPLIED BY PARKINSON SURVEYORS. THE DESIGNER TAKES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THE SURVEY DATA AND THE DESIGN DECISIONS MADE ON THE BASIS OF SURVEY INFORMATION.
2. ALL PROPRIETARY ITEMS SPECIFIED IN THIS DESIGN SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS GUIDELINES.
3. AHD DERIVED FROM TOPNET ALLDAY RTK STN 1, MGA 2020 (ZONE 56) VIDE GNSS, PLANE PROJECTION SCALED FROM STN 1.

ROADWORKS NOTES

1. PAVEMENT & SUBGRADE REPLACEMENT MATERIAL TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS.
2. SUBGRADE TO BE PROOF-ROLLED WITH FULLY LOADED WATER CART. THERE IS TO BE NO VISIBLE DEFORMATION UNDER THE LOAD.
3. PROVIDE COMPACTION TESTING IN ACCORDANCE WITH TRC PLANNING SCHEME POLICY SCHEDULE 6.
4. A HOLD POINT EXISTS FOR RELEASE BY THE SUPERVISING ENGINEER PRIOR TO PLACEMENT OF SUBSEQUENT PAVEMENT LAYERS.
5. BASE AND SUB-BASE MATERIALS TO BE TESTED AND APPROVED PRIOR TO DELIVERY TO SITE. TESTING IS TO BE IN ACCORDANCE WITH THE RELEVANT MRTS, SAA STANDARDS AND TRC PLANNING SCHEME POLICY SCHEDULE 6.
6. SAW CUT EXISTING SEAL TO FORM NEAT EDGE WITH NEW WORKS.
7. DEFECTS IN THE EXISTING PAVEMENT ARE TO BE REPAIRED BY EXCAVATION AND REPLACEMENT, AND SEALED.
8. ALL KERB TYPES SPECIFIED IN THE DRAWINGS TO BE IN ACCORDANCE WITH IPWEAQ STANDARD DRAWING No. RS-080.
9. PAVEMENT MATERIAL TO EXTEND MIN 300 mm BEHIND BACK OF KERB, OR TO SUIT KERBER AT CONTRACTORS EXPENSE

PAVEMENT AND BITUMEN SEAL NOTES

1. ALL COMPACTION TO BE SUBJECTED TO TESTING IN ACCORDANCE WITH THE RELEVANT S.A.A CODE AND TRC PLANNING SCHEME POLICY SCHEDULE 6.
2. MINIMUM DEPTH OF PAVEMENT IS DETAILED ON TYPICAL SECTION. ACTUAL PAVEMENT DEPTHS ARE TO BE DETERMINED FOLLOWING SOAKED CBR TESTS ON SUBGRADE.
3. FOR PAVEMENT DESIGN, REFER TO SHEET 260.
4. BASE COURSE PAVEMENT GRAVELS ARE TO BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO ACHIEVE 100% STANDARD COMPACTION.
5. SUB BASE COURSE PAVEMENT GRAVELS (IF SPECIFIED) ARE TO BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO ACHIEVE 100% STANDARD COMPACTION.
6. SUBGRADE IS TO BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO ACHIEVE 98% STANDARD FOR THE TOP 300mm AND 95% STANDARD BELOW THE TOP 300mm.
7. SEAL DESIGN BASED ON DESIGN ASSUMPTIONS AND THIS IS TO BE VERIFIED FULLY WITH THE DESIGNER BY THE SPRAY CONTRACTOR PRIOR TO APPLICATION.

EARTHWORKS AND FILL MANAGEMENT NOTES

1. ALL WORKS TO BE GENERALLY IN ACCORDANCE WITH AS 3798.
2. ALL WORK TO BE STRICTLY IN ACCORDANCE WITH THE STANDARD EARTHWORKS SPECIFICATION.
3. SURFACE LEVELS OVER THE SITE HAVE BEEN INTERPOLATED THROUGH COMPUTER MODELLING OF FIELD SURVEY DATA. THESE CALCULATED LEVELS MAY VARY FROM THE ACTUAL GROUND LEVEL.
4. ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND FULLY OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
5. ALL EXISTING UNDERGROUND SERVICES TO BE LOCATED AND MARKED PRIOR TO COMMENCING EARTHWORKS.
6. CLEARING, STRIPPING AND GRUBBING SHOULD BE CARRIED OUT IN AREAS SUBJECT TO EARTHWORKS. ALSO, ALL SOILS CONTAINING ORGANIC MATTER SHOULD BE STRIPPED FROM THE CONSTRUCTION AREA. THIS MATERIAL IS NOT CONSIDERED SUITABLE FOR USE AS STRUCTURAL FILL.
7. ALL STRIPPED TOPSOIL IS TO BE STOCKPILED ON SITE AND REUSED DURING REVEGETATION WORKS.
8. AFTER CLEARING, GRUBBING AND STRIPPING THE EXPOSED SURFACE, ALL PAVED CONSTRUCTION AREAS SHOULD BE PROOF ROLLED TO DETECT ANY SOFT OR LOOSE MATERIAL. WEAK SOILS, PARTICULARLY LOOSE SURFACE, CLAYEY OR SANDS SHOULD BE COMPACTED TO THE APPROPRIATE REQUIREMENTS WHERE POSSIBLE. WEAK, OVERLY MOIST SOILS PARTICULARLY CLAY SOILS, SHOULD BE PREFERABLY REMOVED. PROOF ROLLING OF CUT AREAS SHOULD BE DEFERRED UNTIL AFTER FULL EXCAVATION IS COMPLETED.
9. MATERIAL EXCAVATED FROM CUT AREAS SHALL NOT BE USED AS FILL WITHOUT THE SUPERINTENDENTS APPROVAL.
10. THE INSITU SOILS, WHERE FREE OF ORGANIC AND DELETERIOUS MATERIAL, MAY BE USED FOR STRUCTURAL FILL PROVIDED THE MOISTURE CONTENT OF THE SOILS ON PLACEMENT APPROXIMATES THE OPTIMUM MOISTURE CONTENT REQUIRED FOR COMPACTION.
11. FILL TO BE PLACED IN MAXIMUM 200mm LIFTS, UNLESS APPROVED OTHERWISE BY A SUITABLY QUALIFIED CONSULTANT, AND COMPACTED TO SPECIFICATION.
12. PLACEMENT OF FILL SHALL CONFORM TO THE FOLLOWING MINIMUM DRY DENSITY RATIO (M.D.D.R.) COMPACTION STANDARDS:
    A) RESIDENTIAL ALLOTMENTS = 95% STD
    B) ROAD VERGES/EMBANKMENTS = 95% STD
    C) PAVEMENT SUBGRADE = 100% STD
13. ANY IMPORTED FILL, IF NEEDED TO MAKE UP EARTHWORK DEFICIENCIES, SHOULD HAVE A SOAKED CBR OF NOT LESS THAN 15% AND A MAXIMUM AGGREGATE SIZE OF NO GREATER THAN 75 mm, MAX LIQUID LIMIT = 40, MAX P.I = 15, MAX P.I X % PASSING 4.25 um = 450. TEST RESULTS SHALL BE PROVIDED.
14. FIELD DENSITY TESTING SHOULD BE CARRIED OUT TO CHECK THE STANDARD OF COMPACTION ACHIEVED AND THE PLACEMENT MOISTURE CONTENT. THE FREQUENCY AND EXTENT OF TESTING SHOULD BE AS PER GUIDELINES IN AS 3798-2007 AND TRC PLANNING SCHEME POLICY SCHEDULE 6.
15. CONTROL TESTING OF EARTHWORKS TO BE IN ACCORDANCE WITH AS1289.5 & AS3798-2007, WITH LEVEL 1 GEOTECHNICAL CERTIFICATION FOR ALLOTMENT AND TEMPORARY DRAIN FILLING.
16. FILL DENSITY TESTING SHALL CONFORM TO THE FOLLOWING:
    A) 1 TEST PER 500m^3 - GENERALLY
    B) 1 TEST PER 100m^3 - WATERCOURSES
    C) 1 TEST PER 2 LAYERS PER 40m - TRENCH FOR NON-COHESIVE MATERIALS, M.D.D.R. = 80%
13. ALL FILL MATERIAL PLACED ON THE SITE IS TO:
    i) COMPRISE ONLY OF NATURAL EARTH AND ROCK AND IS TO BE FREE OF CONTAMINANTS, NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIALS. FILL MATERIAL IS TO BE FREE DRAINING. NO DEMOLITION MATERIAL IS TO BE USED. THE FILL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 300 mm AND TO A MINIMUM 95% DRY DENSITY RATIO USING STANDARD COMPACTION IN ACCORDANCE WITH AS 1289.29. A MINIMUM OF 98% DRY DENSITY IS REQUIRED OF SUBGRADE LEVEL AND 100% DRY DENSITY IS REQUIRED FOR PAVEMENTS.
    ii) BE PLACED IN ACCORDANCE WITH AS 3798 - GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL PROPERTIES.
14. STRIP TURF OPEN DRAIN INVERTS AND BATTERS AT 3m INTERVALS. APPLY GRASS SEEDING TO ALL REMAINING DISTURBED AREAS.
15. ALL AREAS SUBJECT TO EARTHWORKS ARE TO BE FREE DRAINING WITH A MINIMUM SLOPE OF 1:100 (1%).
16. ALL TEMPORARY STOCKPILES (IF APPLICABLE) TO HAVE 1:6 MAXIMUM SIDE BATTERS (GRASS SEEDED).
17. WHERE TOPSOIL STOCKPILES ARE LOCATED ADJACENT TO FILL AREAS, CARE MUST BE TAKEN TO ENSURE STRUCTURAL FILL DOES NOT BECOME CONTAMINATED BY BLENDING WITH TOPSOIL.
18. EARTHWORKS BATTERS ARE TO BE TREATED AS FOLLOWS:
    A) 1V:4H OR FLATTER TO BE GRASS SEEDED (UNLESS NOTED OTHERWISE)
    B) STEEPER THAN 1V:4H OR HIGHER THAN 300mm TO BE MULCHED
19. WHERE THERE IS EVIDENCE OF REMOVAL OF TREES, THE STUMP HOLE SHALL BE EXCAVATED, FILLED AND COMPACTED AS PART OF THE LEVEL 1 CERTIFICATION.

CONCRETE NOTES

1. ALL CONCRETE TO BE IN ACCORDANCE WITH AS1379 AND AS3600 WITH COMPRESSIVE STRENGTHS AS SHOWN ON THE DRAWINGS.
2. CONCRETE CONSTRUCTION TO COMPLY WITH THE REQUIREMENTS OF AS3600.
3. REINFORCEMENT FABRIC TO AS1304, WITH COVER AS SPECIFIED ON THE DRAWINGS.
4. CONCRETE TO BE BROOM FINISHED AND HAVE A MAXIMUM AGGREGATE SIZE AS SPECIFIED ON THE DRAWINGS.

PIT AND CONCRETE NOTES

1. BASE OF PITS TO BE PREPARED WITH 150 MM OF 3.2 PAVEMENT MATERIAL, COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
2. CONCRETE TO BE S40, 60 MM COVER AND TO COMPLY WITH MRTS70.
3. ALL REINFORCING STEEL AND PLACEMENT TO COMPLY WITH MRTS71.

STORMWATER DRAINAGE NOTES

1. PIPE MATERIAL TO BE UPVC DRAINAGE PIPE PLASCOR OR EQUIVALENT AND RCP CLASS "3" RUBBER RING JOINTED, UNLESS NOTED OTHERWISE.
2. UPVC PIPES ARE EITHER RUBBER RING JOINTED OR SOLVENT WELD JOINTED. STANDARD MANUFACTURER'S FITTING ARE TO BE USED IN BOTH CASES.
3. LIDS TO CAST-IN-SITU MANHOLES ARE CLASS 'D', CLOSE FITTING BOLT DOWN CAST IRON OR GALVANISED STEEL, CONCRETE INFILL TYPE (GATIC LIGHT DUTY, POLYCRETE BROADSTEL, OR SIMILAR) OF APPROXIMATELY THE SAME INTERNAL DIMENSIONS AS THE MANHOLE.
4. LIDS TO FRC AND RCP MANHOLES ARE IN ACCORDANCE WITH THE MANUFACTURE'S PROPRIETARY CONCRETE OR CONCRETE INFILL TYPE.
5. LIDS MATCH FINISHED SURFACE GROUND SLOPE AND ARE MARKED "STORMWATER" IMPRESSED INTO THE CONCRETE INFILL.
6. INFILL CONCRETE IS CLASS N25.
7. UPVC PIPE AND KERB ADAPTORS ARE USED WHERE DISCHARGE IS INTO THE KERB AND CHANNEL.
8. 150mm UPVC PIPE WHERE DISCHARGING DIRECTLY TO GULLY PIT. REFER TRC DRAWING 101450-001.
9. MATERIALS AND CONSTRUCTION ARE IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARD SPECIFICATION.

WATER RETICULATION NOTES

1. ALL WATER RETICULATION MAINS SHALL BE RIGID PVC-M PIPE, SOCKET AND SPIGOT, RUBBER RING JOINTED CLASS 12 OR GREATER TO COMPLY WITH A.S. 2977 AND BE COMPATIBLE WITH DICL PIPE FITTINGS TO AS 2280 - U.N.O.
2. ALL WATER RETICULATION MAINS TO BE LOCATED IN FOOTPATH ON A 1.2m ALIGNMENT FROM PROPERTY BOUNDARIES (UNLESS NOTED OTHERWISE).
3. CONCRETE (GRADE N20) THRUST BLOCKS TO WSAA STANDARDS SHALL BE PLACED AT ALL BENDS, TEES, REDUCERS, VALVES AND DEAD ENDS.
4. CONNECTION TO EXISTING WATER RETICULATION MAIN TO BE CARRIED OUT BY COUNCIL AT THE CONTRACTORS EXPENSE.
5. ALL DUCTILE IRON FITTING TO BE HEAVY CEMENT LINED & COMPLY WITH AS 2280.
6. WATER SERVICE ENVELOPING CONDUITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TRC STANDARD DRAWING 101214-001 REV. A. A BRASS INDICATOR DISC SHALL BE SET IN THE KERB TO DENOTE CONDUIT LOCATION.
7. WATER SERVICES TO BE CONSTRUCTED IN ACCORDANCE WITH TOOWOOMBA REGIONAL COUNCIL WATER INFRASTRUCTURE POLICY 2.03.
8. WATER SERVICE ENVELOPING CONDUITS SHALL BE PLUGGED TO PREVENT THE ENTRY OF DIRT ETC.
9. THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF LEVELS & LOCATIONS OF SERVICES TO FULLY COMPLY WITH COUNCILS "AS CONSTRUCTED" INFORMATION REQUIREMENTS.
10. MARKER PLATES- ONLY KERB PAINTING WILL BE DONE PRIOR TO ON-MAINTENANCE INSPECTION. MARKER PLATE SHALL BE INSTALLED TOWARDS OFF-MAINTENANCE INSPECTION.
11. HYDRANT RRPM'S SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH WSAA STANDARDS.
12. ALL CAST IRON FITTINGS INCLUDING VALVES AND HYDRANTS SHALL HAVE THERMALLY APPLIED PROTECTIVE COATINGS IN ACCORDANCE WITH AS 4158.
13. REFER WSAA STANDARDS FOR ALL TRENCHING AND THRUST BLOCK DETAILS ETC.
14. ALL WATER MAINS UNDER ROADWAYS SHALL BE DUCTILE IRON CEMENT LINED (DICL)
15. MAXIMUM SPACING OF FIRE HYDRANTS SHALL BE 80 m BUT LOCATED WITHIN 40m OF EACH PROPERTY. HYDRANTS SHALL BE LOCATED < 200 mm FROM THE DIVIDING PROPERTY BOUNDARY.
16. COVER TO WATER MAINS SHALL BE IN ACCORDANCE WITH TOOWOOMBA REGIONAL COUNCIL'S WATER INFRASTRUCTURE POLICY 2.03.
17. SLUICE VALVES TO BE CLASS 14 AND COMPLY WITH AS 2638.
18. MINIMUM 1.0m HORIZONTAL SEPERATION TO STREET LIGHTING AND GREEN BOYS TO WATER MAINS AND WATER CROSSINGS AS PER TRC REQUIREMENTS.

SEWERAGE RETICULATION NOTES

PIPELINES

1. ALL SEWERS ARE TO BE 150 TO 300 mm DIA. UPVC CLASS 'SN8' - AS 1260 - RUBBER RING JOINTED IN MAXIMUM 3.0 m LENGTHS UNLESS NOTED OTHERWISE.
2. ALIGNMENT UNLESS OTHERWISE NOTED SHALL BE:
   2.1. 1.5 m INSIDE FRONT OR REAR BOUNDARY OF ALLOTMENTS
   2.2. 1.5 m FROM SIDE BOUNDARY OF ALLOTMENTS
   2.3. 1.5 m WHERE A RETAINING WALL GREATER THAN 0.8 m HIGH IS LOCATED ON THE REAR OR SIDE BOUNDARY.
3. BEDDING FOR PIPELINES TO BE GENERALLY TYPE 3 BEDDING UNLESS OTHERWISE NOTED AND PLACED IN ACCORDANCE WITH WSAA STANDARD DRAWING NO. SEW-1201.
4. MINIMUM COVER FOR SEWER PIPES SHALL BE 0.9 m FOR ALLOTMENTS, 0.9 m FOR PARKS AND 1.2 m FOR ROADWAYS AND PATHS.
5. ALL BACKFILL TO PIPES TO BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY (STANDARD) WITH REPRESENTATIVE TESTING AS REQUESTED BY THE ENGINEER ON SITE.
6. CONTRACTOR TO SUPPLY ENGINEER WITH ACCURATE AS CONSTRUCTED PLANS ON COMPLETION OF WORKS.
7. MARKER TAPE REQUIRED FOR ALL NEW SEWER MAIN INSTALLATION.
8. WHERE ACID SULFATE SOILS ARE ENCOUNTERED, REMOVAL AND TREATMENT SHALL BE IN ACCORDANCE WITH AN APPROVED ACID SULFATE SOIL MANAGEMENT PLAN.
9. DROP STRUCTURES TO BE CONSTRUCTED AS A 'TYPE C INLET' IN ACCORDANCE WITH TRC STANDARD DRAWING NO 101211-001 REVISION C. REFER DWG GS323-411.

HOUSE CONNECTION BRANCHES

10. HOUSE CONNECTION BRANCHES TO BE 100mm DIA AND EXTEND TO 1.0 m INTO PROPERTY BEING SERVED.
11. ALL HOUSE CONNECTION BRANCHES TO BE CONSTRUCTED IN ACCORDANCE WITH TRC STANDARD DRAWING NO 101211-001 REVISION C.
12. HOUSE CONNECTION JUMP UPS/STUBS TO BE CAPPED AT 1 m ABOVE GROUND LEVEL AND FINISHED WITH A PUSH ON CAPPING PIECE, PAINTED YELLOW, IN ACCORDANCE WITH TRC STANDARD DRAWING NO. 101211-001 REV C.

WORK ON EXISTING SEWERS

13. ALL WORK ON EXISTING SEWERS TO BE PERFORMED BY TOOWOOMBA REGIONAL COUNCIL, UNLESS OTHERWISE DIRECTED AND ACTUAL COST INCLUDING LABOUR AND MATERIALS SHALL BE MET BY THE DEVELOPER.

MANHOLES

14. MANHOLES ON 150 mm ⌀ SEWER LINES SHALL BE PRE-CAST 1050 mm DIAMETER UNLESS NOTED OTHERWISE AND CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING NO. SEW-1300.
15. MANHOLES ON 300 mm ⌀ SEWER LINES SHALL BE PRE-CAST 1200 mm DIAMETER, EPOXY COATED.
16. ALL MANHOLES TO HAVE LIDS AS SHOWN ON THE SEWER LONGITUDINAL SECTIONS.
17. FINAL SURFACE LEVELS OF MANHOLES NOMINATED ON LONG SECTIONS ARE TO DESIGN SURFACE LEVEL AND ARE TO BE ADJUSTED ON SITE TO SUIT ALL EARTHWORKS TYPICALLY 75 mm ABOVE SURROUNDING FINISHED SURFACE LEVELS.
18. INVERTS IN ALL MANHOLES TO BE BENCHED TO SUIT INLET AND OUTLET PIPES IN ACCORDANCE WITH WSAA.

LIST OF ABBREVIATIONS

WSAA	WATER SERVICES ASSOCIATION OF AUSTRALIA
TRC	TOOWOOMBA REGIONAL COUNCIL
DTMR	DEPARTMENT OF TRANSPORT AND MAIN ROADS
ID	INSIDE DIAMETER
OD	OUTSIDE DIAMETER
DICL	DUCTILE IRON CEMENT LINED
HDPE	HIGH DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE PIPE
PRV	PRESSURE REDUCING VALVE
DN	NOMINAL DIAMETER

ISSUED FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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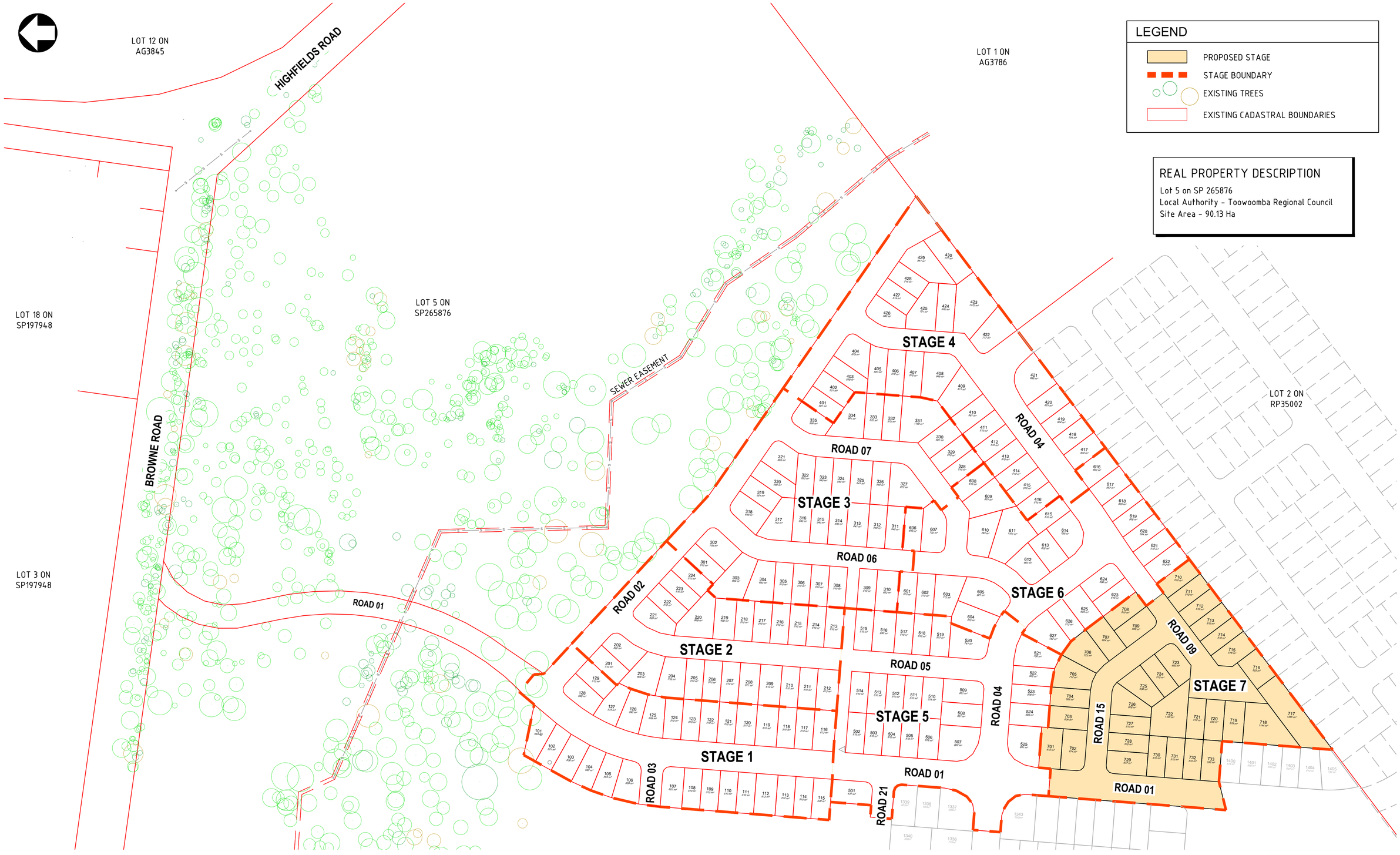
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: CONSTRUCTION NOTES

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	002	0

GENERAL



OVERALL DEVELOPMENT LAYOUT PLAN

SCALE 1:1500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APPD	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

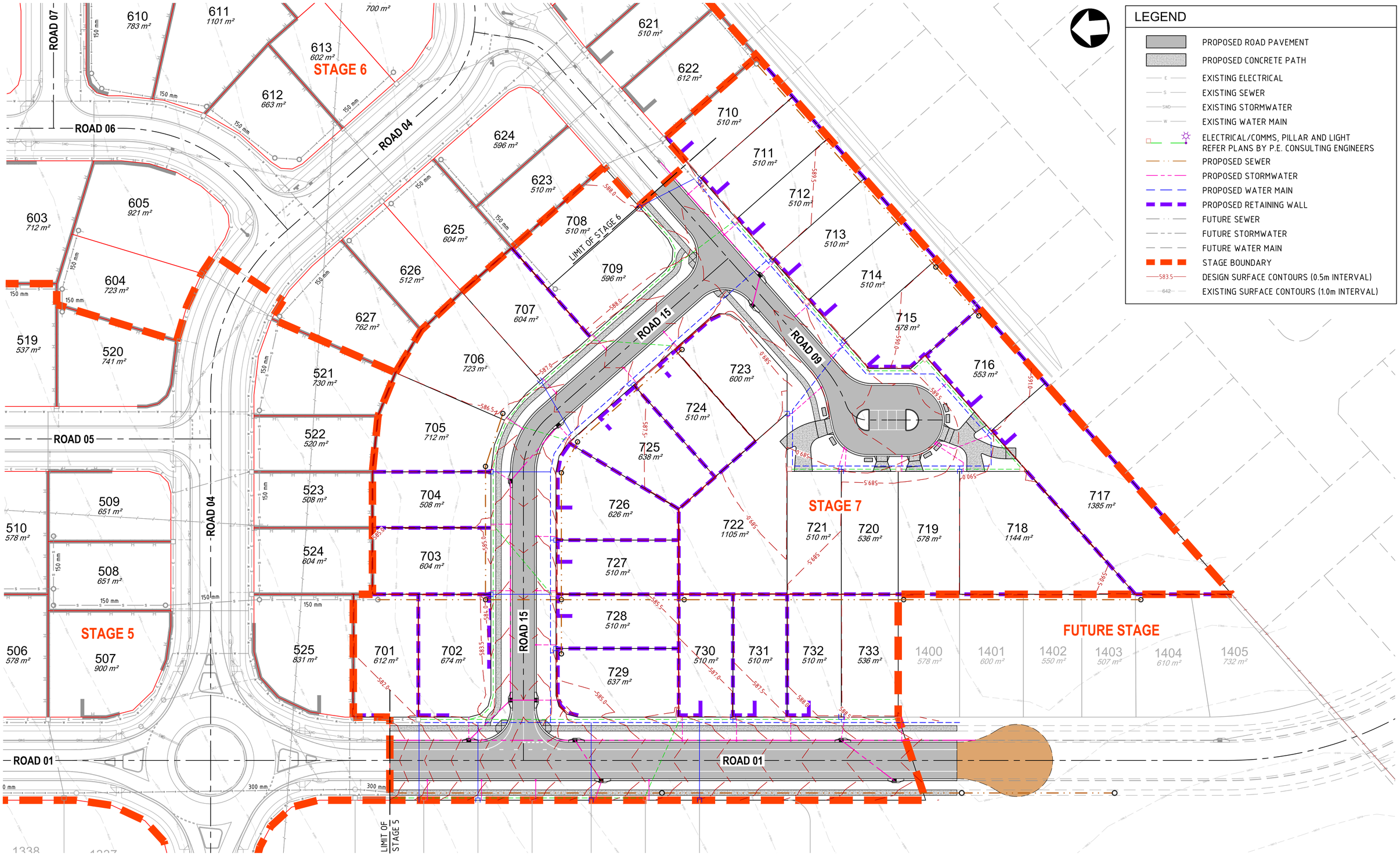
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: OVERALL LAYOUT AND STAGING PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	010	0

GENERAL



STAGE 7 DEVELOPMENT LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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CLIENT	BIRD IN HAND 3 PTY LTD
PROJECT	BOTANIC HIGHFIELDS STAGE 7
DRAWN	B ENRIGHT
CHECKED	D TAYLOR
ENGINEER	B LUSK
SURVEYOR	PARKINSON SURVEYS
DESIGNED	B ENRIGHT
HORIZ. DATUM	MGA 2020 (Z 56)
VERT. DATUM	AHD

TITLE	STAGE 7 DEVELOPMENT LAYOUT			
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	020	0

EARTHWORKS QUANTITIES - STAGE 7

TOPSOIL STRIP	6,686m³ (150mm THICK)
EARTHWORKS CUT	11,299m³
FILL REQUIRED	12,819m³
BALANCE	1,520m³

NOTES:

1. ALL VOLUMES INDICATED ARE SOLID VOLUMES.
2. ASSUMED TOPSOIL RE-SPREAD AT 150mm THICK.
3. EARTHWORKS QUANTITIES BASED ON COMPARISON BETWEEN BOXING DESIGN SURFACE AND COMPLETED EARTHWORKS SURFACE FROM STAGES 1 TO 3, REFER PLANS GS562-07.
4. REFER EARTHWORKS NOTES ON SHEET 101.
5. RETAINING WALL HEIGHTS NOMINATED IS THE APPROXIMATE DIFFERENCE BETWEEN EARTHWORKS LEVELS ONLY. THE FINISHED RETAINING WALL HEIGHT SHOULD SIT A MINIMUM 100mm PROUD OF THE FINISHED SURFACE LEVEL TO ALLOW FOR FUTURE CUT/FILL OF LOTS.
6. REFER TO LANDSCAPE PLANS BY SAUNDERS HAVILL FOR DETAILS ON RETAINING WALL FINISH.
7. MINIMUM 0.5% FALL REQUIRED DIAGONALLY ACROSS ALL BLOCKS.

ALLOTMENT EARTHWORKS PREVIOUSLY SHOWN PLAN SET GS562-06 STAGE 6

ALLOTMENT EARTHWORKS PREVIOUSLY SHOWN PLAN SET GS562-05 STAGE 5

STAGE 5 · STAGE 6 · STAGE 7 · FUTURE STAGE

ROAD 01 · ROAD 04 · ROAD 05 · ROAD 09 · ROAD 15

LIMIT OF STAGE 5 · LIMIT OF STAGE 6 · LIMIT OF STAGE 7

LEGEND

- CUT DEPTH >3m
- CUT DEPTH 2m to 3m
- CUT DEPTH 1m to 2m
- CUT DEPTH 0.1m to 1m
- CUT/FILL 0.1m FROM NATURAL
- FILL DEPTH 0.1m to 1m
- FILL DEPTH 1m to 2m
- FILL DEPTH 2m to 3m
- FILL DEPTH >3m
- EXISTING RETAINING WALLS (POSTS DENOTE LOW SIDE)
- PROPOSED A GRADE SANDSTONE BLOCK RET. WALLS (POSTS DENOTE LOW SIDE)
- PROPOSED TEXTURED CONCRETE SLEEPER RET. WALLS (POSTS DENOTE LOW SIDE)
- DESIGN SURFACE CONTOURS (0.5m)
- EXISTING SURFACE CONTOURS (1m)
- BATTERS (SLOPES AS NOTED)

0 5 10 15 20m

SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

EARTHWORKS LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

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0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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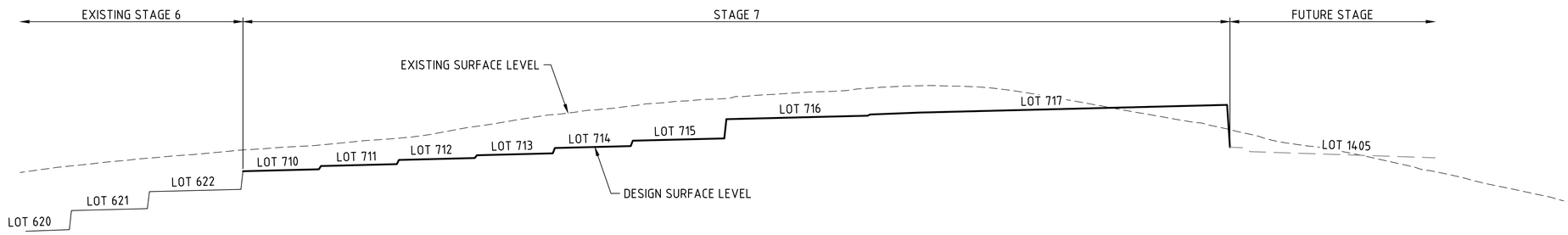
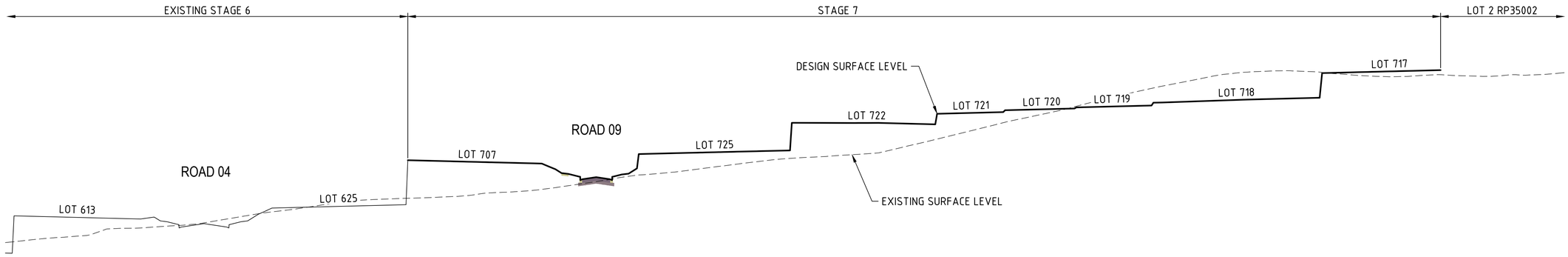
CLIENT: BIRD IN HAND 3 PTY LTD				
PROJECT: BOTANIC HIGHFIELDS STAGE 7				
DRAWN: B ENRIGHT	CHECKED: D TAYLOR	ENGINEER: B LUSK	SURVEYOR: PARKINSON SURVEYS	
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56)	VERT. DATUM: AHD

TITLE: EARTHWORKS LAYOUT PLAN				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-07	SHEET No: 100	REVISION: 0

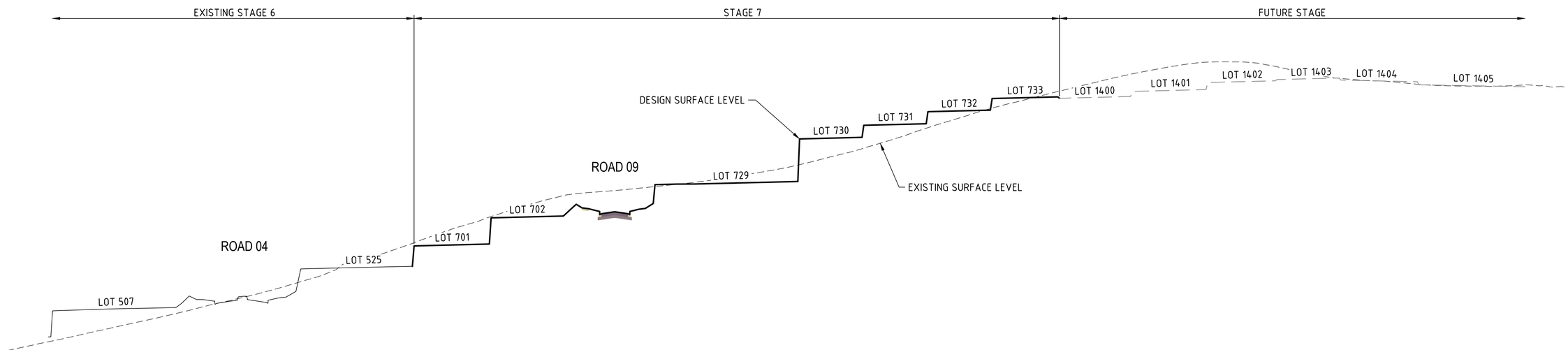
GENERAL



SECTION A
SCALE 1:500(H), 1:100(V) 100



SECTION B
SCALE 1:500(H), 1:100(V) 100



SECTION C
SCALE 1:500(H), 1:100(V) 100

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

0 1 2 3 4m
SCALE 1:100 (A1)
SCALE 1:200 (A3)

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FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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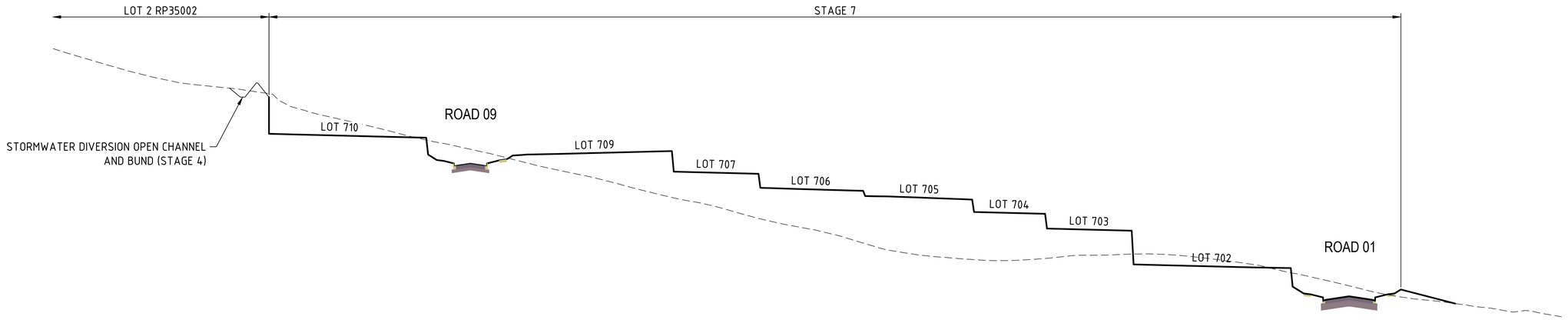
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

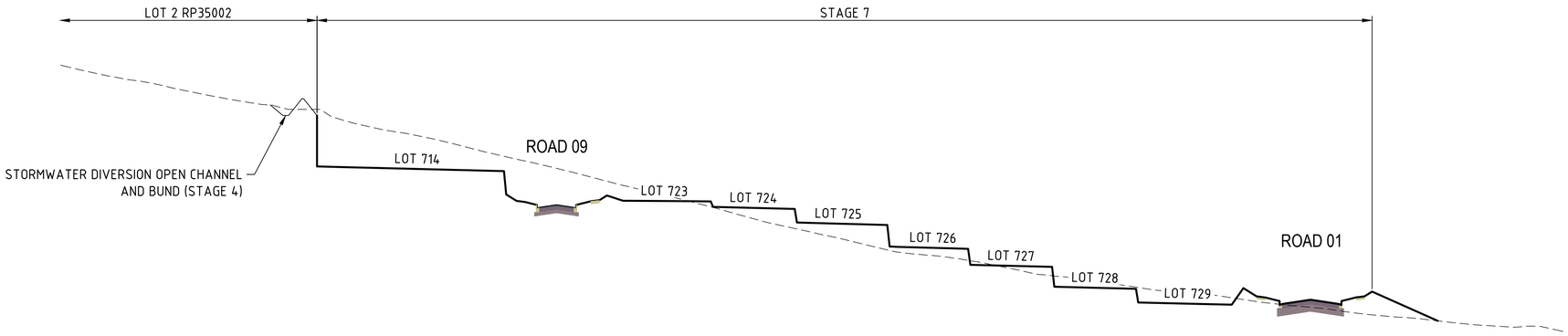
TITLE: EARTHWORKS SECTIONS
SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	101	0

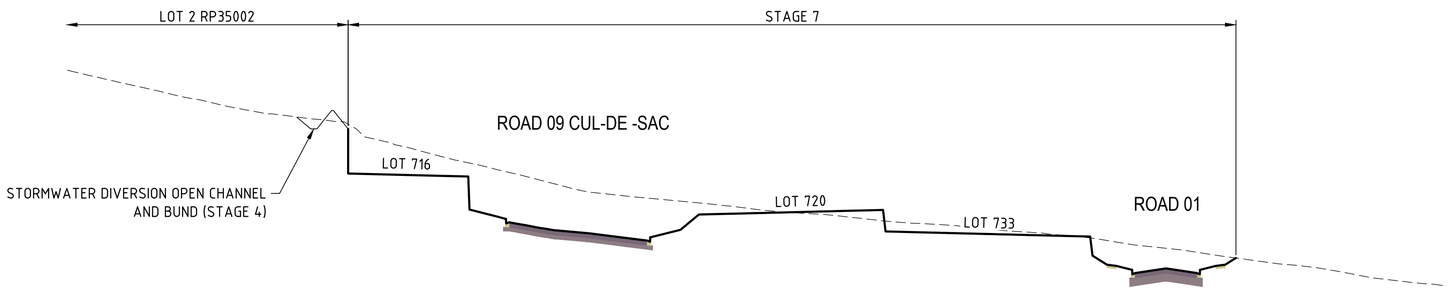
GENERAL



SECTION D
SCALE 1:500(H), 1:100(V)



SECTION E
SCALE 1:500(H), 1:100(V)



SECTION F
SCALE 1:500(H), 1:100(V)

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

0 1 2 3 4m
SCALE 1:100 (A1)
SCALE 1:200 (A3)

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FOR CONSTRUCTION

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RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD
B ENRIGHT			

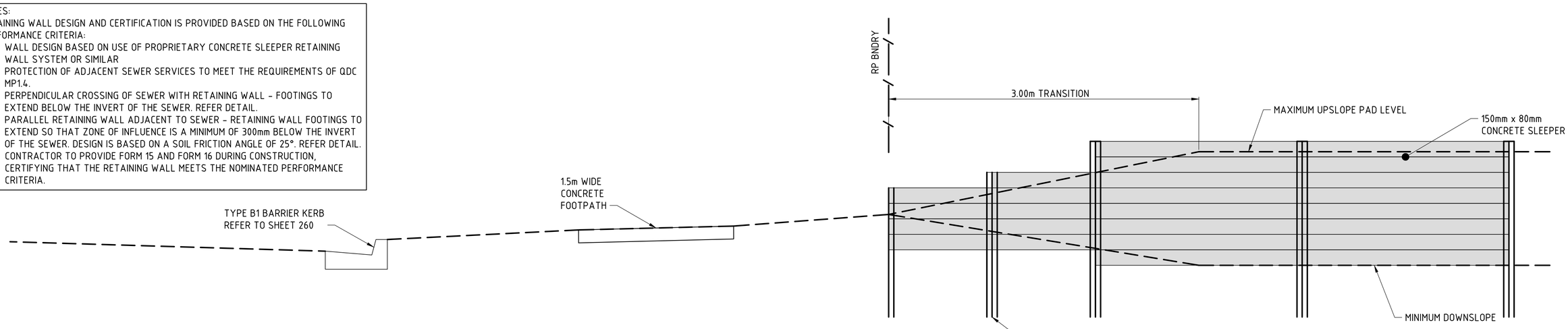
TITLE: EARTHWORKS SECTIONS
SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	102	0

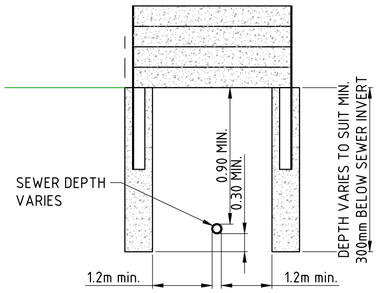
GENERAL

NOTES:
RETAINING WALL DESIGN AND CERTIFICATION IS PROVIDED BASED ON THE FOLLOWING PERFORMANCE CRITERIA:

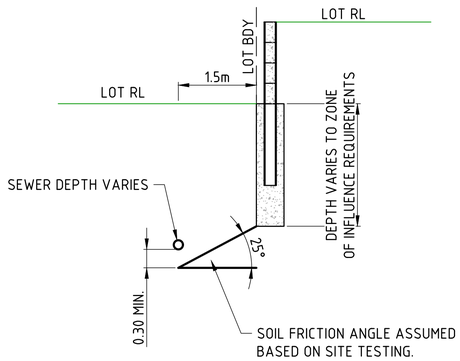
- WALL DESIGN BASED ON USE OF PROPRIETARY CONCRETE SLEEPER RETAINING WALL SYSTEM OR SIMILAR
- PROTECTION OF ADJACENT SEWER SERVICES TO MEET THE REQUIREMENTS OF QDC MP1.4.
- PERPENDICULAR CROSSING OF SEWER WITH RETAINING WALL - FOOTINGS TO EXTEND BELOW THE INVERT OF THE SEWER. REFER DETAIL.
- PARALLEL RETAINING WALL ADJACENT TO SEWER - RETAINING WALL FOOTINGS TO EXTEND SO THAT ZONE OF INFLUENCE IS A MINIMUM OF 300mm BELOW THE INVERT OF THE SEWER. DESIGN IS BASED ON A SOIL FRICTION ANGLE OF 25°. REFER DETAIL.
- CONTRACTOR TO PROVIDE FORM 15 AND FORM 16 DURING CONSTRUCTION, CERTIFYING THAT THE RETAINING WALL MEETS THE NOMINATED PERFORMANCE CRITERIA.



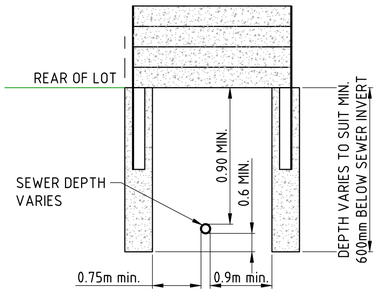
RETAINING WALL BOUNDARY STEP-DOWN DETAILS
SCALE 1:50



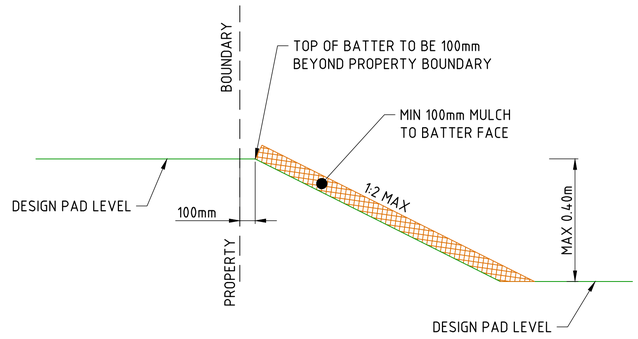
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 1
SCALE N.T.S



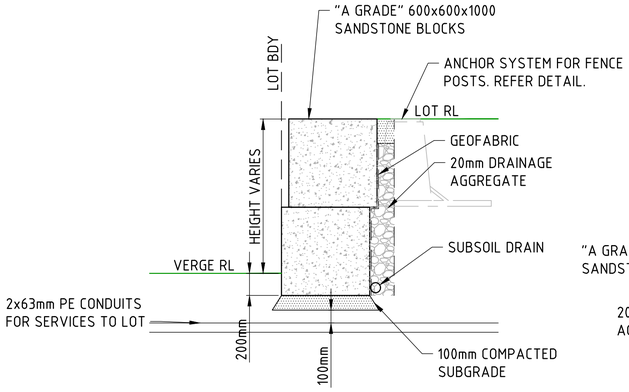
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 2
SCALE N.T.S



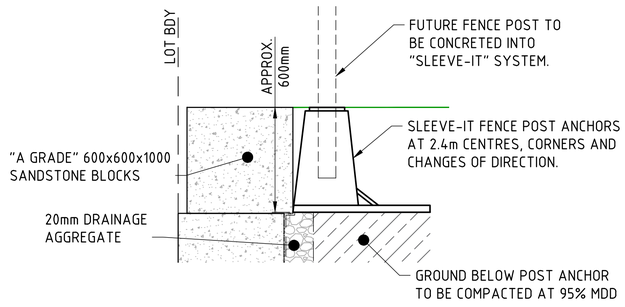
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 3
SCALE N.T.S



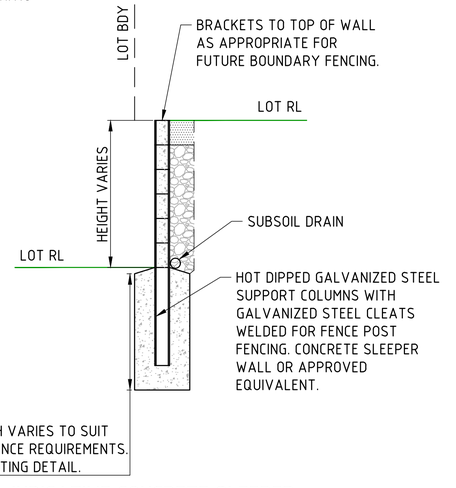
TYPICAL BATTER DETAIL (IF REQUIRED)
SCALE N.T.S



SANDSTONE BLOCK WALL AND SERVICE CONDUIT DETAIL
SCALE N.T.S



ANCHOR FOR FUTURE FENCE POSTS TO SANDSTONE BLOCK WALL DETAIL
SCALE N.T.S



INDICATIVE CONCRETE SLEEPER RETAINING WALL FOOTING DETAILS
SCALE N.T.S

REFER DRAWINGS FOR DURAWALL BY CASEDC FOR STRUCTURAL CERTIFICATION.

ISSUED
FOR CONSTRUCTION

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

0 0.1 0.2 0.3 0.4m
SCALE 1:10 (A1)
SCALE 1:20 (A3)

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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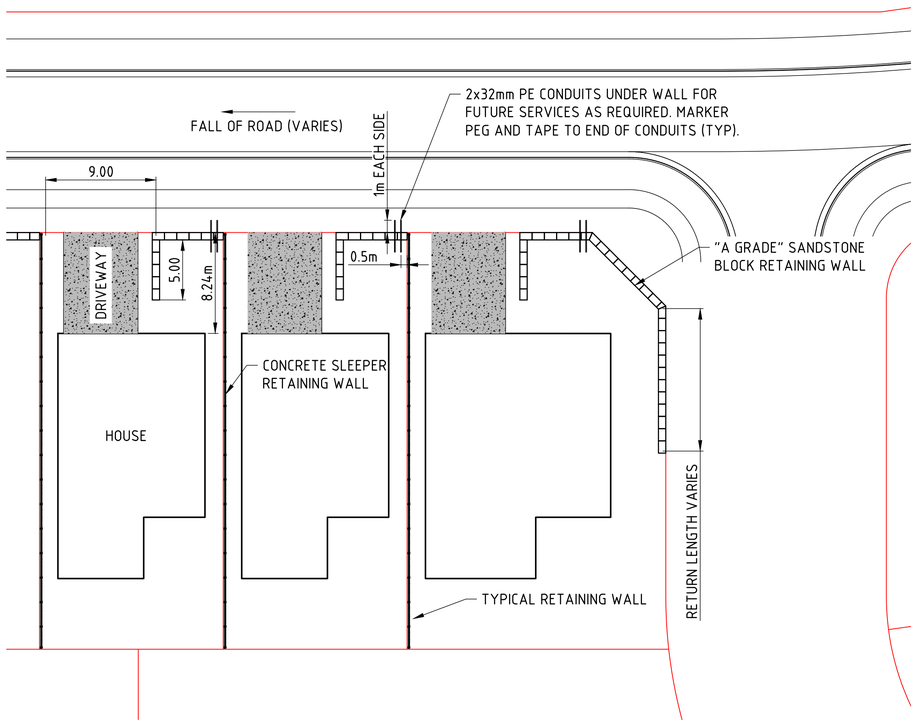
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

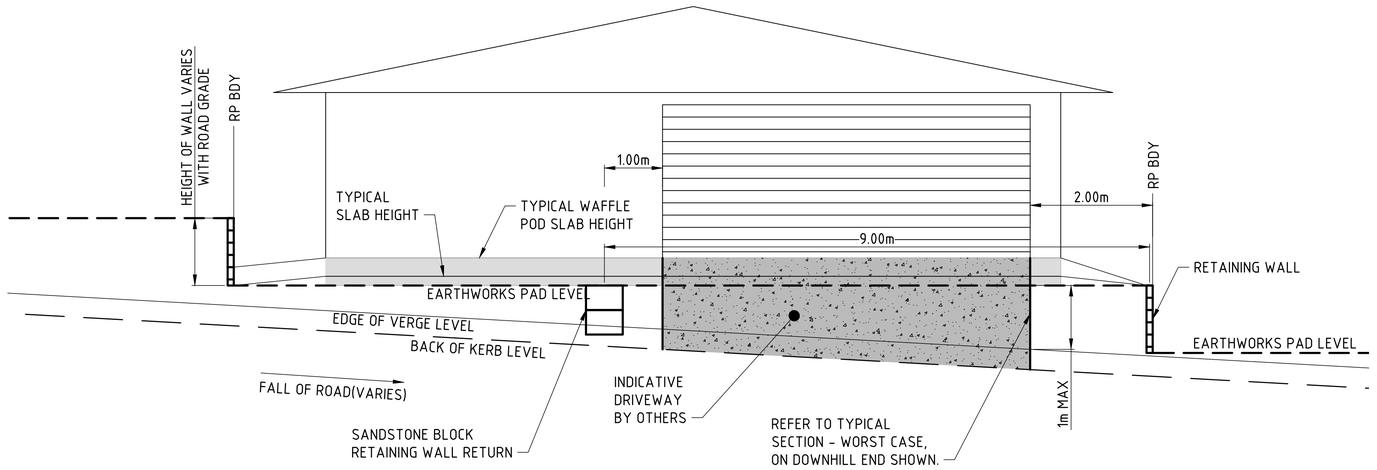
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: EARTHWORKS TYPICAL RETAINING WALL

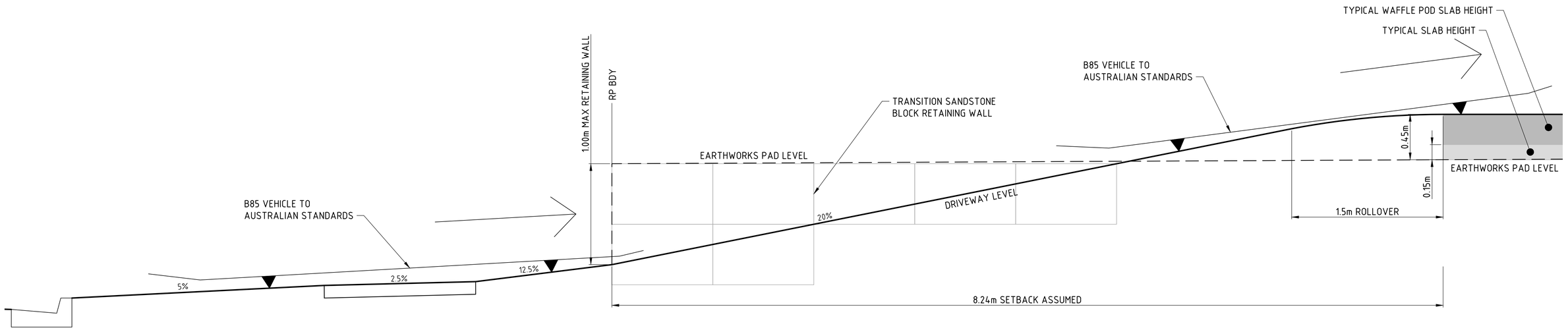
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	110	0



TYPICAL HOUSE LAYOUT PLAN
SCALE 1:250



ELEVATION - TYPICAL EARTHWORKS AND DRIVEWAY ARRANGEMENT
SCALE 1:50



TYPICAL CROSS SECTION - WORST CASE
SCALE 1:20

0 2.5 5 7.5 10m — SCALE 1:250 (A1) SCALE 1:500 (A3)

0 0.5 1.0 1.5 2.0m — SCALE 1:50 (A1) SCALE 1:100 (A3)

0 0.2 0.4 0.6 0.8m — SCALE 1:20 (A1) SCALE 1:40 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
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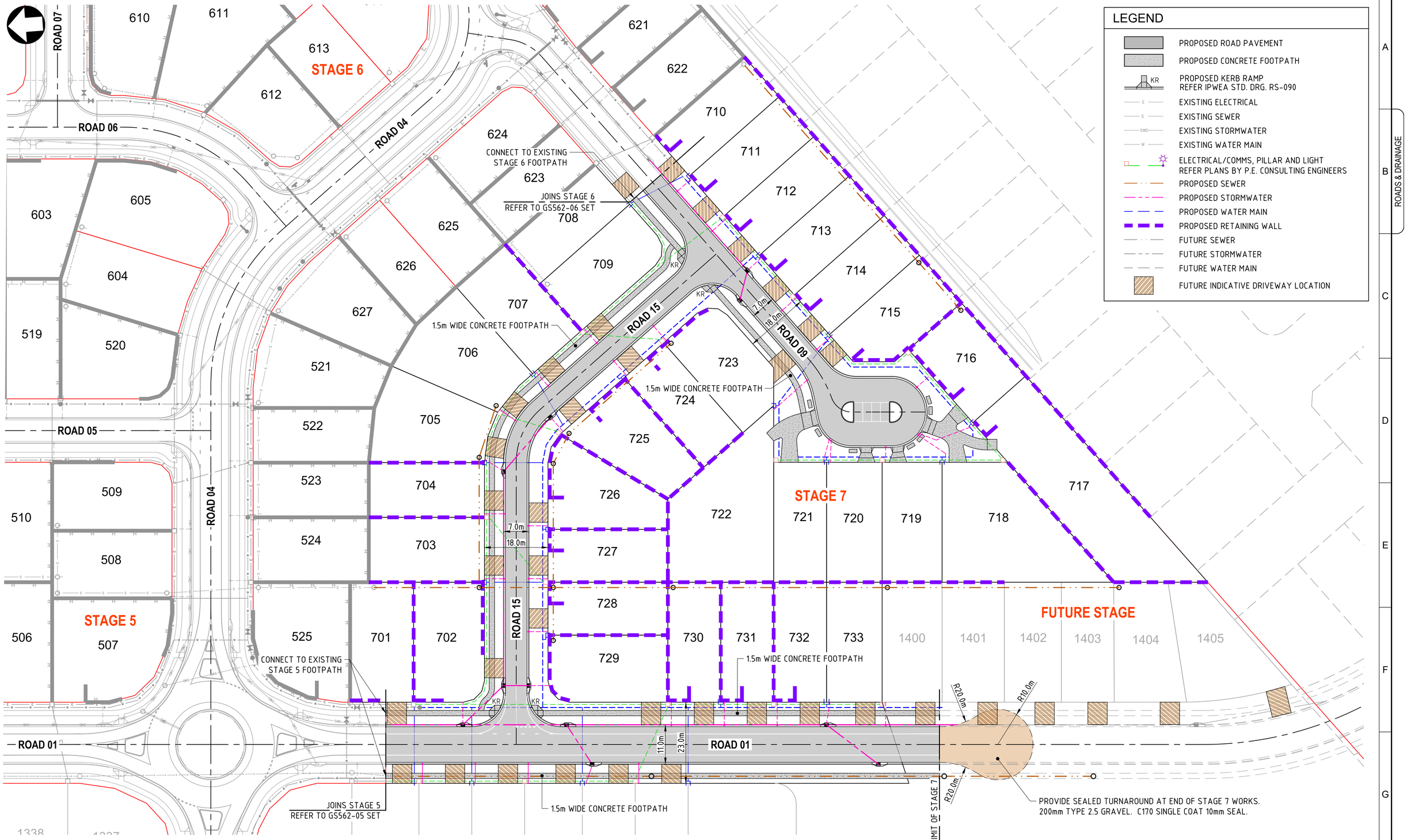
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: EARTHWORKS
TYPICAL FRONT RETAINING WALL

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	111	0

GENERAL



0 5 10 15 20m

SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

ROADS AND FOOTPATHS LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
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Engineer	Ben Lusk	RPEQ Number	13132
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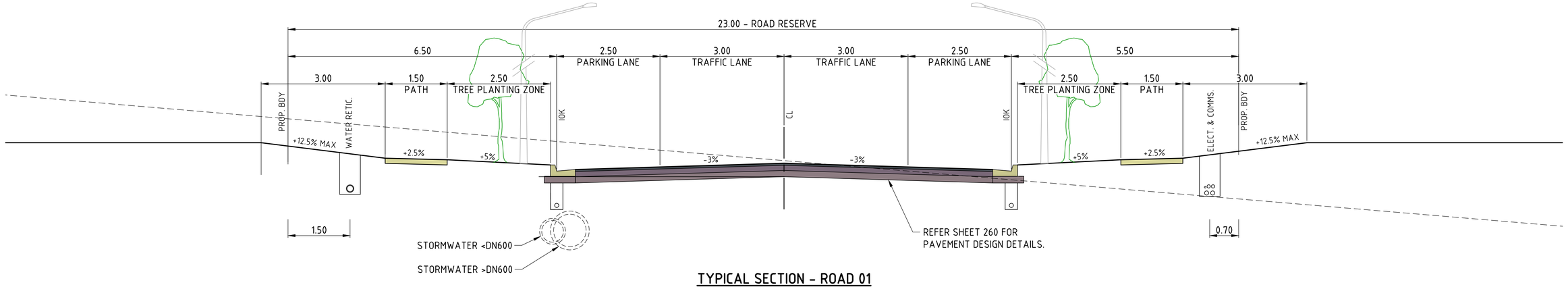
CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 7			
DRAWN B ENRIGHT	CHECKED D TAYLOR	ENGINEER B LUSK	SURVEYOR PARKINSON SURVEYS
DESIGNED B ENRIGHT			HORIZ. DATUM MGA 2020 (Z 56) VERT. DATUM AHD

TITLE: ROADS AND FOOTPATHS DETAIL PLAN

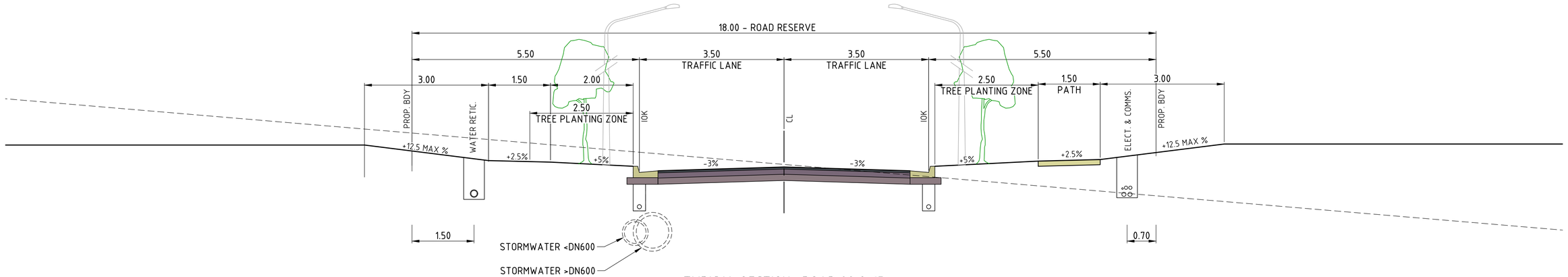
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	200	0

ROADS & DRAINAGE



TYPICAL SECTION - ROAD 01

SCALE 1:50



TYPICAL SECTION- ROAD 09 & 15

SCALE 1:50

NOTE:
TURFING TO EXTEND TO FULL VERGE WIDTH.

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR CONSTRUCTION

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0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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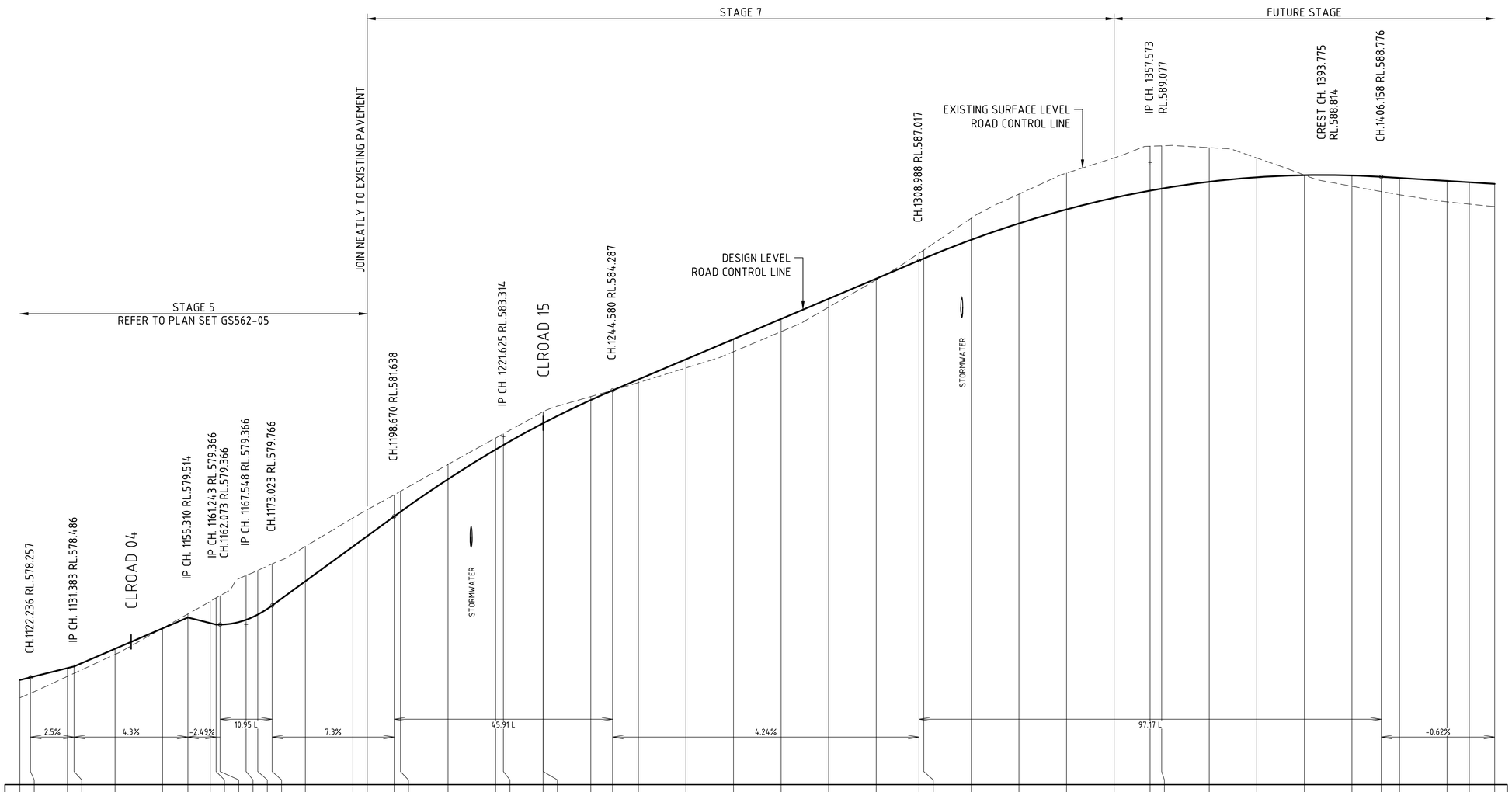
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROADS TYPICAL SECTIONS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	210	0

ROADS & DRAINAGE



CHAINAGE	CUT / FILL DEPTH	EXISTING SURFACE LEVEL ROAD CONTROL LINE	LIP OF KERB LEFT	LIP OF KERB RIGHT	DESIGN LEVEL ROAD CONTROL LINE
1120	0.373	577.826			578.199
1122.236	0.337	577.920			578.257
1130	0.174	578.277			578.451
1131.383	0.145	578.341			578.486
1140	0.118	578.738			578.856
1150	-0.004	579.290			579.285
1155.31	-0.075	579.588			579.514
1160	-0.457	579.853			579.397
1161.243	-0.562	579.928			579.366
1162.073	-0.607	579.973			579.366
1167.548	-0.932	580.398			579.466
1170	-0.927	580.502			579.575
1173.023	-0.875	580.640			579.766
1180	-0.733	581.008			580.275
1190	-0.601	581.606	581.073	581.072	581.005
1193	-0.553	581.777	581.486	581.486	581.224
1198.67	-0.453	582.091	581.486	581.486	581.638
1200	-0.432	582.166	581.583	581.583	581.734
1210	-0.309	582.731	582.271	582.271	582.422
1220	-0.242	583.285	582.892	582.892	583.043
1221.625	-0.237	583.375	582.986	582.986	583.138
1229.983	-0.243	583.840	583.445	583.445	583.597
1230	-0.243	583.841	583.446	583.446	583.598
1240	-0.072	584.158	583.934	583.934	584.086
1244.58	-0.003	584.290	584.135	584.135	584.287
1250	0.066	584.451	584.365	584.365	584.517
1260	0.181	584.759	584.789	584.789	584.940
1270	0.264	585.101	585.213	585.213	585.364
1280	0.267	585.521	585.637	585.637	585.788
1290	0.177	586.035	586.061	586.061	586.212
1300	0.027	586.609	586.485	586.485	586.636
1308.988	-0.151	587.169	586.866	586.866	587.017
1310	-0.177	587.237	586.908	586.908	587.060
1320	-0.454	587.908	587.302	587.302	587.454
1330	-0.615	588.413	587.646	587.646	587.798
1340	-0.763	588.854	587.940	587.940	588.092
1350	-0.839	589.175	588.184	588.184	588.335
1357.573	-0.933	589.420			588.487
1360	-0.899	589.429			588.529
1370	-0.717	589.390	587.302		588.673
1380	-0.406	589.173	587.646		588.767
1390	-0.002	588.813	587.940		588.811
1400	0.227	588.578	588.184		588.805
1406.158	0.309	588.467			588.776
1410	0.353	588.399			588.752
1420	0.439	588.251			588.690
1424.661	0.460	588.202			588.662
1430	0.477	588.152			588.629

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

ROAD 01 LONGITUDINAL SECTION

SCALE 1:500(H), 1:50(V)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
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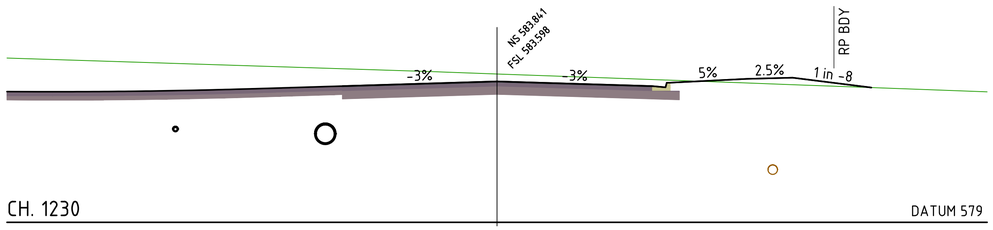
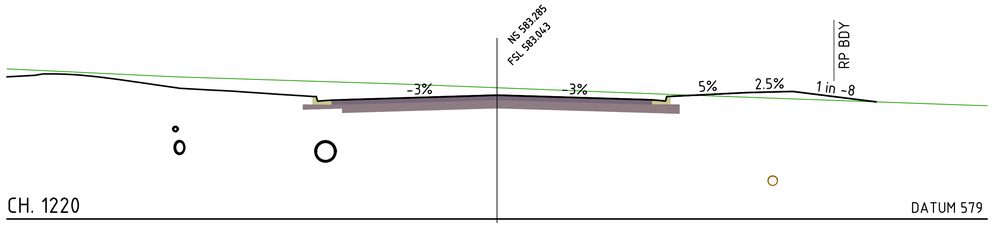
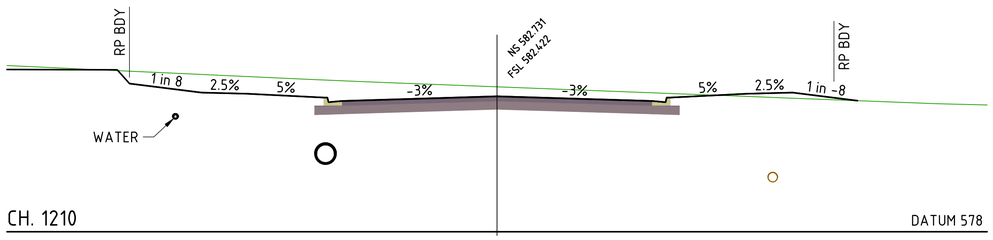
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

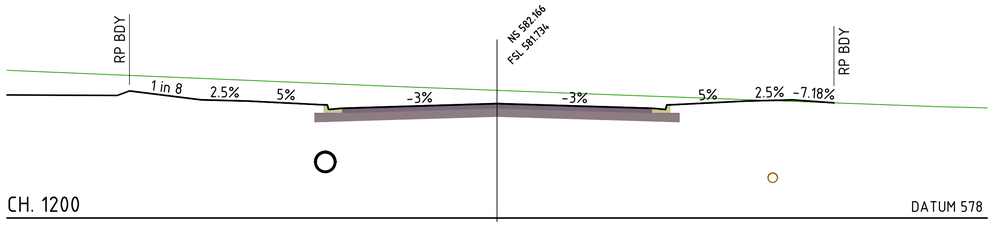
TITLE: ROAD 01 LONGITUDINAL SECTION
SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-07 | SHEET No: 220 | REVISION: 0

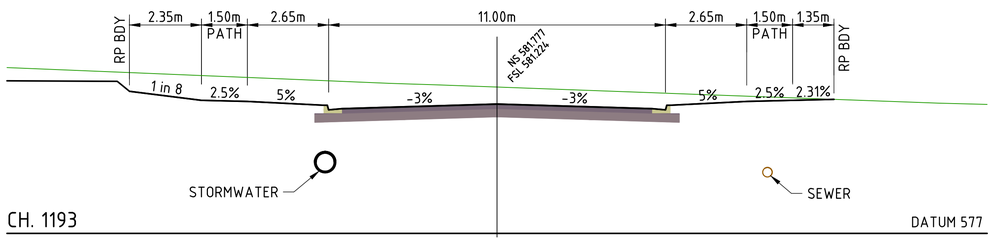
ROADS & DRAINAGE

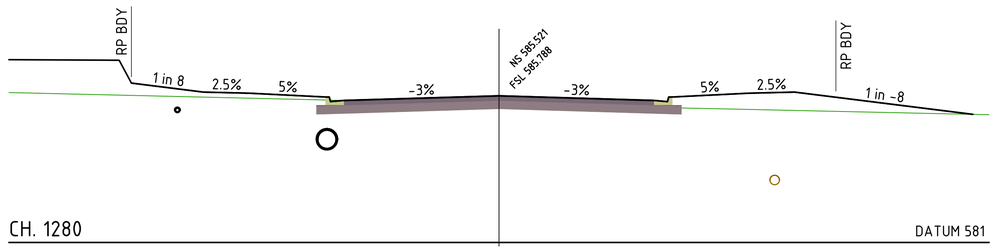


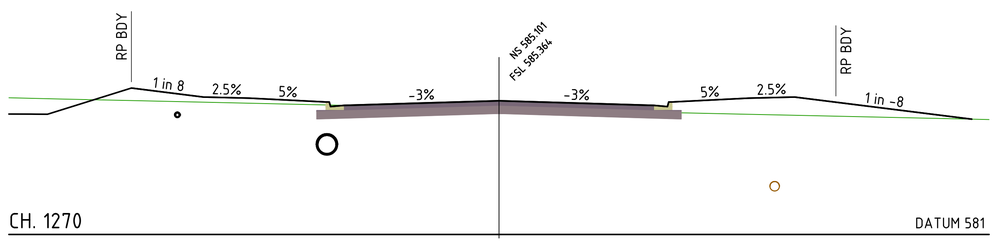


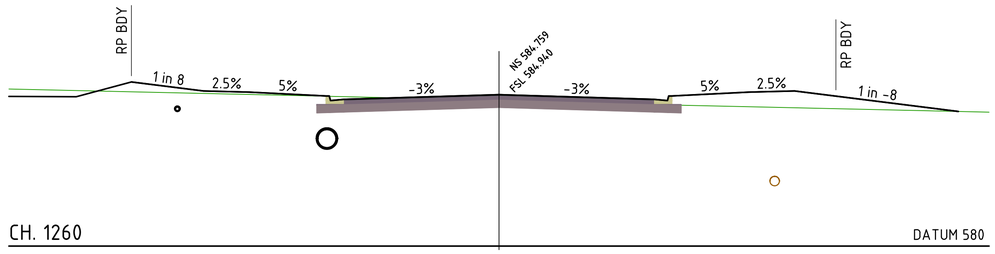


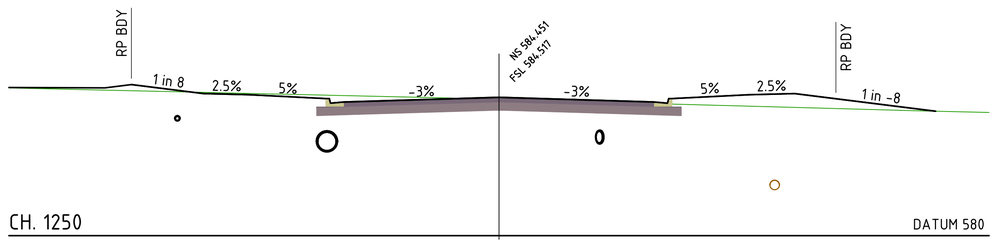


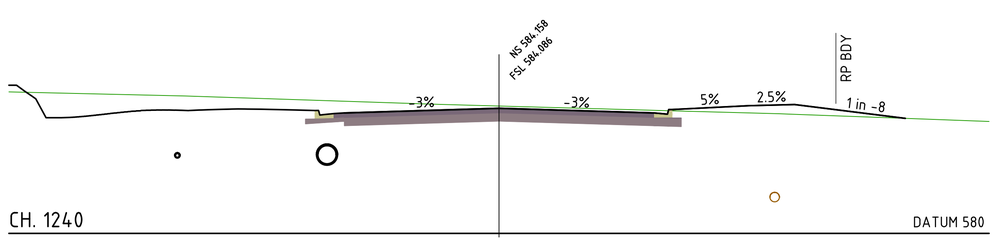












ROAD 01 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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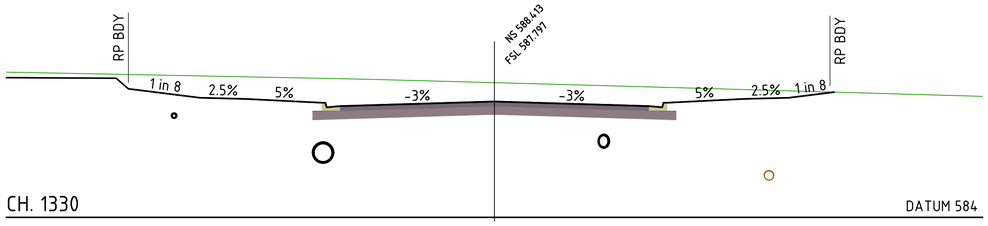
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

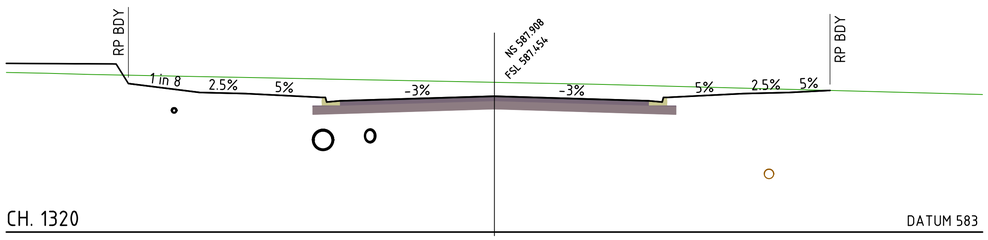
TITLE: ROAD 01 CROSS SECTIONS SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	221	0

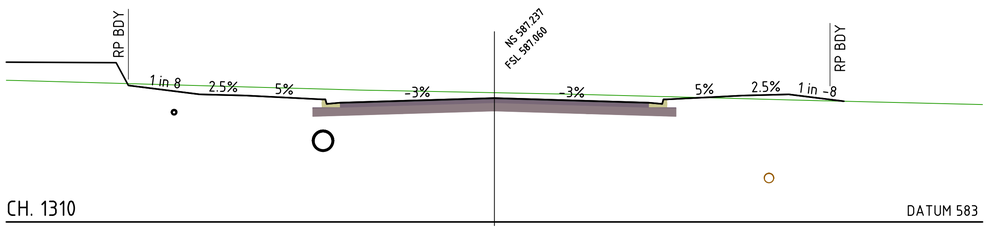
ROADS & DRAINAGE



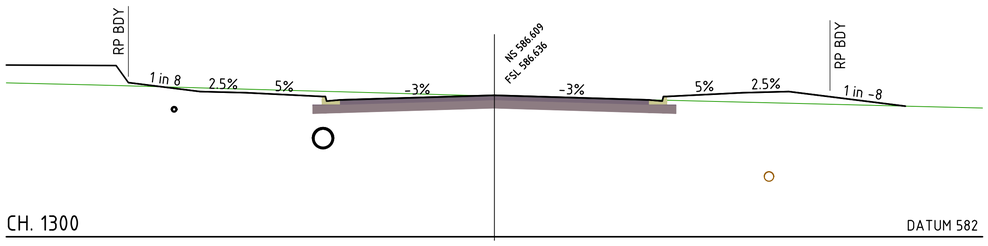
CH. 1330 DATUM 584



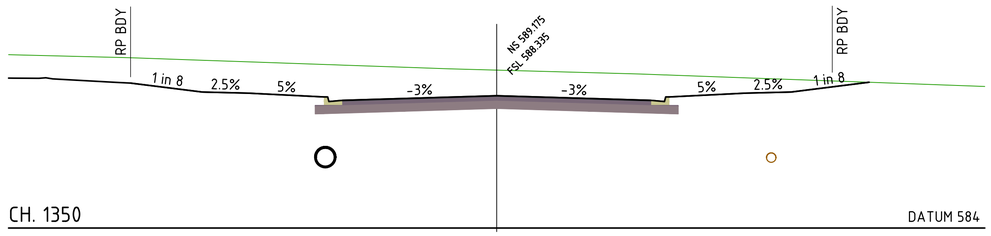
CH. 1320 DATUM 583



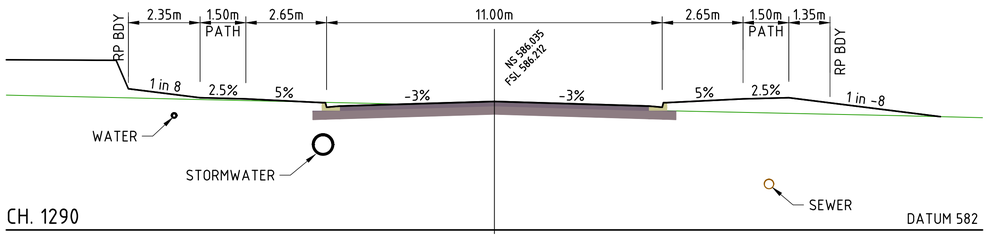
CH. 1310 DATUM 583



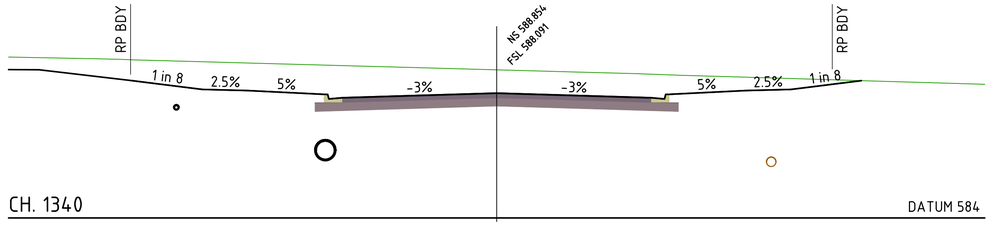
CH. 1300 DATUM 582



CH. 1350 DATUM 584



CH. 1290 DATUM 582



CH. 1340 DATUM 584

ROAD 01 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APPD	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
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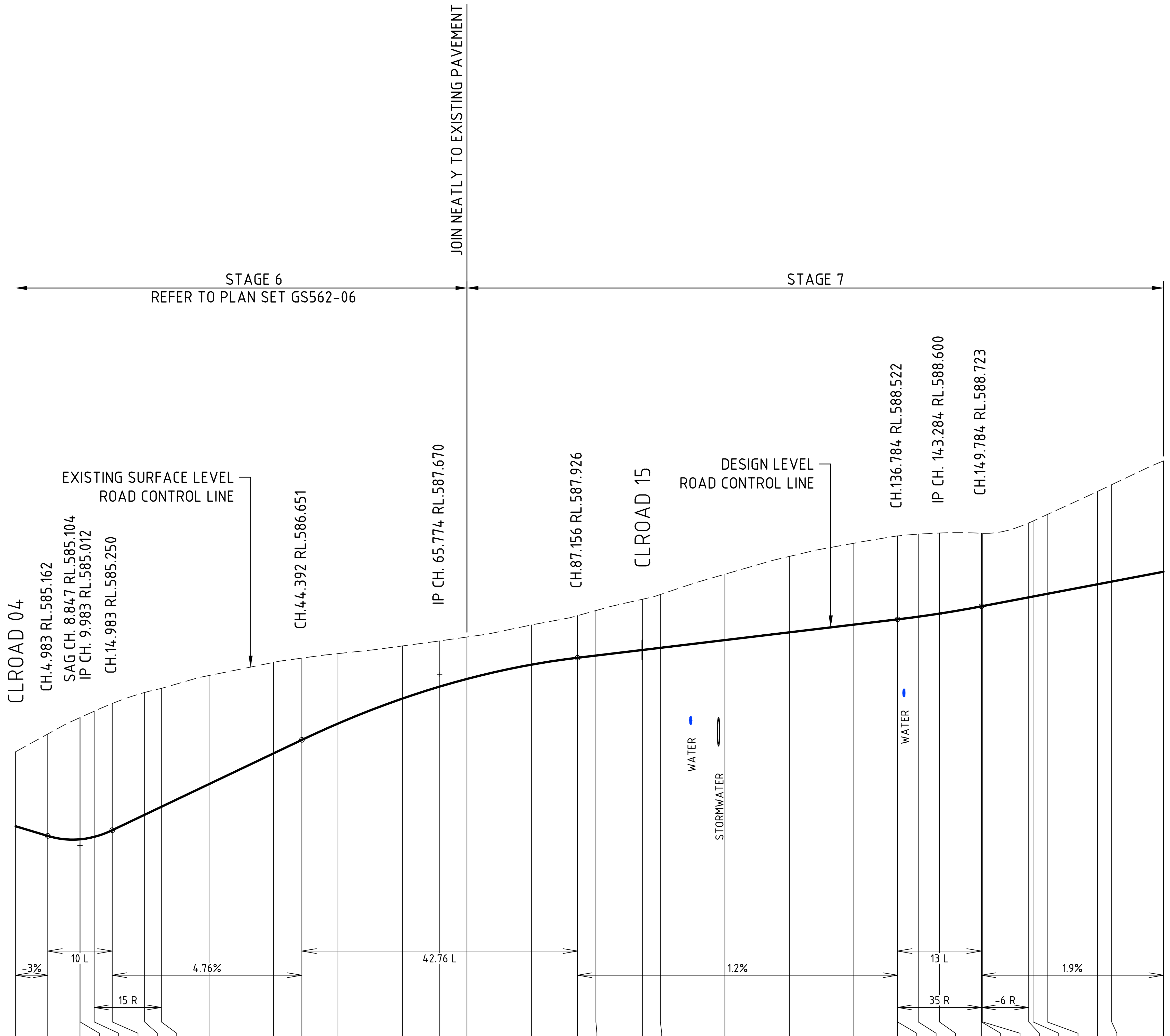
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROAD 01 CROSS SECTIONS SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	222	0

ROADS & DRAINAGE



CHAINAGE	DESIGN LEVEL ROAD CONTROL LINE	LIP OF KERB RIGHT	LIP OF KERB LEFT	EXISTING SURFACE LEVEL ROAD CONTROL LINE	CUT / FILL DEPTH
0	585.311			586.468	-1.156
4.983	585.162			586.742	-1.580
9.983	585.109			586.997	-1.888
10	585.109			586.998	-1.888
12.181	585.147			587.096	-1.949
14.983	585.250			587.216	-1.966
20	585.489			587.387	-1.898
22.609	585.613			587.450	-1.837
30	585.966			587.650	-1.685
40	586.442			587.854	-1.412
44.392	586.651			587.920	-1.269
50	586.905			587.991	-1.085
60	587.293			588.109	-0.816
65.774	587.479			588.188	-0.708
70	587.598	587.506	587.506	588.248	-0.650
80	587.819	587.728	587.728	588.435	-0.616
87.156	587.926		587.835	588.579	-0.653
90	587.960		587.869	588.659	-0.698
97.209	588.047		587.956	588.834	-0.787
100	588.080		587.989	588.907	-0.827
110	588.200	588.109	588.109	589.222	-1.022
120	588.320	588.229	588.229	589.498	-1.178
130	588.440	588.349	588.349	589.703	-1.263
136.764	588.522	588.429	588.430	589.816	-1.294
136.784	588.522	588.430	588.430	589.816	-1.294
140	588.563	588.453	588.480	589.844	-1.281
143.284	588.611	588.473	588.537	589.862	-1.251
149.784	588.723	588.513	589.096	589.858	-1.134
149.81	588.724	588.513	589.101	589.857	-1.134
150	588.727	588.515	589.064	589.857	-1.129
157.132	588.863	588.632	588.697	590.018	-1.155
157.807	588.876	588.637	588.724	590.048	-1.172
160	588.917	588.659	588.815	590.148	-1.231
167.807	589.066	588.816	589.141	590.507	-1.441
170	589.107	588.878	589.233	590.611	-1.504
178.031	589.260			590.980	-1.720

ROAD 09 LONGITUDINAL SECTION

SCALE 1:500(H), 1:50(V)

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng
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ABN 81 150 773 961
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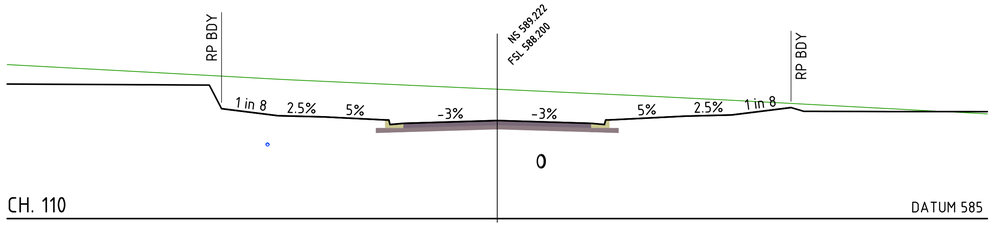
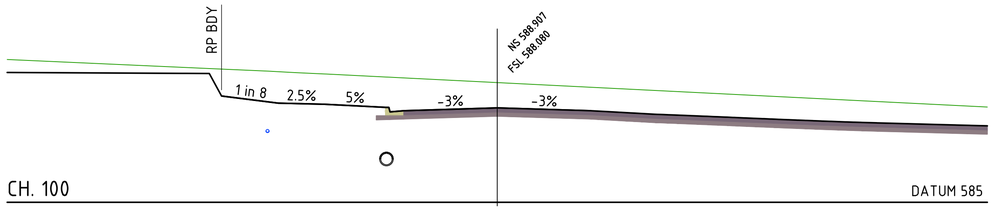
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | DESIGNED: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROAD 09 LONGITUDINAL SECTION
SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-07 | SHEET No: 223 | REVISION: 0

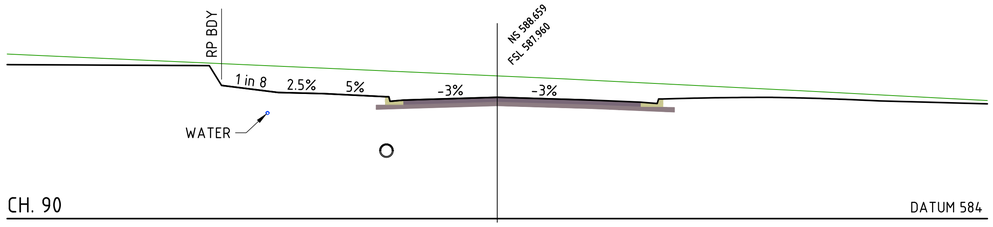
ROADS & DRAINAGE



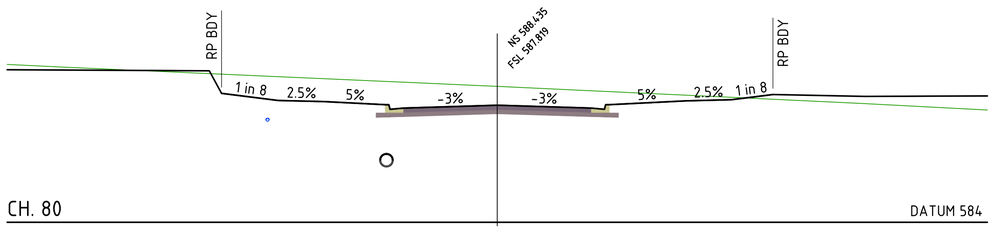
CH. 110 DATUM 585



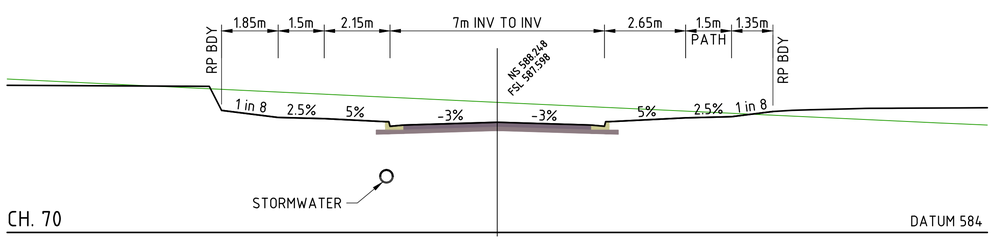
CH. 100 DATUM 585



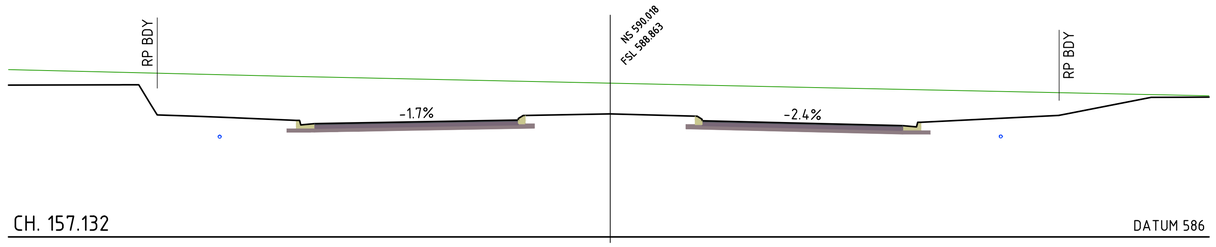
CH. 90 DATUM 584



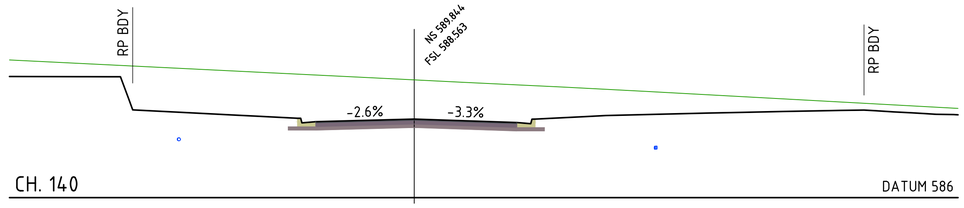
CH. 80 DATUM 584



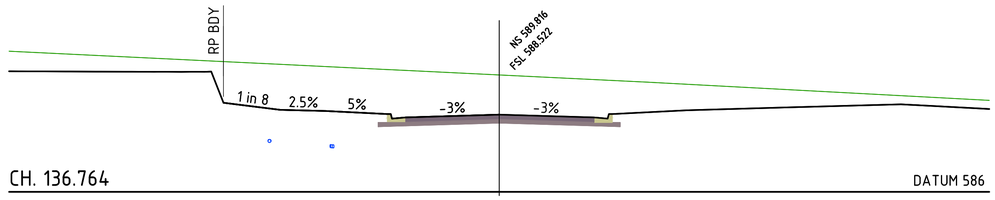
CH. 70 DATUM 584



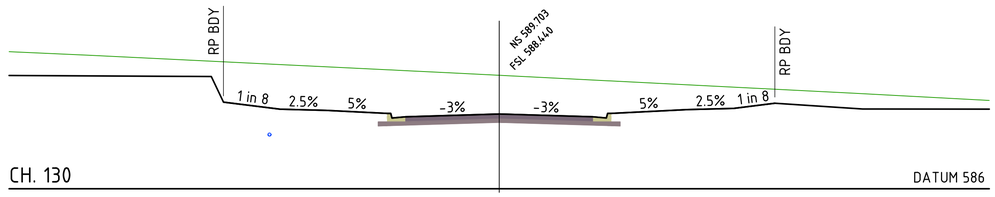
CH. 157.132 DATUM 586



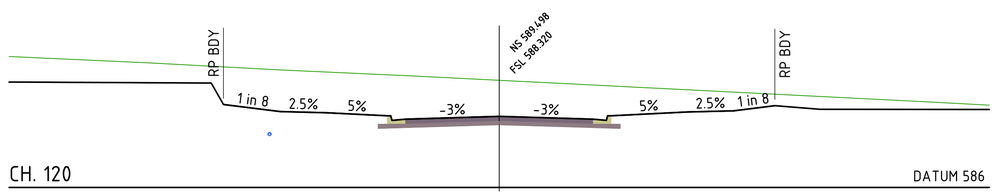
CH. 140 DATUM 586



CH. 136.764 DATUM 586



CH. 130 DATUM 586



CH. 120 DATUM 586

ROAD 09 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
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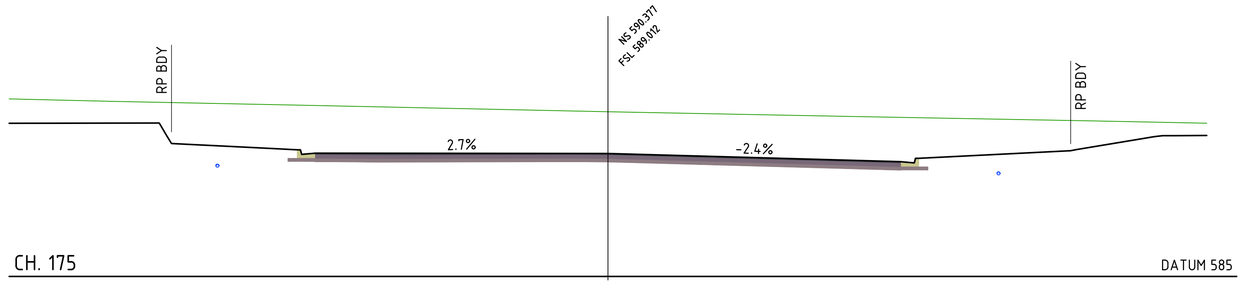
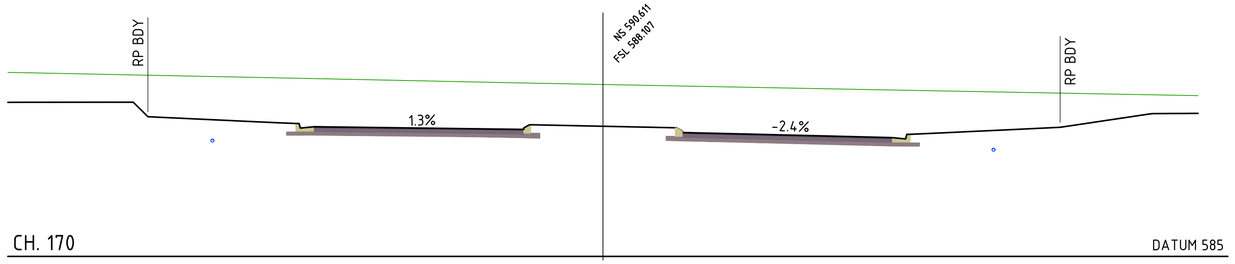
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

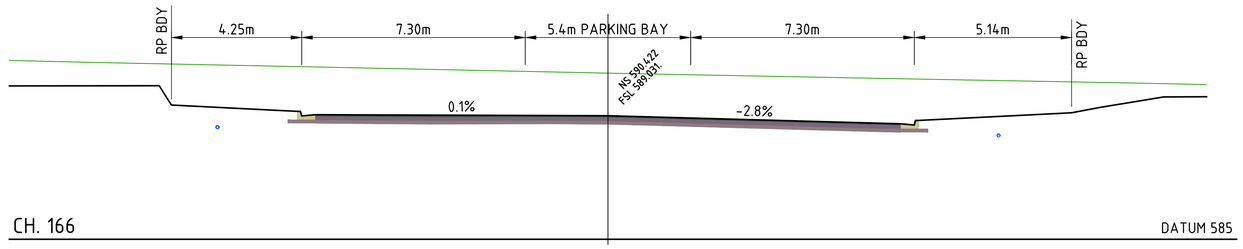
TITLE: ROAD 09 CROSS SECTIONS SHEET 1 OF 2

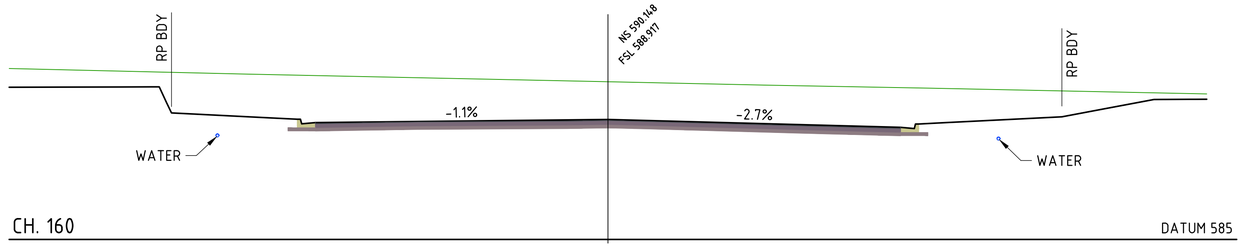
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	224	0

ROADS & DRAINAGE









ROAD 09 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

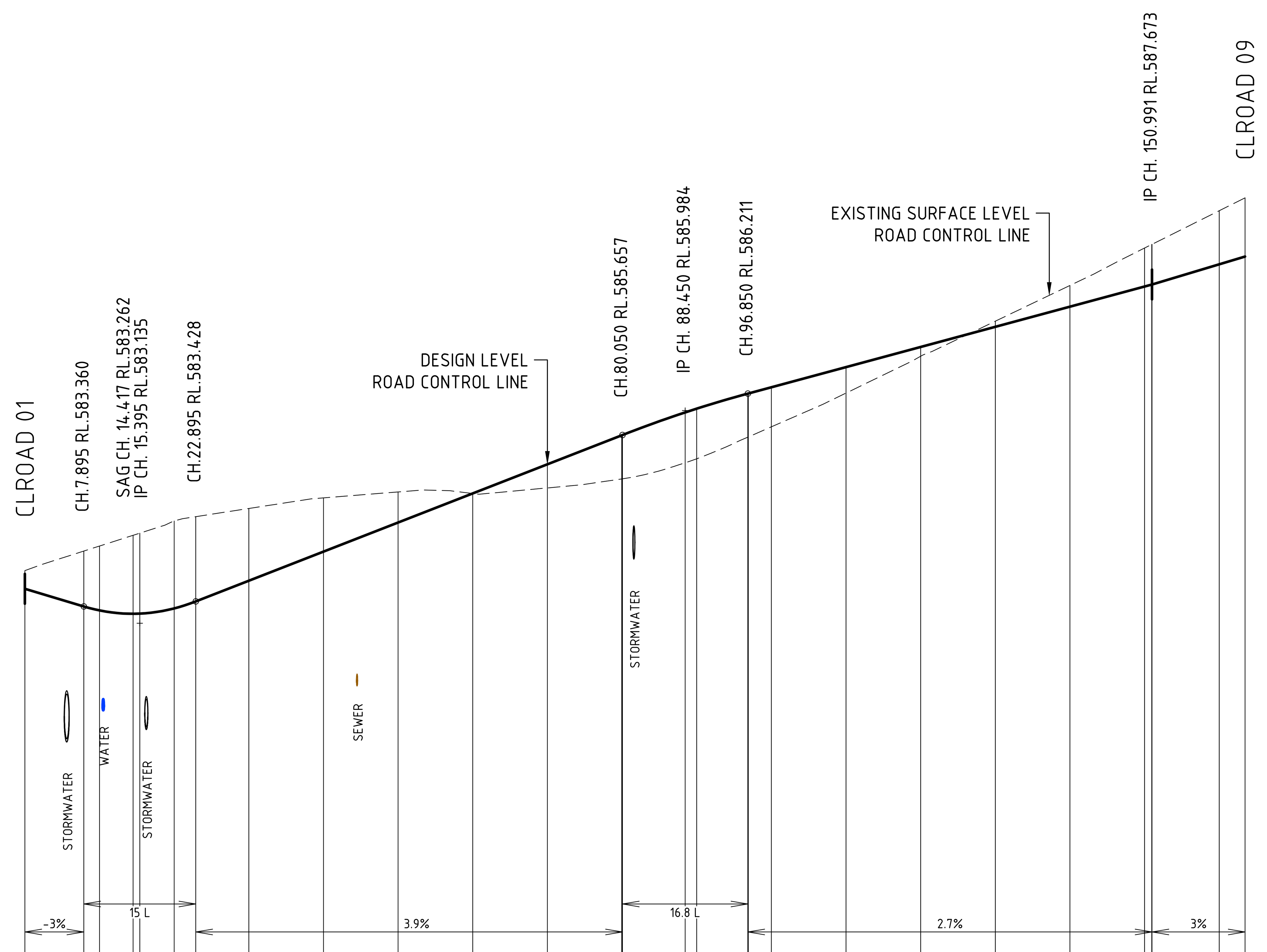
RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT				
BIRD IN HAND 3 PTY LTD				
PROJECT				
BOTANIC HIGHFIELDS STAGE 7				
DRAWN	CHECKED	ENGINEER	SURVEYOR	
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS	
DESIGNED			HORIZ. DATUM	VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56)	AHD

TITLE				
ROAD 09 CROSS SECTIONS SHEET 2 OF 2				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	225	0



VERT. CURVE LENGTH
VERT. GEOMETRY
HORZ. GEOMETRY
DATUM RL 578

CHAINAGE	DESIGN LEVEL ROAD CONTROL LINE	LIP OF KERB RIGHT	LIP OF KERB LEFT	EXISTING SURFACE LEVEL ROAD CONTROL LINE	CUT / FILL DEPTH
0	583.597			583.840	-0.243
7.895	583.360			584.102	-0.742
10	583.307			584.169	-0.862
14.5	583.262	583.171	583.171	584.313	-1.051
15.395	583.264	583.173	583.173	584.342	-1.077
20	583.334	583.242	583.242	584.504	-1.171
22.895	583.428	583.336	583.336	584.563	-1.135
30	583.705	583.613	583.613	584.673	-0.968
40	584.095	584.003	584.003	584.815	-0.720
50	584.485	584.393	584.393	584.894	-0.409
60	584.875	584.783	584.783	584.874	0.001
70	585.265	585.173	585.173	584.948	0.317
79.958	585.653	585.562	585.562	585.068	0.585
80	585.655	585.563	585.563	585.069	0.586
80.05	585.657	585.565	585.565	585.069	0.587
88.45	585.959	585.867	585.867	585.284	0.675
90	586.009	585.918	585.918	585.338	0.671
96.85	586.211	586.119	586.119	585.628	0.583
96.911	586.213	586.121	586.121	585.631	0.582
100	586.296	586.205	586.205	585.766	0.530
110	586.566	586.475	586.475	586.218	0.348
120	586.836	586.745	586.745	586.712	0.124
130	587.106	587.015	587.015	587.181	-0.075
140	587.376	587.285	587.285	587.660	-0.284
150	587.646	587.555	587.555	588.161	-0.515
150.961	587.672	587.580	587.580	588.209	-0.537
150.991	587.673			588.211	-0.538
160	587.943			588.661	-0.718
163.461	588.047			588.834	-0.787

ROAD 15 LONGITUDINAL SECTION

SCALE 1:500(H), 1:50(V)

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

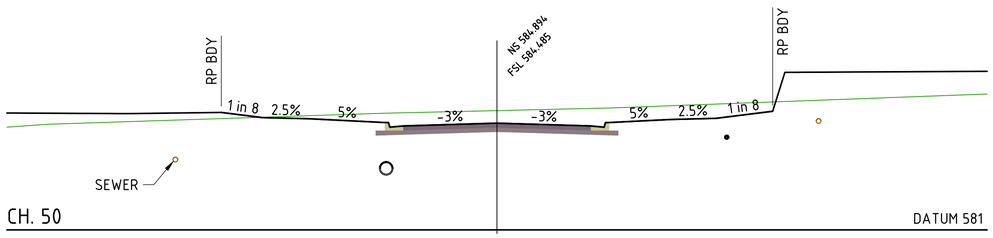
GenEng

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

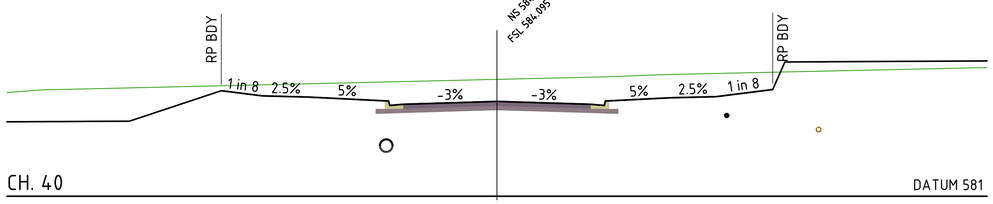
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT
DESIGNED: B ENRIGHT
CHECKED: D TAYLOR
ENGINEER: B LUSK
SURVEYOR: PARKINSON SURVEYS
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROAD 15 LONGITUDINAL SECTION

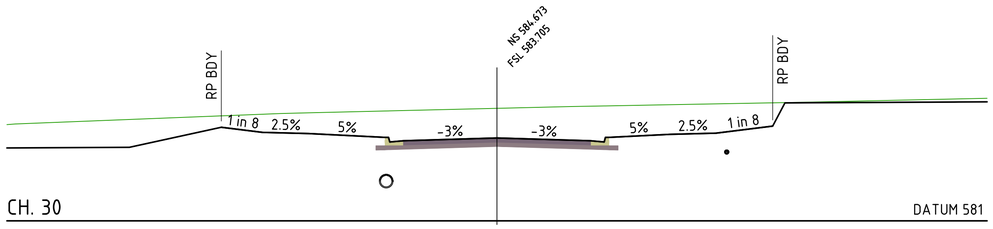
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	226	0



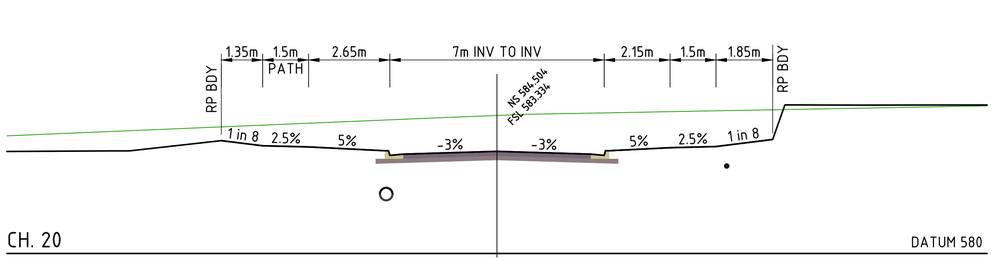
CH. 50 DATUM 581



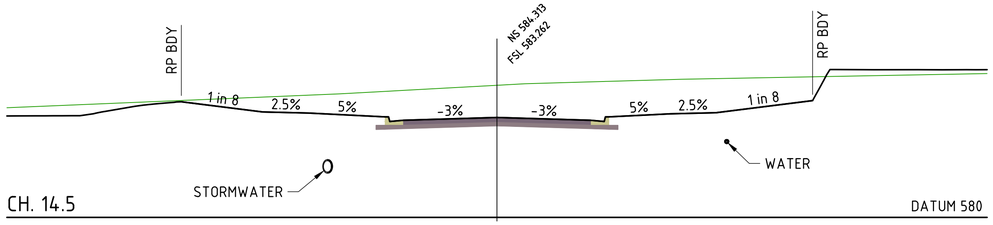
CH. 40 DATUM 581



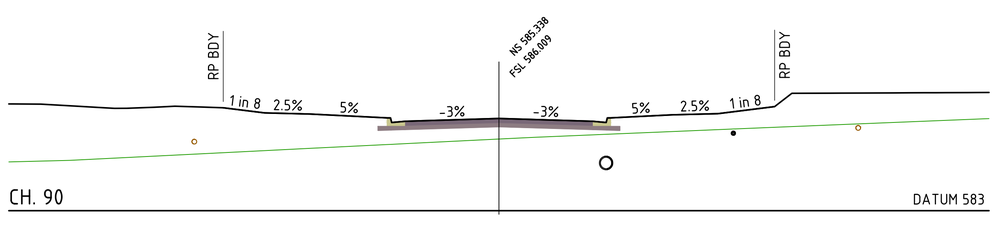
CH. 30 DATUM 581



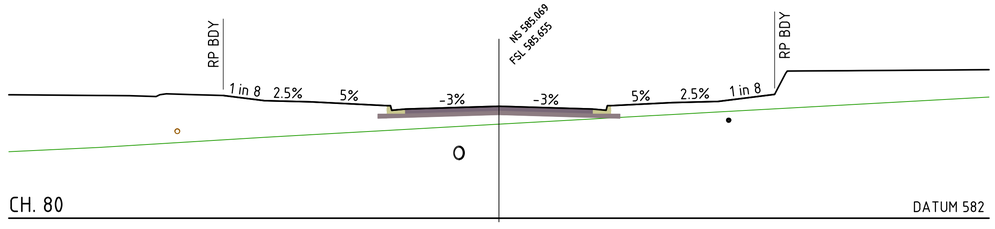
CH. 20 DATUM 580



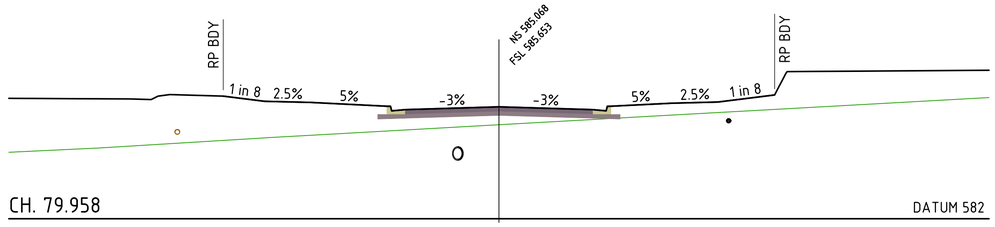
CH. 14.5 DATUM 580



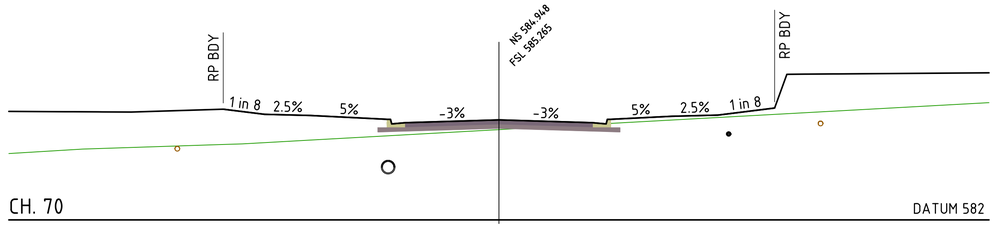
CH. 90 DATUM 583



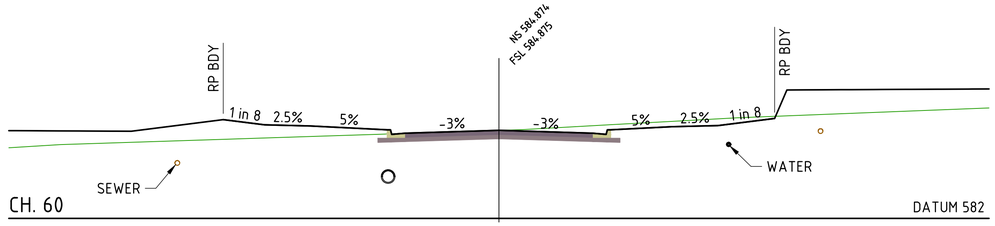
CH. 80 DATUM 582



CH. 79.958 DATUM 582



CH. 70 DATUM 582



CH. 60 DATUM 582

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ROAD 15 CROSS SECTIONS

SCALE 1:100

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

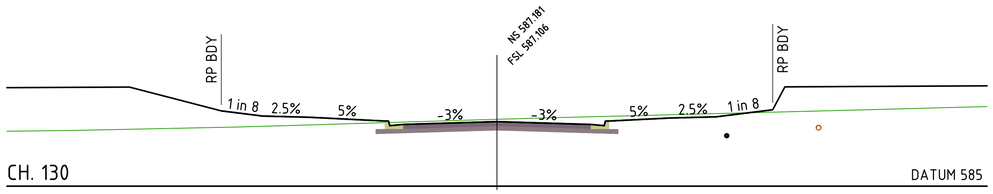
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

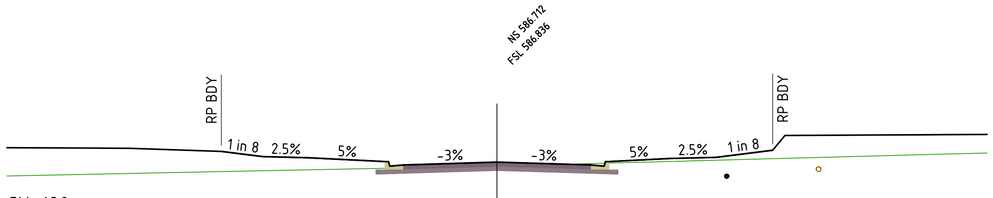
TITLE: ROAD 15 CROSS SECTIONS
SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	227	0

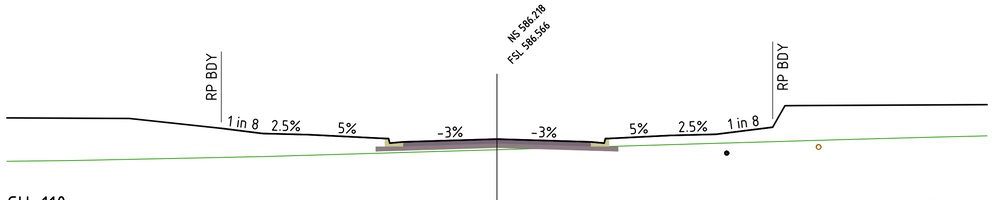
ROADS & DRAINAGE



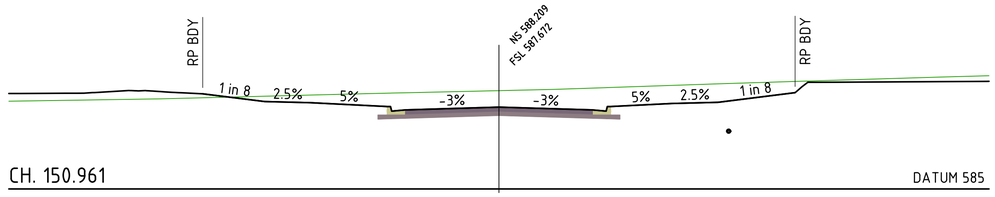
CH. 130 DATUM 585



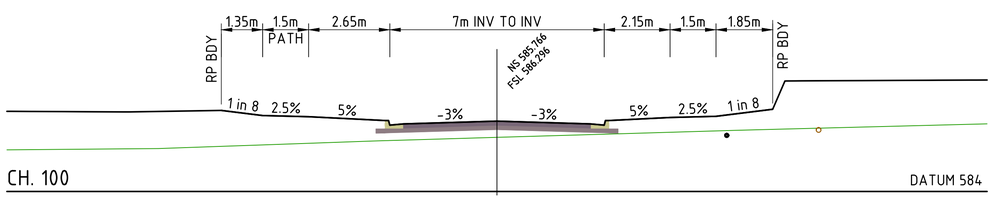
CH. 120 DATUM 585



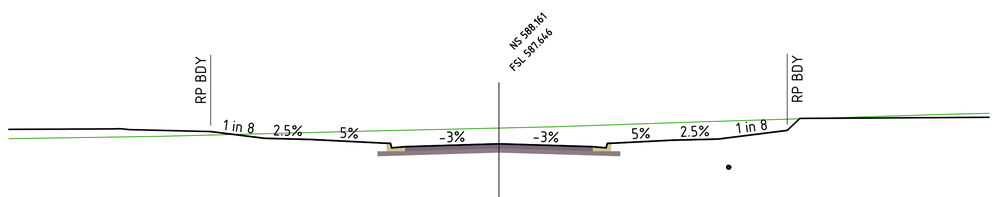
CH. 110 DATUM 584



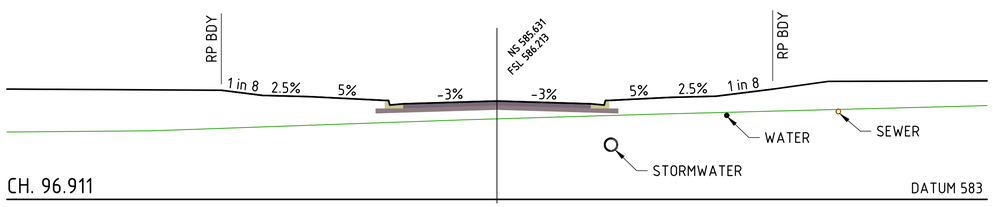
CH. 150.961 DATUM 585



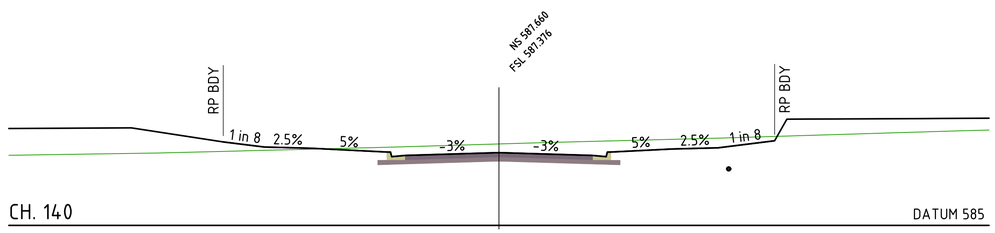
CH. 100 DATUM 584



CH. 150 DATUM 585



CH. 96.911 DATUM 583



CH. 140 DATUM 585

0 1 2 3 4m

SCALE 1:100 (A1)
SCALE 1:200 (A3)

ROAD 15 CROSS SECTIONS

SCALE 1:100

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

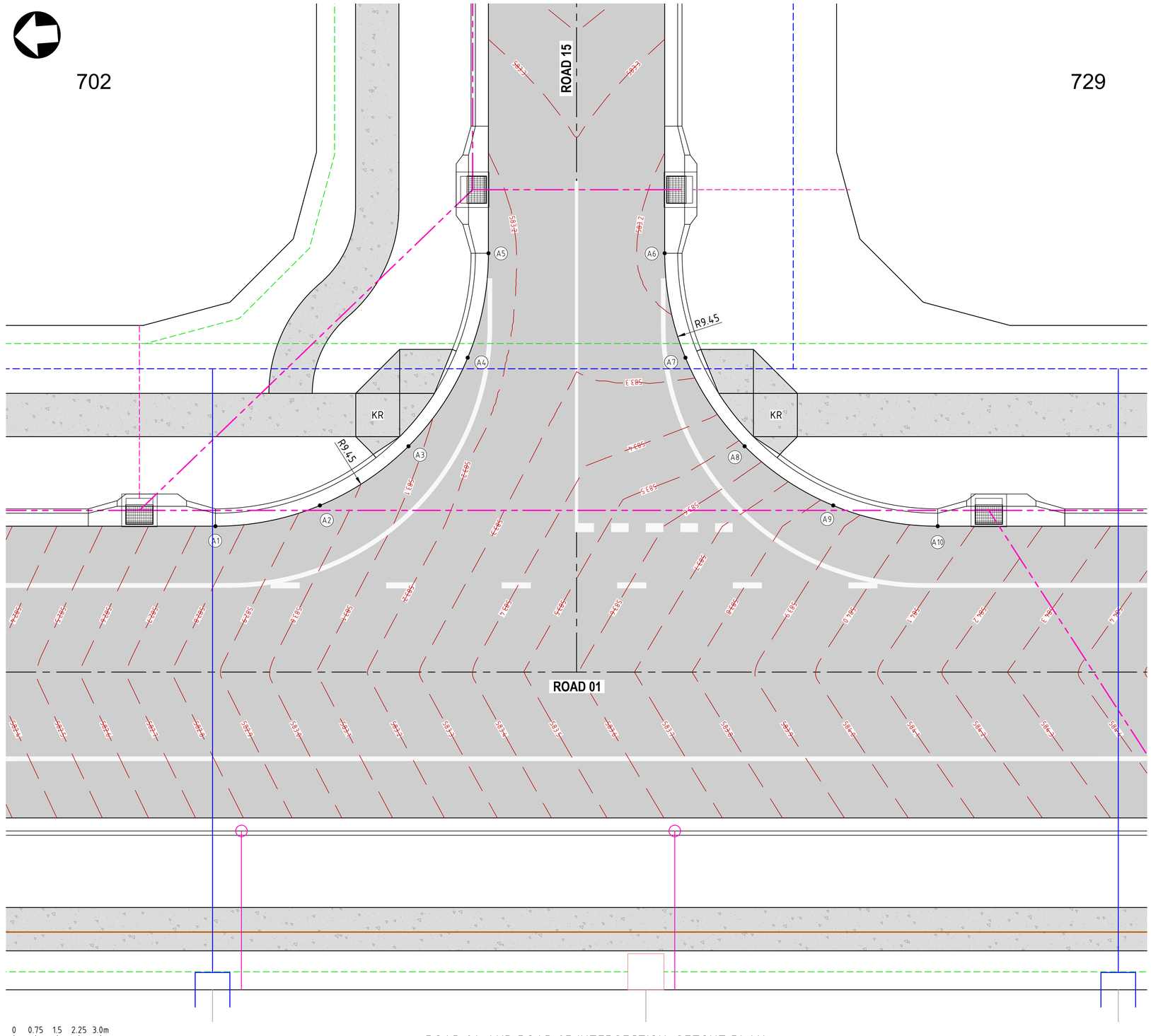
BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 7			
DRAWN: B ENRIGHT	CHECKED: D TAYLOR	ENGINEER: B LUSK	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE				
ROAD 15 CROSS SECTIONS SHEET 2 OF 2				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-07	SHEET No: 228	REVISION: 0

ROADS & DRAINAGE

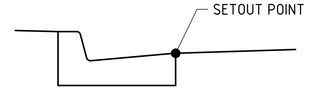


LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- E — EXISTING ELECTRICAL
- S — EXISTING SEWER
- SWD — EXISTING STORMWATER
- W — EXISTING WATER MAIN
- ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- 583.5 — DESIGN SURFACE CONTOURS (0.1m INTERVAL)
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

ROAD 01 AND ROAD 15 INTERSECTION SETOUT PLAN

POINT	EASTING	NORTHING	DESIGN RL
A1	393881.381	6963715.494	582.742
A2	393881.817	6963711.832	582.935
A3	393883.621	6963708.616	583.068
A4	393886.518	6963706.335	583.144
A5	393890.067	6963705.336	583.171
A6	393889.592	6963699.256	583.171
A7	393885.931	6963698.820	583.259
A8	393882.714	6963697.017	583.526
A9	393880.433	6963694.120	583.834
A10	393879.434	6963690.570	584.045



TYPE B1 K&C SETOUT DETAIL
NTS

0 0.75 1.5 2.25 3.0m
SCALE 1:75 (A1)
SCALE 1:150 (A3)

ROAD 04 AND ROAD 05 INTERSECTION SETOUT PLAN

SCALE 1:75

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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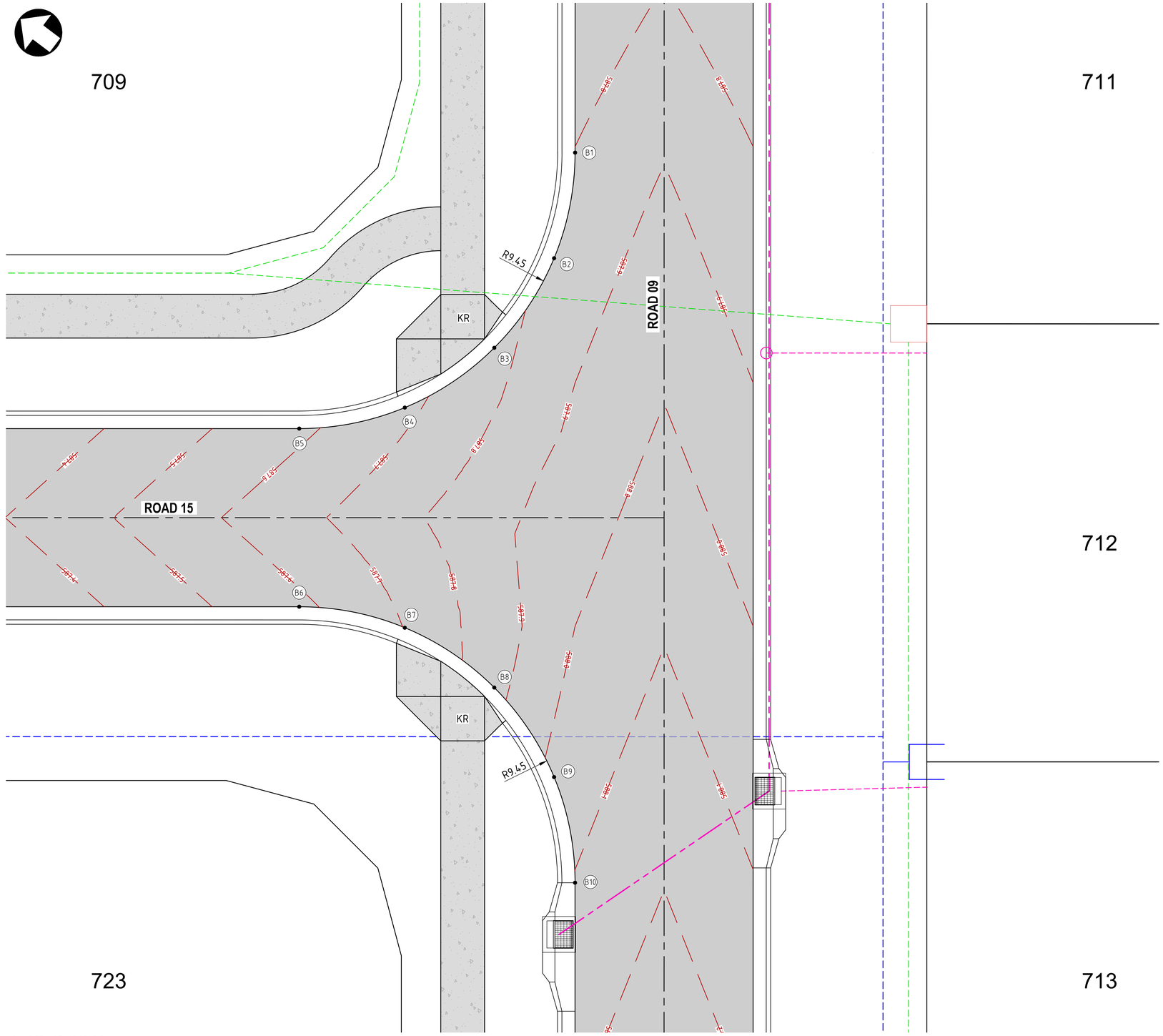
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROAD 01 - ROAD 15 INTERSECTION SETOUT PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	250	0

ROADS & DRAINAGE

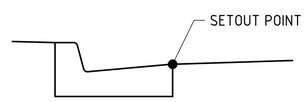


LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- E — EXISTING ELECTRICAL
- S — EXISTING SEWER
- SWD — EXISTING STORMWATER
- W — EXISTING WATER MAIN
- ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- 583.5 — DESIGN SURFACE CONTOURS (0.1m INTERVAL)
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

ROAD 09 AND ROAD 15 INTERSECTION SETOUT PLAN

POINT	EASTING	NORTHING	DESIGN RL
B1	394017.685	6963646.067	587.803
B2	394014.362	6963644.467	587.820
B3	394010.681	6963644.260	587.768
B4	394007.200	6963645.478	587.678
B5	394004.451	6963647.934	587.581
B6	393999.578	6963644.267	587.581
B7	394001.178	6963640.945	587.703
B8	394001.385	6963637.263	587.871
B9	394000.167	6963633.783	588.025
B10	393997.710	6963631.033	588.105



TYPE B1 K&C SETOUT DETAIL
NTS

0 0.75 1.5 2.25 3.0m
SCALE 1:75 (A1)
SCALE 1:150 (A3)

ROAD 09 AND ROAD 15 INTERSECTION SETOUT PLAN
SCALE 1:75

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT | HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROAD 09 - ROAD 15 INTERSECTION SETOUT PLAN
SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-07 | SHEET No: | REVISION: 0

ROADS & DRAINAGE

ROAD 09 CUL-DE-SAC ISLAND 1 SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
D1	393975.477	6963606.666	588.506
D2	393972.599	6963603.343	588.597
D3	393971.342	6963599.130	588.754
D4	393970.955	6963594.172	588.961
D5	393970.568	6963589.214	589.169
D6	393968.920	6963584.553	589.353
D7	393965.163	6963581.340	589.382
D8	393960.303	6963580.437	589.260

ROAD 09 CUL-DE-SAC ISLAND 2 SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
E1	393975.477	6963606.666	588.506
E2	393972.599	6963603.343	588.597
E3	393971.342	6963599.130	588.754
E4	393970.955	6963594.172	588.961
E5	393970.568	6963589.214	589.169
E6	393968.920	6963584.553	589.353
E7	393965.163	6963581.340	589.382
E8	393960.303	6963580.437	589.260

ROAD 09 CUL-DE-SAC SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
C1	393975.477	6963606.666	588.506
C2	393972.599	6963603.343	588.597
C3	393971.342	6963599.130	588.754
C4	393970.955	6963594.172	588.961
C5	393970.568	6963589.214	589.169
C6	393968.920	6963584.553	589.353
C7	393965.163	6963581.340	589.382
C8	393960.303	6963580.437	589.260
C9	393955.643	6963582.084	589.118
C10	393952.430	6963585.841	588.976
C11	393951.527	6963590.701	588.835
C12	393951.969	6963596.358	588.702
C13	393952.410	6963602.015	588.632
C14	393953.712	6963606.133	588.602
C15	393956.695	6963609.257	588.572
C16	393960.749	6963610.747	588.542
C17	393967.334	6963611.568	588.497
C18	393972.477	6963612.905	588.460
C19	393977.101	6963615.522	588.415

714
715
716
717
718
719
720
721
722
723

ROAD 09

136.764
157.132
157.807
165
167.807
170
175
178.031

7.0
R10.45
R9.55
10.0
TYPE SM3 KERB
R0.3
R3.0
2.5 TYP.
5.4 TYP.
6.0

RESIDENTIAL BIN SLABS
REFER DRG. GS562-07-254 FOR TYPICAL DETAIL

CONCRETE DRIVEWAY TO LOT 716
REFER DRG. GS562-07-253 FOR SETOUT PLAN AND DETAILS

CONCRETE DRIVEWAY TO LOT 717
REFER DRG. GS562-07-253 FOR SETOUT PLAN AND DETAILS

CONCRETE DRIVEWAY TO LOTS 721 AND 722. REFER DRG. GS562-07-254 FOR SETOUT PLAN AND DETAILS

CONCRETE DRIVEWAY TO LOT 720
REFER DRG. GS562-07-253 FOR SETOUT PLAN AND DETAILS

CONCRETE DRIVEWAY TO LOT 719
REFER DRG. GS562-07-253 FOR SETOUT PLAN AND DETAILS

CONCRETE DRIVEWAY TO LOT 718
REFER DRG. GS562-07-253 FOR SETOUT PLAN AND DETAILS

0 1 2 3 4m
SCALE 1:100 (A1)
SCALE 1:200 (A3)

ROAD 09 CUL-DE-SAC SETOUT PLAN
SCALE 1:100

ISSUED
FOR CONSTRUCTION

ROADS & DRAINAGE

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

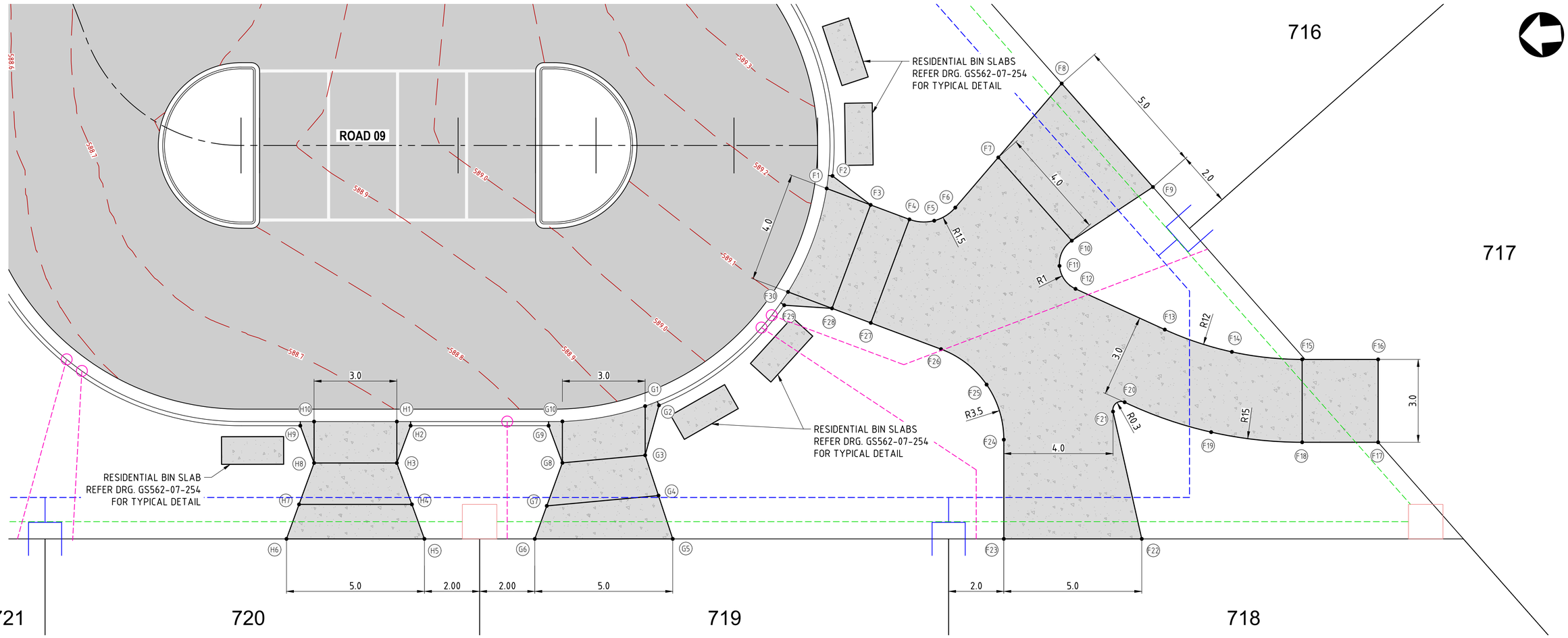
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT
CHECKED: D TAYLOR
ENGINEER: B LUSK
SURVEYOR: PARKINSON SURVEYS
HORIZ. DATUM: MGA 2020 (Z 56)
VERT. DATUM: AHD
DESIGNED: B ENRIGHT

TITLE: ROAD 09 CUL-DE-SAC SETOUT PLAN
SHEET: A1
SCALE: AS SHOWN
JOB No: GS562-07
SHEET No: 252
REVISION: 0



LOTS 716 TO 720 DRIVEWAY SETOUT PLAN

SCALE 1:75

LOTS 720 DRIVEWAY SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
H1	393951.521	6963596.420	588.661
H2	393951.333	6963595.933	588.821
H3	393950.026	6963596.537	588.848
H4	393948.488	6963596.110	588.888
H5	393947.207	6963595.754	589.040
H6	393947.596	6963600.739	588.990
H7	393948.807	6963600.188	588.845
H8	393950.260	6963599.528	588.805
H9	393951.645	6963599.921	588.761
H10	393951.755	6963599.411	588.617

LOTS 719 DRIVEWAY SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
G1	393951.379	6963587.404	588.886
G2	393951.368	6963586.903	589.049
G3	393949.605	6963587.542	589.085
G4	393948.110	6963587.175	589.122
G5	393946.506	6963586.781	589.240
G6	393946.895	6963591.766	589.190
G7	393948.054	6963591.240	589.032
G8	393949.563	6963590.555	588.991
G9	393950.944	6963590.948	588.939
G10	393951.059	6963590.438	588.803

LOTS 716 TO 718 DRIVEWAY SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL	POINT	EASTING	NORTHING	DESIGN RL
F1	393958.725	6963580.231	589.178	F16	393950.995	6963560.785	590.557
F2	393959.162	6963579.984	589.341	F17	393948.004	6963561.019	590.557
F3	393958.007	6963578.687	589.380	F18	393948.218	6963563.765	590.220
F4	393957.374	6963577.328	589.417	F19	393948.841	6963567.023	590.048
F5	393957.257	6963576.435	589.462	F20	393950.164	6963570.065	589.875
F6	393957.672	6963575.636	589.545	F21	393949.861	6963570.512	589.863
F7	393959.361	6963573.940	589.837	F22	393945.182	6963569.833	589.932
F8	393961.852	6963571.441	590.274	F23	393945.571	6963574.818	589.808
F9	393957.857	6963568.435	590.274	F24	393949.154	6963574.538	589.690
F10	393956.147	6963571.521	589.833	F25	393951.192	6963575.005	589.603
F11	393955.272	6963572.037	589.751	F26	393952.600	6963576.550	589.479
F12	393954.398	6963571.521	589.768	F27	393953.748	6963579.016	589.298
F13	393952.675	6963568.410	589.953	F28	393954.381	6963580.376	589.260
F14	393951.680	6963566.049	590.086	F29	393954.629	6963582.094	589.206
F15	393951.209	6963563.531	590.220	F30	393955.099	6963581.919	589.069

NOTES

1. REFER TO IPWEA STD DRGS RS-049 AND RS-050 FOR RESIDENTIAL DRIVEWAY VEHICLE CROSSING CONCRETE DETAILS.
2. FOR RESIDENTIAL BIN SLABS REFER TO IPWEA STD. DRG. RS-065 FOR FOOTPATH CONCRETE DETAILS.

0 0.75 1.5 2.25 3.0m
SCALE 1:75 (A1)
SCALE 1:150 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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Crows Nest QLD 4355
Ph: (07) 4698 2100
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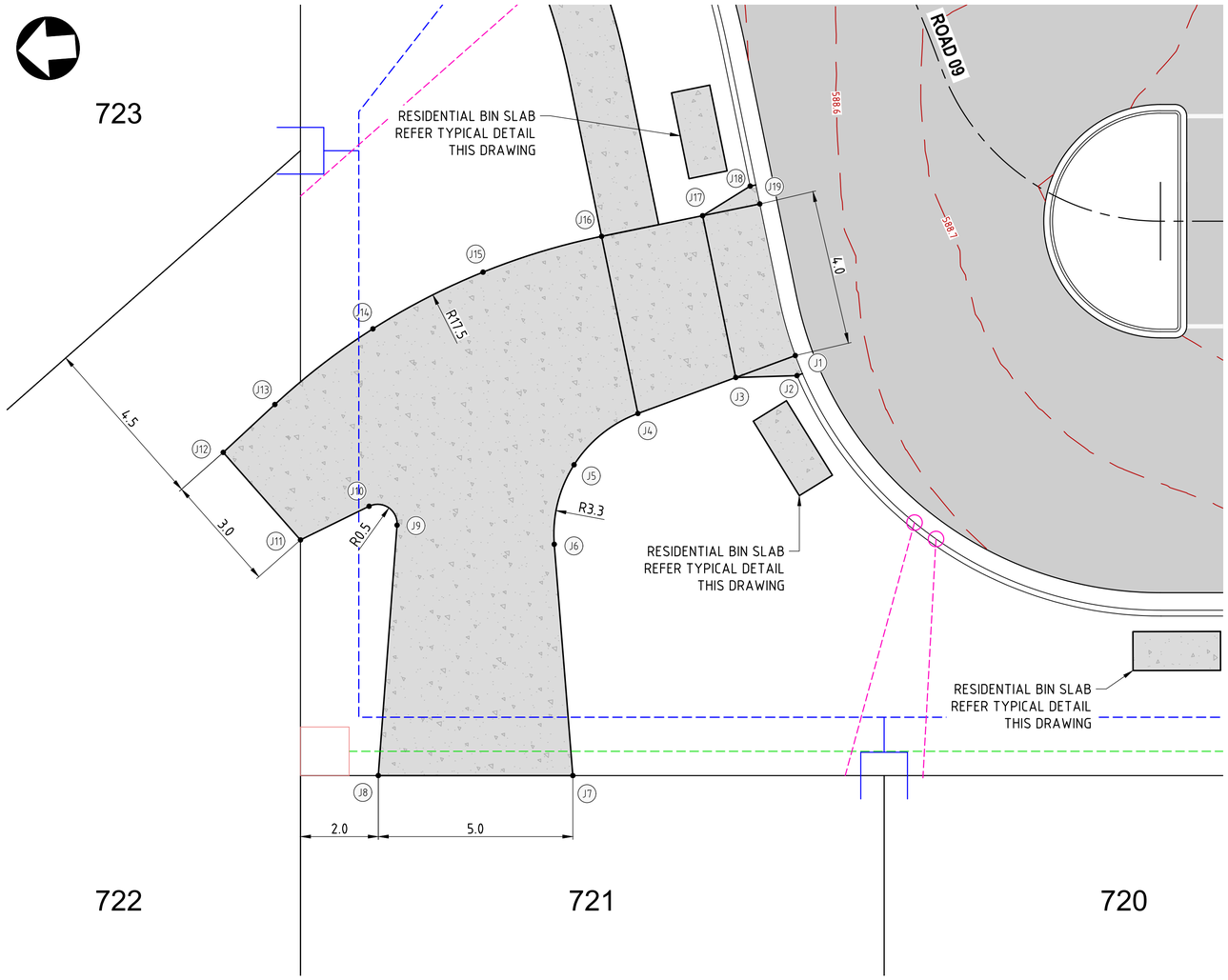
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROAD 09 CUL-DE-SAC DRIVEWAYS SETOUT PLAN SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	253	0

ROADS & DRAINAGE



LOTS 721 TO 722 DRIVEWAY SETOUT TABLE

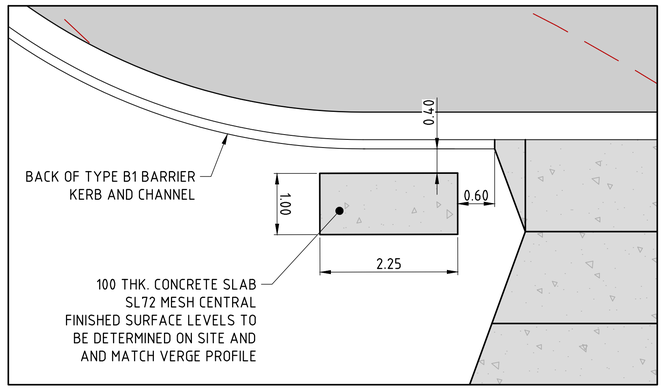
POINT	EASTING	NORTHING	DESIGN RL
J1	393959.219	6963610.896	588.512
J2	393958.700	6963610.893	588.665
J3	393958.776	6963612.467	588.700
J4	393958.050	6963615.047	588.767
J5	393956.862	6963616.785	588.826
J6	393954.866	6963617.452	588.907
J7	393948.900	6963617.438	589.150
J8	393949.290	6963622.423	589.150
J9	393955.670	6963621.441	588.960
J10	393956.210	6963622.120	588.959
J11	393955.485	6963623.945	588.980
J12	393957.881	6963625.749	588.980
J13	393959.006	6963624.331	588.941
J14	393960.749	6963621.667	588.873
J15	393961.981	6963618.732	588.805
J16	393962.661	6963615.622	588.736
J17	393962.989	6963612.992	588.670
J18	393963.652	6963611.714	588.632
J19	393963.174	6963611.504	588.485

NOTES

1. REFER TO IPWEA STD DRGS RS-049 AND RS-050 FOR RESIDENTIAL DRIVEWAY VEHICLE CROSSING CONCRETE DETAILS.
2. FOR RESIDENTIAL BIN SLABS REFER TO IPWEA STD. DRG. RS-065 FOR FOOTPATH CONCRETE DETAILS.

LOTS 721 AND 722 DRIVEWAY SETOUT PLAN

SCALE 1:75



RESIDENTIAL BIN SLAB TYPICAL DETAIL

SCALE 1:50

0 0.75 1.5 2.25 3.0m
SCALE 1:75 (A1)
SCALE 1:150 (A3)

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
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Ph: (07) 4698 2100
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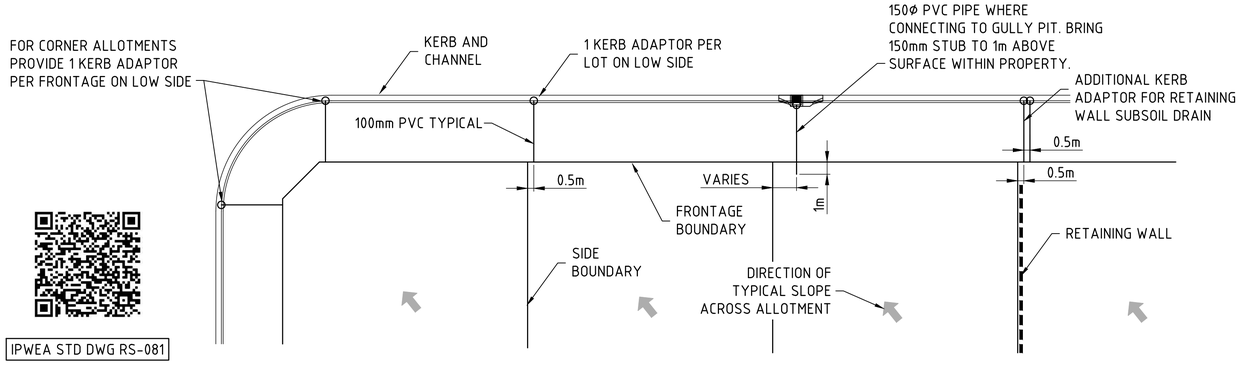
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT | HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROAD 09 CUL-DE-SAC DRIVEWAYS SETOUT PLAN SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	254	0

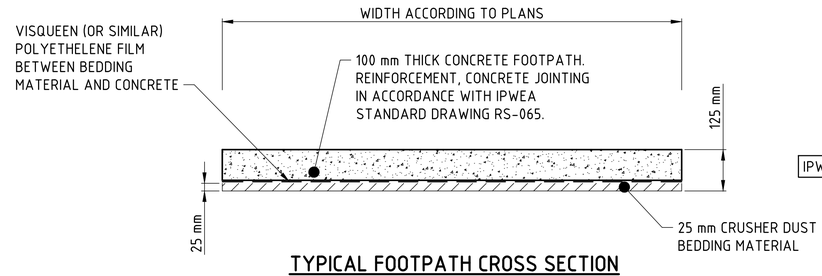
ROADS & DRAINAGE



IPWEA STD DWG RS-081

TYPICAL KERB ADAPTOR INSTALLATION

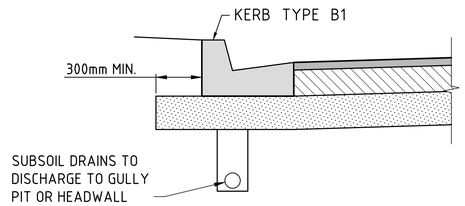
REFER IPWEA STD DWG RS-081 AND TRC 101450-001 FOR DETAILS
SCALE N.T.S



IPWEA STD DWG RS-065

TYPICAL FOOTPATH CROSS SECTION

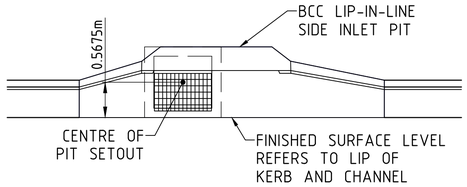
SCALE 1:10



50mm THICK ASPHALT WEARING COURSE - AC14H WITH AMCO PRIME. SPRAY RATE TBC BY SUPERINTENDENT.
125mm THICK BASE COURSE PAVEMENT TYPE 2.1
245mm THICK SUB-BASE COURSE PAVEMENT TYPE 2.3

NEW PAVEMENT CONSTRUCTION - ROAD 01

SCALE 1:50



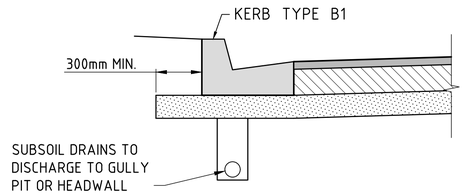
TMR STD DWG 1311

GULLY INLET PIT SETOUT DETAIL

REFER MAIN ROADS STD DWG 1311
SCALE N.T.S

NOTE:
RAMPED PEDESTRIAN CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH IPWEA STANDARD DRAWING RS-090

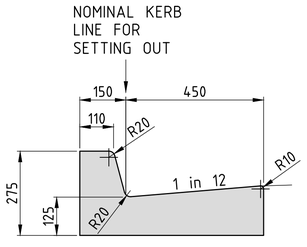
IPWEA STD DWG RS-090



35mm THICK ASPHALT WEARING COURSE - BCC TYPE 2 WITH AMCO PRIME. SPRAY RATE TBC BY SUPERINTENDENT
125mm THICK BASE COURSE PAVEMENT TYPE 2.1
115mm THICK SUB-BASE COURSE PAVEMENT TYPE 2.3

NEW PAVEMENT CONSTRUCTION - ROADS 09 AND 15

SCALE 1:50

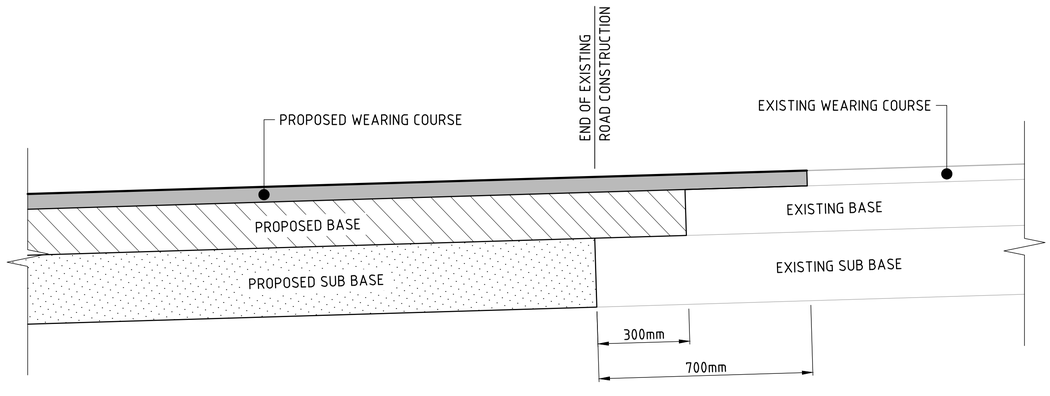


TYPE B1 - BARRIER KERB AND CHANNEL

SCALE N.T.S

IPWEA STD DWG RS-080

KERB PROFILES IN ACCORDANCE WITH IPWEAQ STD DWG NO. RS-080



ROAD JOINT DETAIL

SCALE 1:10

SUBGRADE NOTES

1. THE PAVEMENT DESIGN FOR ALL ROADS MUST BE CONFIRMED AFTER IN-SITU SUBGRADE TESTING PRIOR TO CONSTRUCTION OF THE PAVEMENT. PAVEMENT DESIGN DETAILS AND TEST RESULTS MUST BE SUBMITTED AND APPROVED BY COUNCIL A MINIMUM OF FIVE (5) BUSINESS DAYS PRIOR TO COMMENCEMENT OF PAVEMENT WORKS ON THE SUBJECT LAND.
2. IF SUBGRADE IS FOUND TO BE UNSUITABLE, THE FOLLOWING SUBGRADE REPLACEMENT OPTIONS ARE AVAILABLE, FOLLOWING APPROVAL BY THE SUPERINTENDENT:
   - 2.1. GEOCOMPOSITE WITH 200mm SUBGRADE REPLACEMENT TYPE 2.5 MATERIAL.
   - 2.2. 300mm ROCK REPLACEMENT d50=200mm, 300mm THICK LAYER, A49 GEOFABRIC WRAPPED EXTENDED OUT TO SUBSOIL DRAINAGE IN ORDER TO DRAIN.

0 0.5 1.0 1.5 2.0m
SCALE 1:50 (A1)
SCALE 1:100 (A3)

0 0.1 0.2 0.3 0.4m
SCALE 1:10 (A1)
SCALE 1:20 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

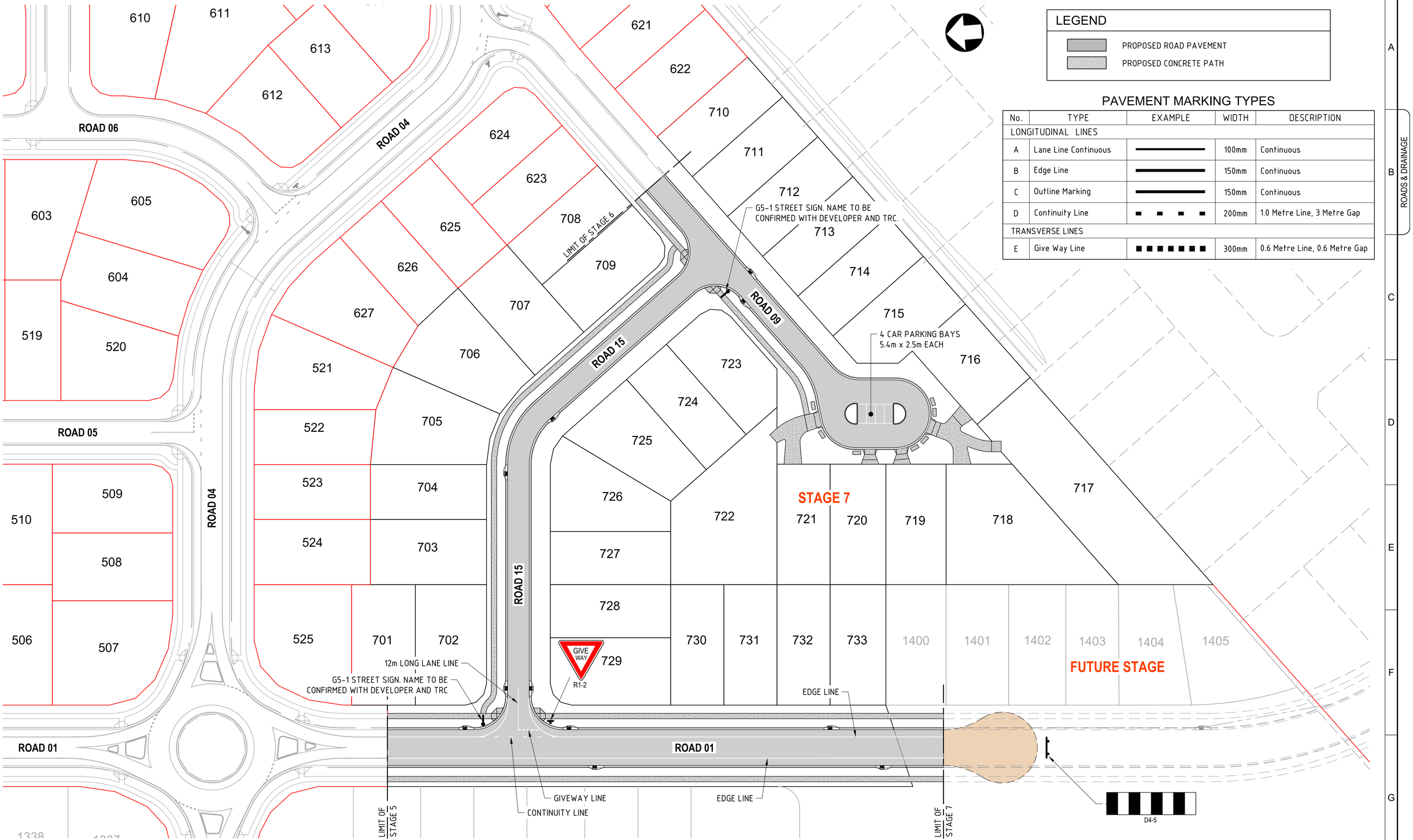
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: PAVEMENT DETAILS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	260	0

ROADS & DRAINAGE



0 4 8 12 16m

SCALE 1:400 (A1)
SCALE 1:800 (A3)

SIGNAGE AND LINEMARKING LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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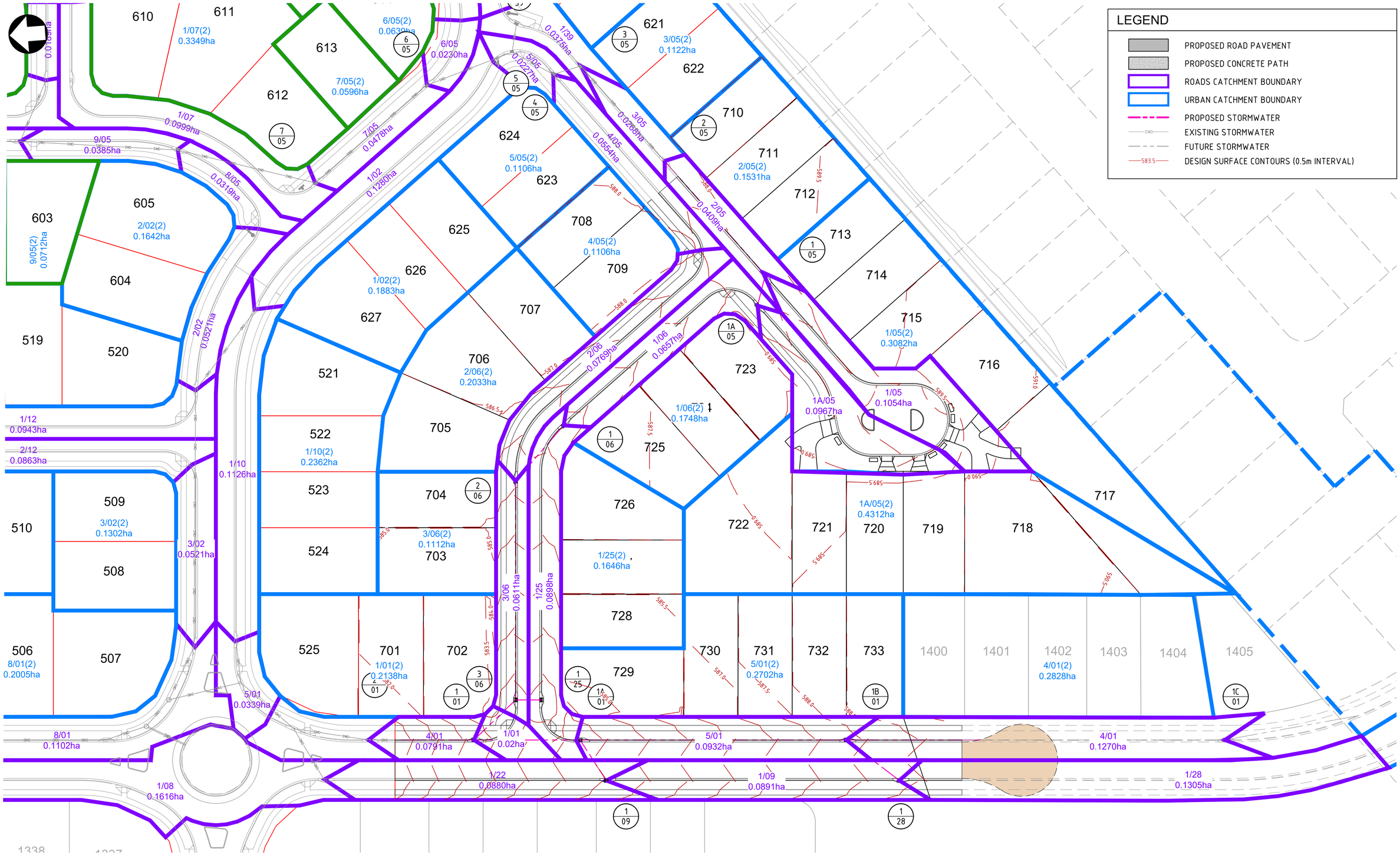
CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 7			
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM / VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56) / AHD

TITLE				
SIGNAGE AND LINEMARKING PLAN				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	270	0



SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

STORMWATER CATCHMENT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
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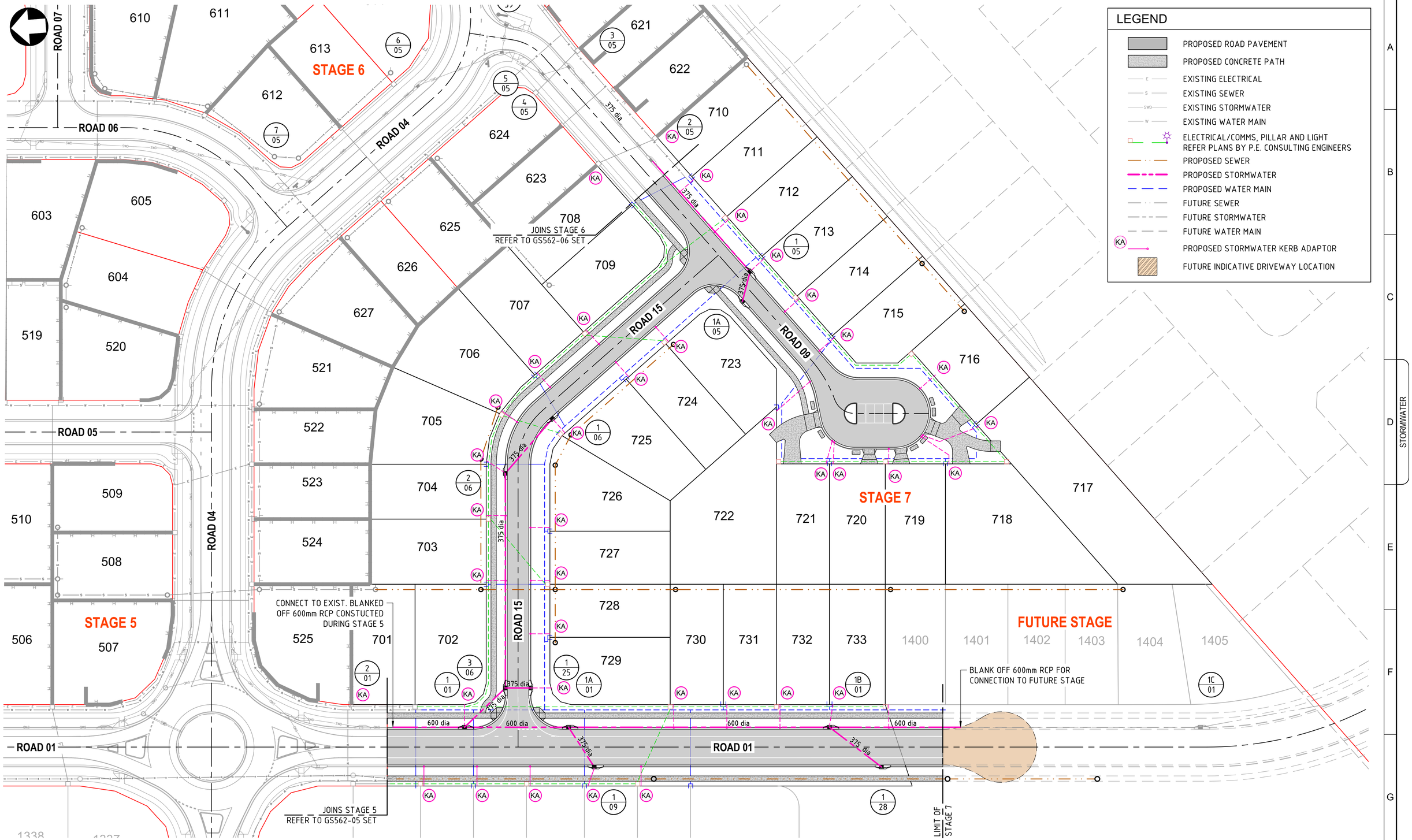
CLIENT	BIRD IN HAND 3 PTY LTD
PROJECT	BOTANIC HIGHFIELDS STAGE 7
DRAWN	B ENRIGHT
CHECKED	D TAYLOR
ENGINEER	B LUSK
SURVEYOR	PARKINSON SURVEYS
DESIGNED	B ENRIGHT
HORIZ. DATUM	MGA 2020 (Z 56)
VERT. DATUM	AHD

TITLE	SHEET	SCALE	JOB No	SHEET No	REVISION
STORMWATER CATCHMENT PLAN	A1	AS SHOWN	GS562-07	300	0

STORMWATER



0 5 10 15 20m

SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

STORMWATER LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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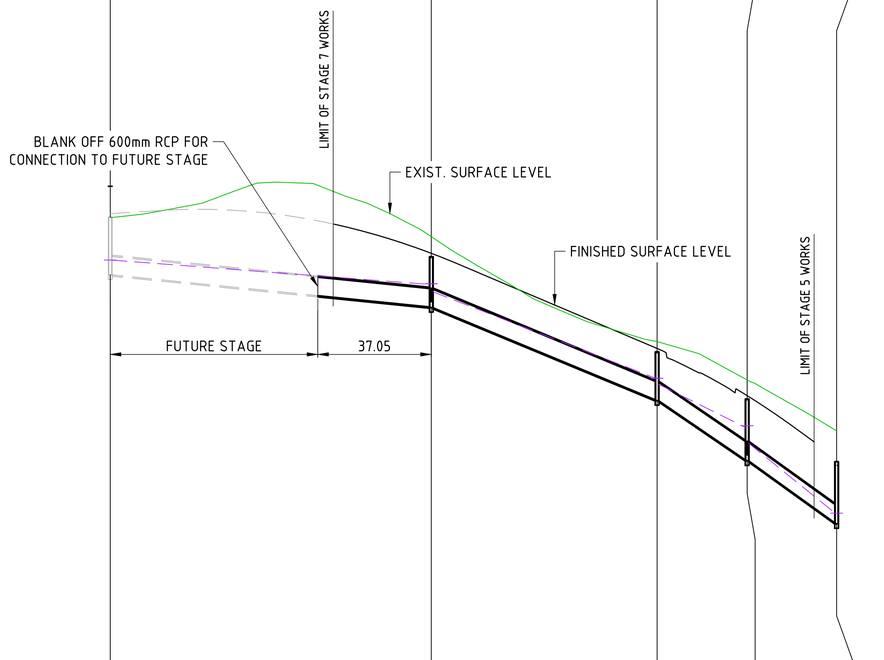
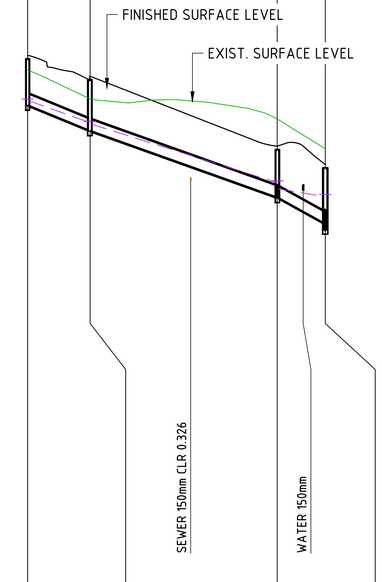
CLIENT	BIRD IN HAND 3 PTY LTD
PROJECT	BOTANIC HIGHFIELDS STAGE 7
DRAWN	B ENRIGHT
CHECKED	D TAYLOR
ENGINEER	B LUSK
SURVEYOR	PARKINSON SURVEYS
DESIGNED	B ENRIGHT
HORIZ. DATUM	MGA 2020 (Z 56)
VERT. DATUM	AHD

TITLE	SHEET	SCALE	JOB No	SHEET No	REVISION
STORWMATER LAYOUT PLAN	A1	AS SHOWN	GS562-07	310	0

STORMWATER

STRUCTURE NAME	1C/01 393865.957 E 6963510.753 N	1B/01 393874.121 E 6963615.255 N	1A/01 393879.863 E 6963688.761 N	1/01 393882.133 E 6963718.073 N	2/01 393884.427 E 6963747.183 N	1/09 393868.097 E 6963682.409 N	1A/01 393879.863 E 6963688.761 N	1/28 393861.777 E 6963601.505 N	1B/01 393874.121 E 6963615.255 N	1/06 393967.084 E 6963686.495 N	2/06 393952.749 E 6963701.100 N	3/06 393891.876 E 6963705.765 N	1/01 393882.133 E 6963718.073 N	1/25 393891.319 E 6963698.532 N	3/06 393891.876 E 6963705.765 N
STRUCTURE DESCRIPTION	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	BCC MANHOLE WITH TYPE A GULLY 1500mm DIA WITH L.I.L; 2.4m Lintel	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel
PIPE SIZE (mm)	600	600	600	600		375		375		375	375	375		375	
PIPE CLASS	3	3	3	3		3		3		RCP	3	3		3	
PIPE GRADE (%)	1.00%	4.09%	6.61%	6.97%		2.53%		2.58%		3.88%	3.51%	5.12%		3.05%	
PIPE SLOPE (1 in X)	100.0	24.4	15.1	14.3		39.5		38.7		25.8	28.5	19.5		32.8	
CAPACITY VELOCITY (m/s)	2.17	4.39	5.59	5.74		2.53		2.55		3.13	2.98	3.59		2.77	
NORMAL DEPTH VELOCITY (m/s)	2.45	4.43	5.42	5.92		1.45		1.64		2.17	2.56	3.42		1.97	
PIPE FLOW (cumecs)	0.545	0.641	0.700	0.921		0.019		0.028		0.046	0.093	0.164		0.044	
CAPACITY FLOW (cumecs)	0.614	1.242	1.580	1.622		0.279		0.282		0.346	0.329	0.397		0.306	
DATUM RL	566.000					561.000		564.000		561.000				560.000	
HGL ELEVATION	587.117 / 586.320	586.083 / 583.257	583.064 / 581.648	581.139 / 578.855		583.293 / 583.296	583.068	586.507 / 586.397	586.200	584.766 / 584.072	584.003 / 582.112	581.893 / 581.648	581.139	582.109 / 582.112	581.893
FINISHED (& EXISTING) SURFACE LEVEL	588.521 (588.501) / 587.227 (587.882)	584.121 (584.456) / 582.580 (583.204)	580.536 (581.541)			584.429 (584.343) / 584.121 (584.456)		587.729 (588.381) / 587.227 (587.882)		586.142 (585.771) / 585.459 (584.828)	583.179 (584.180) / 582.580 (583.204)			583.179 (584.499) / 583.179 (584.180)	
DEPTH OF INVERT BELOW FSL	1.887 / 1.751	1.771 / 1.681	1.701 / 2.104	2.124 / 2.005	2.025	1.445 / 1.476	1.701	1.453 / 1.428	1.653	1.640 / 1.749	1.789 / 1.654	1.694 / 1.899	2.124	1.433 / 1.654	1.694
INVERT LEVEL	586.634 / 585.586	585.566 / 582.550	582.530 / 580.586	580.566 / 578.531	578.511	583.094 / 582.755	582.530	586.386 / 585.909	585.684	584.612 / 583.920	583.780 / 581.635	581.595 / 580.791	580.566	581.856 / 581.635	581.595
CHAINAGE	0.000 / 104.820	104.820 / 178.550	29.400m / 207.950	29.200m / 237.150		0.000 / 13.371	13.371	0.000 / 18.478	18.478	0.000 / 20.400	20.400 / 81.458	61.058m / 97.157	15.698m	0.000 / 7.235	7.235
LINE	01					09		28		06				25	





0 10 20 30 40m
SCALE 1:1,000 (A1)
SCALE 1:2,000 (A3)

0 1 2 3 4m
SCALE 1:100 (A1)
SCALE 1:200 (A3)

STORMWATER LONGITUDINAL SECTIONS

SCALE 1:1000(H), 1:100(V)

ISSUED
FOR CONSTRUCTION

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

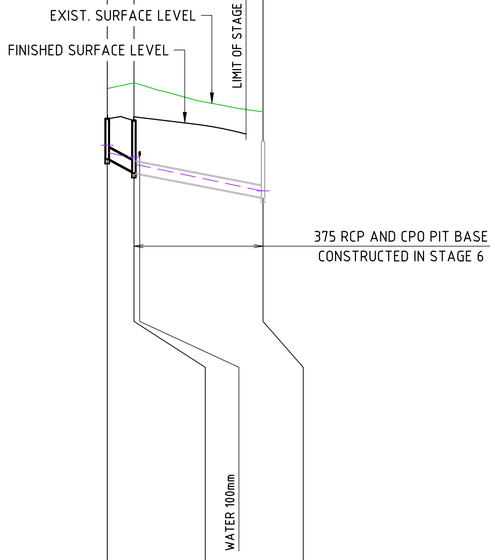
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD				
PROJECT: BOTANIC HIGHFIELDS STAGE 7				
DRAWN: B ENRIGHT	CHECKED: D TAYLOR	ENGINEER: B LUSK	SURVEYOR: PARKINSON SURVEYS	
DESIGNED: B ENRIGHT			HORIZ DATUM: MGA 2020 (Z 56)	VERT. DATUM: AHD

TITLE: STORMWATER LONG SECTIONS SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	320	0

STRUCTURE NAME	1A/05 393995.954 E 6963630.423 N	1/05 394004.227 E 6963627.594 N	2/05 394037.888 E 6963652.929 N
STRUCTURE DESCRIPTION	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel



PIPE SIZE (mm)		375	375
PIPE CLASS		3	3
PIPE GRADE (%)		4.78%	1.89%
PIPE SLOPE (1 in X)		20.9	53.0
CAPACITY VELOCITY (m/s)		3.47	2.18
NORMAL DEPTH VELOCITY (m/s)		2.75	2.30
PIPE FLOW (cumecs)		0.081	0.150
CAPACITY FLOW (cumecs)		0.383	0.241
DATUM RL		565.000	
HGL ELEVATION	587.008	586.829 / 586.627	585.762
FINISHED (& EXISTING) SURFACE LEVEL	588.127 (589.100)	588.068 (589.287)	587.378 (588.341)
DEPTH OF INVERT BELOW FSL	1.437	1.796 / 1.836	1.830 / 1.850
INVERT LEVEL	586.800	586.382 / 586.342	585.548 / 585.528
CHAINAGE	0.000	8.743 / 8.743	42.130 / 50.873
LINE		05	

0 10 20 30 40m
SCALE 1:1,000 (A1)
SCALE 1:2,000 (A3)

0 1 2 3 4m
SCALE 1:100 (A1)
SCALE 1:200 (A3)

STORMWATER LONGITUDINAL SECTIONS

SCALE 1:1000(H), 1:100(V)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER LONG SECTIONS SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	321	0

STORMWATER

AEP	STRUCTURE	SUB-CATCHMENT RUNOFF						INLET DESIGN									DRAIN DESIGN											HEAD LOSSES						PART FULL		DESIGN LEVELS						STRUCTURE
DESIGN AEP %	STRUCTURE No.	DRAIN SECTION	Tc SUB-CATCHMENT TIME OF CONC. min	I RAINFALL INTENSITY mm/h	A SUB-CATCHMENT AREA ha	CA EQUIVALENT AREA ha	Qc SUB-CATCHMENT DISCHARGE L/s	Qa FLOW IN K&C (INC. BYPASS) L/s	HALF ROAD CAPACITY L/s	FLOW WIDTH m	FLOW DEPTH m	FLOW DxV m^2/s	ROAD GRADE AT INLET %	ROAD XFALL AT INLET %	INLET TYPE	INLET CURVE	Qg FLOW INTO INLET L/s	Qb BYPASS FLOW L/s	BYPASS STRUCTURE No.	Tc CRITICAL TIME OF CONC. min	I RAINFALL INTENSITY mm/hr	CA TOTAL (C x A) ha	Qrat PEAK FLOW L/s	Q PIPE FLOW L/s	L REACH LENGTH m	S PIPE GRADE %	PIPE SIZE mm	PIPE CLASS	Vf=Q/A FULL PIPE VELOCITY m/s	Qcap CAPACITY FLOW L/s	Vcap CAPACITY VELOCITY m/s	Vt TRAVEL VELOCITY m/s		CHART(S) USED	Vf²/2g VELOCITY HEAD m	Ku U/S HEAD LOSS COEFFICIENT	hu U/S HEAD LOSS m	Kw W.S.E COEFFICIENT	hw CHANGE IN W.S.E m	Sf PIPE FRICTION SLOPE %	hf PIPE FRICTION HEAD LOSS m	dn NORMAL DEPTH m	Vn NORMAL DEPTH VEL. m/s	PIPE U/S I.L m	PIPE D/S I.L m	PIPE U/S H.G.L m	PIPE D/S H.G.L m	W.S.E m	GRATE LEVEL m	STRUCTURE No.
39.35	**3/01**	3/01 to 4/01	0	0	0	0	0	0					6.84		AL2E		0	0		1	167	0	923	923	50.649	6.97	600	3	3.26	1621	5.73	2		0.544	0	0		0	5.67	2.89	0.324	5.92	580.795	577.267	581.369	578.496	581.369	582.927	**3/01**
39.35	**4/01**	4/01 to 5/01	5	119	0.214	0.149	49	49	287		0.002		1.75	1.1	SAL2E 1500	SAG	49	0	5/01	5.13	119	0.18	982	982	21.347	5	750	3	2.22	2490	5.64	2	T3/T6	0.252	1.87	0.473	2.03	0.512	0.78	0.166	0.327	5.3	577.117	576.049	578.024	577.858	578.535	579.244	**4/01**
39.35	**5/01**	5/01 to 6/01	5	119	0.03	0.022	7	14	319		0		1.82	2.15	SAL2E 1500	SAG	14	0	3/02	5.18	118	0.383	1049	1051	20.376	3	750	3	2.38	1929	4.37	2	T6/T9	0.289	1.84	0.532	2.01	0.58	0.89	0.182	0.395	4.46	576.009	575.398	577.326	577.144	577.906	579.112	**5/01**
39.35	**6/01**	6/01 to 7/01											5.96	115	MH1500					5.96	115	0.763	1173	1173	9.473	2	750	3	2.66	1575	3.57	2	T3/T6	0.36	1.57	0.566	1.72	0.62	1.11	0.105	0.482	3.91	575.378	575.189	576.578	576.473	577.198	578.962	**6/01**
39.35	**7/01**	7/01 to 8/01											6.04	114	MH1500					6.04	114	0.763	1172	1172	54.501	2.68	750	3	2.65	1823	4.13	2	T3/T6	0.359	1.86	0.667	2	0.718	2.07	1.186	0.438	4.38	575.149	573.688	575.806	574.677	576.525	578.613	**7/01**
39.35	**8/01**	8/01 to 9/01	5	119	0.233	0.164	54	54	1380	1.487	0.071	0.098	5.87	3	AL2E 1500	4G,3.3X	51	3	9/01	6.49	112	1.04	1254	1252	45	5.5	750	3	2.83	2612	5.91	2	T3/T3	0.41	0.82	0.336	0.94	0.386	5.53	2.474	0.366	5.85	573.668	571.193	574.341	571.854	574.727	575.82	**8/01**
39.35	**9/01**	9/01 to 10/01	5	119	0.048	0.035	12	14	1380	0.677	0.046	0.052	5.87	3	AL2E	4G,3.3X	14	0		6.87	111	1.076	1260	1260	72.237	4.14	750	3	2.85	2266	5.13	2	T6/T9	0.415	1.9	0.789	2.17	0.901	4.15	2.991	0.4	5.26	570.39	567.399	571.064	568.067	571.965	573.178	**9/01**
39.35	**1/02**	1/02 to 2/02	5	119	0.241	0.17	56	63	945	1.883	0.082	0.088	2.78	2.96	AL2E	2G,3.3X	61	3	1/10	5	119	0.17	63	61	27.76	3.4	375	3	0.55	324	2.93	2	G1	0.015	7	0.108		0.108	3.12	0.906	0.11	2.24	581.562	580.617	581.741	580.876	581.848	582.885	**1/02**
39.35	**2/02**	2/02 to 3/02	5	119	0.156	0.109	36	36	861	1.535	0.072	0.063	2.28	3.02	AL2E	2G,3.3X	36	0	1/12	5.23	118	0.279	99	96	71.074	3.82	375	3	0.87	343	3.11	2	T3/T6	0.039	1.85	0.071	2.42	0.093	3.64	2.645	0.136	2.66	580.577	577.859	580.805	578.215	580.898	582.242	**2/02**
39.35	**3/02**	3/02 to 6/01	5	119	0.134	0.093	31	31	1009	1.351	0.059	0.07	6.29	3.01	AL2E	8G,3.3X	31	0	8/01	5.82	115	0.374	127	124	16.206	4.42	375	3	1.13	369	3.34	2	T3/T6	0.065	1.79	0.116	2.29	0.148	5.1	0.481	0.15	3.01	577.839	577.123	578.099	577.273	578.247	579.569	**3/02**
39.35	**6/01**														MH1500																	T3/T6		1.57	0.566	1.72	0.62								577.198	578.962	**6/01**
39.35	**1/08**	1/08 to 8/01	5	119	0.145	0.107	35	35	1380	1.207	0.062	0.079	5.87	3	AL2E	4G,3.3X	35	0		5	119	0.107	35	35	11.215	4.4	375	3	0.32	368	3.33	2	G2	0.005	9.7	0.05		0.05	-0.04	0.039	0.078	2.1	574.537	574.043	574.672	574.677	574.722	575.82	**1/08**
39.35	**8/01**		5	119	0.233	0.164	54	54	1380	1.487	0.071	0.098	5.87	3	AL2E 1500	4G,3.3X	51	3	9/01															T1/T3		0.82	0.336	0.94	0.386					574.727	575.82	**8/01**
39.35	**1/10**	1/10 to 5/01	5	119	0.259	0.181	60	63	1391	1.584	0.073	0.106	5.89	3	AL2E	4G,3.3X	56	6	5/01	5	119	0.181	60	56	10.618	5.04	375	3	0.51	394	3.57	2	G1	0.013	7	0.092		0.092	2.55	0.324	0.096	2.53	577.957	577.422	578.129	577.858	578.221	579.68	**1/10**
39.35	**5/01**		5	119	0.03	0.022	7	14	319		0		1.82	2.15	SAL2E 1500	SAG	14	0	3/02															T6/T9		1.84	0.532	2.01	0.58								577.906	579.112	**5/01**
39.35	**1/12**	1/12 to 2/12	5	119	0.28	0.195	65	65	454	1.583	0.073	0.109	6.35	3	AL2E	8G,3.3X	53	11		5	119	0.195	65	53	8.834	3.26	375	3	0.48	317	2.87	2	G2	0.012	9.7	0.116		0.116	1.98	0.221	0.104	2.13	575.391	575.103	575.559	575.383	575.674	576.693	**1/12**
39.35	**2/12**	2/12 to 3/12	5	119	0.218	0.153	50	50	454	1.413	0.068	0.096	6.35	3	AL2E	8G,3.3X	45	5		5.07	119	0.348	115	99	58	6.39	375	3	0.89	443	4.02	2	T6/T9	0.041	2.21	0.09	2.64	0.107	5.92	3.492	0.12	3.23	575.063	571.356	575.294	571.858	575.401	576.371	**2/12**
39.35	**1/22**	1/22 to 4/01	5	119	0.042	0.03	10	10	1539	0.436	0.038	0.046	7.3	3	AL2E	8G,3.3X	10	0	1/39	5	119	0.03	10	10	15.774	5.17	375	3	0.09	399	3.61	2	G2	0	9.7	0.004		0.004	-0.01	0	0.041	1.53	578.308	577.492	578.495	578.496	578.499	579.607	**1/22**
39.35	**4/01**		5	119	0.214	0.149	49	49	287		0.002		1.75	1.1	SAL2E 1500	SAG	49	0	5/01															T3/T6		1.87	0.473	2.03	0.512								578.535	579.244	**4/01**
39.35	**1/23**	1/23 to 10/01	5	119	0.297	0.208	69	69							AL2E		69	0		5	119	0.208	69	69	11.778	1.4	375	3	0.62	208	1.88	2	G1	0.02	7	0.139		0.139	0.54	0.111	0.149	1.69	567.939	567.774	568.13	568.067	568.269	569.23	**1/23**
39.35	**10/01**		5	119	0.35	0.242	80	80							AL2E 1800	PIT	80	0																T1/T3		0.49	0.119	0.54	0.133								568.081	569.05	**10/01**
39.35	**1/27**	1/27 to 3/12	5	119	0.172	0.119	40	40							AL2E		40	0		5	119	0.119	40	40	7.832	2.14	375	3	0.36	257	2.33	2	G1	0.007	7	0.046		0.046	-0.01	0.004	0.099	1.68	571.584	571.416	571.858	571.858	571.904	572.879	**1/27**
39.35	**3/12**		5	119	0.179	0.125	41	41							AL2E		41	0																T1/T3		1.65	0.215	1.99	0.26								571.903	572.688	**3/12**
39.35	**1/39**	1/39 to 2/39	5	119	0.833	0.571	189	189	1208	2.677	0.106	0.178	4.5	3	AL2E	4G,3.3X	113	76		5	119	0.571	189	113	11.235	1	375	3	1.03	175	1.59	2	G2	0.054	7	0.375		0.375	0.27	0.078	0.219	1.69	574.834	574.722	575.082	575.051	575.457	576.117	**1/39**
39.35	**2/39**	2/39 to 3/39	5	119	0.062	0.046	15	15	1208	0.788	0.05	0.049	4.5	3	AL2E	4G,3.3X	15	0		5.09	119	0.616	203	128	1.77	1	375	3	1.16	175	1.59	2	T10	0.068	2.15	0.146	2.66	0.181	2.47	0.012	0.237	1.73	574.642	574.624	574.905	574.861	575.086	576.117	**2/39**

MINOR STORM CALCULATION TABLE

39.35% AEP (2 YEAR ARI)

AEP	STRUCTURE	SUB-CATCHMENT RUNOFF						INLET DESIGN									DRAIN DESIGN											HEAD LOSSES						PART FULL		DESIGN LEVELS						STRUCTURE
DESIGN AEP %	STRUCTURE No.	DRAIN SECTION	Tc SUB-CATCHMENT TIME OF CONC. min	I RAINFALL INTENSITY mm/h	A SUB-CATCHMENT AREA ha	CA EQUIVALENT AREA ha	Qc SUB-CATCHMENT DISCHARGE L/s	Qa FLOW IN K&C (INC. BYPASS) L/s	HALF ROAD CAPACITY L/s	FLOW WIDTH m	FLOW DEPTH m	FLOW DxV m^2/s	ROAD GRADE AT INLET %	ROAD XFALL AT INLET %	INLET TYPE	INLET CURVE	Qg FLOW INTO INLET L/s	Qb BYPASS FLOW L/s	BYPASS STRUCTURE No.	Tc CRITICAL TIME OF CONC. min	I RAINFALL INTENSITY mm/hr	CA TOTAL (C x A) ha	Qrat PEAK FLOW L/s	Q PIPE FLOW L/s	L REACH LENGTH m	S PIPE GRADE %	PIPE SIZE mm	PIPE CLASS	Vf=Q/A FULL PIPE VELOCITY m/s	Qcap CAPACITY FLOW L/s	Vcap CAPACITY VELOCITY m/s	Vt TRAVEL VELOCITY m/s		CHART(S) USED	Vf²/2g VELOCITY HEAD m	Ku U/S HEAD LOSS COEFFICIENT	hu U/S HEAD LOSS m	Kw W.S.E COEFFICIENT	hw CHANGE IN W.S.E m	Sf PIPE FRICTION SLOPE %	hf PIPE FRICTION HEAD LOSS m	dn NORMAL DEPTH m	Vn NORMAL DEPTH VEL. m/s	PIPE U/S I.L m	PIPE D/S I.L m	PIPE U/S H.G.L m	PIPE D/S H.G.L m	W.S.E m	GRATE LEVEL m	STRUCTURE No.
1	**3/01**	3/01 to 4/01	0	0	0	0	0	0					6.84		AL2E		0	0		1	367	0	1086	1086	50.649	6.97	600	3	3.84	1621	5.73	2			0.753	0	0		0	4.22	2.147	0.359	6.14	580.795	577.267	581.381	579.244	581.381	582.927	**3/01**
1	**4/01**	4/01 to 5/01	5	264	0.214	0.194	143	810	0		0.12		1.75	1.1	SAL2E 1500	SAG	-397	1206	5/01	5.13	263	0.235	2046	762	21.347	5	750	3	1.72	2490	5.64	2	T3/T6	0.152	1.73	0.263	1.84	0.279	0.47	0.1	0.285	4.95	577.117	576.049	578.468	578.368	578.747	579.244	**4/01**
1	**5/01**	5/01 to 6/01	5	264	0.03	0.029	21	1558	160		0.15		1.82	2.15	SAL2E 1500	SAG	160	1399	3/02	5.18	262	0.499	2238	1057	20.376	3	750	3	2.39	1929	4.37	2	T6/T9	0.292	1.75	0.512	1.93	0.565	0.9	0.184	0.396	4.46	576.009	575.398	577.856	577.672	578.421	579.112	**5/01**
1	**6/01**	6/01 to 7/01											5.96	253	0.995	2884	1394	9.473	2	750	3	3.15	1575	3.57	2	T6	0.508	1.59	0.807	1.61	0.82	1.57	0.148	0.549	4.02	575.378	575.189	576.865	576.716	577.684	578.962	**6/01**
1	**7/01**	7/01 to 8/01											6.04	253	MH1500					6.04	253	0.995	2882	1391	54.501	2.68	750	3	3.15	1823	4.13	2	T3/T6	0.506	1.73	0.874	1.86	0.941	1.56	0.883	0.491	4.54	575.149	573.688	575.843	574.995	576.784	578.613	**7/01**
1	**8/01**	8/01 to 9/01	5	264	0.233	0.213	156	1523	1380	6.48	0.191	0.6	5.87	3	AL2E 1500	4G,3.3X	142	1381	9/01	6.49	248	1.356	3116	1572	45	5.5	750	3	3.56	2612	5.91	2	T1/T3	0.646	0.95	0.614	1.05	0.679	4.32	1.969	0.42	6.18	573.668	571.193	574.381	572.436	575.06	575.82	**8/01**
1	**9/01**	9/01 to 10/01	5	264	0.048	0.045	33	1414	1380	6.48	0.191	0.557	5.87	3	AL2E	4G,3.3X	142	1273		6.87	243	1.403	3132	1696	72.237	4.14	750	3	3.84	2266	5.13	2	T6/T9	0.752	1.76	1.324	1.92	1.447	3.54	2.574	0.484	5.63	570.39	567.399	571.112	568.557	572.56	573.178	**9/01**
1	**1/02**	1/02 to 2/02	5	264	0.241	0.221	162	456	945	4.326	0.151	0.257	2.78	2.96	AL2E	2G,3.3X	161	296	1/10	5	264	0.221	456	161	27.76	3.4	375	3	1.45	324	2.93	2	G1	0.108	4.3	0.464		0.464	2.01	0.6	0.187	2.92	581.562	580.617	581.857	581.3	582.321	582.885	**1/02**
1	**2/02**	2/02 to 3/02	5	264	0.156	0.142	104	119	861	2.544	0.102	0.118	2.28	3.02	AL2E	2G,3.3X	73	46	1/12	5.23	261	0.364	573	232	71.074	3.82	375	3	2.1	343	3.11	2	T3/T6	0.224	1.7	0.382	1.96	0.44	2.71	1.948	0.226	3.33	580.577	577.859	580.918	578.992	581.359	582.242	**2/02**
1	**3/02**	3/02 to 6/01	5	264	0.134	0.122	89	1488	1009	6.258	0.156	0.601	6.29	3.01	AL2E	8G,3.3X	122	1366	8/01	5.82	255	0.488	655	345	16.206	4.42	375	3	3.13	369	3.34	2	T3/T6	0.498	1.39	0.692	1.54	0.766	3.87	0.628	0.288	3.79	577.839	577.123	578.3	577.672	579.065	579.569	**3/02**
1	**6/01**														MH1500																	T6		1.59	0.807	1.61	0.82								577.684	578.962	**6/01**
1	**1/08**	1/08 to 8/01	5	264	0.145	0.138	101	101	1380	1.962	0.085	0.136	5.87	3	AL2E	4G,3.3X	62	39		5	264	0.138	101	62	11.215	4.4	375	3	0.56	368	3.33	2	G2	0.016	8.92	0.144		0.144	0.13	0.014	0.104	2.48	574.537	574.043	575.009	574.995	575.153	575.82	**1/08**
1	**8/01**		5	264	0.233	0.213	156	1523	1380	6.48	0.191	0.6	5.87	3	AL2E 1500	4G,3.3X	142	1381	9/01															T1/T3		0.95	0.614	1.05	0.679					575.06	575.82	**8/01**
1	**1/10**	1/10 to 5/01	5	264	0.259	0.236	173	469	1391	3.625	0.134	0.312	5.89	3	AL2E	4G,3.3X	138	331	5/01	5	264	0.236	173	138	10.618	5.04	375	3	1.25	394	3.57	2	G1	0.08	4.37	0.349		0.349	0.62	0.066	0.153	3.25	577.957	577.422	578.434	578.368	578.783	579.68	**1/10**
1	**5/01**		5	264	0.03	0.029	21	1558	160		0.15		1.82	2.15	SAL2E 1500	SAG	160	1399	3/02															T6/T9		1.75	0.512	1.93	0.565								578.421	579.112	**5/01**
1	**1/12**	1/12 to 2/12	5	264	0.28	0.254	187	233	454	2.716	0.107	0.215	6.35	3	AL2E	8G,3.3X	92	141		5	264	0.254	187	92	8.834	3.26	375	3	0.83	317	2.87	2	G2	0.035	8.23	0.289		0.289	0.27	0.081	0.138	2.48	575.391	575.103	575.613	575.59	575.903	576.693	**1/12**
1	**2/12**	2/12 to 3/12	5	264	0.218	0.199	146	146	454	2.246	0.093	0.167	6.35	3	AL2E	8G,3.3X	71	74		5.07	263	0.453	332	162	58	6.39	375	3	1.47	443	4.02	2	T6/T9	0.11	2.09	0.23	2.45	0.271	4.84	2.849	0.157	3.7	575.063	571.356	575.36	572.554	575.63	576.371	**2/12**
1	**1/22**	1/22 to 4/01	5	264	0.042	0.04	29	151	1539	2.214	0.092	0.176	7.3	3	AL2E	8G,3.3X	73	78	1/39	5	264	0.04	151	73	15.774	5.17	375	3	0.66	399	3.61	2	G2	0.022	4.2	0.094		0.094	0.17	0.027	0.109	2.75	578.308	577.492	579.271	579.244	579.365	579.607	**1/22**
1	**4/01**		5	264	0.214	0.194	143	810	0		0.12		1.75	1.1	SAL2E 1500	SAG	-397	1206	5/01															T3/T6		1.73	0.263	1.84	0.279								578.747	579.244	**4/01**
1	**1/23**	1/23 to 10/01	5	264	0.297	0.271	199	199							AL2E		199	0		5	264	0.271	199	199	11.778	1.4	375	3	1.8	208	1.88	2	G1	0.165	2.91	0.482		0.482	1.29	0.151	0.294	2.14	567.939	567.774	568.708	568.557	569.191	569.23	**1/23**
1	**10/01**		5	264	0.35	0.315	231	231							AL2E 1800	PIT	231	0																T1/T3		0.89	0.487	1.01	0.55								568.62	569.05	**10/01**
1	**1/27**	1/27 to 3/12	5	264	0.172	0.156	114	114							AL2E		114	0		5	264	0.156	114	114	7.832	2.14	375	3	1.03	257	2.33	2	G1	0.055	3.06	0.167		0.167	0.42	0.033	0.175	2.26	571.584	571.416	572.587	572.554	572.754	572.879	**1/27**
1	**3/12**		5	264	0.179	0.162	119	119							AL2E		119	0																T3/T6		1.36	0.848	1.5	0.939								572.645	572.688	**3/12**
1	**1/39**	1/39 to 2/39	5	264	0.833	0.745	547	625	1208	4.522	0.155	0.34	4.5	3	AL2E	4G,3.3X	142	483		5	264	0.745	547	142	11.235	1	375	3	1.28	175	1.59	2	G2	0.084	5.36	0.449		0.449	0.65	0.073	0.255	1.77	574.834	574.722	575.281	575.208	575.731	576.117	**1/39**
1	**2/39**	2/39 to 3/39	5	264	0.062	0.059	43	43	1208	1.427	0.069	0.082	4.5	3	AL2E	4G,3.3X	35	9		5.09	263	0.805	588	174	1.77	1	375	3	1.58	175	1.59	2	T10	0.127	2.05	0.26	2.51	0.318	1.06	0.018	0.305	1.81	574.642	574.624	574.948	574.929	575.266	576.117	**2/39**

MAJOR STORM CALCULATION TABLE

1% AEP (100 YEAR ARI)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: STORMWATER CALCULATION TABLES

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	330	0

STORMWATER

NOTES:

1. ALL MANHOLES TO BE AT 1.5m OFFSETS TO LOT BOUNDARIES.
2. MANHOLES ON 150 mm ø SEWER LINES SHALL BE PRE-CAST 1050 mm DIAMETER UNLESS NOTED OTHERWISE AND CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING NO. SEW-1300.
3. MANHOLES ON 300 mm ø SEWER LINES SHALL BE PRE-CAST CALCAREOUS CONCRETE 1200 mm DIAMETER, EPOXY COATED WITH:
   - 3.1. EPIREZ 133 EPOXY PRIMER
   - 3.2. TROWEL COATING OF EPIREZ 633 HIGH BUILD EPOXY MIXED WITH WASHED KILN, DRIED SAND TO ACHIEVE DRY FILM THICKNESS OF 2.0 mm.
   - 3.3. FINAL COAT OF EPIREZ 733 HIGH BUILD EPOXY COATING TO A 1.0mm DRY FILM THICKNESS.
   - 3.4. COATING APPLIED TO BASES AND CHAMBERS INSITU, FOLLOWING SUCCESSFUL VACUUM TEST.

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- EXISTING ELECTRICAL
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING WATER MAIN
- ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS
- PROPOSED SEWER, MANHOLE & HOUSE CON.
- PROPOSED TRUNK SEWER
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- PROPOSED RETAINING WALL
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

STAGE 5 STAGE 6 STAGE 7

ROAD 01 ROAD 04 ROAD 05 ROAD 09 ROAD 15

JOIN TO EXISTING STUB

JOINS STAGE 6 REFER TO GS562-06 SET

JOIN TO EXISTING STUB

JOINS STAGE 5 REFER TO GS562-05 SET

INSTALL SECTION OF 300mm DIA TRUNK SEWER MAIN TO SERVICE FUTURE STAGES

LIMIT OF STAGE 7

POTENTIAL FUTURE LOT LAYOUT

SEWERAGE LAYOUT PLAN
SCALE 1:500

0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

ISSUED FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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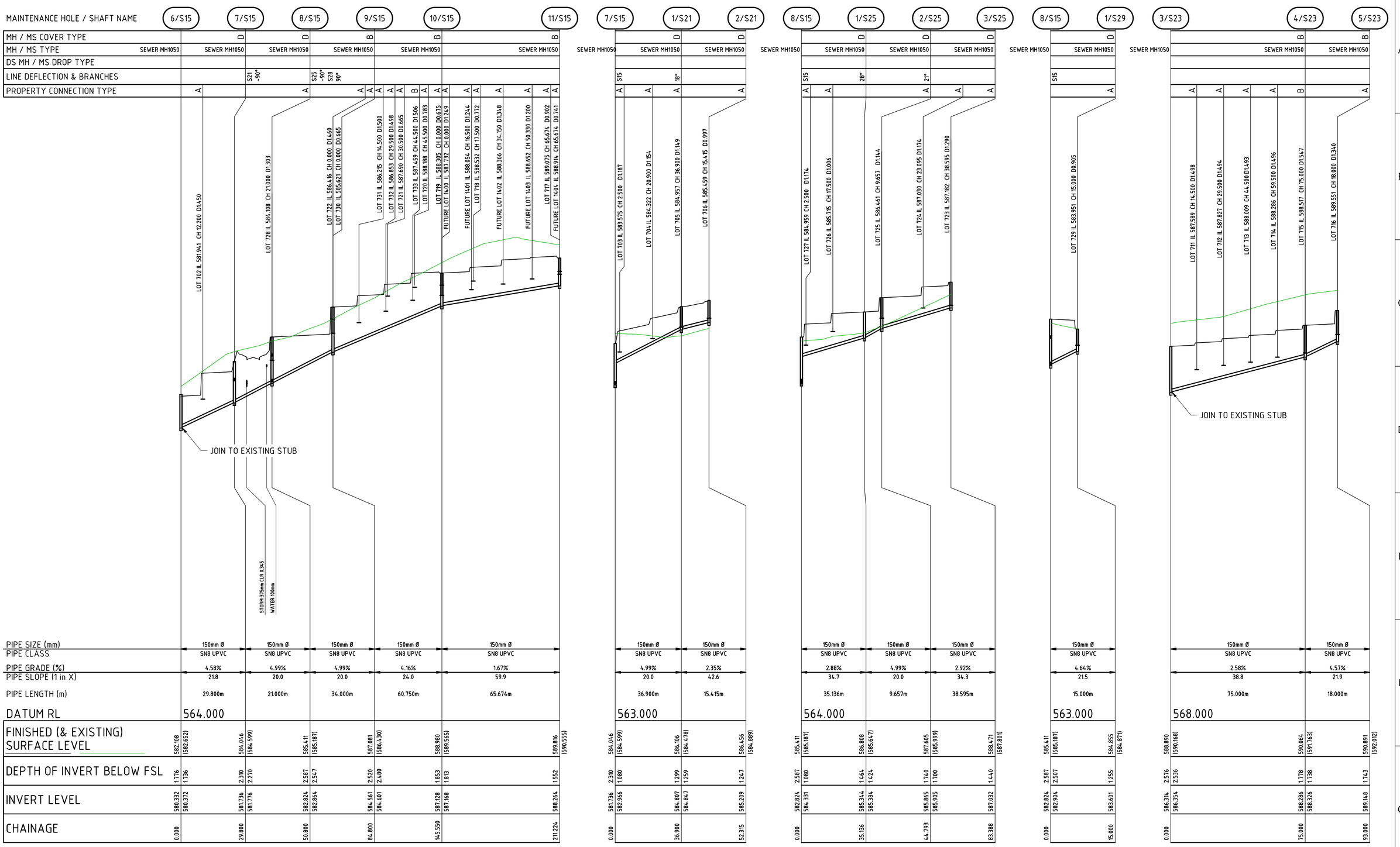
www.genengsolutions.com.au

CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 7			
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM / VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56) / AHD

TITLE				
SEWERAGE LAYOUT PLAN				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	400	0



SEWERAGE LONGITUDINAL SECTIONS

SCALE 1:1000(H), 1:100(V)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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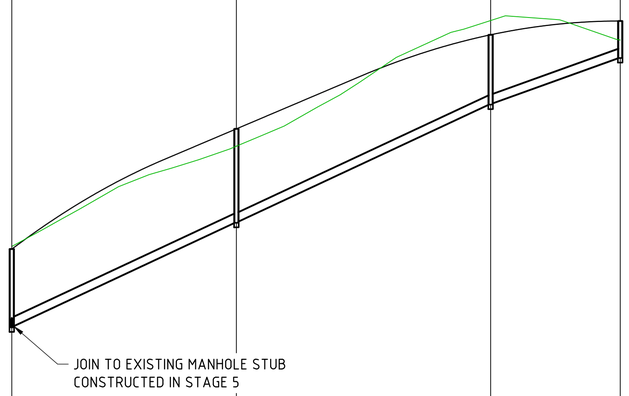
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT
CHECKED: D TAYLOR
ENGINEER: B LUSK
SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56)
VERT. DATUM: AHD

TITLE: SEWERAGE LONG SECTIONS SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	410	0

SEWER

MAINTENANCE HOLE / SHAFT NAME	15/S28	16/S28	17/S28	18/S28
MH / MS COVER TYPE	D	D	D	D
MH / MS TYPE	SEWER PLASTIC MH1200	SEWER PLASTIC MH1200	SEWER PLASTIC MH1200	SEWER PLASTIC MH1200
DS MH / MS DROP TYPE				
LINE DEFLECTION & BRANCHES	XS28			
PROPERTY CONNECTION TYPE				



PIPE SIZE (mm)	300mm Ø	300mm Ø	300mm Ø
PIPE CLASS	SN8 UPVC	SN8 UPVC	SN8 UPVC
PIPE GRADE (%)	4.60%	4.60%	3.49%
PIPE SLOPE (1 in X)	21.7	21.7	28.6
PIPE LENGTH (m)	73.334m	83.000m	42.314m
DATUM RL	563.000		
FINISHED (& EXISTING) SURFACE LEVEL	581.475 (581.559)	585.399 (584.833)	588.469 (588.934)	588.919 (588.298)
DEPTH OF INVERT BELOW FSL	2.555 2.515	3.065 3.025	2.278 2.238	1.209
INVERT LEVEL	578.920 578.960	582.333 582.373	586.191 586.231	587.710
CHAINAGE	0.000	73.334	156.334	198.647

LINE S28

0 10 20 30 40m
SCALE 1:1,000 (A1)
SCALE 1:2,000 (A3)

0 1.25 2.5 3.75 5m
SCALE 1:125 (A1)
SCALE 1:250 (A3)

SEWERAGE LONGITUDINAL SECTIONS

SCALE 1:1000(H), 1:100(V)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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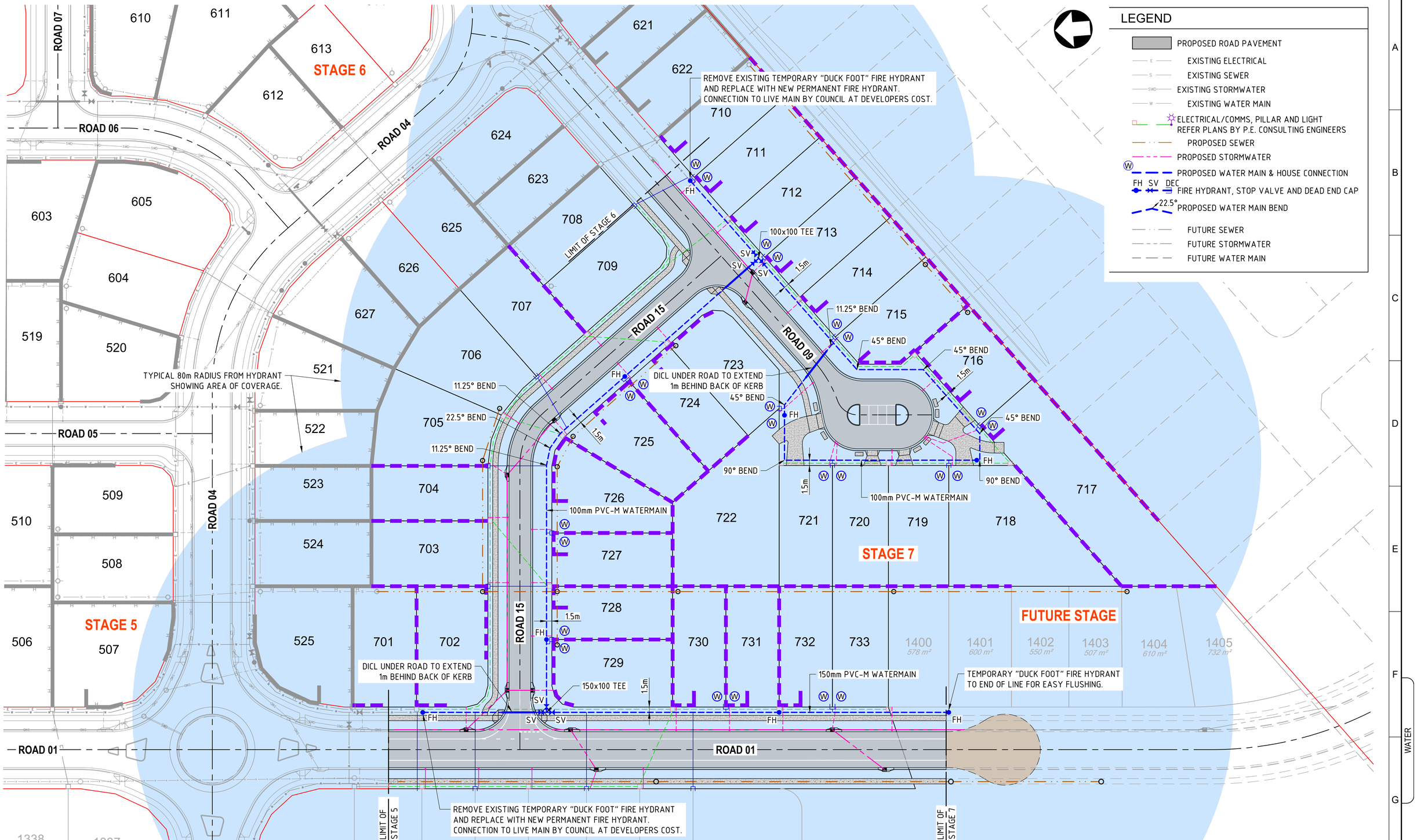
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: SEWERAGE LONG SECTIONS SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	411	0

SEWER



WATER RETICULATION LAYOUT PLAN

SCALE 1:500

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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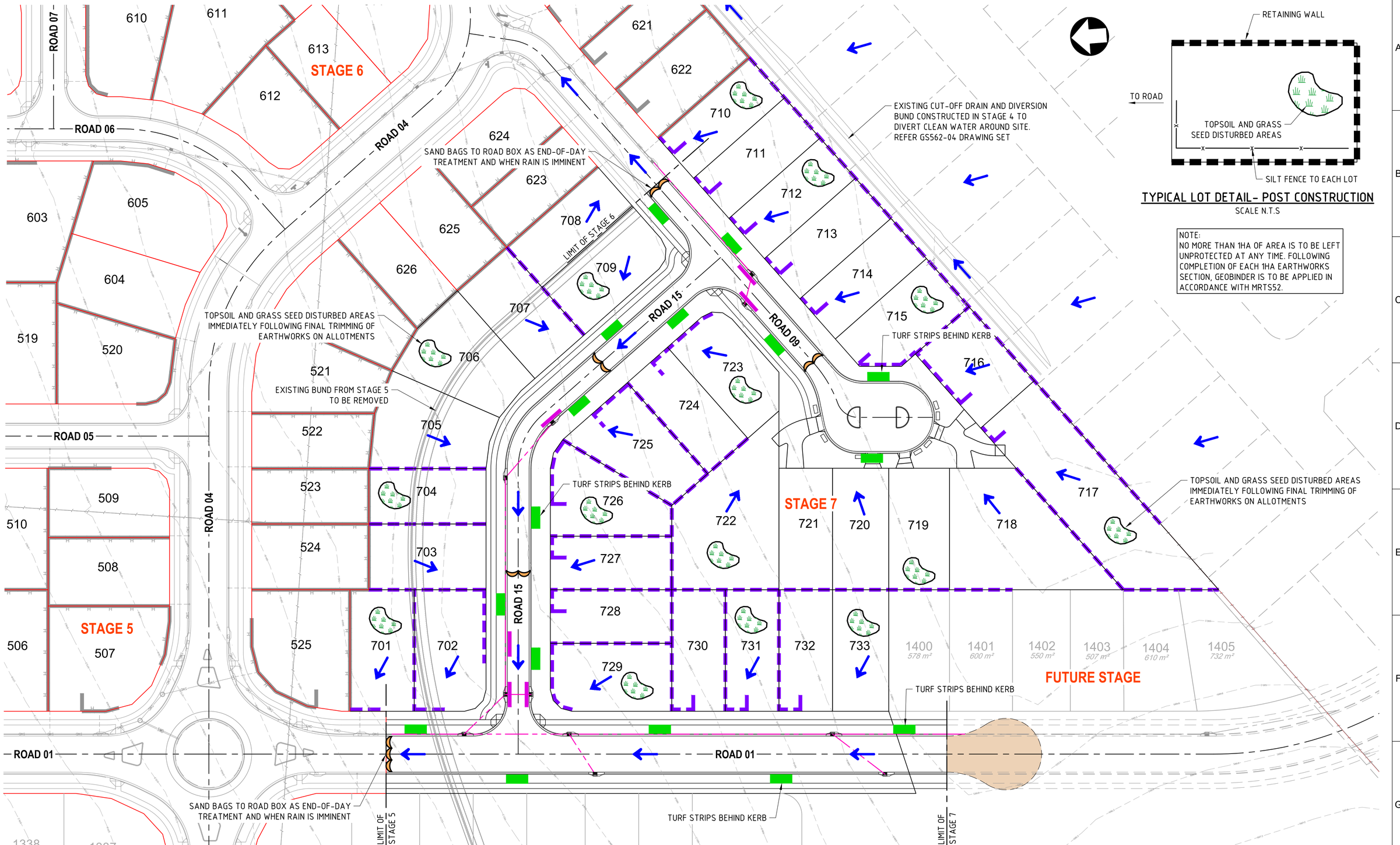
CLIENT				
BIRD IN HAND 3 PTY LTD				
PROJECT				
BOTANIC HIGHFIELDS STAGE 7				
DRAWN	CHECKED	ENGINEER	SURVEYOR	
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS	
DESIGNED			HORIZ. DATUM	VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56)	AHD

TITLE				
WATER LAYOUT PLAN				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	500	0



TYPICAL LOT DETAIL- POST CONSTRUCTION

SCALE N.T.S

NOTE:
NO MORE THAN 1HA OF AREA IS TO BE LEFT UNPROTECTED AT ANY TIME. FOLLOWING COMPLETION OF EACH 1HA EARTHWORKS SECTION, GEOBINDER IS TO BE APPLIED IN ACCORDANCE WITH MRTS52.

EROSION AND SEDIMENT CONTROL LAYOUT PLAN

SCALE 1:500

0 5 10 15 20m

SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7
DRAWN: B ENRIGHT | CHECKED: D TAYLOR | ENGINEER: B LUSK | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT | HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ESC LAYOUT PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	600	0

E&SCP

EROSION AND SEDIMENT CONTROL ASSESSMENT

1. ASSESSMENT OF EROSION RISK WAS CARRIED OUT IN ACCORDANCE WITH URBAN STORMWATER QUALITY PLANNING GUIDELINES 2010. ASSESSMENT DETERMINED THE SITE AS A LOW RISK SITE.
2. SOIL LOSS, CALCULATED VIA THE RUSLE EQUATION IS EXPECTED TO BE 86 t/ha/year ASSUMING A 40m LENGTH ACROSS EACH LOT. IN ACCORDANCE WITH IECA, TYPE 2 TREATMENTS ARE REQUIRED, PROVIDED ONLY 1HA OF AREA IS LEFT EXPOSED AT ONE TIME.
3. A SEDIMENT WEIR WAS SELECTED AS A SUITABLE TREATMENT MEASURE AND WAS CONSTRUCTED IN THE STAGE 1 WORKS IN THE NORTH-WEST CORNER. A TEMPORARY DIVERSION BUIND IS TO BE USED TO TAKE WATER FROM THE STAGE 5 CATCHMENT TO THIS WEIR.

STAGING

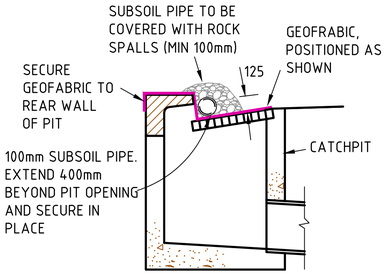
1. EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCEMENT OF EARTHWORKS.
2. SITE STRIPPING OF GROUNDCOVER AND TOPSOIL SHALL BE MINIMISED SO THAT ONLY SMALL AREAS ARE EXPOSED AT ANY ONE TIME.
3. DISTURBED AREAS ARE TO BE REINSTATED AS SOON AS POSSIBLE AFTER CONSTRUCTION LEVELS ARE ACHIEVED.
4. EROSION CONTROL STRUCTURES ARE TO REMAIN IN PLACE UNTIL VEGETATION IS APPROPRIATELY ESTABLISHED.

GENERAL NOTES

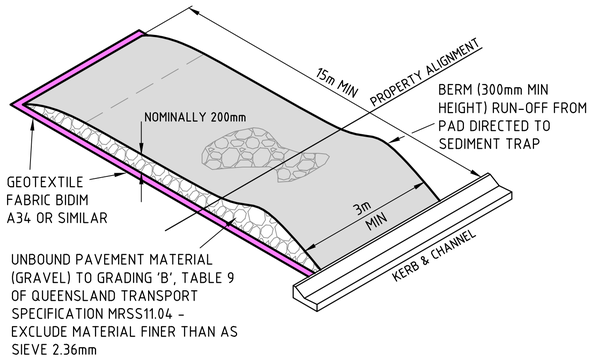
ALL SEDIMENT AND EROSION CONTROL MEASURES IMPLEMENTED DURING THE CONSTRUCTION ARE TO BE IN ACCORDANCE WITH LOCAL/STATE AUTHORITY REQUIREMENTS.

THE GUIDELINES PROVIDE THE NECESSARY REQUIREMENTS AND STANDARD DRAWINGS (SD) AS REFERENCED INDIVIDUALLY BELOW.

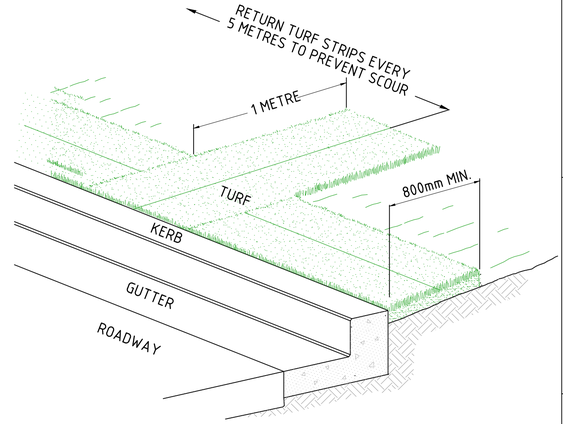
1. GENERAL
   - (A) TEMPORARY DRAINAGE CONTROL. FLOW SHOULD BE DIVERTED AROUND THE WORK SITE WHERE POSSIBLE. (SD 5-5 & 5-6)
   - (B) ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND BE OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
   - (C) ALL SEDIMENT & EROSION CONTROL DEVICES MUST BE REGULARLY INSPECTED AND MAINTAINED BY THE CONTRACTOR. INSPECTIONS SHOULD OCCUR ON A WEEKLY BASIS (MINIMUM), ALONG WITH BEFORE AND AFTER SIGNIFICANT RUNOFF PRODUCING STORMS.
   - (D) ALL DISTURBED LAND MUST BE RENDERED EROSION-PROOF BY THE ESTABLISHMENT OF 70% EFFECTIVE GROUND COVER WITHIN 28 DAYS OF FINAL EARTHWORKS TRIM.
   - (E) IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES TO BE EITHER MULCHED, COVERED WITH EROSION CONTROL BLANKETS OR TURFED, IF EARTHWORKS ARE EXPECTED TO BE DELAYED FOR MORE THAN 14 DAYS.
   - (F) STRAW BALE SEDIMENT TRAPS ARE A SECONDARY OPTION WHICH GENERALLY SHOULD NOT BE USED IF OTHER OPTIONS ARE AVAILABLE.
2. SEDIMENT CONTROL FENCE (SD 6-7)
   - (A) NOT TO BE LOCATED IN AREAS OF CONCENTRATED FLOW.
   - (B) NORMALLY LOCATED ALONG THE CONTOUR WITH A MAXIMUM CATCHMENT AREA 0.6 HA PER 100M LENGTH OF FENCE.
   - (C) WOVEN FABRICS ARE PREFERRED, NON-WOVEN FABRICS MAY BE USED ON SMALL WORK SITES, I.E. OPERATIONAL PERIOD LESS THAN 6 MONTHS OR ON SITES WHERE SIGNIFICANT SEDIMENT RUNOFF IS NOT EXPECTED.
   - (D) FENCES ARE REQUIRED 2M MIN FROM TOE OF CUT OR FILL BATTERS. WHERE NOT PRACTICAL, ONE FENCE CAN BE AT THE TOE WITH A SECOND FENCE 1M MIN AWAY. FENCE SHOULD NOT BE LOCATED PARALLEL WITH TOE IF CONCENTRATION OF FLOW WILL OCCUR BEHIND THE FENCE.
3. TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP (SD 6-9).
   - (A) ADJACENT STORMWATER RUNOFF TO BE DIVERTED AWAY FROM ENTRY/EXIT.
   - (B) WHEEL-WASH OR SPRAY UNIT MAY BE REQUIRED DURING WET WEATHER.
4. SAFETY ISSUES MUST BE CONSIDERED AT ALL TIMES - INCORPORATE TRAFFIC CONTROL DEVICES .
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN ADDRESSED AS STIPULATED.
6. TEMPORARY STOCKPILES TO HAVE 2:1 SIDE BATTERS (MAXIMUM) AND BE SHAPED TO ENSURE RUN-OFF IS TREATED AND MANAGED TO THE SATISFACTION OF THE SUPERINTENDENT. ALL EXPOSED STOCKPILE SURFACES TO BE GRASS SEEDED. SEDIMENT FENCES AND CUT-OFF DRAINS MAY BE REQUIRED.
7. ADDITIONAL OR DIFFERENT SEDIMENT & EROSION CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION PHASE TO COMPLY WITH THE ABOVE.



GULLY PIT SEDIMENT BARRIER
N.T.S.



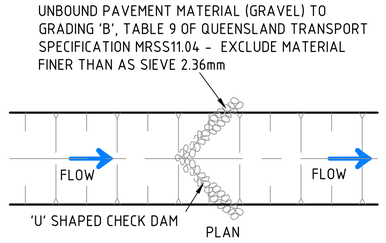
TEMPORARY CONSTRUCTION ACCESS / EXIT
N.T.S.

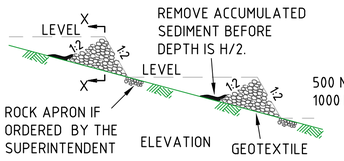


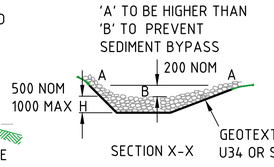
TURF FILTER STRIP DETAIL
N.T.S.

CONSTRUCTION NOTES

1. INSTALL A 2 x 400mm MINIMUM WIDE ROLL OF TURF ON THE VERGE NEXT TO THE KERB AND AT THE SAME LEVEL AS THE TOP OF THE KERB.
2. LAY 1.8m LONG TURF STRIPS NORMAL TO THE KERB EVERY 5 METRES.

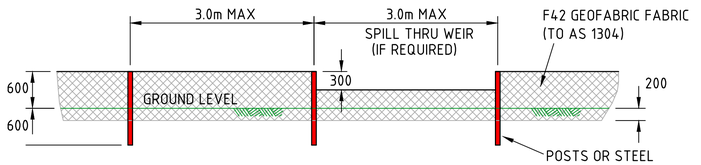




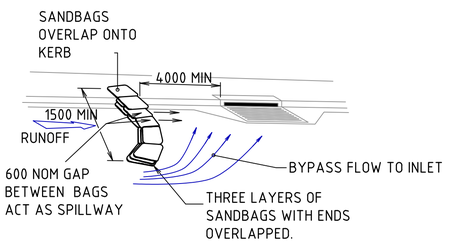


TEMPORARY CHECK DAMS - FLOW CONTROL
N.T.S.

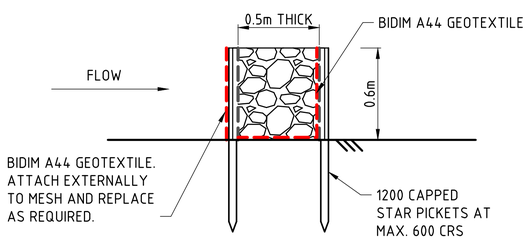
NOTE:
CHECK DAM CATCHMENT AREA LIMITED TO 4.00 Ha. DEVICE IS INTENDED FOR VELOCITY CONTROL ONLY - SEDIMENT COLLECTION IS A SECONDARY PURPOSE.



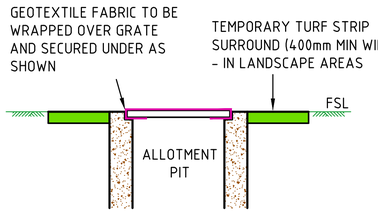
SEDIMENT FENCE
N.T.S.



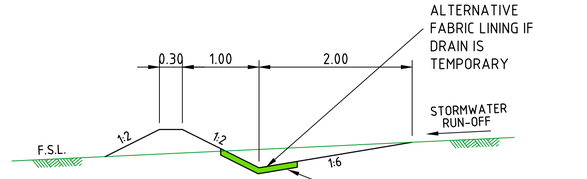
CHECK DAM (SANDBAG) DETAIL
N.T.S.



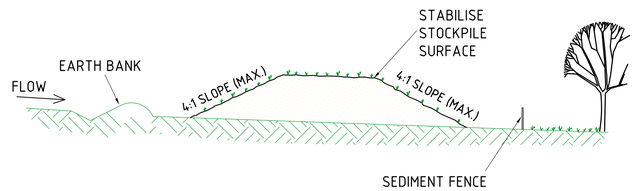
SEDIMENT WEIR TYPICAL SECTION
SCALE 1:20



ALLOTMENT PIT PROTECTION
N.T.S.



DIVERSION / CUT-OFF DRAINS
N.T.S.



STOCKPILES
N.T.S.

CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
0	03/07/25	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	01/05/2025
Project Number	GS562-07 BOTANIC STAGE 7 REV A		

BOTANIC
HIGHFIELDS RD

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 7

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	D TAYLOR	B LUSK	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM / VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56) / AHD

TITLE: ESC DETAILS AND NOTES

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-07	610	0

E&SCP