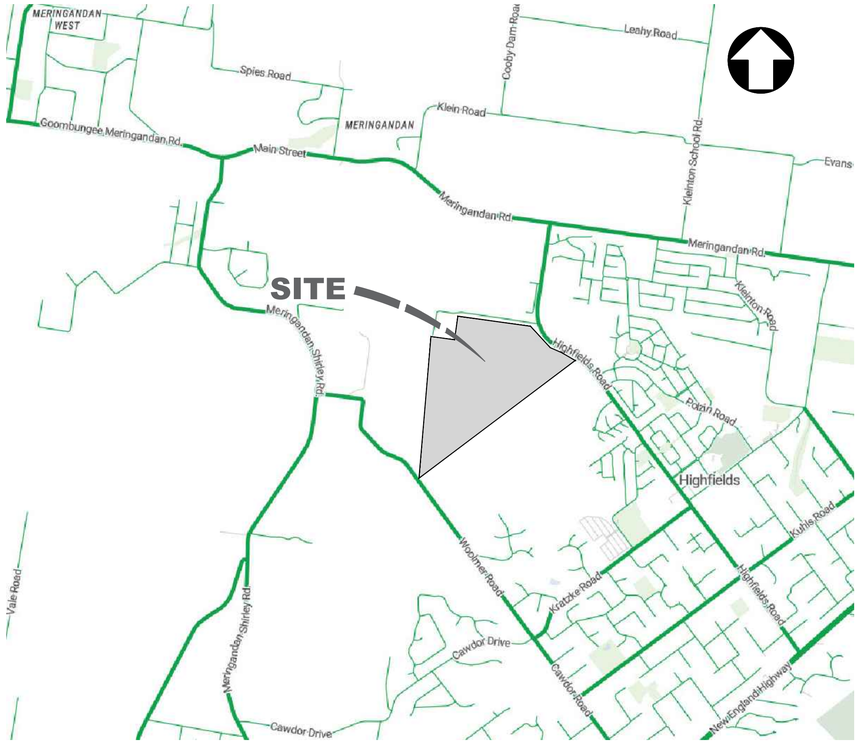
BIRD IN HAND 3 PTY LTD
BOTANIC HIGHFIELDS
STAGE 8

BROWNE ROAD, HIGHFIELDS



LOCALITY PLAN
SCALE N.T.S.

DRAWING INDEX		
DRAWING NO.	REVISION	DRAWING TITLE
GS562-08-001	B	LOCALITY PLAN AND DRAWING INDEX
GS562-08-002	B	CONSTRUCTION NOTES
GS562-08-010	B	OVERALL LAYOUT AND STAGING PLAN
GS562-08-020	B	STAGE 8 DEVELOPMENT LAYOUT SHEET 1 OF 3
GS562-08-021	B	STAGE 8 DEVELOPMENT LAYOUT SHEET 2 OF 3
GS562-08-022	B	STAGE 8 DEVELOPMENT LAYOUT SHEET 3 OF 3
GS562-08-100	B	EARTHWORKS LAYOUT PLAN SHEET 1 OF 3
GS562-08-101	B	EARTHWORKS LAYOUT PLAN SHEET 2 OF 3
GS562-08-102	B	EARTHWORKS LAYOUT PLAN SHEET 3 OF 3
GS562-08-103	B	EARTHWORKS SECTIONS SHEET 1 OF 2
GS562-08-104	B	EARTHWORKS SECTIONS SHEET 2 OF 2
GS562-08-110	B	EARTHWORKS TYPICAL RETAINING WALL
GS562-08-111	B	EARTHWORKS TYPICAL FRONT RETAINING WALL
GS562-08-120	B	RETAINING WALL 1 PLAN AND ELEVATION
GS562-08-121	B	RETAINING WALL 2 PLAN AND ELEVATION
GS562-08-122	B	RETAINING WALL 3 PLAN AND ELEVATION
GS562-08-200	B	ROADS AND FOOTPATHS DETAIL PLAN SHEET 1 OF 2
GS562-08-201	B	ROADS AND FOOTPATHS DETAIL PLAN SHEET 2 OF 2
GS562-08-210	B	ROADS TYPICAL SECTIONS
GS562-S5-220	B	ROAD 03 LONGITUDINAL SECTION AND CROSS SECTIONS
GS562-08-221	B	ROAD 21 LONGITUDINAL SECTION SHEET 1 OF 3
GS562-08-222	B	ROAD 21 LONGITUDINAL SECTION SHEET 2 OF 3
GS562-08-223	B	ROAD 21 LONGITUDINAL SECTION SHEET 3 OF 3
GS562-08-224	B	ROAD 21 CROSS SECTIONS SHEET 1 OF 6
GS562-08-225	B	ROAD 21 CROSS SECTIONS SHEET 2 OF 6
GS562-08-226	B	ROAD 21 CROSS SECTIONS SHEET 3 OF 6
GS562-08-227	B	ROAD 21 CROSS SECTIONS SHEET 4 OF 6
GS562-08-228	B	ROAD 21 CROSS SECTIONS SHEET 5 OF 6
GS562-08-229	B	ROAD 21 CROSS SECTIONS SHEET 6 OF 6
GS562-08-230	B	ROAD 22 LONGITUDINAL SECTION AND CROSS SECTIONS
GS562-08-250	B	ROUNDABOUT LAYOUT PLAN
GS562-08-251	B	ROUNDABOUT SETOUT PLAN
GS562-08-252	B	ROUNDABOUT CENTRAL ISLAND PLAN
GS562-08-253	B	ROUNDABOUT SPLITTER ISLANDS SHEET 1 OF 2
GS562-08-254	B	ROUNDABOUT SPLITTER ISLANDS SHEET 2 OF 2
GS562-08-255	B	ROAD 21 - ROAD 22 INTERSECTION PLAN
GS562-08-260	B	PAVEMENT DETAILS
GS562-08-261	B	ROUNDABOUT CONCRETE DETAILS
GS562-08-270	B	SIGNAGE AND LINEMARKING PLAN SHEET 1 OF 3
GS562-08-271	B	SIGNAGE AND LINEMARKING PLAN SHEET 2 OF 3

DRAWING INDEX		
DRAWING NO.	REVISION	DRAWING TITLE
GS562-08-271	B	SIGNAGE AND LINEMARKING PLAN SHEET 3 OF 3
GS562-08-300	B	STORMWATER CATCHMENT PLAN SHEET 1 OF 3
GS562-08-301	B	STORMWATER CATCHMENT PLAN SHEET 2 OF 3
GS562-08-302	B	STORMWATER CATCHMENT PLAN SHEET 3 OF 3
GS562-08-310	B	STORWMATER LAYOUT PLAN SHEET 1 OF 3
GS562-08-311	B	STORWMATER LAYOUT PLAN SHEET 2 OF 3
GS562-08-312	B	STORWMATER LAYOUT PLAN SHEET 3 OF 3
GS562-08-320	B	STORMWATER LONGITUDINAL SECTIONS SHEET 1 OF 4
GS562-08-321	B	STORMWATER LONGITUDINAL SECTIONS SHEET 2 OF 4
GS562-08-322	B	STORMWATER LONGITUDINAL SECTIONS SHEET 3 OF 4
GS562-08-323	B	STORMWATER LONGITUDINAL SECTIONS SHEET 4 OF 4
GS562-08-330	B	STORMWATER CALCULATION TABLES
GS562-08-340	B	STORMWATER OPEN CHANNEL TYPICAL SECTIONS
GS562-08-341	B	STORMWATER OPEN CHANNEL LONGITUDINAL SECTION SHEET 1 OF 2
GS562-08-342	B	STORMWATER OPEN CHANNEL LONGITUDINAL SECTION SHEET 2 OF 2
GS562-08-343	B	STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 1 OF 5
GS562-08-344	B	STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 2 OF 5
GS562-08-345	B	STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 3 OF 5
GS562-08-346	B	STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 4 OF 5
GS562-08-347	B	STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 5 OF 5
GS562-08-348	B	STORMWATER OPEN CHANNEL INLETS PLAN
GS562-08-349	B	STORMWATER OPEN CHANNEL OUTLET PROTECTION PLAN
GS562-08-350	B	STORMWATER BIO RETENTION BASIN LAYOUT PLAN
GS562-08-351	B	STORMWATER BIO RETENTION BASIN SECTIONS AND DETAILS
GS562-08-352	B	STORMWATER SEDIMENT FOREBAY CONCRETE DETAILS
GS562-08-360	B	STORMWATER CULVERT SECTIONS
GS562-08-400	B	SEWERAGE LAYOUT PLAN SHEET 1 OF 3
GS562-08-401	B	SEWERAGE LAYOUT PLAN SHEET 2 OF 3
GS562-08-402	B	SEWERAGE LAYOUT PLAN SHEET 3 OF 3
GS562-08-410	B	SEWERAGE LONGITUDINAL SECTIONS SHEET 1 OF 4
GS562-08-411	B	SEWERAGE LONGITUDINAL SECTIONS SHEET 2 OF 4
GS562-08-412	B	SEWERAGE LONGITUDINAL SECTIONS SHEET 3 OF 4
GS562-08-413	B	SEWERAGE LONGITUDINAL SECTIONS SHEET 4 OF 4
GS562-08-500	B	WATER LAYOUT PLAN SHEET 1 OF 2
GS562-08-501	B	WATER LAYOUT PLAN SHEET 2 OF 2
GS562-08-600	B	ESC LAYOUT PLAN SHEET 1 OF 3
GS562-08-600	B	ESC LAYOUT PLAN SHEET 2 OF 3
GS562-08-600	B	ESC LAYOUT PLAN SHEET 3 OF 3
GS562-08-610	B	ESC DETAILS AND NOTES

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature	Eghyte Sign	Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: 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	GS562-08	001	B

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 ϕ 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 ϕ 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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

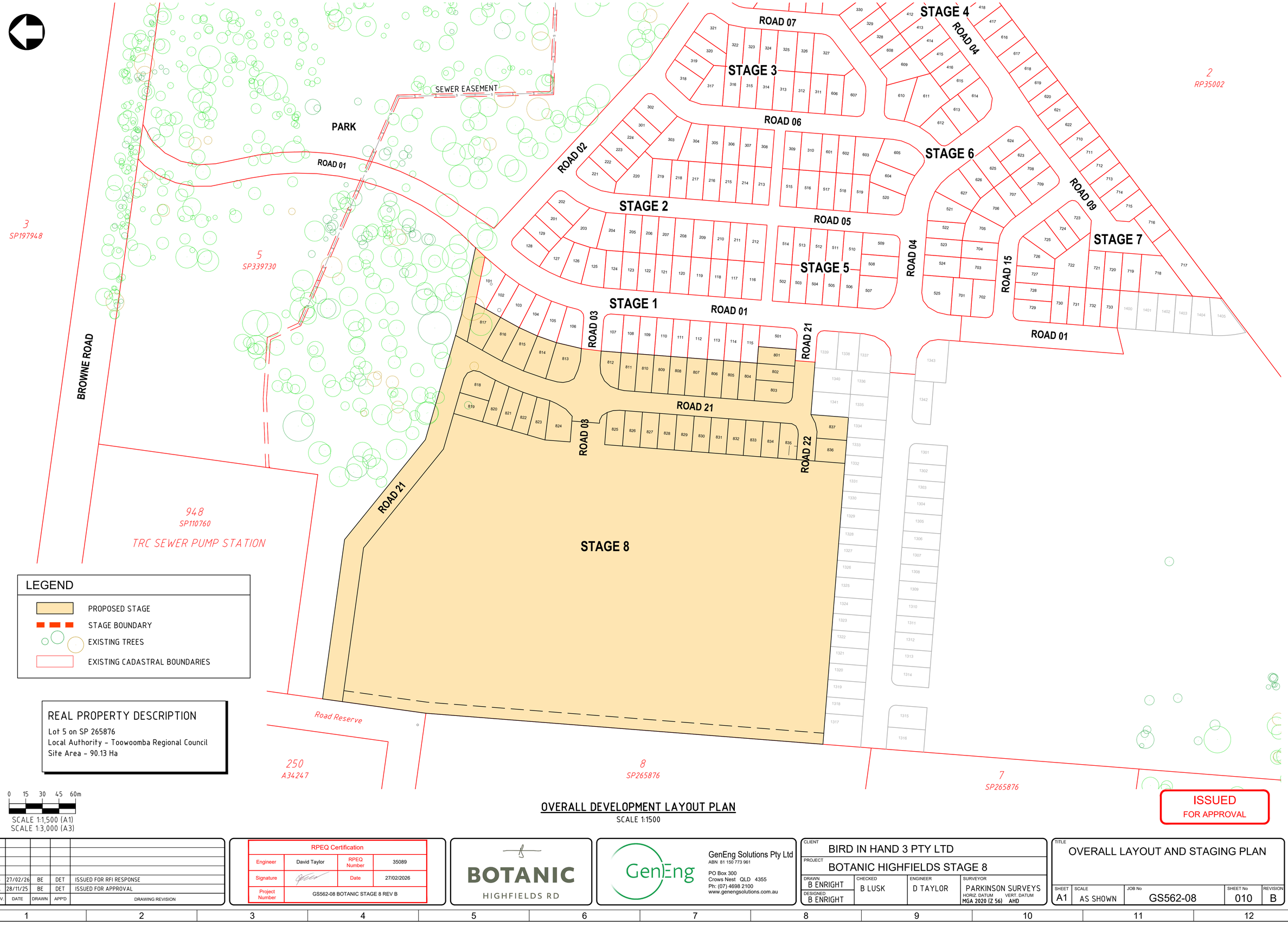
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: 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	GS562-08	002	B

GENERAL



LEGEND

- PROPOSED STAGE
- STAGE BOUNDARY
- EXISTING TREES
- EXISTING CADASTRAL BOUNDARIES

REAL PROPERTY DESCRIPTION

Lot 5 on SP 265876
Local Authority - Toowoomba Regional Council
Site Area - 90.13 Ha

0 15 30 45 60m
SCALE 1:1,500 (A1)
SCALE 1:3,000 (A3)

OVERALL DEVELOPMENT LAYOUT PLAN

SCALE 1:1500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

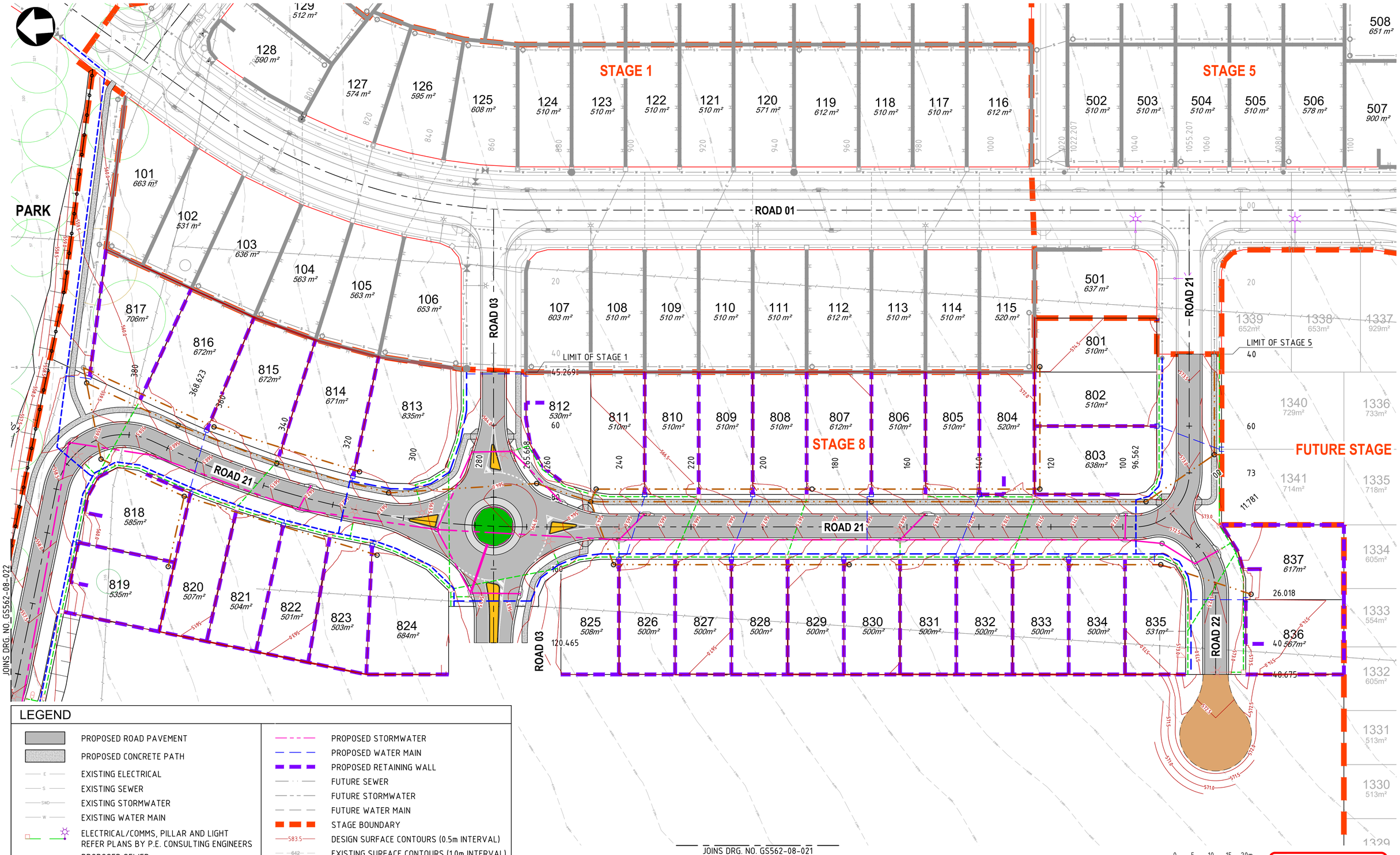
BOTANIC
HIGHFIELDS RD

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 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE				
OVERALL LAYOUT AND STAGING PLAN				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-08	SHEET No: 010	REVISION: B

GENERAL



LEGEND

PROPOSED ROAD PAVEMENT	PROPOSED STORMWATER
PROPOSED CONCRETE PATH	PROPOSED WATER MAIN
EXISTING ELECTRICAL	PROPOSED RETAINING WALL
EXISTING SEWER	FUTURE SEWER
EXISTING STORMWATER	FUTURE STORMWATER
EXISTING WATER MAIN	FUTURE WATER MAIN
ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS	STAGE BOUNDARY
PROPOSED SEWER	DESIGN SURFACE CONTOURS (0.5m INTERVAL)
	EXISTING SURFACE CONTOURS (1.0m INTERVAL)

STAGE 8 DEVELOPMENT LAYOUT PLAN - SHEET 1 OF 3

SCALE 1:500

0 5 10 15 20m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: STAGE 8 DEVELOPMENT LAYOUT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	020	B

JOINS DRG. NO. GS562-08-020

JOINS DRG. NO. GS562-08-022

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
- PROPOSED RETAINING WALL
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN
- STAGE BOUNDARY
- 583.5 — DESIGN SURFACE CONTOURS (0.5m INTERVAL)
- 642 — EXISTING SURFACE CONTOURS (1.0m INTERVAL)

STAGE 8

FUTURE STAGE

1326 1325 1324 323 322 1321 1320 1319 1318 1317

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

STORMWATER CULVERT
REFER DRG. GS562-08-311 FOR DETAILS

10.00

SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

260 250.467 240 220 200 180 160 140 120 100 80 60 40 20 0

Road Reserve

8 SP265876

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

STAGE 8 DEVELOPMENT LAYOUT PLAN - SHEET 2 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8				
DRAWN	CHECKED	ENGINEER	SURVEYOR	
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS	
DESIGNED			HORIZ. DATUM	VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56)	AHD

TITLE				
STAGE 8 DEVELOPMENT LAYOUT PLAN SHEET 2 OF 3				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	021	B

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
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- PROPOSED RETAINING WALL
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN
- STAGE BOUNDARY
- DESIGN SURFACE CONTOURS (0.5m INTERVAL)
- EXISTING SURFACE CONTOURS (1.0m INTERVAL)

948
SP110760

TRC SEWER PUMP STATION

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

EXISTING TRC TRUNK SEWER

5
SP339730

DN150 SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

Road Reserve

250
A34247

PARK

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

STORMWATER CULVERTS
REFER DRG. GS562-08-312 FOR DETAILS

ROAD 21

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

Road Reserve

STAGE 8

JOINS DRG. NO. GS562-08-021

JOINS DRG. NO. GS562-08-020

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

STAGE 8 DEVELOPMENT LAYOUT PLAN - SHEET 3 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8		
DRAWN B ENRIGHT	CHECKED B LUSK	ENGINEER D TAYLOR	SURVEYOR PARKINSON SURVEYS
DESIGNED B ENRIGHT			HORIZ. DATUM MGA 2020 (Z 56) VERT. DATUM AHD

TITLE: STAGE 8 DEVELOPMENT LAYOUT PLAN SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	022	B

EARTHWORKS QUANTITIES - STAGE 8

TOPSOIL STRIP	7358m³ (150mm THICK)
EARTHWORKS CUT	9304m³
FILL REQUIRED	18608m³
BALANCE (BORROW)	9304m³ (TAKE SPOIL FROM STAGES 1-7)

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 NATURAL SURFACE. REFER PLANS GS562-08.
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.

PARK

STAGE 1

ROAD 01

ROAD 03

ROAD 21

ROAD 22

ALLOTMENT EARTHWORKS PREVIOUSLY SHOWN PLAN SET GS562-01 STAGE 1

ALLOTMENT EARTHWORKS PREVIOUSLY SHOWN PLAN SET GS562-05 STAGE 5

LIMIT OF STAGE 1

LIMIT OF STAGE 5

STAGE 5

FUTURE STAGE

STAGE 8

JOINS DRG. NO. GS562-08-022

JOINS DRG. NO. GS562-08-021

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)

EARTHWORKS LAYOUT PLAN - SHEET 1 OF 3

SCALE 1:500

0 5 10 15 20m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT | HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: EARTHWORKS LAYOUT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	100	B

GENERAL

JOINS DRG. NO. GS562-08-100

JOINS DRG. NO. GS562-08-102

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)
- 583.5 DESIGN SURFACE CONTOURS (0.5m)
- 642 EXISTING SURFACE CONTOURS (1m)
- BATTERS (SLOPES AS NOTED)

STAGE 8

FUTURE STAGE

1325 1324 1323 1322 1321 1320 1319 1318 1317

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

553.0 553.5 554.0 554.5 555.0 555.5 556.0 556.5 557.0 557.5 558.0 558.5 559.0

553.0 553.5 554.0 554.5 555.0 555.5 555.0 555.5 556.0 556.5 557.0 557.5 558.0 558.5

10.00

Road Reserve

8 SP265876

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

EARTHWORKS LAYOUT PLAN - SHEET 2 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: EARTHWORKS LAYOUT PLAN SHEET 2 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	101	B

GENERAL

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)
- 583.5 DESIGN SURFACE CONTOURS (0.5m)
- 642 EXISTING SURFACE CONTOURS (1m)
- BATTERS (SLOPES AS NOTED)

948
SP110760

5
SP339730

TRC SEWER PUMP STATION

EXISTING TRC TRUNK SEWER

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

PARK

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

ROAD 2

Road Reserve

250
A34247

Road Reserve

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

STAGE 8

JOINS DRG. NO. GS562-08-101

JOINS DRG. NO. GS562-08-100

300 mm

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

EARTHWORKS LAYOUT PLAN - SHEET 3 OF 3
SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

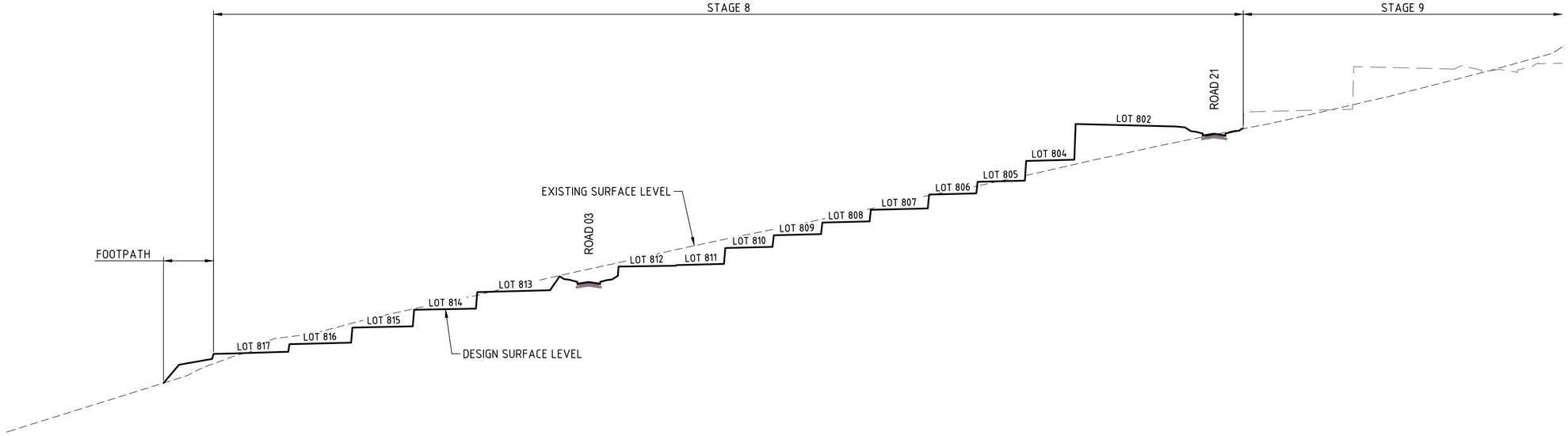
RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

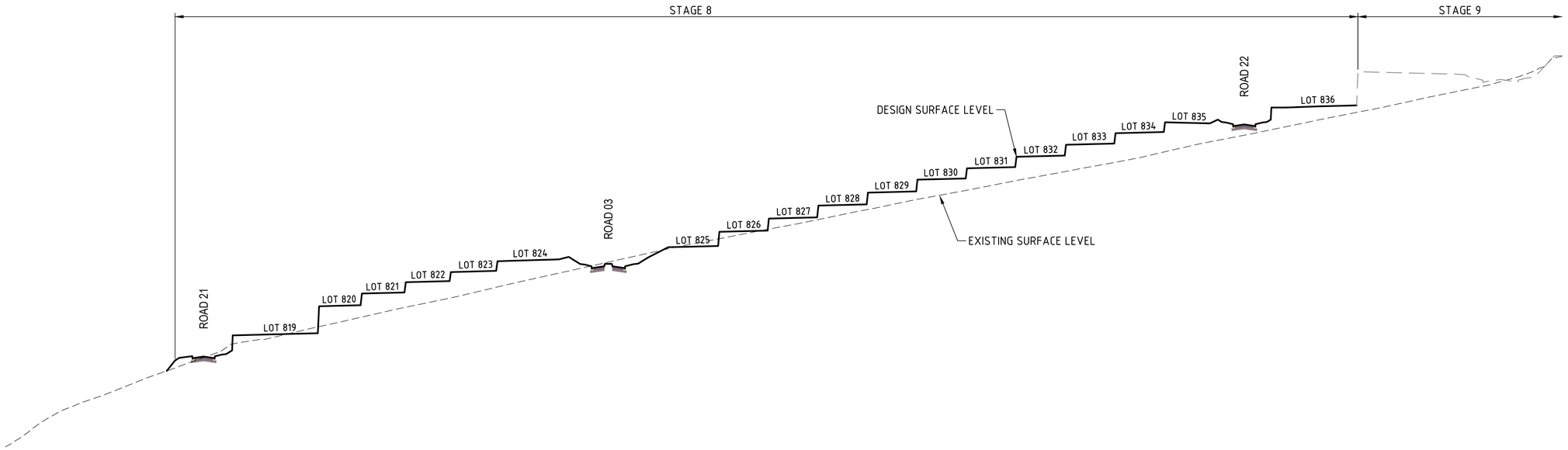
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 8			
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM / VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56) / AHD

TITLE				
EARTHWORKS LAYOUT PLAN SHEET 3 OF 3				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	102	B



SECTION A
SCALE 1:750(H), 1:150(V)



SECTION B
SCALE 1:750(H), 1:150(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)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

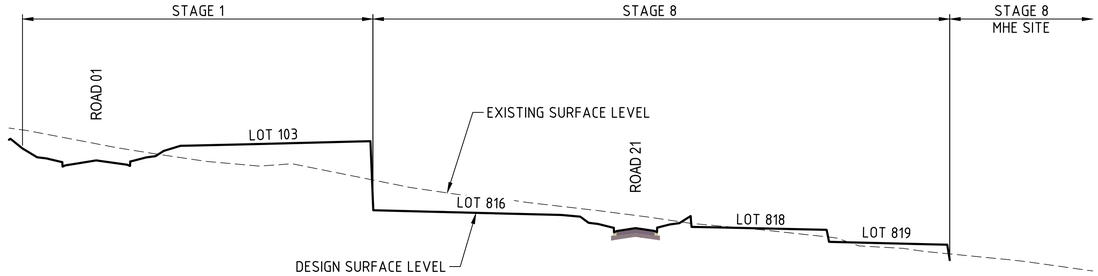
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

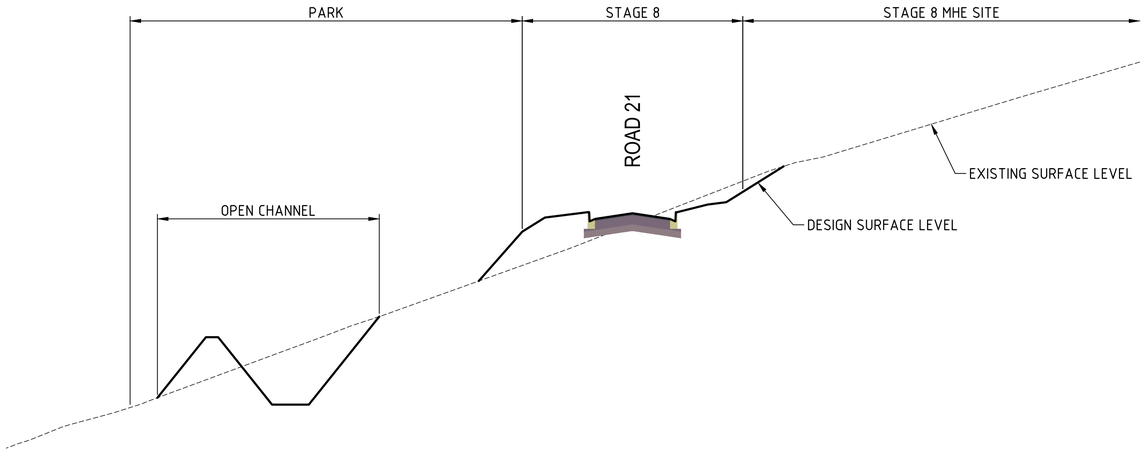
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD
B ENRIGHT			

TITLE: EARTHWORKS SECTIONS SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	103	B



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



SECTION E
SCALE 1:250(H), 1:50(V)

SECTION D
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)

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)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

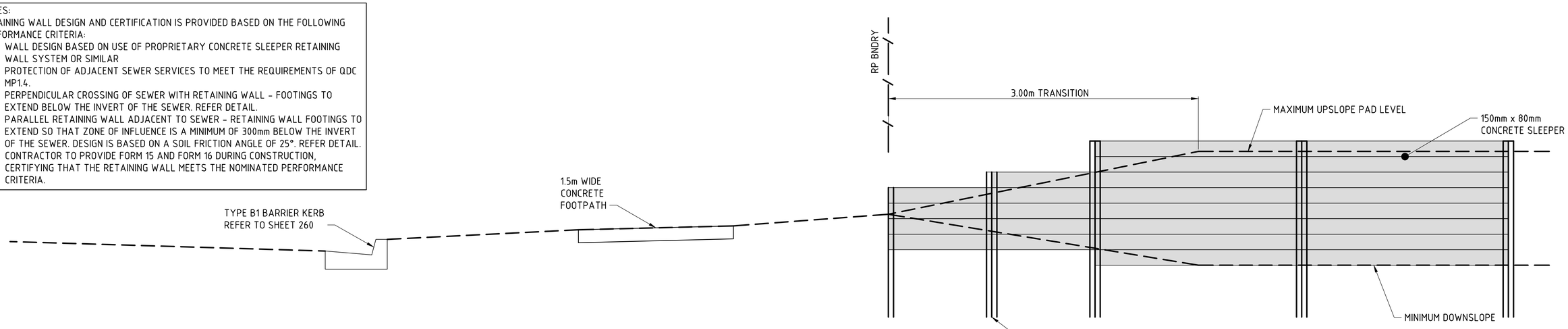
TITLE: EARTHWORKS SECTIONS SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	104	B

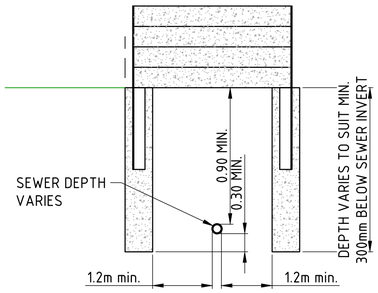
GENERAL

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

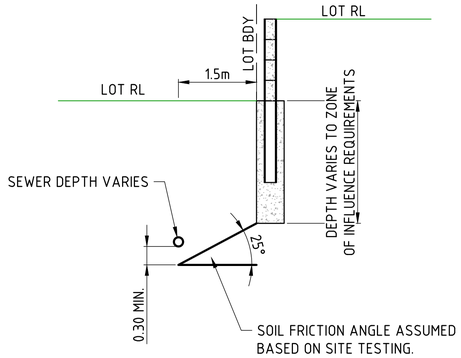
- WALL DESIGN BASED ON USE OF PROPRIETARY CONCRETE SLEEPER RETAINING WALL SYSTEM OR SIMILAR
- PROTECTION OF ADJACENT SEWER SERVICES TO MEET THE REQUIREMENTS OF QDC MP1.4.
- PERPENDICULAR CROSSING OF SEWER WITH RETAINING WALL - FOOTINGS TO EXTEND BELOW THE INVERT OF THE SEWER. REFER DETAIL.
- PARALLEL 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.



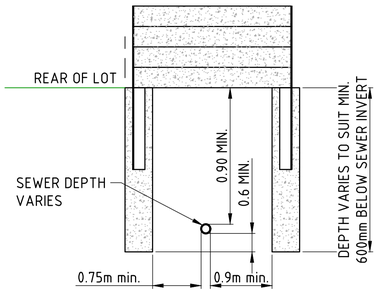
RETAINING WALL BOUNDARY STEP-DOWN DETAILS
SCALE 1:50



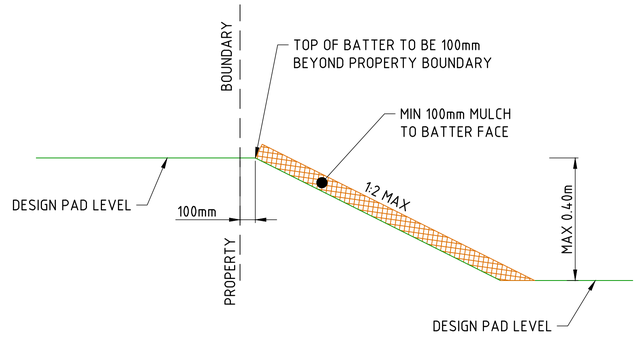
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 1
SCALE N.T.S



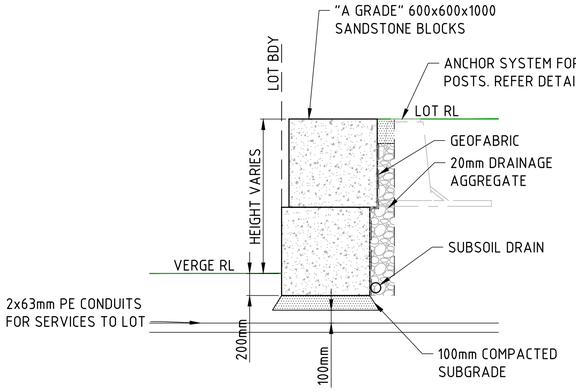
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 2
SCALE N.T.S



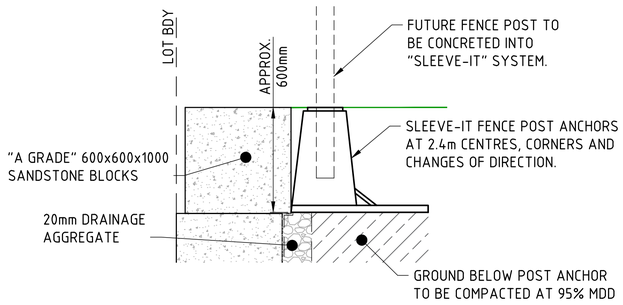
RETAINING WALL BRIDGE OF SEWER DETAIL TYPE 3
SCALE N.T.S



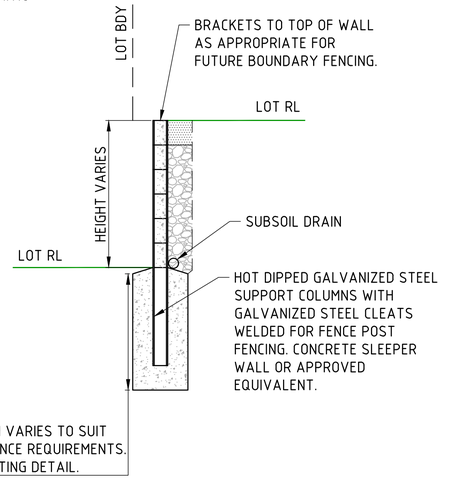
TYPICAL BATTER DETAIL (IF REQUIRED)
SCALE N.T.S



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 APPROVAL

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
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

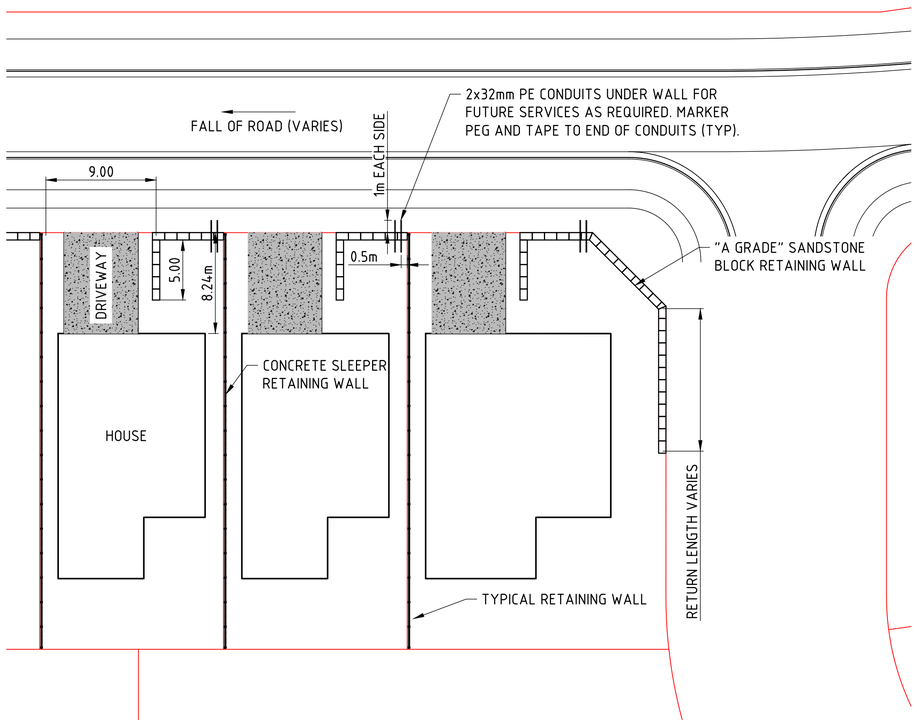
BOTANIC
HIGHFIELDS RD

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

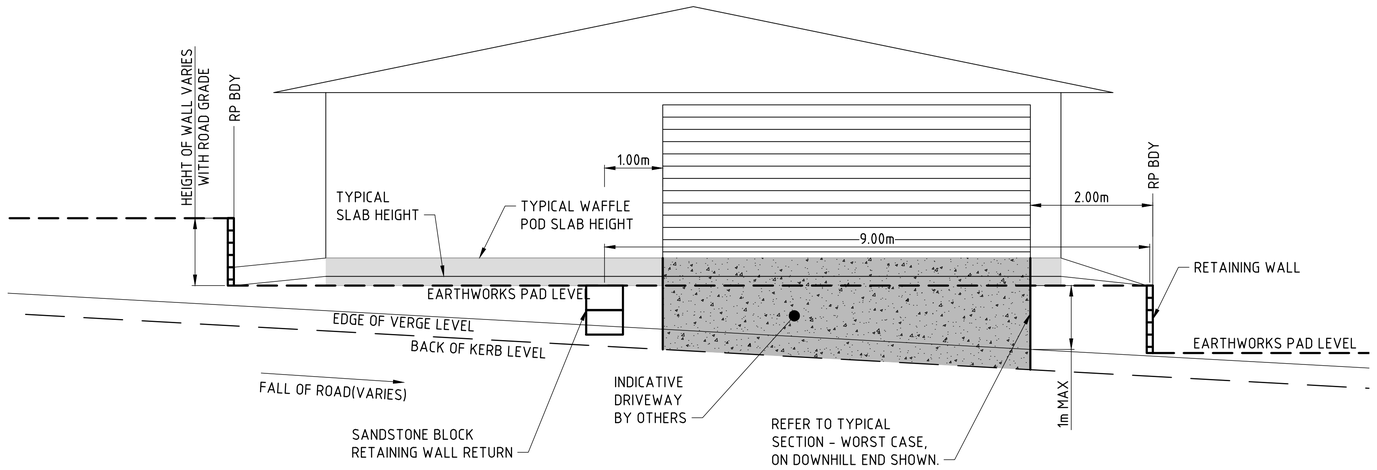
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: TYPICAL RETAINING WALL

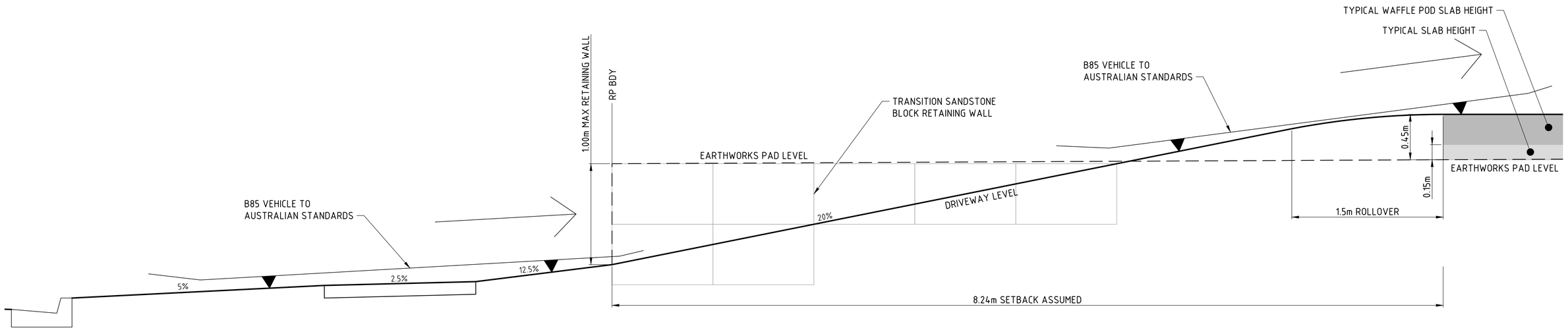
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	110	B



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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

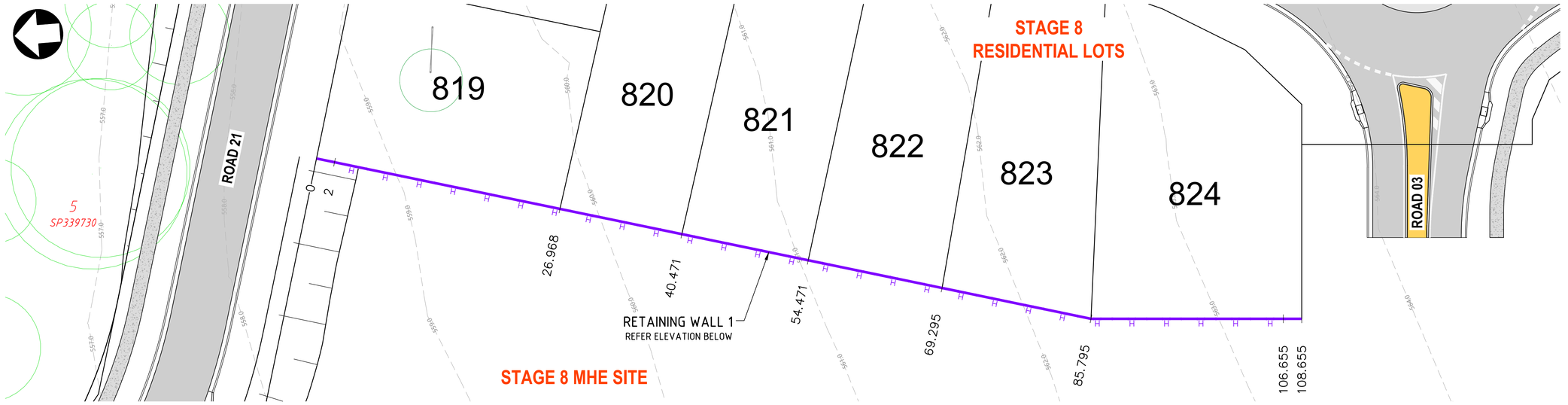
BOTANIC
HIGHFIELDS RD

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 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

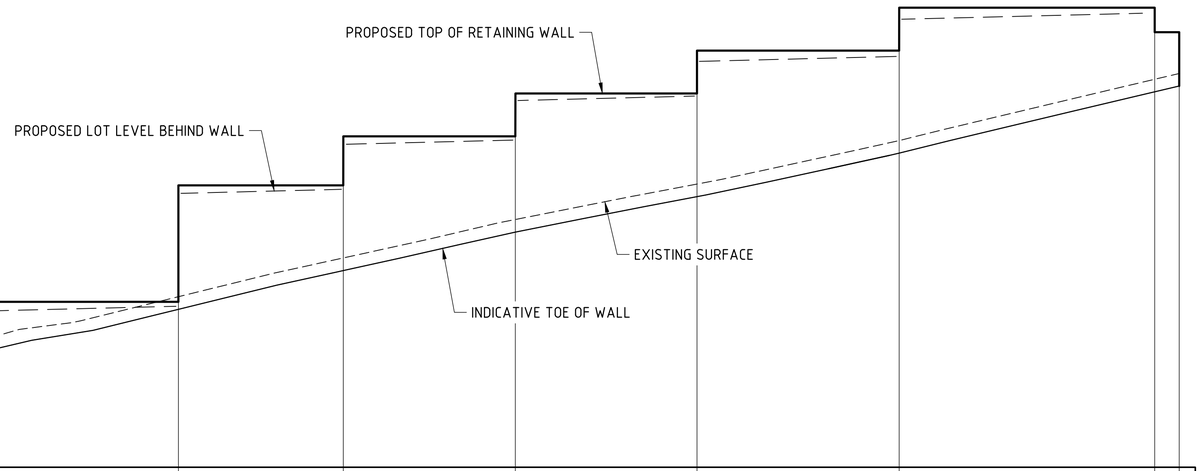
TITLE: FRONT RETAINING WALL
SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-08 | SHEET No: 111 | REVISION: B

GENERAL



RETAINING WALL 1 PLAN

SCALE 1:250



VERT. CURVE LENGTH
VERT. GEOMETRY
HORZ. GEOMETRY
DATUM RL 557

TOP OF RETAINING WALL	558.900	558.900	559.700	561.600	562.400	563.100	563.800	564.500	563.222
HEIGHT OF WALL	0.700	0.357	0.123	1.390	1.562	1.684	1.673	1.373	0.000
TOE OF RETAINING WALL	558.200	558.543	559.577	560.210	560.838	561.416	562.127	563.127	563.222
EXISTING SURFACE LEVEL	558.674	558.748	559.783	560.416	561.043	561.622	562.331	563.332	563.426
CHAINAGE	0.000	2.000	26.968	40.423	54.471	69.296	85.795	106.655	108.655

LONGITUDINAL SECTION - RETAINING WALL 1

SCALE 1:250(H), 1:50(V)

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)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

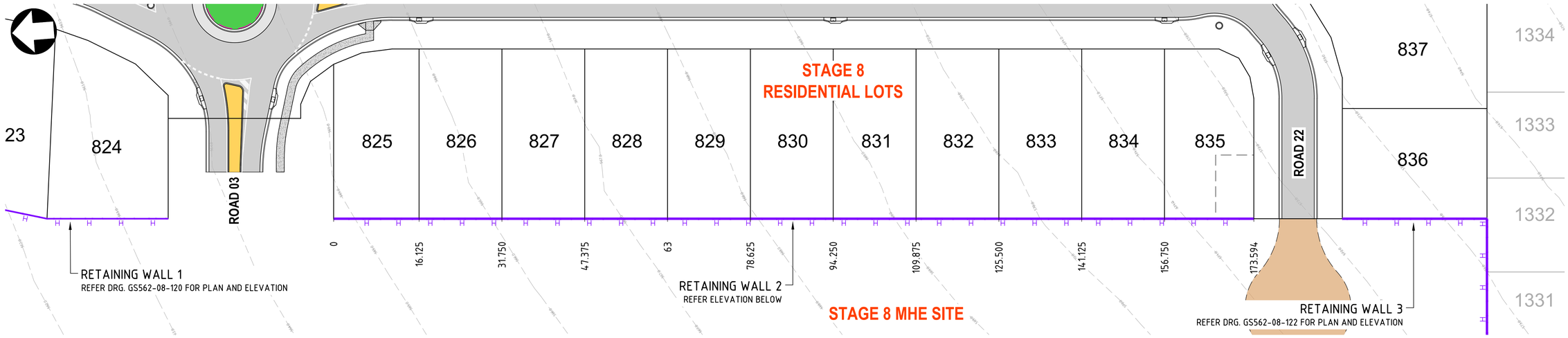
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

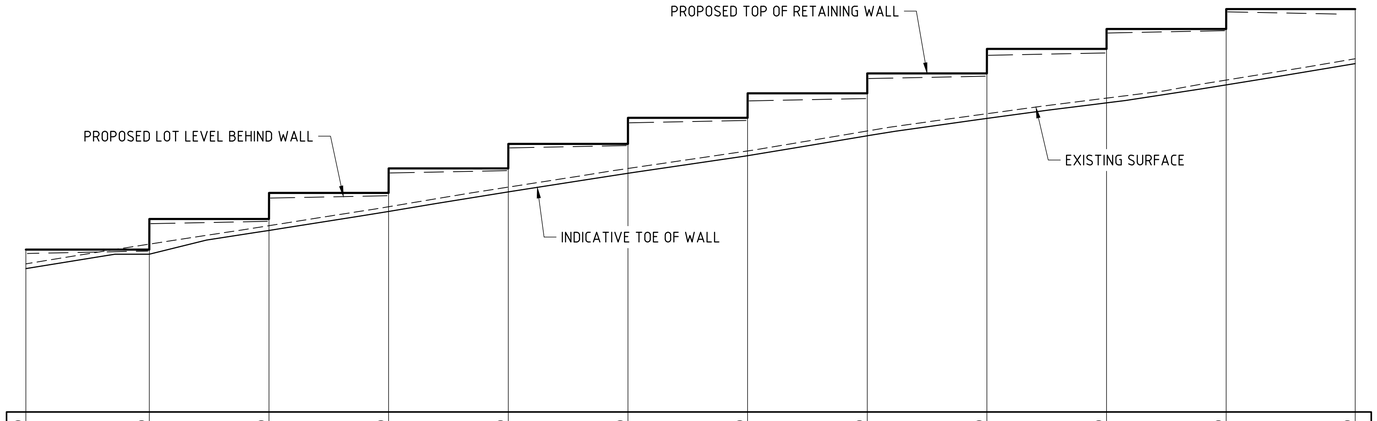
TITLE: EARTHWORKS
RETAINING WALL 1
PLAN AND ELEVATION

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	120	B



RETAINING WALL 2 PLAN

SCALE 1:400



VERT. CURVE LENGTH											
VERT. GEOMETRY											
HORZ. GEOMETRY											
DATUM RL 560											
TOP OF RETAINING WALL	565.300	565.300	566.300	567.150	567.950	568.750	569.600	570.400	571.050	571.850	572.500	573.150
HEIGHT OF WALL	0.620	0.150	0.375	0.606	0.767	0.958	1.236	1.385	1.469	1.761	1.824	1.779
TOE OF RETAINING WALL	564.680	565.150	565.925	566.544	567.183	567.792	568.364	569.015	569.581	570.089	570.676	571.311
EXISTING SURFACE LEVEL	564.835	565.479	566.080	566.700	567.339	567.947	568.519	569.171	569.735	570.244	570.833	571.528
CHAINAGE	0.000	16.125	31.750	47.375	63.000	78.625	94.250	109.875	125.500	141.125	156.750	173.594

LONGITUDINAL SECTION - RETAINING WALL 2

SCALE 1:400(H), 1:100(V)

0 4 8 12 16m
SCALE 1:400 (A1)
SCALE 1:800 (A3)

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

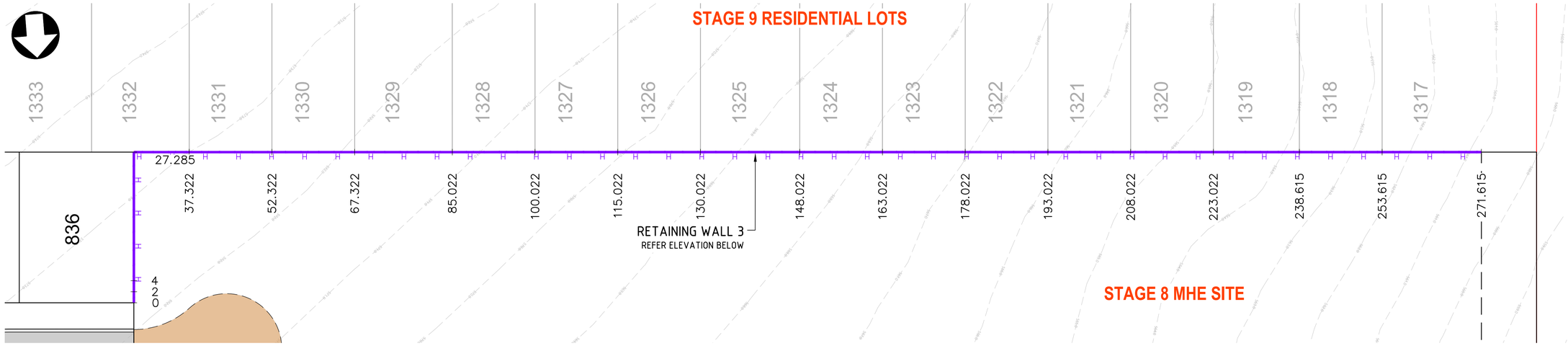
BOTANIC
HIGHFIELDS RD

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 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: EARTHWORKS
RETAINING WALL 2
PLAN AND ELEVATION

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	121	B



RETAINING WALL 3 PLAN

SCALE 1:400

0 4 8 12 16m

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

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: EARTHWORKS
RETAINING WALL 3
PLAN AND ELEVATION

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	122	B

CONNECT TO EXISTING STAGE 1 FOOTPATH

1.5m WIDE CONCRETE FOOTPATH

TIMBER POST AND RAIL FENCE. REFER LANDSCAPE DRAWINGS BY SAUNDERS HAVILL.

STAGE 1

STAGE 5

STAGE 8

FUTURE STAGE

ROAD 01

ROAD 03

ROAD 21

ROAD 22

CONNECT TO EXISTING STAGE 1 FOOTPATH

LIMIT OF STAGE 1

CONNECT TO EXISTING STAGE 5 FOOTPATH

LIMIT OF STAGE 5

1.5m WIDE CONCRETE FOOTPATH

JOINS DRG. NO. GS562-08-201

FUTURE MHE SITE

PROVIDE SEALED TURNAROUND AT END OF STAGE 7 WORKS. 200mm TYPE 2.5 GRAVEL. C170 SINGLE COAT 10mm SEAL.

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- KR — PROPOSED KERB RAMP REFER IPWEA STD. DRG. RS-090
- 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
- PROPOSED RETAINING WALL
- 583.5 — DESIGN SURFACE CONTOURS (0.1m INTERVAL)
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

ROADS AND FOOTPATHS LAYOUT PLAN – SHEET 1 OF 2

SCALE 1:500

0 5 10 15 20m

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

ISSUED FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: ROADS AND FOOTPATHS DETAIL PLAN SHEET 1 OF 1

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	200	B

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- KR — PROPOSED KERB RAMP REFER IPWEA STD. DRG. RS-090
- 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
- PROPOSED RETAINING WALL
- 583.5 — DESIGN SURFACE CONTOURS (0.1m INTERVAL)
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

948
SP110760

TRC SEWER PUMP STATION

EXISTING TRC TRUNK SEWER

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

PROVIDE SEALED TURNAROUND AT END OF STAGE 8 WORKS. 200mm TYPE 2.5 GRAVEL. C170 SINGLE COAT 10mm SEAL.

250
A34247

Road Reserve

3m WIDE VEHICLE GATE
REFER LANDSCAPE DRAWINGS BY SAUNDERS HAVILL.

PARK

BIO RETENTION BASIN
REFER DRG. GS562-08-350 TO 352 FOR DETAILS

POTENTIAL PEDESTRIAN ACCESS POINT. ACCESS DETAILS TO BE CONFIRMED BY SAUNDERS HAVILL LANDSCAPING PLANS.

1.5m WIDE CONCRETE FOOTPATH

ROAD 21

TIMBER POST AND RAIL FENCE. REFER LANDSCAPE DRAWINGS BY SAUNDERS HAVILL.

FUTURE MHE SITE

STAGE 8

819
515m²

818
602m²

820

816

JOINS DRG. NO. GS562-08-200

8
SP265876

Road Reserve

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

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

ROADS AND FOOTPATHS LAYOUT PLAN - SHEET 2 OF 2

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

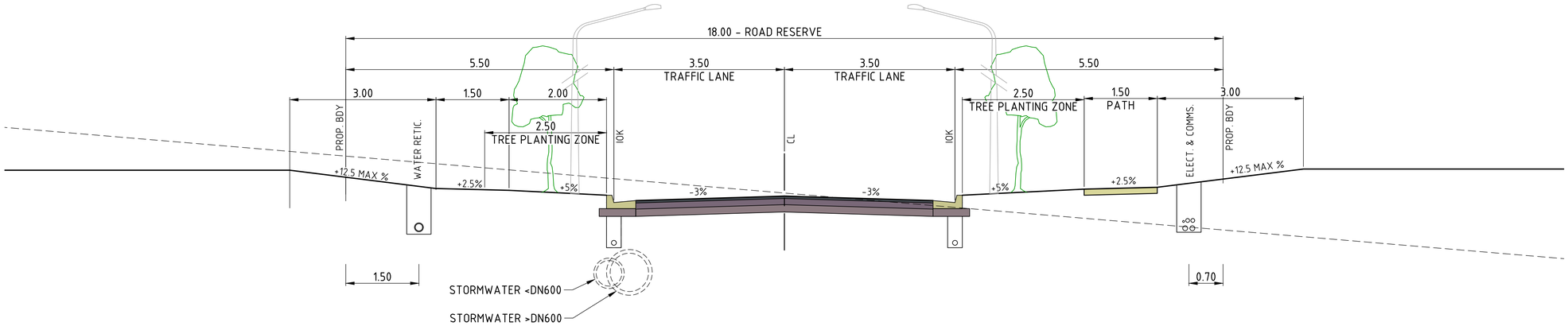
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROADS AND FOOTPATHS DETAIL PLAN SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	201	B

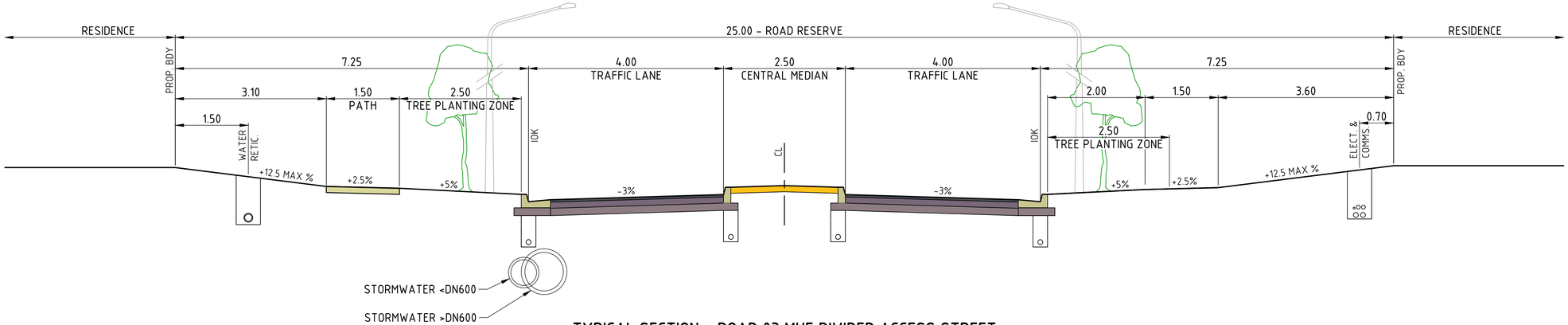
ROADS & DRAINAGE



TYPICAL SECTION- ROAD 03, 21 & 22

SCALE 1:50

NOTE:
TURFING TO EXTEND TO FULL VERGE WIDTH.



TYPICAL SECTION - ROAD 03 MHE DIVIDED ACCESS STREET (CH.103 TO CH.120.465)

SCALE 1:50

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

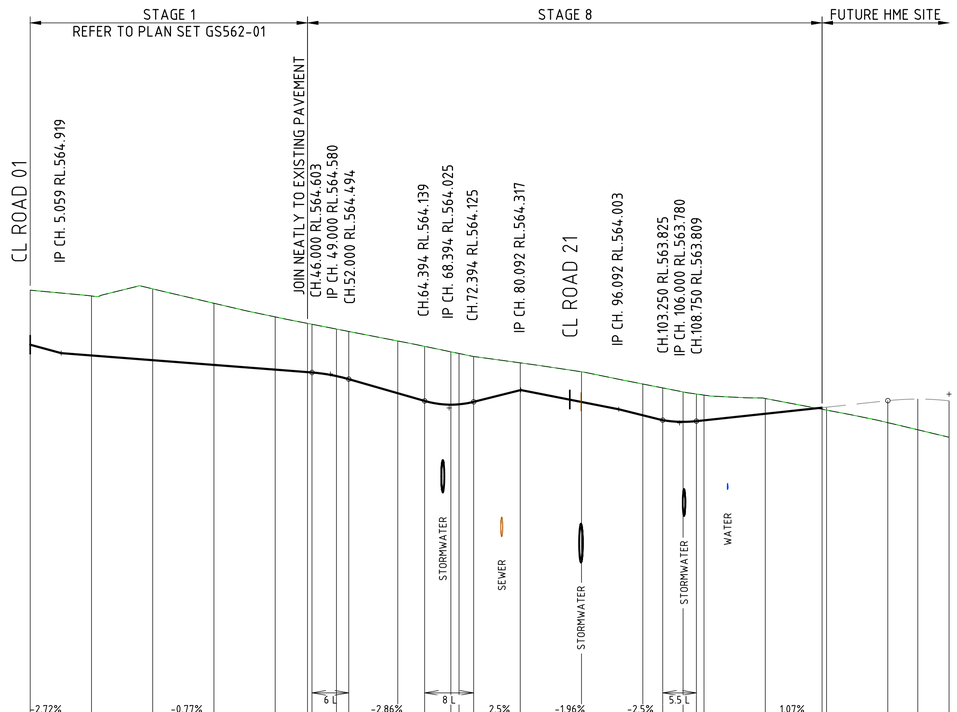
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD			
PROJECT: BOTANIC HIGHFIELDS STAGE 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

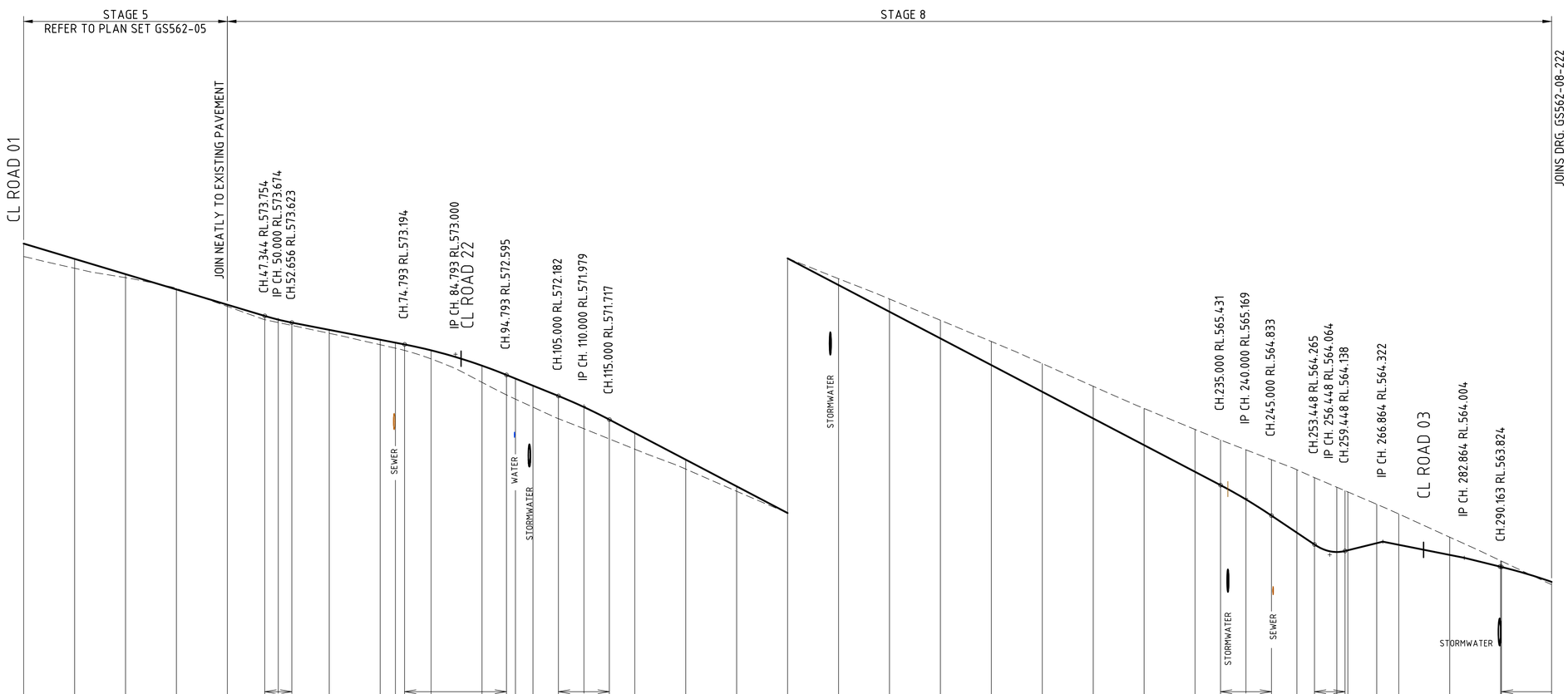
TITLE: ROADS
TYPICAL SECTIONS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	210	B

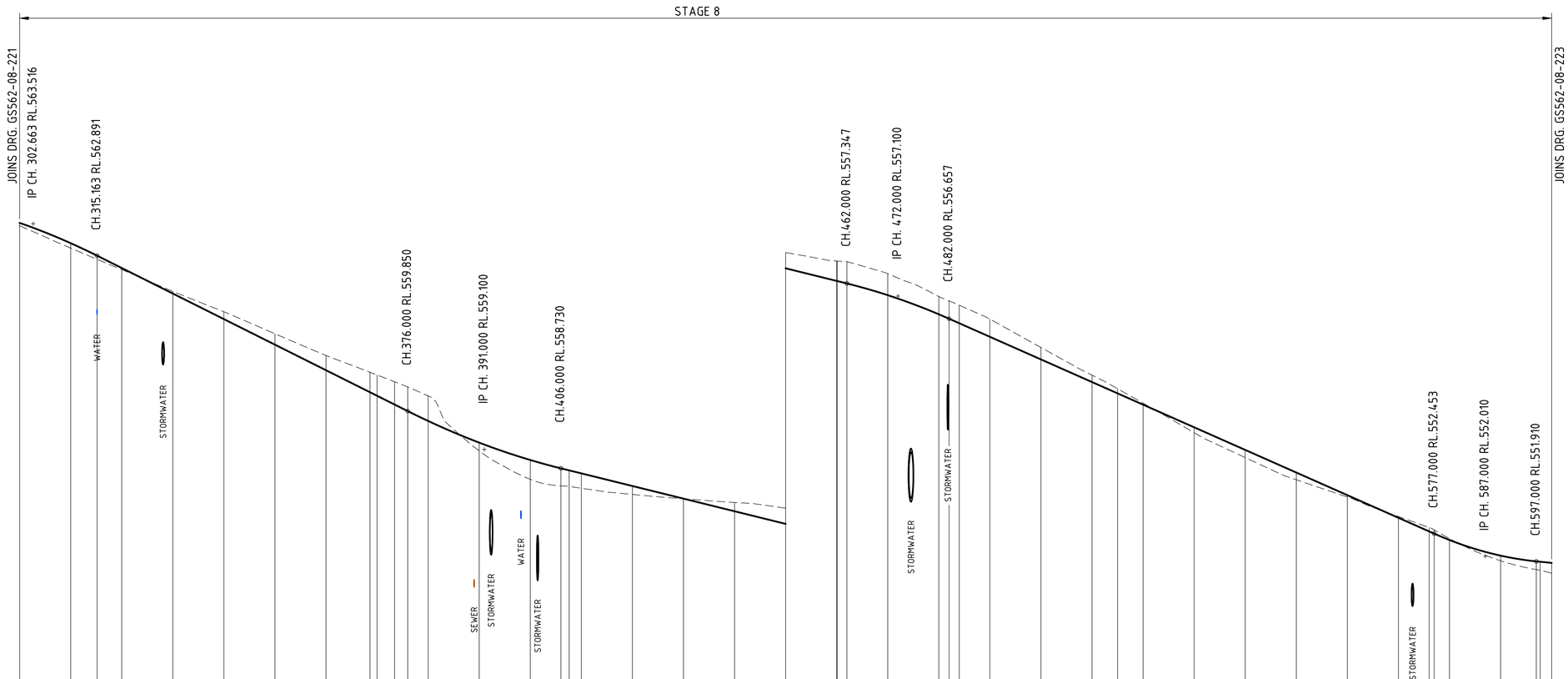
ROADS & DRAINAGE


STAGE 1
REFER TO PLAN SET GS562-01
STAGE 8
FUTURE HME SITE
CL ROAD 01
IP CH. 5.059 RL.564.919
JOIN NEATLY TO EXISTING PAVEMENT
CH.46.000 RL.564.603
IP CH. 49.000 RL.564.580
CH.52.000 RL.564.494
CH.64.394 RL.564.139
IP CH. 68.394 RL.564.025
CH.72.394 RL.564.125
IP CH. 80.092 RL.564.317
CL ROAD 21
IP CH. 96.092 RL.564.003
CH.103.250 RL.563.825
IP CH. 106.000 RL.563.780
CH.108.750 RL.563.809
STORMWATER
SEWER
STORMWATER
STORMWATER
WATER
VERT. CURVE LENGTH
VERT. GEOMETRY
HORZ. GEOMETRY
DATUM RL 558
-2.72%
-0.77%
6 L
-2.86%
8 L
2.5%
-1.96%
-2.5%
5.5 L
1.07%

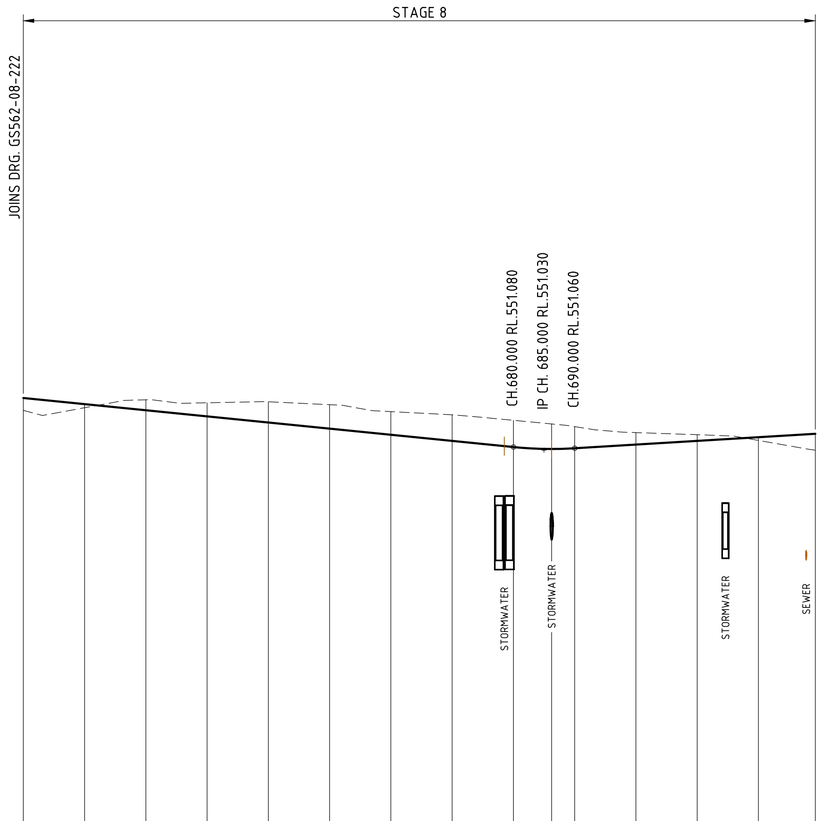
| | | |


STAGE 5
REFER TO PLAN SET GS562-05
STAGE 8
CL ROAD 01
JOIN NEATLY TO EXISTING PAVEMENT
CH.47.344 RL.573.754
IP CH. 50.000 RL.573.674
CH.52.656 RL.573.623
CH.74.793 RL.573.194
IP CH. 84.793 RL.573.000
CL ROAD 22
CH.94.793 RL.572.595
CH.105.000 RL.572.182
IP CH. 110.000 RL.571.979
CH.115.000 RL.571.717
SEWER
WATER
STORMWATER
STORMWATER
CH.235.000 RL.565.431
IP CH. 240.000 RL.565.169
CH.245.000 RL.564.833
CH.253.448 RL.564.265
IP CH. 256.448 RL.564.064
CH.259.448 RL.564.138
IP CH. 266.864 RL.564.322
CL ROAD 03
IP CH. 282.864 RL.564.004
CH.290.163 RL.563.824
JOINS DRG. GS562-08-222
STORMWATER
SEWER
STORMWATER
VERT. CURVE LENGTH
VERT. GEOMETRY
-3%
5.31 L
-1.94%
20 L
15 R
-4.05%
10 L
-5.24%
10 L
-6.72%
6 L
2.48%
-1.99%
-2.46%
25 L
238.5 R
HORZ. GEOMETRY
DATUM RL 571
DATUM RL 561

| | | |


STAGE 8
JOINS DRG. GS562-08-221
IP CH. 302.663 RL.563.516
CH.315.163 RL.562.891
CH.376.000 RL.559.850
IP CH. 391.000 RL.559.100
CH.406.000 RL.558.730
CH.462.000 RL.557.347
IP CH. 472.000 RL.557.100
CH.482.000 RL.556.657
CH.577.000 RL.552.453
IP CH. 587.000 RL.552.010
CH.597.000 RL.551.910
JOINS DRG. GS562-08-223
WATER
STORMWATER
SEWER
STORMWATER
WATER
STORMWATER
STORMWATER
STORMWATER
STORMWATER
STORMWATER
VERT. CURVE LENGTH
VERT. GEOMETRY
HORZ. GEOMETRY
25 L
-5%
30 L
-2.47%
20 L
-4.43%
20 L
-1%
238.5 R
-19 R
60 R
-40 R
DATUM RL 558
DATUM RL 548

| | | |



VERT. CURVE LENGTH
VERT. GEOMETRY

HORZ. GEOMETRY

DATUM RL 541

DESIGN LEVEL ROAD CONTROL LINE	551.880	551.780	551.680	551.580	551.480	551.380	551.280	551.180	551.080	551.049	551.060	551.120	551.180	551.240	551.296
LIP OF KERB RIGHT	551.788	551.688	551.588	551.488	551.388	551.288	551.188	551.088	550.988	550.957	550.969	551.029	551.089	551.149	
LIP OF KERB LEFT	551.788	551.688	551.588	551.488	551.388	551.288	551.188	551.088	550.988	550.957	550.969	551.029	551.089	551.149	
EXISTING SURFACE LEVEL ROAD CONTROL LINE	551.678	551.721	551.851	551.802	551.819	551.771	551.658	551.606	551.516	551.457	551.413	551.316	551.282	551.188	
CUT / FILL DEPTH	0.202	0.059	-0.171	-0.222	-0.339	-0.391	-0.378	-0.426	-0.436	-0.408	-0.353	-0.196	-0.102	0.052	
CHAINAGE	600	610	620	630	640	650	660	670	680	686.249	690	700	710	720	729.289

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 21 LONGITUDINAL SECTION

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

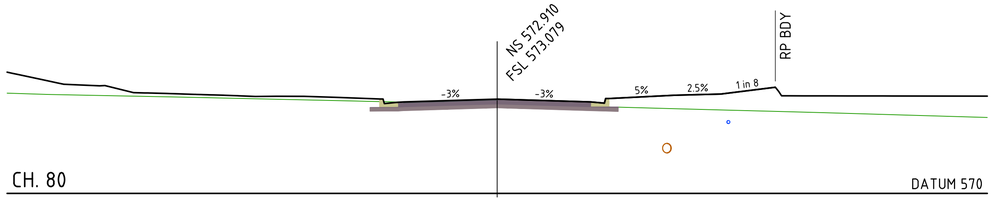
BOTANIC
HIGHFIELDS RD

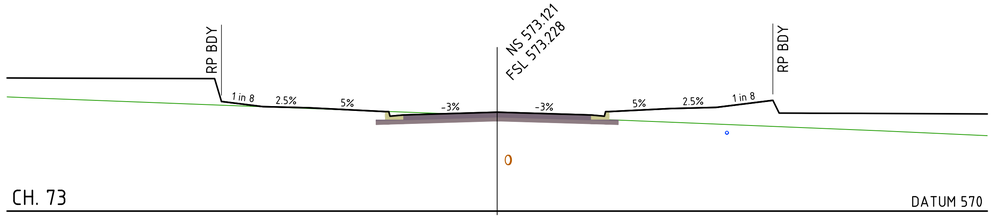
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

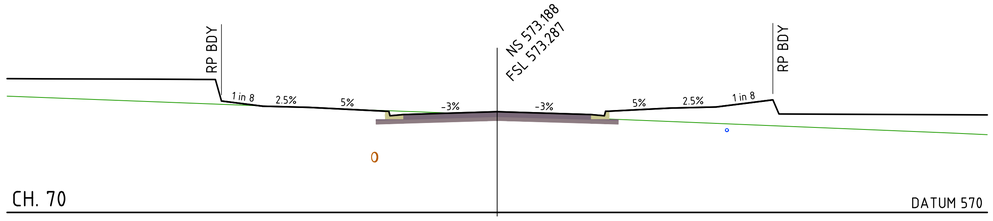
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

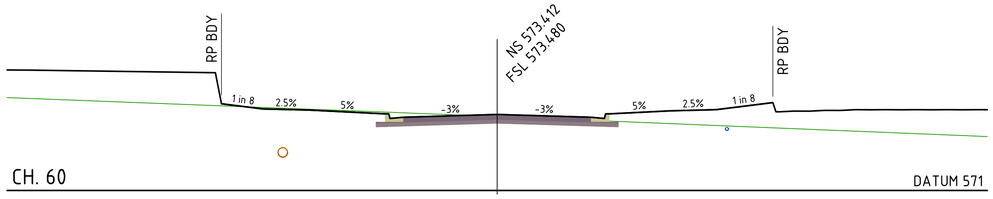
TITLE: ROAD 21 LONGITUDINAL SECTION SHEET 3 OF 3
SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-08 | SHEET No: 223 | REVISION: B

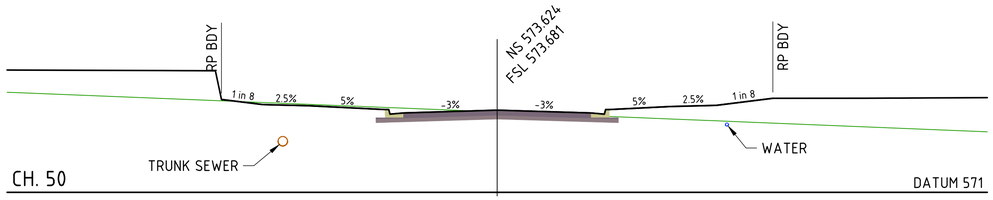
ROADS & DRAINAGE

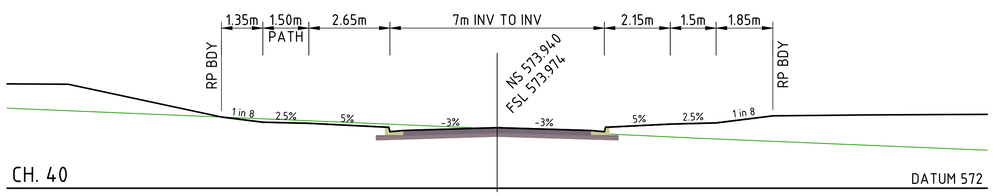


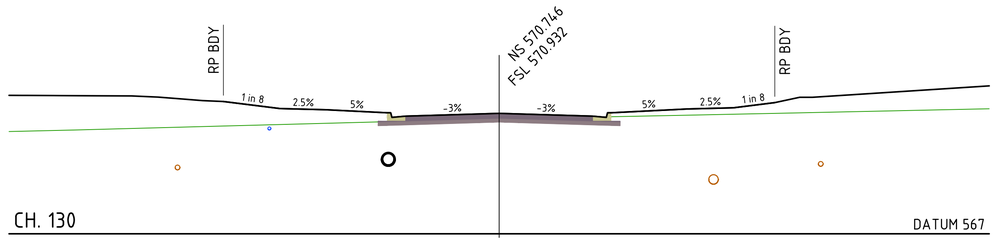


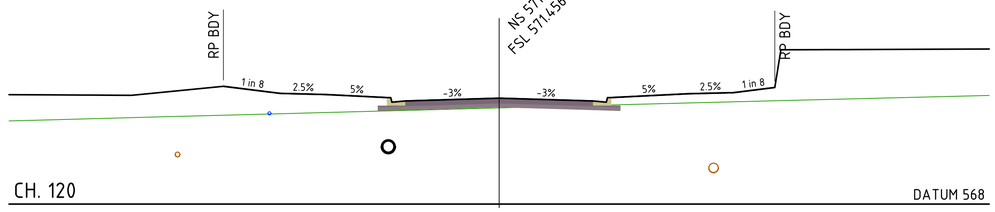


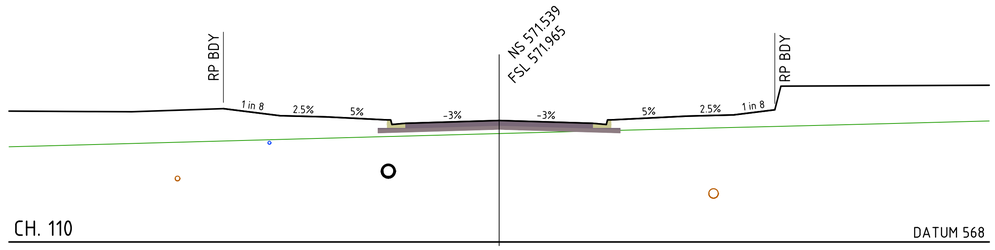


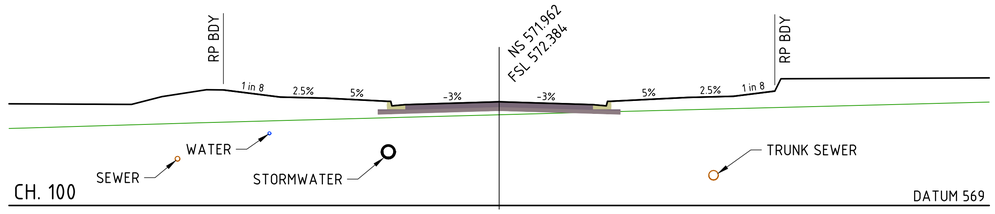


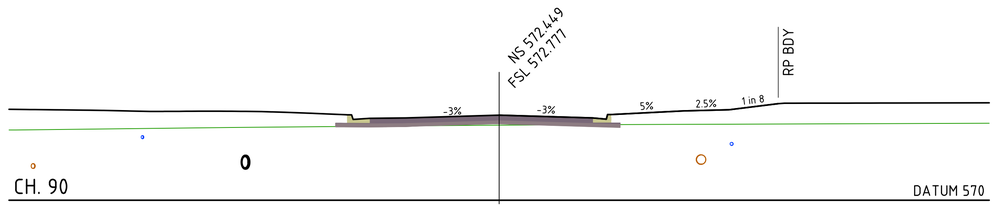












ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

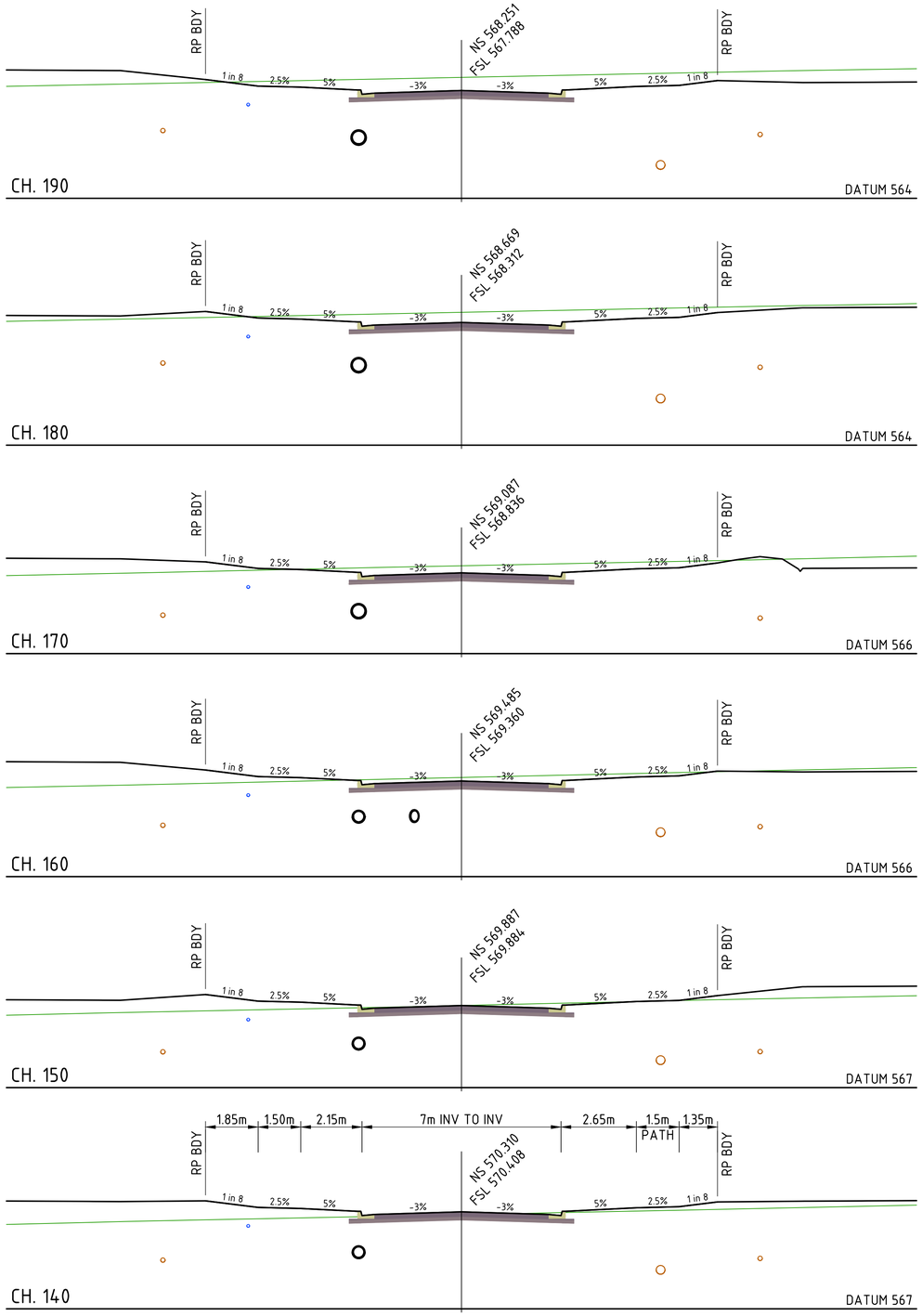
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

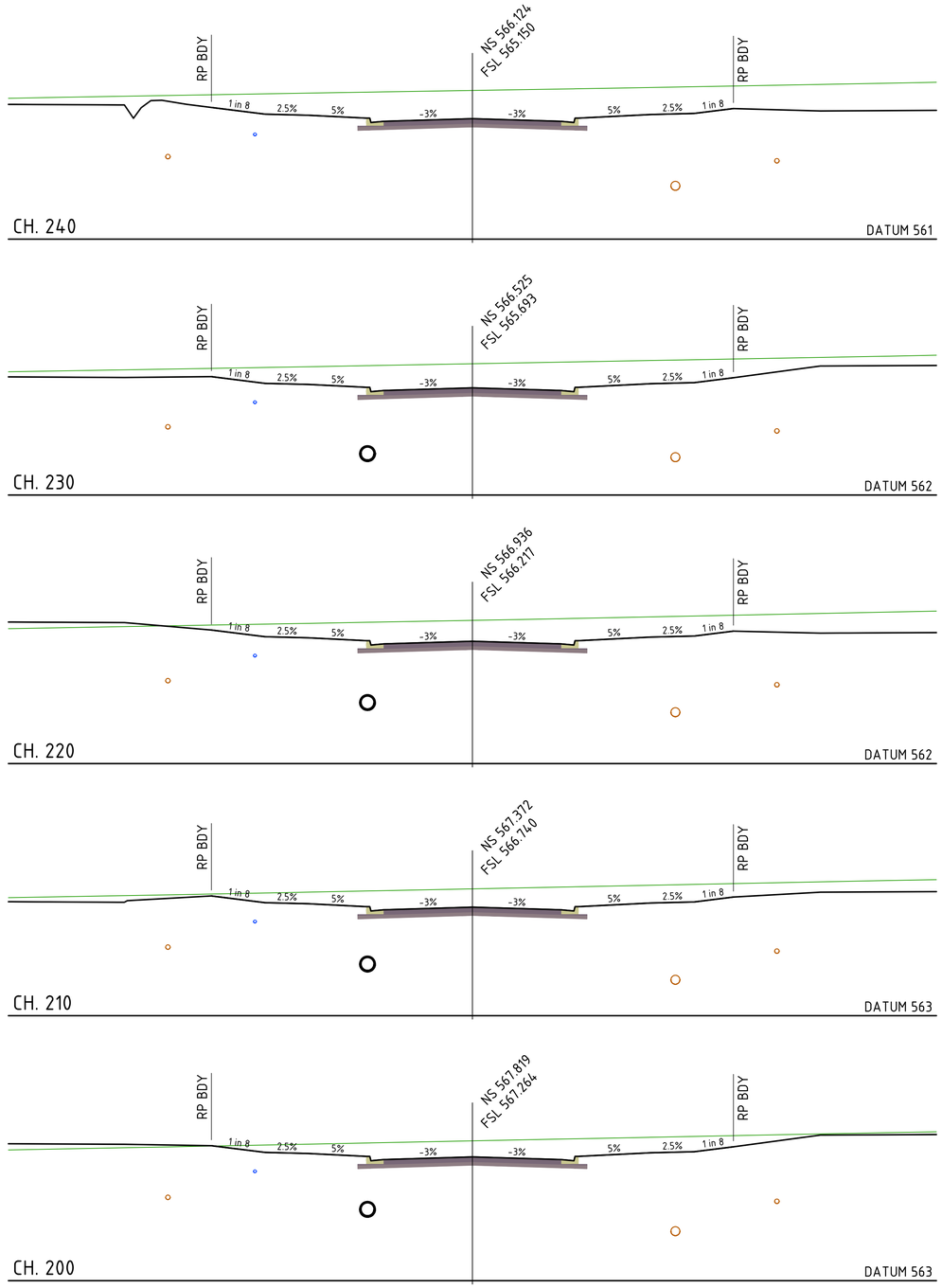
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROAD 21
CROSS SECTIONS
SHEET 1 OF 6

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	224	B

ROADS & DRAINAGE





ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

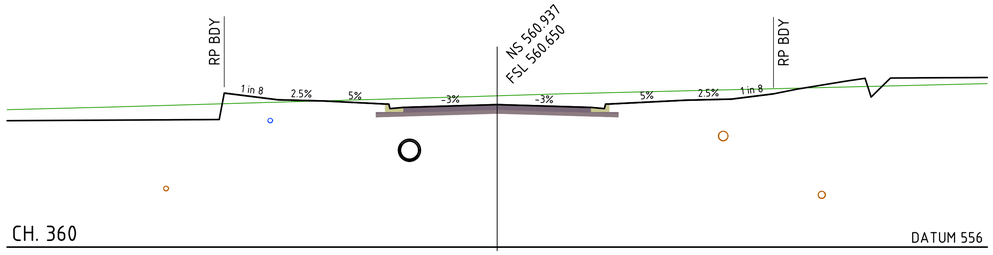
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

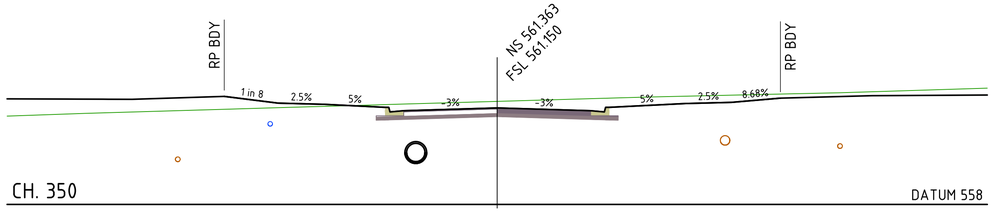
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD
B ENRIGHT			

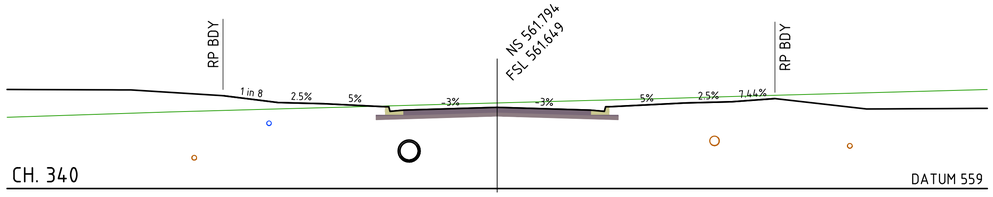
TITLE: ROAD 21
CROSS SECTIONS
SHEET 2 OF 6

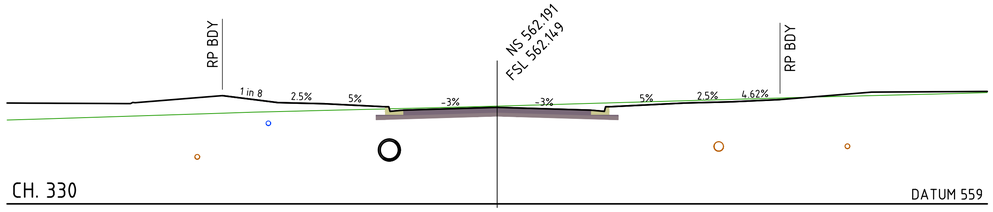
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	225	B

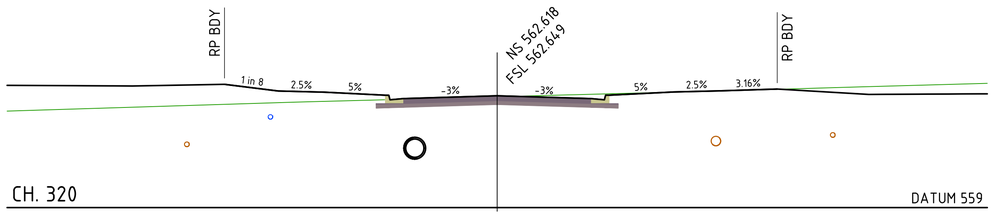
ROADS & DRAINAGE

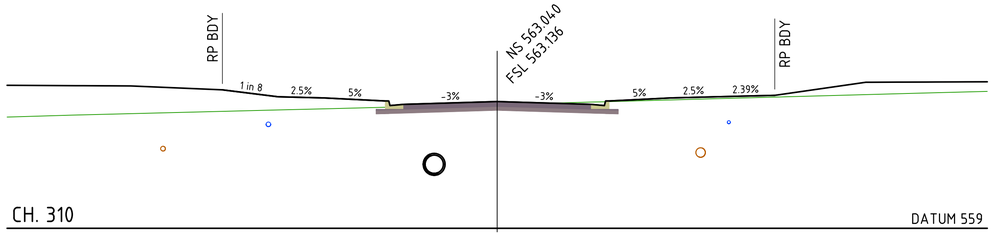


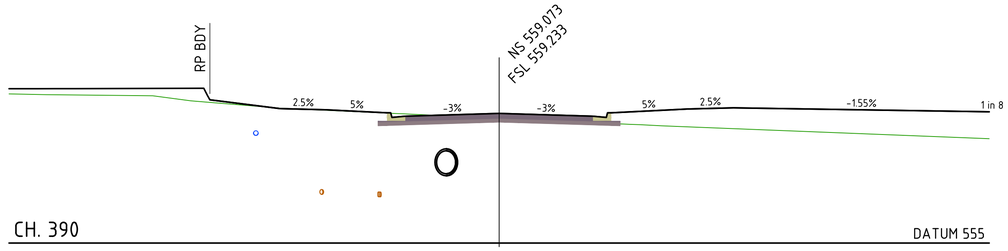


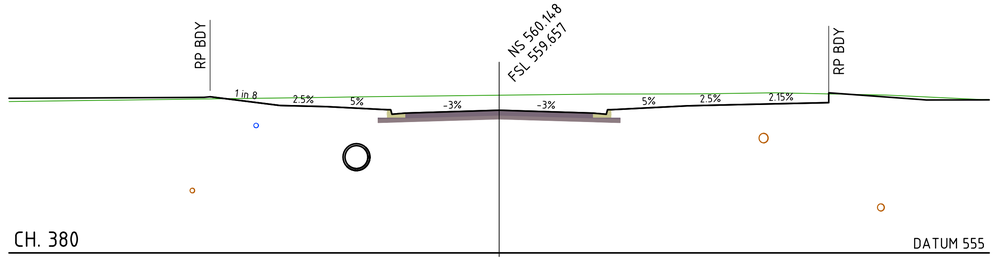


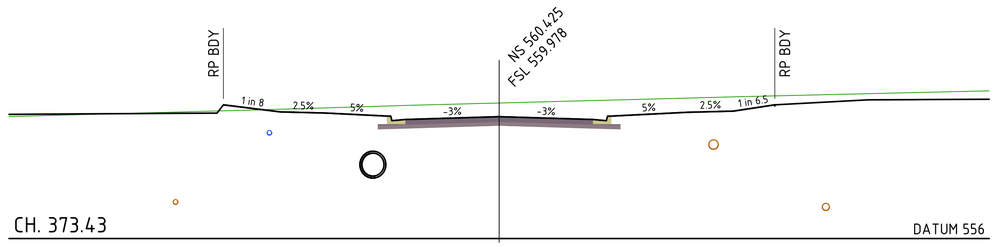


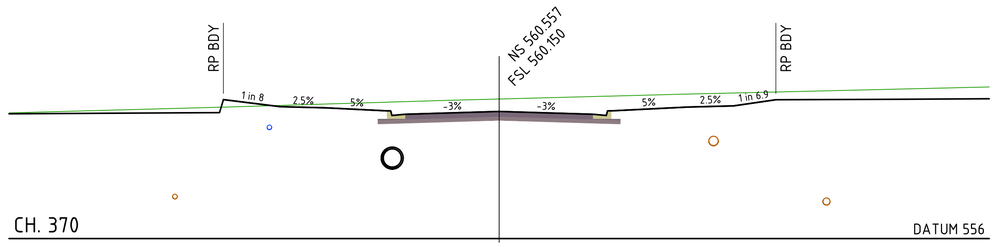


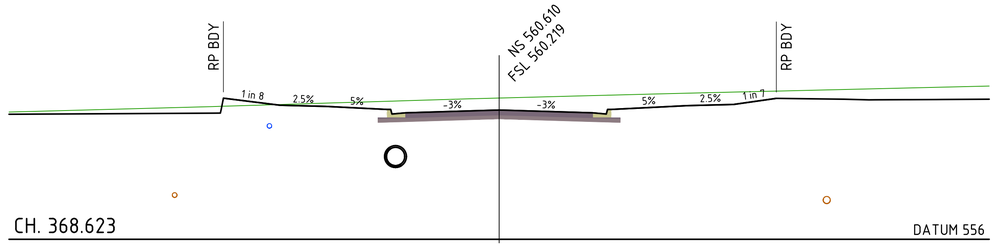












ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

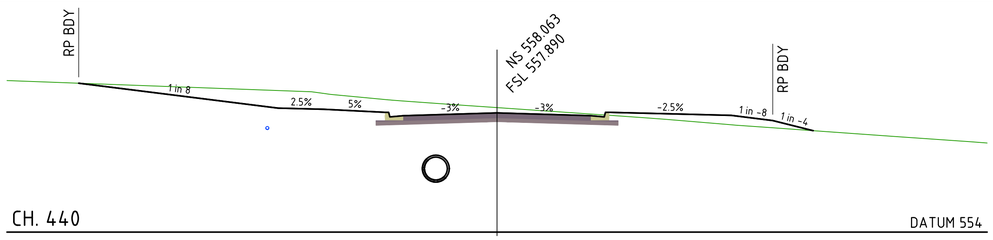
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

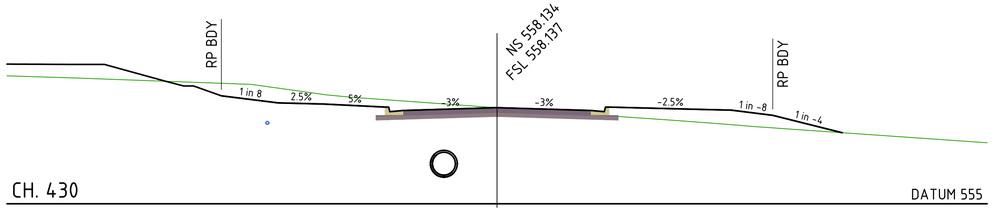
TITLE: ROAD 21 CROSS SECTIONS SHEET 3 OF 6

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	226	B

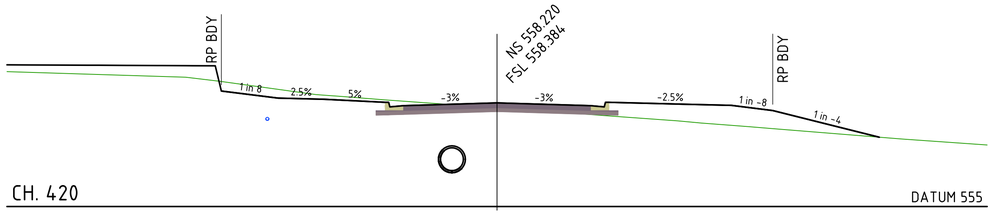
ROADS & DRAINAGE



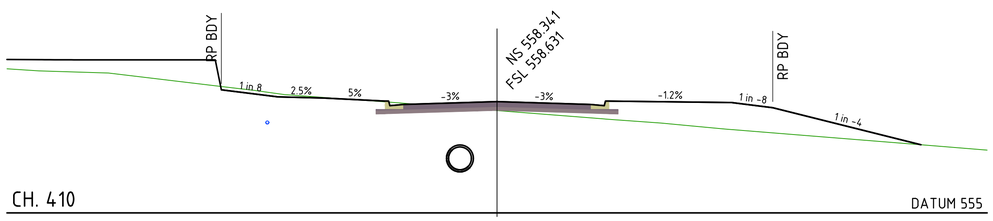
CH. 440 DATUM 554



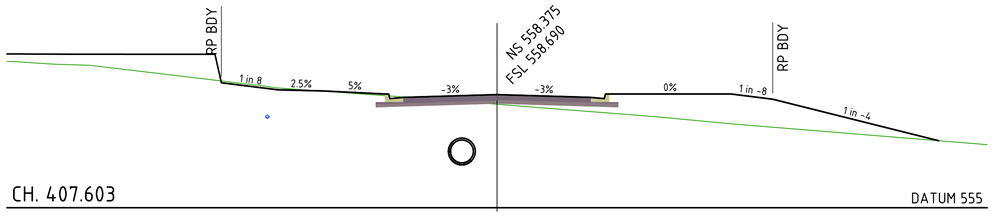
CH. 430 DATUM 555



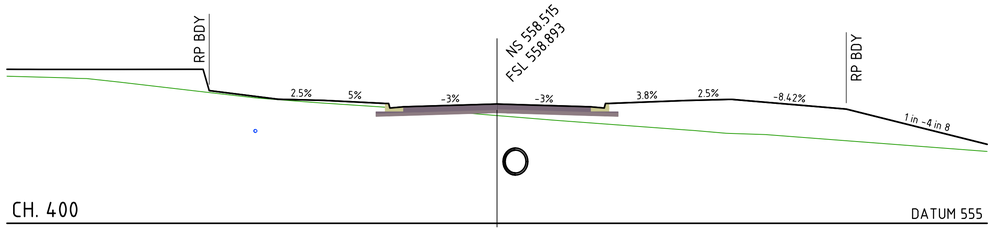
CH. 420 DATUM 555



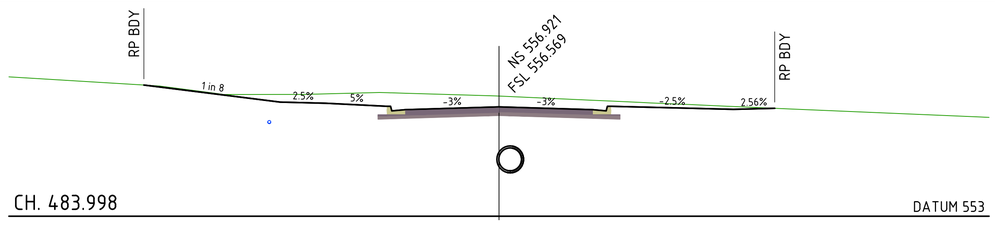
CH. 410 DATUM 555



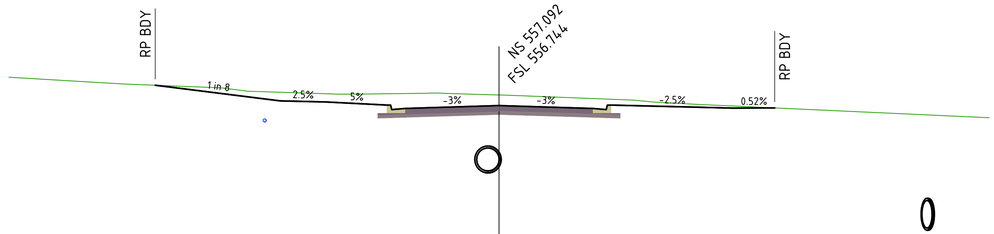
CH. 407.603 DATUM 555



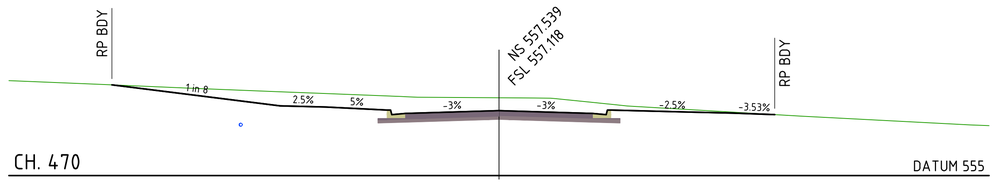
CH. 400 DATUM 555



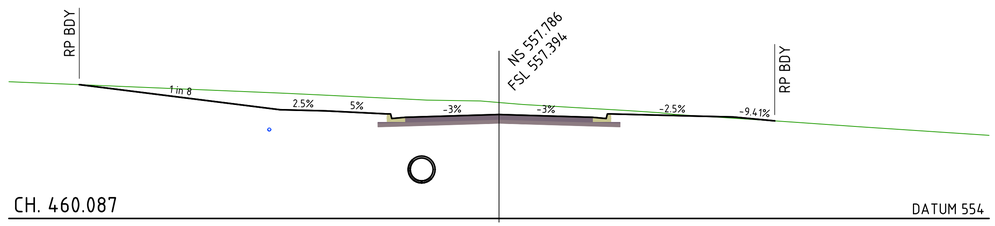
CH. 483.998 DATUM 553



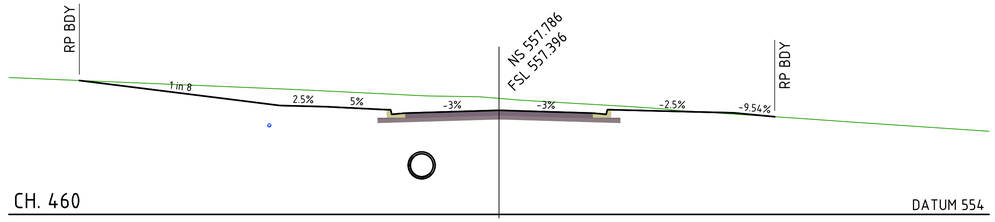
CH. 480 DATUM 551



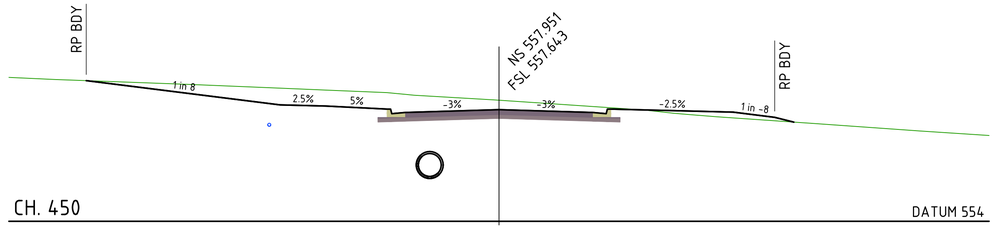
CH. 470 DATUM 555



CH. 460.087 DATUM 554



CH. 460 DATUM 554



CH. 450 DATUM 554

ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

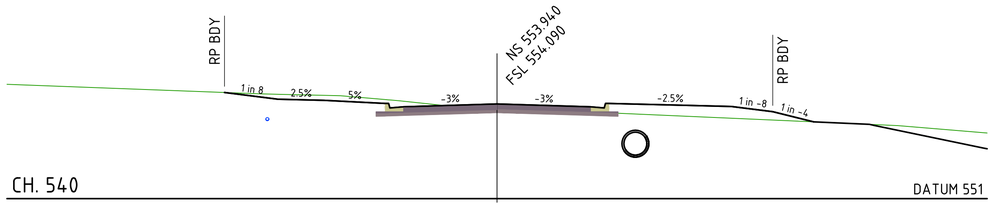
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

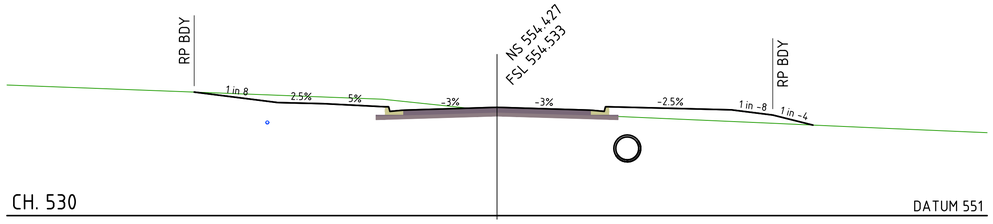
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

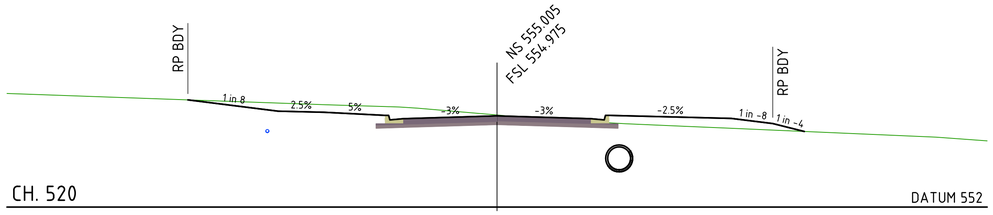
TITLE: ROAD 21 CROSS SECTIONS SHEET 4 OF 6

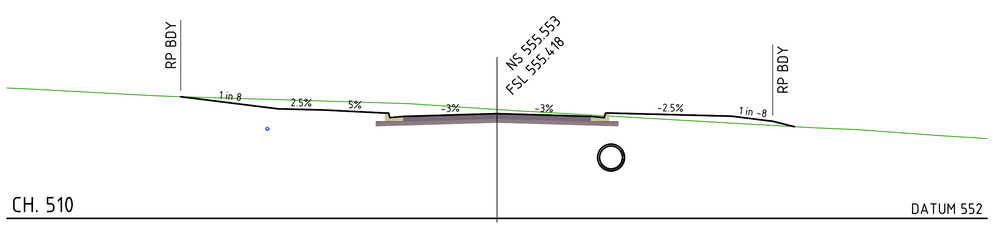
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	227	B

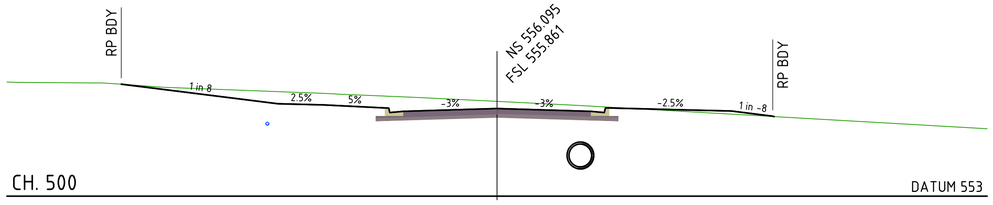
ROADS & DRAINAGE

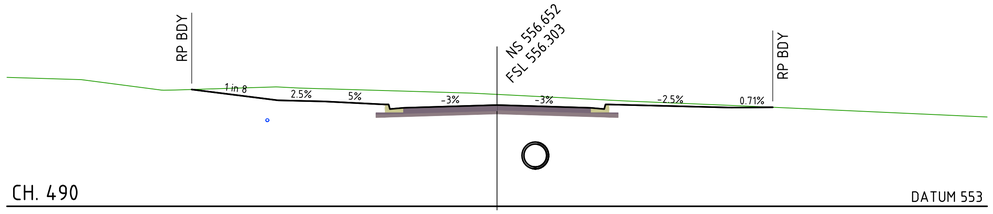


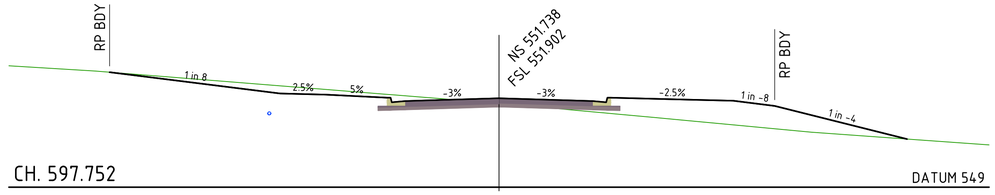


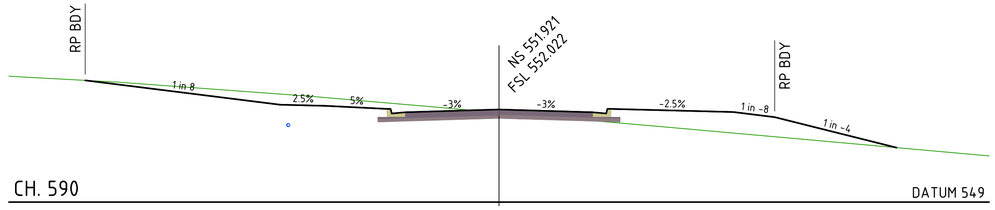


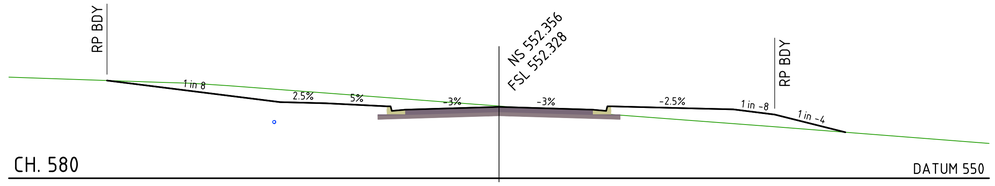


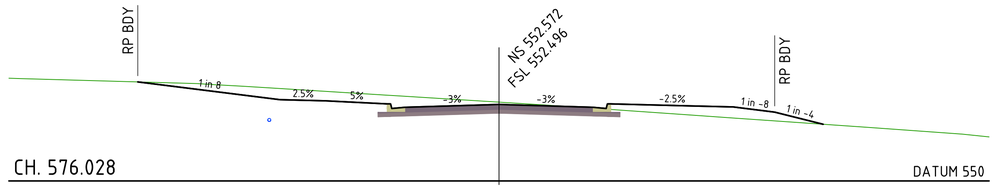


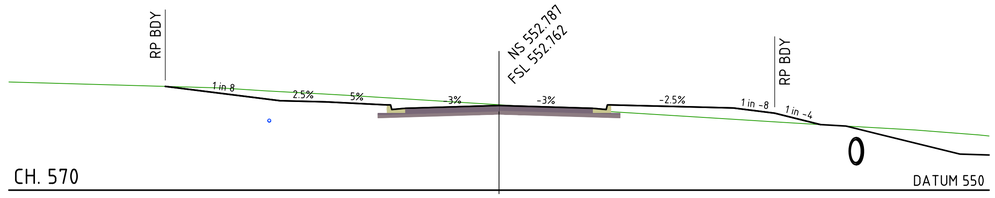


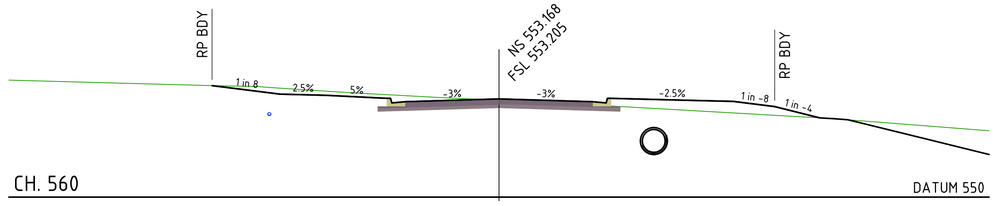


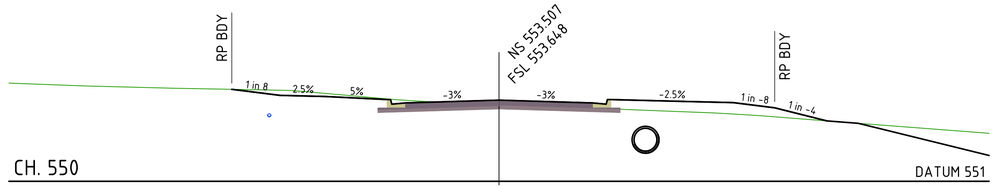












ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

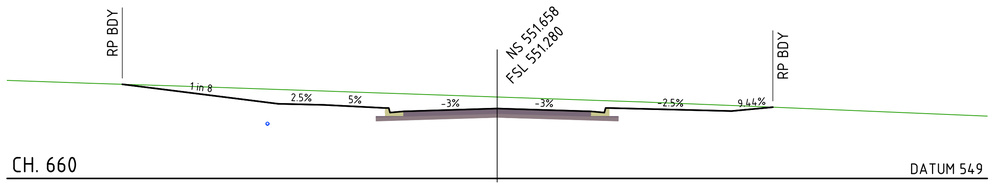
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

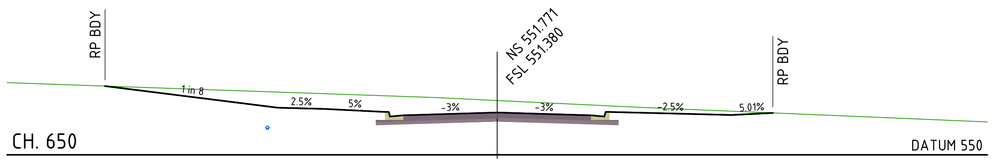
TITLE: ROAD 21 CROSS SECTIONS SHEET 5 OF 6

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	228	B

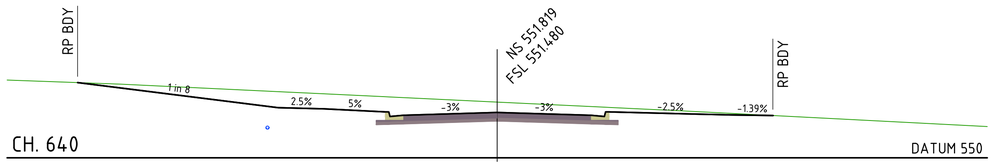
ROADS & DRAINAGE



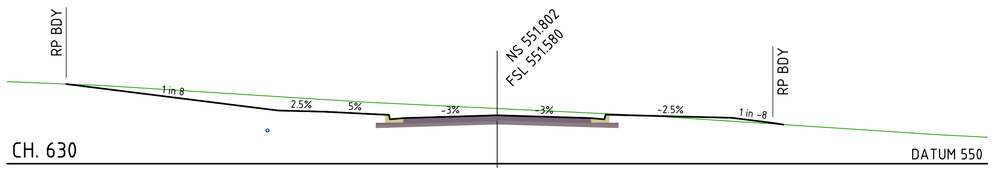
CH. 660 DATUM 549



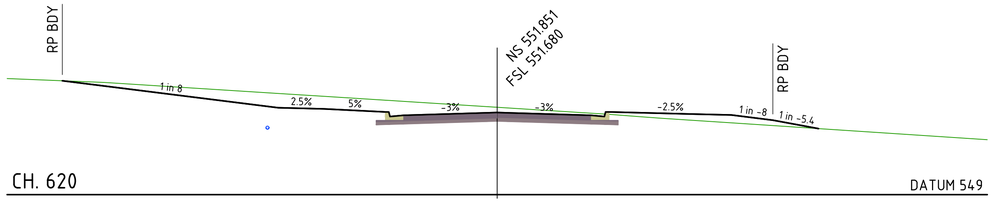
CH. 650 DATUM 550



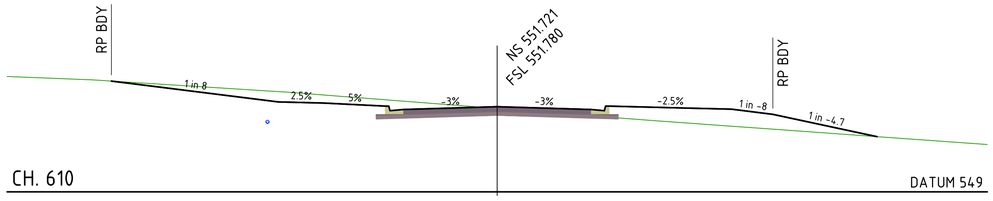
CH. 640 DATUM 550



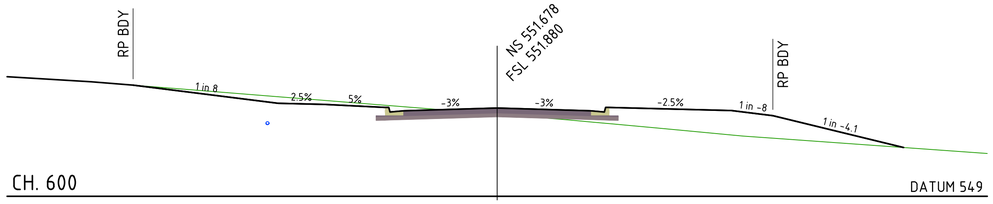
CH. 630 DATUM 550



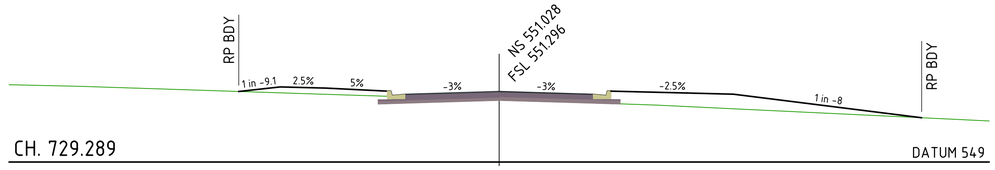
CH. 620 DATUM 549



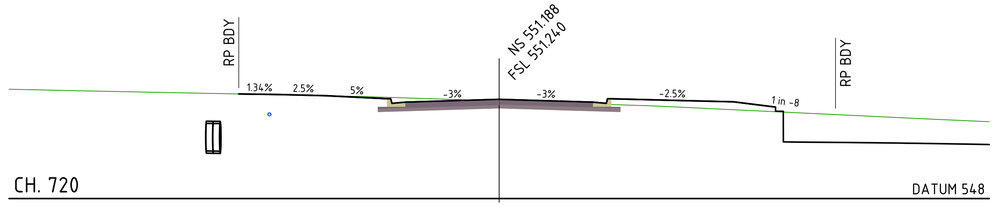
CH. 610 DATUM 549



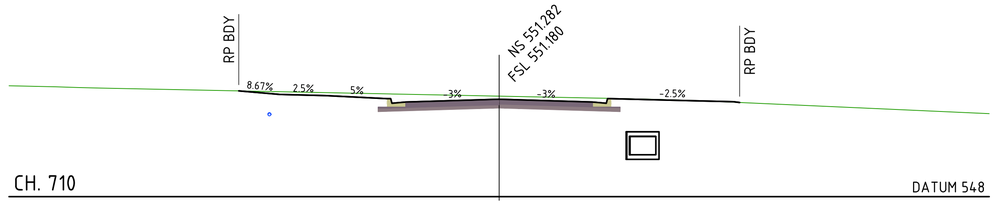
CH. 600 DATUM 549



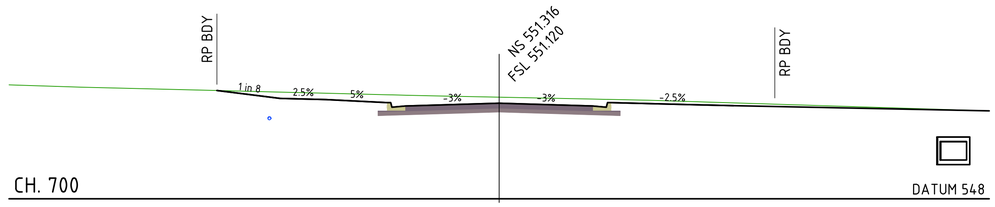
CH. 729.289 DATUM 549



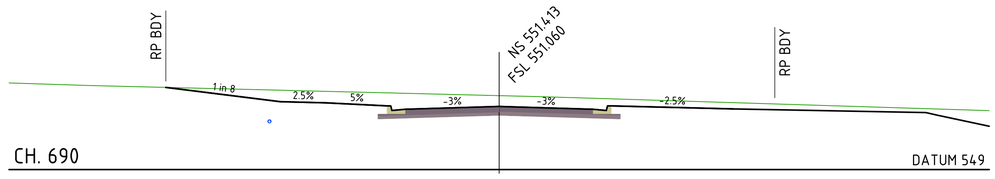
CH. 720 DATUM 548



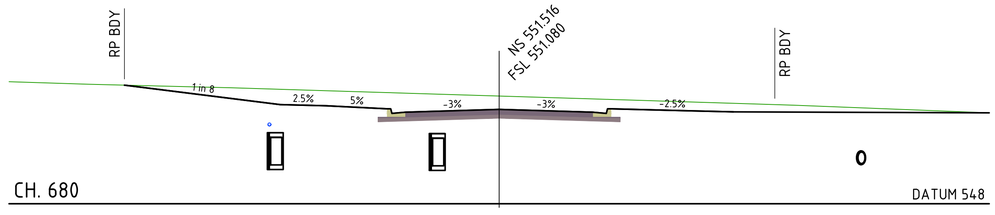
CH. 710 DATUM 548



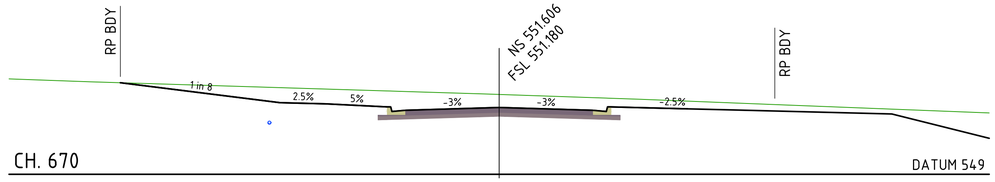
CH. 700 DATUM 548



CH. 690 DATUM 549



CH. 680 DATUM 548



CH. 670 DATUM 549

ROAD 21 CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

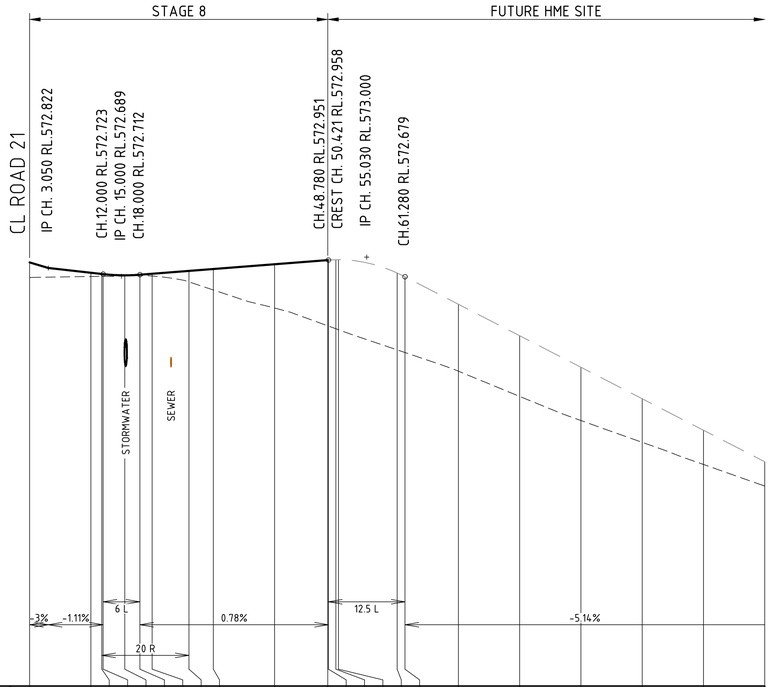
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROAD 21 CROSS SECTIONS SHEET 6 OF 6

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	229	B

ROADS & DRAINAGE



VERT. CURVE LENGTH																							
VERT. GEOMETRY																							
HORZ. GEOMETRY																							
DATUM RL 566																							
DESIGN LEVEL ROAD CONTROL LINE	572.914		572.745	572.725	572.723	572.703	572.712	572.728	572.775	572.806	572.883	572.951	572.951	572.957	572.958	572.741	572.679	572.231	571.717	571.202	570.688	570.174	569.660
LIP OF KERB RIGHT						550.968	551.580	552.514	557.856	557.756	557.504	557.284	557.281	557.248	557.237	556.909	556.854	556.408	555.871	555.088	554.546	554.004	553.462
LIP OF KERB LEFT	573.056					551.003	551.610	552.857	557.887	557.787	557.535	557.316	557.313	557.284	557.273	556.999	556.954	556.587	556.057	555.278	554.736	554.194	553.653
EXISTING SURFACE LEVEL ROAD CONTROL LINE	572.666		572.684	572.686	572.687	572.697	572.700	572.691	572.596	572.464	572.169	571.879	571.875	571.830	571.815	571.486	571.443	571.138	570.726	570.333	569.977	569.616	569.264
CUT / FILL DEPTH	0.248		0.061	0.038	0.036	0.006	0.012	0.037	0.179	0.342	0.714	1.072	1.077	1.127	1.143	1.254	1.236	1.092	0.990	0.869	0.711	0.558	0.397
CHAINAGE	0	10	11.781	12	15.536	18	20	26.017	30	40	48.675	48.78	50	50.421	60	61.28	70	80	90	100	110	120	

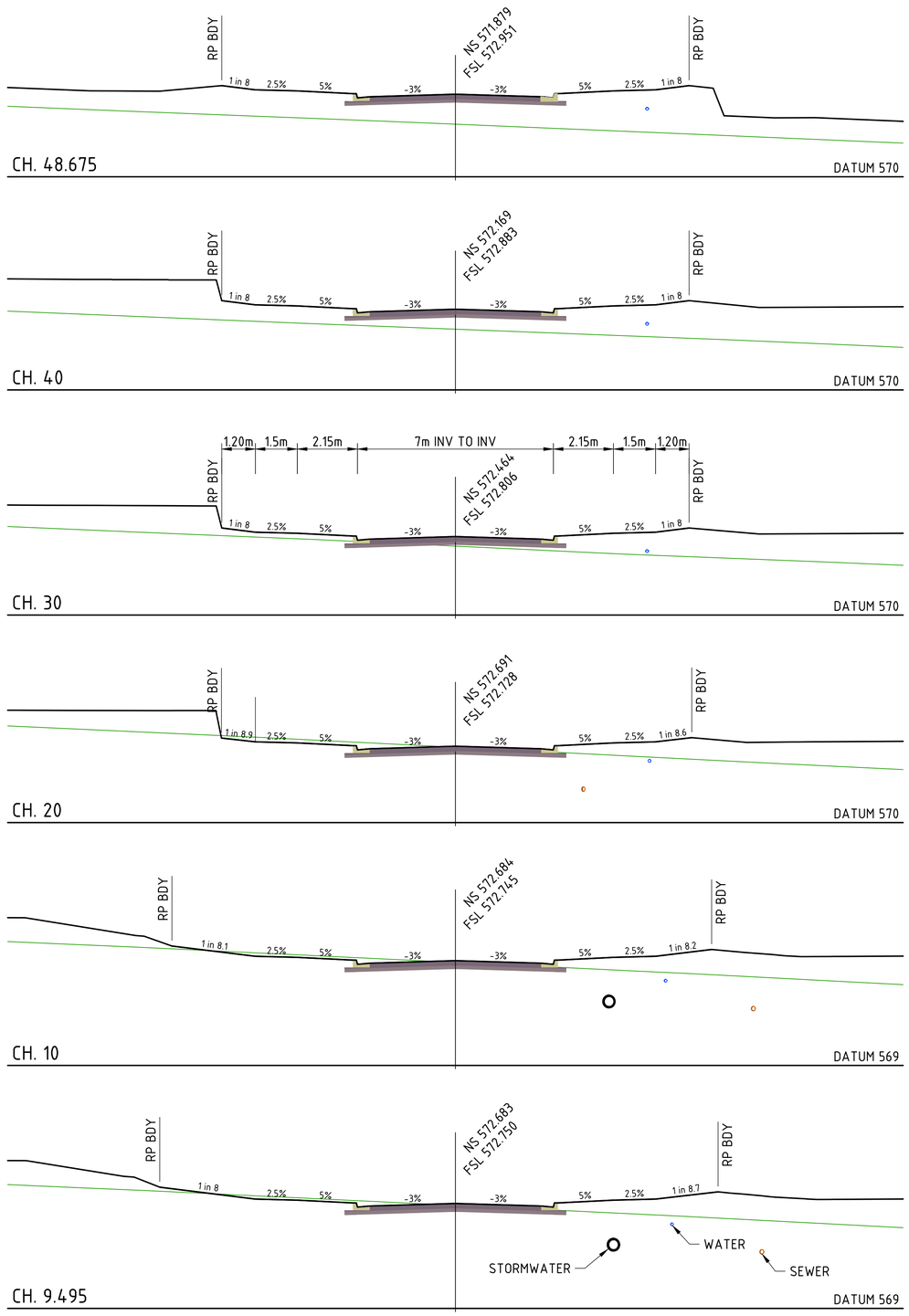
ROAD 22 LONGITUDINAL SECTION

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



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

SCALE 1:50 (A1)
SCALE 1:100 (A3)



ROAD 22 CROSS SECTIONS

SCALE 1:100

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

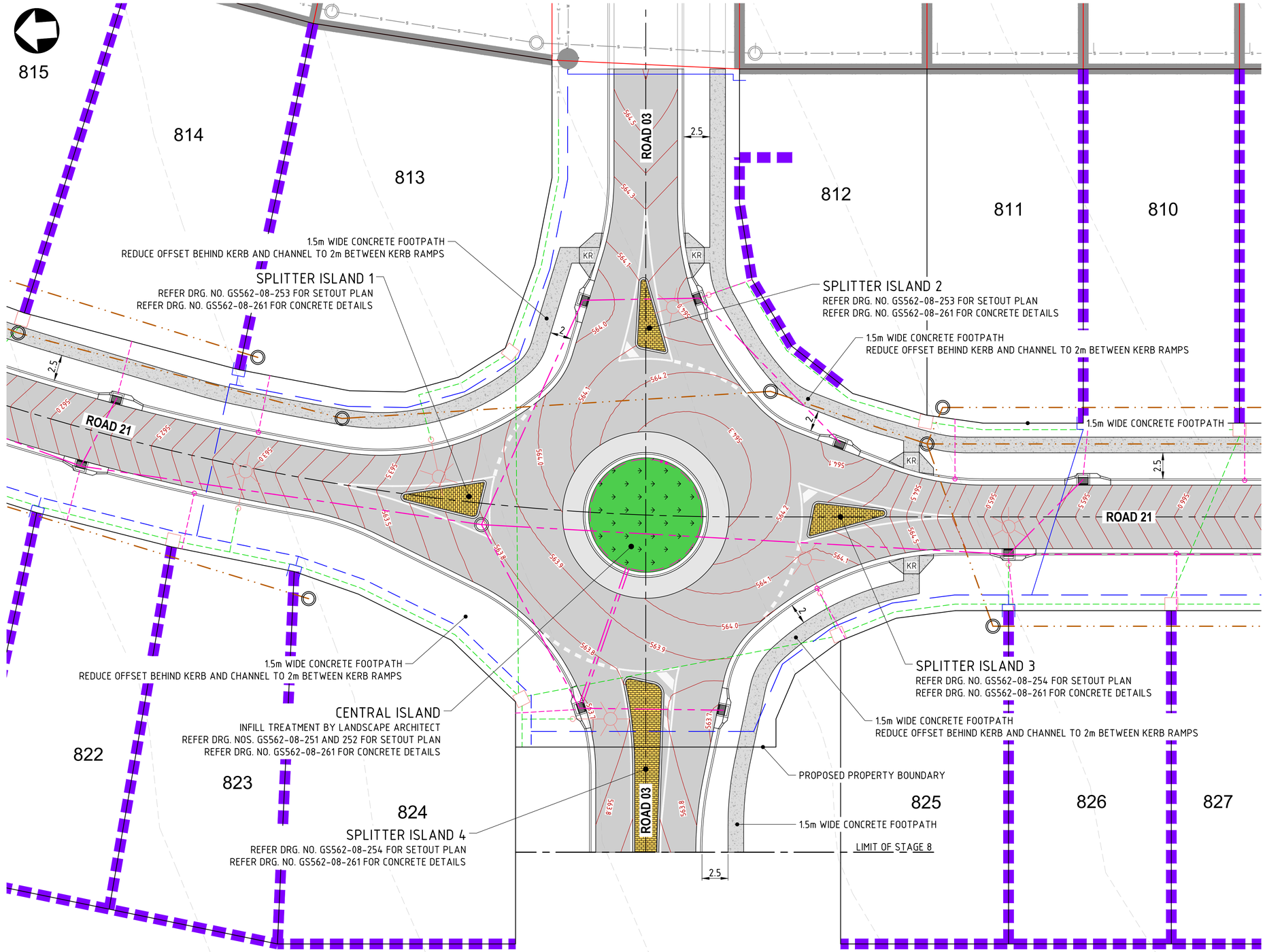
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: ROAD 22 LONGITUDINAL SECTION AND CROSS SECTIONS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	230	B

ROADS & DRAINAGE



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
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- PROPOSED RETAINING WALL
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

NOTES

1. REFER DRG. NO. GS562-08-251 TO 252 FOR ROUNDABOUT CENTRAL ISLAND SETOUT PLAN AND TABLES.
2. REFER DRG. NO. GS562-08-253 TO 254 FOR ROUNDABOUT SPLITTER ISLAND SETOUT PLAN AND TABLES.
3. REFER DRG. NO. GS562-08-261 FOR ROUNDABOUT ISLAND CONCRETE DETAILS.
4. REFER DRG. NO. GS562-08-271 FOR ROUNDABOUT SIGNAGE AND LINE MARKING PLAN.

0 2 4 6 8m

SCALE 1:200 (A1)
SCALE 1:400 (A3)

ROUNDABOUT LAYOUT PLAN

SCALE 1:200

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: ROUNDABOUT LAYOUT PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	250	B

ROADS & DRAINAGE

SETOUT TABLE - CONTROL LINE 2

CHAINAGE	EASTING	NORTHING	LIP LEVEL	RADIUS
0.000	393824.816	6964106.079	563.257	-24.45
5.000	393824.117	6964101.136	563.462	-24.45
10.000	393824.437	6964096.155	563.662	-24.45
15.000	393825.761	6964091.343	563.833	-24.45
20.000	393828.035	6964086.900	563.978	-24.45
21.137	393828.676	6964085.961	563.998	-8.45
25.000	393831.554	6964083.434	564.019	-8.45
26.017	393832.477	6964083.009	564.012	-8.45
30.000	393836.188	6964081.564	563.944	
35.000	393840.847	6964079.749	564.018	
35.958	393841.740	6964079.401	564.053	-25.45
40.000	393845.607	6964078.239	564.191	-25.45
43.427	393848.995	6964077.743	564.296	-25.45

SETOUT TABLE - CONTROL LINE 1

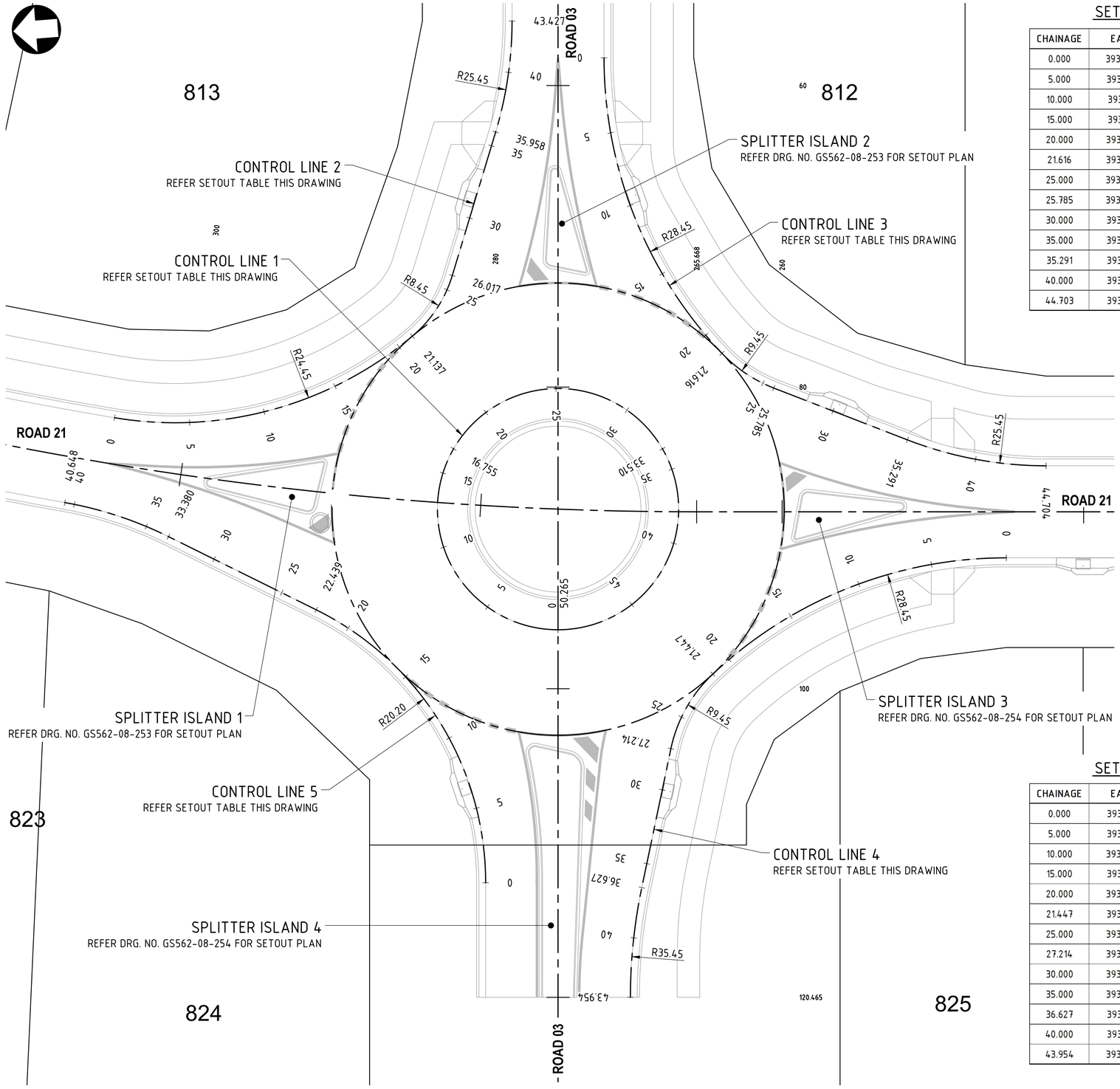
CHAINAGE	EASTING	NORTHING	DESIGN RL	RADIUS
0.000	393808.507	6964077.846	564.003	8
5.000	393810.380	6964082.395	563.936	8
10.000	393814.560	6964084.989	563.953	8
15.000	393819.467	6964084.646	564.049	8
20.000	393823.246	6964081.497	564.187	8
25.000	393824.468	6964076.733	564.314	8
30.000	393822.672	6964072.153	564.383	8
35.000	393818.535	6964069.491	564.368	8
40.000	393813.623	6964069.752	564.274	8
45.000	393809.792	6964072.838	564.137	8
50.265	393808.507	6964077.846	564.003	8

SETOUT TABLE - CONTROL LINE 5

CHAINAGE	EASTING	NORTHING	LIP LEVEL	RADIUS
0.000	393792.152	6964083.939	563.747	
5.000	393797.134	6964084.167	563.690	-20.2
10.000	393801.909	6964085.609	563.726	-20.2
15.000	393806.184	6964088.177	563.757	-20.2
20.000	393809.700	6964091.714	563.738	-20.2
22.439	393811.073	6964093.728	563.709	-20.2
25.000	393812.385	6964095.927	563.663	
30.000	393814.947	6964100.221	563.540	
33.380	393816.679	6964103.124	563.441	
35.000	393817.464	6964104.540	563.386	-25.45
40.000	393819.297	6964109.183	563.189	-25.45
40.648	393819.467	6964109.809	563.163	-25.45

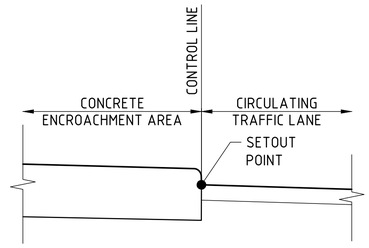
SETOUT NOTES

1. REFER DRG. NOS. GS562-08-252 AND 253 FOR SPLITTER ISLAND SETOUT PLAN AND TABLES

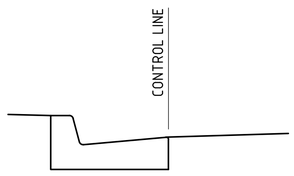


SETOUT TABLE - CONTROL LINE 3

CHAINAGE	EASTING	NORTHING	LIP LEVEL	RADIUS
0.000	393846.082	6964071.852	564.226	-28.45
5.000	393841.089	6964071.802	564.072	-28.45
10.000	393836.181	6964070.881	563.960	-28.45
15.000	393831.510	6964069.115	564.128	-28.45
20.000	393827.220	6964066.560	564.209	-28.45
21.616	393825.937	6964065.577	564.213	-9.45
25.000	393823.743	6964063.025	564.178	-9.45
25.785	393823.374	6964062.332	564.162	-9.45
30.000	393821.549	6964058.533	564.065	
35.000	393819.384	6964054.026	564.220	
35.291	393819.258	6964053.763	564.241	-25.45
40.000	393817.622	6964049.355	564.584	-25.45
44.703	393816.826	6964044.726	564.905	-25.45



CENTRAL ISLAND SETOUT DETAIL
NTS



TYPE B1 K&C SETOUT DETAIL
NTS

SETOUT TABLE - CONTROL LINE 4

CHAINAGE	EASTING	NORTHING	LIP LEVEL	RADIUS
0.000	393810.950	6964047.825	564.733	
5.000	393810.900	6964052.818	564.388	-28.45
10.000	393809.978	6964057.726	564.079	-28.45
15.000	393808.213	6964062.397	564.021	-28.45
20.000	393805.657	6964066.687	563.992	-28.45
21.447	393804.781	6964067.839	563.982	
25.000	393802.096	6964070.133	563.899	-9.45
27.214	393800.062	6964070.997	563.803	
30.000	393797.389	6964071.779	563.690	
35.000	393792.590	6964073.183	563.714	
36.627	393791.029	6964073.640	563.734	
40.000	393787.751	6964074.432	563.783	-35.45
43.954	393783.835	6964074.959	563.828	-35.45

0 1.5 3 4.5 6m
SCALE 1:150 (A1)
SCALE 1:300 (A1)

ROUNDABOUT SETOUT PLAN
SCALE 1:150

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

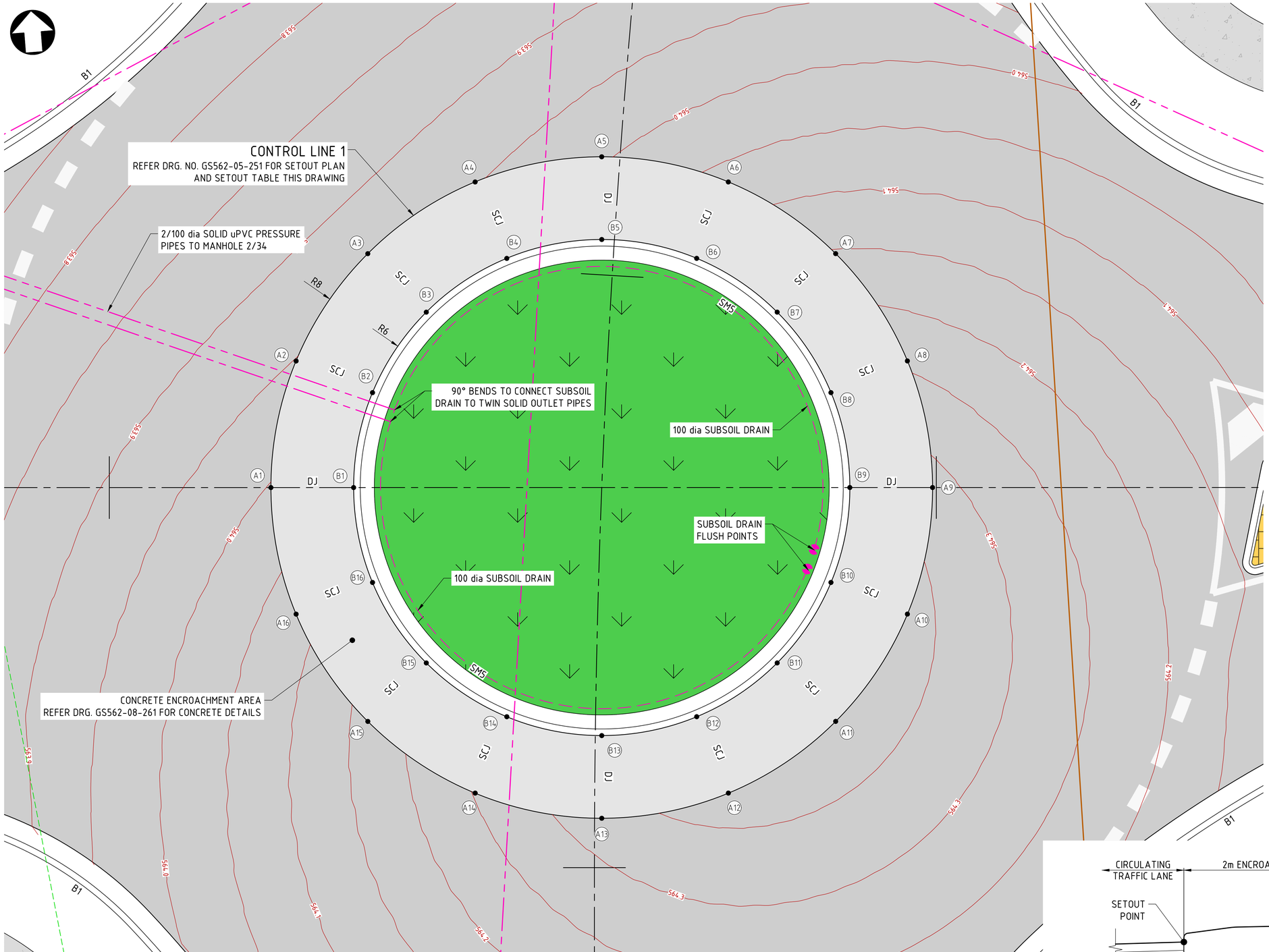
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: ROUNDABOUT SETOUT PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	251	B

ROADS & DRAINAGE



LEGEND

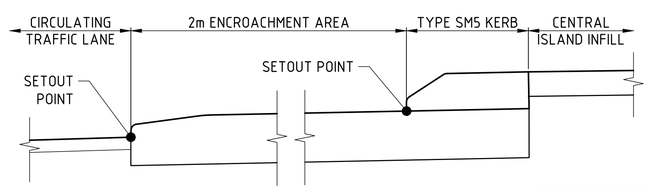
A1 •	SETOUT POINT REFER SETOUT TABLE THIS DRAWING
DJ	CONCRETE DOWEL JOINT
SCJ	CONCRETE SAWCUT JOINT
• FP	SUBSOIL DRAIN FLUSH POINT

ROUNDABOUT CENTRAL ISLAND SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
A1	393808.507	6964077.846	564.100
A2	393809.353	6964080.851	564.071
A3	393811.284	6964083.304	564.064
A4	393814.007	6964084.830	564.080
A5	393817.106	6964085.199	564.116
A6	393820.111	6964084.354	564.166
A7	393822.564	6964082.423	564.224
A8	393824.090	6964079.700	564.280
A9	393824.459	6964076.600	564.326
A10	393823.614	6964073.595	564.354
A11	393821.682	6964071.143	564.361
A12	393818.960	6964069.616	564.345
A13	393815.860	6964069.247	564.309
A14	393812.855	6964070.093	564.259
A15	393810.403	6964072.024	564.201
A16	393808.876	6964074.747	564.145

ROUNDABOUT ENCROACHMENT AREA SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
B1	393810.501	6964077.691	564.224
B2	393811.136	6964079.944	564.195
B3	393812.584	6964081.783	564.188
B4	393814.626	6964082.929	564.204
B5	393816.950	6964083.205	564.240
B6	393819.204	6964082.571	564.290
B7	393821.043	6964081.123	564.348
B8	393822.188	6964079.081	564.404
B9	393822.465	6964076.756	564.450
B10	393821.831	6964074.502	564.478
B11	393820.383	6964072.663	564.485
B12	393818.341	6964071.518	564.469
B13	393816.016	6964071.242	564.433
B14	393813.762	6964071.876	564.383
B15	393811.923	6964073.324	564.325
B16	393810.778	6964075.366	564.269



CENTRAL ISLAND SETOUT DETAIL

NTS

ROUNDABOUT CENTRAL ISLAND SETOUT PLAN

SCALE 1:50

0 0.5 1.0 1.5 2.0m

SCALE 1:50 (A1)
SCALE 1:100 (A3)

NOTES

1. REFER DRG. NO. GS562-08-261 FOR ROUNDABOUT ISLAND CONCRETE DETAILS.

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

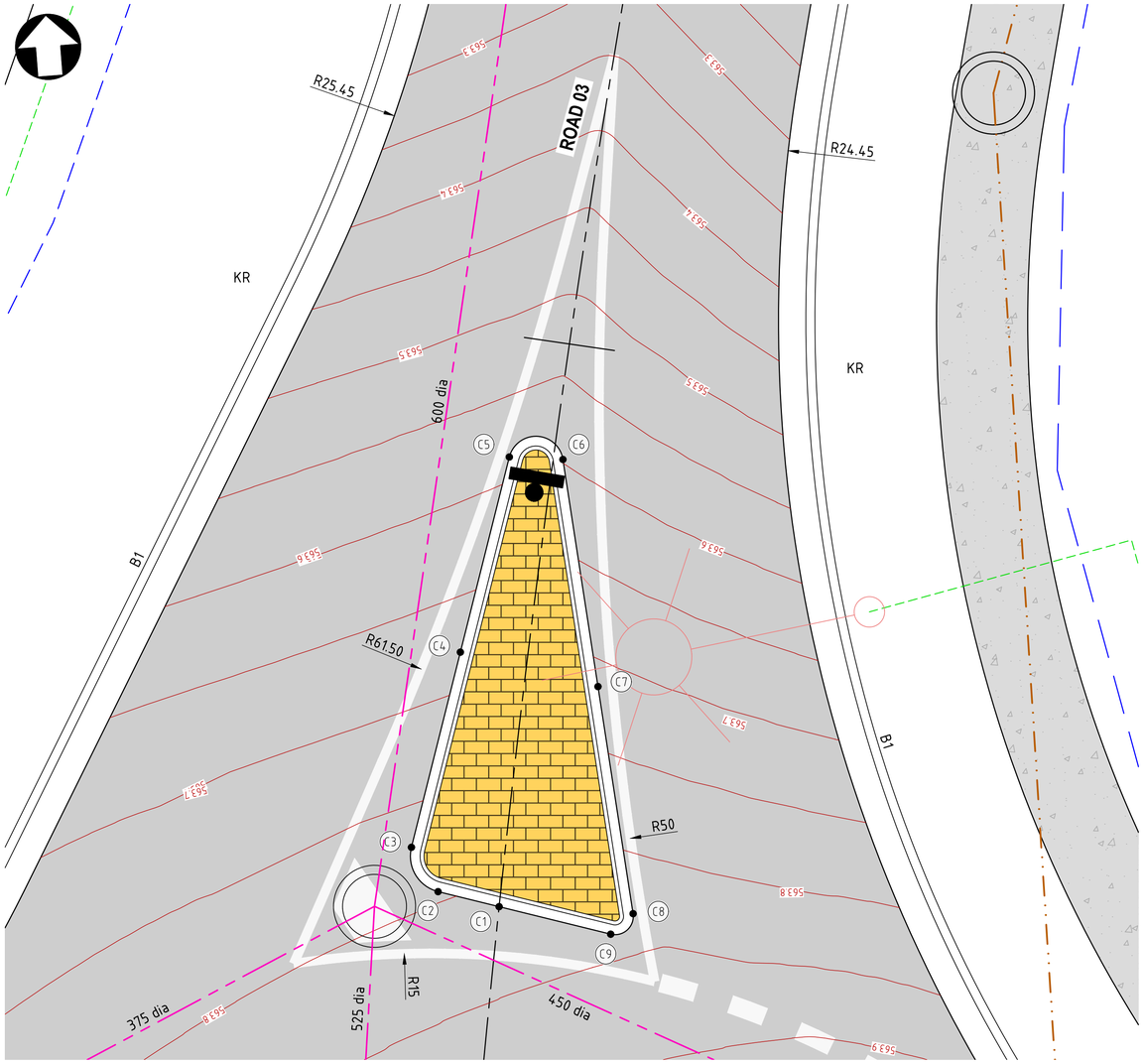
BOTANIC
HIGHFIELDS RD

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 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROUNDABOUT CENTRAL ISLAND SETOUT PLAN				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-08	SHEET No: 252	REVISION: B

ROADS & DRAINAGE



ROUNDABOUT SPLITTER ISLAND 1 SETOUT PLAN

SCALE 1:50

ROUNDABOUT SPLITTER ISLAND 1 SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
C1	393818.840	6964092.855	563.811
C2	393817.858	6964093.180	563.795
C3	393817.478	6964093.940	563.772
C4	393818.531	6964097.077	563.680
C5	393819.584	6964100.213	563.587
C6	393820.460	6964100.104	563.598
C7	393820.744	6964096.336	563.715
C8	393821.028	6964092.568	563.833
C9	393820.635	6964092.261	563.838

0 0.75 1.5 2.25 3.0m

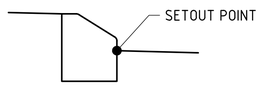
SCALE 1:75 (A1)
SCALE 1:150 (A3)

LEGEND

A1 • SETOUT POINT
REFER SETOUT TABLE THIS DRAWING

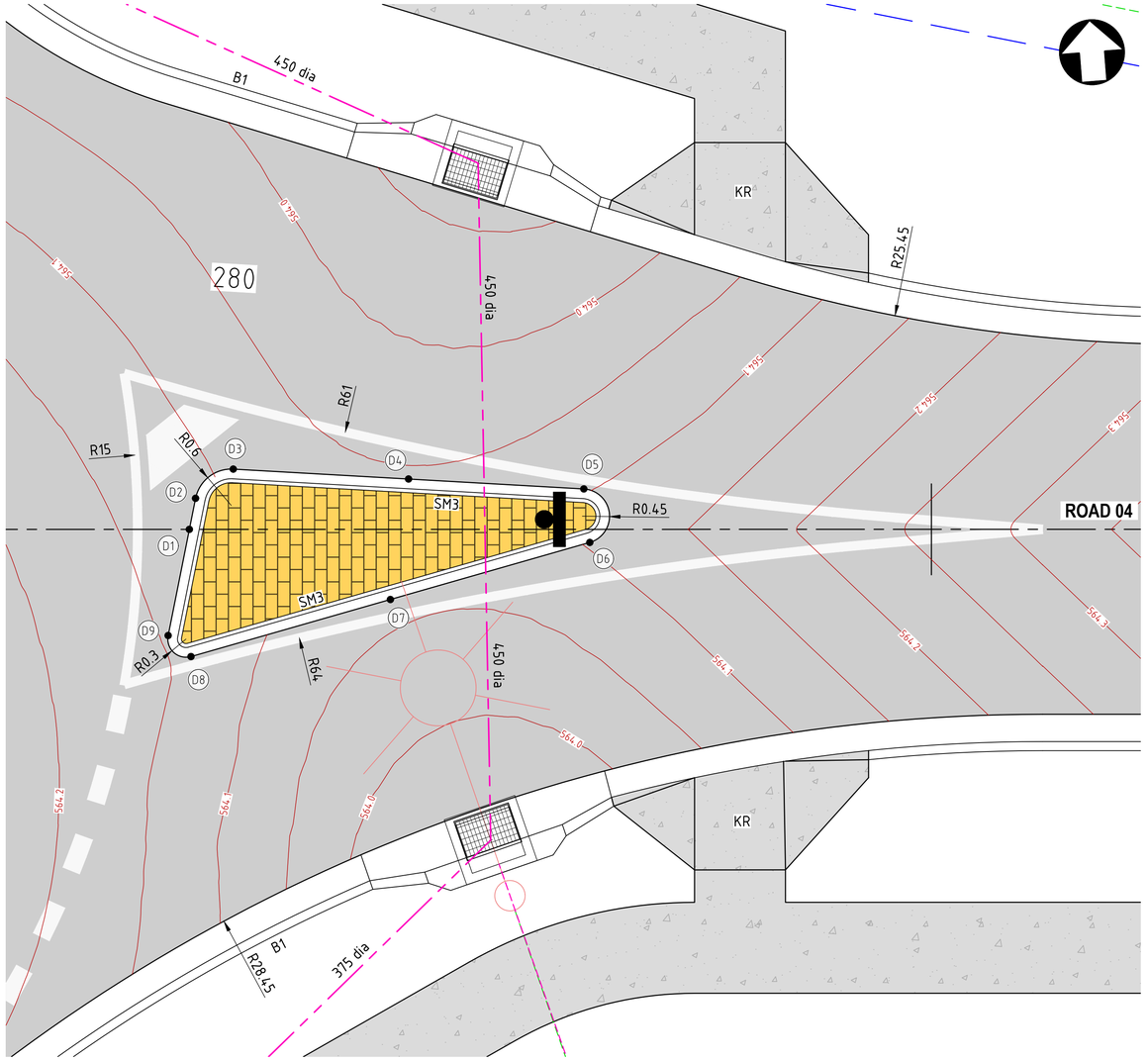
NOTES

1. REFER DRG. NO. GS562-08-261 FOR ROUNDABOUT ISLAND CONCRETE DETAILS.



TYPE SM3 KERB SETOUT DETAIL

NTS



ROUNDABOUT SPLITTER ISLAND 2 SETOUT PLAN

SCALE 1:50

ROUNDABOUT SPLITTER ISLAND 2 SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
D1	393832.287	6964075.989	564.120
D2	393832.429	6964076.492	564.113
D3	393833.087	6964076.923	564.092
D4	393835.956	6964076.535	564.056
D5	393838.826	6964076.146	564.097
D6	393838.855	6964075.259	564.104
D7	393835.503	6964074.577	564.064
D8	393832.151	6964073.896	564.141
D9	393831.802	6964074.271	564.147

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

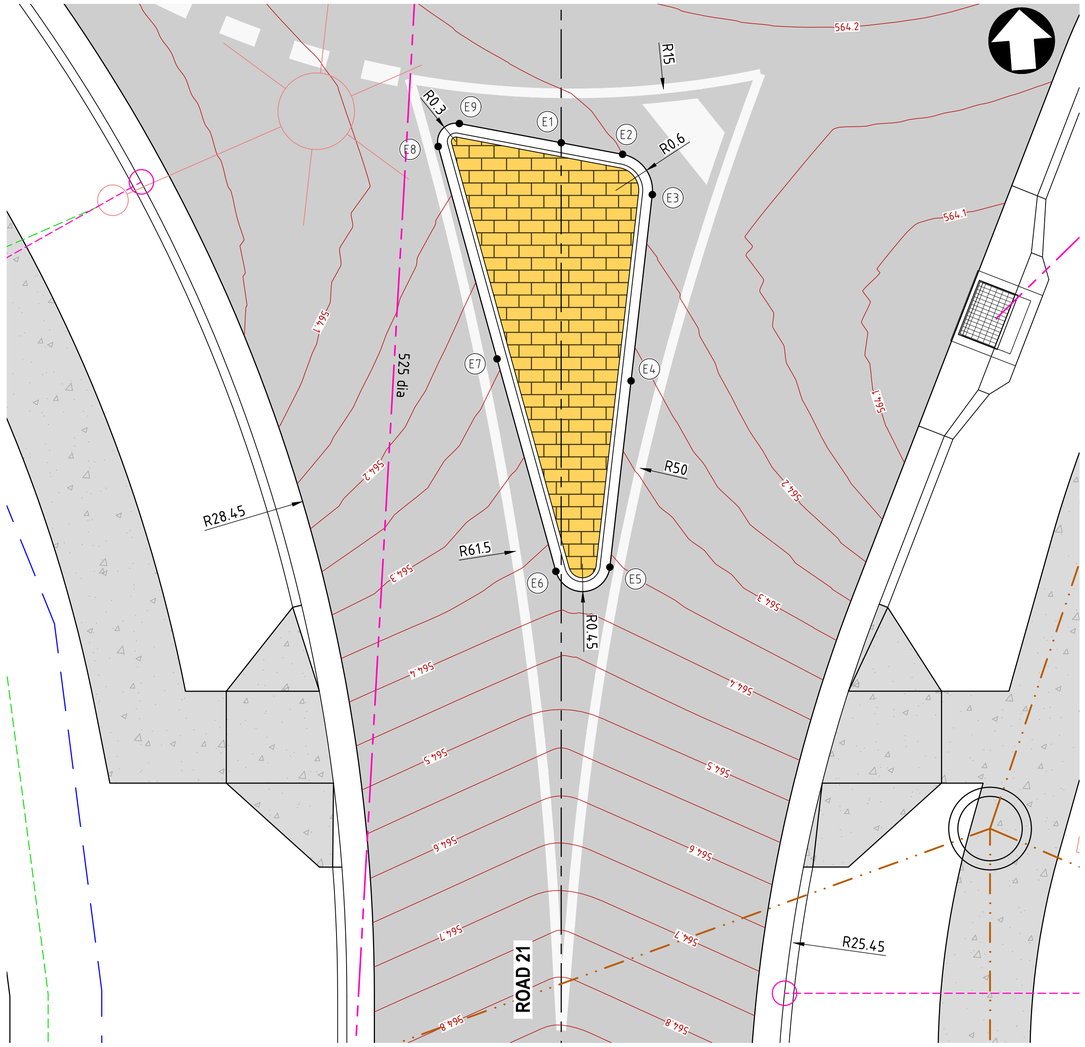
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: ROUNDABOUT SPLITTER ISLANDS SETOUT PLAN SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	253	B

ROADS & DRAINAGE

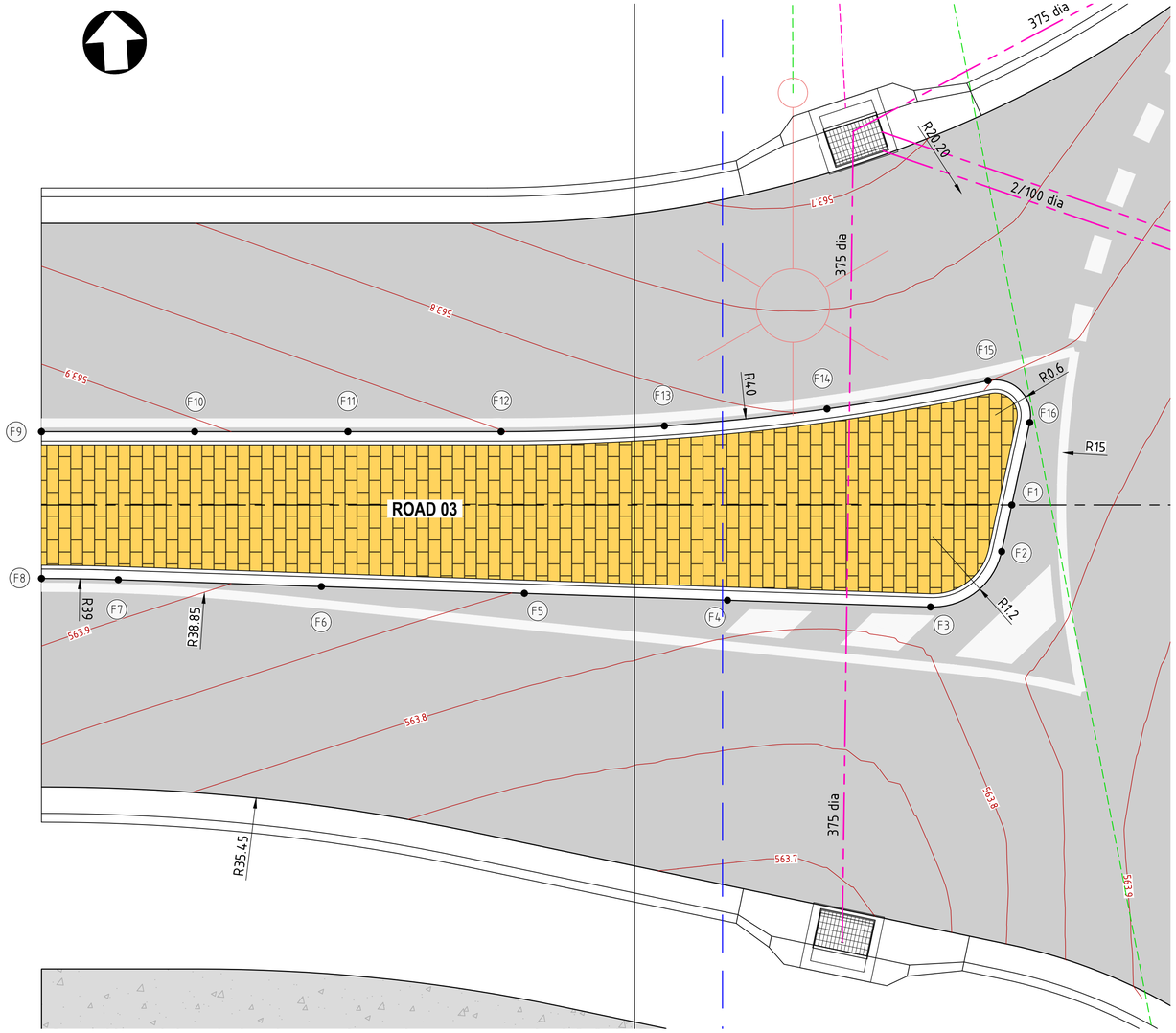


ROUNDABOUT SPLITTER ISLAND 3 SETOUT PLAN

SCALE 1:50

ROUNDABOUT SPLITTER ISLAND 3 SETOUT TABLE

POINT	EASTING	NORTHING	DESIGN RL
E1	393815.076	6964061.480	564.137
E2	393816.060	6964061.213	564.150
E3	393816.492	6964060.519	564.176
E4	393815.910	6964057.516	564.266
E5	393815.328	6964054.512	564.356
E6	393814.444	6964054.512	564.365
E7	393813.756	6964058.044	564.244
E8	393813.069	6964061.575	564.122
E9	393813.442	6964061.922	564.116



ROUNDABOUT SPLITTER ISLAND 4 SETOUT PLAN

SCALE 1:50

ROUNDABOUT SPLITTER ISLAND 4 SETOUT TABLE

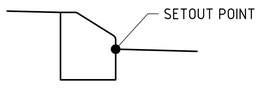
POINT	EASTING	NORTHING	DESIGN RL	POINT	EASTING	NORTHING	DESIGN RL
F1	393800.685	6964078.457	563.813	F9	393784.306	6964080.991	563.935
F2	393800.451	6964077.681	563.817	F10	393786.907	6964080.788	563.907
F3	393799.168	6964076.834	563.815	F11	393789.509	6964080.584	563.879
F4	393795.730	6964077.219	563.817	F12	393792.110	6964080.381	563.851
F5	393792.291	6964077.604	563.848	F13	393794.892	6964080.261	563.821
F6	393788.853	6964077.989	563.884	F14	393797.675	6964080.335	563.797
F7	393785.414	6964078.374	563.921	F15	393800.446	6964080.602	563.800
F8	393784.111	6964078.498	563.935	F16	393801.099	6964079.834	563.805

LEGEND

A1 • SETOUT POINT
REFER SETOUT TABLE THIS DRAWING

NOTES

1. REFER DRG. NO. GS562-08-261 FOR ROUNDABOUT ISLAND CONCRETE DETAILS.



TYPE SM3 KERB SETOUT DETAIL

NTS

0 0.5 1.0 1.5 2.0m

SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

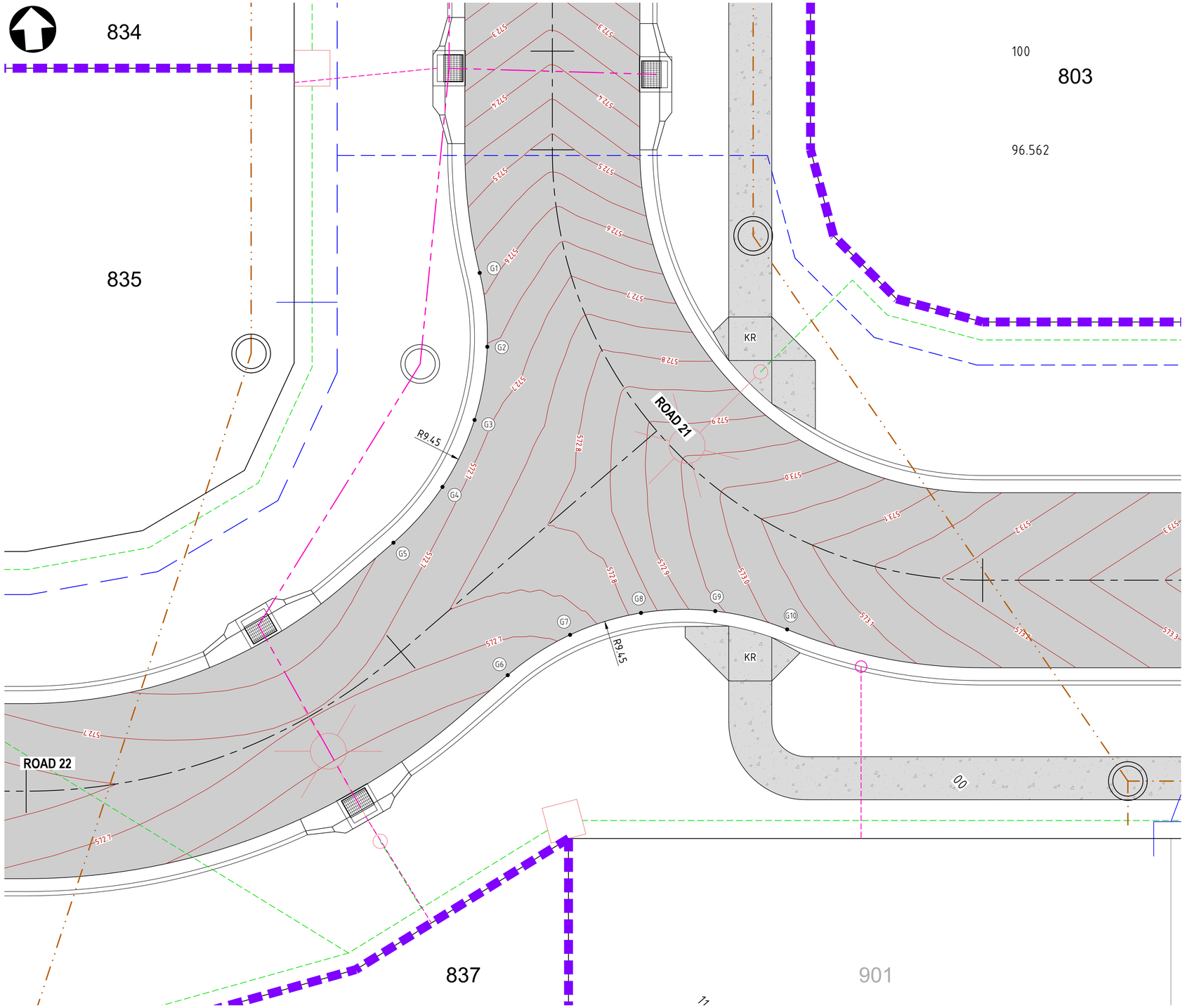
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

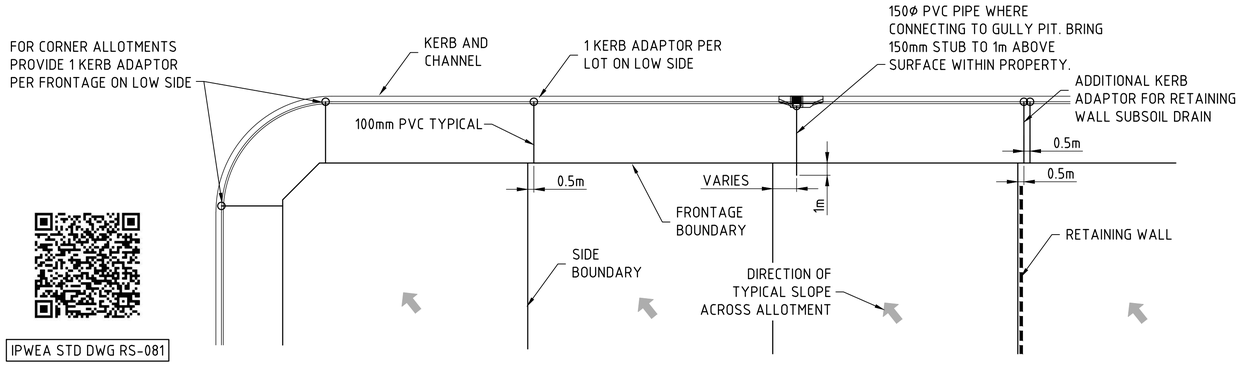
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ROUNDABOUT SPLITTER ISLANDS SETOUT PLAN SHEET 2 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	254	B

ROADS & DRAINAGE

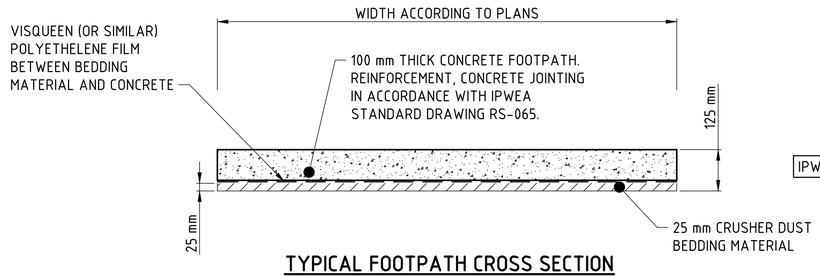

834
835
803
100
96.562
837
901
ROAD 21
ROAD 22
KR
KR
R9.45
R9.45
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
572.3
572.4
572.5
572.6
572.7
572.8
572.9
573.0
573.1
573.2
573.3
572.1
572.7
572.8
572.9
573.0
573.1
573.2
573.3
572.7
572.7
572.7



IPWEA STD DWG RS-081

TYPICAL KERB ADAPTOR INSTALLATION

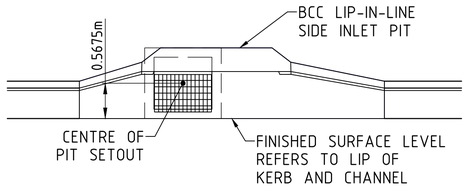
REFER IPWEA STD DWG RS-081 AND TRC 101450-001 FOR DETAILS
SCALE N.T.S



IPWEA STD DWG RS-065

TYPICAL FOOTPATH CROSS SECTION

SCALE 1:10



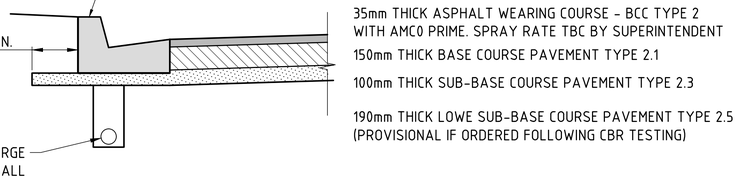
TMR STD DWG 1311

GULLY INLET PIT SETOUT DETAIL

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

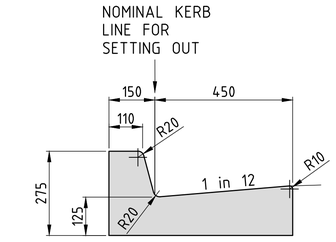
NOTE:
RAMPED PEDESTRIAN CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH IPWEA STANDARD DRAWING RS-090

IPWEA STD DWG RS-090



NEW PAVEMENT CONSTRUCTION - ROADS 03, ROAD 21 AND ROAD 22 (LOCAL ACCESS ROAD)

SCALE 1:20

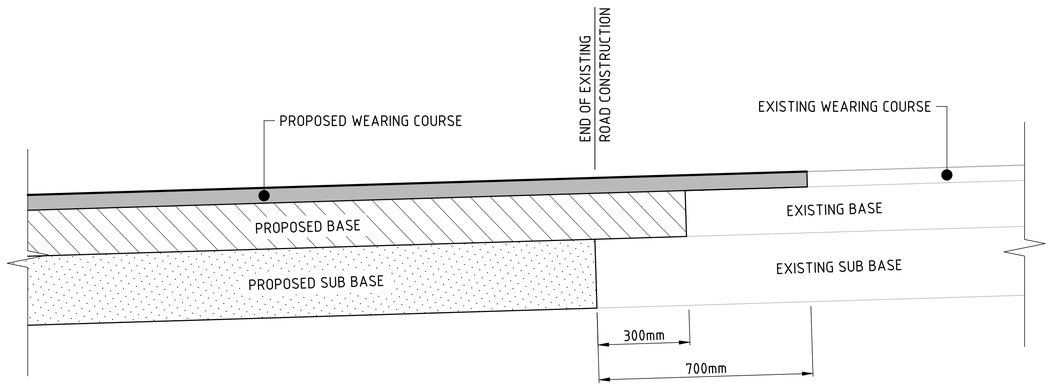


TYPE B1 - BARRIER KERB AND CHANNEL

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.

ISSUED
FOR APPROVAL

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
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

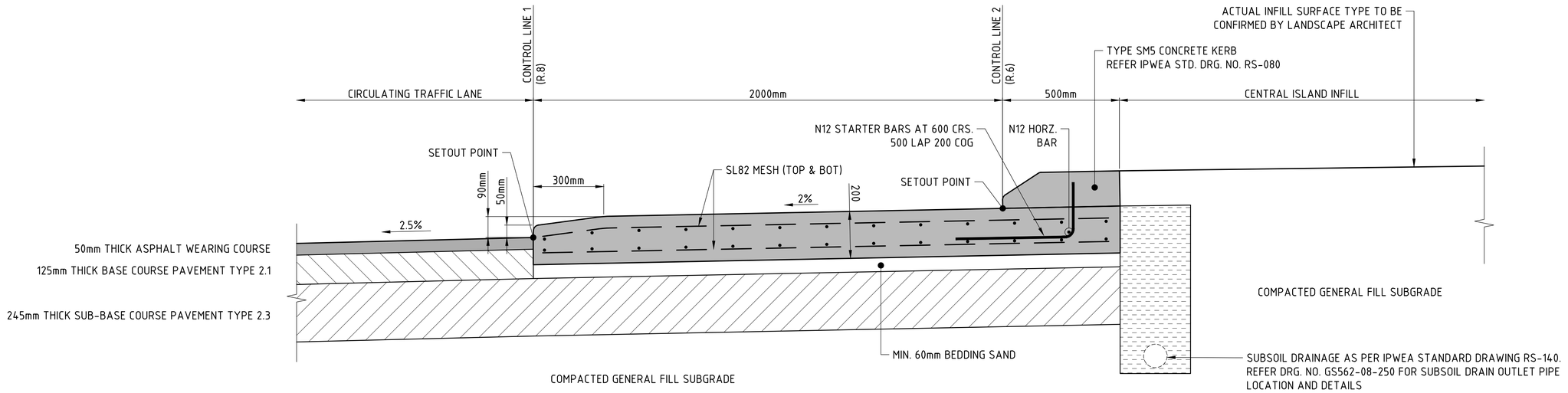
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: PAVEMENT DETAILS

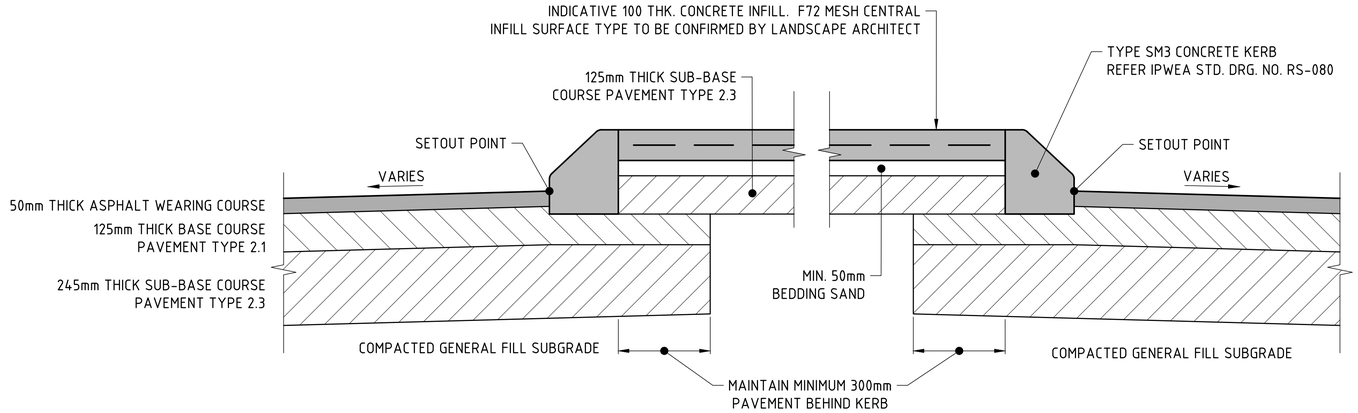
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	260	B

ROADS & DRAINAGE



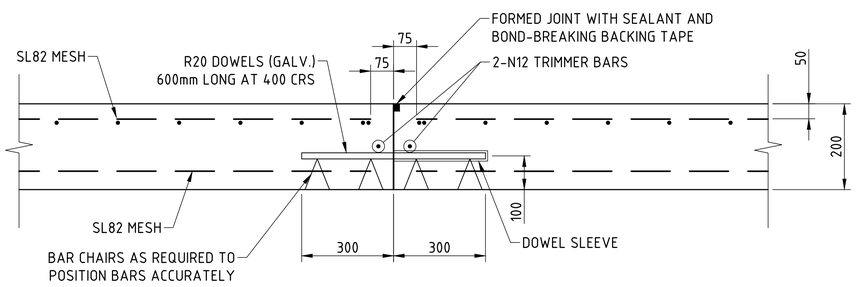
CENTRAL ISLAND - TYPICAL SECTION CONCRETE ENCROACHMENT AREA

SCALES 1:10



SPLITTER ISLANDS - TYPICAL SECTION

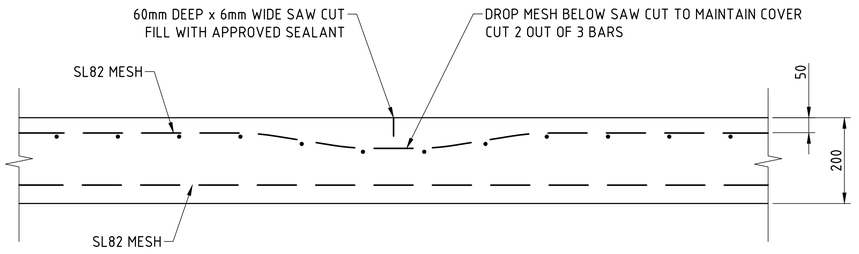
SCALES 1:10



TYPICAL SECTION - DOWEL JOINT (DJ)

CONSTRUCT AT 25m SPACING (NOM.)

1:10



TYPICAL SECTION - SAW CUT JOINT (SCJ)

CONSTRUCT AT 5m SPACING (NOM.)

1:10

ROUNDABOUT ISLAND CONCRETE NOTES

1. REFER REFER DRG. GS562-08-002 FOR CONSTRUCTION NOTES.
2. REFER DRG. GS562-08-051 TO 054 FOR ROUNDABOUT CENTRAL ISLAND AND SPLITTER ISLAND SETOUT PLANS AND SETOUT TABLES.
3. ALL DESIGN LEVELS ARE TO BE CHECKED AND CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
4. PEDESTRIAN KERB RAMPS AND TACTILE GROUND SURFACE INDICATORS (TGSI's) ARE TO COMPLY WITH IPWEA STD. DRG. RS-090 AND RS-092.

0 0.1 0.2 0.3 0.4m

SCALE 1:10 (A1)
SCALE 1:20 (A3)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

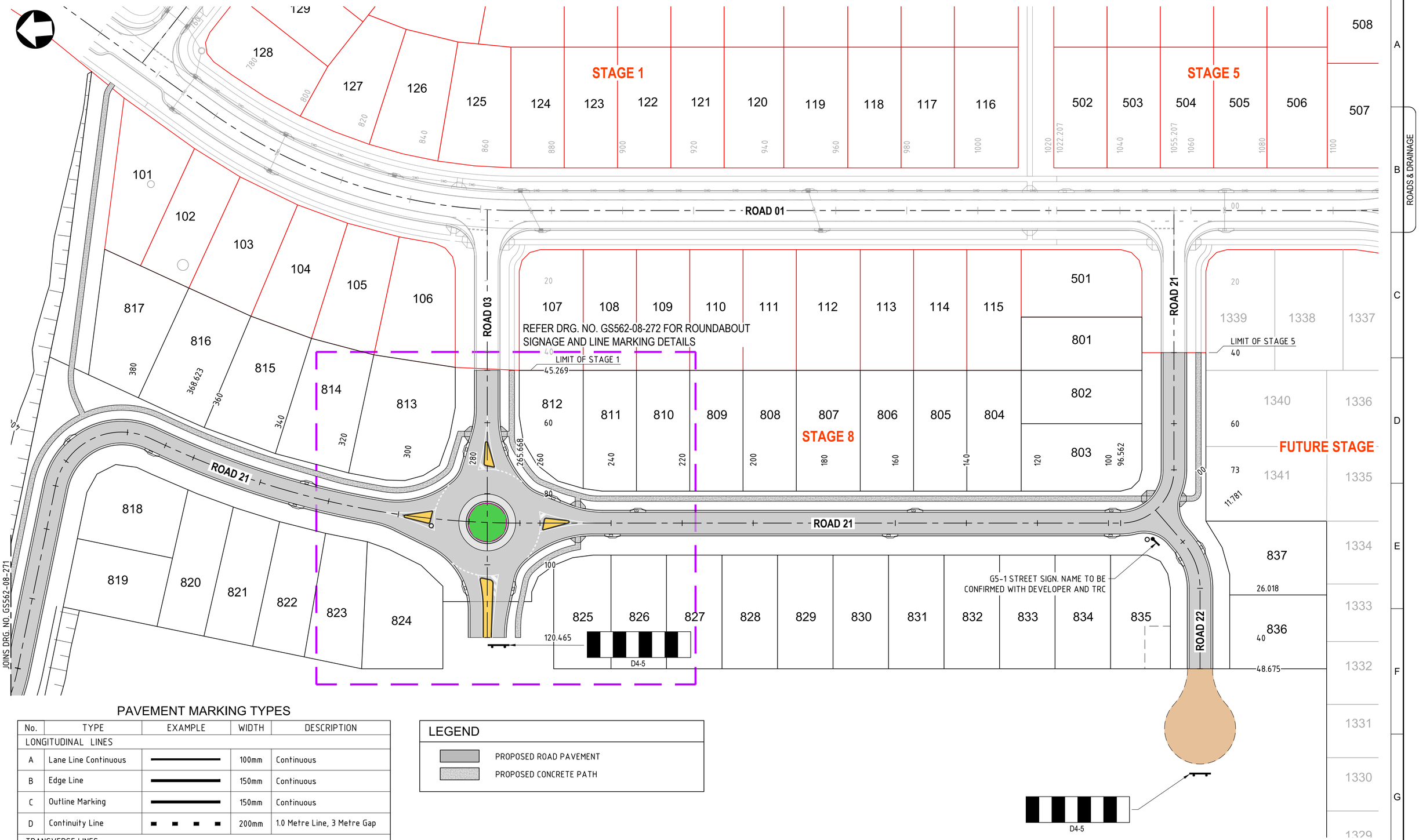
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: ROUNDABOUT CONCRETE DETAILS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	261	B

ROADS & DRAINAGE



PAVEMENT MARKING TYPES

No.	TYPE	EXAMPLE	WIDTH	DESCRIPTION
LONGITUDINAL LINES				
A	Lane Line Continuous		100mm	Continuous
B	Edge Line		150mm	Continuous
C	Outline Marking		150mm	Continuous
D	Continuity Line		200mm	1.0 Metre Line, 3 Metre Gap
TRANSVERSE LINES				
E	Give Way Line		450mm	0.6 Metre Line, 0.6 Metre Gap

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH

SIGNAGE AND LINEMARKING LAYOUT PLAN

SCALE 1:500

0 5 10 15 20m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

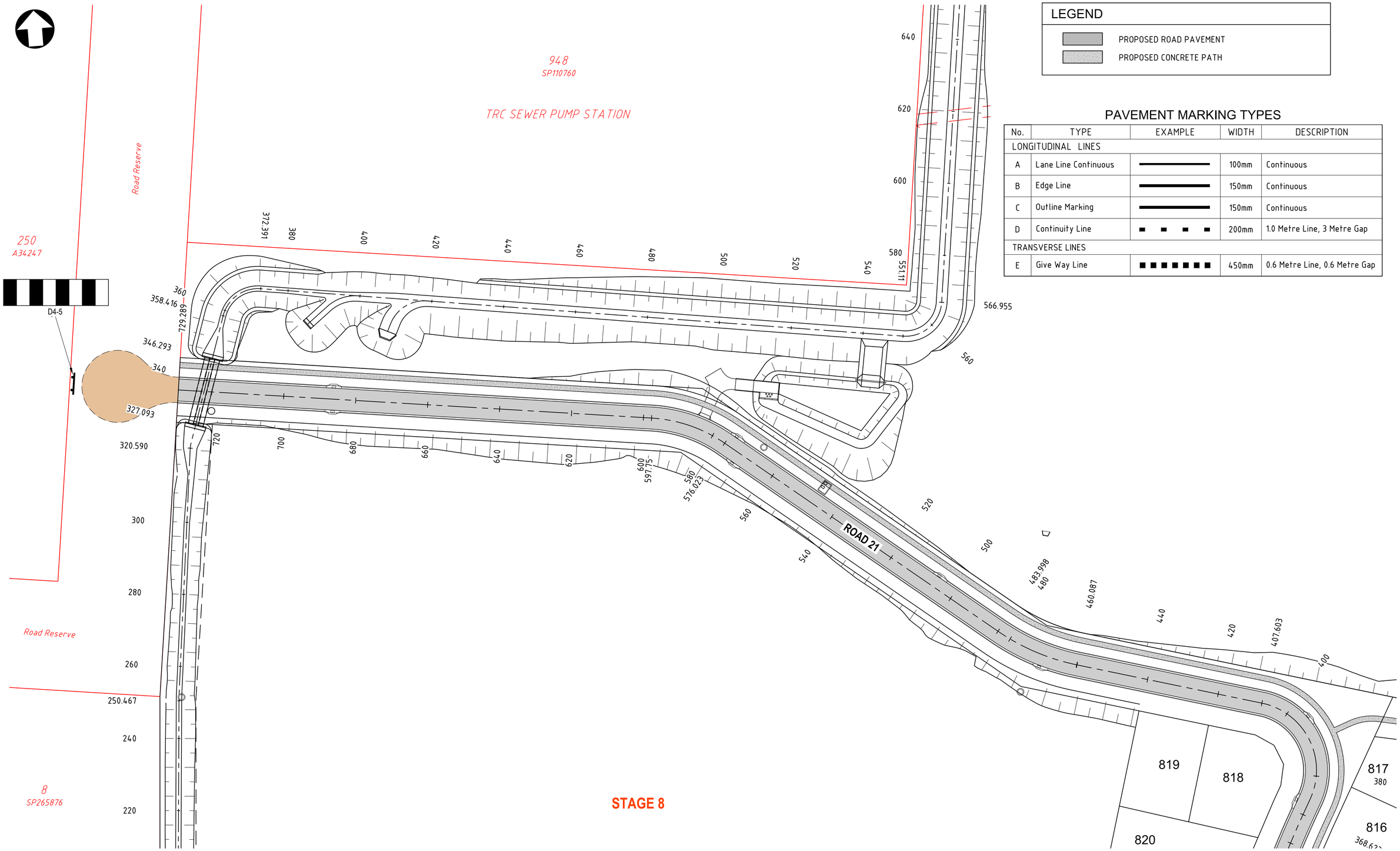
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	270	B



LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH

PAVEMENT MARKING TYPES

No.	TYPE	EXAMPLE	WIDTH	DESCRIPTION
LONGITUDINAL LINES				
A	Lane Line Continuous	———	100mm	Continuous
B	Edge Line	———	150mm	Continuous
C	Outline Marking	———	150mm	Continuous
D	Continuity Line	- - - -	200mm	1.0 Metre Line, 3 Metre Gap
TRANSVERSE LINES				
E	Give Way Line	■■■■■■■	450mm	0.6 Metre Line, 0.6 Metre Gap

STAGE 8

SIGNAGE AND LINEMARKING LAYOUT PLAN

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

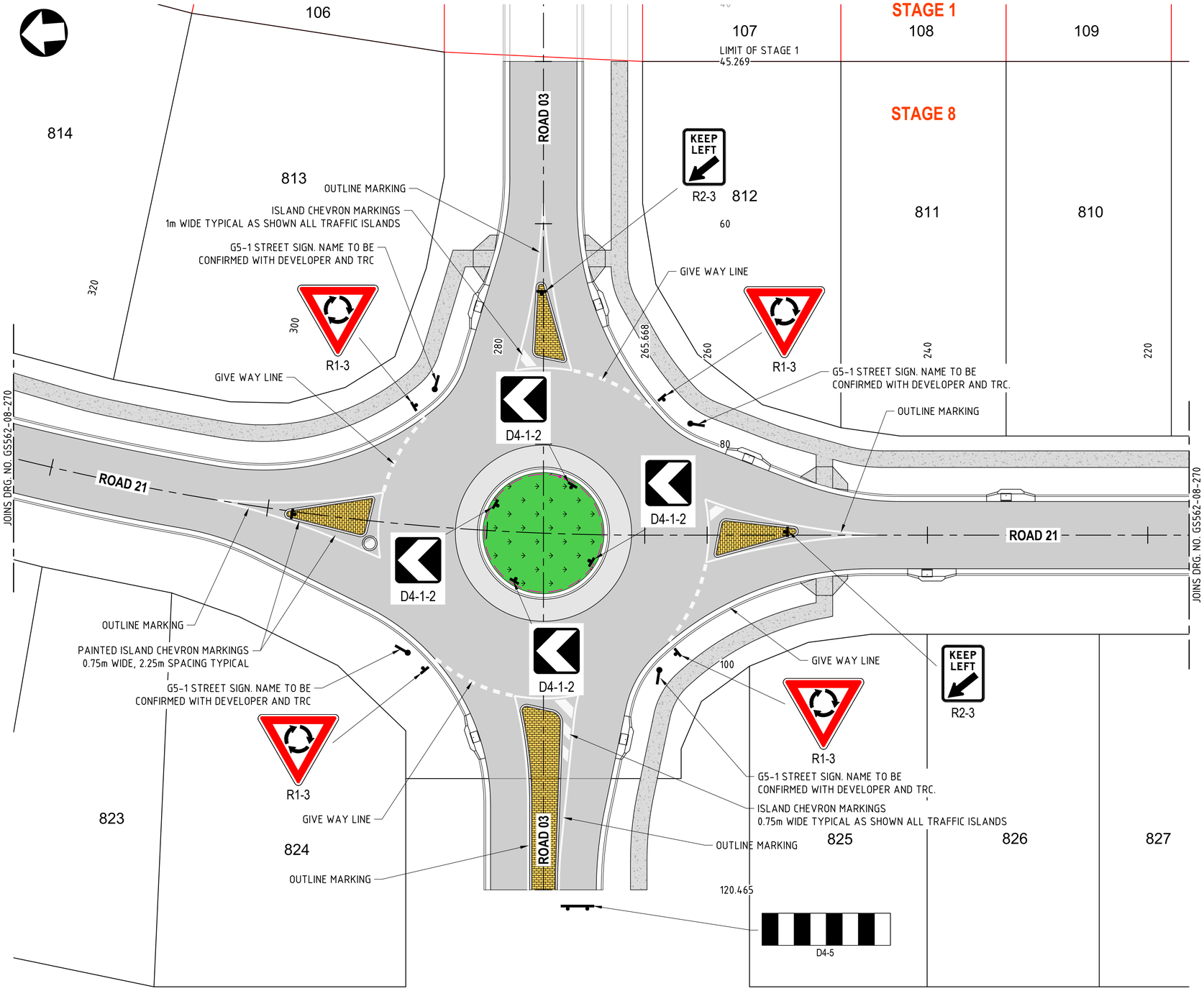
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 2 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	271	B

ROADS & DRAINAGE



LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH

PAVEMENT MARKING TYPES

No.	TYPE	EXAMPLE	WIDTH	DESCRIPTION
LONGITUDINAL LINES				
A	Lane Line Continuous	———	100mm	Continuous
B	Edge Line	———	150mm	Continuous
C	Outline Marking	———	150mm	Continuous
D	Continuity Line	- - - -	200mm	1.0 Metre Line, 3 Metre Gap
TRANSVERSE LINES				
E	Give Way Line	■■■■■■■	450mm	0.6 Metre Line, 0.6 Metre Gap

NOTES

1. ALL ROUNDABOUT SIGNAGE IS BASED ON MUTCD PART 2, FIGURE 2.8.
2. ALL SERVICES TO BE POSITIVELY LOCATED BEFORE INSTALLING SIGNAGE SPEARS.
3. ALL SOCKETS TO BE CAST INTO CONCRETE ISLANDS AT TIME OF CONCRETE POUR.
4. ALL LINE MARKING AND SIGNAGE IS TO BE INSTALLED IN ACCORDANCE WITH MUTCD.

0 2 4 6 8m
SCALE 1:200 (A1)
SCALE 1:400 (A3)

SIGNAGE AND LINEMARKING LAYOUT PLAN

SCALE 1:200

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

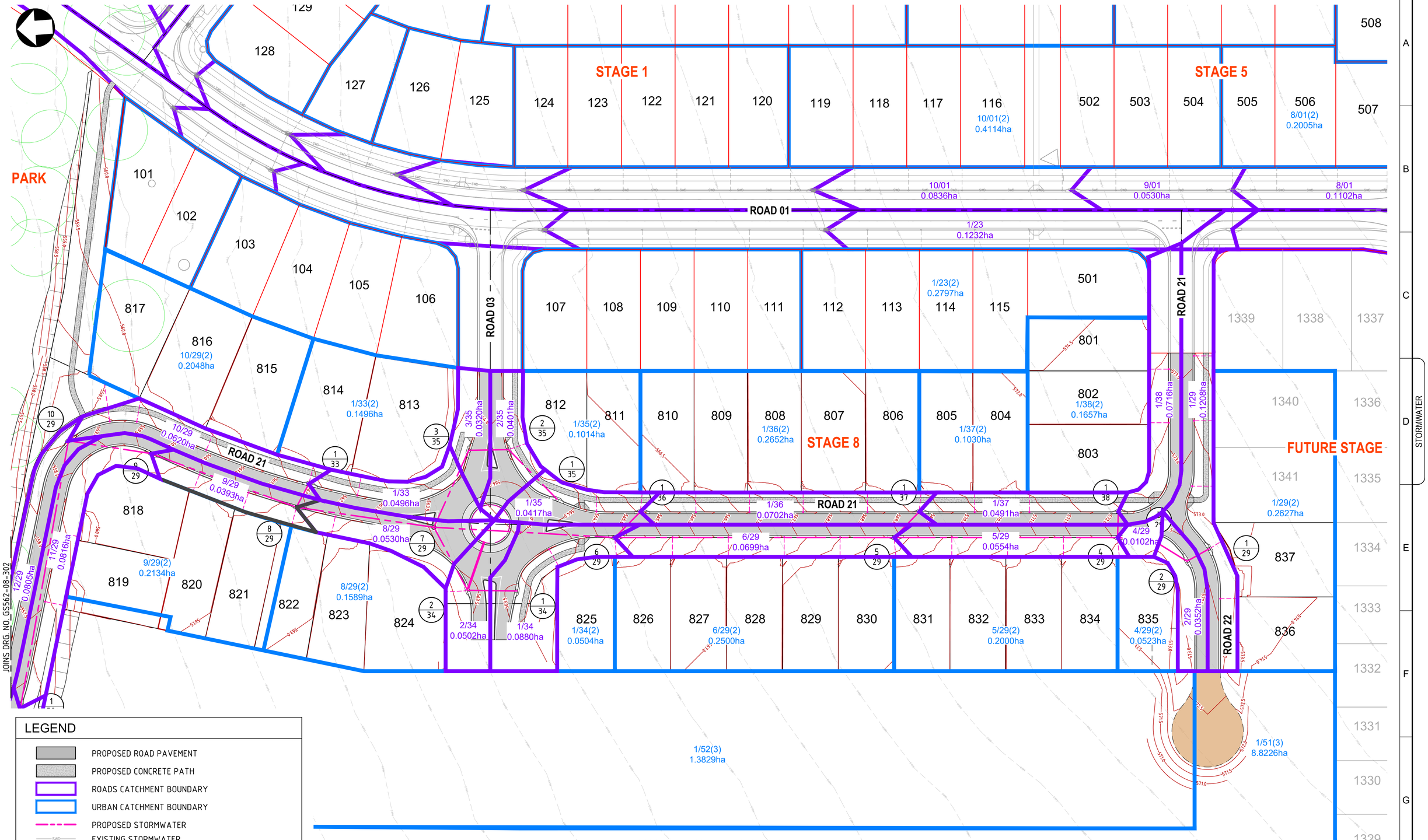
BOTANIC
HIGHFIELDS RD

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 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE				
SIGNAGE AND LINEMARKING PLAN SHEET 3 OF 3				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-08	SHEET No: 272	REVISION: B

ROADS & DRAINAGE



LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- ROADS CATCHMENT BOUNDARY
- URBAN CATCHMENT BOUNDARY
- PROPOSED STORMWATER
- EXISTING STORMWATER
- FUTURE STORMWATER
- DESIGN SURFACE CONTOURS (0.5m INTERVAL)

STORMWATER CATCHMENT PLAN - SHEET 1 OF 3

SCALE 1:500

0 5 10 15 20m

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

ISSUED
FOR APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: STORMWATER CATCHMENT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	300	B

JOINS DRG. NO. GS562-08-300

JOINS DRG. NO. GS562-08-302

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- ROADS CATCHMENT BOUNDARY
- URBAN CATCHMENT BOUNDARY
- PROPOSED STORMWATER
- SWD — EXISTING STORMWATER
- FUTURE STORMWATER
- 583.5 — DESIGN SURFACE CONTOURS (0.5m INTERVAL)

STAGE 8

1/51(3)
8.8226ha

FUTURE STAGE

1326
1325
1324
1323
1322
1321
1320
1319
1318
1317

5/30
4/30
3/30
2/30

553.0 553.5 554.0 554.5 555.0 555.5 556.0 556.5 557.0 557.5 558.0 558.5 559.0

Road Reserve

8
SP265876

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

STORMWATER CATCHMENT PLAN - SHEET 2 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: STORMWATER CATCHMENT PLAN SHEET 2 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	301	B

STORMWATER

LEGEND

- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE PATH
- ROADS CATCHMENT BOUNDARY
- URBAN CATCHMENT BOUNDARY
- PROPOSED STORMWATER
- SWD — EXISTING STORMWATER
- FUTURE STORMWATER
- 583.5 — DESIGN SURFACE CONTOURS (0.5m INTERVAL)

948
SP110760

TRC SEWER PUMP STATION

EXISTING TRC TRUNK SEWER

5
SP339730

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

PARK

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

Road Reserve

250
A34247

2/31
0.1141ha

1/31
0.1416ha

2/32
0.0487ha

1/32
0.0935ha

1/51(3)
8.8226ha

12/29
0.0805ha

11/29
0.0816ha

9/29(2)
0.2134ha

10/29
0.0620ha

ROAD 21

819

818

820

Road Reserve

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

8
SP265876

JOINS DRG. NO. GS562-08-301

JOINS DRG. NO. GS562-08-300

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

STORMWATER CATCHMENT PLAN - SHEET 3 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

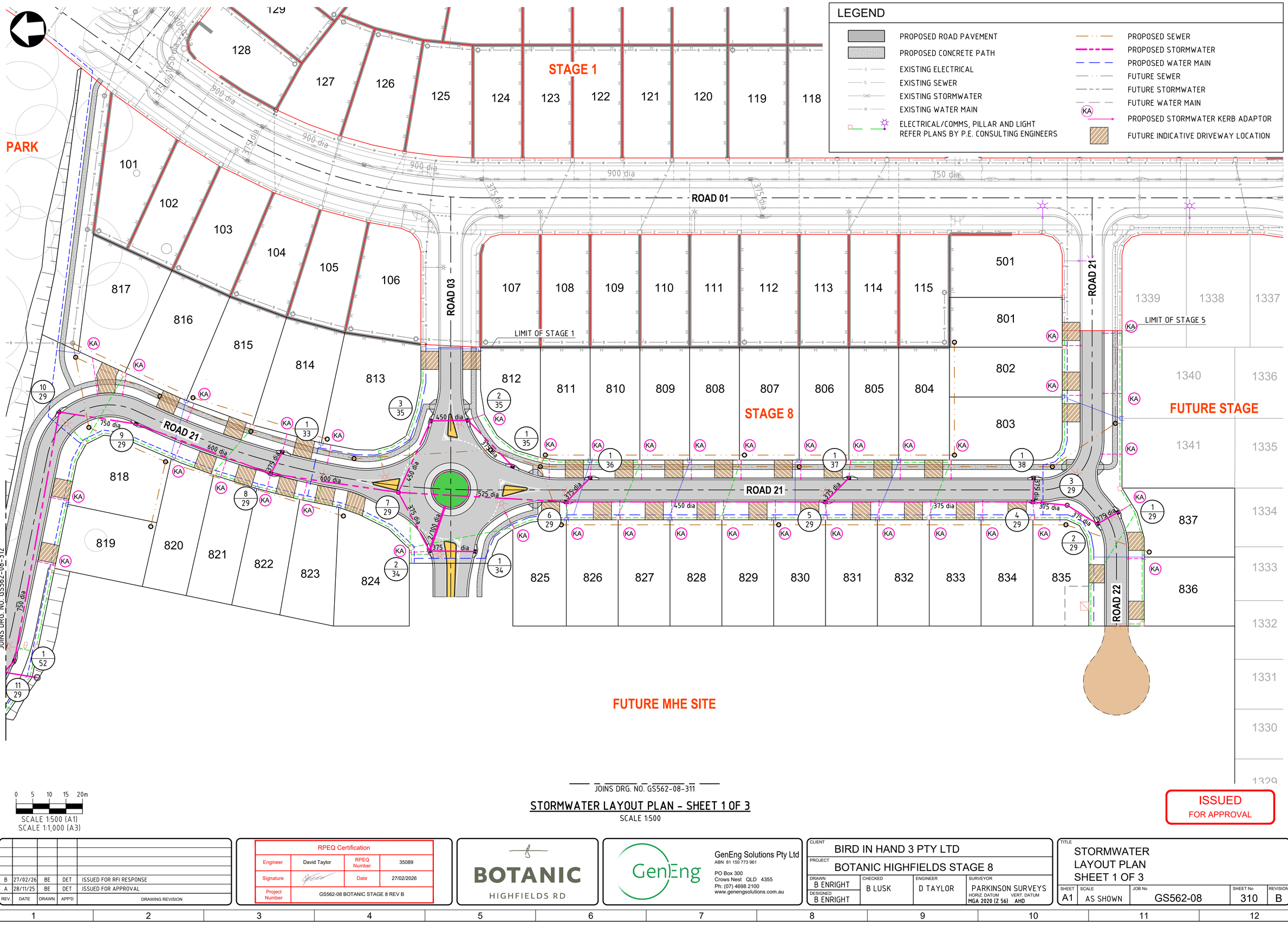
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER CATCHMENT PLAN SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	302	B

STORMWATER



0 5 10 15 20m

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

STORMWATER LAYOUT PLAN - SHEET 1 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8		
DRAWN B ENRIGHT	CHECKED B LUSK	ENGINEER D TAYLOR	SURVEYOR PARKINSON SURVEYS
DESIGNED B ENRIGHT			HORIZ. DATUM MGA 2020 (Z 56) VERT. DATUM AHD

TITLE: STORMWATER LAYOUT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	310	B

JOINS DRG. NO. GS562-08-310

JOINS DRG. NO. GS562-08-312

STORMWATER

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
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN
- KA — PROPOSED STORMWATER KERB ADAPTOR
- FUTURE INDICATIVE DRIVEWAY LOCATION

STAGE 8

STAGE 9

1324 513m²
1323 513m²
1322 513m²
1321 513m²
1320 513m²
1319 533m²
1318 513m²
1317 608m²

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

4/30 3/30 2/30 1/30

900 dia 900 dia 1650 dia 1650 dia 10.00

220 200 180 160 140 120 100 80 60 40 20 0

PLACE DUMPED ROCK PROTECTION (d=300mm) AROUND SEWER MANHOLE FOR MIN. 1m WIDTH ON OPEN CHANNEL SIDE SLOPE

DN180 SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

PLACE DUMPED ROCK PROTECTION (d=300mm) AROUND SEWER MANHOLE FOR MIN. 1m WIDTH ON OPEN CHANNEL SIDE SLOPE

900x600 TMR FIELD INLET TYPE 2. REFER QLD TMR STD DRG SD1310.
PROVIDE DUMPOED ROCK PROTECTION (d=300mm) AROUND THE FIELD INLET AND WITHIN THE BASE OF OPEN CHANNEL FOR OF 3m DOWNSTREAM OF STRUCTURE.

SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

8
SP265876

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

STORMWATER LAYOUT PLAN - SHEET 2 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: STORMWATER LAYOUT PLAN SHEET 2 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	311	B

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
- PROPOSED STORMWATER
- PROPOSED WATER MAIN
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN
- PROPOSED STORMWATER KERB ADAPTOR
- FUTURE INDICATIVE DRIVEWAY LOCATION

948
SP110760

250
A34247

Road Reserve

TRC SEWER PUMP STATION

5
SP339730

PARK

ROAD 21

STAGE 8

STORMWATER OPEN CHANNEL OUTLET
REFER DRG. GS562-08-349 FOR DETAILS

EXISTING TRC TRUNK SEWER

DN150 SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

GROSS POLLUTANT TRAP
HUMEGARD HG30

ROCK PROTECTION TO OUTLET IN
ACCORDANCE WITH QUDM: d50=200mm
AT 2.7m LONG AND 360mm DEEP.

PLACE DUMPED ROCK PROTECTION
(d=300mm) AROUND SEWER
MANHOLE FOR MIN. 1m WIDTH ON
OPEN CHANNEL SIDE SLOPE

LOCALLY DEVIATE STORMWATER OPEN CHANNEL
AROUND PROPOSED SEWER MANHOLE

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

JOINS DRG. NO. GS562-08-311

JOINS DRG. NO. GS562-08-310

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

STORMWATER LAYOUT PLAN - SHEET 3 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

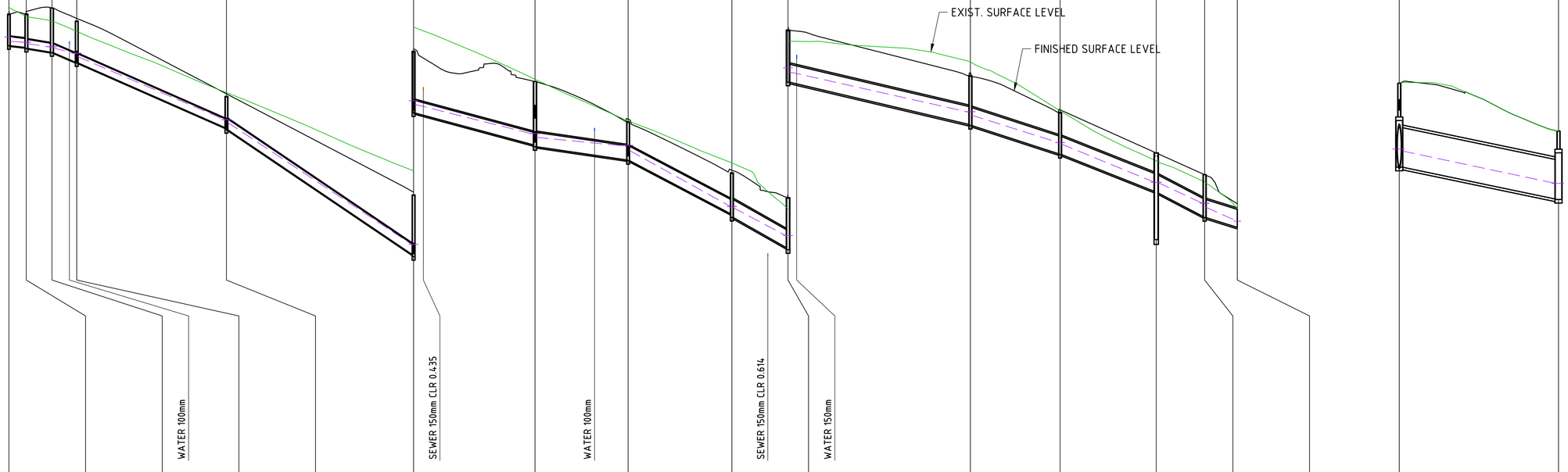
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER LAYOUT PLAN SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	312	B

STORMWATER

STRUCTURE NAME	1/29 393793.961 E 6963877.173 N	2/29 393790.923 E 6963883.739 N	3/29 393797.247 E 6963892.397 N	4/29 393799.036 E 6963902.596 N	5/29 393803.903 E 6963964.906 N	6/29 393809.987 E 6964042.794 N	7/29 393816.796 E 6964093.020 N	8/29 393825.359 E 6964130.944 N	9/29 393843.458 E 6964170.267 N	10/29 393848.891 E 6964193.068 N	11/29 393775.221 E 6964212.323 N	12/29 393749.847 E 6964239.872 N	13/29 393719.331 E 6964265.939 N	14/29 393703.969 E 6964279.073 N	15/29 393706.317 E 6964292.507 N	1/30 393505.590 E 6963837.230 N	2/30 393510.771 E 6963903.505 N
STRUCTURE DESCRIPTION	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	BCC MANHOLE 1050mm DIA	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	BCC MANHOLE 1050mm DIA	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	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	HUMEGARD HG30 PRECAST GPT	BCC MANHOLE 1050mm DIA	HEADWALL	BCC MANHOLE 2700mm DIA	BCC MANHOLE 2700mm DIA



PIPE SIZE (mm)	375	375	375	375	450	525	600	600	750	750	750	750	750	750		1650	
PIPE CLASS	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	
PIPE GRADE (%)	1.00%	1.48%	3.91%	4.34%	6.69%	2.64%	1.43%	5.15%	5.42%	2.32%	3.17%	3.85%	4.90%	3.00%		2.00%	
PIPE SLOPE (1 in X)	100.0	67.4	25.6	23.0	14.9	37.9	70.1	19.4	18.4	43.0	31.5	26.0	20.4	33.3		50.0	
CAPACITY VELOCITY (m/s)	1.59	1.93	3.14	3.31	4.64	3.23	2.59	4.93	5.87	3.84	4.49	4.95	5.58	4.38		6.03	
NORMAL DEPTH VELOCITY (m/s)	1.47	1.75	2.49	2.98	3.88	3.06	2.58	4.31	4.41	3.32	3.72	4.01	4.36	3.65		4.27	
PIPE FLOW (cumecs)	0.066	0.073	0.073	0.123	0.188	0.283	0.358	0.419	0.452	0.490	0.493	0.502	0.494	0.490		1.835	
CAPACITY FLOW (cumecs)	0.175	0.214	0.347	0.366	0.738	0.699	0.734	1.393	2.594	1.698	1.983	2.186	2.465	1.936		12.895	
DATUM RL	545.000					539.000				532.000						536.000	
HGL ELEVATION	571.475	571.427 571.373	571.234	571.194	570.952 570.831	568.187 568.088	562.967 562.841	561.591 561.460	561.090 560.919	558.566 558.529	557.332 557.196	555.508 555.388	554.237 554.185	552.985 552.572	551.688 551.540	550.958	557.889 556.539
FINISHED (& EXISTING) SURFACE LEVEL	572.611 (572.882)	572.611 (572.514)	572.862 (572.319)	572.317 (571.892)	569.169 (569.328)	565.057 (566.064)	563.790 (563.885)	562.113 (562.146)	559.975 (560.393)	558.943 (558.476)	557.034 (557.608)	555.499 (555.563)	553.808 (553.474)	552.900 (552.598)	551.450 (551.488)	560.721 (560.753)	558.724
DEPTH OF INVERT BELOW FSL	1.433	1.506 1.546	1.845 1.865	1.835 1.855	1.421 1.496	2.611 2.686	2.646 2.721	1.709 1.729	1.820 1.970	2.208 2.288	2.149 2.189	1.841 1.861	1.605 1.669	1.751 1.791	0.000 0.000	3.507	2.839
INVERT LEVEL	571.288	571.216 571.176	571.017 570.997	570.592 570.572	567.858 567.783	562.556 562.481	561.144 561.069	560.514 560.494	558.266 558.116	556.845 556.765	554.995 554.955	553.768 553.748	552.202 552.139	551.149 551.109	550.700 550.700	557.214	555.885
CHAINAGE	0.000 7.235m	7.235 10.721m	17.956 10.354m	28.311 62.500m	90.811 78.125m	168.936 50.686m	219.622 38.878m	258.500 43.305m	301.805 23.430m	325.235 76.144m	401.379 37.454m	438.833 40.133m	478.967 20.212m	499.179 13.637m	512.816	-22.035 66.478m	44.443

LINE

29

30

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 APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

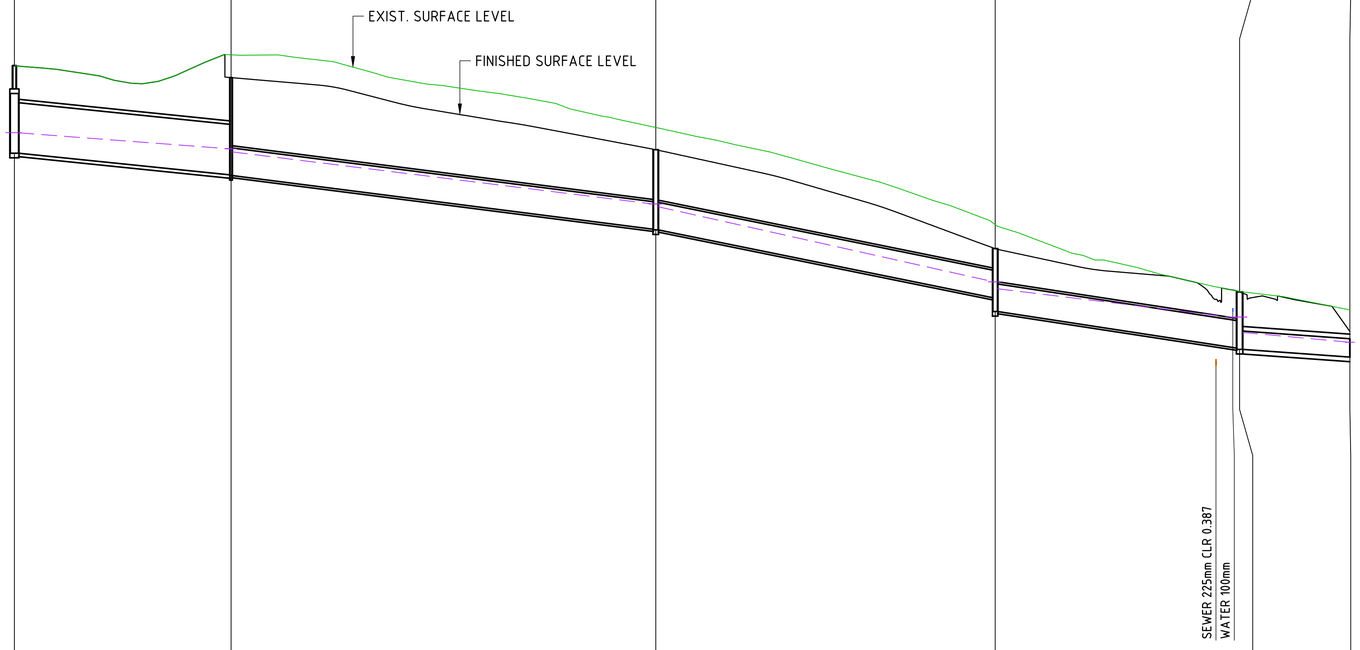
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 1 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	320	B

STRUCTURE NAME	2/30	3/30	4/30	5/30	6/30	7/30	1/31	2/31	3/31	1/32	2/32	3/32
	393510.771 E 6963903.505 N	393516.283 E 6963974.098 N	393528.807 E 6964112.111 N	393537.469 E 6964222.578 N	393551.890 E 6964301.063 N	393560.424 E 6964323.001 N	393585.362 E 6964298.113 N	393586.353 E 6964305.280 N	393600.809 E 6964320.326 N	393694.626 E 6964275.255 N	393696.863 E 6964282.792 N	393706.391 E 6964292.678 N
STRUCTURE DESCRIPTION	BCC MANHOLE 2700mm DIA	FIELD INLET GENERIC 900x900	BCC MANHOLE 1500mm DIA	BCC MANHOLE 1500mm DIA	BCC MANHOLE 1800mm DIA	HEADWALL	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	BCC TYPE A GULLY (SAG) L.I.L; 2.4m Lintel	HEADWALL	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	HEADWALL



PIPE SIZE (mm)	1650	900	900	900	1200x600		375	375		375	375	
PIPE CLASS	4	4	4	4	BC		4	4		4	4	
PIPE GRADE (%)	1.00%	1.27%	2.00%	1.50%	0.70%		1.00%	2.06%		5.53%	1.00%	
PIPE SLOPE (1 in X)	100.0	79.0	50.0	66.7	142.9		100.0	48.5		18.1	100.0	
CAPACITY VELOCITY (m/s)	4.26	3.20	4.03	3.49	2.88		1.59	2.29		3.73	1.59	
NORMAL DEPTH VELOCITY (m/s)	3.31	3.60	4.28	3.79	2.67		1.20	1.83		1.94	1.20	
PIPE FLOW (cumecs)	1.793	1.748	1.662	1.593	1.553		0.031	0.056		0.020	0.031	
CAPACITY FLOW (cumecs)	9.118	2.038	2.561	2.218	2.076		0.175	0.253		0.412	0.176	
DATUM RL	531.000						528.000			529.000		
HGL ELEVATION	556.539 / 556.532	556.006 / 555.910	554.205 / 554.119	551.674 / 551.442	550.491 / 550.017	549.694	549.760	549.716 / 549.693	549.240	551.384	550.964 / 550.957	550.807
FINISHED (& EXISTING) SURFACE LEVEL	558.724	558.333 (559.077)	555.980 (556.706)	552.751 (553.535)	551.339 (551.350)	549.810 (550.751)	550.957 (551.561)	550.957 (551.345)	549.495 (550.856)	552.614 (552.966)	552.482 (552.411)	551.075 (551.487)
DEPTH OF INVERT BELOW FSL	2.839 / 2.859	3.175 / 3.195	2.598 / 2.618	1.605 / 2.052	1.837 / 1.877	0.195 / 0.195	1.433	1.506 / 1.546	0.635 / 0.635	1.441	1.742 / 1.762	1.000 / 1.000
INVERT LEVEL	555.885 / 555.865	555.158 / 555.138	553.382 / 553.362	551.146 / 550.699	549.502 / 549.462	549.210 / 549.210	549.634	549.562 / 549.522	549.120 / 549.120	551.283	550.850 / 550.830	550.700 / 550.700
CHAINAGE	44.443	70.728m 115.170	138.660m 253.830	110.806m 364.636	79.797m 444.433	36.000m 480.434	0.000	7.235m 7.235	19.483m 26.718	0.000	7.824m 7.824	13.048m 20.871

LINE

30 31 32

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 APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 2 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	321	B

STRUCTURE NAME	1/33	8/29	1/34	2/34	7/29	1/35	2/35	3/35	7/29	1/36	6/29	1/37	5/29	1/38	4/29	1/51	2/51
	393831.632 E 6964126.980 N	393825.359 E 6964130.944 N	393797.219 E 6964071.238 N	393798.484 E 6964085.030 N	393816.796 E 6964093.020 N	393821.954 E 6964058.065 N	393836.849 E 6964070.473 N	393837.514 E 6964081.656 N	393816.796 E 6964093.020 N	393816.642 E 6964035.083 N	393809.987 E 6964042.794 N	393810.567 E 6963957.320 N	393803.903 E 6963964.906 N	393806.232 E 6963901.819 N	393799.036 E 6963902.596 N	393588.098 E 6964289.273 N	393601.521 E 6964317.438 N
STRUCTURE DESCRIPTION	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY 1500mm MANHOLE 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	BCC MANHOLE 1800mm DIA	BCC TYPE A GULLY (SAG) 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	BCC MANHOLE 1800mm DIA	BCC TYPE A GULLY L.I.L; 2.4m Lintel	BCC TYPE A GULLY 1200mm MANHOLE 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 L.I.L; 2.4m Lintel	BCC TYPE A GULLY L.I.L; 2.4m Lintel	END	HEADWALL
PIPE SIZE (mm)	375		375	375		375	450	450		375		375		375		(2x)1200x900	
PIPE CLASS	4		4	4		4	4	4		4		4		4		BC	
PIPE GRADE (%)	1.99%		1.00%	4.28%		1.29%	1.00%	1.00%		14.49%		3.32%		4.83%		0.56%	
PIPE SLOPE (1 in X)	50.2		100.0	23.4		77.8	100.0	100.0		6.9		30.1		20.7		178.6	
CAPACITY VELOCITY (m/s)	2.24		1.59	3.29		1.80	1.79	1.79		6.04		2.89		3.49		2.91	
NORMAL DEPTH VELOCITY (m/s)	1.56		1.17	2.16		1.26	1.23	1.29		3.59		1.74		2.26		2.20	
PIPE FLOW (cumecs)	0.033		0.029	0.040		0.027	0.036	0.043		0.052		0.026		0.041		2.074	
CAPACITY FLOW (cumecs)	0.248		0.175	0.363		0.199	0.285	0.285		0.668		0.320		0.386		6.291	
DATUM RL	539.000		540.000			541.000				542.000		546.000		549.000		528.000	
HGL ELEVATION	561.085	561.090	562.490	562.332	561.591	563.176	562.903	562.730	562.423	564.271	562.967	568.309	568.187	571.147	570.952	549.719	549.512
FINISHED (& EXISTING) SURFACE LEVEL	562.195 (562.410)	562.113 (562.146)	563.692 (564.629)	563.691 (563.982)	563.787 (563.885)	564.061 (565.566)	563.958 (565.200)	563.936 (564.693)	563.787 (563.885)	565.451 (566.473)	565.057 (566.064)	569.538 (569.773)	569.169 (569.328)	572.326 (572.097)	572.317 (571.892)	551.786 (551.829)	550.020 (550.918)
DEPTH OF INVERT BELOW FSL	1.438	1.504 1.729	1.434	1.571 1.651	2.494 2.719	1.114	1.260 1.335	1.424 1.504	1.482 2.719	1.455	2.536 2.686	1.455	1.421 1.496	1.434	1.775 1.855	2.491	0.849 0.849
INVERT LEVEL	560.867	560.719 560.494	562.368	562.229 562.149	561.294 561.069	563.058	562.809 562.734	562.622 562.542	562.305 561.069	564.106	562.631 562.481	568.193	567.858 567.783	571.002	570.652 570.572	549.295	549.120 549.120
CHAINAGE	0.000 7.420m	7.420	0.000 13.850m	13.850 19.979m	33.830	0.000 19.386m	19.386 11.203m	30.589 23.629m	54.218	0.000 10.185m	10.185	0.000 10.098m	10.098	0.000 7.238m	7.238	0.000 31.200m	31.200
LINE	33		34			35				36		37		38		51	

EXIST. SURFACE LEVEL

FINISHED SURFACE LEVEL

SEWER 300mm CLR 0.470

SEWER 300mm CLR 0.313

WATER 100mm CLR 0.210

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 APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

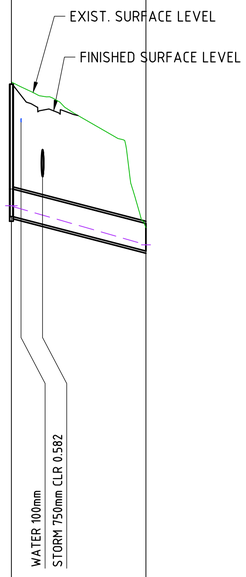
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 3 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	322	B

STRUCTURE NAME	1/52 393769.654 E 6964205.912 N	2/52 393780.205 E 6964249.597 N
STRUCTURE DESCRIPTION	BCC MANHOLE 1500mm DIA	HEADWALL



PIPE SIZE (mm)		900	
PIPE CLASS		4	
PIPE GRADE (%)		2.56%	
PIPE SLOPE (1 in X)		39.1	
CAPACITY VELOCITY (m/s)		4.57	
NORMAL DEPTH VELOCITY (m/s)		3.01	
PIPE FLOW (cumecs)		0.325	
CAPACITY FLOW (cumecs)		2.908	
DATUM RL		533.000	
HGL ELEVATION	557.767	553.775	552.525
FINISHED (& EXISTING) SURFACE LEVEL	(557.840)	553.222	(553.084)
DEPTH OF INVERT BELOW FSL	4.322	0.762	0.762
INVERT LEVEL	553.445	552.323	552.322
CHAINAGE	0.000	43.920m	43.920

LINE 52

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 APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8			
DRAWN B ENRIGHT	CHECKED B LUSK	ENGINEER D TAYLOR	SURVEYOR PARKINSON SURVEYS
DESIGNED B ENRIGHT			HORIZ. DATUM MGA 2020 (Z 56) VERT. DATUM AHD

TITLE				
STORMWATER LONGITUDINAL SECTIONS SHEET 4 OF 4				
SHEET A1	SCALE AS SHOWN	JOB No GS562-08	SHEET No 323	REVISION B

MINOR STORM CALCULATION TABLE

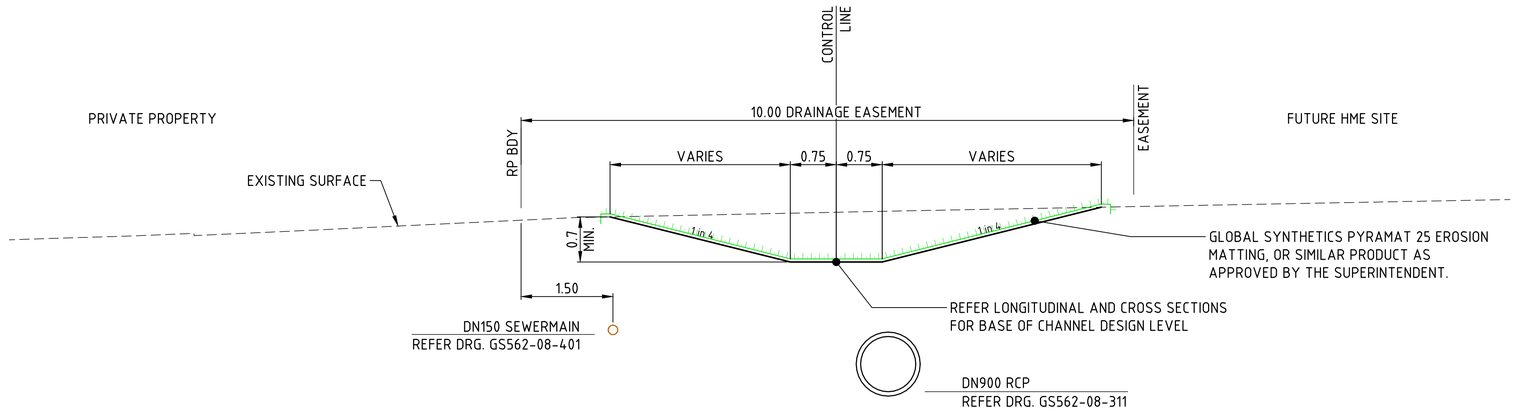
39.35% AEP (2 YEAR ARI)

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.
39.35	**1/29**	1/29 to 2/29	5	119	0.284	0.199	66	66	301		0.015		0.32	3	SAL2E	SAG	66	0	2/29	5	119	0.199	66	66	7.235	1	375	4	0.6	175	1.59	2	G2	0.018	9.7	0.176		0.176	0.66	0.067	0.159	1.47	571.288	571.216	571.475	571.427	571.45	572.571	**1/29**
39.35	**2/29**	2/29 to 3/29	5	119	0.032	0.023	8	8	150		0		0.35	2.96	SAL2E	SAG	8	0	4/29	5.06	119	0.222	73	73	10.721	1.48	375	4	0.66	214	1.93	2	G2/T6/T9	0.022	2.39	0.054	2.69	0.06	1.3	0.156	0.152	1.75	571.176	571.017	571.373	571.234	571.434	572.571	**2/29**
39.35	**3/29**	3/29 to 4/29													MH1050					5.15	118	0.222	73	73	10.354	3.91	375	4	0.66	214	1.93	2	T3/T6	0.022	1.8	0.04	2.17	0.048	2.34	0.298	0.117	2.49	570.997	570.592	571.194	570.952	571.242	572.862	**3/29**
39.35	**4/29**	4/29 to 5/29	5	119	0.044	0.03	10	10	362	0.574	0.043	0.04	4.05	3	AL2E	4G,3.3X	10	0	5/29	5.24	118	0.376	123	123	62.5	4.34	375	4	1.12	366	3.31	2	T3/T6	0.063	1.91	0.121	2.31	0.147	4.23	2.688	0.15	2.98	570.572	567.858	570.831	568.187	570.977	572.277	**4/29**
39.35	**5/29**	5/29 to 6/29	5	119	0.183	0.127	42	42	412	1.357	0.067	0.084	5.24	3	AL2E	4G,3.3X	42	0	6/29	5.76	116	0.585	188	188	78.125	6.69	450	4	1.18	738	4.64	2	T1/T3	0.071	1.38	0.098	1.55	0.111	6.56	5.18	0.155	3.88	567.783	562.556	568.088	562.967	568.199	569.129	**5/29**
39.35	**6/29**	6/29 to 7/29	5	119	0.23	0.159	53	53	439	1.465	0.07	0.097	5.8	3	AL2E	4G,3.3X	51	2	1/34	6.41	113	0.922	289	283	50.686	2.64	525	4	1.31	699	3.23	2	T1/T3	0.087	1.44	0.126	1.7	0.149	2.47	1.307	0.233	3.06	562.481	561.144	562.841	561.591	562.99	565.017	**6/29**
39.35	**7/29**	7/29 to 8/29													MH1050					6.83	111	1.164	358	358	38.878	1.43	600	4	1.27	734	2.59	2	T1/T3	0.082	1.59	0.13	1.93	0.157	0.95	0.458	0.296	2.58	561.069	560.514	561.46	561.09	561.618	563.787	**7/29**
39.35	**8/29**	8/29 to 9/29	5	119	0.154	0.107	35	35	399	1.264	0.064	0.076	4.92	3.02	AL2E	4G,3.3X	35	0	9/29	7.15	109	1.382	419	419	43.305	5.15	600	4	1.48	1393	4.93	2	T1/T3	0.112	1.53	0.171	1.86	0.208	5.43	2.102	0.226	4.31	560.494	558.266	560.919	558.566	561.127	562.073	**8/29**
39.35	**9/29**	9/29 to 10/29	5	119	0.178	0.123	41	41	403	1.348	0.066	0.081	5	3	AL2E	4G,3.3X	41	0	11/29	7.52	108	1.512	452	452	23.43	5.42	750	4	1.02	2594	5.87	2	T1/T3	0.053	0.7	0.037	0.85	0.046	5.11	1.251	0.212	4.41	558.116	556.845	558.529	557.332	558.574	559.935	**9/29**
39.35	**10/29**	10/29 to 11/29	5	119	0.192	0.134	44	44	298	1.576	0.074	0.075	2.9	3.08	AL2E	2G,3.3X	44	0	12/29	7.71	107	1.655	490	490	76.144	2.32	750	4	1.11	1698	3.84	2	T9/T10	0.063	2.16	0.136	2.67	0.167	2.22	1.747	0.276	3.32	556.765	554.995	557.196	555.508	557.364	558.903	**10/29**
39.35	**11/29**	11/29 to 12/29	5	119	0.073	0.094	18	18	312	0.99	0.056	0.048	2.92	3.09	AL2E	2G,3.3X	18	0	1/32	8.28	104	1.706	493	493	37.454	3.17	750	4	1.12	1983	4.49	2	T3/T6	0.063	1.89	0.12	2.26	0.144	3.07	1.182	0.255	3.72	554.955	553.768	555.388	554.237	555.532	556.994	**11/29**
39.35	**12/29**	12/29 to 13/29	5	119	0.072	0.053	18	18	379	0.879	0.052	0.052	4.43	3	AL2E	4G,3.3X	18	0	2/32	8.48	103	1.753	502	502	40.133	3.85	750	4	1.14	2186	4.95	2	T1/T3	0.066	0.79	0.052	0.91	0.06	3.99	1.53	0.244	4.01	553.748	552.202	554.185	552.585	554.244	555.459	**12/29**
39.35	**13/29**	13/29 to 14/29													HUMEGARD HG30					8.82	101	1.753	494	494	20.212	4.9	750	4	1.12	2465	5.58	2	T1	0.064	0.2	0.013		0.013	4.37	0.955	0.228	4.36	552.139	551.149	552.572	551.688	552.585	553.684	**13/29**
39.35	**14/29**	14/29 to 15/29													MH1050					8.98	101	1.753	490	490	13.637	3	750	4	1.11	1936	4.38	2	T6/T9	0.063	2.35	0.148	2.64	0.166	4.27	0.082	0.258	3.65	551.109	550.7	551.54	550.958	551.707	553.018	**14/29**
39.35	**15/29**														HW OUT																														550.958	551.45	**15/29**
39.35	**1/30**	1/30 to 2/30													MH2700					6.53	112	5.893	1835	1835	66.478	2	1650	4	0.86	12895	6.03	2	T3/T6	0.038	1.94	0.073	2.28	0.086	2.03	1.328	0.421	4.27	557.214	555.885	557.889	556.539	557.975	560.721	**1/30**
39.35	**2/30**	2/30 to 3/30													MH2700					7.08	110	5.893	1793	1793	70.728	1	1650	4	0.84	9118	4.26	2	T1	0.036	0.2	0.007		0.007	0.74	0.642	0.496	3.31	555.865	555.158	556.532	556.006	556.539	558.724	**2/30**
39.35	**3/30**	3/30 to 4/30	0	0	0	0	0	0	0		0				SAG FI TMP	SAG	0	0		7.37	108	5.817	1748	1748	138.66	1.27	900	4	2.75	2038	3.2	2	T1	0.385	0.25	0.096	0.26	0.101	1.23	1.747	0.642	3.6	555.138	553.382	555.91	554.205	556.01	558.333	**3/30**
39.35	**4/30**	4/30 to 5/30													MH1500					8.52	103	5.817	1662	1662	110.806	2	900	4	2.61	2561	4.03	2	T1	0.348	0.25	0.086	0.26	0.09	2.21	1.941	0.528	4.28	553.362	551.146	554.119	551.674	554.209	555.98	**4/30**
39.35	**5/30**	5/30 to 6/30													MH1500					9.35	99	5.792	1593	1593	79.797	1.5	900	4	2.5	2218	3.49	2	T1/T3	0.32	0.61	0.194	0.71	0.226	1.19	1.041	0.565	3.79	550.699	549.502	551.442	550.491	551.667	552.751	**5/30**
39.35	**6/30**	6/30 to 7/30													MH1800					10.81	94	5.979	1553	1553	36	0.7	1200x60	BC	2.16	2076	2.88	2	T3/T6	0.238	2	0.474	2.12	0.503	0.9	0.236	0.484	2.67	549.462	549.21	550.017	549.694	550.52	552.339	**6/30**
39.35	**7/30**														HW OUT																												549.694	549.81	**7/30**
39.35	**1/31**	1/31 to 2/31	5	119	0.127	0.093	31	31	47		0		0.2	3	SAL2E	SAG	31	0	2/31	5	119	0.093	31	31	7.235	1	375	4	0.28	175	1.59	2	G2	0.004	9.7	0.039		0.039	0.6	0.063	0.107	1.2	549.634	549.562	549.76	549.716	549.799	550.917	**1/31**
39.35	**2/31**	2/31 to 3/31	5	119	0.103	0.075	25	25	374		0		0.2	3	SAL2E	SAG	25	0		5.06	119	0.169	56	56	20.865	1.92	375	4	0.5	244	2.21	2	T3/T6	0.013	1.83	0.024	2.44	0.032	2.16	0.354	0.122	1.79	549.522	549.12	549.693	549.242	549.724	550.917	**2/31**
39.35	**3/31**														HW OUT																												549.242	549.495	**3/31**
39.35	**1/32**	1/32 to 2/32	5	119	0.084	0.062	20	20	379	0.965	0.055	0.056	4.43	3	AL2E	4G,3.3X	20	0	1/31	5	119	0.062	20	20	7.824	5.53	375	4	0.18	412	3.73	2	G2	0.002	9.7	0.017		0.017	5.38	0.43	0.057	1.94	551.283	550.85	551.384	550.964	551.401	552.574	**1/32**
39.35	**2/32**	2/32 to 3/32	5	119	0.044	0.032	11	11	379	0.578	0.044	0.042	4.43	3	AL2E	4G,3.3X	11	0	2/31	5.07	119	0.094	31	31	13.048	1	375	4	0.28	176	1.59	2	T3/T6	0.004	1.79	0.007	2.32	0.009	1.15	0.123	0.107	1.2	550.83	550.7	550.957	550.807	550.966	552.442	**2/32**
39.35	**3/32**														HW OUT																												550.807	551.075	**3/32**
39.35	**1/33**	1/33 to 8/29	5	119	0.144	0.101	33	33	405	1.213	0.063	0.074	5.05	2.99	AL2E	4G,3.3X	33	0	10/29	5	119	0.101	33	33	7.42	1.99	375	4	0.3	248	2.24	2	G2	0.005	9.7	0.045		0.045	-0.06	0.003	0.093	1.56	560.867	560.719	561.085	561.09	561.13	562.155	**1/33**
39.35	**8/29**		5	119	0.154	0.107	35	35	399	1.264	0.064	0.076	4.92	3.02	AL2E	4G,3.3X	35	0	9/29														T1/T3		1.53	0.171	1.86	0.208											561.127	562.073	**8/29**
39.35	**1/34**	1/34 to 2/34	5	119	0.113	0.081	27	29	326		0		3.79	1.64	SAL2E	SAG	29	0	2/34	5	119	0.081	27	29	13.85	1	375	4	0.26	175	1.59	2	G2	0.003	9.7	0.034		0.034	1.13	0.131	0.103	1.17	562.368	562.229	562.49	562.332	562.523	563.652	**1/34**
39.35	**2/34**	2/34 to 7/29	5	119	0.045	0.033	11	11	139		0		1.09	2.47	SAL2E	SAG	11	0	8/29	5.12	119	0.114	38	40	19.979	4.28	375	4	0.36	363	3.29	2	T6/T9	0.007	2.41	0.016	2.71	0.018	3.52	0.746	0.084	2.16	562.149	561.294	562.293	561.591	562.311	563.651	**2/34**
39.35	**7/29**														MH1050																	T1/T3		1.59	0.13	1.93	0.157											561.618	563.787	**7/29**
39.35	**1/35**	1/35 to 2/35	5	119	0.105	0.074	24	27	279		0		2.35	1.04	SAL2E	SAG	27	0	2/35	5	119	0.074	24	27	19.386	1.29	375	4	0.25	199	1.8	2	G2	0.003	9.7	0.031		0.031	1.41	0.235	0.094	1.26	563.058	562.809	563.176	562.903	563.207	564.021	**1/35**
39.35	**2/35**	2/35 to 3/35	5	119	0.036	0.026	9	9	345		0		1.99	2.61	SAL2E	SAG	9	0	3/35	5.16	118	0.1	33	36	11.203	1	450	4	0.23	285	1.79	2	T6/T9	0.003	2.27	0.006	2.38	0.006	1.19	0.103	0.108	1.23	562.734	562.622	562.863	562.73	562.869	563.918	**2/35**
39.35	**3/35**	3/35 to 7/29	5	119	0.029	0.021	7	7	184		0		1.24	2.76	SAL2E	SAG	7	0	1/33	5.25	118	0.121	40	43	23.629	1	450	4	0.27	285	1.79	2	T6/T9	0.004	2.49	0.009	2.75	0.01	1.1	0.226	0.118	1.29	562.542	562.305	562.683	562.423	562.693	563.896	**3/35**
39.35	**7/29**														MH1050																	T1/T3		1.59	0.13	1.93	0.157											561.618	563.787	**7/29**
39.35	**1/36**	1/36 to 6/29	5	119	0.24	0.167	55	55	412	1.539	0.072	0.096	5.24	3	AL2E	4G,3.3X	52	3	1/35	5	119	0.167	55	52	10.185	14.49	375	4	0.47	668	6.04	2	G2	0.011	9.7	0.11		0.11	12.81	1.355	0.071	3.59	564.106	562.631	564.271	562.967	564.381	565.411	**1/36**
39.35	**6/29**		5	119	0.23	0.159	53	53	439	1.465	0.07	0.097	5.8	3	AL2E	4G,3.3X	51	2	1/34														T1/T3		1.44	0.126	1.7	0.149											562.99	565.017	**6/29**
39.35	**1/37**	1/37 to 5/29	5	119	0.113	0.079	26	26	412	1.062	0.058	0.066	5.24	3	AL2E	4G,3.3X	26	0	1/36	5	119	0.079	26	26	10.098	3.32	375	4	0.24	320	2.89	2	G2	0.003	9.7	0.028		0.028	1.21	0.16	0.073	1.74	568.193	567.858	568.309	568.187	568.336	569.498	**1/37**
39.35	**5/29**		5	119	0.183	0.127	42	42	412	1.357	0.067	0.084	5.24	3	AL2E	4G,3.3X	42	0	6/29														T1/T3		1.38	0.098	1.55	0.111											568.199	569.129	**5/29**
39.35	**1/38**	1/38 to 4/29	5	119	0.175	0.122	41	41	362	1.416	0.068	0.077	4.05	3	AL2E	4G,3.3X	41	0	1/37	5	119	0.122	41	41	7.238	4.83	375	4	0.37	386	3.49	2	G2	0.007	9.7	0.067		0.067	2.69	0.239	0.082	2.26	571.002	570.652	571.147	570.952	571.213	572.286	**1/38**
39.35	**4/29**		5	119	0.044	0.03	10	10	362	0.574	0.043	0.04	4.05	3	AL2E	4G,3.3X	10	0	5/29														T3/T6		1.91	0.121	2.31	0.147											570.977	572.277	**4/29**
39.35	**1/51**	1/51 to 2/51	5	119	8.234	6.265	2074	2074	1000000000		0			-12.5	ALL IN FIELI	SAG	2074	0	1/31	5	119	6.265	2074	2074	31.2	0.56	(2x)1200	BC	0.96	6291	2.91	2		0.047	0.2	0.009		0.009	0.66	0.171	0.392	2.2	549.295	549.12	549.719	549.512	549.728	550.195	**1/51**
39.35	**2/51**														HW OUT																												549.512	550.02	**2/51**
39.35	**1/52**	1/52 to 2/52	5	119	1.291	0.982	325	325	1000000000		0			-12.52	ALL IN FIELD	INLET	325	0		5	119	0.982	325	325	44.942	2.5	900	4	0.51	2875	4.52	2		0.013	2	0.027		0.027	2.78	0.915	0.205	2.99	553.445	552.322	553.775	552.527	553.801	554.345	**1/52**
39.35	**2/52**														HW OUT																												552.527	553.222	**2/52**

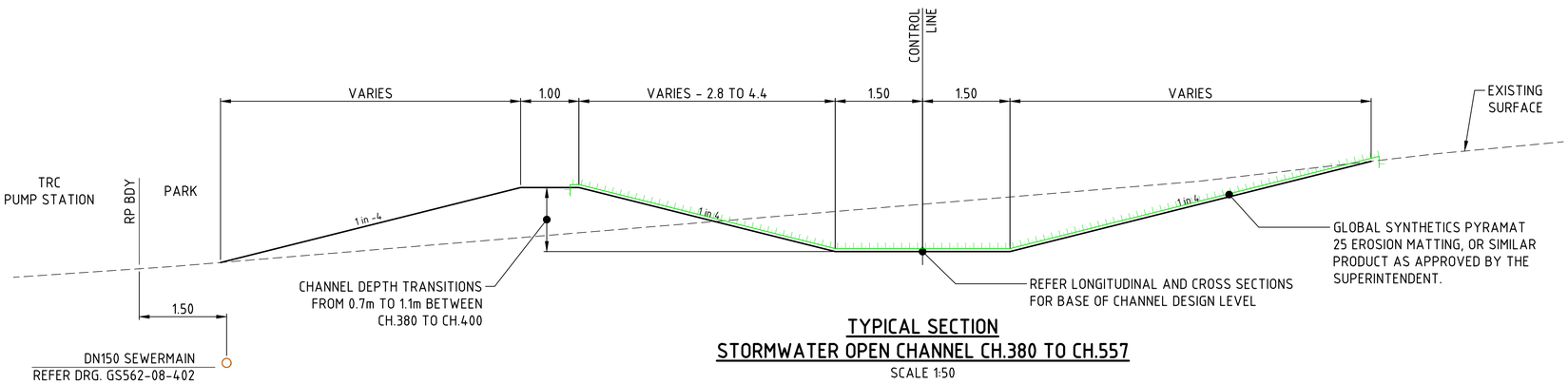
MAJOR STORM CALCULATION TABLE

1% AEP (100 YEAR ARI)

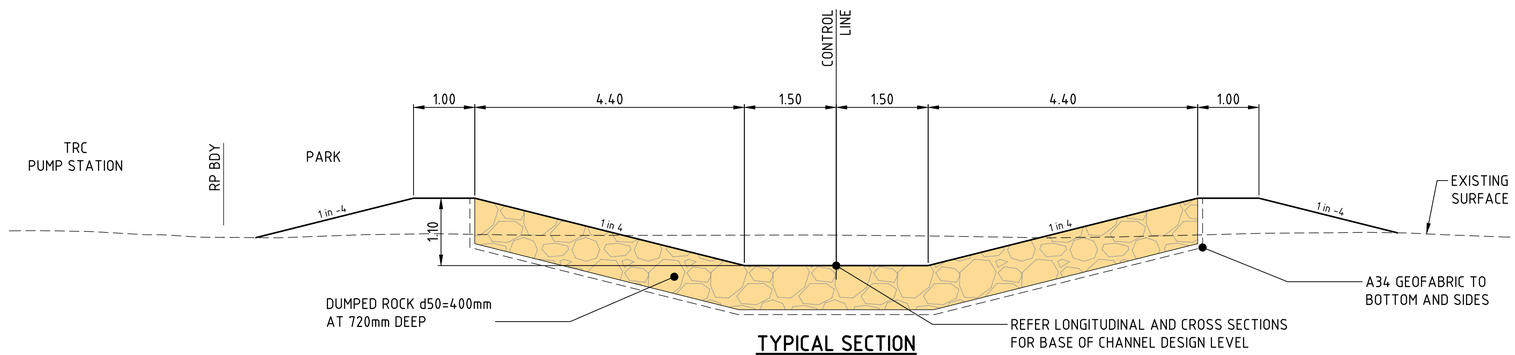
AEP	STRUCTURE	SUB-CATCHMENT RUNOFF						INLET DESIGN									DRAIN DESIGN											HEAD LOSSES								PART FULL		DESIGN LEVELS							STRUCTURE
DESIGN AEP %	STRUCTURE No.	DRAIN SECTION	Tc SUB-CATCHMENT TIME OF CONC. min	I RAINFALL INTENSITY mm/hr	A SUB-CATCHMENT AREA ha	CA EQUIVALENT AREA ha	Qc SUB-CATCHMENT 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	**1/29**	1/29 to 2/29	5	264	0.284	0.259	190	229	61		0.132		0.32	3	SAL2E	SAG	61	168	2/29	5	264	0.259	229	61	7.235	1	375	4	0.56	175	1.59	2	G2	0.016	7.4	0.117		0.117	0.12	0.009	0.153	1.45	571.288	571.216	571.893	571.885	572.01	572.571	**1/29**
1	**2/29**	2/29 to 3/29	5	264	0.032	0.03	22	190	75		0.072		0.35	2.96	SAL2E	SAG	75	115	4/29	5.06	263	0.289	251	136	10.721	1.48	375	4	1.23	214	1.93	2	G2/T6/T9	0.077	2.58	0.199	2.83	0.218	0.6	0.064	0.217	2.05	571.176	571.017	571.681	571.621	571.904	572.571	**2/29**
1	**3/29**	3/29 to 4/29													MH1050					5.15	262	0.289	250	135	10.354	3.91	375	4	1.22	347	3.14	2	T3/T6	0.076	1.72	0.131	2.01	0.153	0.59	0.061	0.162	2.94	570.997	570.592	571.49	571.429	571.643	572.862	**3/29**
1	**4/29**	4/29 to 5/29	5	264	0.044	0.04	29	144	362	2.45	0.099	0.15	4.05	3	AL2E	4G,3.3X	78	66	5/29	5.24	261	0.489	394	279	62.5	4.34	375	4	2.53	366	3.31	2	T3/T6	0.326	1.53	0.5	1.77	0.578	3.63	2.283	0.245	3.64	570.572	567.858	570.929	568.658	571.507	572.277	**4/29**
1	**5/29**	5/29 to 6/29	5	264	0.183	0.166	122	188	412	2.591	0.103	0.183	5.24	3	AL2E	4G,3.3X	90	98	6/29	5.76	256	0.763	581	430	78.125	6.69	450	4	2.7	738	4.64	2	T1/T3	0.372	1.21	0.449	1.31	0.489	4.79	3.761	0.247	4.81	567.783	562.556	568.209	564.464	568.699	569.129	**5/29**
1	**6/29**	6/29 to 7/29	5	264	0.23	0.208	153	250	439	2.832	0.111	0.221	5.8	3	AL2E	4G,3.3X	105	145	1/34	6.41	248	1.204	870	608	50.686	2.64	525	4	2.81	699	3.23	2	T1/T3	0.402	0.9	0.362	0.99	0.4	2	1.012	0.379	3.63	562.481	561.144	564.102	563.09	564.605	565.017	**6/29**
1	**7/29**	7/29 to 8/29													MH1050					6.83	244	1.518	1067	836	38.878	1.43	600	4	2.96	734	2.59	2	T3/T6	0.447	1.14	0.508	1.33	0.595	1.85	0.721	0.6	2.96	561.069	560.514	562.582	561.861	563.177	563.787	**7/29**
1	**8/29**	8/29 to 9/29	5	264	0.154	0.14	102	273	399	3.043	0.117	0.222	4.92	3.02	AL2E	4G,3.3X	109	163	9/29	7.15	240	1.803	1242	1004	43.305	5.15	600	4	3.55	1393	4.93	2	T1/T3	0.644	1.22	0.786	1.41	0.904	4.83	2.104	0.377	5.36	560.494	558.266	561.075	558.984	561.979	562.073	**8/29**
1	**9/29**	9/29 to 10/29	5	264	0.178	0.16	117	281	403	3.068	0.118	0.226	5	3	AL2E	4G,3.3X	111	170	11/29	7.45	237	1.969	1335	1090	23.43	5.42	750	4	2.47	2594	5.87	2	T1/T3	0.311	0.74	0.229	0.89	0.278	2.66	0.69	0.339	5.61	558.116	556.845	558.755	558.131	559.033	559.935	**9/29**
1	**10/29**	10/29 to 11/29	5	264	0.192	0.175	128	203	298	3.025	0.117	0.167	2.9	3.08	AL2E	2G,3.3X	102	100	12/29	7.65	235	2.155	1444	1174	76.144	2.32	750	4	2.66	1698	3.84	2	T9/T10	0.36	1.96	0.708	2.34	0.843	1.46	1.168	0.459	4.15	556.765	554.995	557.423	556.311	558.265	558.903	**10/29**
1	**11/29**	11/29 to 12/29	5	264	0.073	0.07	51	221	312	3.087	0.118	0.177	2.92	3.09	AL2E	2G,3.3X	108	113	1/32	8.17	229	2.216	1449	1236	37.454	3.17	750	4	2.8	1983	4.49	2	T3/T6	0.399	1.72	0.686	1.92	0.766	2.2	0.873	0.429	4.73	554.955	553.768	555.625	554.803	556.391	556.994	**11/29**
1	**12/29**	12/29 to 13/29	5	264	0.072	0.069	51	151	379	2.452	0.099	0.157	4.43	3	AL2E	4G,3.3X	80	71	2/32	8.48	226	2.288	1473	1289	40.133	3.85	750	4	2.92	2186	4.95	2	T1/T3	0.434	0.86	0.375	0.98	0.426	3.81	1.544	0.414	5.15	553.748	552.202	554.427	552.899	554.853	555.459	**12/29**
1	**13/29**	13/29 to 14/29													HUMEGARD HG30					8.82	222	2.288	1449	1266	20.212	4.9	750	4	2.86	2465	5.58	2	T1	0.419	0.2	0.085		0.085	1.22	0.293	0.381	5.61	552.139	551.149	552.814	552.568	552.899	553.684	**13/29**
1	**14/29**	14/29 to 15/29													MH1050					8.98	220	2.288	1437	1254	13.637	3	750	4	2.84	1936	4.38	2	T6/T9	0.411	1.91	0.786	2.2	0.905	4.71	0	0.441	4.65	551.109	550.7	551.782	551.141	552.687	553.018	**14/29**



TYPICAL SECTION
STORMWATER OPEN CHANNEL CH.00 TO CH.315
SCALE 1:50



TYPICAL SECTION
STORMWATER OPEN CHANNEL CH.380 TO CH.557
SCALE 1:50



TYPICAL SECTION
STORMWATER OPEN CHANNEL CH.557 TO CH.688
SCALE 1:50

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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.au

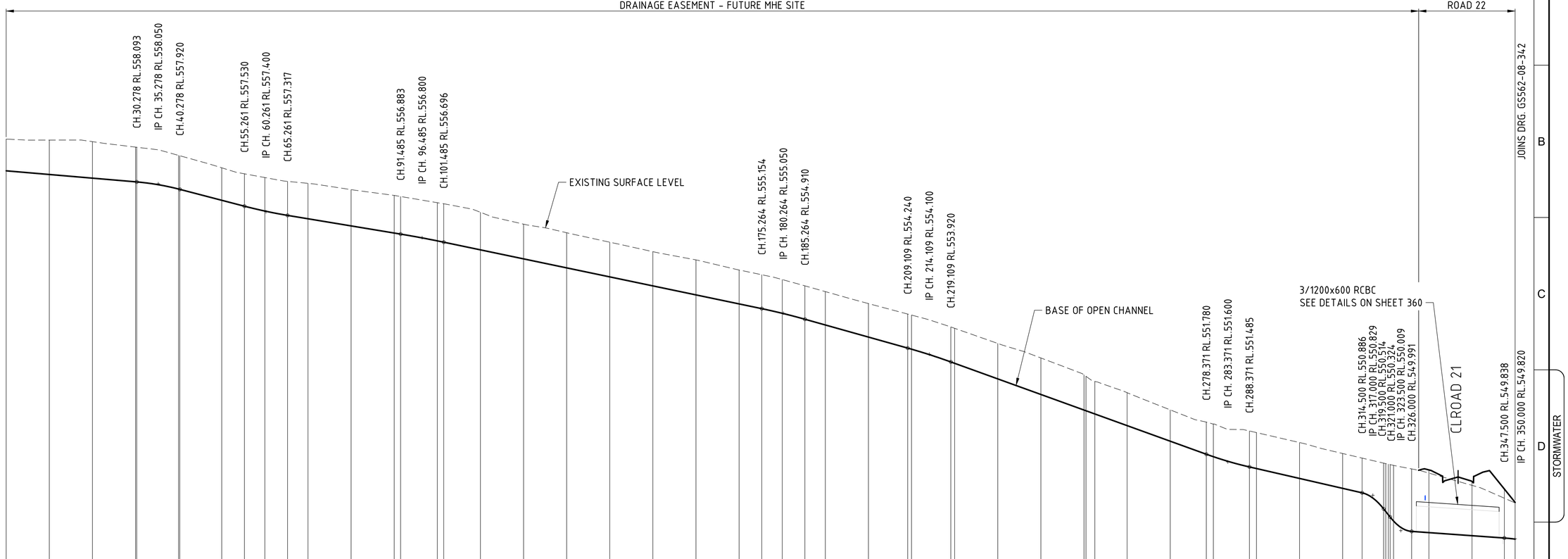
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

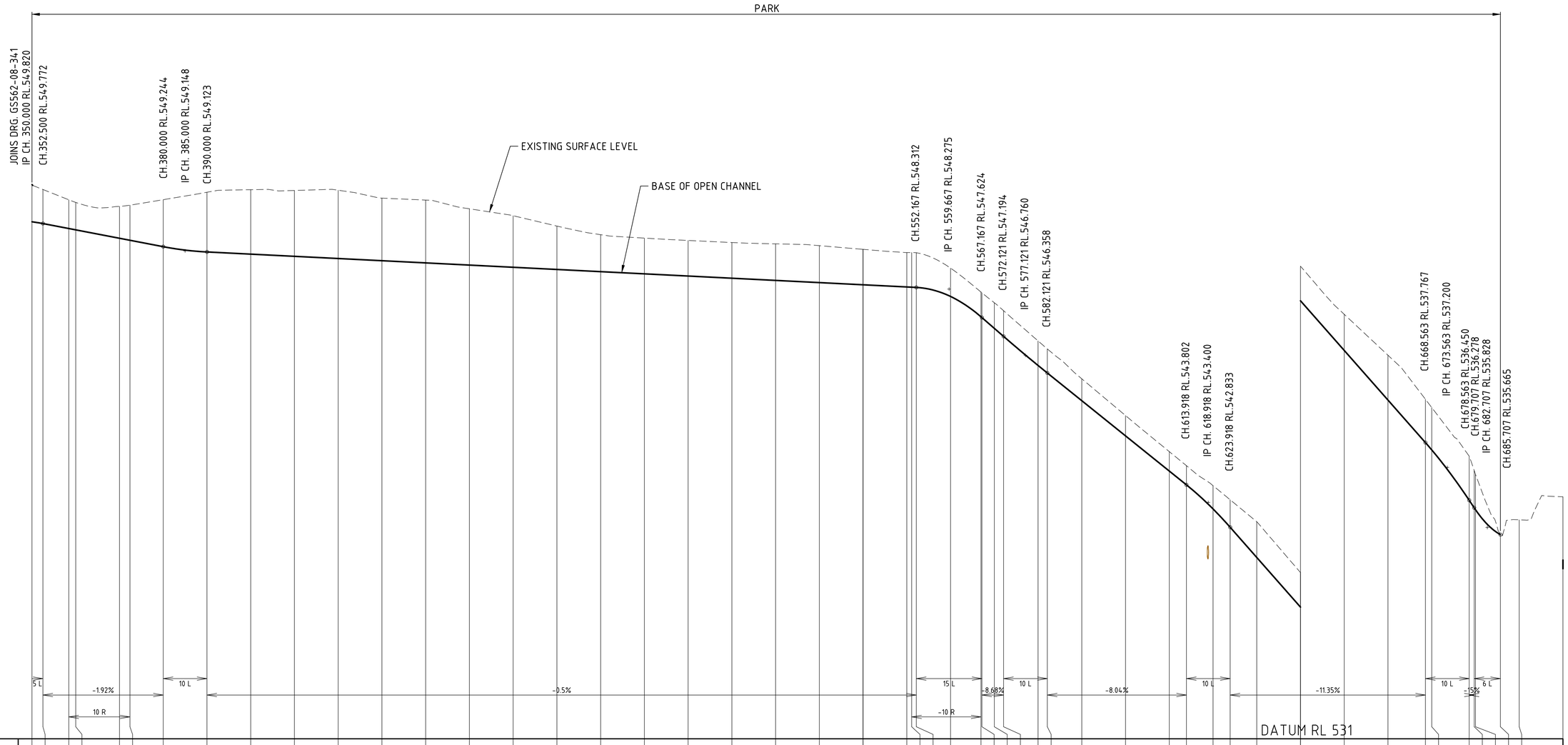
TITLE: STORMWATER OPEN CHANNEL TYPICAL SECTIONS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	340	B

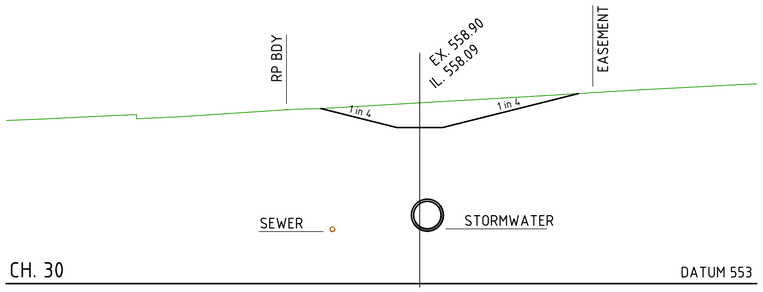
ROADS & DRAINAGE

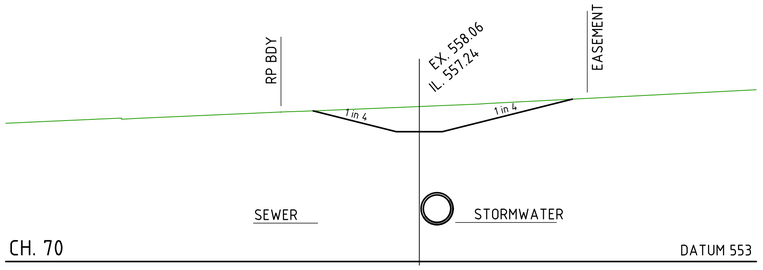

DRAINAGE EASEMENT - FUTURE MHE SITE
ROAD 22
JOINS DRG. GS562-08-342
CH.30.278 RL.558.093
IP CH. 35.278 RL.558.050
CH.40.278 RL.557.920
CH.55.261 RL.557.530
IP CH. 60.261 RL.557.400
CH.65.261 RL.557.317
CH.91.485 RL.556.883
IP CH. 96.485 RL.556.800
CH.101.485 RL.556.696
EXISTING SURFACE LEVEL
CH.175.264 RL.555.154
IP CH. 180.264 RL.555.050
CH.185.264 RL.554.910
CH.209.109 RL.554.240
IP CH. 214.109 RL.554.100
CH.219.109 RL.553.920
BASE OF OPEN CHANNEL
CH.278.371 RL.551.780
IP CH. 283.371 RL.551.600
CH.288.371 RL.551.485
3/1200x600 RCBC
SEE DETAILS ON SHEET 360
CH.314.500 RL.550.886
IP CH. 317.000 RL.550.829
CH.319.500 RL.550.514
CH.321.000 RL.550.324
IP CH. 323.500 RL.550.009
CH.326.000 RL.549.991
CLROAD 21
CH.347.500 RL.549.838
IP CH. 350.000 RL.549.820
STORMWATER

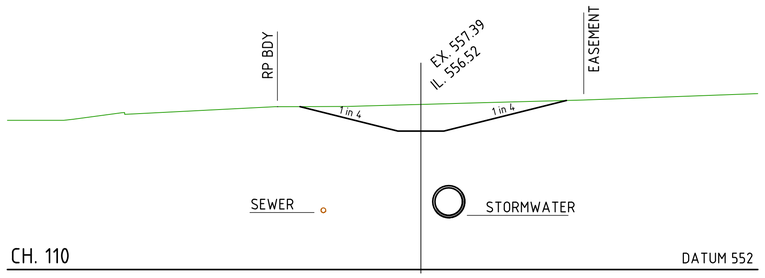
| | | |

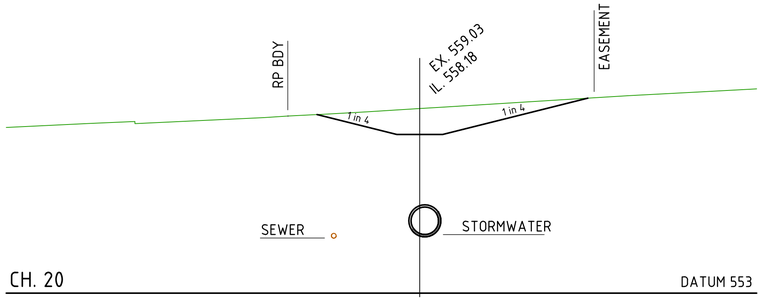

PARK
JOINS DRG. GS562-08-341
IP CH. 350.000 RL.549.820
CH.352.500 RL.549.772
CH.380.000 RL.549.244
IP CH. 385.000 RL.549.148
CH.390.000 RL.549.123
EXISTING SURFACE LEVEL
BASE OF OPEN CHANNEL
CH.552.167 RL.548.312
IP CH. 559.667 RL.548.275
CH.567.167 RL.547.624
CH.572.121 RL.547.194
IP CH. 577.121 RL.546.760
CH.582.121 RL.546.358
CH.613.918 RL.543.802
IP CH. 618.918 RL.543.400
CH.623.918 RL.542.833
CH.668.563 RL.537.767
IP CH. 673.563 RL.537.200
CH.678.563 RL.536.450
CH.679.707 RL.536.278
IP CH. 682.707 RL.535.828
CH.685.707 RL.535.665
VERT. CURVE LENGTH
VERT. GEOMETRY
HORZ. GEOMETRY
5 L
-1.92%
10 R
10 L
-0.5%
15 L
-10 R
-8.68%
10 L
-8.04%
10 L
-11.35%
10 L
-5%
6 L
DATUM RL 538
DATUM RL 531

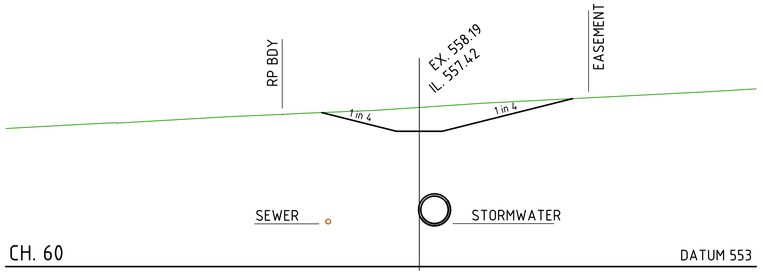
| | | |

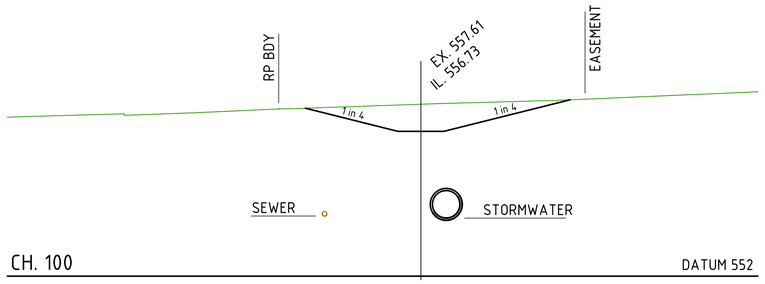


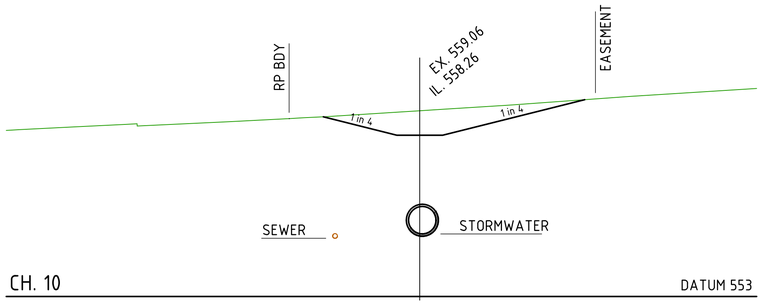


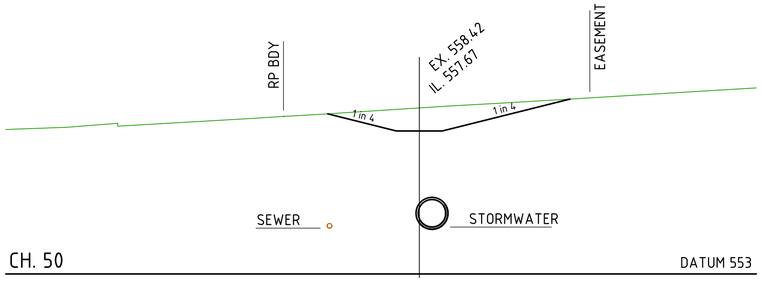


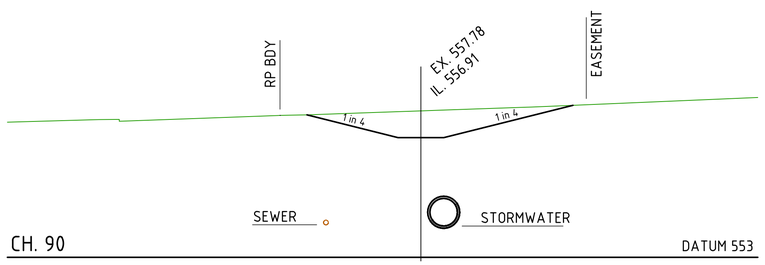


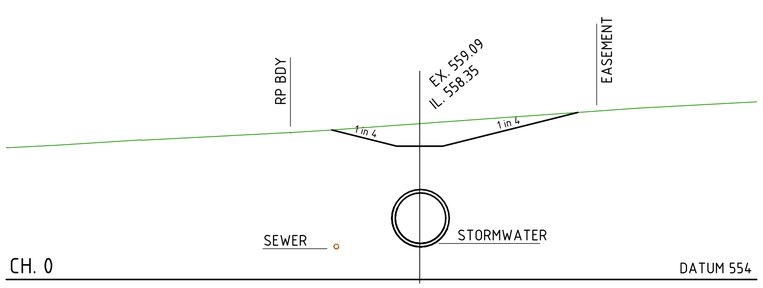


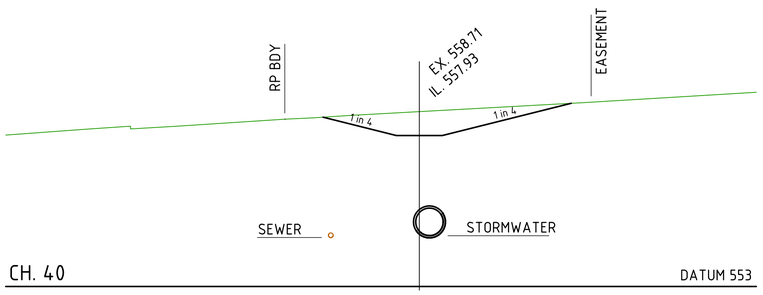


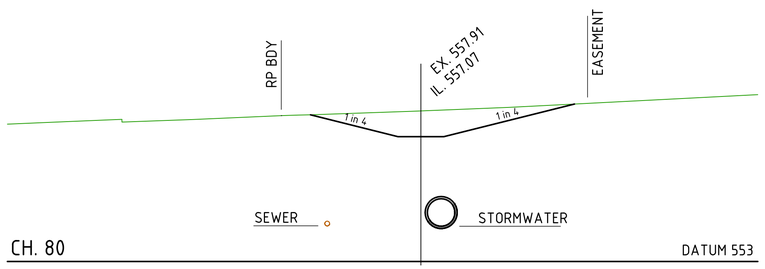












STORMWATER OPEN CHANNEL CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

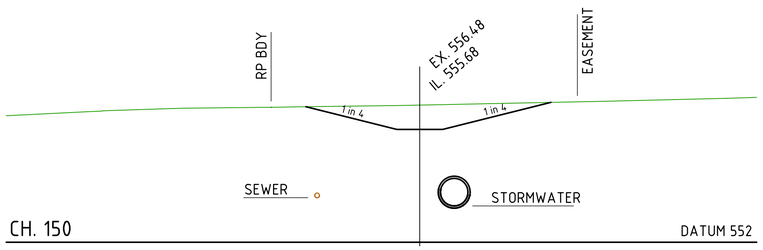
BOTANIC
HIGHFIELDS RD

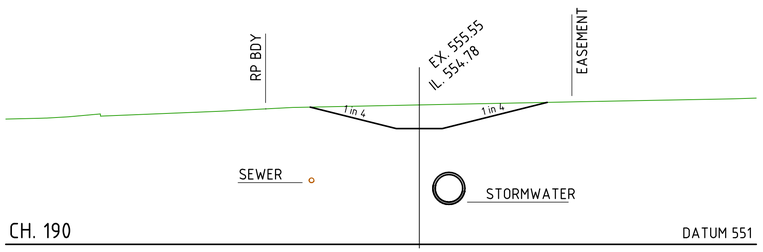
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

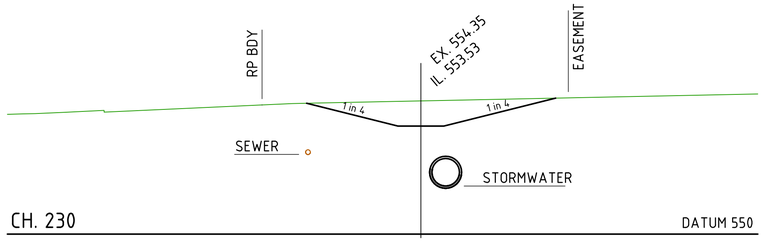
CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

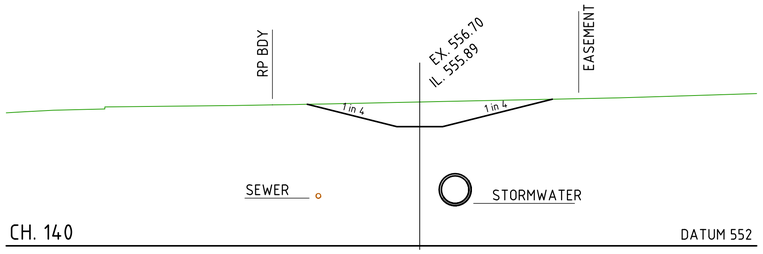
TITLE				
STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 1 OF 5				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-08	SHEET No: 343	REVISION: B

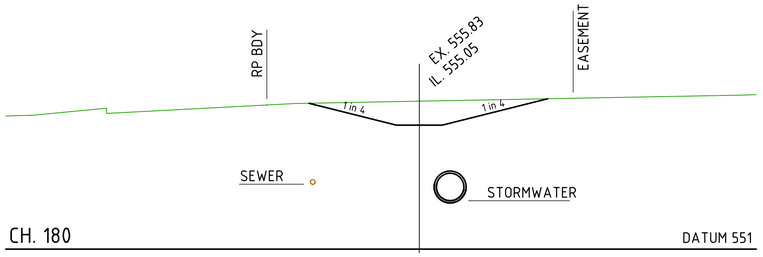
STORMWATER

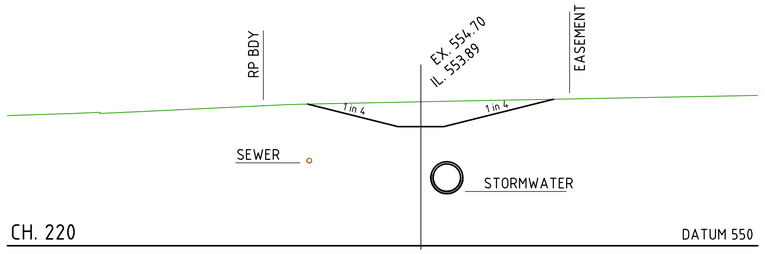


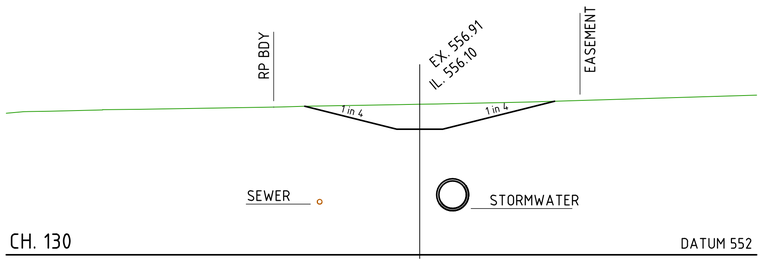


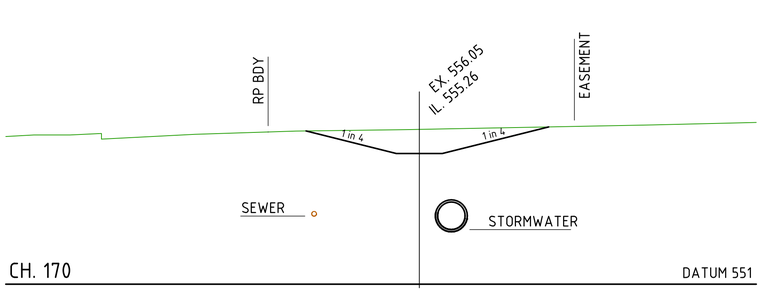


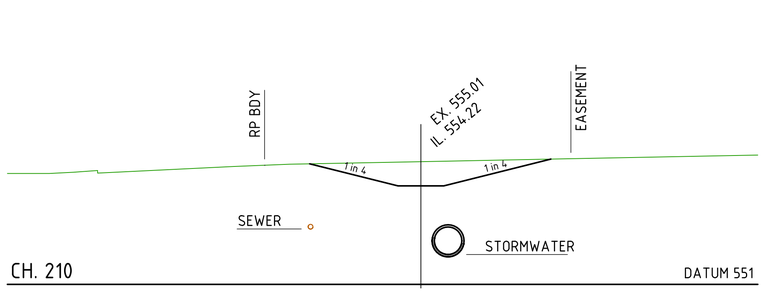


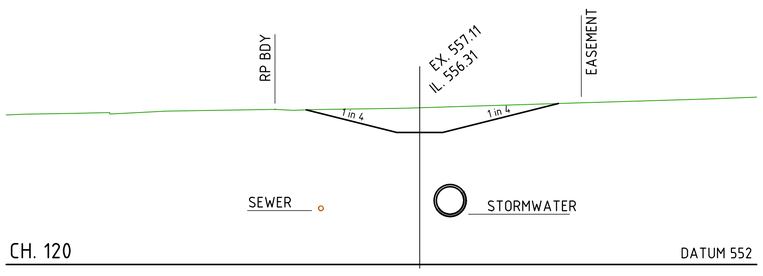


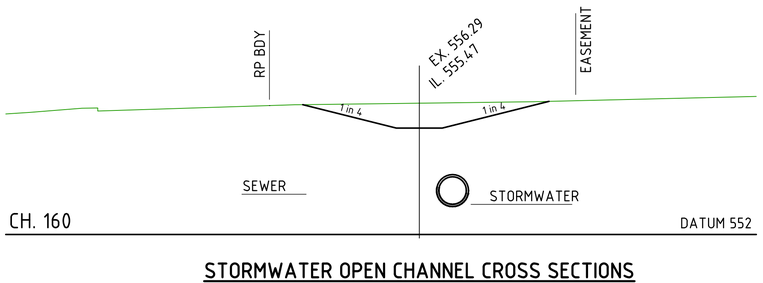


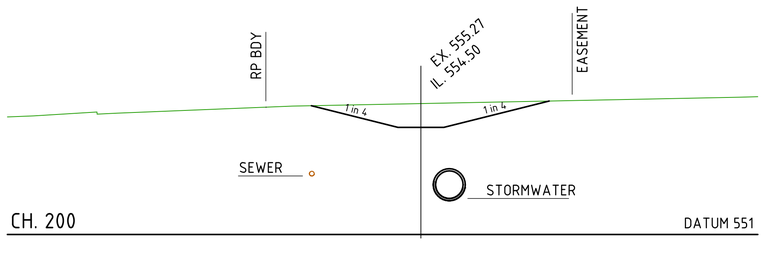












STORMWATER OPEN CHANNEL CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

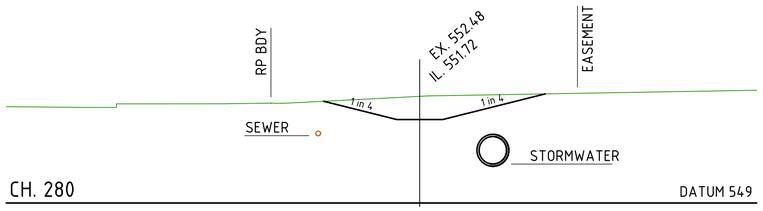
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

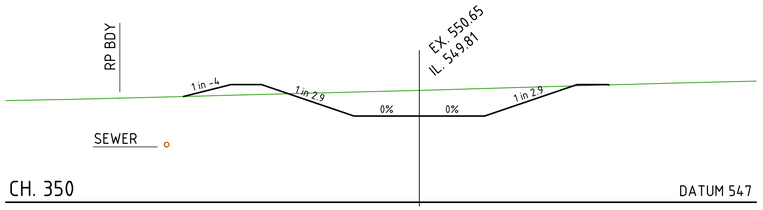
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD
B ENRIGHT			

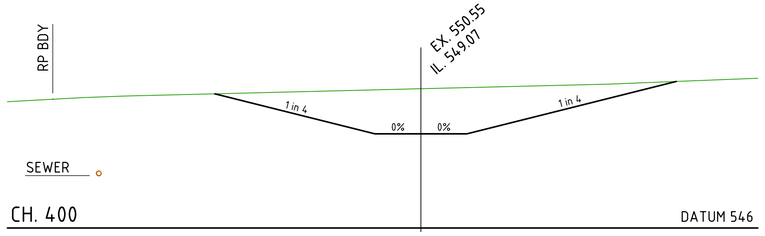
TITLE: STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 2 OF 5

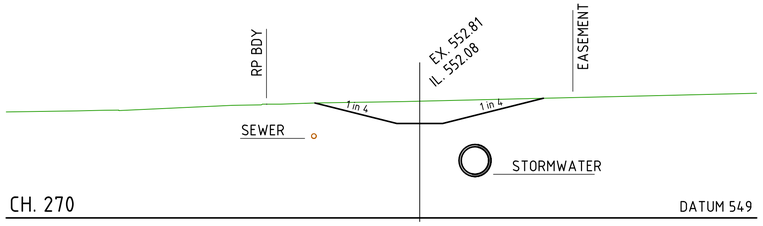
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	344	B

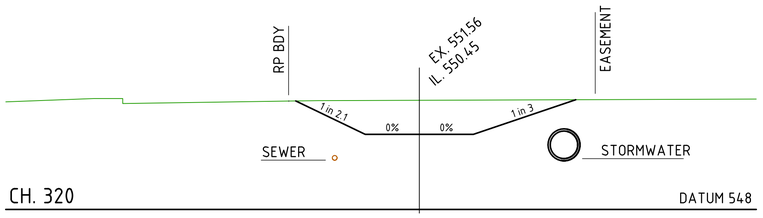
STORMWATER

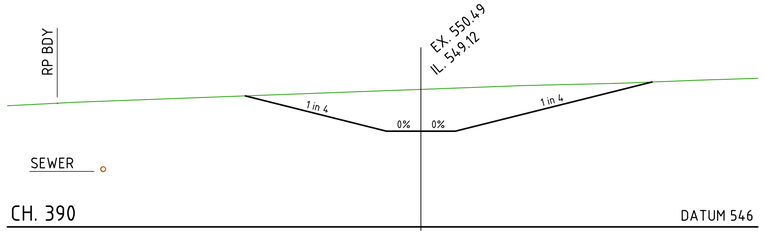


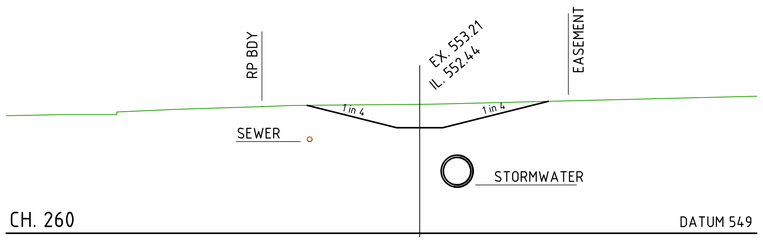


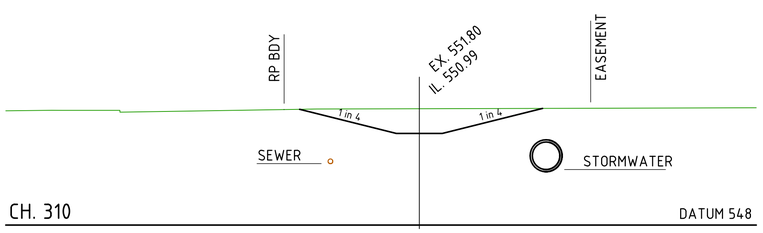


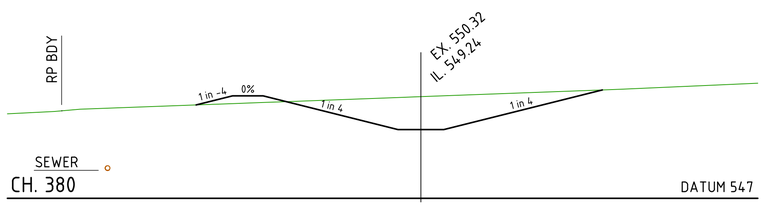


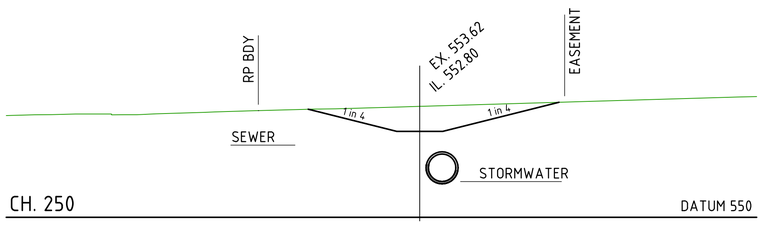


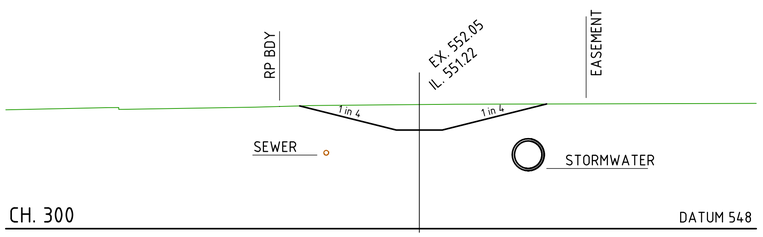


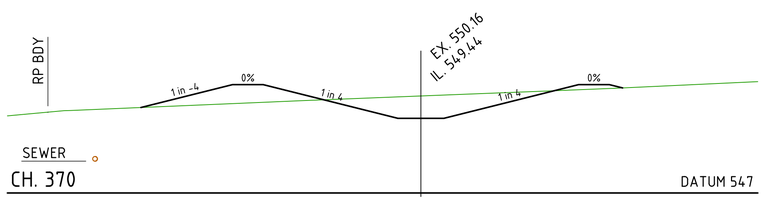


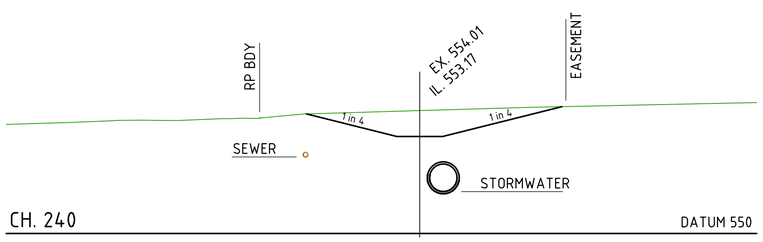


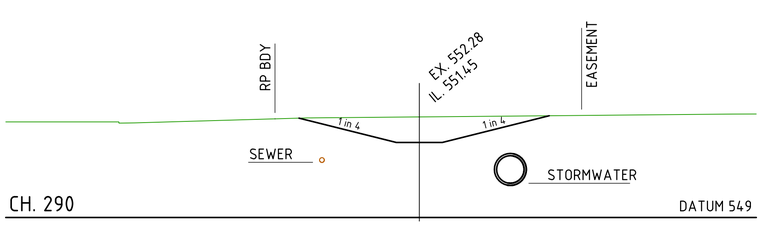


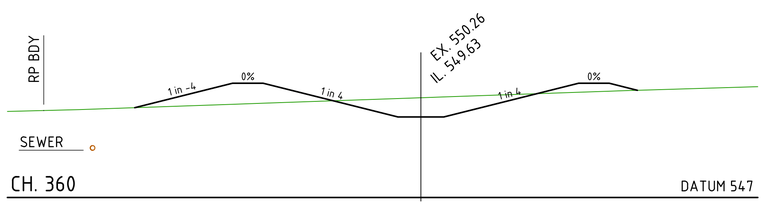












STORMWATER OPEN CHANNEL CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

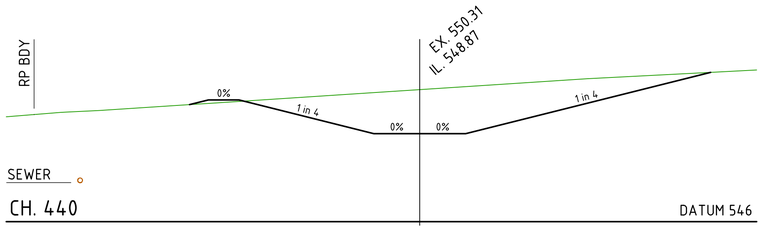
BOTANIC
HIGHFIELDS RD

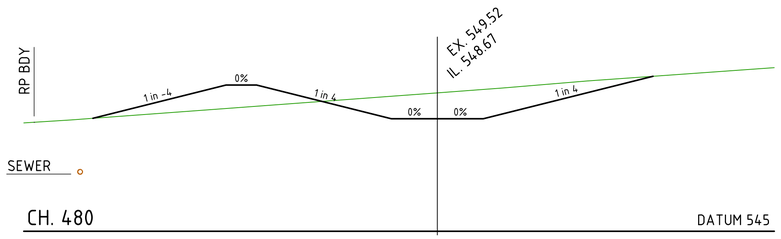
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

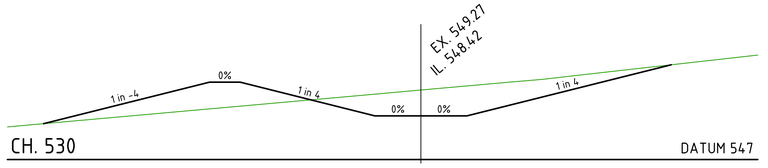
CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 8			
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56) AHD

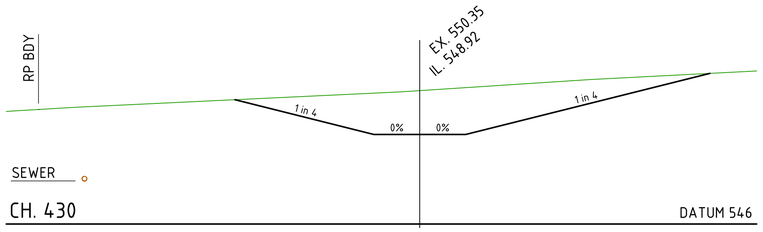
TITLE				
STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 3 OF 5				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	345	B

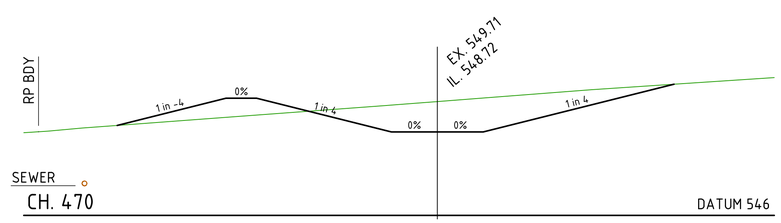
STORMWATER

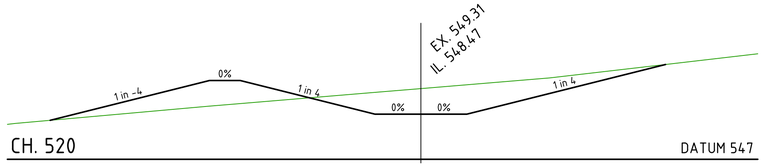


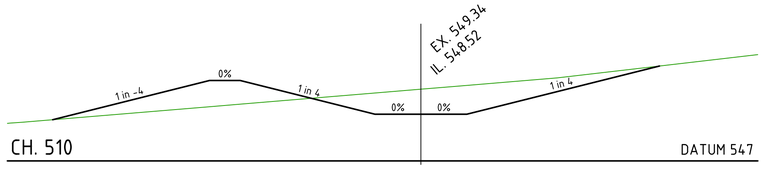


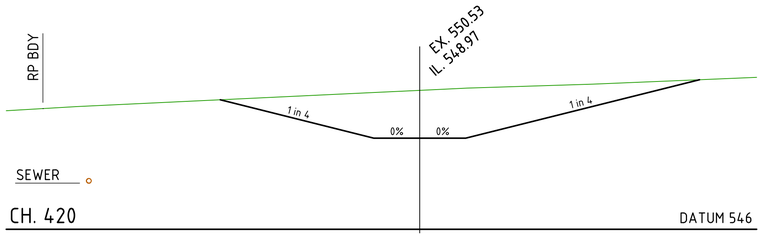


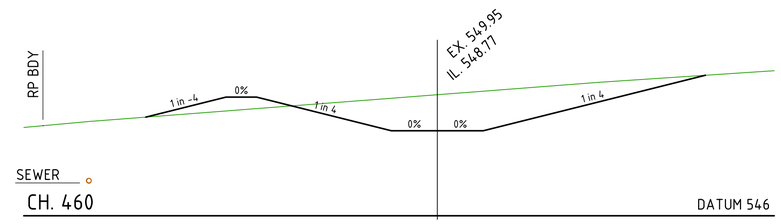


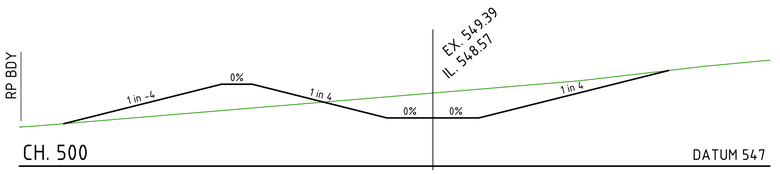


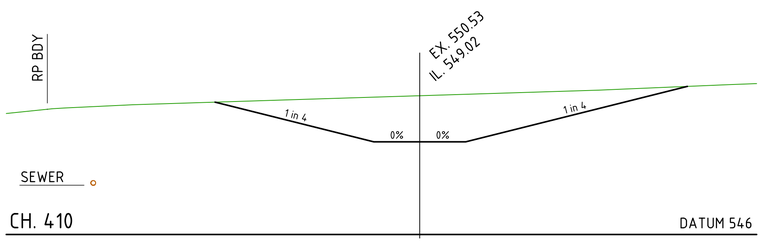


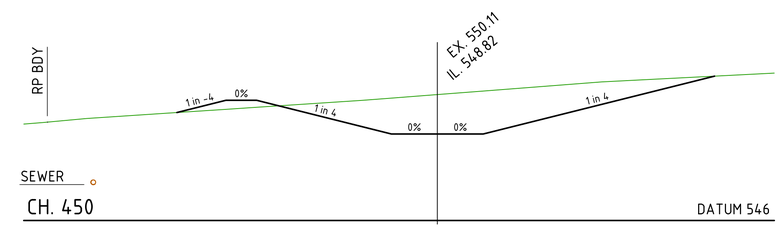


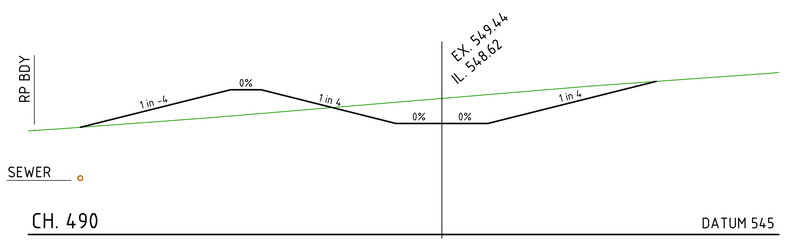












STORMWATER OPEN CHANNEL CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

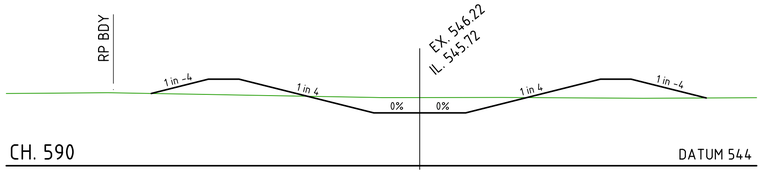
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

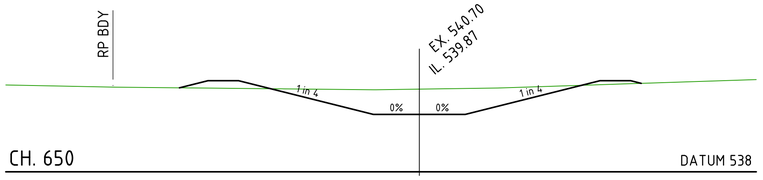
DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS
DESIGNED			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD
B ENRIGHT			

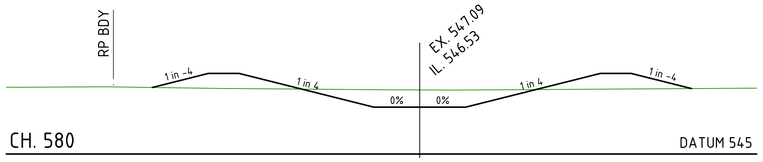
TITLE: STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 4 OF 5

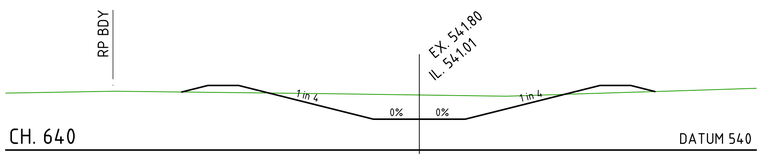
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	346	B

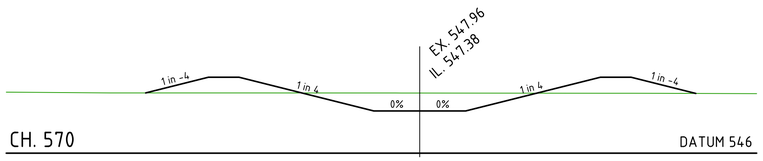
STORMWATER

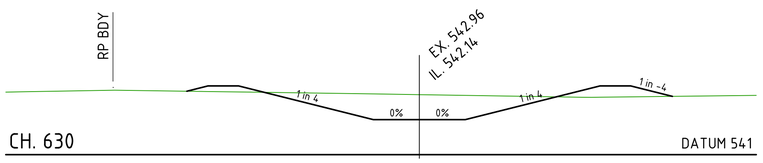


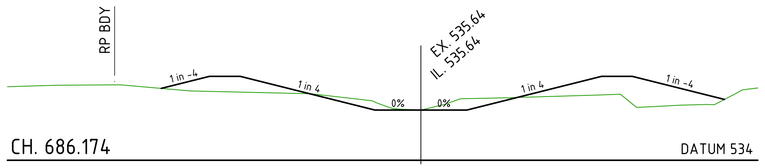


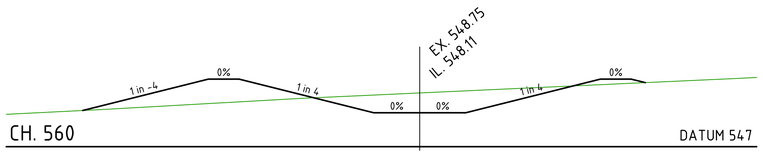


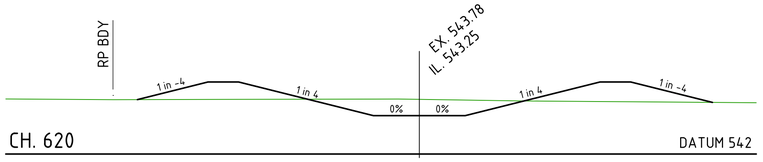


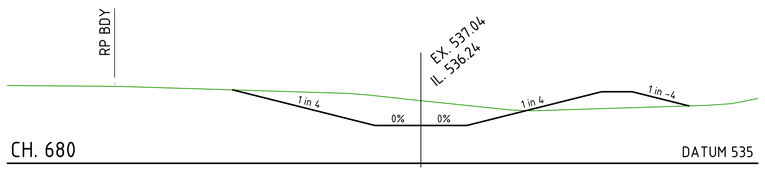


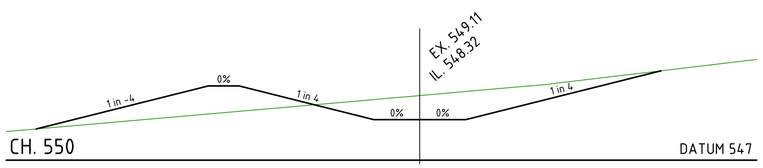


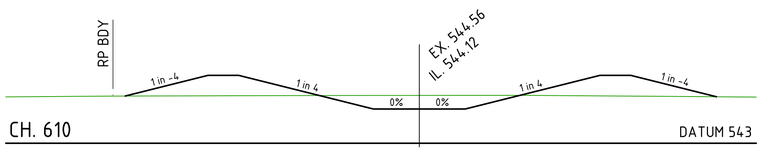


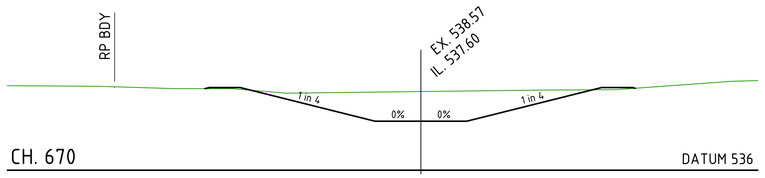


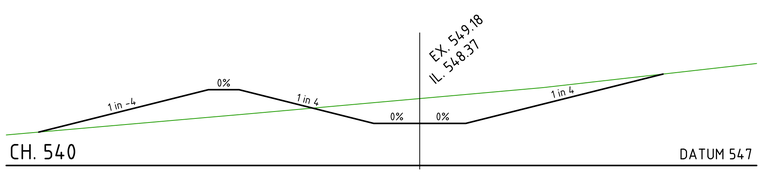


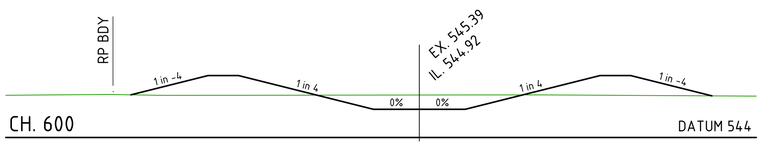


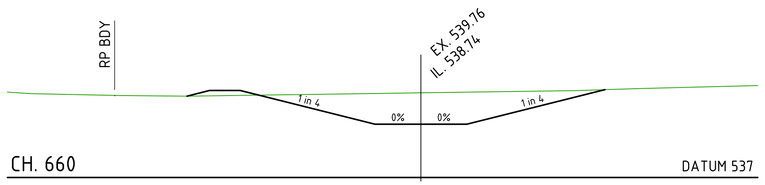












STORMWATER OPEN CHANNEL CROSS SECTIONS

SCALE 1:100

0 1 2 3 4m

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

ISSUED
FOR APPROVAL

STORMWATER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

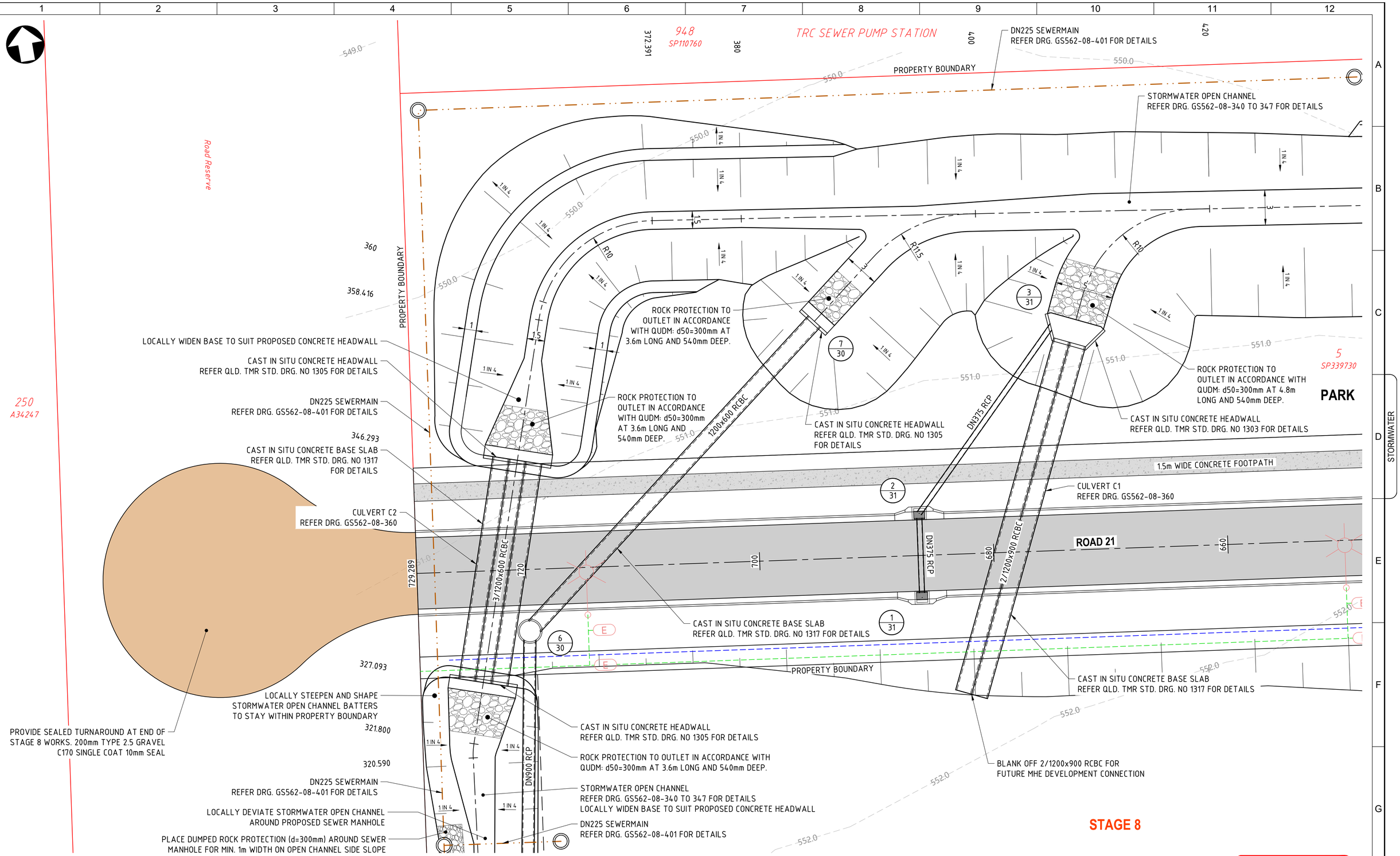
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: STORMWATER OPEN CHANNEL CROSS SECTIONS SHEET 5 OF 5

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	347	B



STORMWATER OPEN CHANNEL INLETS PLAN

SCALE 1:150

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

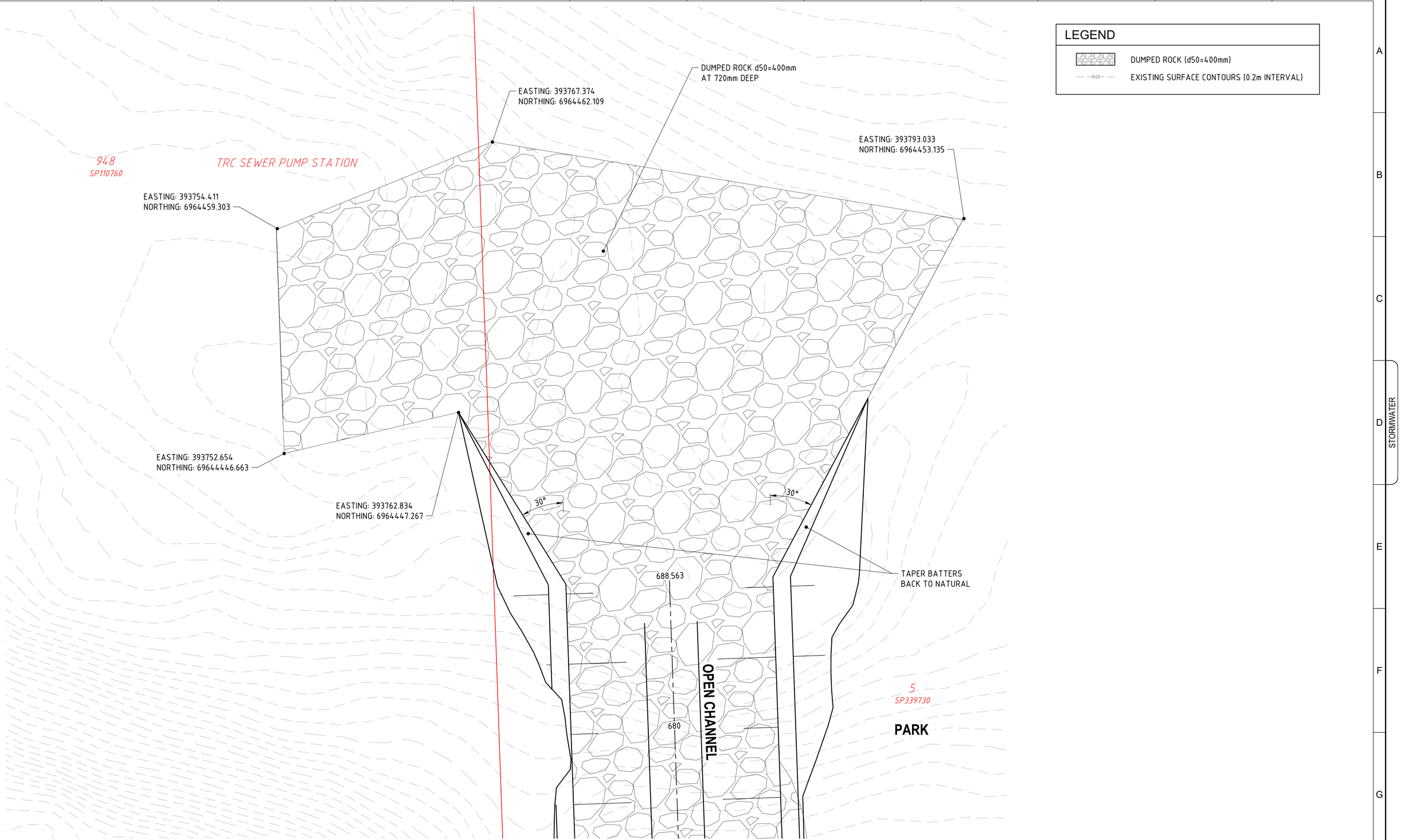
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT			HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER OPEN CHANNEL CULVERT INLET DETAILS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	348	B

STORMWATER



STORMWATER OPEN CHANNEL OUTLET PLAN

SCALE 1:100

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

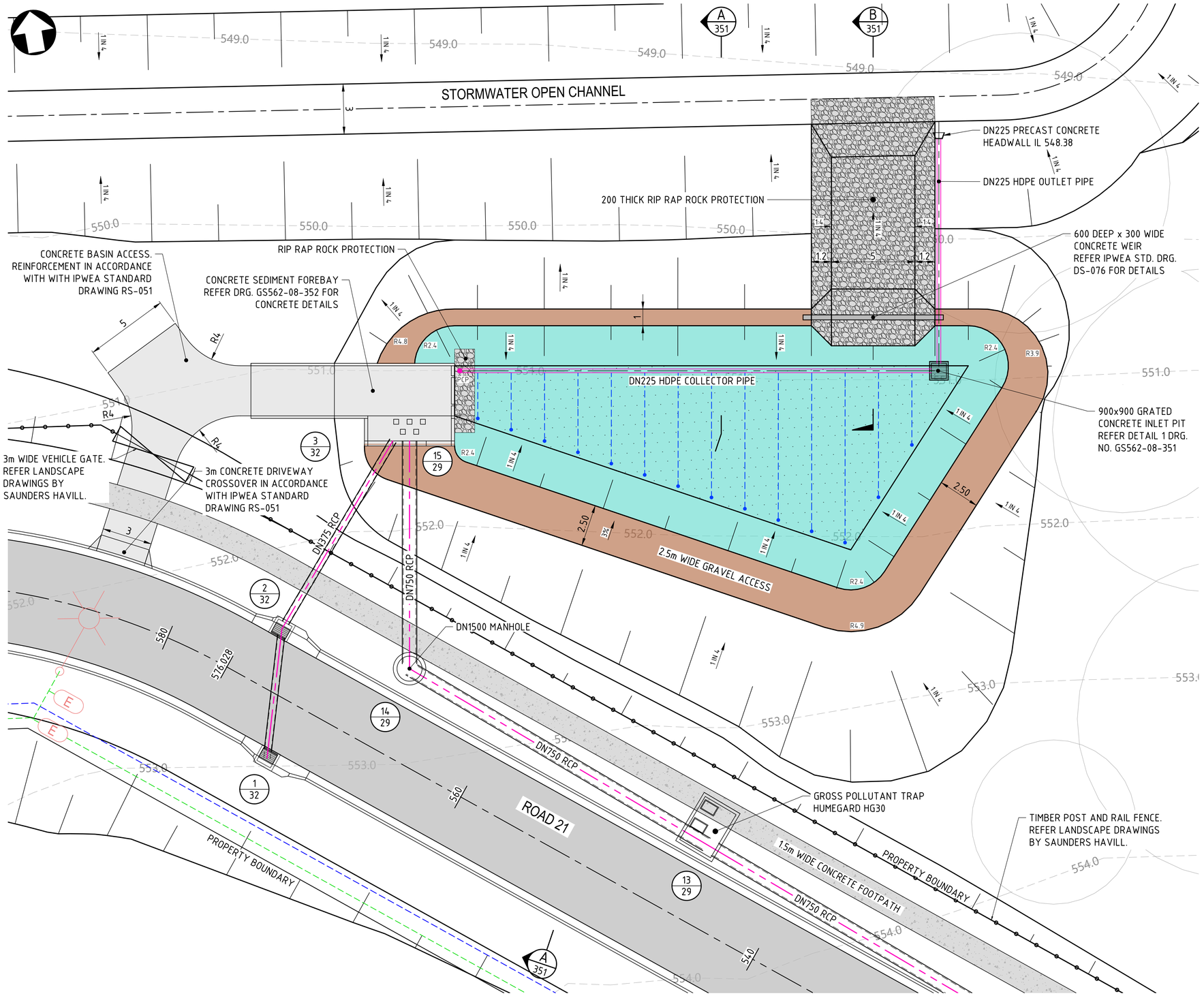
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: STORMWATER OPEN CHANNEL OUTLET PLAN

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	349	B

STORMWATER



LEGEND

- PROPOSED BIORETENTION BASIN FILTER AREA AND VEGETATION REFER DRG. GS562-08-351 FOR DETAILS
- PROPOSED BIORETENTION BASIN GRAVEL ACCESS CREST
- PROPOSED TOPSOILED AND TURFED BATTERS
- PROPOSED GROUTED ROCK SPILLWAY
- PROPOSED CONCRETE SEDIMENT FOREBAY REFER DRG. GS562-08-352 FOR DETAILS
- PCP — PROPOSED DN100 HDPE SLOTTED HDPE PIPE & CLEANOUT POINT REFER DRG. GS562-08-351 FOR DETAILS
- PCP — PROPOSED DN225 HDPE COLLECTOR PIPE & CLEANOUT POINT REFER DRG. GS562-08-351 FOR DETAILS
- PROPOSED STORMWATER
- PROPOSED WATERMAIN

BIO-RETENTION BASIN NOTES

1. BIORETENTION BASINS ARE TO BE CONSTRUCTED GENERALLY IN ACCORDANCE WITH IPWEA STANDARD DRAWING DS-070.
2. BIORETENTION DRAINAGE PROFILE IS A TYPE 3 CONVENTIONAL PROFILE AS DETAILED IN IPWEA STD. DRG. DS-073.
3. FOR BIORETENTION BASIN STANDARD NOTES REFER IPWEA STANDARD DRAWING DS-078.
4. SLOTTED UNDERDRAIN PIPES TO BE DN110 HDPE PE100 SDR26 PN6.
5. UNDERDRAIN COLLECTOR PIPES TO BE DN225 PE100 SDR26 PN6.
6. FOR TYPE 1 FIELD INLET PIT REFER IPWEA STANDARD DRAWING DS-050. OMIT APRON.
7. DN110 SLOTTED UNDERDRAIN PIPE TO BE CONNECTED TO DN225 COLLECTOR PIPE USING ELECTROFUSION WELDED BRANCH SADDLE OR APPROVED EQUIVALENT.
8. DN225 HDPE COLLECTOR PIPES TO OUTLET INTO TYPE 1 PIT VIA AN OUTLET RISER IN ACCORDANCE WITH IPWEA STANDARD DRAWING DS-070. TOP OF RISER TO BE 350mm ABOVE INVERT LEVEL OF PIT.
9. GROUTED ROCK PITCHING SHALL BE IN ACCORDANCE WITH MRTS03. ROCK SIZE, OTHER THAN SMALLER ROCK REQUIRED FOR WEDGING, SHALL BE NOT LESS THAT 150mm AND NOT GREATER THAN 250mm IN DIMENSION.
10. RIP RAP ROCK PROTECTION TO OUTLET CULVERT TO BE NOT LESS THAT 100mm AND NOT GREATER THAN 300mm IN DIMENSION. ROCK SHALL BE CLEAN, HARD, DENSE, AND DURABLE IGNEOUS OR METAMORPHIC ROCK. THE ROCK SHALL BE RESISTANT TO WEATHERING, FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATTER. ROCK THAT IS LAMINATED, FRACTURED, POROUS OR OTHERWISE PHYSICALLY WEAK SHALL NOT BE USED. SEDIMENTARY ROCK IS NOT TO BE USED.

BIORETENTION BASIN DESIGN SUMMARY	
FILTER AREA (BASE)	200 m^2
EXTENDED DETENTION DEPTH	300 mm
FILTER DEPTH	600 mm
SPILLWAY WIDTH (BASE)	5 m
SPILLWAY DEPTH	300 mm

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

BIO RETENTION BASIN LAYOUT PLAN
SCALE 1:100

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

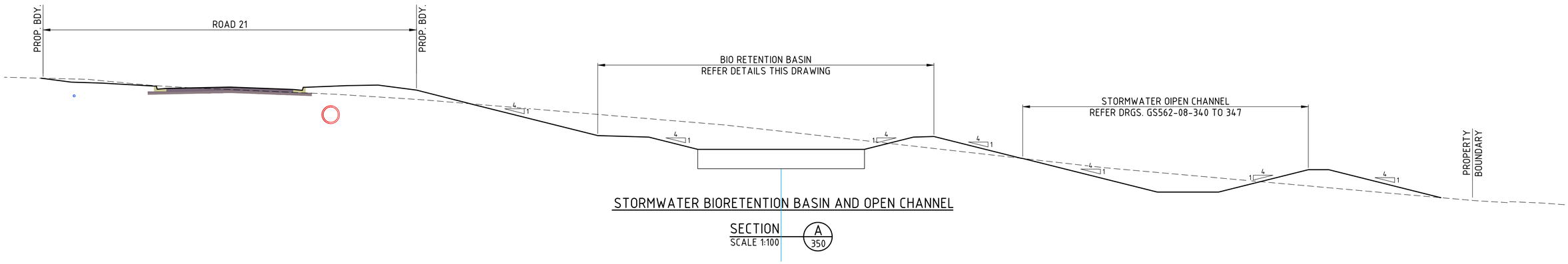
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER BIO RETENTION BASIN LAYOUT PLAN

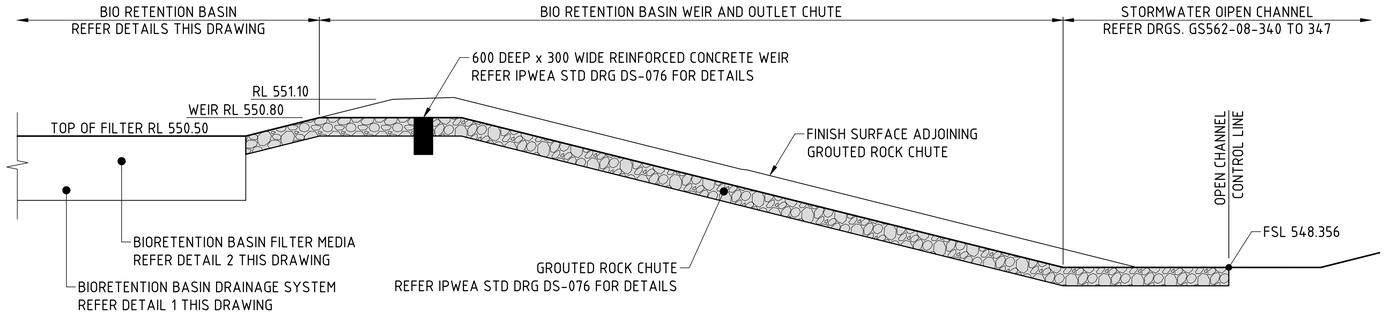
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	350	B

STORMWATER



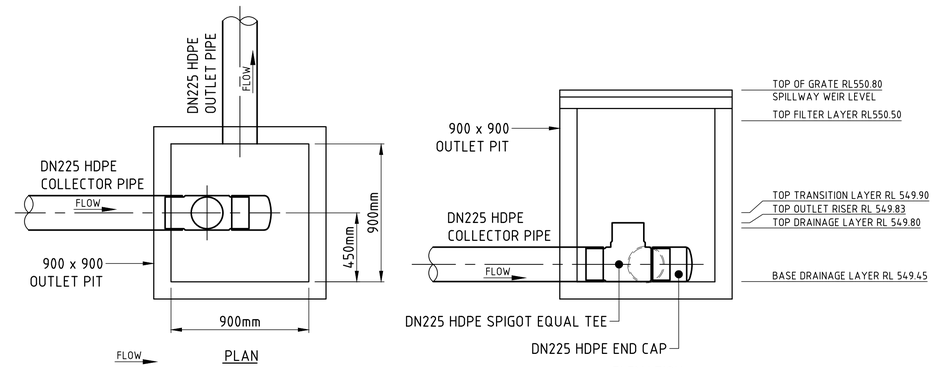
STORMWATER BIORETENTION BASIN AND OPEN CHANNEL

SECTION A 350
SCALE 1:100



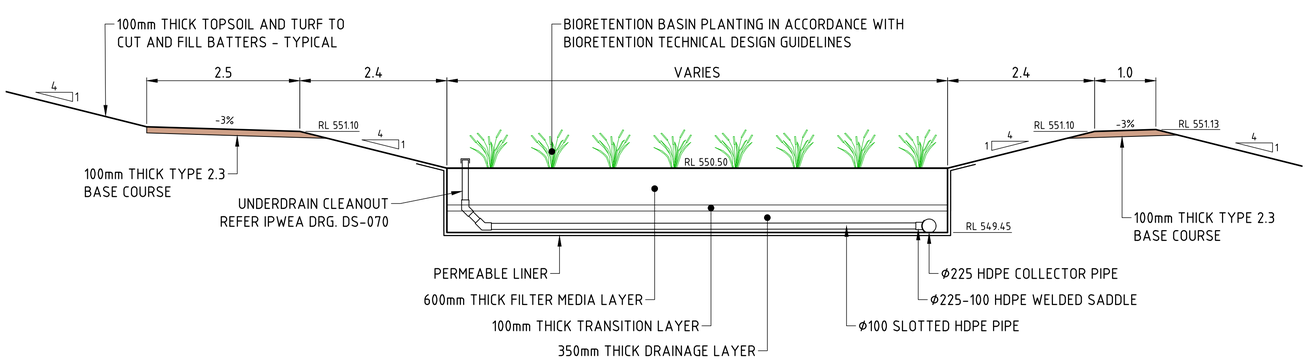
STORMWATER BIORETENTION BASIN OUTLET CHUTE

SECTION B 350
SCALE 1:50



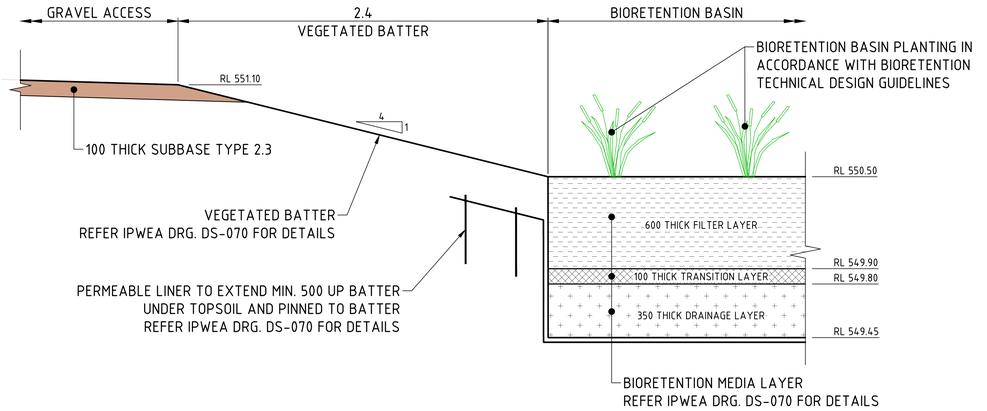
GRATED INLET PIT & COLLECTOR PIPE OUTLET RISER DETAIL

DETAIL 1
SCALE 1:20



BIORETENTION BASIN DRAINAGE SYSTEM

DETAIL 1
SCALE 1:20



BIORETENTION BASIN FILTER MEDIA

DETAIL 2
SCALE 1:20

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

NOTES

1. REFER DRG. GS562-08-350 FOR BIORETENTION BASIN LAYOUT PLAN AND NOTES.

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

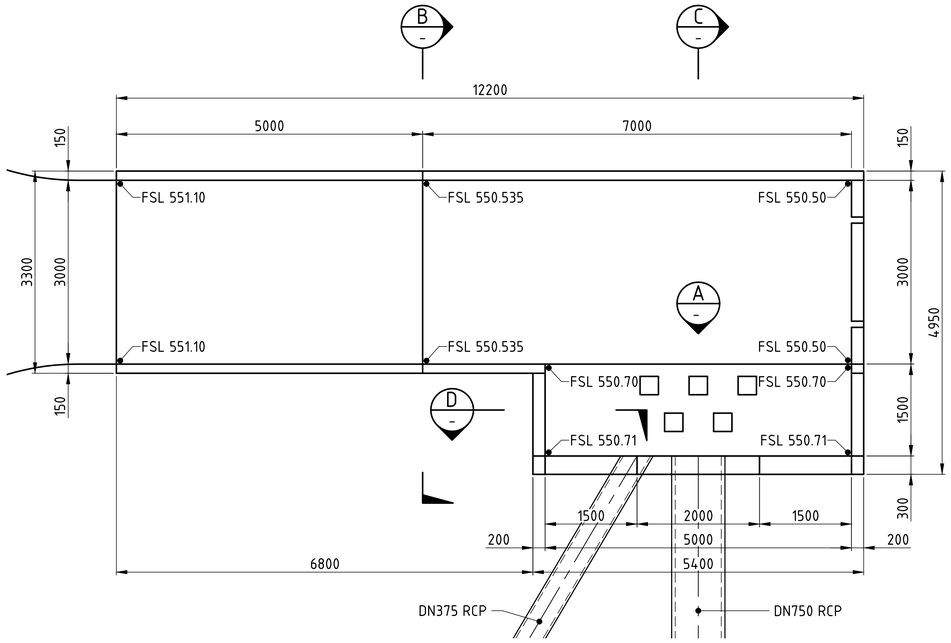
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

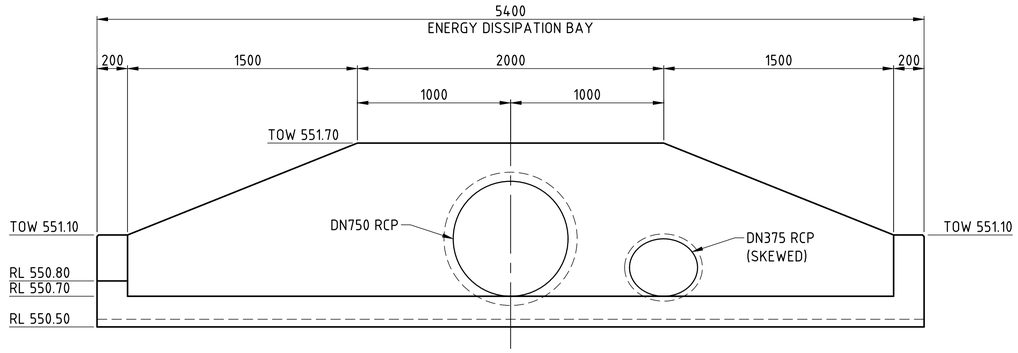
TITLE: STORMWATER BIO RETENTION BASIN SECTIONS AND DETAILS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	351	B

STORMWATER

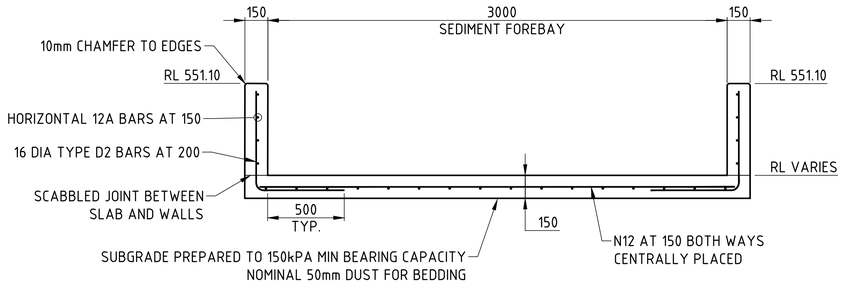


CONCRETE SEDIMENT FOREBAY PLAN
SCALE 1:50



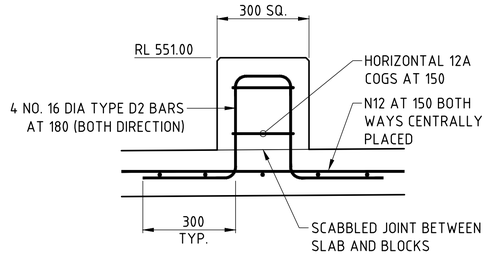
ENERGY DISSIPATION BAY
ELEVATION (A)
SCALE 1:20

NOTE:
ENERGY DISSIPATION BLOCKS NOT SHOWN FOR CLARITY. REFER DETAIL 1



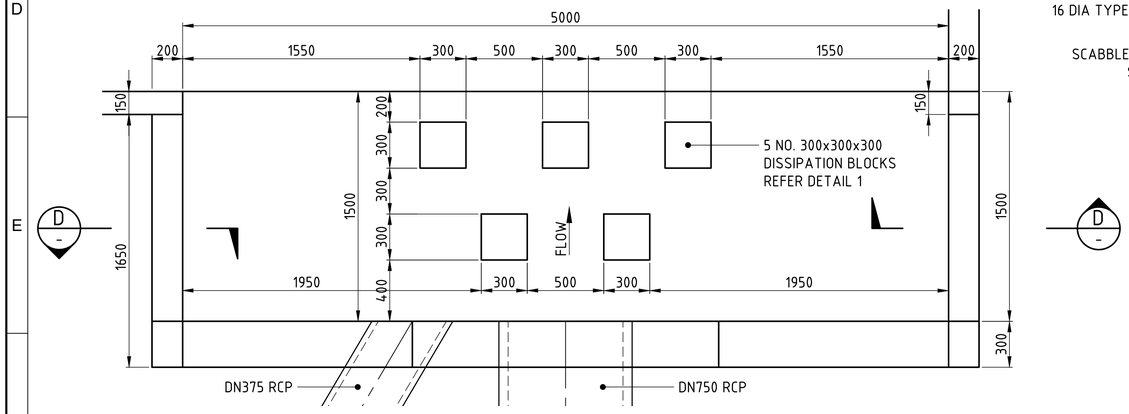
×CONCRETE SPECIFICATION AT 40/20/100 WITH 50mm COVER.

SECTION (B)
SCALE 1:20

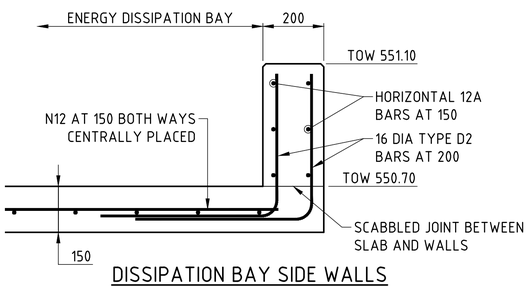


TYPICAL ENERGY DISSIPATION BLOCK

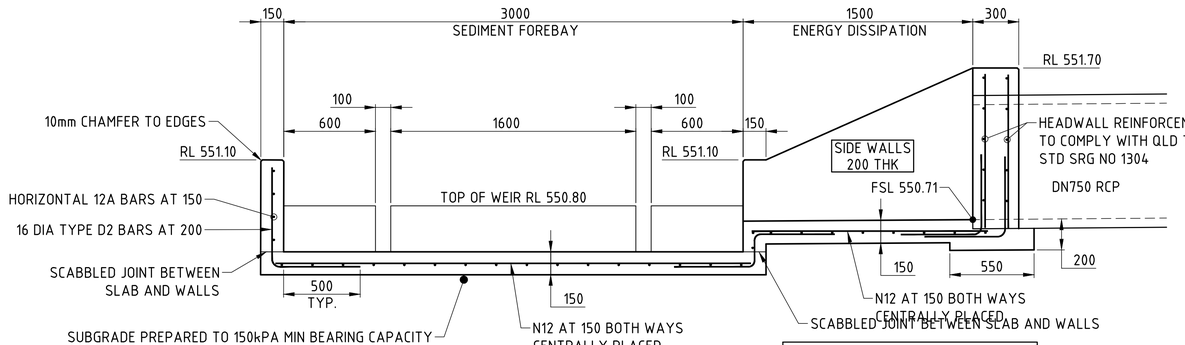
DETAIL (1)
SCALE 1:10



DISSIPATION BAY PLAN
SCALE 1:20



DISSIPATION BAY SIDE WALLS
SECTION (D)
SCALE 1:10



×CONCRETE SPECIFICATION AT 40/20/100 WITH 50mm COVER.

NOTE:
ENERGY DISSIPATION BLOCKS NOT SHOWN FOR CLARITY. REFER DETAIL 1

SECTION (C)
SCALE 1:20

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)

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

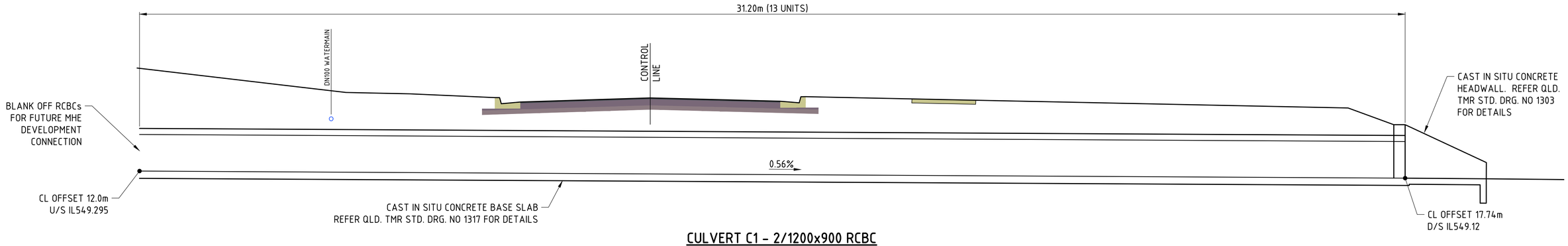
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: STORMWATER
BIO RETENTION BASIN
SEDIMENT FOREBAY CONCRETE DETAILS

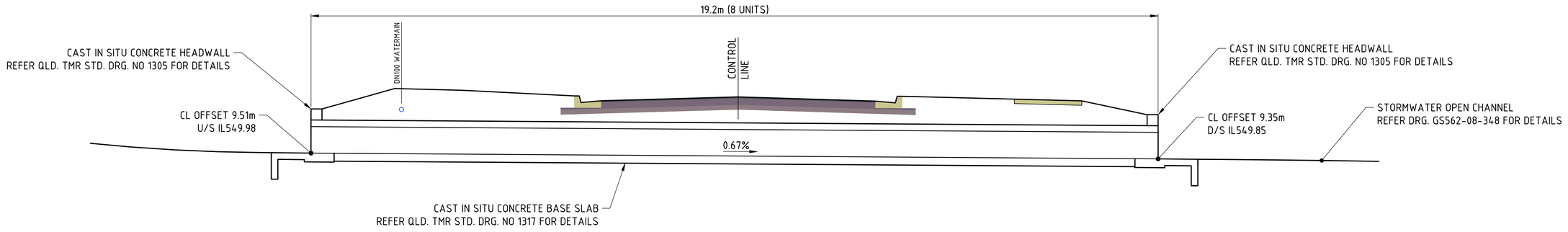
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	352	B

STORMWATER



CULVERT C1 - 2/1200x900 RCBC (ROAD 21 CH. 678.52, 31.20m LONG, 17.6° SKEW)

SCALE 1:50



CULVERT C1 - 3/1200x600 RCBC (ROAD 21 CH. 722.15, 19.20m LONG, 10.8° SKEW)

SCALE 1:50

0 0.5 1.0 1.5 2.0m

SCALE 1:50 (A1)
SCALE 1:100 (A3)

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

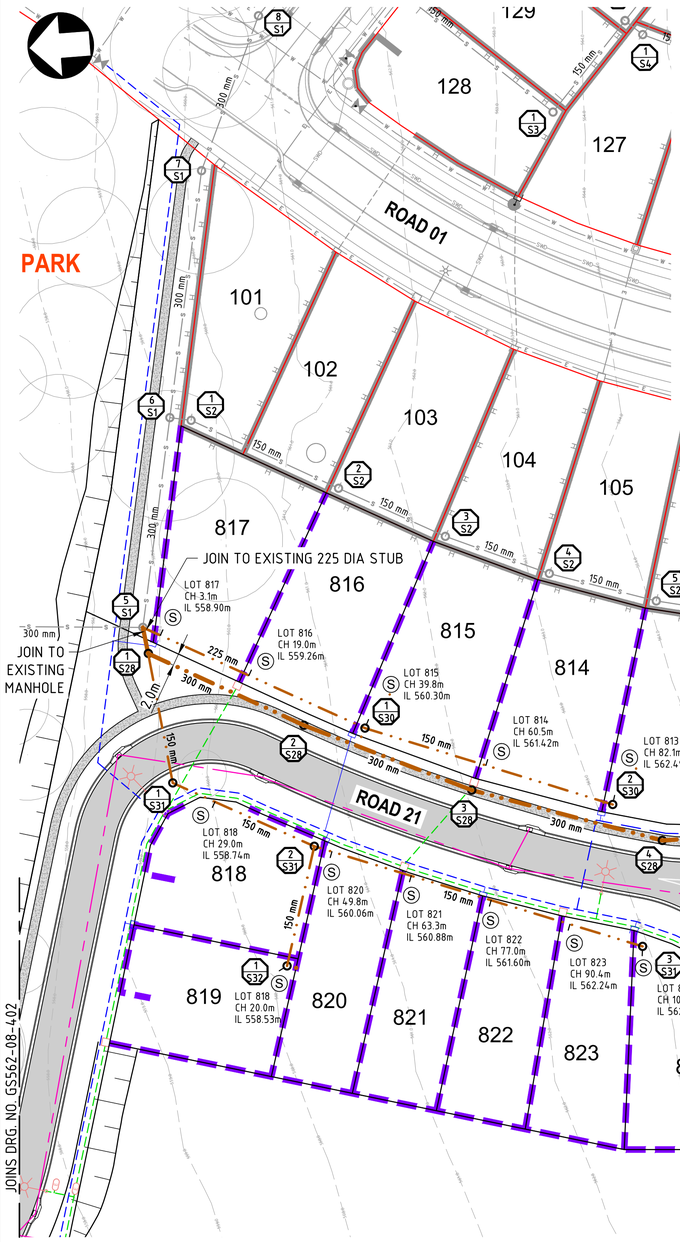
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

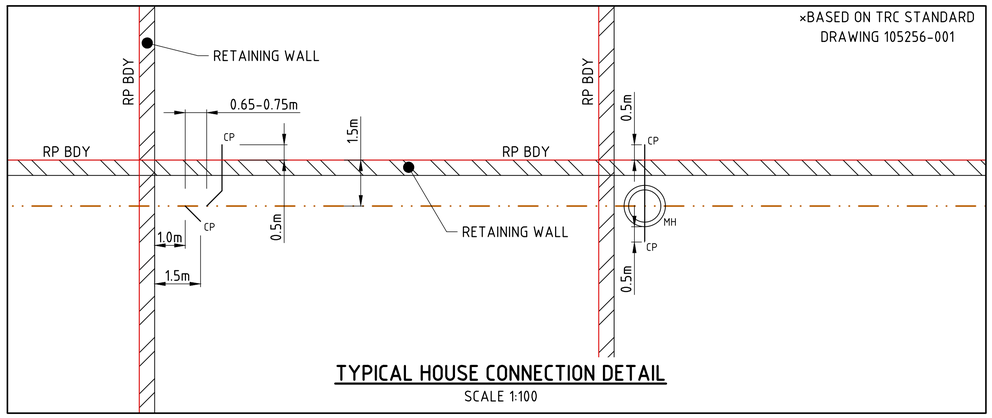
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: STORMWATER CULVERT SECTIONS

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	360	B

ROADS & DRAINAGE





TYPICAL HOUSE CONNECTION DETAIL

SCALE 1:100

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. REFER TO SHEET 110 FOR CLEARANCE REQUIREMENTS TO RETAINING WALL CLEARANCE REQUIREMENTS
4. MANHOLES ON 300 mm Ø SEWER LINES SHALL BE PRE-CAST CALCAREOUS CONCRETE 1200 mm DIAMETER, EPOXY COATED WITH:
   - 4.1. EPIREZ 133 EPOXY PRIMER
   - 4.2. TROWEL COATING OF EPIREZ 633 HIGH BUILD EPOXY MIXED WITH WASHED KILN, DRIED SAND TO ACHIEVE DRY FILM THICKNESS OF 2.0 mm.
   - 4.3. FINAL COAT OF EPIREZ 733 HIGH BUILD EPOXY COATING TO A 1.0mm DRY FILM THICKNESS.
   - 4.4. 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

SEWERAGE LAYOUT PLAN - SHEET 1 OF 3

SCALE 1:500

0 5 10 15 20m

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

ISSUED FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: SEWERAGE LAYOUT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	400	B

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

JOINS DRG. NO. GS562-08-400

JOINS DRG. NO. GS562-08-402

STAGE 8

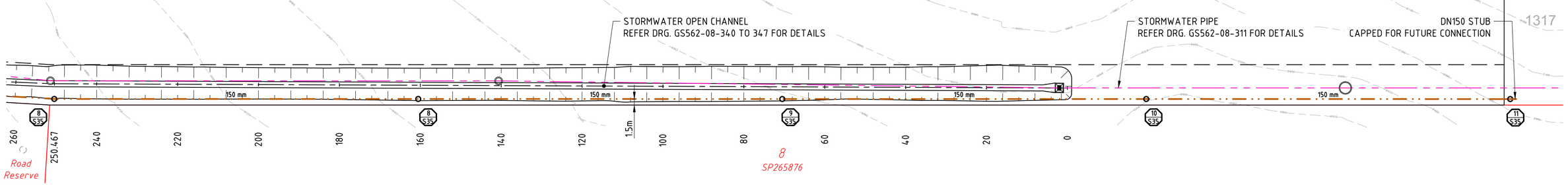
STAGE 9

1329 1328 1327 1326 1325 1324 1323 1322 1321 1320 1319 1318 1317

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

STORMWATER PIPE
REFER DRG. GS562-08-311 FOR DETAILS

DN150 STUB
CAPPED FOR FUTURE CONNECTION



0 5 10 15 20m

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

SEWERAGE LAYOUT PLAN - SHEET 2 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8				
DRAWN	CHECKED	ENGINEER	SURVEYOR	
B ENRIGHT	B LUSK	D TAYLOR	PARKINSON SURVEYS	
DESIGNED			HORIZ. DATUM	VERT. DATUM
B ENRIGHT			MGA 2020 (Z 56)	AHD

TITLE				
SEWERAGE LAYOUT PLAN SHEET 2 OF 3				
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	401	B

SEWER

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

TRC SEWER PUMP STATION

EXISTING TRC TRUNK SEWER

CONSTRUCT NEW CONNECTION TO EXISTING TRC TRUNK SEWER

225 mm

225 mm

948
SP110760

Road Reserve

225 mm

1.5m

225 mm

5
SP339730

300 mm

STORMWATER CULVERT
REFER DRG. GS562-08-311

250
A34247

225 mm

PARK

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

225 mm

1.5m

STORMWATER CULVERTS
REFER DRG. GS562-08-312 FOR DETAILS

ROAD 21

150 mm

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

STAGE 8

Road Reserve

300 mm

225 mm

819

818

817

816

820

150 mm

150 mm

150 mm

8
SP265876

1.5m

JOINS DRG. NO. GS562-08-401

JOINS DRG. NO. GS562-08-400

0 5 10 15 20m

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

SEWERAGE LAYOUT PLAN - SHEET 3 OF 3

SCALE 1:500

ISSUED
FOR APPROVAL

SEWER

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

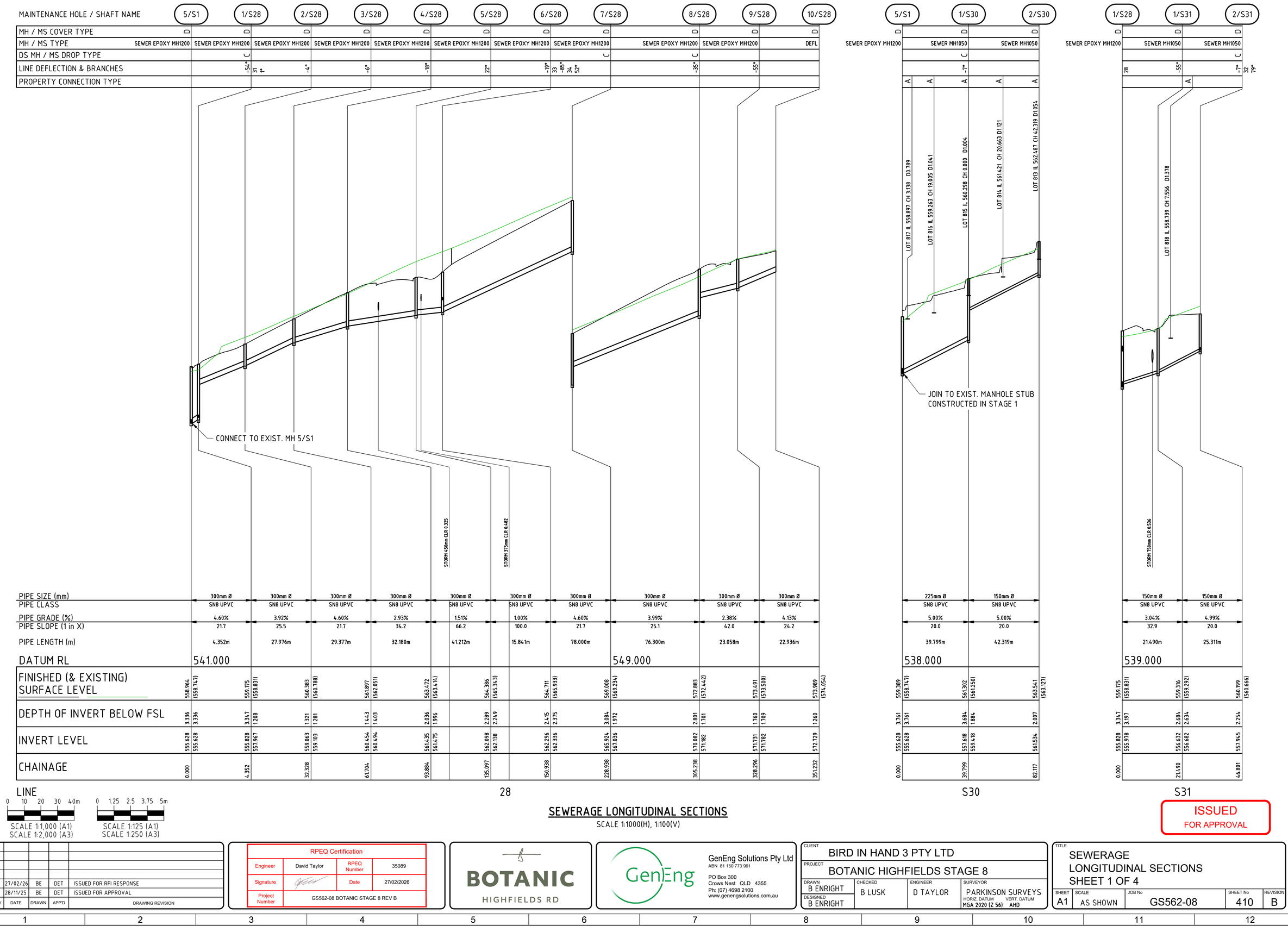
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: SEWERAGE LAYOUT PLAN SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	402	B



SEWERAGE LONGITUDINAL SECTIONS

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

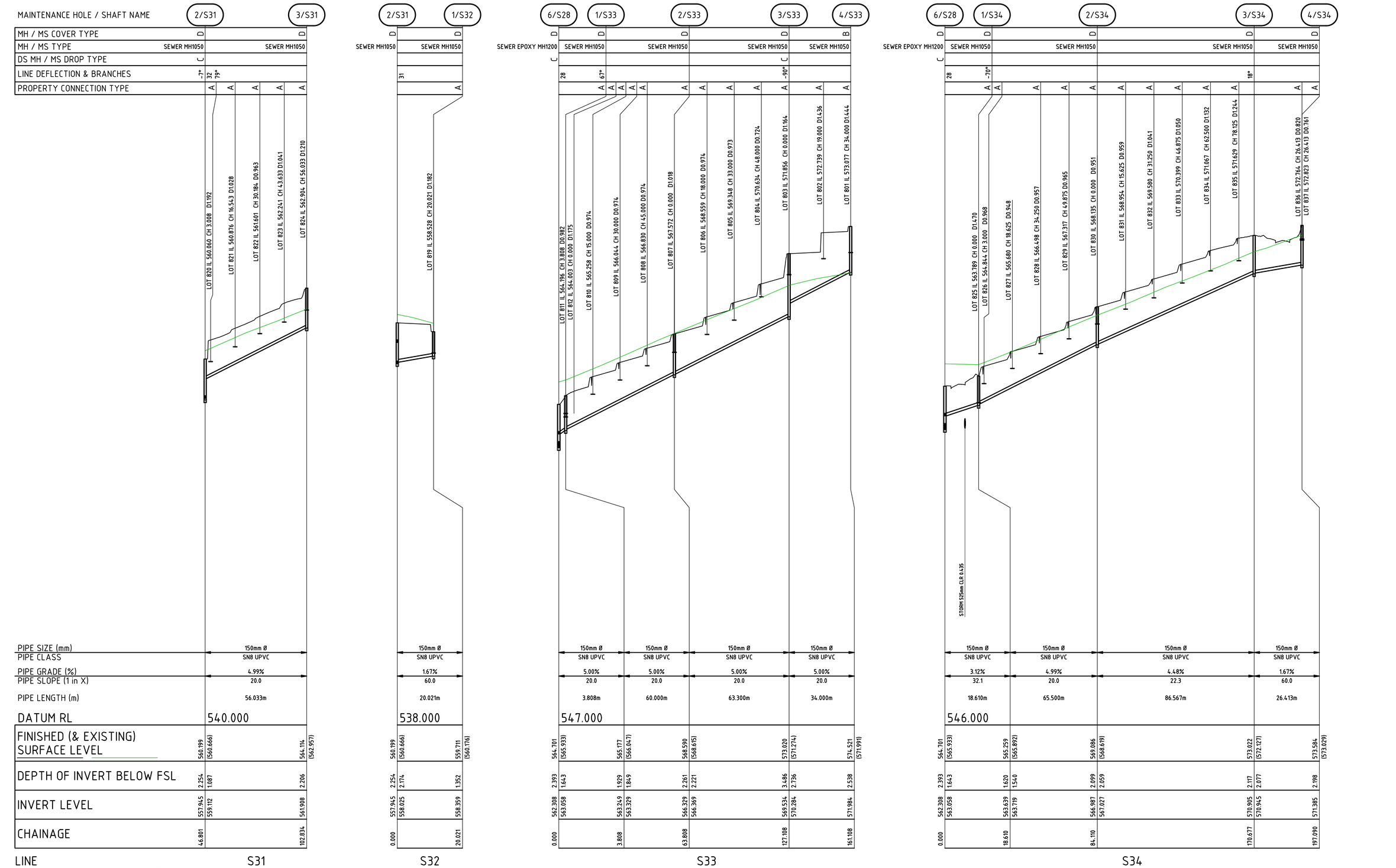
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8

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

TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 1 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	410	B

SEWER



SEWERAGE LONGITUDINAL SECTIONS

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

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

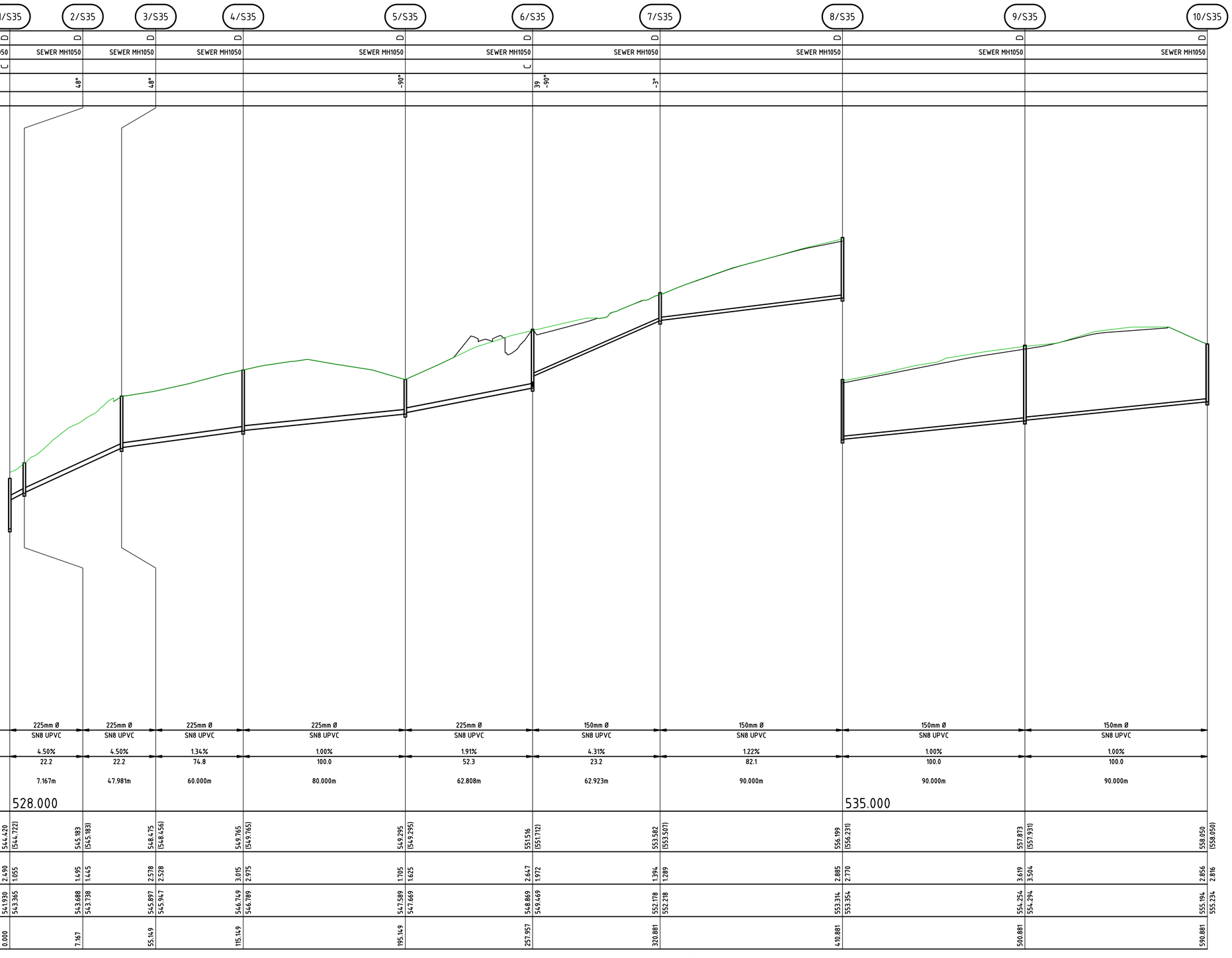
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) | VERT. DATUM: AHD

TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 2 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	411	B

SEWER



MAINTENANCE HOLE / SHAFT NAME	1/S35	2/S35	3/S35	4/S35	5/S35	6/S35	7/S35	8/S35	9/S35	10/S35
MH / MS COVER TYPE	D	D	D	D	D	D	D	D	D	D
MH / MS TYPE	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050
DS MH / MS DROP TYPE	C					C				
LINE DEFLECTION & BRANCHES		4.8°	4.8°		-90°	39 -90°	-3°			
PROPERTY CONNECTION TYPE										
PIPE SIZE (mm)	225mm Ø	225mm Ø	225mm Ø	225mm Ø	225mm Ø	150mm Ø	150mm Ø	150mm Ø	150mm Ø	150mm Ø
PIPE CLASS	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC	SN8 UPVC
PIPE GRADE (%)	4.50%	4.50%	1.34%	1.00%	1.91%	4.31%	1.22%	1.00%	1.00%	1.00%
PIPE SLOPE (1 in X)	22.2	22.2	74.8	100.0	52.3	23.2	82.1	100.0	100.0	
PIPE LENGTH (m)	7.167m	47.981m	60.000m	80.000m	62.808m	62.923m	90.000m	90.000m	90.000m	
DATUM RL	528.000							535.000		
FINISHED (& EXISTING) SURFACE LEVEL	544.420 (544.722)	545.183 (545.183)	548.475 (548.456)	549.765 (549.765)	549.295 (549.295)	551.516 (551.712)	553.582 (553.507)	556.199 (556.231)	557.873 (557.931)	558.050 (558.050)
DEPTH OF INVERT BELOW FSL	2.490 1.055	1.495 1.445	2.578 2.528	3.015 2.975	1.705 1.625	2.647 1.972	1.394 1.289	2.885 2.770	3.619 3.504	2.856 2.816
INVERT LEVEL	541.930 543.365	543.688 543.738	545.897 545.947	546.749 546.789	547.589 547.669	548.869 549.469	552.178 552.218	553.314 553.354	554.254 554.294	555.194 555.234
CHAINAGE	0.000	7.167	55.149	115.149	195.149	257.957	320.881	410.881	500.881	590.881

LINE

S35

0 10 20 30 4.0m
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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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

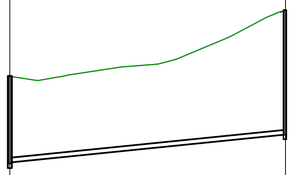
CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

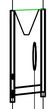
TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 3 OF 4

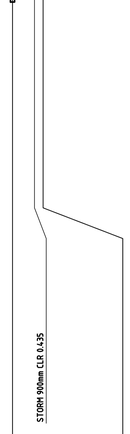
SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	412	B

SEWER

MAINTENANCE HOLE / SHAFT NAME	10/S35	11/S35	6/S35	1/S39
MH / MS COVER TYPE	D	D	D	D
MH / MS TYPE	SEWER MH1050	SEWER MH1050	SEWER MH1050	SEWER MH1050
DS MH / MS DROP TYPE				
LINE DEFLECTION & BRANCHES			35	
PROPERTY CONNECTION TYPE				







PIPE SIZE (mm)	150mm Ø		225mm Ø	
PIPE CLASS	SN8 UPVC		SN8 UPVC	
PIPE GRADE (%)	1.00%		1.00%	
PIPE SLOPE (1 in X)	100.0		100.0	
PIPE LENGTH (m)	90.000m		9.989m	
DATUM RL			529.000	
FINISHED (& EXISTING) SURFACE LEVEL	558.050	(558.050) 560.199	551.461	(551.712) 551.744 (551.744)
DEPTH OF INVERT BELOW FSL	2.856	2.816 4.065	2.572	2.492 2.695
INVERT LEVEL	555.194	555.234 556.134	548.869	548.949 549.049
CHAINAGE	590.881	680.881	0.000	9.989

LINE

S39

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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

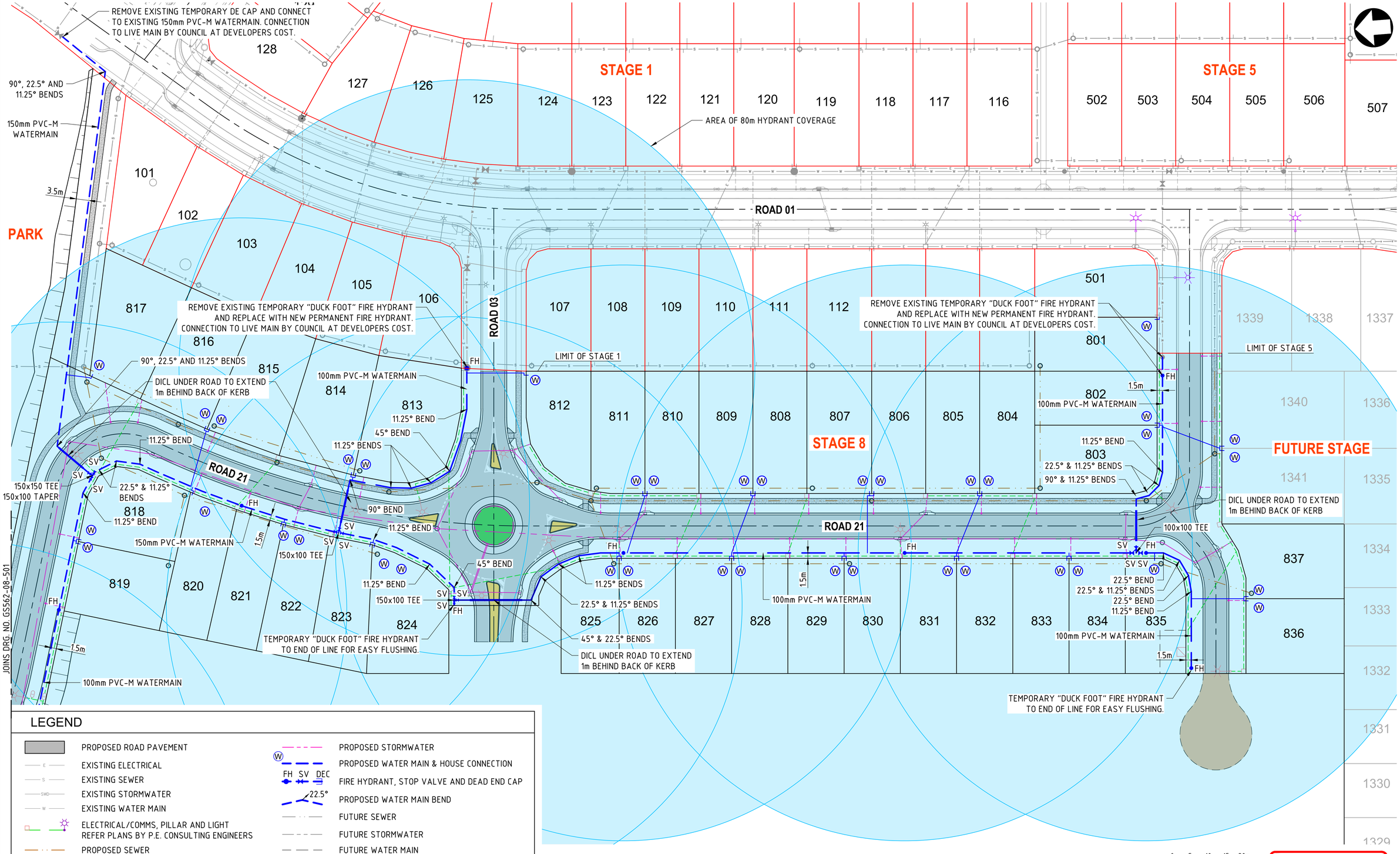
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 3 OF 4

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	413	B

SEWER



LEGEND

- PROPOSED ROAD PAVEMENT
- EXISTING ELECTRICAL
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING WATER MAIN
- ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED WATER MAIN & HOUSE CONNECTION
- FIRE HYDRANT, STOP VALVE AND DEAD END CAP
- PROPOSED WATER MAIN BEND
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

WATER RETICULATION LAYOUT PLAN - SHEET 1 OF 2

SCALE 1:500

0 5 10 15 20m

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

ISSUED FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: WATER LAYOUT PLAN SHEET 1 OF 2

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	500	B

LEGEND

- PROPOSED ROAD PAVEMENT
- EXISTING ELECTRICAL
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING WATER MAIN
- ELECTRICAL/COMMS, PILLAR AND LIGHT REFER PLANS BY P.E. CONSULTING ENGINEERS
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED WATER MAIN & HOUSE CONNECTION
- FH SV DEC — FIRE HYDRANT, STOP VALVE AND DEAD END CAP
- 22.5° — PROPOSED WATER MAIN BEND
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE WATER MAIN

948
SP110760

TRC SEWER PUMP STATION

Road Reserve

250
A34247

Road Reserve

8
SP265876

PARK

AREA OF 80m HYDRANT COVERAGE

TEMPORARY "DUCK FOOT" FIRE HYDRANT TO END OF LINE FOR EASY FLUSHING.

FH

1.5m

22.5° & 6° BENDS

ROAD 21

100mm PVC-M WATERMAIN

90°, 22.5° AND 11.25° BENDS

DICL UNDER ROAD TO EXTEND 1m BEHIND BACK OF KERB

150mm PVC-M WATERMAIN

22.5° BEND

11.25° BEND

SV

150x150 TEE
150x100 TAPER

22.5° & 11.25° BENDS

11.25° BEND

819

818

817

816

820

JOINS DRG. NO. GS562-08-500

STAGE 8

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

WATER RETICULATION LAYOUT PLAN - SHEET 2 OF 2

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8			
DRAWN: B ENRIGHT	CHECKED: B LUSK	ENGINEER: D TAYLOR	SURVEYOR: PARKINSON SURVEYS (HORIZ. DATUM MGA 2020 (Z 56) VERT. DATUM AHD)
DESIGNED: B ENRIGHT			

TITLE				
WATER LAYOUT PLAN SHEET 2 OF 2				
SHEET: A1	SCALE: AS SHOWN	JOB No: GS562-08	SHEET No: 501	REVISION: B

WATER

STAGE 1

STAGE 5

STAGE 9

ROAD 01

ROAD 03

ROAD 21

ROAD 22

LIMIT OF STAGE 1

LIMIT OF STAGE 5

TOPSOIL AND GRASS SEED DISTURBED AREAS IMMEDIATELY FOLLOWING FINAL TRIMMING OF EARTHWORKS ON ALLOTMENTS

TURF STRIPS BEHIND KERB

SAND BAGS TO ROAD BOX AS END-OF-DAY TREATMENT AND WHEN RAIN IS IMMINENT

PLACE SILT FENCE ALONG PROPERTY BOUNDARY

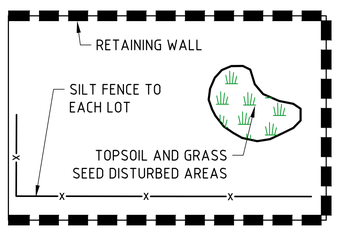
PLACE SILT FENCE AROUND TEMPORARY CULDESAC

JOINS DRG. NO. GS562-08-602

JOINS DRG. NO. GS562-08-601

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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

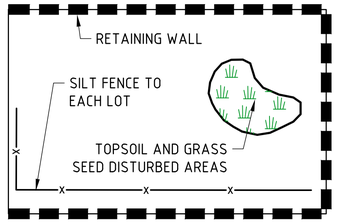
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ESC LAYOUT PLAN SHEET 1 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	600	B

E&SCP



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.

TYPICAL LOT DETAIL- POST CONSTRUCTION

SCALE N.T.S

JOINS DRG. NO. GS562-08-600

STAGE 8

STAGE 9

CONSTRUCT CUT-OFF DRAIN AND DIVERSION BUND
CONSTRUCTED TO DIVERT CLEAN WATER AROUND SITE.

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

STORMWATER CULVERT
REFER DRG. GS562-08-311 FOR DETAILS

PLACE SILT FENCE ALONG PROPERTY BOUNDARY

PLACE COIR LOGS AT 50m NOMINAL SPACING

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

SEWERMAIN
REFER DRG. GS562-08-401 FOR DETAILS

8
SP265876

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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

BOTANIC
HIGHFIELDS RD

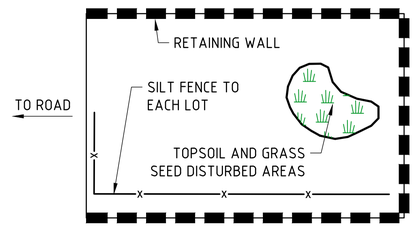
GenEng Solutions Pty Ltd
ABN 81 150 773 961
PO Box 300
Crows Nest QLD 4355
Ph: (07) 4698 2100
www.genengsolutions.com.au

CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 8
DRAWN: B ENRIGHT | CHECKED: B LUSK | ENGINEER: D TAYLOR | SURVEYOR: PARKINSON SURVEYS
DESIGNED: B ENRIGHT
HORIZ. DATUM: MGA 2020 (Z 56) VERT. DATUM: AHD

TITLE: ESC LAYOUT PLAN SHEET 2 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	601	B

E&SCP



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.

948
SP110760

TRC SEWER PUMP STATION

EXISTING TRC TRUNK SEWER

5
SP339730

PARK

Ro Road Reserve

SEWERMAIN
REFER DRG. GS562-08-402 FOR DETAILS

PLACE COIR LOGS AT 50m NOMINAL SPACING

PLACE SILT FENCE ALONG PROPERTY BOUNDARY

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

PLACE SILT FENCE AROUND TEMPORARY CULDESAC

250
A34247

BIO RETENTION BASIN
REFER DRG. GS562-08-350 FOR DETAILS

STORMWATER CULVERTS
REFER DRG. GS562-08-312
FOR DETAILS

UTILISE EXISTING SEDIMENT BASIN FROM STAGE 1 FOR AS LONG AS POSSIBLE. CAPTURE DIRTY RUNOFF FROM SITE INTO SEDIMENT FOREBAY AND DIVERT CLEAN WATER AROUND.

TURF STRIPS BEHIND KERB

ROAD 21

PLACE SILT FENCE ALONG PROPERTY BOUNDARY

PLACE COIR LOGS AT 50m NOMINAL SPACING

Road Reserve

CONSTRUCT CUT-OFF DRAIN AND DIVERSION BUND CONSTRUCTED TO DIVERT CLEAN WATER AROUND SITE.

TURF STRIPS BEHIND KERB

SAND BAGS TO ROAD BOX AS END-OF-DAY TREATMENT AND WHEN RAIN IS IMMINENT

SEWERMAIN
REFER DRG. GS562-08-402

8
SP265876

STORMWATER OPEN CHANNEL
REFER DRG. GS562-08-340 TO 347 FOR DETAILS

819
818
817
816
820

TOPSOIL AND GRASS SEED DISTURBED AREAS IMMEDIATELY FOLLOWING FINAL TRIMMING OF EARTHWORKS ON ALLOTMENTS

STAGE 8

JOINS DRG. NO. GS562-08-601

JOINS DRG. NO. GS562-08-600

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

EROSION AND SEDIMENT CONTROL LAYOUT PLAN

SCALE 1:500

ISSUED
FOR APPROVAL

REV.	DATE	DRAWN	APPD	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification			
Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

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

TITLE: ESC LAYOUT PLAN SHEET 3 OF 3

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-08	602	B

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

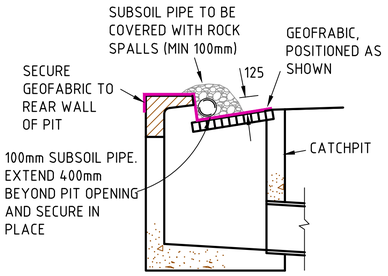
1. EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCEMENT OF EARTHWORKS.
2. SITE STRIPPING OF GROUNDCOVER AND TOPSOIL SHALL BE MINIMISED SO THAT ONLY SMALL AREAS ARE EXPOSED AT ANY ONE TIME.
3. DISTURBED AREAS ARE TO BE REINSTATED AS SOON AS POSSIBLE AFTER CONSTRUCTION LEVELS ARE ACHIEVED.
4.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

GENERAL NOTES

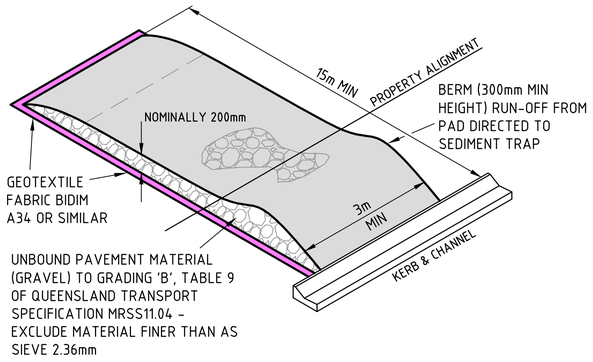
ALL SEDIMENT AND EROSION CONTROL MEASURES IMPLEMENTED DURING THE CONSTRUCTION ARE TO BE IN ACCORDANCE WITH LOCAL/STATE AUTHORITY REQUIREMENTS.

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

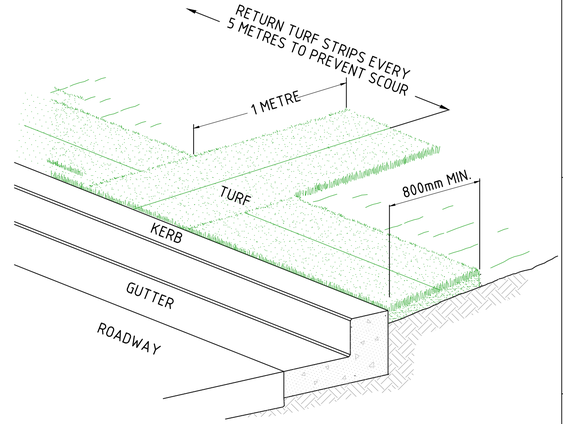
1. GENERAL
   - (A) TEMPORARY DRAINAGE CONTROL. FLOW SHOULD BE DIVERTED AROUND THE WORK SITE WHERE POSSIBLE. (SD 5-5 & 5-6)
   - (B) ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND BE OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
   - (C) ALL SEDIMENT & EROSION CONTROL DEVICES MUST 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.



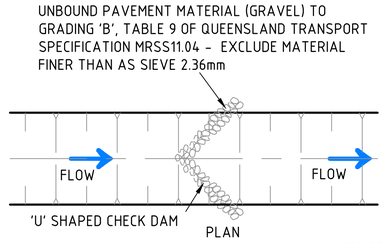
TEMPORARY CONSTRUCTION ACCESS / EXIT
N.T.S.

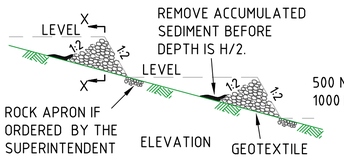


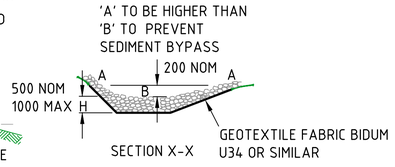
TURF FILTER STRIP DETAIL
N.T.S.

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.

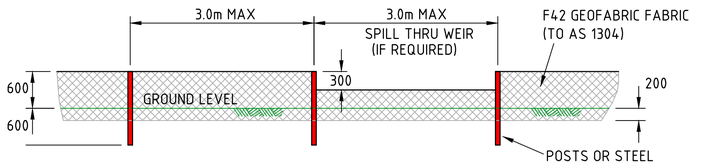




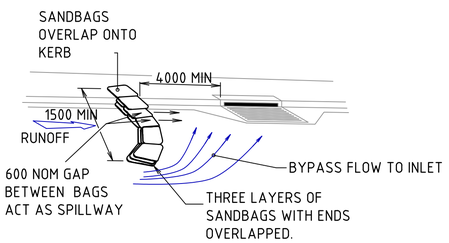


TEMPORARY CHECK DAMS - FLOW CONTROL
N.T.S.

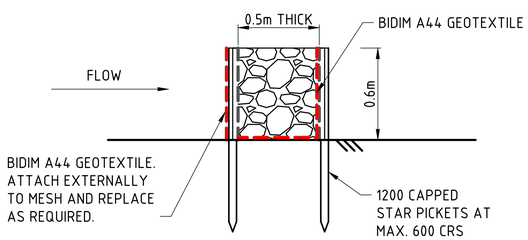
NOTE:
CHECK DAM CATCHMENT AREA LIMITED TO 4.00 Ha. DEVICE IS INTENDED FOR VELOCITY CONTROL ONLY - SEDIMENT COLLECTION IS A SECONDARY PURPOSE.



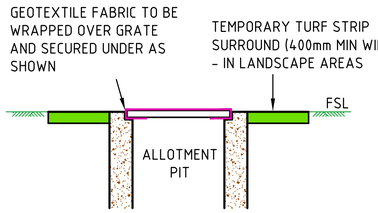
SEDIMENT FENCE
N.T.S.



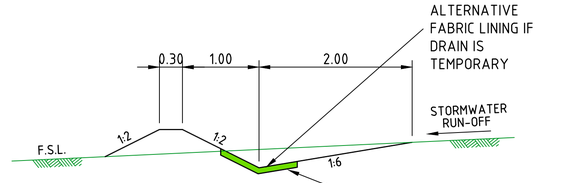
CHECK DAM (SANDBAG) DETAIL
N.T.S.



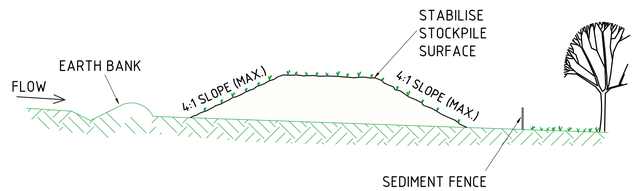
SEDIMENT WEIR TYPICAL SECTION
SCALE 1:20



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 APPROVAL

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
B	27/02/26	BE	DET	ISSUED FOR RFI RESPONSE
A	28/11/25	BE	DET	ISSUED FOR APPROVAL

RPEQ Certification

Engineer	David Taylor	RPEQ Number	35089
Signature		Date	27/02/2026
Project Number	GS562-08 BOTANIC STAGE 8 REV B		

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 8

DRAWN	CHECKED	ENGINEER	SURVEYOR
B ENRIGHT	B LUSK	D TAYLOR	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	GS562-08	610	B

E&SCP