SQS
SOIL QUALITY SERVICES
AMB Geotech SQS Pty Ltd
ABN 36 631 788 620

LEVEL 1 EARTHWORKS

Botanic Highfields
Stage 3
Highfields Qld 4350

CERTIFICATE

AMB Geotech Pty Ltd t/a SQS
ABN: 36631788620

CHINCHILLA
Ray Hicks
PHONE: 0428 187 579

27th March 2025

Appian Civil Pty Ltd,
PO Box 4660,
TOOWOOMBA QLD 4350

Dear Sir

RE: LEVEL 1 EARTHWORKS
BOTANIC HIGHFIELD STAGE 3 LOTS 301 - 335
HIGHFIELDS QLD, 4350.

Supervision of earthwork operations was carried out at the above location by SQS. The Level 1 Supervision and associated field density testing on the earthworks commenced on 11/10/2024 and was completed on 11/10/2024.

The supervision and testing of the earthworks were undertaken in general accordance with the Level 1 requirements of AS3798 – Guidelines on Earthworks for Commercial and Residential Developments and the Earthworks. Structural fill used in the project was placed compacted and tested in accordance with Section 6 and 7 of AS3798 (2007) – Guidelines on Earthworks for Commercial and Residential Development.

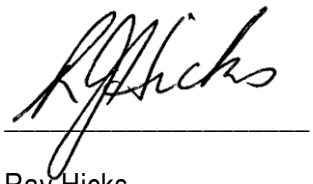
The site supervision and testing were performed by experienced geotechnicians from the SQS Toowoomba laboratory as per Section 8.2 AS3798 (2007). Supervision of the works included, test rolling of subgrade, placing of imported structural fill, compaction and adding or removal of moisture as required. Any areas that were deemed unsatisfactory were reworked and retested under the supervision of SQS. Testing was performed to the relevant Australian Standards and all test reports carry NATA endorsement. All compaction tests were located randomly throughout the fill profile are considered to be representative of the fill materials that was placed in the above-mentioned period. When interpreting the requirements of AS2870 – Residential Slabs and Footings 2011, we are of the view that all of the material that has been placed across the site during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 98% +2/-2% (OMC) standard compaction for the fill.

All NATA endorsed test certificates associated with the filling are held in the Toowoomba Laboratory Office of SQS. These test certificates are in electronic format and held on computer data base. Hard copies of the test reports are also filed in the Toowoomba Laboratory Office.

This Certificate applies to all fill material placed in the construction of the project within the boundaries of the project sites as listed and shown on the drawing included in this report –Botanic Highfields Subdivision Stage 3–Drawing No GS562-03-002 Rev 1, Construction Notes, Drawing No GS562-03-020 Rev 4, Stage 3 Development Layout

Should you require any further information or clarification of this matter, please contact Ray Hicks by telephoning 0428187579 during business hours.

Yours faithfully,



Ray Hicks
RPEQ 1149

DRAWINGS

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 500m³ - GENERALLY
    - B) 1 TEST PER 100m³ - 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 1.5m 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 3.0m 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.

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 Ø 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 Ø SEWER LINES SHALL BE PRE-CAST 1200 mm DIAMETER, EPOXY COATED.
16. ALL MANHOLES TO HAVE LIDS AS SHOWN ON THE SEWER LONGITUDINAL SECTIONS.
17. FINAL SURFACE LEVELS OF MANHOLES NOMINATED ON LONG SECTIONS ARE TO DESIGN SURFACE LEVEL AND ARE TO BE ADJUSTED ON SITE TO SUIT ALL EARTHWORKS TYPICALLY 75 mm ABOVE SURROUNDING FINISHED SURFACE LEVELS.
18. INVERTS IN ALL MANHOLES TO BE BENCHED TO SUIT INLET AND OUTLET PIPES IN ACCORDANCE WITH WSAA.

LIST OF ABBREVIATIONS

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

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APP'D	DRAWING REVISION
1	14/02/25	DET	BGL	COUNCIL GIA APPROVAL
0	20/08/24	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification

Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	26/08/2024
Project Number	GS562-03 BOTANIC STAGE 3 IFC		

BOTANIC HIGHFIELDS

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CLIENT: BIRD IN HAND 3 PTY LTD
PROJECT: BOTANIC HIGHFIELDS STAGE 3
DRAWN: Y.LI | CHECKED: D.TAYLOR | ENGINEER: L.KNIGHT | SURVEYOR: PARKINGSON SURVEYS
DESIGNED: A.HALL | HORIZ DATUM: MGA2020 (Z 56) | VERT DATUM: AHD

TITLE: CONSTRUCTION NOTES

SHEET	SCALE	JOB No	SHEET No	REVISION
A1	AS SHOWN	GS562-03	002	1

GENERAL

BIRD IN HAND 3 PTY LTD
BOTANIC HIGHFIELDS
STAGE 3

BROWNE ROAD, HIGHFIELDS

LOCALITY PLAN

LOCALITY PLAN
SCALE N.T.S.

DRAWING INDEX		
DRAWING NUMBER	REVISION	SHEET TITLE
GS562-03-001	4	LOCALITY PLAN AND DRAWING INDEX
GS562-03-002	1	CONSTRUCTION NOTES
GS562-03-010	0	OVERALL LAYOUT AND STAGING PLAN
GS562-03-020	4	STAGE 3 DEVELOPMENT LAYOUT
GS562-03-100	3	EARTHWORKS LAYOUT PLAN
GS562-03-101	0	EARTHWORKS TYPICAL SECTIONS
GS562-03-110	1	EARTHWORKS TYPICAL RETAINING WALL AND BATTER DETAILS
GS562-03-111	0	EARTHWORKS TYPICAL FRONT RETAINING WALL ARRANGEMENT AND DETAILS
GS562-03-200	4	ROADS AND FOOTPATHS DETAIL PLAN
GS562-03-210	0	TYPICAL SECTIONS AND SERVICE ALLOCATIONS
GS562-03-220	0	ROAD 02 LONGITUDINAL SECTION
GS562-03-221	0	ROAD 02 CROSS SECTIONS
GS562-03-222	0	ROAD 06 LONGITUDINAL SECTION
GS562-03-223	0	ROAD 06 CROSS SECTIONS
GS562-03-224	0	ROAD 07 LONGITUDINAL SECTION
GS562-03-225	0	ROAD 07 CROSS SECTIONS
GS562-03-250	0	INTERSECTION DETAILS SHEET - 1 OF 2
GS562-03-251	0	INTERSECTION DETAILS SHEET - 2 OF 2
GS562-03-260	3	PAVEMENT DESIGN AND MISCELLANEOUS DETAILS
GS562-03-270	1	SIGNAGE AND LINEMARKING PLAN
GS562-03-280	0	KOALA FENCE DETAILS
GS562-03-300	0	STORMWATER DRAINAGE CATCHMENT PLAN
GS562-03-310	2	STORWMATER DRAINAGE LAYOUT PLAN
GS562-03-320	1	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 2
GS562-03-321	0	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 2
GS562-03-330	0	STORMWATER DRAINAGE CALCULATION TABLES
GS562-03-350	1	STORMWATER DRAINAGE BIO BASIN LAYOUT PLAN
GS562-03-351	1	STORMWATER DRAINAGE BIO BASIN DETAILS
GS562-03-400	4	SEWERAGE RETICULATION LAYOUT PLAN
GS562-03-410	0	SEWERAGE RETICULATION LONGITUDINAL SECTIONS SHEET 1 OF 2
GS562-03-411	0	SEWERAGE RETICULATION LONGITUDINAL SECTIONS SHEET 2 OF 2
GS562-03-500	2	WATER RETICULATION LAYOUT PLAN
GS562-03-600	3	EROSION AND SEDIMENT CONTROL LAYOUT PLAN
GS562-03-610	0	EROSION AN SEDIMENT CONTROL DETAILS AND NOTES

ISSUED
FOR CONSTRUCTION

REV.	DATE	DRAWN	APPD	DRAWING REVISION
4	04/03/25	DET	BGL	WALL TO LOT 310
3	14/02/25	DET	BGL	COUNCIL GIA APPROVAL
2	1/10/24	DET	BGL	CONNECTIONS TO STAGE 4 SEWER
1	09/09/24	DET	BGL	RETAINING WALL CHANGES
0	20/08/24	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	26/08/2024
Project Number	GS562-03 BOTANIC STAGE 3 IFC		

BOTANIC HIGHFIELDS

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

CLIENT			
BIRD IN HAND 3 PTY LTD			
PROJECT			
BOTANIC HIGHFIELDS STAGE 3			
DRAWN	CHECKED	ENGINEER	SURVEYOR
Y.LI	D.TAYLOR	L.KNIGHT	PARKINGSON SURVEYS
DESIGNED	HORIZ. DATUM	VERT. DATUM	
A.HALL	MGA2020 (Z 56)	AHD	

TITLE				
LOCALITY PLAN AND DRAWING INDEX				
SHEET	SCALE	JOB No	SHEET No	
A1	AS SHOWN	GS562-03	001	4

NOTE:
THE CONTRACTOR IS TO OBTAIN AN ARBORICULTURAL IMPACT ASSESSMENT REPORT TO NOTE HOW TREES TO BE RETAINED (WITHIN 15m) ARE PROTECTED FROM HARM DURING CONSTRUCTION. REPORT TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF WORKS.
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)
STAGE 4
STAGE 3
STAGE 2
STAGE 6
BIO RETENTION BASIN
REFER SHEET 350
GROSS POLLUTANT TRAP CLEAN OUT AREA
REFER SHEET 310
GRAVEL ACCESS TRACK. 200mm DEEP ARRB SPEC GRAVEL.
REFER SHEET 260.
JOINS STAGE 2
REFER TO GS562-02 SET
ROAD 02
ROAD 07
ROAD 06
3.0m
321 653 m²
322 553 m²
323 540 m²
324 540 m²
325 641 m²
326 540 m²
327 973 m²
320 566 m²
319 501 m²
318 649 m²
317 742 m²
316 540 m²
315 540 m²
314 540 m²
313 641 m²
312 540 m²
311 540 m²
334 801 m²
333 570 m²
332 570 m²
331 1156 m²
330 561 m²
329 510 m²
328 510 m²
335 566 m²
302 709 m²
301 510 m²
303 904 m²
304 692 m²
305 510 m²
306 510 m²
307 510 m²
308 510 m²
309 510 m²
310 632 m²
224 510 m²
223 510 m²
222 510 m²
221 628 m²
220 868 m²
219 602 m²
218 510 m²
217 510 m²
216 510 m²
215 510 m²
214 510 m²
213 510 m²
CT232.059
IP209.059
TC204.250
IP327.597
TC179.382
CT190.230
0 5 10 15 20m
SCALE 1:500 (A1)
SCALE 1:1,000 (A3)

STAGE 3 DEVELOPMENT LAYOUT PLAN

SCALE 1:500

ISSUED FOR CONSTRUCTION

REV	DATE	DRAWN	APP'D	DRAWING REVISION
4	04/03/25	DET	BGL	WALL FOR 310
3	14/02/25	DET	BGL	COUNCIL GIA APPROVAL
2	1/10/24	DET	BGL	SEWER CONNECTIONS TO STAGE 4
1	09/09/24	DET	BGL	RETAINING WALL HEIGHT CHANGES
0	20/08/24	DET	BGL	ISSUED FOR CONSTRUCTION

RPEQ Certification			
Engineer	Ben Lusk	RPEQ Number	13132
Signature		Date	26/08/2024
Project Number	GS562-03 BOTANIC STAGE 3 IFC		

BOTANIC HIGHFIELDS

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

CLIENT: BIRD IN HAND 3 PTY LTD

PROJECT: BOTANIC HIGHFIELDS STAGE 3

DRAWN: Y.LI | DESIGNED: A.HALL | CHECKED: D.TAYLOR | ENGINEER: L.KNIGHT | SURVEYOR: PARKINGSON SURVEYS | HORIZ. DATUM: MGA2020 (Z 56) | VERT. DATUM: AHD

TITLE: STAGE 3 DEVELOPMENT LAYOUT

SHEET: A1 | SCALE: AS SHOWN | JOB No: GS562-03 | SHEET No: 020 | REVISION: 4

DAILY EARTHWORKS

SQS

Client : Appian Civil Pty Ltd **Project #:** T-24-1006 **Project Name:** Botanic Highfields Stage 3

Location: **Test Date:** 11/10/2024 **Tested By:** sqs-ryand

Work Request: 17564

Level 1 Monitoring Worksheet

Daily Checks (AS 3798)		
Have you undertaken a safety check?	Yes	
Have you discussed daily works program with Clients site foreman?	Yes	
Has a stripped survey been done for the area?	Yes	If not, speak to client about getting it done. It must be done before filling takes place on the area. Discuss movement, water issues etc with site supervisor
Does the fill area look as it was when you were last here?	Yes	If not, check levels and compare to last ones taken.are they comparable? Make notes regarding this issue. Call Supervisor to discuss.
Has unsuitable material been removed?	Yes	Record material description, location, and where it was sent
Does the material meet specifications and is it fit for purpose?	Yes	If not, speak to client about other sources of material. Make notes on this issue.
Have you noted the source of the material?	Yes	
Is the material at a suitable moisture content for placement?	Yes	If not, is there a way to moisture condition the material to bring it within specifications? Make notes on this issue
Have you marked on the plan where the material is being placed today?	No	Refer to plan
		Marked with GPS
Have you done required testing for the day?	Yes	
Have you got accurate and useful locations for tests taken?	Yes	
Have you noted on a plan of the job the approximate locations of tests taken?	No	Marked with GPS
Have you filled out the summary sheet including hours onsite and lots worked on?	Yes	
Have you filled out Daily Monitoring Sheet with actions taken for the day?	Yes	
Have you noted construction methods and machinery used for the day?	Yes	
Have you made notes of any significant conversations had with the client or contractors ?	Yes	
Estimated quantity of fill?	9000	
Estimated thickness of layer placed?	200	
Weather observations	Fine	

Potential Contaminations / Environmental Indications							
Note	Notify site foreman and site manager IMMEDIATELY if any of the following are detected.						
Odorous Material	No	Stained Material	No	Deleterious Material	No	Potential Petroleum Contamination	No
Hazardous Building Materials	No	General Waste Material	No				
Remarks							

Machinery / Plant									
Compactor	0	Size ?		Grader	1			Highway Truck	0
Roller- Padfoot	1	Weight ?	18t	Bulldozer	1	Size ?	D6	Moxy	0
Roller- Smoothdrum	0	Weight ?		Excavator	1	Size ?	14t	Scraper	1
Water Cart	1								
Other									

Remarks	
Time	Remarks
	Placing existing cut to fill material on lot's 311, 326, 327, 327, 328, 329, 330, 331, 332, 333. Placing material at 200mm layer's with good moisture.
	18 x AS1289.5.8.1 18 x AS1289.5.1.1
	1 x Grader 1 x ad Foot Roller 1 x water Cart 1 x Excavator 1 x Scraper
	Onsite Hours 2

MATERIAL TEST RESULTS

Material Test Report

SQS www.sqs.net.au
SOIL QUALITY SERVICES
AMB Geotech SQS Pty Ltd
ABN 36 631 788 620

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Email: Toowoomba@sqs.net.au

Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: Kevin Kivinen
Laboratory Manager
NATA Accredited Laboratory Number: 2911

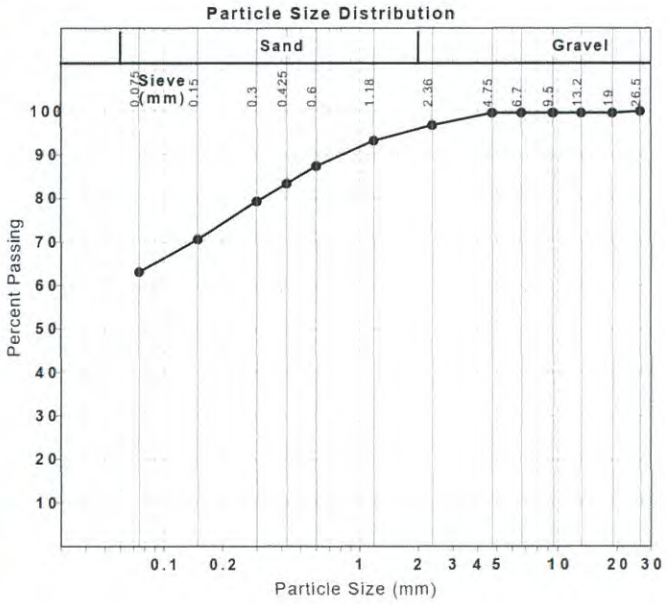
Report Number: T-24-1006-1
Issue Number: 1
Date Issued: 06/06/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 15349
Sample Number: T-15349A
Date Sampled: 29/05/2024
Dates Tested: 31/05/2024 - 06/06/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **Stage 3 - Sample 1**
Material Source: Onsite Existing / Insitu

Particle Size Distribution (AS1289 3.6.1 & 2.1.1 & Q253)			
Sieve	Passed %	Passing Limits	
26.5 mm	**100**		
19 mm	**100**		
13.2 mm	**100**		
9.5 mm	**100**		
6.7 mm	**100**		
4.75 mm	**100**		
2.36 mm	**97**		
1.18 mm	**93**		
0.6 mm	**87**		
0.425 mm	**83**		
0.3 mm	**79**		
0.15 mm	**71**		
0.075 mm	**63**		

Particle size and shape properties of a soil (Q253)		Min	Max
Coefficient of Uniformity (D_{60}/D_{10})	102.5		
Fines Ratio	0.76		
Fines to Sand Ratio	0.65		
% < 0.075 mm / % < 0.300 mm Ratio	0.80		
Coefficient of Curvature	0.40		
Grading Coefficient	3.2		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1 & Q252)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Passing 0.425 (%)	83		
Liquid Limit (%)	65		
Plastic Limit (%)	32		
Plasticity Index (%)	**33**		
Weighted Plasticity Index (%)	2752		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**14.0**		
Cracking Crumbling Curling	Cracking & Curling		



Material Test Report

SQS www.sqs.net.au
SOIL QUALITY SERVICES
AMB Geotech SQS Pty Ltd
ABN 36 631 788 620

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Email: Toowoomba@sqs.net.au

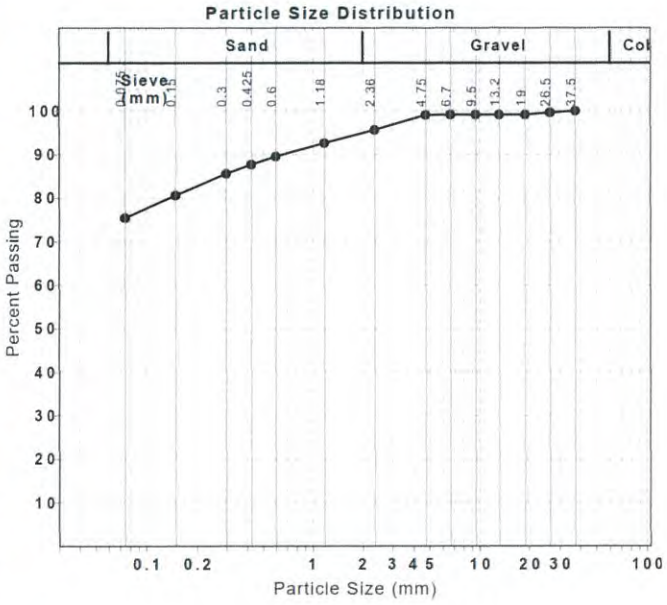
Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: Kevin Kivinen
Laboratory Manager
NATA Accredited Laboratory Number: 2911

Report Number: **T-24-1006-1**
Issue Number: 1
Date Issued: 06/06/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 15349
Sample Number: T-15349B
Date Sampled: 29/05/2024
Dates Tested: 31/05/2024 - 06/06/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **Stage 3 - Sample 2**
Material Source: Onsite Existing / Insitu

Particle Size Distribution (AS1289 3.6.1 & 2.1.1 & Q253)			
Sieve	Passed %	Passing Limits	
37.5 mm	**100**		
26.5 mm	**100**		
19 mm	**99**		
13.2 mm	**99**		
9.5 mm	**99**		
6.7 mm	**99**		
4.75 mm	**99**		
2.36 mm	**96**		
1.18 mm	**93**		
0.6 mm	**90**		
0.425 mm	**88**		
0.3 mm	**86**		
0.15 mm	**81**		
0.075 mm	**75**		



Particle size and shape properties of a soil (Q253)		Min	Max
Coefficient of Uniformity (D_{60}/D_{10})	947.0		
Fines Ratio	0.86		
Fines to Sand Ratio	0.76		
% < 0.075 mm / % < 0.300 mm Ratio	0.86		
Coefficient of Curvature	0.31		
Grading Coefficient	3.9		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1 & Q252)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Passing 0.425 (%)	88		
Liquid Limit (%)	79		
Plastic Limit (%)	30		
Plasticity Index (%)	**49**		
Weighted Plasticity Index (%)	4298		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**17.5**		
Cracking Crumbling Curling	Cracking & Curling		

Material Test Report

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NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: Kevin Kivinen
Laboratory Manager
NATA Accredited Laboratory Number: 2911

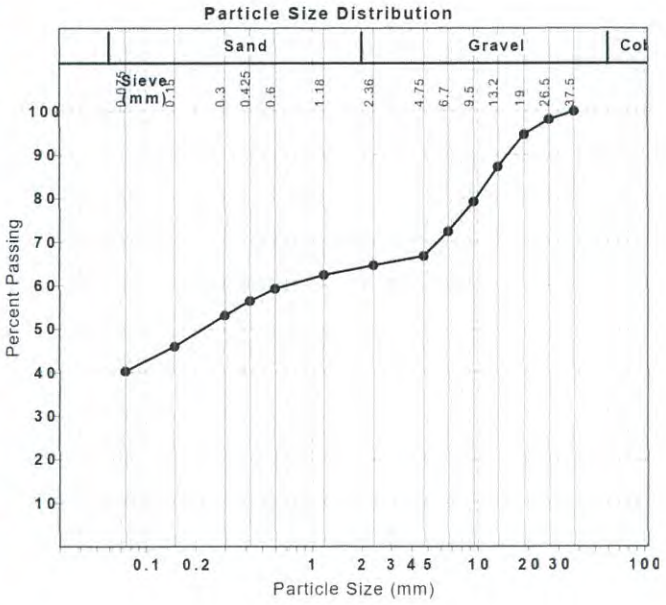
Report Number: T-24-1006-1
Issue Number: 1
Date Issued: 06/06/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 15349
Sample Number: T-15349C
Date Sampled: 29/05/2024
Dates Tested: 31/05/2024 - 06/06/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **Stage 3 - Sample 3**
Material Source: Onsite Existing / Insitu

Particle Size Distribution (AS1289 3.6.1 & 2.1.1 & Q253)			
Sieve	Passed %	Passing Limits	
37.5 mm	**100**		
26.5 mm	**98**		
19 mm	**95**		
13.2 mm	**87**		
9.5 mm	**79**		
6.7 mm	**72**		
4.75 mm	**67**		
2.36 mm	**65**		
1.18 mm	**62**		
0.6 mm	**59**		
0.425 mm	**56**		
0.3 mm	**53**		
0.15 mm	**46**		
0.075 mm	**40**		

Particle size and shape properties of a soil (Q253)		Min	Max
Coefficient of Uniformity (D_{60}/D_{10})	373.7		
Fines Ratio	0.71		
Fines to Sand Ratio			
% < 0.075 mm / % < 0.300 mm Ratio			
Coefficient of Curvature	0.35		
Grading Coefficient	22.4		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1 & Q252)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Passing 0.425 (%)	56		
Liquid Limit (%)	77		
Plastic Limit (%)	35		
Plasticity Index (%)	**42**		
Weighted Plasticity Index (%)	2370		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**16.0**		
Cracking Crumbling Curling	Cracking & Curling		



Material Test Report

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AMB Geotech SQS Pty Ltd
ABN 36 631 788 620

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Email: Neil.hooper@sqs.net.au

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NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Neil Hooper
Senior Technician
NATA Accredited Laboratory Number: 2911

Report Number: T-24-1006-2
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Lot Location*
Date Issued: 13/11/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 17564
Date Sampled: 11/10/2024
Dates Tested: 11/10/2024 - 15/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: COMPACTION STD: 98% of Standard Compaction with +/- 2% OMC (as advised by client)
Location: Botanic Highfields Stage 3 - Lots 333, 332, 331, 330, 329, 328, 327, 326 & 311 General Fill
Material: General Fill
Material Source: Onsite / Cut to Fill

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	T-17564A	T-17564B	T-17564C	T-17564D	T-17564E	T-17564F
Date Tested	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024
Time Tested	09:10	09:15	09:20	09:25	09:30	09:35
Test Request #/Location	Lot 333	Lot 333	Lot 332	Lot 332	Lot 331	Lot 331
Easting	394199.920	394182.540	394195.460	394178.160	394190.140	394170.630
Northing	6963889.320	6963889.070	6963872.530	6963875.380	6963851.150	6963855.730
Elevation (m)	577.220	577.340	578.270	578.470	579.350	579.430
Layer / Reduced Level	General Fill	General Fill	General Fill	General Fill	General Fill	General Fill
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	175	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**	**	**
Oversize (dry basis) %	**	**	**	**	**	**
Curing Hours	5.6	5.1	6.2	23.3	21.0	3.7
Method used to Determine Plasticity	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile
Field Wet Density (FWD) t/m^3	1.91	1.93	1.92	1.91	1.91	1.92
Field Moisture Content %	29.2	32.6	28.3	31.1	35.8	32.0
Field Dry Density t/m^3	1.48	1.45	1.50	1.46	1.41	1.46
Maximum Dry Density t/m^3	1.40	1.37	1.42	1.37	1.32	1.37
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content %	31.0	34.5	30.0	33.0	36.5	33.5
Adjusted Optimum Moisture Content %	**	**	**	**	**	**
Moisture Variation %	2.0	1.5	1.5	2.0	0.5	1.5
Moisture Ratio %	94.0	95.0	94.5	94.0	98.5	95.5
Density Ratio %	**105.5**	**106.5**	**105.5**	**106.5**	**106.0**	**106.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

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NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Neil Hooper
Senior Technician
NATA Accredited Laboratory Number: 2911

Report Number: T-24-1006-2
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Lot Location*
Date Issued: 13/11/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 17564
Date Sampled: 11/10/2024
Dates Tested: 11/10/2024 - 15/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: COMPACTION STD: 98% of Standard Compaction with +/- 2% OMC (as advised by client)
Location: Botanic Highfields Stage 3 - Lots 333, 332, 331, 330, 329, 328, 327, 326 & 311 General Fill
Material: General Fill
Material Source: Onsite / Cut to Fill

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	T-17564G	T-17564H	T-17564I	T-17564J	T-17564K	T-17564L
Date Tested	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024
Time Tested	09:40	09:45	09:50	09:55	10:00	10:05
Test Request #/Location	Lot 330	Lot 330	Lot 329	Lot 329	Lot 328	Lot 328
Easting	394162.830	394170.040	394150.570	394157.390	394139.270	394133.500
Northing	6963844.080	6963833.090	6963836.390	6963824.310	6963826.300	6963822.720
Elevation (m)	580.160	580.430	580.350	580.610	580.890	581.140
Layer / Reduced Level	General Fill	General Fill	General Fill	General Fill	General Fill	General Fill
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	175	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**	**	**
Oversize (dry basis) %	**	**	**	**	**	**
Curing Hours	2.7	6.7	3.1	2.4	4.4	20.6
Method used to Determine Plasticity	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile
Field Wet Density (FWD) t/m^3	1.88	1.90	1.90	1.90	1.90	1.91
Field Moisture Content %	31.8	30.9	30.9	31.6	33.1	35.1
Field Dry Density t/m^3	1.43	1.45	1.45	1.44	1.43	1.41
Maximum Dry Density t/m^3	1.38	1.38	1.40	1.38	1.35	1.32
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content %	34.0	32.5	33.0	33.5	34.5	37.0
Adjusted Optimum Moisture Content %	**	**	**	**	**	**
Moisture Variation %	2.0	2.0	2.0	2.0	1.0	2.0
Moisture Ratio %	93.5	94.5	94.0	94.0	96.5	94.5
Density Ratio %	**103.5**	**105.5**	**104.0**	**104.5**	**106.0**	**107.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

SQS www.sqs.net.au
SOIL QUALITY SERVICES
AMB Geotech SQS Pty Ltd
ABN 36 631 788 620

SQS
Toowoomba Laboratory
15 Rocla Court Toowoomba QLD 4350
Phone: (07) 4633 4875
Email: Neil.hooper@sqs.net.au

Accredited for compliance with ISO/IEC 17025 - Testing

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Neil Hooper
Senior Technician
NATA Accredited Laboratory Number: 2911

Report Number: T-24-1006-2
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Lot Location*
Date Issued: 13/11/2024
Client: Appian Civil Pty Ltd
PO Box 4660, Toowoomba QLD 4350
Contact: Clayton MacDonald
Project Number: T-24-1006
Project Name: Botanic Highfields Stage 3
Work Request: 17564
Date Sampled: 11/10/2024
Dates Tested: 11/10/2024 - 15/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: COMPACTION STD: 98% of Standard Compaction with +/- 2% OMC (as advised by client)
Location: Botanic Highfields Stage 3 - Lots 333, 332, 331, 330, 329, 328, 327, 326 & 311 General Fill
Material: General Fill
Material Source: Onsite / Cut to Fill

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	T-17564M	T-17564N	T-17564O	T-17564P	T-17564Q	T-17564R
Date Tested	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024	11/10/2024
Time Tested	10:10	10:15	10:20	10:25	10:30	10:35
Test Request #/Location	Lot 327	Lot 327	Lot 326	Lot 326	Lot 311	Lot 311
Easting	394119.470	394131.250	394119.980	394137.400	394078.690	394089.800
Northing	6963870.470	6963858.540	6963887.360	6963882.850	6963876.990	6963876.610
Elevation (m)	579.160	579.630	577.900	578.020	577.930	577.990
Layer / Reduced Level	General Fill	General Fill	General Fill	General Fill	General Fill	General Fill
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	175	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**	**	**
Oversize (dry basis) %	**	**	**	**	**	**
Curing Hours	4.3	4.4	20.4	4.1	21.4	4.1
Method used to Determine Plasticity	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile	Visual / Tactile
Field Wet Density (FWD) t/m^3	1.92	1.93	1.92	1.94	1.93	1.94
Field Moisture Content %	32.4	28.1	31.3	35.9	36.9	35.3
Field Dry Density t/m^3	1.45	1.51	1.47	1.43	1.41	1.43
Maximum Dry Density t/m^3	1.37	1.42	1.40	1.40	1.35	1.33
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content %	34.5	30.5	31.5	37.0	37.0	36.5
Adjusted Optimum Moisture Content %	**	**	**	**	**	**
Moisture Variation %	2.0	2.0	0.0	1.5	0.5	1.5
Moisture Ratio %	94.0	93.0	99.5	96.5	99.5	96.0
Density Ratio %	**105.5**	**106.5**	**104.5**	**102.0**	**104.5**	**107.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC