PROPOSED RESIDENTIAL DEVELOPMENT AT LOT 27 ON RP910631 224 CHAMBERS FLAT ROAD, WATERFORD WEST

GENERAL NOTES:

- CONTRACT DOCUMENTATION ALL DRAWINGS UNDER THIS CONTRACT ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATION.
- SURVEY INFORMATION CONTROL SURVEY INFORMATION WILL BE ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR. SETOUT 2. INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
- 3.
- DATUM ALL LEVELS SHOWN ON DRAWINGS ARE A.H.D. (DERIVED).
- EXISTING SURVEY CONTROL STATIONS THE CONTRACTOR IS TO ENSURE THAT SURVEY CONTROL STATIONS ARE NOT DAMAGED OR DISTURBED IN ANY WAY BY CONSTRUCTION ACTIVITIES.
- EXISTING SERVICES 5.
- EXISTING SERVICES LOCATIONS WHERE SHOWN ON THE DRAWINGS ARE INDICATIVE ONLY. THE CONTRACTOR SHALL CONTACT THE RELEVANT AUTHORITIES AND UNDERTAKE A DIAL-BEFORE-YOU-DIG SEARCH TO ASCERTAIN THE EXACT LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORK AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING SERVICES.
- SITE ACCESS THE CONTRACTOR SHALL GAIN ACCESS TO THE SITE AT LOCATIONS APPROVED BY THE SUPERINTENDENT. FREEDOM OF ACCESS TO OTHER WORK AREAS ON THE SITE SHALL BE MAINTAINED AT ALL TIMES.
- PROVISION FOR TRAFFIC PROVISION FOR TRAFFIC ON LOCAL ROADS IS TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND LOCAL AUTHORITY REQUIREMENTS.

WORK BOUNDARIES THE CONTRACTOR IS TO RESTRICT ACTIVITIES TO THOSE AREAS DESIGNATED AS WORK AREAS UNDER THIS CONTRACT. AT NO TIME SHALL THE CONTRACTOR ENTER ADJOINING PROPERTIES OR CONTRACT WORK AREAS ON THE SITE WITHOUT WRITTEN AUTHORISATION FROM THE SUPERINTENDENT.

TOPSOIL STRIPPING ALL TOPSOIL STRIPPED FROM WORK AREAS SHALL BE STOCKPILED FOR LATER RE-SPREADING TO ALL FOOTPATHS, BATTERS AND ALLOTMENTS.

10. EARTHWORKS (GENERAL)

ALL FILL MATERIAL PLACED SHALL BE COMPACTED AND TRIMMED TO FINAL EARTHWORKS LEVELS AND PROFILES SHOWN ON THE CONTRACT DRAWINGS AND TESTED IN ACCORDANCE WITH THE PROJECT SPECIFICATION ALL COMPACTION TESTING UNDER THIS CONTRACT IS TO BE CARRIED OUT TO AS3798 LEVEL 1 STANDARD BY

A NATA-ACCREDITED TESTING AUTHORITY, CERTIFICATION FOR ALL FARTHWORKS CONSTRUCTION AND TESTING IS TO BE PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER QUEENSLAND (RPEQ) ENGAGED BY THE CONTRACTOR.

11.

COMPACTION STANDARDS ALL FILL MATERIAL PLACED UNDER THIS CONTRACT SHALL BE COMPACTED IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND CURRENT COUNCIL STANDARDS.

12. STORMWATER DRAINAGE

OCATION AND ALIGNMENT OF ALL STORMWATER DRAINLINES IS TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT PRIOR TO EXCAVATION. THE DESIGN SURFACE LEVELS OF MANHOLES AND OTHER STRUCTURES ARE TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT ALL DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH COUNCIL STANDARD DRAWINGS AND SPECIFICATION.

13.

SEWERAGE RETICULATION THE DESIGN SURFACE LEVELS OF SEWER MANHOLES ARE TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT PRIOR TO CONSTRUCTION. ALL SEWERAGE RETICULATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE (SEQ CODE) AND ASSOCIATED STANDARD DRAWINGS.

14. WATER RETICULATION

ALL WATER RETICULATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE (SEQ CODE) AND ASSOCIATED STANDARD DRAWINGS.

15. ELECTRICAL RETICULATION

ALIGNMENTS OF ALL CONDUIT CROSSINGS ARE TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT PRIOR TO EXCAVATION. ALL TRENCHING AND CONDUIT WORKS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT CONSULTANT'S DRAWINGS AND ENERGEX SPECIFICATION "UNDERGROUND DISTRIBUTION CONSTRUCTION."

16. TESTING

ALL TESTING SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. TESTING AUTHORITY IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND COUNCIL STANDARDS.

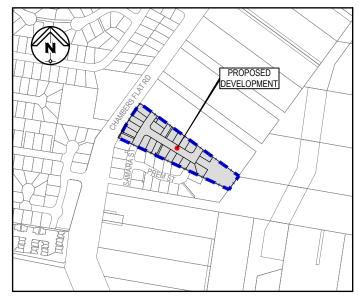
17. <u>"AS CONSTRUCTED" SURVEY</u> "AS CONSTRUCTED" SURVEY SHALL BE CARRIED OUT BY THE PRINCIPAL'S SURVEYOR AS WORK PROCEEDS.

- MAINTENANCE OF SITE CONDITION AT THE COMPLETION OF WORKS THE SITE IS TO BE LEFT IN A CLEAN AND TIDY CONDITION TO THE SATISFACTION OF THE SUPERINTENDENT AND RELEVANT COUNCIL REPRESENTATIVE.
- 19. REFERENCED DOCUMENTS

ALL DRAWINGS TO BE READ IN CONJUNCTION WITH: - LANDSCAPE ARCHITECTS DRAWINGS

- FLECTRICAL DRAWINGS - VEGETATION MANAGEMENT AND TREE CLEARING REQUIREMENTS

ROADWORKS AND CIVIL SERVICES 224 CHAMBERS FLAT RD. **CONTRACT BE210215-01**



LOCALITY PLAN N.T.S.

SURVEY	
PROVIDED BY:	ORION SPATIAL SOLUTIONS P/L
REPORT No:	S-1991-002-C
DATE:	11-10-2023
SYSTEM:	PSM 104067 RL20.646
GEOTECH	
PROVIDED BY:	PACIFIC GEOTECH P/L
REPORT No:	PG-8246
DATE:	21-11-2022
SITE CLASS:	'H2' (IN ACCORDANCE WITH AS2870-2011)

PREPARED FOR GAFSTEV PTY LTD



	DRAWING INDEX							
DRG. No.	DESCRIPTION							
C000	COVER SHEET, LOCALITY PLAN, DRAWING INDEX & NOTES							
C100	OVERALL SITE LAYOUT PLAN							
C200	EARTHWORKS LAYOUT PLAN							
C210	EARTHWORKS SPOT LEVEL PLAN - SHEET 1							
C211	EARTHWORKS SPOT LEVEL PLAN - SHEET 2							
C220	EARTHWORKS SECTIONS - SHEET 1							
C221	EARTHWORKS SECTIONS - SHEET 2							
C230	EARTHWORKS NOTES							
C231	EARTHWORKS DETAILS - SHEET 1							
C232	EARTHWORKS DETAILS - SHEET 2							
C250	EROSION & SEDIMENT CONTROL PLAN - CIVIL WORKS PHASE							
C260	EROSION & SEDIMENT CONTROL NOTES & DETAILS							
C261	SEDIMENT BASIN NOTES & SECTIONS							
C300	ROADWORKS & DRAINAGE LAYOUT PLAN							
C310	GENERAL SETOUT PLAN							
C311	GENERAL SETOUT TABLES							
C320	ROADWORKS LONGITUDINAL & CROSS SECTIONS - SAMARAT ST. EXT.							
C321	ROADWORKS LONGITUDINAL & CROSS SECTIONS - ROAD 01							
C340	ROADWORKS INTERSECTION DETAILS							
C350	ROADWORKS SIGNS & LINEMARKING PLAN							
C351	ROADWORKS SWEPT PATH PLAN							
C360	ROADWORKS NOTES & DETAILS							
C400	STORMWATER CATCHMENT PLAN							
C410	STORMWATER CALCULATION TABLE							
C420	STORMWATER LONGITUDINAL SECTIONS							
C430	STORMWATER NOTES & DETAILS							
C440	STORMWATER STRUCTURE DETAILS							
C450	BIO BASIN LAYOUT PLAN							
C451	FOREBAY LAYOUT PLAN & SECTION							
C452	TYPICAL CONCRETE DRIVEWAY DETAILS							
C460	BASIN SECTIONS							
C461	TYPICAL BASIN DETAILS - SHEET 1							
C462	TYPICAL BASIN DETAILS - SHEET 2							
C463	TYPICAL BASIN NOTES							
C470	SWALE 01 LAYOUT PLAN & LONGITUDINAL SECTION							
C471	SWALE 01 CROSS SECTIONS							
C500	WATER RETICULATION LAYOUT PLAN							
C510	WATER RETICULATION NOTES & DETAILS							
C600	SEWER RETICULATION LAYOUT PLAN							
C610	SEWER LONGITUDINAL SECTIONS - SHEET 1							
C611	SEWER LONGITUDINAL SECTIONS - SHEET 2							
C620	SEWER RETICULATION NOTES & DETAILS							
C900	HAZARD RISK REGISTER - DESIGN RISKS							

PREPARED BY



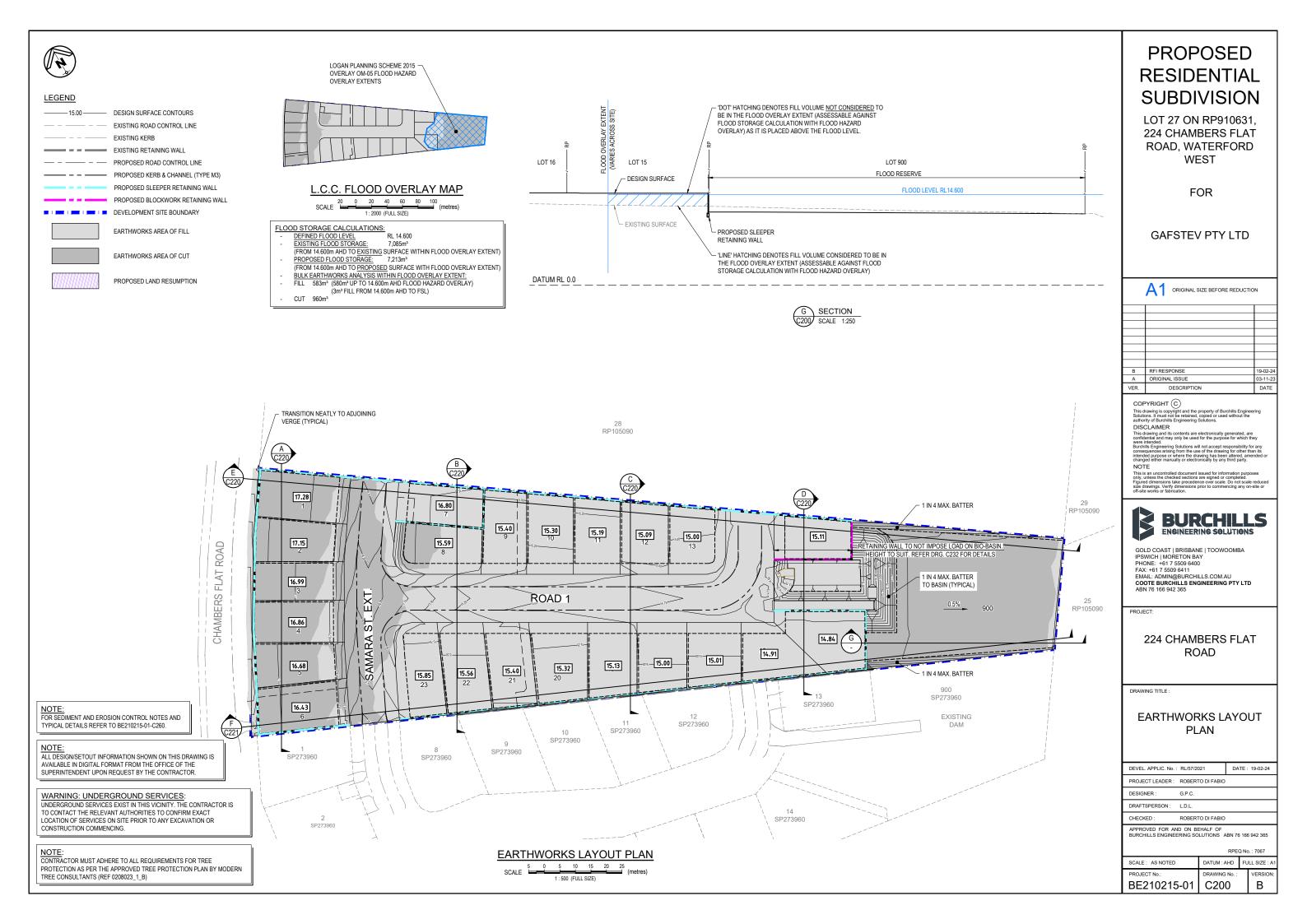
GOLD COAST | BRISBANE | TOOWOOMBA **IPSWICH | MORETON BAY** PHONE: +61 7 5509 6400 FAX: +61 7 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU COOTE BURCHILLS ENGINEERING PTY LTD ABN 76 166 942 365

> ROJECT No BE210215-01 C000 В

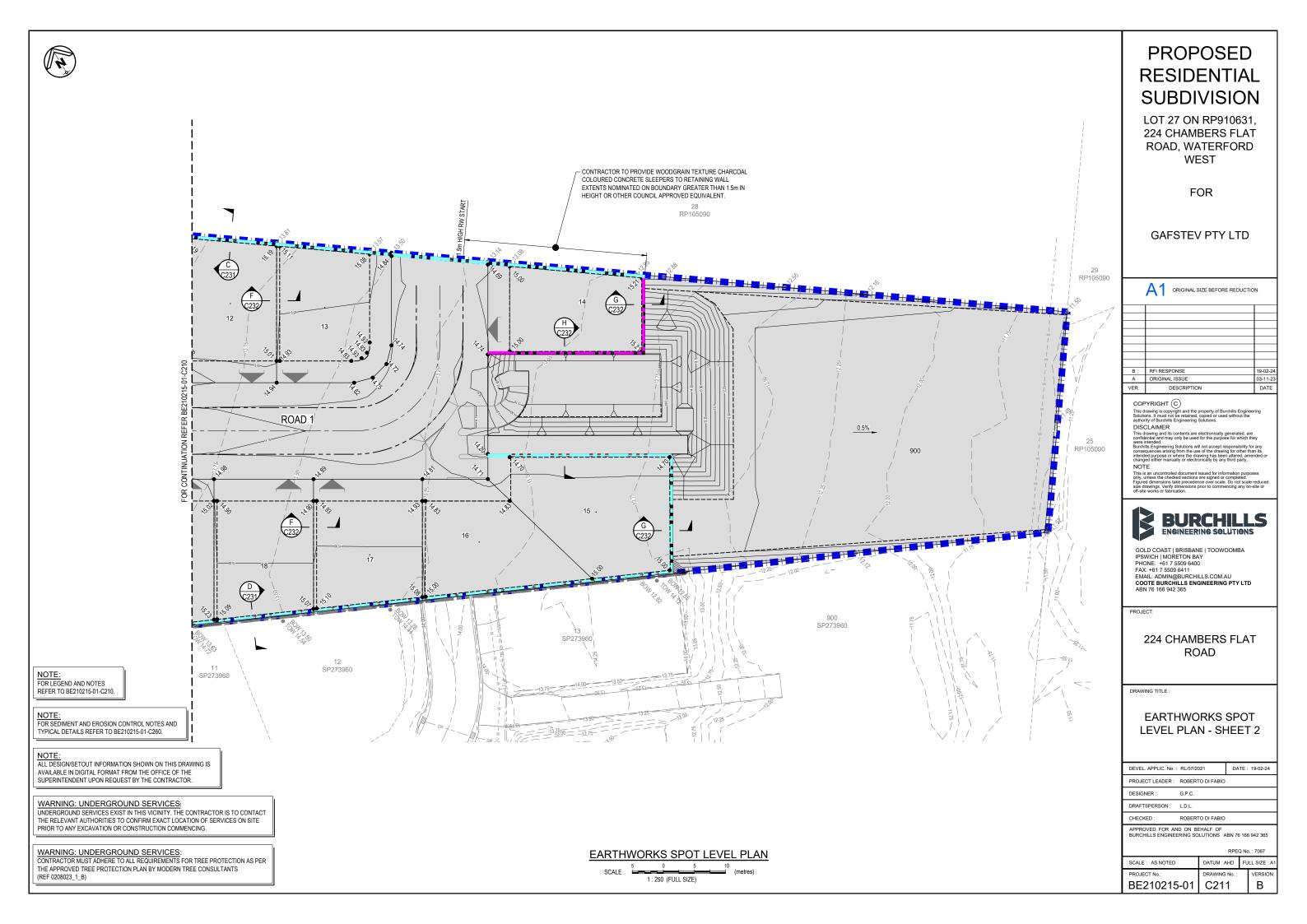
DATE: 19-02-24

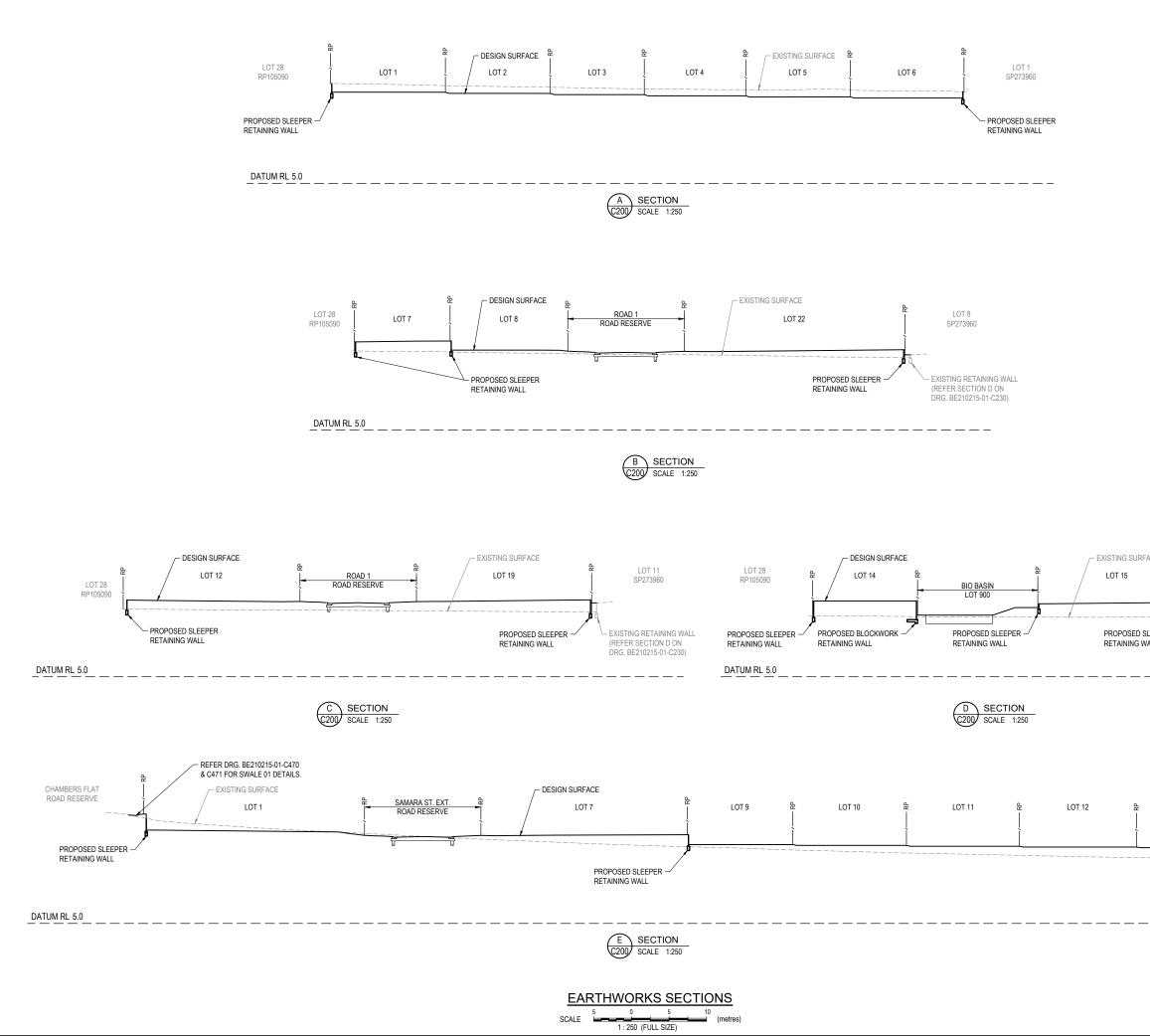


	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD
	A1 ORIGINAL SIZE BEFORE REDUCTION
29	
RP105090	A ORIGINAL ISSUE 20-09-23 VER. DESCRIPTION DATE
∞ 2 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4	COPYRIGHT () This drawing is copyright and the property of Burchills Engineering Solutions. It is the relationed, coperty or used without the authority of Burch telloring Solutions: DECLAIMER This drawing and its contents are electronically generated, are correcting and the contents are electronically generated, are consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party. NOTE This is an uncontrolled document issued for information purposes only, unless the checked actions are signed or completed. Figured usings: Verify dis precedence over scale. Do not scale reduced of -site works or fabrication.
	BURCHILLS COLD COAST BRISBANE TOOWOOMBA ISWICH MORETON BAY PHONE: +017 5509 6401 EXA:: +617 5509 6411 EXA:: +617 5509 6411 EXA:: +ADMIN@BURCHILLS.COM.AU COTE BURCHILLS ENGINEERING PTY LTD ABN 76 166 942 365
	PROJECT:
	PRELIMINARY CIVIL ENGINEERING DESIGN
	DRAWING TITLE :
	OVERALL LAYOUT PLAN
	DEVEL. APPLIC. No. : RL/57/2021 DATE : 20-09-23 PROJECT LEADER : ROBERTO DI FABIO
	DESIGNER : G.P.C.
	DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO
	APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
	RPEQ No. : 7067 SCALE : AS NOTED DATUM : AHD FULL SIZE : A1
	PROJECT NO.: DRAWING NO.: VERSION: BE210215-01 C100 A
	DE210210-01 0100 A

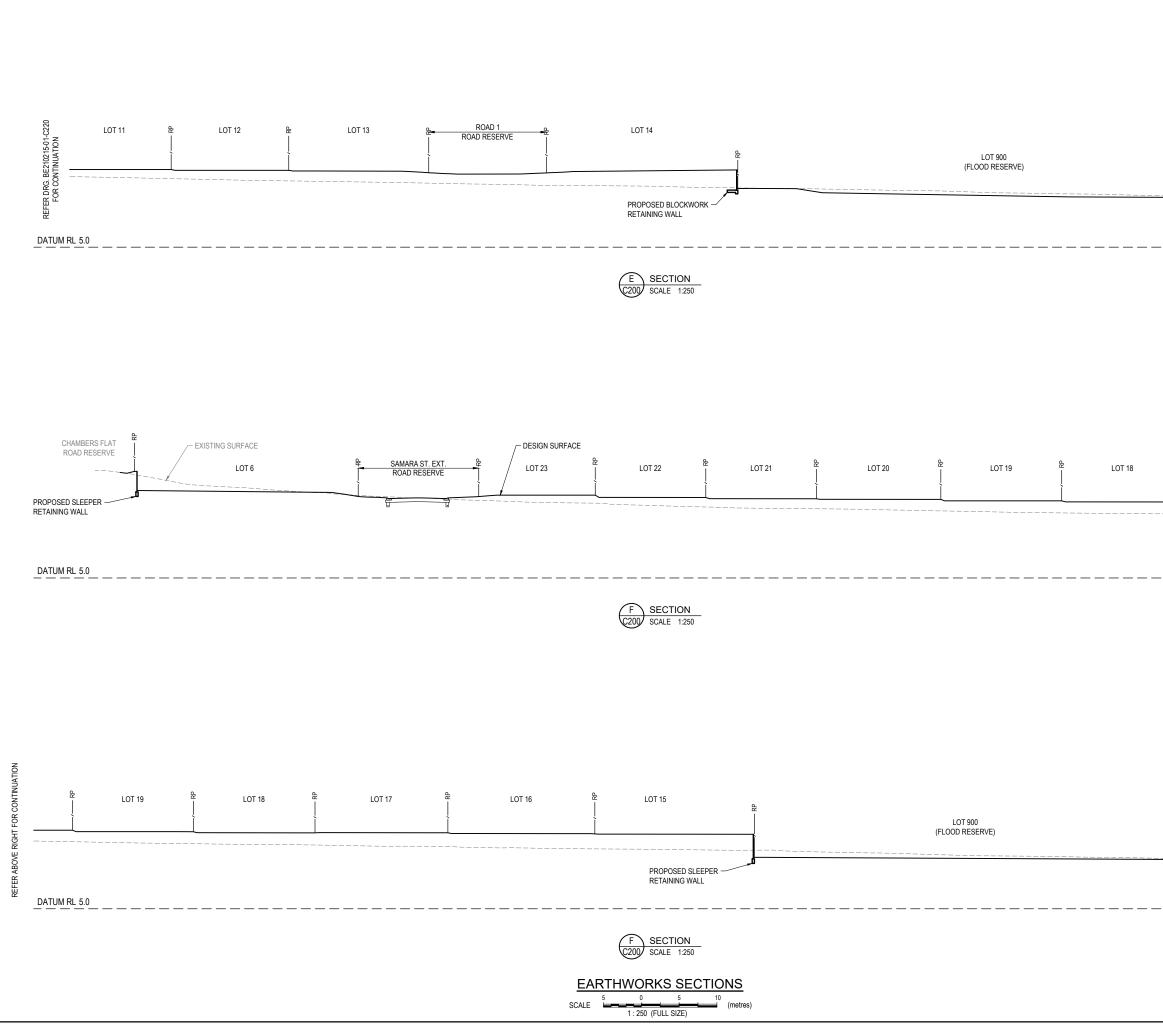








	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR
	GAFSTEV PTY LTD
	A1 ORIGINAL SIZE BEFORE REDUCTION
	B RFI RESPONSE 19-02-24
	A ORIGINAL ISSUE 03-11-23 VER. DESCRIPTION DATE
ACE	This drawing is copyright and the property of Burchills Engineering Solutions. It must not be retained, copied or used without the authority of Burchills Engineering Solutions. DISCLAIMER This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. Burchills Engineering Solutions will not a copyr responsibility for any Burchills Engineering Golduions will not a copyr responsibility for any burchills Engineering Golduions will not a copyr responsibility for any burchills Engineering Golduions will not a copyr responsibility for any changed either manually or electronically by any third party. NOTE! This is an uncontrolled document issued for information purposes only, unless the chacked sections are signed or completed. Figured dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.
LOT 13 SP273960 EEEPER EXISTING RETAINING WALL (REFER SECTION D ON DRG. BE210215-01-C230)	GOLD COAST BRISBANE TOOWOOMBA IPSWICH MORETON BAY PHONE: 1617 7509 6400 FAX: +617 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU CODTE BURCHILLS ENGINEERING PTY LTD
	ABN 76 166 942 365
	224 CHAMBERS FLAT ROAD
REFER DRG. BE210215-01-C221 FOR CONTINUATION	DRAWING TITLE: EARTHWORKS SECTIONS - SHEET 1
EFER DF FOR	DEVEL. APPLIC. No. : RL/57/2021 DATE : 19-02-24
R.	PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C.
	DRAFTSPERSON : L.D.L.
	CHECKED : ROBERTO DI FABIO
	BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365 RPEQ No. : 7067
	SCALE : AS NOTED DATUM : AHD FULL SIZE : A1 PROJECT No.: DRAWING No.: VERSION:
	PROJECT No.: DRAWING No.: VERSION: BE210215-01 C220 B



E LOT 25 RP105090	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD
LT TOT IN TAKENTIAL T	<form></form>
د LOT 25 RP105090	PROJECT: 224 CHAMBERS FLAT ROAD DRAWING TITLE : EARTHWORKS SECTIONS - SHEET 2 DEVEL. APPLIC. No. : RL/57/2021 DATE : 19-02-24 PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C. DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO DESIGNER : G.P.C. DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365 RPEQ NO. : 7067 SCALE : AS NOTED DATUM : AHD FULL SIZE : A1 PROJECT NO.: BE2110215-01 C221 B

GENERAL EARTHWORKS NOTES:

- ALL EARTHWORKS CONSTRUCTION UNDER THIS CONTRACT IS TO BE PERFORMED STRICTLY IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED BY THE PRINCIPAL'S GEOTECHNICAL CONSULTANT.
- ALL COMPACTION TESTING UNDER THIS CONTRACT IS TO BE CARRIED OUT TO AS3798 LEVEL 1 STANDARD BY A NATA-ACCREDITED TESTING AUTHORITY. CERTIFICATION FOR ALL EARTHWORKS CONSTRUCTION AND TESTING IS TO BE PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER QUEENSLAND (RPEQ) ENGAGED BY THE CONTRACTOR.
- 3. ALL DESIGN LEVELS SHOWN ON THE CONTRACT DRAWINGS ARE FINISHED SURFACE LEVELS FOLLOWING TOPSOIL REPLACEMENT.
- 4. ALL STRUCTURAL FILL MATERIAL PLACED SHALL BE COMPACTED TO THE FOLLOWING MINIMUM DENSITY IN ACCORDANCE WITH THE SPECIFICATION AND THE GEOTECHNICAL REPORT:
- a) 95% DENSITY RATIO FOR GENERAL STRUCTURAL FILL (COHESIVE MATERIAL)
 b) 98% DENSITY RATIO FOR THE TOP 300mm DEPTH BELOW PAVEMENT SUBGRADE LEVEL (COHESIVE MATERIAL)
- 5. FILL MATERIAL USED IN WETLAND BATTERS IS TO BE STIFF TO HARD CLAYS OR OTHER SUITABLE MATERIAL AS DIRECTED BY GEOTECHNICAL ENGINEER.
- 6. ALL EARTHWORKS BATTERS STEEPER THAN 1 IN 4 ARE TO BE LANDSCAPED IN ACCORDANCE WITH LANDSCAPE ARCHITECTS PLANS.
- EXISTING DAMS ARE TO BE DE-WATERED AND CLEANED-OUT. ALL UNSUITABLE OR SATURATED MATERIAL IS TO BE REMOVED AND REPLACED WITH SELECTED ON-SITE STRUCTURAL FILL MATERIAL AND COMPACTED AS SPECIFIED.
- PROVIDE CONDITION SURVEY OF ADJACENT RESIDENTIAL BUILDINGS FOR ALL PROPERTIES LOCATED WITHIN NOMINAL 100m OF EARTHWORKS OPERATIONS. CONDITION SURVEY TO BE UNDERTAKEN BY QUALIFIED PERSONNEL WITH BUILDING EXPERIENCE.

TYPICAL EARTHWORKS SEQUENCE NOTES:

- 1. CONSTRUCT DIVERSION DRAINS AS DIRECTED TO DIVERT SITE RUNOFF AWAY FROM CONSTRUCTION AREAS. ESTABLISH DE-WATERING CONTROLS TO ENSURE THAT THE CONSTRUCTION AREAS REMAIN FREE OF SURFACE WATER AND PONDING.
- FOLLOWING COMPLETION OF CLEARING OPERATIONS AND REMOVAL OF RESIDUAL VEGETATION AND DEBRIS, STRIP TOPSOIL TO A NOMINAL 150mm DEPTH AND PLACE IN TEMPORARY STOCKPILES IN LOCATIONS APPROVED BY THE SUPERINTENDENT.
- 3. PROOF-ROLL AND COMPACT THE PROPOSED FILL AREAS FOLLOWING TOPSOIL STRIPPING, TO THE SATISFACTION OF THE SUPERINTENDENT.
- ANY STRIPPED AREAS WHICH DEMONSTRATE EXCESSIVE MOVEMENT OR DO NOT IMPROVE SUFFICIENTLY UNDER PROOF-ROLLING ARE TO BE REMOVED, REPLACED WITH APPROVED SITE MATERIAL AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- ANY UNSUITABLE MATERIAL ENCOUNTERED, INCLUDING SILTY MATERIAL AND UN-CONTROLLED FILL IS TO BE EXCAVATED TO THE EXTENTS AND DEPTHS NOMINATED BY THE PRINCIPAL'S GEOTECHNICAL CONSULTANT, REMOVED TO NON-STRUCTURAL FILL AREAS OR TAKEN OFF-SITE AS DIRECTED AND REPLACED WITH APPROVED, COMPACTED FILL MATERIAL.
- PLACE STRUCTURAL FILL MATERIAL FROM SITE EXCAVATIONS TO NOMINATED SITE FILL AREAS, INCLUDING BENCHING AND COMPACTION IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND TRIMMING AND FINAL PROFILING OF BATTERS.
- 7. PROVIDE GRASSING TO TOPSOILED AREAS AS DIRECTED.

RETAINING WALL NOTES:

- RETAINING WALLS, FOOTINGS, DRAINAGE, BACKFILL AND CONNECTION OF AGGREGATE DRAINS TO STORMWATER DRAINAGE SYSTEM TO BE DESIGNED AND CONSTRUCTED BY THE CONTRACTOR AND CERTIFIED BY AN SUITABLY QUALIFIED RPEQ.
- 2. THESE DRAWINGS IDENTIFY SURFACE PROFILES, RETAINING WALL LOCATIONS, AND SETOUT INFORMATION ONLY. REFER TO CONTRACTOR SUPPLIED DRAWINGS FOR RPEQ STRUCTURAL DETAILS, WALL MATERIALS AND COMPACTION SPECIFICATIONS AND CONSTRUCTIBILITY INFORMATION.
- RETAINING WALL DESIGN ENGINEER TO PROVIDE RPEQ FORM 15 STRUCTURAL CERTIFICATE INCLUDING GEOTECHNICAL GLOBAL STABILITY CERTIFICATION BY GEOTECHNICAL ENGINEER. WALL DESIGN TO ASSUME SURCHARGE LOADING BEHIND WALL. DESIGN TO BE IN ACCORDANCE WITH AS4678 INCLUDING ALL REQUIRED DESIGN LOAD CASES AND COMBINATIONS.
- RETAINING WALLS TO BE DESIGNED TO CONSIDER ALL LOADS INCLUDING CONSTRUCTION LOADS AND OPERATIONAL LOADS.
- ANY GEOTECHINCAL INFORMATION PROVIDED BY THE PRINCIPAL OR THE SUPERINTENDENT SHALL BE FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR AND THE RETAINING WALL DESIGN ENGINEER SHOULD SATISFY THEMSELVES OF THE DESIGN SOIL PARAMETERS AND UNDERTAKE AND ADDITIONAL GEOTECHNICAL INVESTIGATION DEEMED NECESSARY BY THE DESIGN ENGINEER.
- 6. THE CONTRACTOR SHALL ENSURE THAT ANY CONFLICT BETWEEN THESE PROJECT DRAWINGS AND THE RETAINING WALL DRAWINGS PREPARED BY THE RETAINING WALL DESIGN ENGINEER IS RESOLVED WITH THE SUPERINTENDENT PRIOR TO CONSTRUCTION COMMENCING.
- A COPY OF THE RETAINING WALL DESIGN DRAWINGS, INCLUDING CONNECTION OF AGGREGATE DRAINS TO THE STORMWATER DRAINAGE SYSTEM, DESIGN PARAMETERS AND CERTIFICATION BE PROVIDED TO THE SUPERINTENDENT AT THE PRE-START MEETING PRIOR TO CONSTRUCTION COMMENCING.
- 8. ANY RETAINING WALL AND BATTER EXCEEDING THE HEIGHT OF 1.5m, THE CONTRACTOR SHALL UNDERTAKE A THIRD PARTY RPEQ REVIEW OF THE PROPOSED DESIGN.

NOTE: RETAINING WALL DESIGN, CONSTRUCTION, SUPERVISION AND CERTIFICATION TO BE PROVIDED BY SPECIALIST SUB-CONTRACTOR.

ROCK PROTECTION:

- 1. ALL ROCK PROTECTION ADJACENT TO SANDSTONE BOULDER WALL IS TO BE HAND PLACED.
- ROCK PROTECTION IS TO COMPRISE OF IGNEOUS OR METAMORPHIC ROCK WHICH IS DENSE, SOUND AND FREE OF ALL DEFECTS OF ANY KIND WHICH WOULD RESULT IN BREAKDOWN OF THE ROCK IN THE MARINE ENVIRONMENT.
- ALL ROCK PROTECTION IS TO BE PLACED ON A SINGLE LAYER OF APPROVED GEOTEXTILE. ("TEXCEL 400R" OR EQUIVALENT) MINIMUM LAPS TO GEOTEXTILE TO BE 500mm.

EARTHWORKS:

(a)

(b)

1. ALL FOUNDATION MATERIAL BELOW SANDSTONE BOULDER PERIMETER WALLS IS TO BE COMPACTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND AS SPECIFIED:

98% STANDARD DENSITY RATIO

FOR COHESIVE MATERIAL

80% DENSITY INDEX FOR

NON-COHESIVE MATERIAL

ED IN ACCORDANCE WITH THE FOLI
TOP 300mm (MIN.) OF MATERIAL
BELOW BOULDER WALLS AND
ROCK PROTECTION

- ALL FOUNDATION MATERIAL :
- ALL FOUNDATION MATERIAL : 95% STANDARD DENSITY RATIO BELOW THE TOP 300mm AND FOR COHESIVE MATERIAL REMAINING STRUCTURAL FILL : 70% DENSITY INDEX FOR NON-COHESIVE MATERIAL
- 2. ALL BACKFILL TO SANDSTONE BOULDER PERIMETER WALLS IS TO BE HAND-COMPACTED
- USING THE CLEANEST, FREE-DRAINING GRANULAR MATERIAL AVAILABLE ON SITE.\
 THE CONTRACTOR IS TO ENSURE THAT NO HEAVY MACHINERY IS ALLOWED TO OPERATE WITHIN 2.0 METRES OF THE BACK OF THE CONSTRUCTED STANDSTONE BOULDER PERIMETER WALLS.

ROCK PROTECTION SPECIFICATION 300mm THICKNESS ROCK LAYER GRADING OF STONE (BASED ON REQUIRED D75 WEIGHT)												
RANGE D100-95 D90-80 I DESIGN D100 D85 I WEIGHT 20kg 10kg I				D80-70 D75 7.5kg 155mm	D55-45 D50 4.5kg 130mm	D20-10 D15 1.5kg 90mm	D5-0 D0 0.25kg 50mm					

STONE SIZES ARE BASED ON SPECIFIC WEIGHT OF STONE 2600kg PER CUBIC METRE. D100, D85, D75, etc. ARE THE SIZES OF SIEVE OR SCREEN OPENINGS PASSING 100%, 85%, 75%, etc. OF MATERIAL BY WEIGHT. D50 IS THE AVERAGE (NOMINAL) SIZE.

WEIGHT - NOMINAL UNIT ARMOUR MASS. SIZE - EQUIVALENT SPHERICAL DIAMETER AS DESCRIBED IN HUDSON'S EQUATION.

BLOCKWORK RETAINING WALL CONSTRUCTION NOTES:

- 1. PLACE BASE MATERIALS TO THE DEPTHS AND WIDTHS SHOWN ON THE DRAWINGS. EXTEND THE LEVELLING PAD LATERALLY AT LEAST 150MM IN FRONT AND BEHIND THE LOWERMOST UNIT.
- 2. PREPARE BASE MATERIALS TO ENSURE COMPLETE CONTACT WITH THE RETAINING WALL UNITS. GAPS ARE NOT ALLOWED.
- 3. PLACE FIRST COURSE OF CONCRETE WALL UNITS SIDE-BY-SIDE ON THE PREPARED BASE MATERIAL. GAPS ARE NOT ALLOWED.
- 4. CHECK UNITS FOR LEVEL AND ALIGNMENT. MAINTAIN THE SAME ELEVATION AT THE TOP OF EACH UNIT WITHIN EACH SECTION OF THE BASE COURSE
- 5. ENSURE THE NO FINES CONCRETE IS INSTALLED COURSE-BY-COURSE WITH THE BLOCKS TO ENSURE ALL VOIDS ARE FILLED AND ADEQUATE BOND IS ACHIEVED.
- 6. INSTALL DRAINAGE PIPE AT THE LOWEST POSSIBLE ELEVATION AND MAINTAIN A 2% FALL TO DISCHARGE AWAY FROM WALL FOUNDATION AND AT MAXIMUM 20m CENTRES.
- 7. REMOVE EXCESS NO FINES CONCRETE FROM TOP OF UNITS PRIOR TO INSTALLING THE FOLLOWING COURSE.
- 8. CHECK EACH COURSE FOR LEVEL, ALIGNMENT AND SETBACK PRIOR TO PROCEEDING WITH EACH ADDITIONAL COURSE.
- 9. IT IS NOT RECOMMENDED TO INSTALL MORE THAN 600mm (3 COURSES) OF NO FINES CONCRETE BEFORE ALLOWING 'FIRST SET'
- 10. FIX THE CAPPING UNIT IN PLACE USING AN EXTERIOR GRADE MASONRY ADHESIVE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS

11. WALL CONSTRUCTION TOLERANCES

- VERTICAL ALIGNMENT : PLUS OR MINUS 25mm OVER ANY 3m DISTANCE, WITH A
 MAXIMUM DIFFERENTIAL OF 50mm OVER THE LENGTH OF THE WALL.
 HORIZONTAL LOCATION CONTROL FROM GRADING PLAN
- STRAIGHT LINES : PLUS OR MINUS 25mm OVER ANY 3m DISTANCE, WITH A MAXIMUM DIFFERENTIAL OF 50mm OVER THE LENGTH OF THE WALL.
 CORNER AND RADIUS LOCATIONS : PLUS OR MINUS 600mm
 CURVES AND SERPENTINE RADIU : PLUS OR MINUS 600mm
- 11.3. IMMEDIATE POST CONSTRUCTION WALL BATTER : WITHIN 2 DEGREES OF THE DESIGN BATTER OF THE CONCRETE RETAINING WALL UNITS.
- 11.4. BULGING : PLUS OR MINUS 25mm OVER ANY 3m DISTANCE.

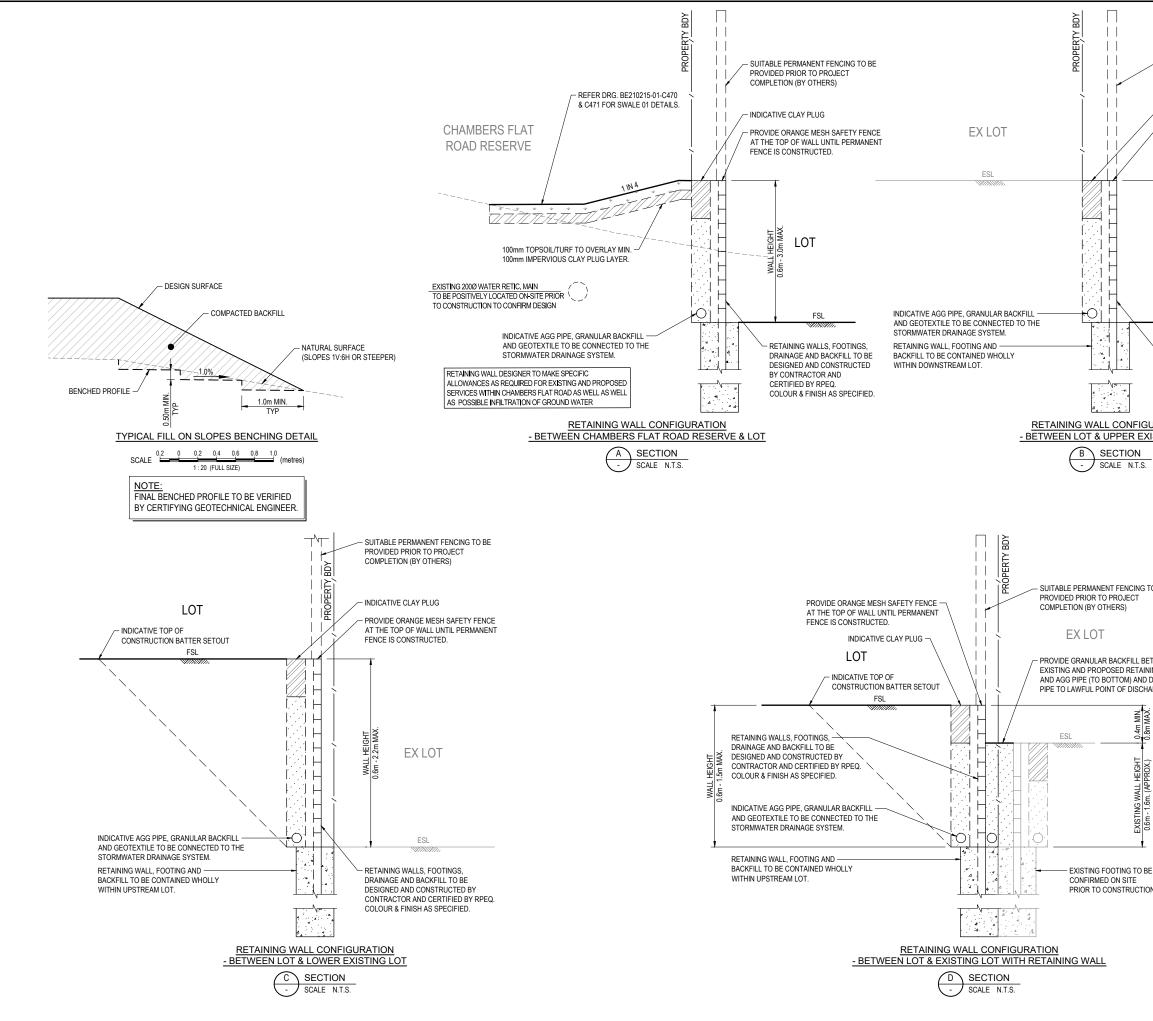
BLOCKWORK RETAINING WALL MATERIAL NOTES:

- 1. RETAINING WALL UNITS AND CAPS : ADBRI MASONRY 'VERTICA' NO SUBSTITUTIONS
- 2. CONCRETE LEVELLING PAD : UNREINFORCED CONCRETE WITH 25MPA MINIMUM STRENGTH.
- DRAINAGE PIPE : 100mm PERFORATED OR SLOTTED PVC OR CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH AS/NZS 2566.
- 4. NO FINES CONCRETE (NFC) : CLEAN 20mm AGGREGATE WITH A CEMENT CONTENT BETWEEN 10% - 14% BY WEIGHT. WATER CONTENT SHALL BE SUCH THAT THE CEMENT SLURRY EVENLY COATS THE AGGREGATE AND RETAINS A WET/GLOSSY APPEARANCE WITHOUT EXCESS SLURRY RUNNING OFF. THIS IS TYPICALLY AROUND 40 LITRES PER 100kg OF CEMENT.

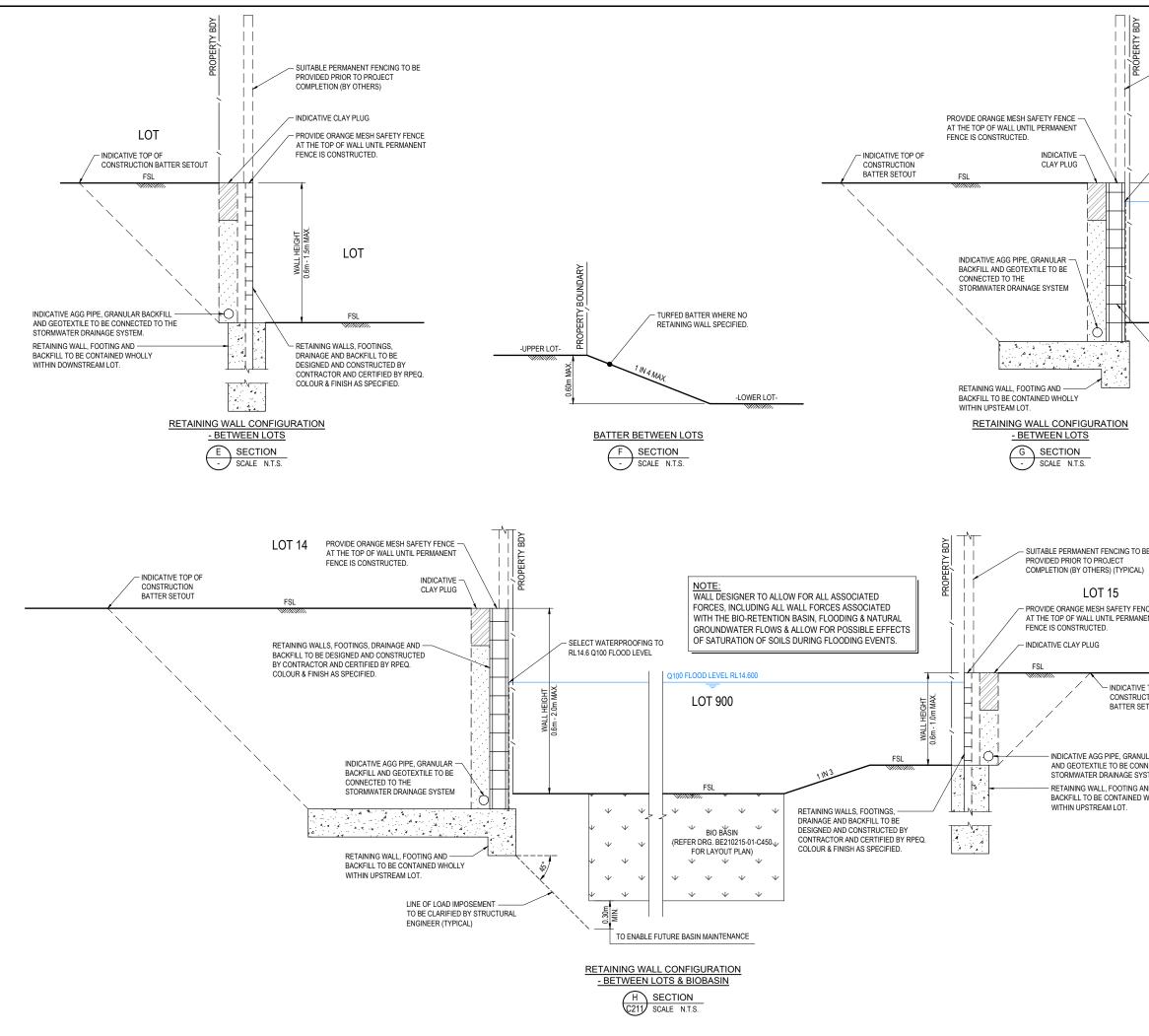
BLOCKWORK RETAINING WALL GENERAL NOTES:

- 1. EXCAVATION SUPPORT, INCLUDING THE STABILITY OF THE EXCAVATION AND ITS INFLUENCE ON ADJACENT PROPERTIES AND STRUCTURES IS THE RESPONSIBILITY OF THE CLIENT.
- NO EXCAVATIONS SHALL BE MADE WITHIN THE 'ZONE OF INFLUENCE EXTENDING 45° DOWN FROM THE BASE OF THE WALL.
- 3. LOCATION OF THE RETAINING WALL IN RELATION TO PROPERTY LINES, UTILITY EASEMENTS, WATERSHED EASEMENTS, OR ANY OTHER TYPE OF EASEMENTS ARE THE RESPONSIBILITY OF THE OWNER. THE ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE LOCATION OF THE SEGMENTAL RETAINING WALLS, OR IF CONSTRUCTION OF THE PROPOSED SEGMENTAL RETAINING WALLS ENCROACHES ANY PROPERTY LINES OR EASEMENTS.
- 4. SET-OUT OF ALL SEGMENTAL RETAINING WALLS MUST TAKE INTO ACCOUNT THE DESIGN BATTER INDICATED ON THE ENCLOSED PLANS AND DETAILS.
- THE ENCLOSED SEGMENTAL RETAINING WALLS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS4678.
- NO CONSIDERATION OF GLOBAL STABILITY (i.e. LAND-SLIPS) HAS BEEN MADE IN THESE DESIGNS. IT IS THE RESPONSIBILITY OF THE OWNER OR OWNERS REPRESENTATIVE TO ENGAGE A GEOTECHNICAL CONSULTANT TO DETERMINE THE SUSCEPTIBILITY OF THE PROPOSED SITE TO SLOPE INSTABILITY.

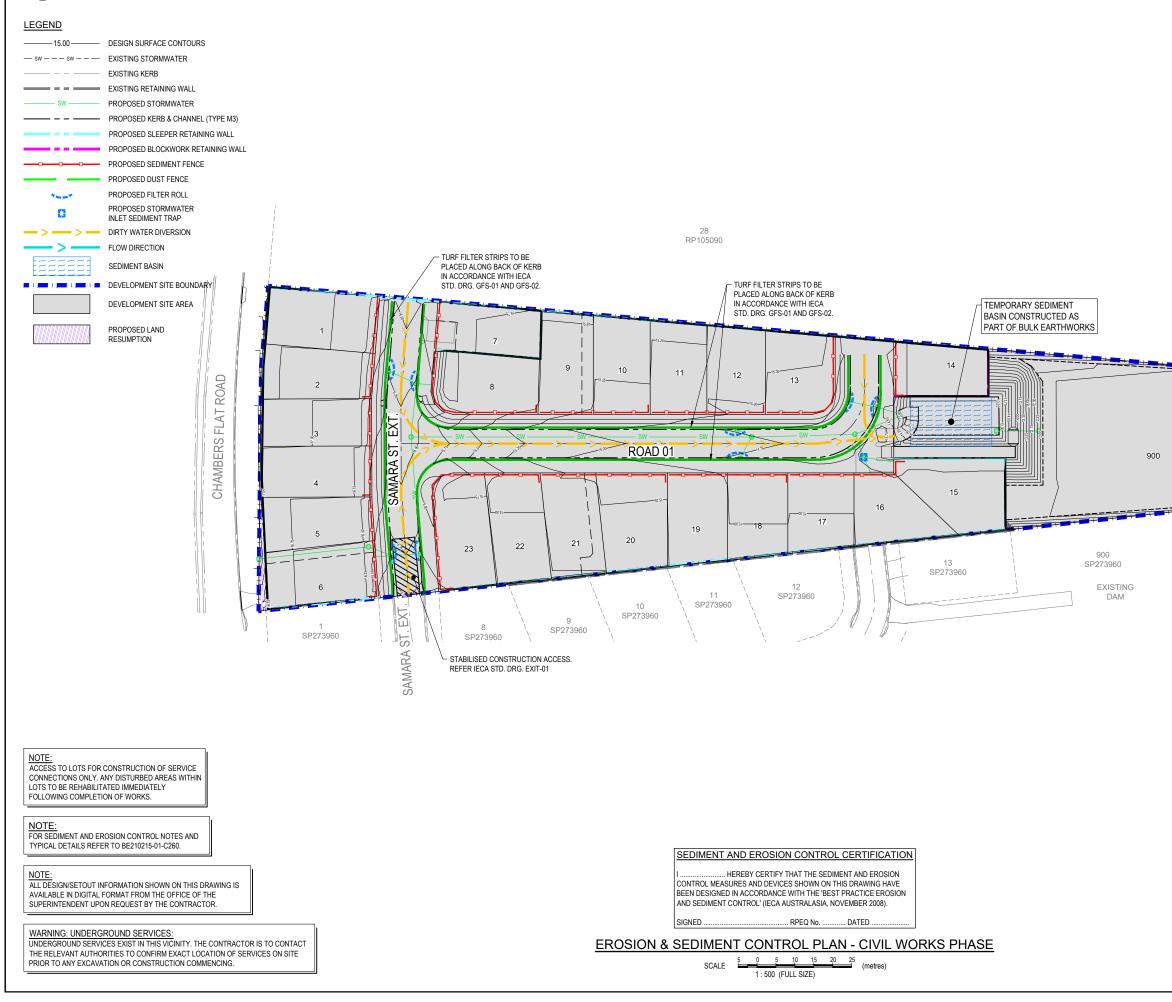
PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD													
A1 ORIGINAL SIZE BEFORE REDUCTION													
В	RFI RESPONSE		19-02-24										
A	ORIGINAL ISSUE		03-11-23										
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	224 CHAM RC	BERS FLA)AD	Т										
DRAW	/ING TITLE :												
DRAWING TITLE : EARTHWORKS NOTES													
DEVEL	APPLIC. No. : RL/57/2	021 DATE :	19-02-24										
PROJE	CT LEADER : ROBER	TO DI FABIO											
DESIG	NER : G.P.C.												
	SPERSON : L.D.L.												
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		PPEON	. 7067										
	AS NOTES	RPEQ No											
	CT No.:		ILL SIZE : A1										
			VERSION:										
RF:	210215-01	C230	В										



SUITABLE PERMANENT FENCING TO BE PROVIDED PRIOR TO PROJECT COMPLETION (BY OTHERS) INDICATIVE CLAY PLUG PROVIDE ORANGE MESH SAFETY FENCE AT THE TOP OF WALL UNTIL PERMANENT FENCE IS CONSTRUCTED.	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST						
	F	OR					
WALL HEIGHT 0.6m - 1.5m MAX.	GAFSTE\	/ PTY LTD					
FSL		SIZE BEFORE REDUCT	ION				
RETAINING WALLS, FOOTINGS, DRAINAGE AND BACKFILL TO BE DESIGNED AND CONSTRUCTED BY CONTRACTOR AND CERTIFIED BY RPEQ. COLOUR & FINISH AS SPECIFIED.							
GURATION	B RFI RESPONSE A ORIGINAL ISSUE		19-02-24 03-11-23				
<u>XISTING LOT</u>	VER. DESCRIPTIO COPYRIGHT () This drawing is copyright and the Solutions. It must not be retained, authority of Burchills Engineering: DISCLAIMER This drawing and its contents are confidential and may only be used were intended. Burchills Engineerising from the us intended purpose or where the dri changed either manually or electr NOTE This is an uncontrolled document nyl, unless the checked sections Figured dimensions take preceden stor drawings. Verify dimensions j off-site works or fabrication.	property of Burchills Engin copied or used without the Solutions. electronically generated, a for the purpose for which in the cocept responsibility of the drawing for other awing has been altered, an onically by any third party. issued for information purp are signed or completed. to not sec	e they for any han its nended or poses le reduced				
TO BE ETWEEN NING WALLS DISCHARGE HARGE.	GOLD COAST BRISBAN IPSWICH MORETON BA PHONE: 4617 5509 6401 FAX: +617 5509 6411 COTE BURCHILLS ENC ABN 76 166 942 365	NY D LLS.COM.AU					
UBIT - 160: LAP-FOX, USIN MAX (REFER DRG BE210215-01-C210 & C220 TOP & BOTTOM OF WALL LEVELS)		BERS FLA DAD	т				
9 #	EARTHWOR	KS DETAII EET 1	_S -				
	DEVEL. APPLIC. No. : RL/57/20 PROJECT LEADER : ROBERT		19-02-24				
	DESIGNER : G.P.C.						
	DRAFTSPERSON : L.D.L.						
	CHECKED : ROBERT APPROVED FOR AND ON BE BURCHILLS ENGINEERING SO		942 365				
		RPEQ No					
	SCALE : AS NOTED	DATUM : AHD FU	LL SIZE : A1				
	PROJECT No.: BE210215-01	DRAWING No. : C231	VERSION: B				



SUITABLE PERMANENT FENCING TO BE PROVIDED PRIOR TO PROJECT COMPLETION (BY OTHERS)	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD						
- SELECT WATERPROOFING TO RL14.6 Q100 FLOOD LEVEL	WE	EST					
Q100 FLOOD LEVEL RL14.600	F	OR					
	GAFSTE\	/ PTY LTC)				
FSL		SIZE BEFORE REDUC	TION				
RETAINING WALLS, FOOTINGS, DRAINAGE AND BACKFILL TO BE DESIGNED AND CONSTRUCTED BY CONTRACTOR AND CERTIFIED BY RPEQ. COLOUR & FINISH AS SPECIFIED.							
	B RFI RESPONSE A ORIGINAL ISSUE VER. DESCRIPTIO	N	19-02-24 03-11-23 DATE				
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ND WHOLLY	DRAWING TITLE : EARTHWORI SHE	KS DETAI ET 2	LS -				
	DEVEL. APPLIC. No. : RL/57/20 PROJECT LEADER : ROBERT		: 19-02-24				
	DESIGNER : G.P.C. DRAFTSPERSON : L.D.L.						
	CHECKED : ROBERT						
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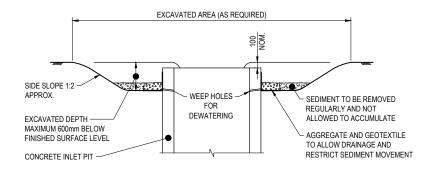


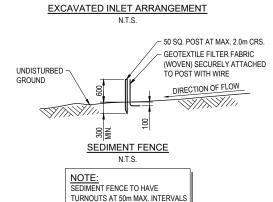
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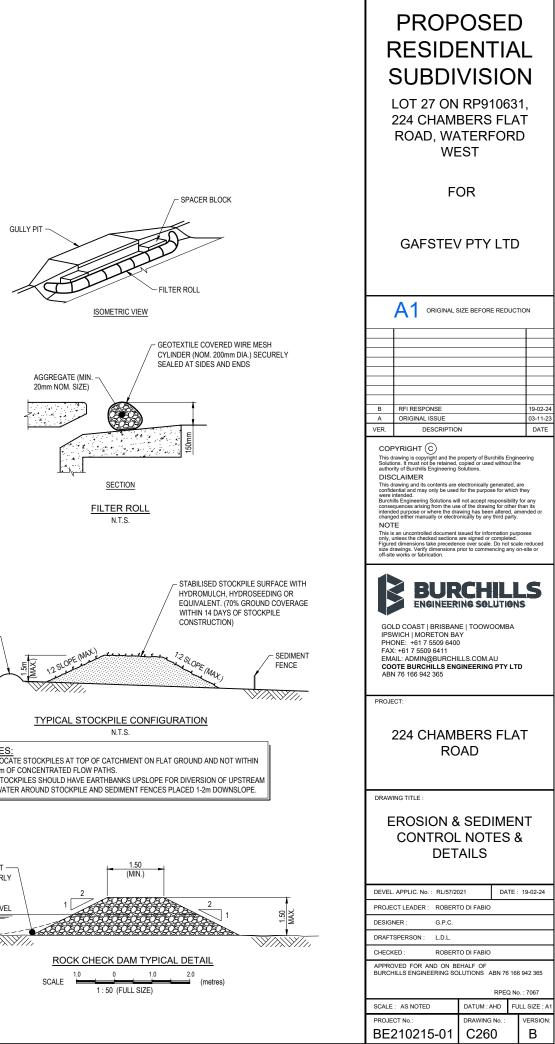
	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST
	FOR GAFSTEV PTY LTD
	A1 ORIGINAL SIZE BEFORE REDUCTION
29 RP105090	A ORIGINAL ISSUE 20-09-23 VER. DESCRIPTION DATE COPYRIGHT ©
25 RP105090	This drawing is copyright and the property of Burchills Engineering Solutions. It must not be retained, copied or used without the authority of Burchills Engineering Solutions. DISCLAMER This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. Used for the purpose for which they consequences arising from the used of the daruption of the consequences arising from the use of the daruption for any consequences arising thom the use of the daruption for any consequences arising from the use of the daruption for any then its intended purpose or where the drawing has been altered, arended or changed either manually or electonically by any third party. NOTE This is an uncontrolled document issued for information purposes influences of raburcation. De not scale reduced size drawings. Verify dimensions pior to commencing any on-site or off-site works or fabrication.
	GOLD COAST BRISBANE TOOWOOMBA IPSWICH MORETON BAY PHONE: +617 5509 6400 FAX: +617 5509 6401 FAX: +617 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU COOTE BURCHILLS ENGINEERING PTY LTD ABN 76 166 942 365
~	PROJECT: PRELIMINARY CIVIL ENGINEERING DESIGN
	DRAWING TITLE: EROSION & SEDIMENT CONTROL PLAN - CIVIL WORKS PHASE
	DEVEL. APPLIC. No. : RL/57/2021 DATE : 20-09-23 PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C. DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO APPROVED FOR AND ON BEHALE OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
	RPEQ No.: 7067 SCALE : AS NOTED DATUM : AHD PROJECT No.: DRAWING No.: PE210215-01 C250

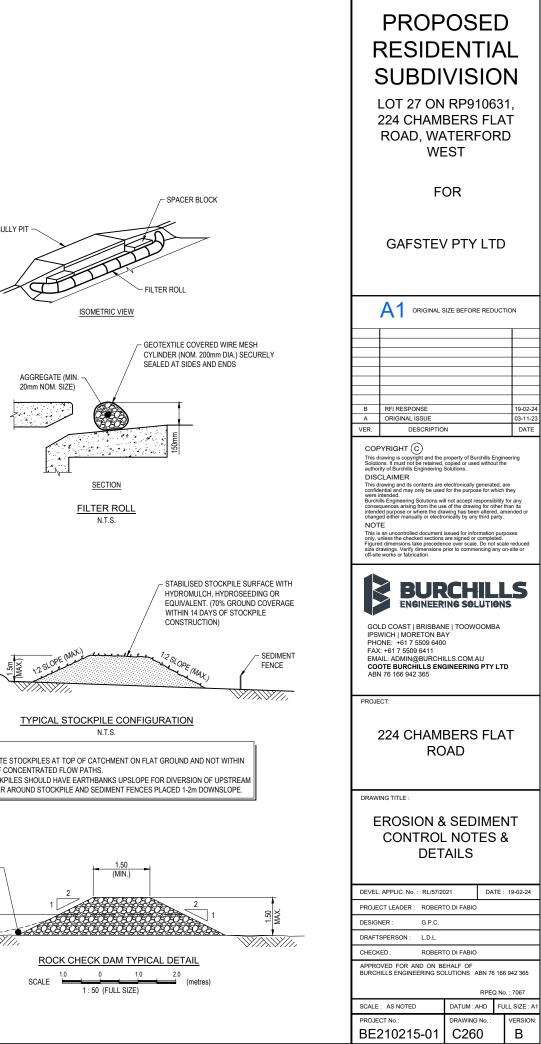
SEDIMENT AND EROSION CONTROL NOTES

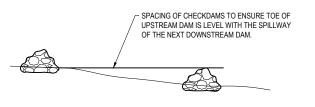
- THIS DRAWING HAS BEEN PREPARED AS A GUIDE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MANAGE SITE 1. SEDIMENT AND EROSION CONTROL MEASURES AND DURING THE CONSTRUCTION PERIOD INSTALL ADDITIONAL MEASURES WHERE SCOUR OR SEDIMENT TRANSPORT IS LIKELY TO OCCUR.
- 2. DELAY CLEARING, GRUBBING AND TOPSOIL STRIPPING UNTIL NECESSARY
- COMMENCE WORK ON SITE ONLY AFTER SEDIMENT AND EROSION CONTROL MEASURES ARE IN PLACE. 3.
- MANAGE SITE ENTRY/EXIT POINTS TO ENSURE SEDIMENT IS NOT TRACKED OFF SITE. 4.
- SHAKEDOWN AREA: PROVIDES FOR CONSTRUCTION. SERVICE AND STAFF VEHICLES ENTERING PUBLIC ROADS. 5 CONTRACTOR SHALL LOCATE TO SUIT SITE ACTIVITIES. CONSTRUCTED AS 250mm THICK LAYER OF COARSE (150mm -200mm) RIVER GRAVEL OVER A SINGLE LAYER OF HIGH STRENGTH GEOTEXTILE (15m x 5m)
- THE CONTRACTOR SHALL INSTALL EITHER STORMWATER INLET SEDIMENT TRAPS OR EXCAVATED INLET ARRANGEMENT AT ALL STORMWATER STRUCTURES DURING THE CONSTRUCTION. 6.
- FILTER ROLLS SHALL BE INSTALLED AT GULLY PITS IMMEDIATELY AFTER GULLY PIT CONSTRUCTION AND LEFT 7. IN PLACE DURING THE MAINTENANCE PERIOD. OPERATION OF ROLLS DURING PERIODS OF HEAVY RAIN TO BE MONITORED TO PREVENT FLOODING AND EROSION DAMAGE ELSEWHERE.
- 8 ARRANGE FOR FROSION CONTROL MEASURES TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE SOURCE OF EROSION
- 9. ENSURE STOCKPILED TOPSOIL AND EARTHWORKS ARE NOT ERODED BY WIND AND STORMWATER RUN-OFF AND ARE PROVIDED WITH A SEDIMENT FENCE AROUND THE LOW SIDE.
- 10. SEDIMENT FENCES HAVE BEEN ESTABLISHED UNDER BULK EARTHWORKS CONTRACT. ERECT SEDIMENT FENCES IF REQUIRED, GENERALLY ALONG THE LOW SIDE OF THE CONSTRUCTION SITE AND ALONG A LINE OF CONSTANT LEVEL. AS AN ALTERNATIVE TO BURYING THE SEDIMENT FENCE LOWER EDGE, THE CONTRACTOR MAY ELECT TO PLACE 200mm OF THE FABRIC ON THE GROUND UP-SLOPE OF THE FENCE AND COVER WITH 100mm MIN LAYER OF AGGREGATE
- 11. TO PREVENT EROSION, TOPSOIL AND SEED IMMEDIATELY AFTER COMPLETION OF BULK EARTHWORKS TO FINISHED PROFILES.
- 12. PROVIDE TURF STRIP ADJACENT TO KERB FOR FULL LENGTH OF NEW ROAD AND TURF STRIP PLACED AT 90° TO KERB EVERY 10m FOR FULL WIDTH OF VERGE.
- 13. PRIOR TO COMPLETION OF CONSTRUCTION OF PAVEMENT AND SEALING, PLACE SANDBAGS AT 45° TO ARREST SCOUR AGAINST KERB AND CHANNEL AS FOLLOWS: ROAD GRADE 0.5% - 5% - 25m MAX CRS.
 - 5% 10% 10m MAX CRS.
 - 10% 15% 15m MAX CRS
 - 15% 20% 5m MAX CRS
- 14. SWEEP EXTERNAL ROADS WHERE SEDIMENT HAS BEEN DROPPED FROM CONSTRUCTION VEHICLES. DO NOT WASH SEDIMENT INTO THE STORMWATER SYSTEM
- 15. ALL SEDIMENT AND EROSION CONTROL STRUCTURES, TRENCHES ETC. SHALL BE REGULARLY MAINTAINED AND INSPECTED FOR EFFECTIVENESS.
- 16. THE USE OF POTABLE WATER IS NOT PERMITTED IN SITE EARTHWORKS OPERATIONS, ROAD AND PAVEMENT CONSTRUCTION OR DUST SUPPRESSION. RECYCLED WATER IS REQUIRED TO BE USED AND IS TO BE IN ACCORDANCE WITH L.C.C. GUIDELINES.



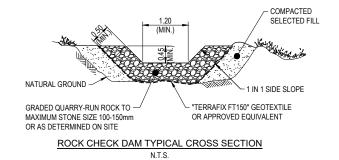


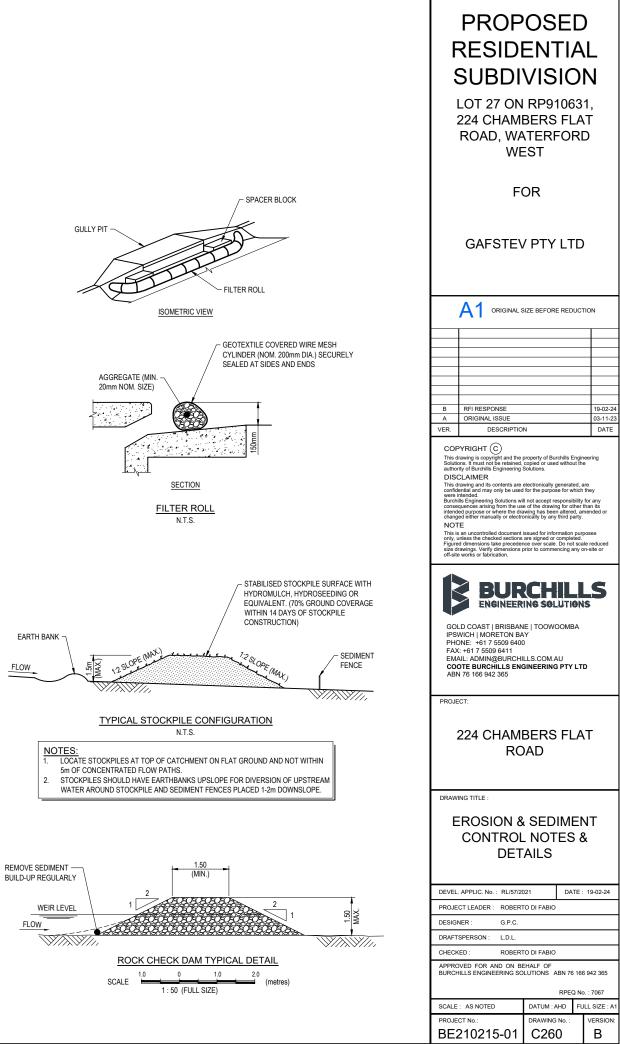


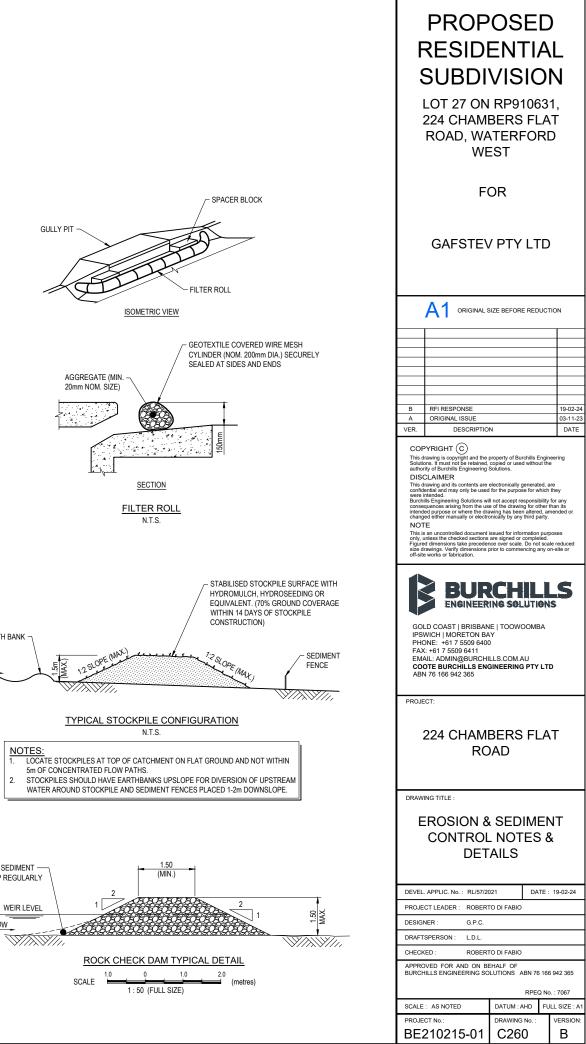


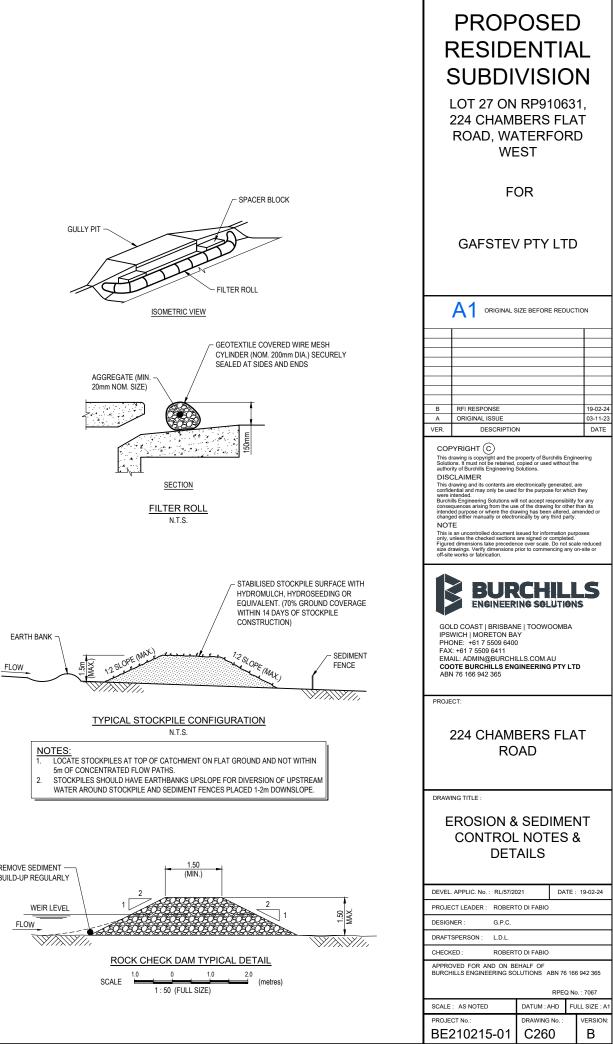


ROCK CHECK DAM TYPICAL LONGITUDINAL SECTION N.T.S.









NOTE: REFER TO IECA STD. DRG.'S FOR ALL ADDITIONAL SEDIMENT CONTROL DETAILS.

PHASE 1 - SITE ESTABLISHMENT

- 1. ESTABLISH STABILISED ACCESS POINT, SITE OFFICES, AND PARKING AREAS (LOCATION TO BE CONFIRMED ON SITE).
- 2. DESIGNATE AND CORDON OFF ANY EXCLUSION AREAS (ANY AREAS OF THE SITE THAT ARE NOT TO BE ACCESSED).
- 3. INSTALL DUST FENCES ALONG ALL BOUNDARIES WITH EXISTING RESIDENTIAL DEVELOPMENT.
- 4. INSTALL SEDIMENT FENCES DOWNSLOPE FROM ALL DISTURBED AREAS AS INDICATED ON THE DRAWINGS (AS A MINIMUM).
- INSTALL CLEAN WATER DIVERSION DRAINS WITH APPROPRIATE EROSION RESISTANT MATERIALS AND ROCK CHECK DAMS IN THE LOCATIONS INDICATED ON THE DRAWINGS.
- 6. CONSTRUCT TYPE B SEDIMENT BASINS PRIOR TO CARRYING OUT BROAD SCALE CLEARING IN THE SAME CATCHMENT.
- 7. INSTALL ALL DIRTY WATER DIVERSIONS AND TEMPORARY SEDIMENT TRAPS ENSURING DE-WATERING FACILITIES ARE AVAILABLE WHEN REQUIRED.
- COMMENCE CLEARING WORK STARTING AT THE TOP OF EACH CATCHMENT. IDEALLY CLEARING SHOULD BE CARRIED OUT PROGRESSIVELY WITH THE BULK EARTHWORKS TO LIMIT EROSION.
- PROGRESSIVELY STRIP, STOCKPILE, AND SEED TOPSOIL WITH A FAST GROWING PASTURE MIX. ALL TOPSOILS MUST BE CARED FOR DURING CONSTRUCTION TO ENSURE SUCCESSFUL REVEGETATION.
- 10. COMMENCE BULK EARTHWORKS, ENSURING A MINIMAL AMOUNT OF AREA IS DISTURBED AT ANY ONE TIME.

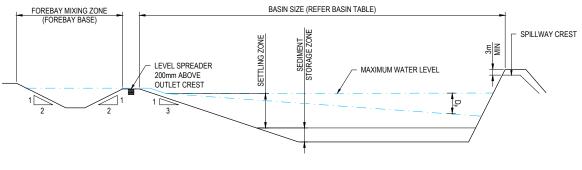
PHASE 2 - CLEARING AND BULK EARTHWORKS

- 11. RESPREAD TOPSOIL OVER COMPLETED EARTHWORKS AND SOW WITH SUITABLE VEGETATIVE COVER AS SOON AS PRACTICABLE.
- 12. ONCE ALL EXPOSED AREAS HAVE BEEN STABILISED WITH TOPSOIL AND AT LEAST 80% VEGETATIVE COVER, ALL TEMPORARY SEDIMENT CONTROLS INCLUDING SEDIMENT BASINS MAY BE REMOVED AND THE BULK EARTHWORKS IN THOSE AREAS COMPLETED AND REVEGETATED.
- 13. REMOVE ALL TEMPORARY CLEAN WATER DIVERSION DRAINS AND REVEGETATE.
- 14. REMOVE SITE OFFICES AND DUST FENCING AND REVEGETATE ANY OTHER DISTURBED AREAS.
- 15. ENSURE ALL EXTERNAL ROADS HAVE BEEN SWEPT CLEAN AND ARE FREE OF ANY SEDIMENT.

SEDIMENT AND EROSION CONTROL CERTIFICATION

I HEREBY CERTIFY THAT THE SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES SHOWN ON THIS DRAWING HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 'BEST PRACTICE EROSION AND SEDIMENT CONTROL' (IECA AUSTRALASIA, NOVEMBER 2008).

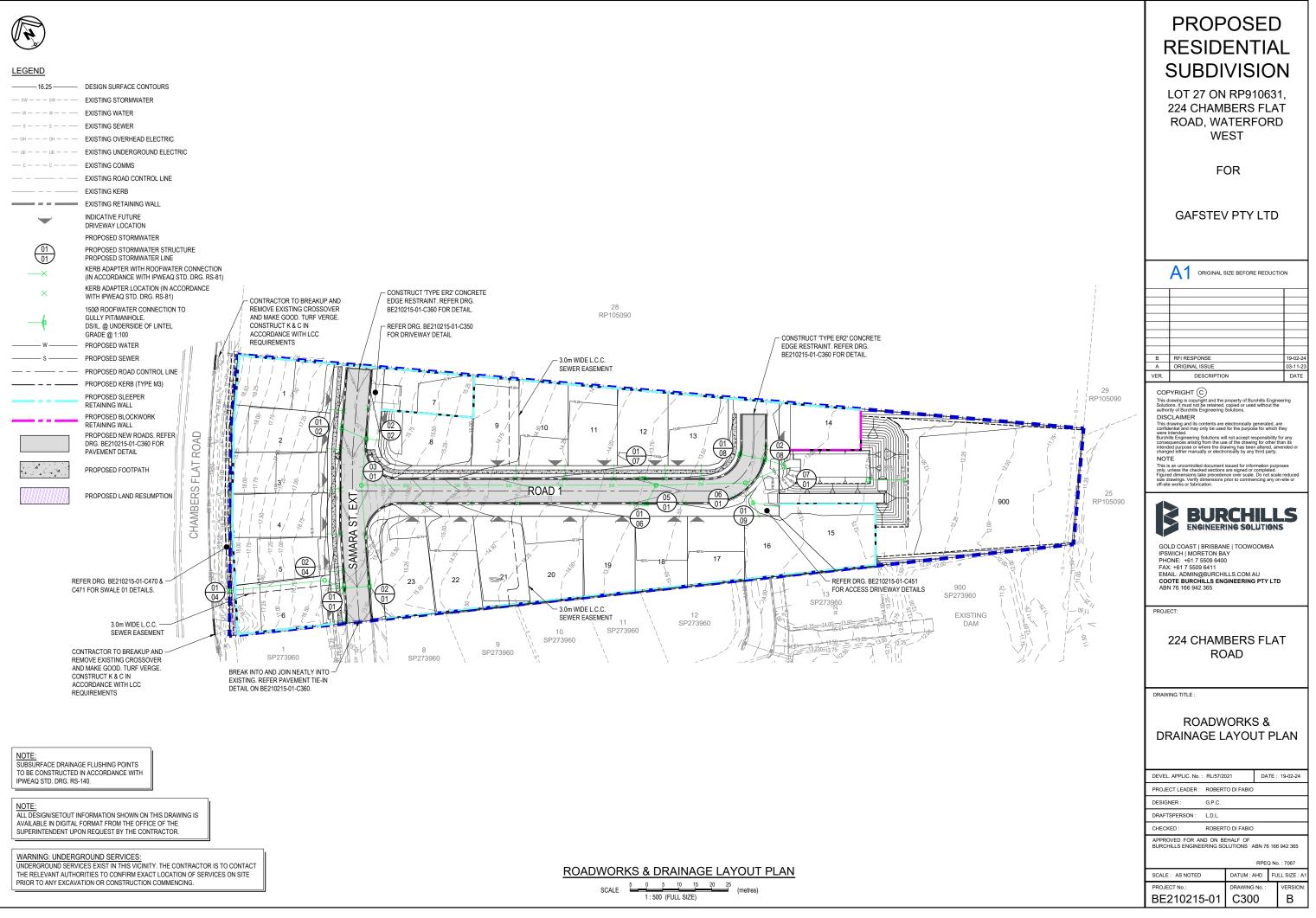
SIGNED DATED

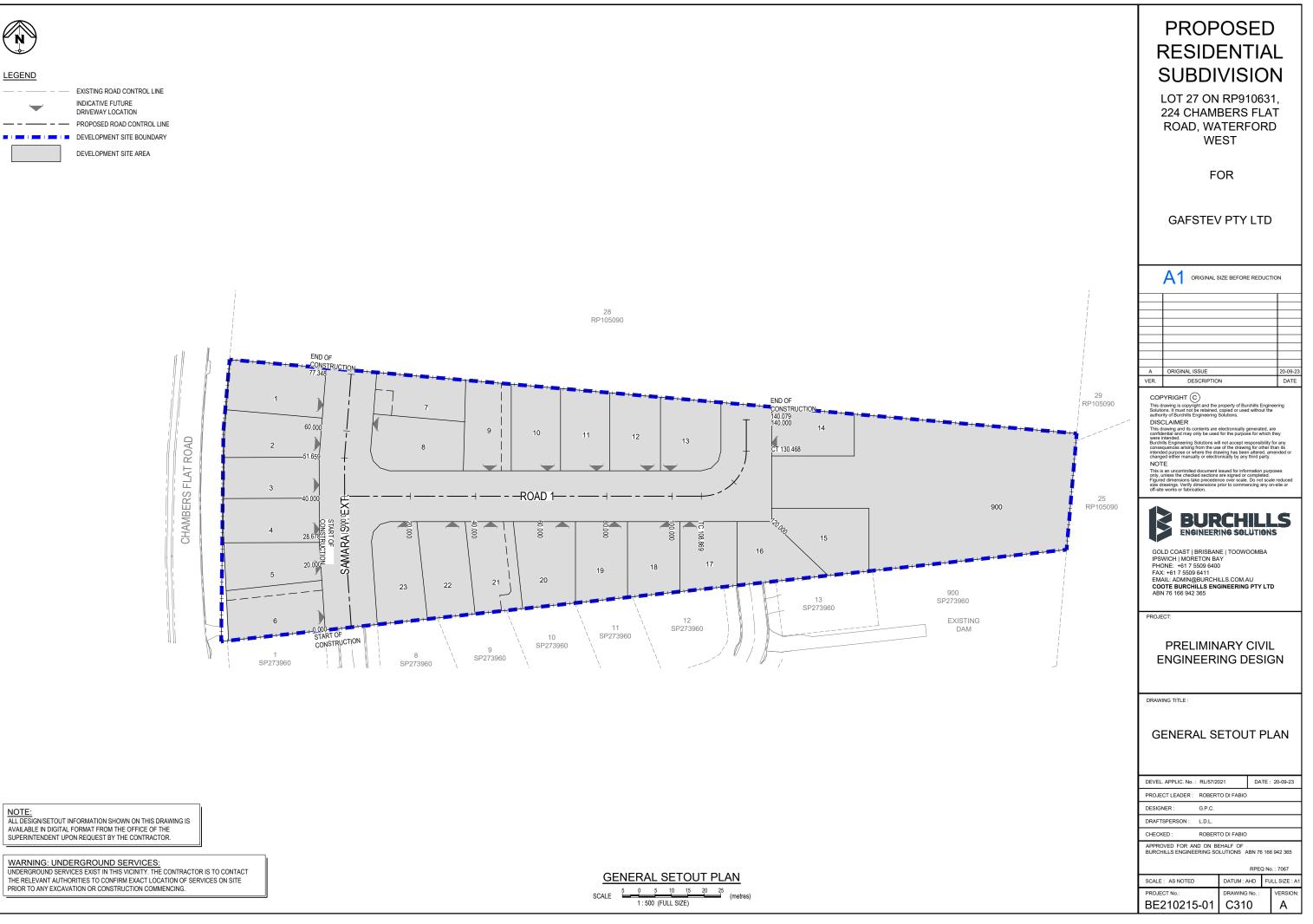


SEDIMENT BASIN TYPE B TYPICAL SECTION

	TEMPORARY SEDIMENT BASIN CALCULATIONS																		
BASIN ID	BASIN TYPE	CATCH AREA (ha)	BATTER 1 in X	L:W RATIO	SETTLING ZONE DEPTH (m)	C ₁	TIME CONC. (mins)	i _l (mm/hr)	0.5Q1 (m³/s)	LAB SETTLE RATE (m/hr)	FLOC SETTLE DEPTH (m)	SETTLING ZONE VOLUME (m ³)	SEDIMENT STORAGE VOLUME (m ³)	SEDIMENT STORAGE DEPTH (m)	APPROX. LENGTH AT SPILLWAY (m)	APPROX. WIDTH AT SPILLWAY (m)	APPROX. DEPTH AT SPILLWAY (m)	APPROX. VOLUME AT SPILLWAY (m ³)	FOREBAY VOLUME (m ³)
1	SED	1.18	3	3	1.00	0.56	20	64	0.59	0.40	0.60	422.00	422.00	0.5	44.60	14.90	1.40	548.40	42.2

	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST							
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	PROJECT: 224 CHAMBERS FLAT ROAD							
	DRAWING TITLE: SEDIMENT BASIN NOTES & SECTIONS							
DE	DEVEL. APPLIC. No. : RL/57/2021 DATE : 19-02-24							
	PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C.							
	DRAFTSPERSON : L.D.L.							
	FTSPERSO	CHECKED : ROBERTO DI FABIO						
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NOTE:

AVAILABLE IN DIGITAL FORMAT FROM THE OFFICE OF THE SUPERINTENDENT UPON REQUEST BY THE CONTRACTOR

THE RELEVANT AUTHORITIES TO CONFIRM EXACT LOCATION OF SERVICES ON SITE PRIOR TO ANY EXCAVATION OR CONSTRUCTION COMMENCING.

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SCALE	5	Ņ	5	10	15	20	25	(metres)
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ROAD CONTROL LINE DETAILS - SAMARA ST. EXT.						
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	
IP 1	0.000	510194.937	6936959.755	15.517	27°17'57.49"	
IP 2	28.678	510208.089	6936985.239	15.993		
IP 3	51.659	510219.936	6937004.932	16.272		
IP 4	77.348	510234.952	6937025.774	16.584	35°46'20.59"	

	ROAD CONTROL LINE DETAILS - ROAD 01							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	510213.952	6936994.985		121°14'06.24"			
TC	108.869	510307.040	6936938.531	14.704	121°14'06.24"			
IP 2	119.668	510318.797	6936931.401	14.639		R = -13.750	21.598	90°00'00.00"
CT	130.468	510325.927	6936943.158	14.598	31°14'06.24"			
IP 3	140.079	510330.911	6936951.376	14.678	31°14'06.24"			

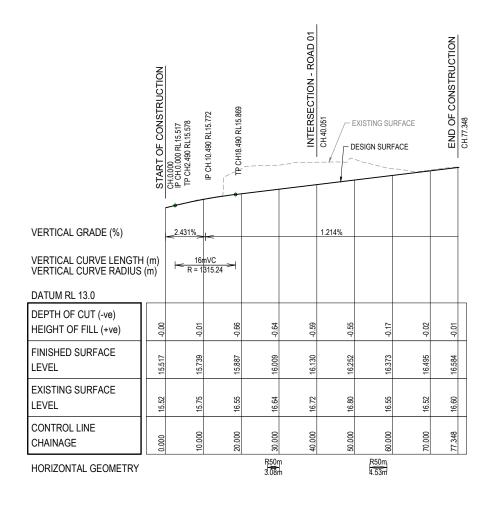
PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD						
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PROJE	PROJECT LEADER : ROBERTO DI FABIO					
DESIG	NER : G.P.C.					
DRAFTSPERSON : L.D.L.						
CHECK		TO DI FABIO				
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NOMINAL PAVEMENT DETAILS

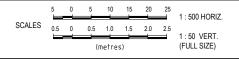
URBAN ACCESS STREET

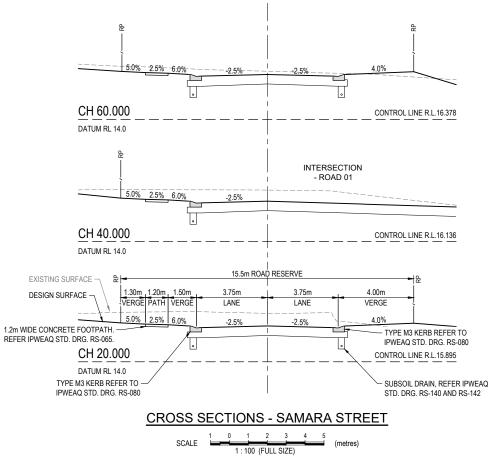
35mm ASPHALTIC CONCRETE 150mm BASE COURSE (TYPE 2.1 CBR 80) 150mm SUB-BASE COURSE (TYPE 2.3, CBR 45) 300mm CBR15 SUBGRADE REPLACEMENT (PROVISIONAL AMOUNT)

FINAL DEPTH OF SUBGRADE REPLACEMENT TO BE CONFIRMED FOLLOWING RESULTS OF SUBGRADE TESTING.

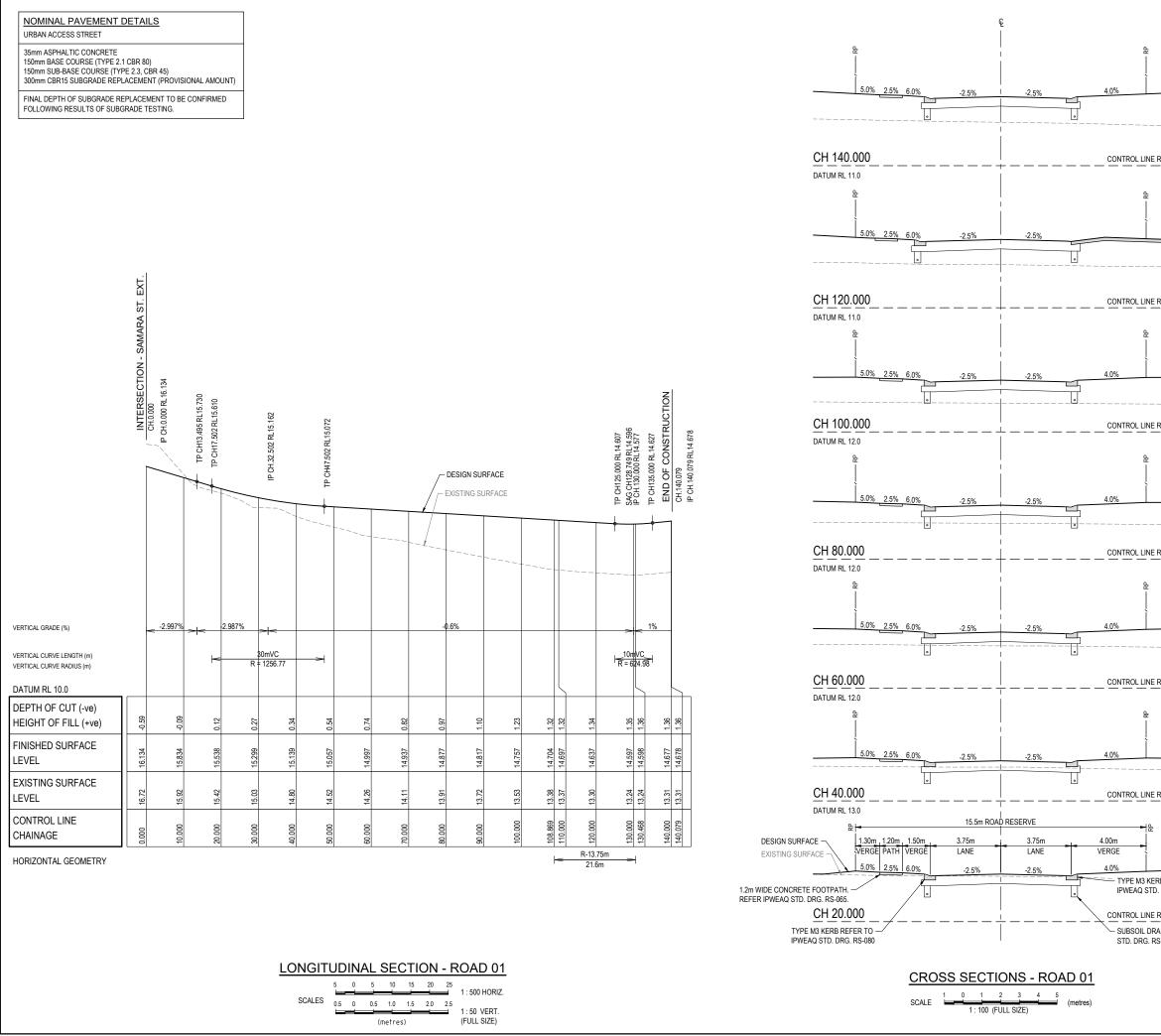


LONGITUDINAL SECTION - SAMARA STREET EXTENSION





	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST					
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	PROJE	CT:				
	PRELIMINARY CIVIL ENGINEERING DESIGN					
	DRAWING TITLE :					
	ROADWORKS LONGITUDINAL SECTION - ROAD 01					
	DEVEL. APPLIC. No. : RL/57/2021 DATE : 20-09-23					
	PROJECT LEADER : ROBERTO DI FABIO					
	DESIGNER : G.P.C.					
	DRAFTSPERSON : L.D.L.					
			ROBER			
				EHALF OF DLUTIONS ABN 76 16	6 942 365	
				RPEQ N	o. : 7067	
		: AS NO	ΓED	DATUM : AHD FI	ULL SIZE : A1	
			15-01	C320		
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RL.14.677	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST
- REFER DRG. BE210215-01-C451 FOR ACCESS DRIVEWAY DETAILS	FOR
	GAFSTEV PTY LTD
RL.14.637	A1 ORIGINAL SIZE BEFORE REDUCTION
RL.14.757	A ORIGINAL ISSUE 20-09-23 VER. DESCRIPTION DATE
RL14.877	COPYRIGHT (c) This drawing is copyright and the property of Burchills Engineering Solutions. It must not be retained, copied or used without the authority of Burchills Engineering Solutions. DISCLAINER This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were interedded, mig Solutions will not accept responsibility for any confidential for the use of the drawing for other than its interedde purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party. NOTE This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figured dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.
	GOLD COAST BRISBANE TOOWOOMBA IPSWICH MORETON BAY PHONE: 1617 5509 6400 FAX: +61 7 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU COTE BURCHILLS.COM.AU ABN 76 166 942 365
<u>RL.14.997</u>	PROJECT: PRELIMINARY CIVIL ENGINEERING DESIGN
RL.15.139	DRAWING TITLE : ROADWORKS CROSS SECTIONS - ROAD 01
R REFER TO D. DRG. RS-080 R.L.15.538 AIN, REFER IPWEAQ S-140 AND RS-142	DEVEL. APPLIC. No.: RL/57/2021 DATE : 20-09-23 PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C. DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365 RPEQ No. : 7067
	SCALE : AS NOTED DATUM : AHD FULL SIZE : A1 PROJECT No.: DRAWING No. : VERSION: BE210215-01 C321 A

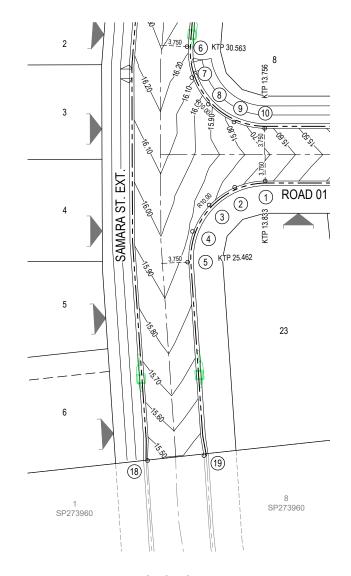


LEGEND

 DESIGN SURFACE CONTOURS
 PROPOSED ROAD CONTROL LINE
 PROPOSED MOUNTABLE KERB & CHANNEL (TYPE M3) OFFSET TO KERB FACE
INDICATIVE FUTURE DRIVEWAY LOCATION

- GENERAL NOTES:

 SETOUT TABLES ARE GIVEN AT KERB LIP LEVELS. (U.N.O.)
 KERB LIP LEVELS ARE GIVEN AT QUARTER POINTS, TP'S AND EQUAL PARTS U.N.O.
 KERB RADI AND OFFSETS ARE GIVEN AT HORIZONTAL SETOUT POINT SHOWN ON KERB SETOUT DETAILS
 EXTRA DETAIL FOR SETTING OUT IS AVAILABLE ON CAD FILE
 REFER DRG. BE210215-01-C360 FOR TYPICAL MOUNTABLE KERB (TYPE M3) DETAILS.



INTERSECTION DETAIL SAMARA ST. EXT. AND ROAD 01 0 5 10 SCALE (metres) 1:250 (FULL SIZE)

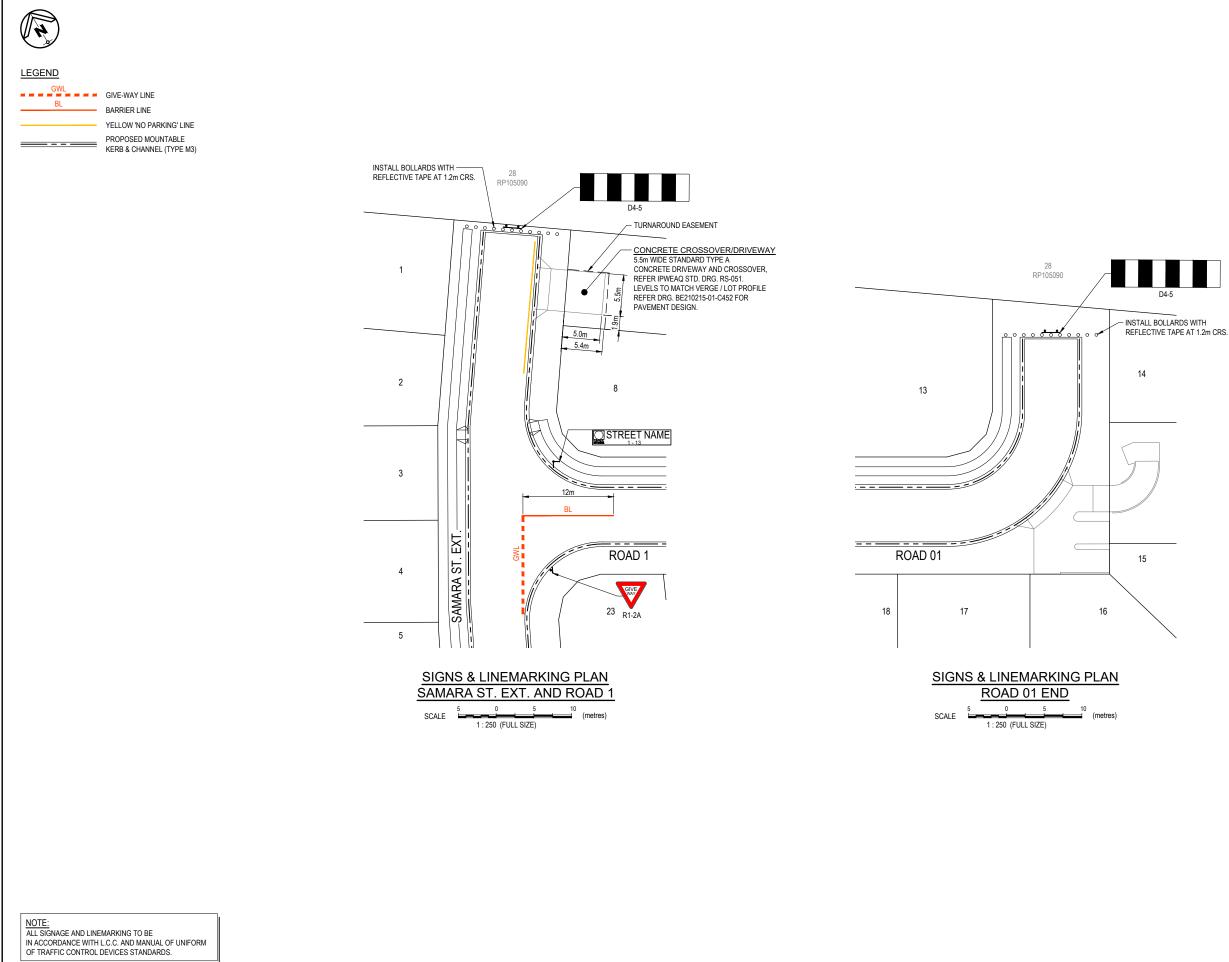
SETOUT TABLE

POINT	EASTING	NORTHING	LEVEL
1	510224.107	6936984.757	15.628
2	510220.092	6936986.162	15.728
3	510216.014	6936985.865	15.824
4	510212.380	6936984.006	15.882
5	510209.655	6936980.685	15.865
6	510224.653	6937005.527	16.224
7	510222.913	6937001.527	16.116
8	510222.924	6936997.464	15.933
9	510224.546	6936993.671	15.753
10	510227.660	6936990.742	15.630

NOTE: PROVIDE KERB RAMPS IN ACCORDANCE WITH IPWEAQ STD. DRG. RS-090.

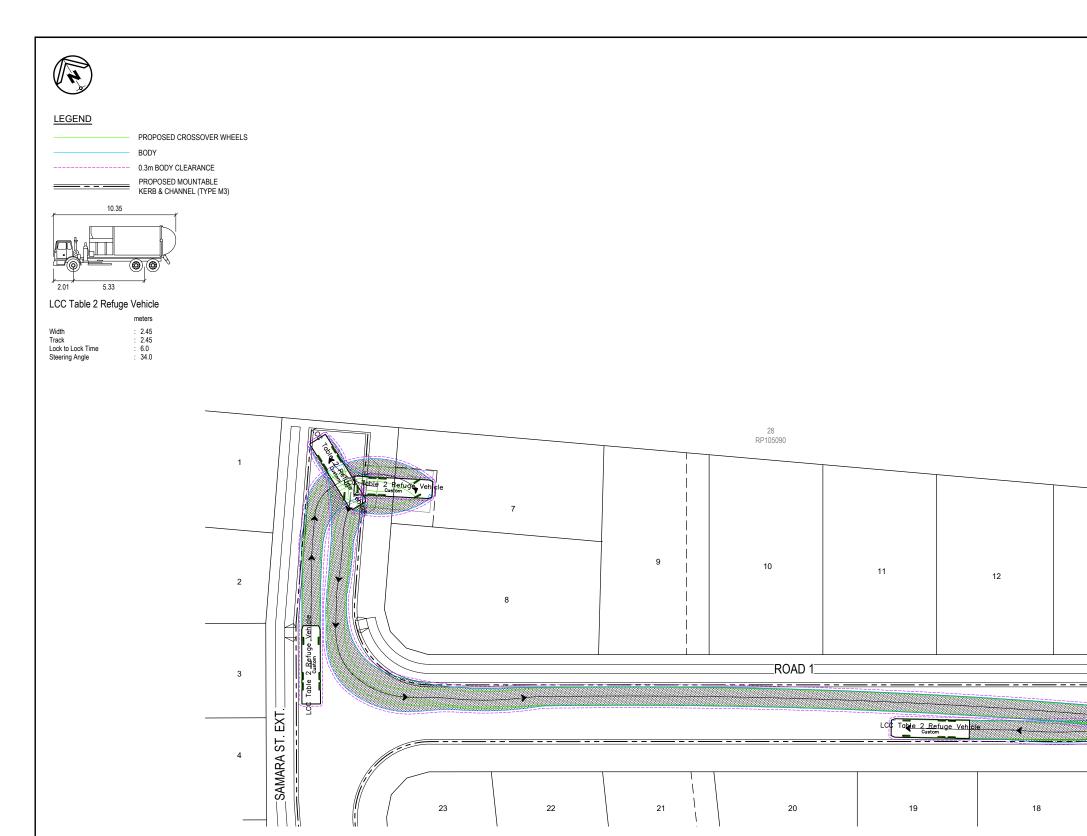
NOTE: ALL DESIGN/SETOUT INFORMATION SHOWN ON THIS DRAWING IS AVAILABLE IN DIGITAL FORMAT FROM THE OFFICE OF THE SUPERINTENDENT UPON REQUEST BY THE CONTRACTOR.

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD					
		SIZE BEFORE REDUCT	TION		
A VER.	ORIGINAL ISSUE DESCRIPTIO	N	20-09-23 DATE		
GO Burds Consider Intendichang NOT This is rely size of off-site GO IPS' PHC FAX EM. CO ABI	<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>				
E	PRELIMINARY CIVIL ENGINEERING DESIGN				
DRAW	ING TITLE :				
ROADWORKS					
DEVEL. APPLIC. No. : RL/57/2021 DATE : 20-09-23					
PROJECT LEADER : ROBERTO DI FABIO					
DESIGNER : G.P.C.					
DRAFTSPERSON : L.D.L.					
CHECK	ED : ROBERT				
	HILLS ENGINEERING SO		3 942 365		
RPEQ No. : 7067					
SCALE	: AS NOTED	DATUM : AHD FU	ILL SIZE : A1		
		DRAWING No. :	VERSION:		
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AUDESIGN/SETOUT INFORMATION SHOWN ON THIS DRAWING IS AUAILABLE IN DIGITAL FORMAT FROM THE OFFICE OF THE SUPERINTENDENT UPON REQUEST BY THE CONTRACTOR.

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST					
	F	OR			
GAFSTI	E∖	/ PTY LT	D		
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A ORIGINAL ISSUE				20-09-23	
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This drawing and its contents confidential and may only be were intended. Burchits Eropis estimation for binding of the second second second content of the second second second content of the second second region of the second second second region of dimensions take pre- size drawings. Verify dimensi off-site works or fabrication.	used ns wil ne us lectro nent i tions ceder	for the purpose for wi I not accept responsite of the drawing for ot wing has been alteree onically by any third pa- issued for information are signed or complet oce over scale. Do not	hich ti bility fo her th d, am arty. purpo ed. scale	ney or any an its ended or ises reduced	
GOLD COAST BRISI IPSWICH MORETON PHONE: +617 5509 61 FAX: +617 5509 61 FAX: +617 5509 61 EMAIL: ADMIN@BUR COOTE BURCHILLS ABN 76 166 942 365	BAN I BA 6400 CHI	Y) LLS.COM.AU	A	S	
PROJECT					
PROJECT: PRELIMINARY CIVIL ENGINEERING DESIGN					
DRAWING TITLE :					
ROADWORKS SIGNS & LINEMARKING PLAN					
DEVEL. APPLIC. No. : RL/57/2021 DATE : 20-09-23					
PROJECT LEADER : ROBERTO DI FABIO					
DESIGNER : G.P.C. DRAFTSPERSON : L.D.L.					
DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO					
APPROVED FOR AND ON BURCHILLS ENGINEERING			166	942 365	
		RPEC	No.	: 7067	
SCALE : AS NOTED		DATUM : AHD	_	L SIZE : A1	
PROJECT No.: BE210215-0	1	C350			



VEHICLE SWEPT PATH LAYOUT PLAN

11

LCC Table <u>2 Refuge Vehicle</u>

19

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18

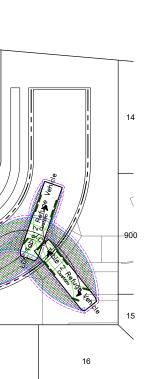
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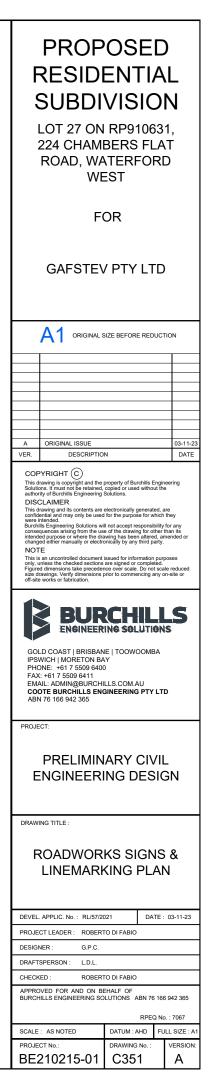
17

0 5 SCALE (metres) 1:250 (FULL SIZE)

NOTE: ALL SIGNAGE AND LINEMARKING TO BE IN ACCORDANCE WITH L.C.C. AND MANUAL OF UNIFORM OF TRAFFIC CONTROL DEVICES STANDARDS.

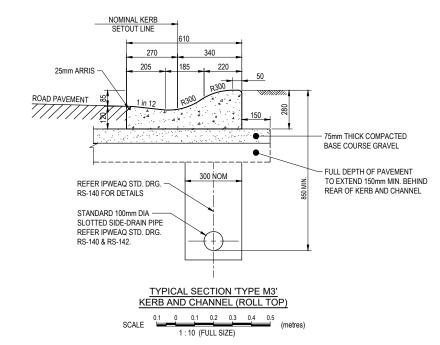
NOTE: ALL DESIGN/SETOUT INFORMATION SHOWN ON THIS DRAWING IS AVAILABLE IN DIGITAL FORMAT FROM THE OFFICE OF THE SUPERINTENDENT UPON REQUEST BY THE CONTRACTOR.

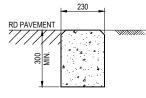




PAVEMENT & KERB NOTES:

- 1. THE COMPACTED DEPTHS OF PAVEMENT SHOWN ON THE DRAWINGS ARE DESIGN DEPTHS ONLY AND MAY BE VARIED AFTER SUBGRADE TESTS ARE TAKEN.
- 2. PAVEMENT MATERIAL SHALL CONFORM TO THE CURRENT [COUNCIL] LAND DEVELOPMENT GUIDELINES.
- BATTER SLOPES AND PAVEMENT CROSSFALLS SHOWN ON THIS DRAWING ARE TYPICAL ONLY. FOR VARIATION FROM THE STANDARD PROFILES REFER RELEVANT ROADWORKS DRAWINGS.
- 4. PAVEMENT DEPTHS SHOWN ON THIS DRAWING ARE DESIGN DEPTHS ONLY AND MAY BE VARIED ONCE SUBGRADE TESTS ARE TAKEN. TURNOUTS ARE TO BE PAVED WITH THE SAME MATERIAL AND COMPACTED TO THE SAME STANDARD AS THE ROAD ADJACENT.
- 5. KERB AND CHANNEL, MEDIAN KERB AND OTHER EDGE SECTIONS SHALL BE CONCRETE CLASS N32, AND THE MIX DESIGNED SPECIFICALLY FOR EXTRUSION.
- 6. REFER IPWEAQ STD. DRG. RS-080 FOR TYPICAL KERB DETAILS AND NOTES.
- 7. FOR DETAILS OF SIDE-DRAIN CONSTRUCTION REFER IPWEAQ STD. DRG. RS-140 AND RS-142.
- 8. IF CLAY BACKFILL IS USED, PROVIDE A BOND BREAKER (PLASTIC MEMBRANE OR EQUIV.) TO BACK OF KERB.



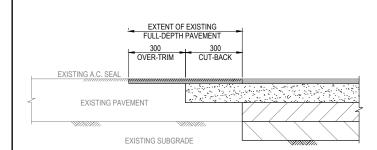


 TYPICAL SECTION 'TYPE ER2'

 EDGE RESTRAINT

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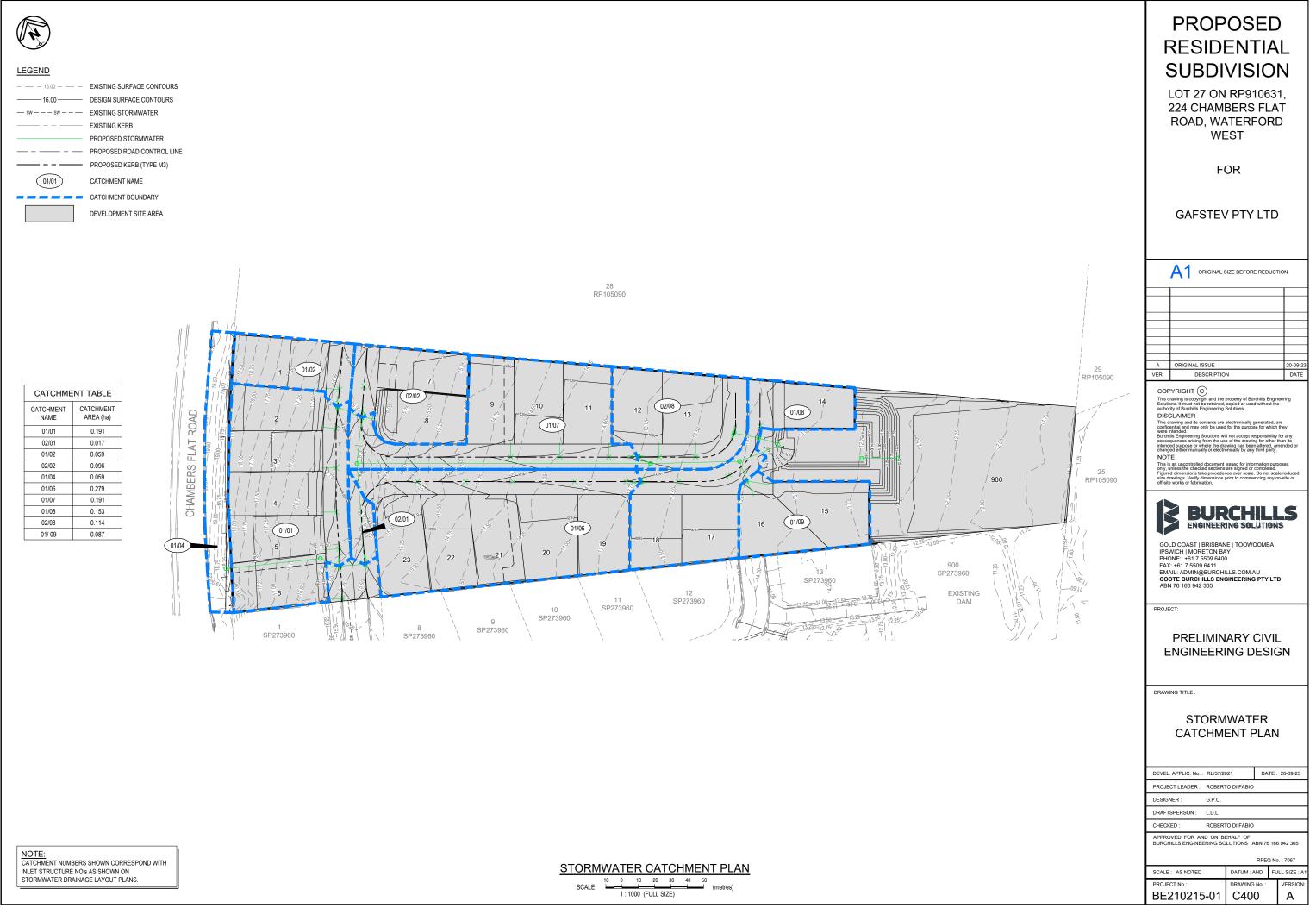
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 (FULL SIZE)
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TYPICAL ROAD PAVEMENT TIE-IN DETAIL N.T.S.

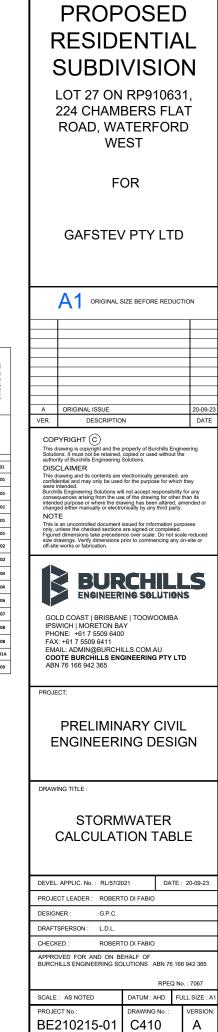
PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD					
	A1 ORIGINAL S	SIZE BEFORE REDUCT	TION		
			+ - 1		
			+		
В	RFI RESPONSE		19-02-24		
A	ORIGINAL ISSUE	N	03-11-23		
VER.	DESCRIPTIO	N	DATE		
NOTE This is an controlled document issued for information purposes infyured demains take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication. EXAMPLE CONTROLLING SOLUTIONS Source Control Control Control Control Control Control Source Control Control Control Control Source Control Control Control Control Source Control Control Control Control Control Source Control Contro					
PROJE	CT:				
	224 CHAMI RC	BERS FLA)AD	T		
ROADWORKS NOTES & DETAILS					
DEVEL. APPLIC. No. : RL/57/2021 DATE : 19-02-24					
PRO.IF	CT LEADER : ROBERT	TO DI FABIO			
		-			
DESIG					
DRAFT	SPERSON : L.D.L.				
CHECK	ED : ROBERT	TO DI FABIO			
	VED FOR AND ON BE				
BURCH	ILLS ENGINEERING SO	LUTIONS ABN 76 166	942 365		
		PPEO N	. 7067		
		RPEQ No			
	: AS NOTED		ILL SIZE : A1		
	CT No.:	DRAWING No. :	VERSION:		
BE2	210215-01	C360	В		

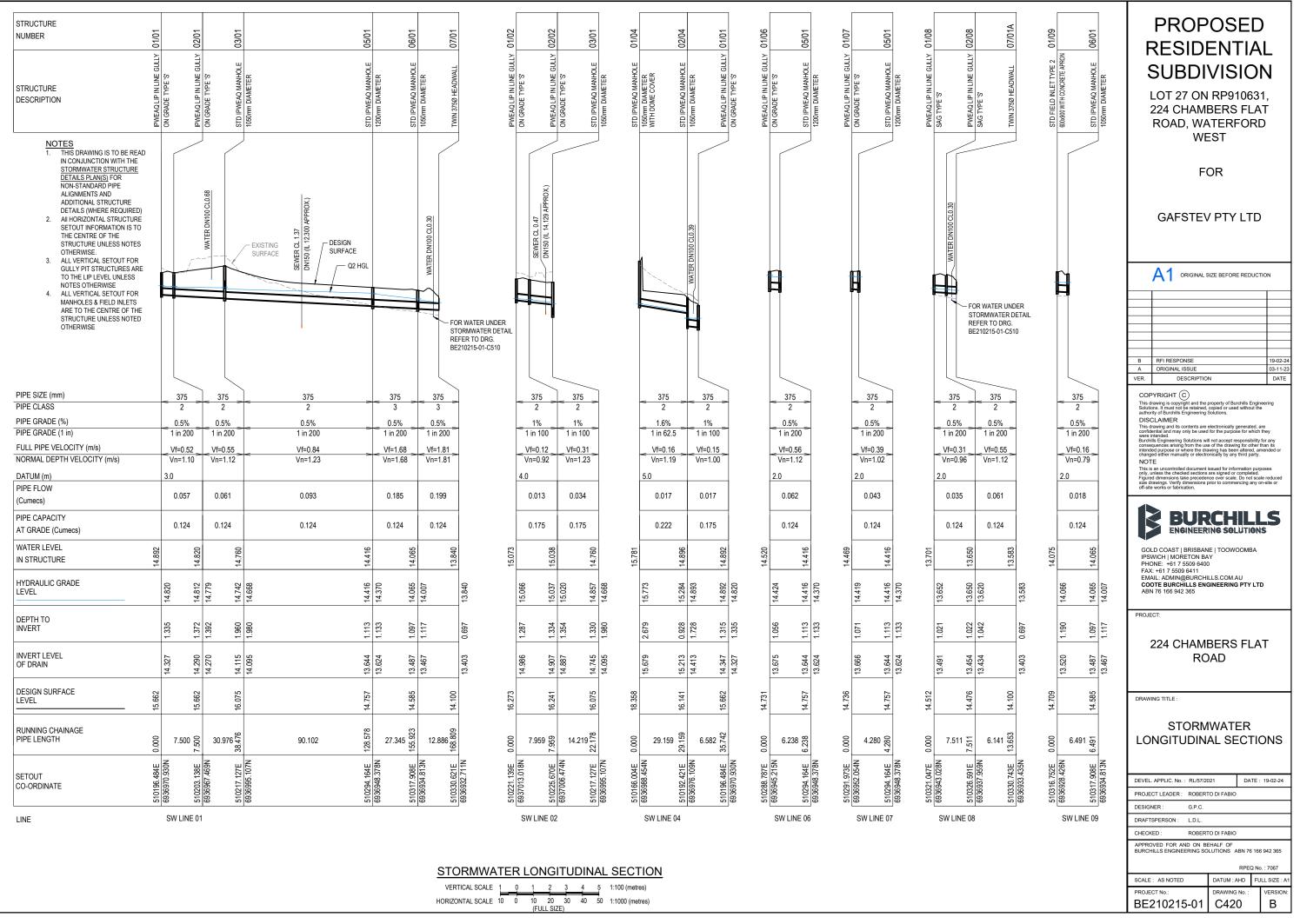
(metres)



DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING SURFACE CONDITIONS (LAND USE)	SLOPE OF CATCHMENT "SUB-CATCHMENT	RAINFALL INTENSITY		COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EQUIVALENT AREA	SUM OF CONTRIBUTING EQUIVALENT AREAS		SUB-CATCHMENT DISCHARGE	FLOW PAST PREVIOUS GULLIES "FLOW IN K&C	(INCLUDING BYPASS)" ROAD GRADE AT INLET	ROAD XFALL AT INLET	FLOW WIDTH FLOW DEPTH AT INVERT	GUTTER FLOW VELOCITY	dg xVg	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	CRITCAL TIME OF CONC. RAINFALL INTENSITY	"TOTAL CONTRIBUTING	EQUIVALENT AREA"	MAJOR TOTAL FLOW MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	ELOW IN PIPE	REACH LENGTH	PIPE GRADE PIPE/BOX	DIMENSIONS FLOW VELOCITY	TIME OF FLOW IN REACH	Ku METHOD	Ku CHART	VELOCITY HEAD	U/S HEADLOSS COEEFF.	U/S PIPE STRUCTURE HEADLOSS	LAT. HEADLOSS COEEFICIENT LAT. PIPE STRUCTURE	W.S.E. COEEFICIENT	CHANGE IN W.S.E.	FRICTION SLOPE	PIPE FRICTION HEADLOSS	DEPTH	VELOCITY	OBVERT LEVELS		DRAIN SECTION HGL	n/sHGL	LATERALHGL WSE	SURFACE or K&CINVERT	LEVEL FREFROARD	STRUCTURE No.
MINOR					"F rom Intensity Chart MINOR"	MUOR	MAJOR	01×6"	MINOR" "9 x 10 MAUOR"	"?11 MINOR"	MAJOR" "(8 x 12)/360 MINOR"	"(8 × 12)/360 MaJOR"	225		~	m m	-	20×19	Refer Legend	From Charts	15 - 24	min mm/hr	"?12 (U/S) MINOR"	MAUOR	08 23 x 28 33/3 13/s m3/s		MINOR	m	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	32/Area of Sect.	33/(36×60)			3 (36 × 36)/2g	FROM QUDM VOL	1 40×41	"FROM QUDM	"F ROM QUDM		"FROM SECT. 14.5.7 A.R.R. VOL 11987"	m		m/s	s/n.,		"U/S	-5/0	mm			
	1/01 01/	/01 to 02/01	4		0 115.96 23	_	+ +		_	Ha	_	1					1.		/01 AL2D			10.52 113.64 236	_									u,Kw - Missouri/Hare	G2/T2/T4	0.01	5.31	m 0.07	m		m 0.072	0.11	0.008	0.179		Ť			4.812 14.892	14.5	_		70 01/01
		/01 to 03/01			0 115.96 23	-	+ +	_	-		_	-		-				-		-	-	10.63 113.13 235	_	+ +				4 30.976 0	_	_	+ +	Charts u,Kw - Missouri/Hare	T10	0.02	2.12	0.03		2.66	0.041	0.12	0.037	0.185		14.645		_		14.8	_		
					10 115.96 23	5.41 0.72	1.00 0	.017 0.0.	12 0.016	0.012 0.0	016 0.004	4 0.011	0.000 0.00		3.00 1	.091 0.026	0.399	-	_	0.004			-						_			Charts u,Kw - Missouri/Hare	110																		
2 100	3/01 03/	/01 to 05/01	10	0.50					_		_			1.00				03	/01 MH1050			1.09 111.10 231	_					5 90.102 0			1.79	Charts	T10	0.04	2.06	0.07		2.56	0.092	0.28	0.252	0.242	1.231	14.470	4.019 14	4.668 14	4.416 14.760	14.7	60 16.07	75 1.3	15 03/01
2 100	5/01 05/	/01 to 06/01	14	0.50										1.00				05	/01 MH1050		1	2.31 106.31 221	.91 0.631	0.860 0.5	30	3.556 0	0.185 0.17	8 27.345 0	.50 37			u,Kw - Missouri/Hare Charts	T2/T4	0.14	0.32	0.05			0.046	1.12	0.305	0.375	1.678	13.999	3.862 14	4.370 14	4.065 14.416	14.4	16 14.75	57 0.3	11 05/01
2 100	6/01 06/	/01 to 07/01	16	0.50										1.00				06	/01 MH1050		1	2.58 105.32 21.	72 0.685	0.934 0.9	70	2.133	0.199 0.21	8 12.886 0	.50 37	75 1.81	0.12	u,Kw - Missouri/Hare Charts	T2/T5	0.17	0.35	0.06			0.058	1.29	0.167	0.375	1.806	13.842	3.778 14	4.007 13	3.840 14.065	14.0	65 14.58	85 0.5	0 06/01
2 100	7/01			0.50										1.00				07	/01 HW							0.162																					13.840	13.8	40 14.10	00	07/01
2 100	1/02 01/	/02 to 02/02	2	0.50 10.0	10 115.96 23	5.41 0.72	1.00 0	.056 0.0	39 0.054	0.039 0.0	054 0.01	3 0.035	0.000 0.01	13 1.21	3.00 1	.321 0.045	0.525	0.024 01	/02 AL2D	0.13	0.000 1	10.00 115.96 236	.41 0.039	0.054 0.0	135	0.699	0.013 0.03	5 7.959 1	.00 37	75 0.12	1.11 Ku	u,Kw - Missouri/Hare Charts	G2	0.00	9.70	0.01			0.007	0.37	0.050	0.068	0.924	15.361	5.282 15	5.066 15	5.037 15.073	15.0	73 16.27	73 1.2	0 01/02
2 100	2/02 02/	/02 to 03/01	4	0.50 10.0	0 115.96 23	5.41 0.72	1.00 0	.096 0.0	68 0.093	0.068 0.0	093 0.022	2 0.061	0.000 0.02	22 1.21	3.00 2	.667 0.039	0.533	0.021 02	/02 AL2D	0.022	0.000 1	10.14 115.32 235	.48 0.107	0.146 0.0	196	0.127	0.034 0.09	6 14.219 1	.00 37	75 0.31	0.76	u,Kw - Missouri/Hare Charts	G1/T8/T10	0.00	3.43	0.01		3.73	0.018	1.14	0.134	0.113	1.233	15.262	5.120 15	5.020 14	4.857 15.038	15.0	38 16.24	41 1.2	02 02/02
2 100	1/04 01/	/04 to 02/04	2	0.50 10.0	0 115.96 30	1.53 0.72	1.00 0	.076 0.0	53 0.073	0.053 0.0	073 0.01	7 0.062	0.000 0.01	17 1.00		0.026		01	/04 SF1 900x900	0.017	0.000 1	0.00 115.96 304	.53 0.053	0.073 0.0	162		0.017 0.06	2 29.159 1	.60 37	75 0.16	3.04 Ku	u,Kw - Missouri/Hare Charts	G1	0.00	7.00	0.01			0.009	1.68	0.450	0.071	1.192	16.054	5.588 15	5.773 15	5.284 15.781	15.7	81 18.35	58 2.5	77 01/04
2 100	2/04 02/	/04 to 01/01	2	0.50										1.00				02	/04 RW PIT 600x60			10.41 114.13 299	-			1,166 (0.017 0.06	1 6.582 1	.00 37	75 0.15	0.73 KL	u,Kw - Missouri/Hare	T10	0.00	2.09	0.00		2,66	0.003	0.01	0.001	0.079	1.005	14,788	4.722 14	4.893 14	4.892 14.896	14.8	96 16.14	41 1.2	15 02/04
		/06 to 05/01			10 115.96 23		.															10.00 115.96 236	_									Charts u,Kw - Missouri/Hare Charts	62	0.02	5.94			-									4.416 14.520				,.
					_	_	+				_			_	\vdash								_									Charts	GZ	0.02		0.10			0.096	0.13	0.008	0.188						14.5	_		
2 100	1/07 01/	/07 to 05/01	2	0.50 10.0	10 115.96 23	5.41 0.72	1.00 0	.191 0.1	34 0.183	0.134 0.1	183 0.043	3 0.120	0.000 0.04	43 0.60	3.00 2	.620 0.072	0.538	0.039 01	/07 AL2D	0.043	0.000 1	10.00 115.96 236	.41 0.134	0.183 0.1	20		0.043 0.02	0 4.280 0	.50 37	75 0.39	0.18	u,Kw - Missouri/Hare Charts	G2	0.01	6.40	0.05			0.050	0.06	0.003	0.153	1.022	14.041 :	4.019 14	4.419 14	4.416 14.469	14.4	69 14.73	36 0.2	57 01/07
2 100	1/08 01/	/08 to 02/08	2	0.50 10.0	10 115.96 23	5.41 0.72	1.00 0	.153 0.1	07 0.147	0.107 0.1	147 0.03	5 0.096	0.000 0.03	35 0.79	SAG	0.000		01	/08 SAL2D	0.035	0.000 1	10.00 115.96 236	.41 0.107	0.147 0.0	196	6	0.035 0.04	0 7.511 0	.50 37	75 0.31	0.40	u,Kw - Missouri/Hare Charts	G2	0.01	9.70	0.05			0.049	0.03	0.014	0.136	0.962	13.866	3.829 13	3.652 13	3.650 13.701	13.7	01 14.51	12 0.8	11 01/08
2 100	2/08 02/0	/08 to 07/01A	4	0.50 10.0	10 115.96 231	5.41 0.72	1.00 0	.114 0.0	81 0.110	0.081 0.1	110 0.020	6 0.072	0.001 0.02	27 1.19	SAG	0.000		02	/08 SAL2D	0.027	0.000 1	10.13 115.96 235	.32 0.188	0.256 0.:	68	0.814	0.061 0.07	9 6.141 0	.50 37	75 0.55	6 0.19 KL	u,Kw - Missouri/Hare Charts	T1/T2	0.02	1.91	0.03			0.030	0.60	0.031	0.186	1.119	13.809	3.778 13	3.620 13	3.583 13.650	13.6	50 14.47	76 0.8	26 02/08
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STORMWATER CALCULATIONS TABLE





GENERAL NOTES:

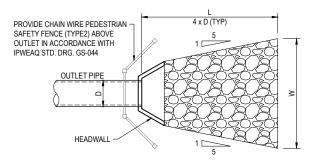
- 1. FOR STORMWATER DRAINAGE ALIGNMENTS AND STRUCTURE LOCATIONS REFER LONGITUDINAL SECTIONS. ALL STRUCTURE LOCATIONS TO BE PEGGED BY THE PRINCIPAL'S SURVEYOR.
- 2. FOR LOCATIONS OF ELECTRICAL ROAD CROSSING CONDUITS REFER ELECTRICAL CONSULTANT'S DRAWINGS.
- THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES SHALL BE THE 3. RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE RECTIFIED AT HIS EXPENSE.
- ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 4. L.C.C. STANDARDS, AND SPECIFICATIONS.
- 5. THE CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION PLANS AND ALL RELEVANT CURRENT IPWEAQ STANDARD DRAWINGS AND L.C.C. STANDARD DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES DURING THE CONSTRUCTION PHASE
- THE CONTRACTOR SHALL MAINTAIN 300mm MINIMUM VERTICAL 6 CLEARANCE FROM ALL EXISTING UTILITIES WHERE CROSSINGS OCCUR UNLESS NOTED OTHERWISE.
- PROVIDE A FULL HEIGHT METAL KERB ADAPTOR IN THE KERB 7. AND CHANNEL 400mm (MIN) FROM THE PROJECTED LOW SIDE PROPERTY BOUNDARY OF EVERY RESIDENTIAL LOT FALLING TOWARD THE ROAD.

STORMWATER DRAINAGE NOTES:

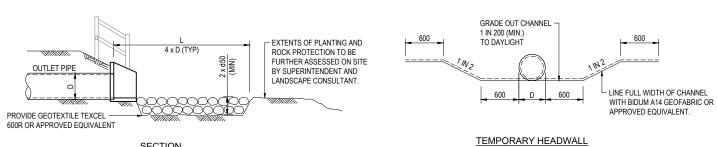
- 1. GULLY PIT CONSTRUCTION TO BE IN ACCORDANCE WITH I.P.W.E.A.Q. STD. DRG. DS-063.
- MANHOLE CONSTRUCTION TO BE IN ACCORDANCE WITH 2. I.P.W.E.A.Q. STD. DRG. DS-010 TO DS-021 (INCLUSIVE).
- 3. FIELD INLET CONSTRUCTION TO BE IN ACCORDANCE WITH I.P.W.E.A.Q. STD. DRG. DS-050.
- 3. WETLAND FIELD INLET CONSTRUCTION TO BE IN ACCORDANCE WITH I.P.W.E.A.Q. STD. DRG. DS-069.
- 4. BEDDING TO STORMWATER LINES TO BE IN ACCORDANCE WITH I.P.W.E.A.Q STD. DRG. DS-030.
- 5. GULLY PIT LOCATIONS SHOWN ARE CENTRE OF PIT ON ALIGNMENT OF NOMINAL KERB LINE.
- ALL STORMWATER PIPES UNDER ROADWAYS AND VEHICULAR 6. TRAFFICKED PAVEMENTS ARE TO BE STEEL REINFORCED CONCRETE PIPES UNLESS NOTED OTHERWISE.
- ALL PIPES UP TO AND INCLUDING 600mm DIA. ARE TO BE 7. RUBBER-RING JOINTED. ALL PIPES LARGER THAN 600mm DIA. TO BE FLUSH-JOINTED UNLESS NOTED OTHERWISE.
- 8. INVERT LEVELS OF EXISTING STORMWATER LINES TO BE CONFIRMED PRIOR TO DRAINLINE CONSTRUCTION COMMENCING.
- 9. STANDARD IPWEAQ MANHOLES DEEPER THAN 3.0m MAX, REQUIRE ONE LAYER OF SL82 MESH TO BE PLACED CENTRALLY IN WALLS
- 10. THE PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY. CONTRACTOR TO ASSESS PROPOSED PIPE COVER IN RELATION TO ANTICIPATED MACHINERY USED ON SITE AND UPGRADE THE PIPE CLASSES IF NECESSARY. CRACKED PIPES WILL NOT BE ACCEPTED.

ROCK ARMOURING NOTES:

- 1. ROCKS TO BE DURABLE BLUE STONE OR OTHERWISE APPROVED BY SUPERINTENDENT.
- 2. EACH ROCK SHALL BE ANGULAR IN SHAPE (PROMOTES INTERLOCKING) AND FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATERIAL.
- 3. NEITHER BREADTH NOR THICKNESS OF A SINGLE ROCK SHALL BE LESS THAN ONE HALF ITS LENGTH (ie THE ROCK SHALL BE CHUNKY RATHER THAN FLAT).
- 4. ROCKS TO BE PLACED AND INTERLOCKED INTO POSITION AND BUILT UP TO FINAL LEVELS SHOWN, ENSURING COVERAGE OF GEOFABRIC.
- 5. GAPS BETWEEN THE ROCKS ARE TO BE FILLED BY DROPPING SMALL ROCKS INTO GAPS AND LOCKING INTO POSITION WITH A CROWBAR
- 6. ALL ROCKWORK TO BE PLACED OVER BIDIM A24 OR EQUIVALENT.
- 7. FOR ROCK SIZED SPECIFIED AS D50 ON THE DRAWINGS, THIS CORRESPONDS TO THE MEDIAN DIAMETER OF WHICH HALF OF THE ROCK SIZES SHALL BE GREATER AND HALF OF THEM SHALL BE SMALLER. THE ROCK SHALL BE WELL GRADED AND HAVE A MAXIMUM SIZE NO GREATER THAN 30% AND A MINIMUM SIZE NO LESS THAN 30% SMALLER THAN D50. FOR EXAMPLE IF D50 = 400mm IS SPECIFIED, THE EQUIVALENT ROCK DIAMETER RANGES FROM 280 to 520mm.







SECTION

TYPICAL STORMWATER OUTLET PROTECTION

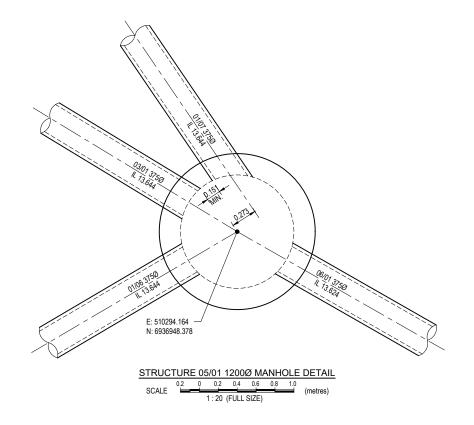
OUTLET DETAIL

N.T.S.

ROCK GRADATION TABLE

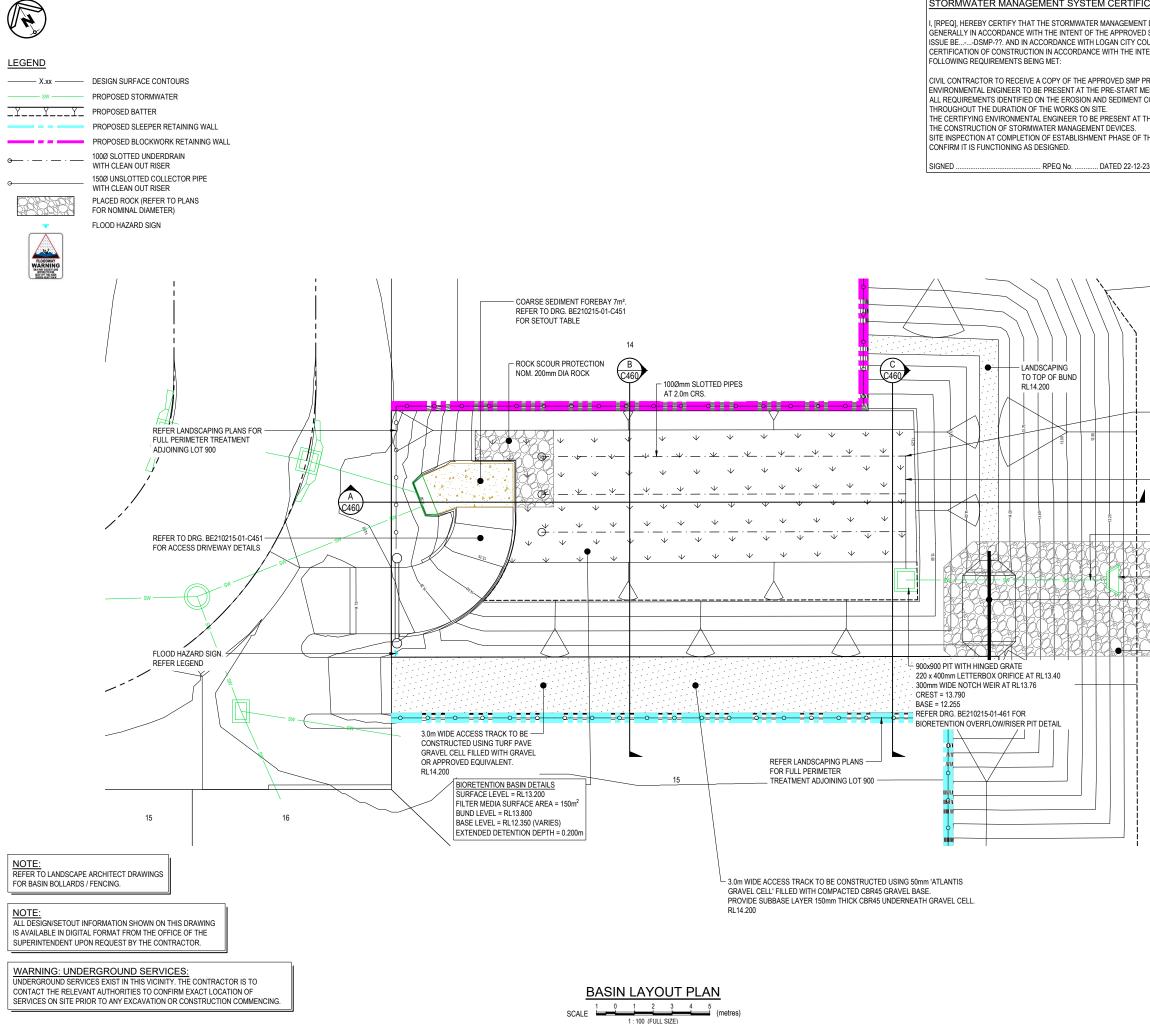
			d50			ROCK DISTRIBUTION
	200mm	300mm	400mm	500mm	600mm	BY %
	400	600	750	850	900	15-25%
ROCK SIZE	300	400	525	600	750	20%
(mm)	200	300	400	500	600	50%
	75	100	150	150	200	15-25%

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD								
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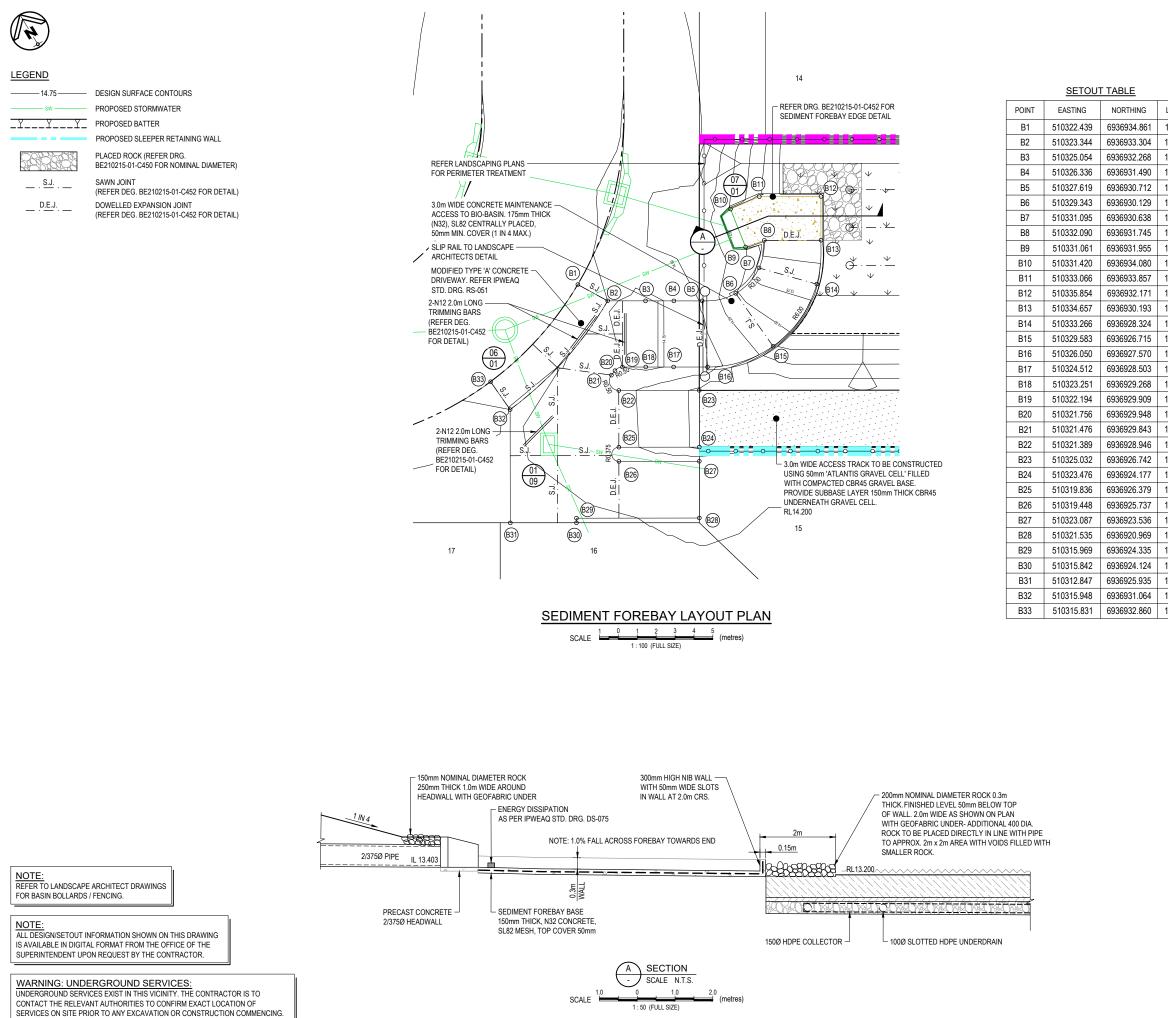
STORMWATER STRUCTURE DETAILS

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STORMWATER MANAGEMENT SYSTEM CERTIFIC

CATION DEVICES SHOWN ON THIS DRAWING ARE STORMWATER MANAGEMENT PLAN (SMP) UNCIL DECISION NOTICE REF: TBC ENT OF THE SMP IS CONTINGENT UPON THE RIOR TO COMMENCEMENT OF WORKS ON SITE. EETING. CONTROL PLAN HAVE BE MAINTAINED HE NOMINATED INSPECTION STAGES DURING THE STORMWATER MANAGEMENT SYSTEM TO 3		ENTIA VISIC BERS FL ATERFOR ST	AL)N 31, AT RD
REFER BE210215-01-C461 FOR 1000 SLOTTED PIPE CONNECTION TO COLLECTOR PIPE DETAIL. 1500 COLLECTOR PIPE 4500 RCP AT 1% USIL 12.255 DSIL 12.143 LENGTH = 11.200m STD. IPWEAQ HEADWALL. OUTLET TO BE FREE DRAINING HIGH FLOW WEIR CREST = RL13.940 WIDTH = 3.5m REFER TO DRG. BE210215-01-462 FOR DETAILS RENO-ROCK MATTRESS TO BE EXTENDED TO ACT AS SCOUR PROTECTION FOR HEADWALL OUTLET	A ORIGINAL ISSUE VER DESCRIPTIO COPYRIGHT © This drawing is copyright and they saturative of Burchille Engineering Subtroly of Burchille Engineering Subtroly of Burchille Engineering Subtroly of Burchille Engineering Burchille Engineering Sutroly of Burchille Engineering Burchille Engineering Sutroly of Burchille Engineering Sutroly Burchille Engineering Sutroly Sutroly	property of Burchills Er copied or used without Solutions. electronically generate for the purpose for without solutions. In of accept responsible of the drawing for our end of the second solution. In our completion of the resource scale. Do not information are signed or completion are signed or completion are signed or completion. In our commencing and information of the second solution of the second solution of the solution of the solution of the solution of the solution of the solution of the solution	20-09-23 DATE 20-09-23 DATE 20-09-23 DATE classes data d. are the signeering the
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GENERAL NOTES:

- SETOUT ALL DIMENSIONS AND SETOUT SHALL BE VERIFIED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION.
- 2 SUBGRADE THE PAVEMENT SUBGRADE SHALL BE TRIMMED TO THE REQUIRED PROFILES AND COMPACTED IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
- GRAVEL SUB-BASE GRAVEL PAVEMENT SUB-BASE SHALL CONFORM TO GRADING B IN ACCORDANCE WITH THE 3. PROJECT SPECIFICATION, VISQUEEN MOISTURE BARRIER TO UNDERSIDE OF SLAB. ALTERNATIVELY WET SUBGRADE PRIOR TO POUR.
- TESTING OF PAVEMENT 4 SUBGRADE & SUB-BASE. ALL TESTING SHALL BE PERFORMED BY AN APPROVED N.A.T.A. TESTING LABORATORY IN ACCORDANCE WITH THE PROJECT SPECIFICATION. NOTWITHSTANDING THE REQUIREMENTS OF THE SPECIFICATION ALL TESTING IS TO BE REPRESENTATIVE OF THE FULL ROAD LENGTH AND CROSS SECTION WITH A MINIMUM OF NOT LESS THAN ONE TEST PER 250 sq.m. OF PAVEMENT
- CONCRETE 5. DEPTH DESIGN CRITERIA THE DESIGN PAVEMENT DEPTH AS SPECIFIED IS BASED ON A SUBGRADE SOAKED CBR VALUE OF 4% (MIN) FOR THE EXISTING BULK EARTHWORKS. CONCRETE PAVEMENT CONSTRUCTION SHALL NOT COMMENCE UNTIL THE CBR OF THE SUB-GRADE IS CONFIRMED AND THE PROPOSED PAVEMENT DEPTH AND CONCRETE SLAB THICKNESS ARE APPROVED BY THE SUPERINTENDENT.
- 6. REINFORCEMENT REINFORCEMENT SHALL BE AS SPECIFIED ON THE DRAWINGS AND SHALL BE CHAIRED AT
- 1000 c/c BOTH WAYS TO GIVE TOP COVER. FOR SMOOTH FINISH SURFACE ADOPT 40 TOP COVER AND FOR EXPOSED AGGREGATE SURFACE ADOPT 50 TOP COVER.
- CONCRETE 1. CONCRETE USED IN PAVEMENT CONSTRUCTION SHALL CONFORM TO THE FOLLOWING 7.1. REQUIREMENTS:
 - (I) CONCRETE TO BE IN ACCORDANCE WITH AS3600 (II) CEMENT TO BE TYPE A ORDINARY CEMENT
 - (iii) SLUMP TO BE 80mm (+/- 15mm)
 - (iv) AGGREGATE TO BE CLEAN WITH A MAXIMUM SIZE OF 20mm
 - (v) CONCRETE SHALL BE GRADE \$32 MINIMUM
 - (vi) 90 DAY FLEXURAL STRENGTH 4.0 MPa. MINIMUM
- (vii) IF CONTRACTOR REQUIRES ACCESS TO SLAB SURFACE PRIOR TO 28 DAYS, EARLIER FLEXURAL STRENGTH SHALL BE REQUIRED AT NO ADDITIONAL COST TO THE CLIENT.
- 72 CONCRETE TO BE MECHANICALLY VIBRATED. THE VIBRATOR SHALL NOT BE USED TO SPREAD THE CONCRETE.
- CONCRETE PAVEMENT SHALL NOT BE CONSTRUCTED IN THE NARROW POINTED RE-ENTRANT AREAS i.e. THE CONCRETE SLAB SHALL BE FINISHED NEATLY SO THAT THE 7.3. MINIMUM SLAB WIDTH IS 300mm. SLABS TO BE POURED IN ALTERNATE BAYS 24 HOURS APART.
- 74 7.5.
- SUB-BASE COMPACTION AND REINFORCEMENT SHALL BE CHECKED BY THE SUPERINTENDENT PRIOR TO PLACING CONCRETE.
- 8.

CONCRETE TESTING THE CONTRACTOR SHALL CARRY OUT SAMPLING AND TESTING OF CONCRETE IN ACCORDANCE WITH THE PROJECT SPECIFICATION. MINIMUM REQUIREMENT FOR CONCRETE TESTING i.e. COMPRESSIVE, SLUMP TEST AND FLEXURAL STRENGTH TO BE ONE TEST SAMPLE PER 15 cu.m. OF CONCRETE.

9.

CONCRETE FINISH THE CONCRETE FINISH SHALL BE IN ACCORDANCE WITH THE LANDSCAPE ARCHITECT'S SPECIFICATION AND SAMPLES SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK

10.

CONTROL JOINTS ALL CONTROL JOINTS SHALL BE FINISHED WITH AN APPROVED SEALANT AS FURTHER SPECIFIED BELOW. CONCRETE CONTROL JOINTS AND SAW JOINTS SHALL BE LOCATED WHERE SHOWN ON THE DRAWINGS.

11.

SAW JOINTS JOINTS TO BE CUT BETWEEN 8 AND 16 HOURS AFTER CONCRETE POUR. LOCATION OF CUT MESH TO BE CLEARLY MARKED ON EDGE BOARD PRIOR TO POURING CONCRETE TO ENSURE JOINT IN CORRECT LOCATION. DEPTH OF THE SAW CUT SHALL BE NOT LESS THAN 25% OF THE SLAB DEPTH.

12

DOWEL BARS AND SLEEVES ALL DOWEL BARS SHALL BE 16 x 16 x 400mm LONG HOT DIP GALVANISED AT 300c/c TO SUIT 13. "DANLEY DOWEL-MASTER" DOWEL SLEEVE (U.N.O.).

14.

SEALANT TO BE "FOSROC THIOFLEX 600" OR APPROVED EQUIVALENT. SEALANT COLOUR IS TO MATCH SURROUNDING PAVEMENT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AND THE SUPERINTENDENT. SEALANT IS TO BE INSTALLED BY A SPECIALIST SUB-CONTRACTOR WHEN CONCRETE IS A MINIMUM OF 28 DAYS OLD. PROVIDE CONTINUOUS "ABELFLEX" OR APPROVED FOUIVALENT JOINT BOARD WITH BOND BREAKER TAPE, RECESS TO BE CLEANED WITH AIR HOSE AND PRIMED WITH AN APPROVED PRIMER PRIOR TO PLACEMENT OF SEALANT. SEALANT TO BE INSTALLED TO A MINIMUM DEPTH OF 15mm AND TO FINISH BELOW THE TOP OF THE FINISHED PAVEMENT.

- 15. DRAINAGE STRUCTURES ALL STORMWATER GULLY PITS REQUIRED TO BE CONSTRUCTED WITHIN PROPOSED ROADWAY TO HAVE GRATE AND FRAME SET PRIOR TO PAVEMENT CONSTRUCTION, PROVIDE 2-N12 TRIMMERS x 1200 LONG AT CORNER OF PITS, LOCATED UNDER MESH.
- 16. MANHOLE LIDS

ALL SEWER AND STORMWATER MANHOLE STRUCTURES THAT ARE REQUIRED TO BE CONSTRUCTED WITHIN CONCRETE PAVEMENT SHALL HAVE COVERS AND FRAMES SET PRIOR TO PAVEMENT CONSTRUCTION. THE CONTRACTOR IS TO ENSURE THAT THE CONCRETE SURROUND AND LID INFILL MATCHES THE SURROUNDING CONCRETE FINISH TO THE LANDSCAPE ARCHITECT'S REQUIREMENTS. RROVIDE 2-N12 TRIMMERS x 1200 LONG AT CORNER OF PITS, LOCATED UNDER MESH OR 8-N12 TRIMMERS x 1200 LONG AT CIRCULAR STRUCTURES.

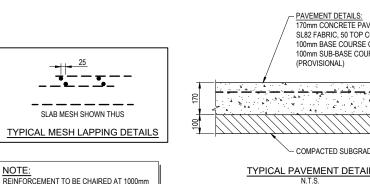
STRUCTURAL NOTES:

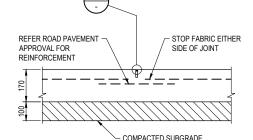
- 1. ALL DIMENSIONS SHALL BE CHECKED ON SITE BEFORE WORK COMMENCES. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS
- 2. COMPACTION OF FOUNDATION MATERIAL SHALL BE CHECKED BY THE SUPERINTENDENT BEFORE POURING OF THE BASE.
- 3. CONCRETE WORK SHALL BE IN ACCORDANCE WITH CURRENT S.A.A. CODES.
- 4. CONCRETE SHALL BE IN ACCORDANCE WITH AS3600 AND THE FOLLOWING
- CONCRETE STRENGTH : 32 MPa
- 5. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE IN ACCORDANCE WITH AS2758-PT1.
- 6. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. THE VIBRATOR SHALL NOT BE USED TO SPREAD CONCRETE

N12

.SL82

- REINFORCEMENT TYPE AND GRADE TO BE IN ACCORDANCE WITH THE FOLLOWING R12
- 7.1 PLAIN ROUND BARS (AS1302).. DEFORMED BARS STRUCTURAL GRADE (AS1304)S12
- DEFORMED BARS (TEMPCORE) (AS1302) 73
- 7.4 HARD DRAWN WIRE FABRIC (AS1304).
- (12 INDICATES DIAMETER OF BARS IN mm)
- 8. PLACEMENT OF REINFORCEMENT AND FORMWORK SHALL BE INSPECTED BY THE SUPERINTENDENT FOR APPROVAL PRIOR TO PLACING CONCRETE.
- 9. ALL FORMWORK SHALL COMPLY WITH THE REQUIREMENTS OF AS3610 S.A.A. FORMWORK CODE
- 10. THE CLEAR COVER TO REINFORCEMENT SHALL BE AS INDICATED ON THE DRAWINGS AND WHERE NOT SHOWN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AS3600.



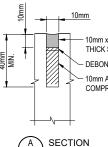


SAWN CUT JOINT (S.J.)

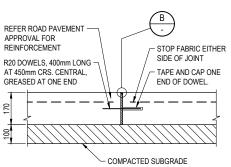
N.T.S

CENTRES TO GIVE TOP COVER OF 50mm.

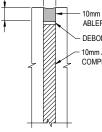
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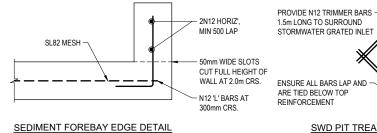
SCALE N.T.S



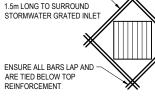




B SECTION SCALE N.T.S



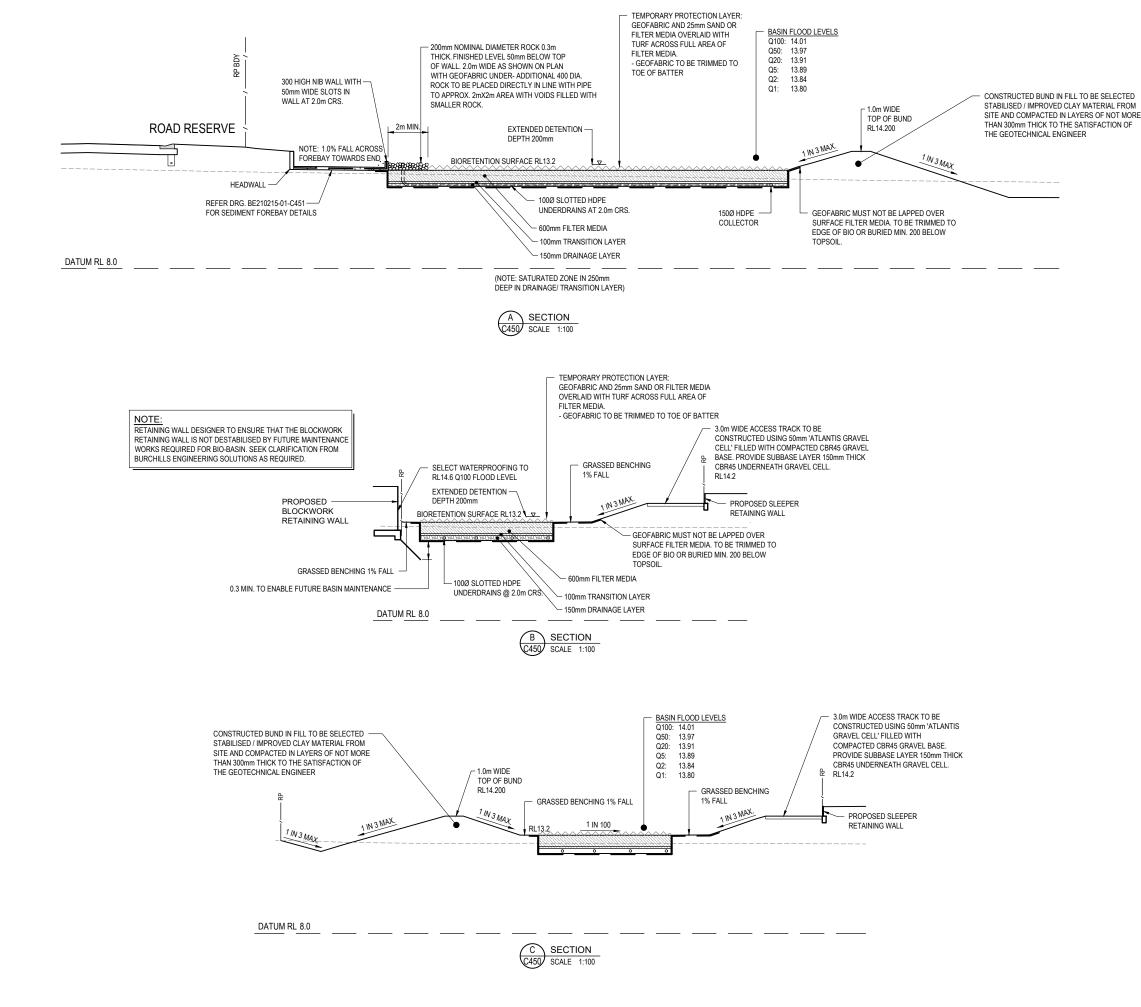
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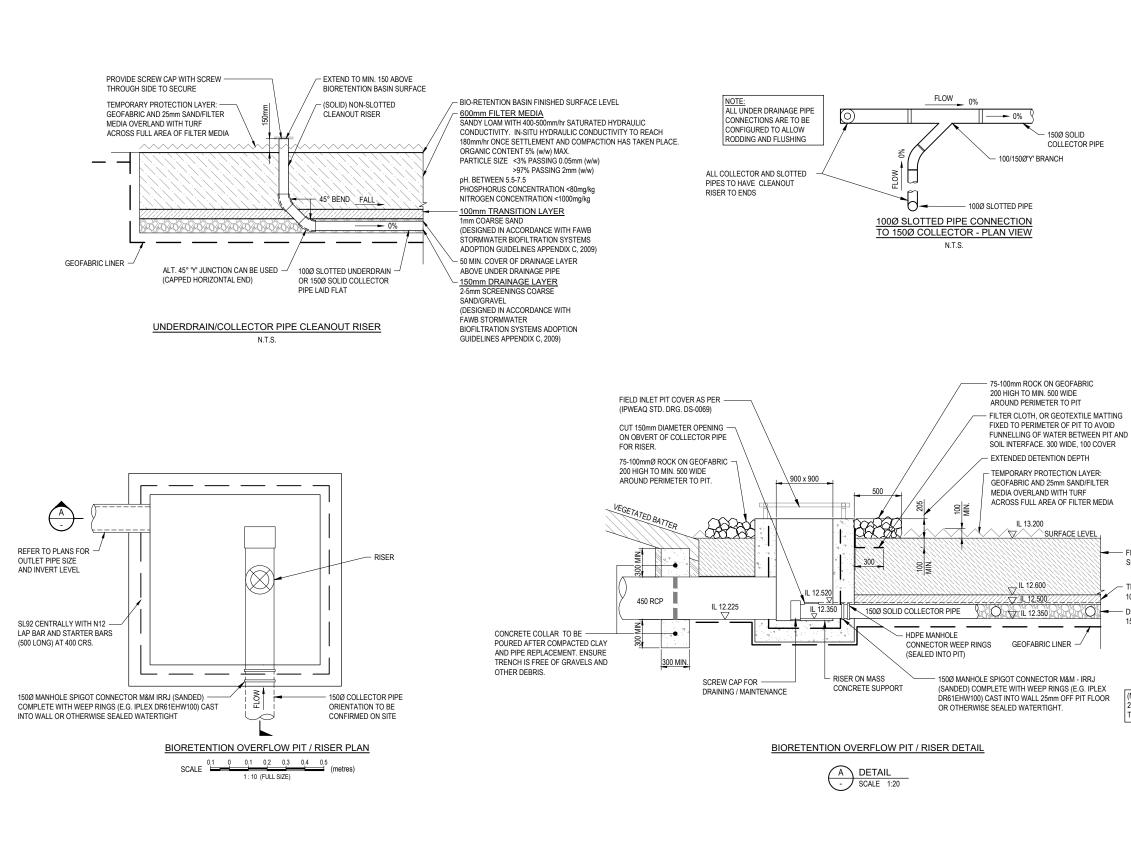
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PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD									
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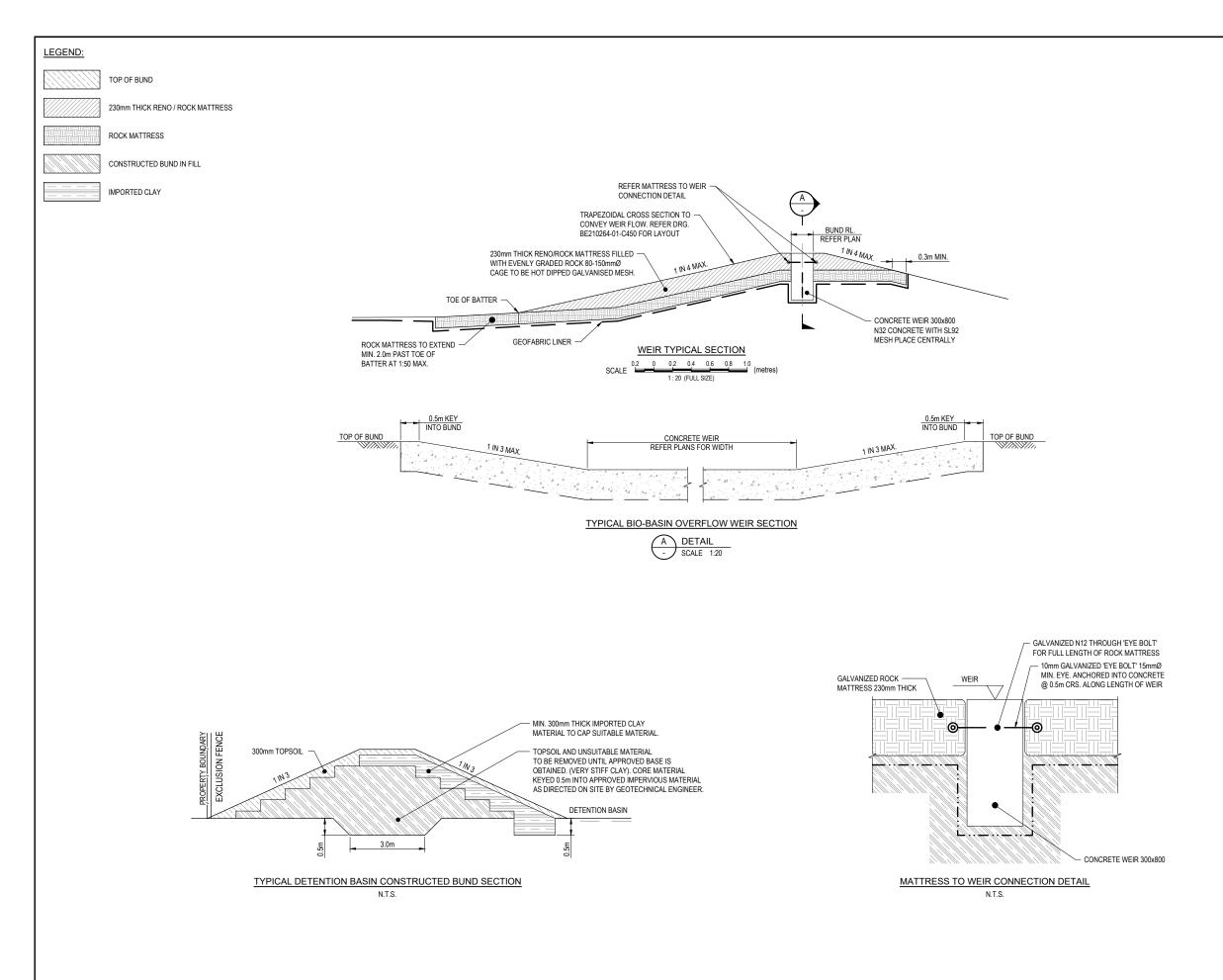
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FILTER MEDIA - 600 REFER SPECIFICATION

TRANSITION LAYER -100 COARSE SAND DRAINAGE LAYER -

150 FINE GRAVEL

(NOTE: SATURATED ZONE 250mm DEEP IN DRAINAGE/ TRANSITION LAYER)



PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD								
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DESIGNER : G.P.C.								
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GENERAL NOTES:

SETOUT ALL DIMENSIONS AND SETOUT SHALL BE VERIFIED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION.

- 2. <u>SUBGRADE</u> THE PAVEMENT SUBGRADE SHALL BE TRIMMED TO THE REQUIRED PROFILES AND COMPACTED IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
- 3. <u>GRAVEL SUB-BASE</u> GRAVEL PAVEMENT SUB-BASE SHALL CONFORM TO GRADING B IN ACCORDANCE WITH THE PROJECT SPECIFICATION. VISQUEEN MOISTURE BARRIER TO UNDERSIDE OF SLAB ALTERNATIVELY WET SUBGRADE PRIOR TO POUR.
- 4. <u>TESTING OF PAVEMENT SUBGRADE & SUB-BASE.</u> ALL TESTING SHALL BE PERFORMED BY AN APPROVED N.A.T.A. TESTING ABORATORY IN ACCORDANCE WITH THE PROJECT SPECIFICATION. NOTWITHSTANDING THE EQUIREMENTS OF THE SPECIFICATION ALL TESTING IS TO BE REPRESENTATIVE OF THE FULL ROAD LENGTH AND CROSS SECTION WITH A MINIMUM OF NOT LESS THAN OUR (4) TESTS.
- 5. <u>CONCRETE DEPTH DESIGN CRITERIA</u> THE DESIGN PAVEMENT DEPTH AS SPECIFIED IS BASED ON A SUBGRADE SOAKED CBR VALUE OF 5% (U.N.O.). CONCRETE PAVEMENT CONSTRUCTION SHALL NOT COMMENCE UNTIL THE CBR OF THE SUB-GRADE IS CONFIRMED AND THE PROPOSED PAVEMENT DEPTH AND CONCRETE SLAB THICKNESS ARE APPROVED BY THE SUPERINTENDENT.
- 6. REINFORCEMENT REINFORCEMENT SHALL BE AS SPECIFIED ON THE DRAWINGS AND SHALL BE CHAIRED AT 1000 c/c BOTH WAYS TO GIVE TOP COVER. FOR SMOOTH FINISH SURFACE ADOPT 50 TOP COVER.
- 7. CONCRETE

CONCRETE USED IN PAVEMENT CONSTRUCTION SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- (I) CONCRETE TO BE IN ACCORDANCE WITH AS3600 (II) CEMENT TO BE TYPE A ORDINARY CEMENT
- (iii) SLUMP TO BE 80mm (+/- 15mm)
- (iv) AGGREGATE TO BE CLEAN WITH A MAXIMUM SIZE OF 20mm
- (v) CONCRETE SHALL BE GRADE N40 MINIMUM
- (v) IF CONTRACTOR REQUIRES ACCESS TO SLAB SURFACE PRIOR TO 28 DAYS, EARLIER FLEXURAL STREINGTH SHALL BE REQUIRED AT NO ADDITIONAL COST TO THE CLIENT. CONCRETE TO BE MECHANICALLY VIBRATED. THE VIBRATOR SHALL NOT BE USED TO SPREAD THE CONCRETE. CONCRETE PAVEMENT SHALL NOT BE CONSTRUCTED IN THE NARROW POINTED RE-ENTRANT AREAS I.e. THE CONCRETE SLAB SHALL BE FINISHED NEATLY SO THAT THE MINIMUM SLAB WIDTH IS 300mm. SLABS TO BE POURED IN ALTERNATE BAYS 24 HOURS APART. SUB-BASE COMPACTION AND REINFORCEMENT SHALL BE CHECKED BY THE SUPERINTENDENT PRIOR TO PLACING CONCRETE.
- 8. CONCRETE TESTING

THE CONTRACTOR SHALL CARRY OUT SAMPLING AND TESTING OF CONCRETE IN ACCORDANCE WITH THE PROJECT SPECIFICATION. MINIMUM REQUIREMENT FOR CONCRETE TESTING i.e. COMPRESSIVE, SLUMP TEST AND FLEXURAL STRENGTH TO BE 4 No. TESTS TOTAL.

- <u>CONCRETE FINISH</u>
 THE CONCRETE FINISH SHALL BE SMOOTH TROWELLED FINISH AND SAMPLES SHALL
 BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO
 COMMENCEMENT OF WORK.
- 10. CONTROL JOINTS

ALL CONTROL JOINTS SHALL BE FINISHED WITH AN APPROVED SEALANT AS FURTHER SPECIFIED BELOW. CONCRETE CONTROL JOINTS AND SAW JOINTS SHALL BE LOCATED WHERE SHOWN ON THE DRAWINGS.

11. SAW JOINTS

JOINTS TO BE CUT BETWEEN 8 AND 16 HOURS AFTER CONCRETE POUR. LOCATION OF CUT MESH TO BE CLEARLY MARKED ON EDGE BOARD PRIOR TO POURING CONCRETE TO ENSURE JOINT IN CORRECT LOCATION. DEPTH OF THE SAW CUT SHALL BE NOT LESS THAN 25% OF THE SLAB DEPTH.

12. DOWEL BARS AND SLEEVES

ALL DOWEL BARS SHALL BE R20 x 400mm LONG HOT DIP GALVANISED AT 300c/c TO SUIT "DANLEY DOWEL-MASTER" DOWEL SLEEVE (U.N.O.).

13. <u>SEALANT</u> SEALANT TO BE "FOSROC THIOFLEX 600" OR APPROVED EQUIVALENT. SEALANT COLOUR IS TO MATCH SURROUNDING PAVEMENT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AND THE SUPERINTENDENT. SEALANT IS TO BE INSTALLED BY A SPECIALIST SUB-CONTRACTOR WHEN

CONCRETE IS A MINIMUM OF 28 DAYS OLD. PROVIDE CONTINUOUS "ABELFLEX" OR APPROVED EQUIVALENT JOINT BOARD WITH BOND BREAKER TAPE.

RECESS TO BE CLEANED WITH AIR HOSE AND PRIMED WITH AN APPROVED

- PRIMER PRIOR TO PLACEMENT OF SEALANT. SEALANT TO BE INSTALLED TO A MINIMUM DEPTH OF 15mm AND TO FINISH
- BELOW THE TOP OF THE FINISHED PAVEMENT.

GENERAL EARTHWORKS NOTES:

- 1. ALL EARTHWORKS CONSTRUCTION UNDER THIS CONTRACT IS TO BE PERFORMED STRICTLY IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED BY THE PRINCIPAL'S GEOTECHNICAL CONSULTANT.
- ALL COMPACTION TESTING UNDER THIS CONTRACT IS TO BE CARRIED OUT TO AS3798 LEVEL 1 STANDARD BY A NATA-ACCREDITED TESTING AUTHORITY. CERTIFICATION FOR ALL EARTHWORKS CONSTRUCTION AND TESTING IS TO BE PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER QUEENSLAND (RPEQ) ENGAGED BY THE CONTRACTOR.
- 3. ALL DESIGN LEVELS SHOWN ON THE CONTRACT DRAWINGS ARE FINISHED SURFACE LEVELS FOLLOWING TOPSOIL REPLACEMENT.
- ALL STRUCTURAL FILL MATERIAL PLACED SHALL BE COMPACTED TO THE FOLLOWING MINIMUM DENSITY IN ACCORDANCE WITH THE SPECIFICATION AND THE GEOTECHNICAL REPORT:
- a) 95% DENSITY RATIO FOR GENERAL STRUCTURAL FILL (COHESIVE MATERIAL)
 b) 98% DENSITY RATIO FOR THE TOP 300mm DEPTH BELOW PAVEMENT SUBGRADE LEVEL (COHESIVE MATERIAL)
- 5. FILL MATERIAL USED IN WETLAND BATTERS IS TO BE STIFF TO HARD CLAYS OR OTHER SUITABLE MATERIAL AS DIRECTED BY GEOTECHNICAL ENGINEER.
- 6. ALL EARTHWORKS BATTERS STEEPER THAN 1 IN 4 ARE TO BE LANDSCAPED IN ACCORDANCE WITH LANDSCAPE ARCHITECTS PLANS.
- EXISTING DAMS ARE TO BE DE-WATERED AND CLEANED-OUT. ALL UNSUITABLE OR SATURATED MATERIAL IS TO BE REMOVED AND REPLACED WITH SELECTED ON-SITE STRUCTURAL FILL MATERIAL AND COMPACTED AS SPECIFIED.
- PROVIDE CONDITION SURVEY OF ADJACENT RESIDENTIAL BUILDINGS FOR ALL PROPERTIES LOCATED WITHIN NOMINAL 100m OF EARTHWORKS OPERATIONS. CONDITION SURVEY TO BE UNDERTAKEN BY QUALIFIED PERSONNEL WITH BUILDING EXPERIENCE.

TYPICAL EARTHWORKS SEQUENCE NOTES:

- CONSTRUCT DIVERSION DRAINS AS DIRECTED TO DIVERT SITE RUNOFF AWAY FROM CONSTRUCTION AREAS. ESTABLISH DE-WATERING CONTROLS TO ENSURE THAT THE CONSTRUCTION AREAS REMAIN FREE OF SURFACE WATER AND PONDING.
- FOLLOWING COMPLETION OF CLEARING OPERATIONS AND REMOVAL OF RESIDUAL VEGETATION AND DEBRIS, STRIP TOPSOIL TO A NOMINAL 150mm DEPTH AND PLACE IN TEMPORARY STOCKPILES IN LOCATIONS APPROVED BY THE SUPERINTENDENT.
- PROOF-ROLL AND COMPACT THE PROPOSED FILL AREAS FOLLOWING TOPSOIL STRIPPING, TO THE SATISFACTION OF THE SUPERINTENDENT.
- 4. ANY STRIPPED AREAS WHICH DEMONSTRATE EXCESSIVE MOVEMENT OR DO NOT IMPROVE SUFFICIENTLY UNDER PROOF-ROLLING ARE TO BE REMOVED, REPLACED WITH APPROVED SITE MATERIAL AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- ANY UNSUITABLE MATERIAL ENCOUNTERED, INCLUDING SILTY MATERIAL AND UN-CONTROLLED FILL IS TO BE EXCAVATED TO THE EXTENTS AND DEPTHS NOMINATED BY THE PRINCIPAL'S GEOTECHNICAL CONSULTANT, REMOVED TO NON-STRUCTURAL FILL AREAS OR TAKEN OFF-SITE AS DIRECTED AND REPLACED WITH APPROVED, COMPACTED FILL MATERIAL.
- PLACE STRUCTURAL FILL MATERIAL FROM SITE EXCAVATIONS TO NOMINATED SITE FILL AREAS, INCLUDING BENCHING AND COMPACTION IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND TRIMMING AND FINAL PROFILING OF BATTERS.
- PROVIDE GRASSING TO TOPSOILED AREAS AS DIRECTED.

FILTER MATERIAL GRADING:

 $\label{eq:response} \begin{array}{l} \mbox{Filter Material to have hydraulic conductivity of 200mm/hr. Under drainage material is to have a minimum hydraulic conductivity of 5000mm/hr. The grading of the under drainage gravel, transition layer and filter media shall comply with the following criteriae complexity of the following drainage gravel, transition layer and filter media drainage gravel. (Transition layer and filter media) <math display="inline">D_{15}$ (drainage layer) $\leq 5 x D_{85}$ (fransition media) D_{15} (drainage layer) $\leq 5 x D_{85}$ (transition media) D_{15}

FILTER MEDIA PARTICLE SIZE DISTRIBUTION:

CLAY & SILT	<3%	(<0.05mm)
VERY FINE SAND	5-30%	(0.05-0.15mm)
FINE SAND	10-30%	(0.15-0.25mm)
MEDIUM TO COURSE SAND	40-60%	(0.25-1.0mm)
COURSE SAND	7-10%	(1.0-2.0mm)
FINE GRAVEL	<3%	(2.0-3.4mm)

FILTER MEDIA CRITERIA:

FILTER MEDIA THAT DOES NOT MEET THE FOLLOWING SPECIFICATIONS WILL BE REJECTED:

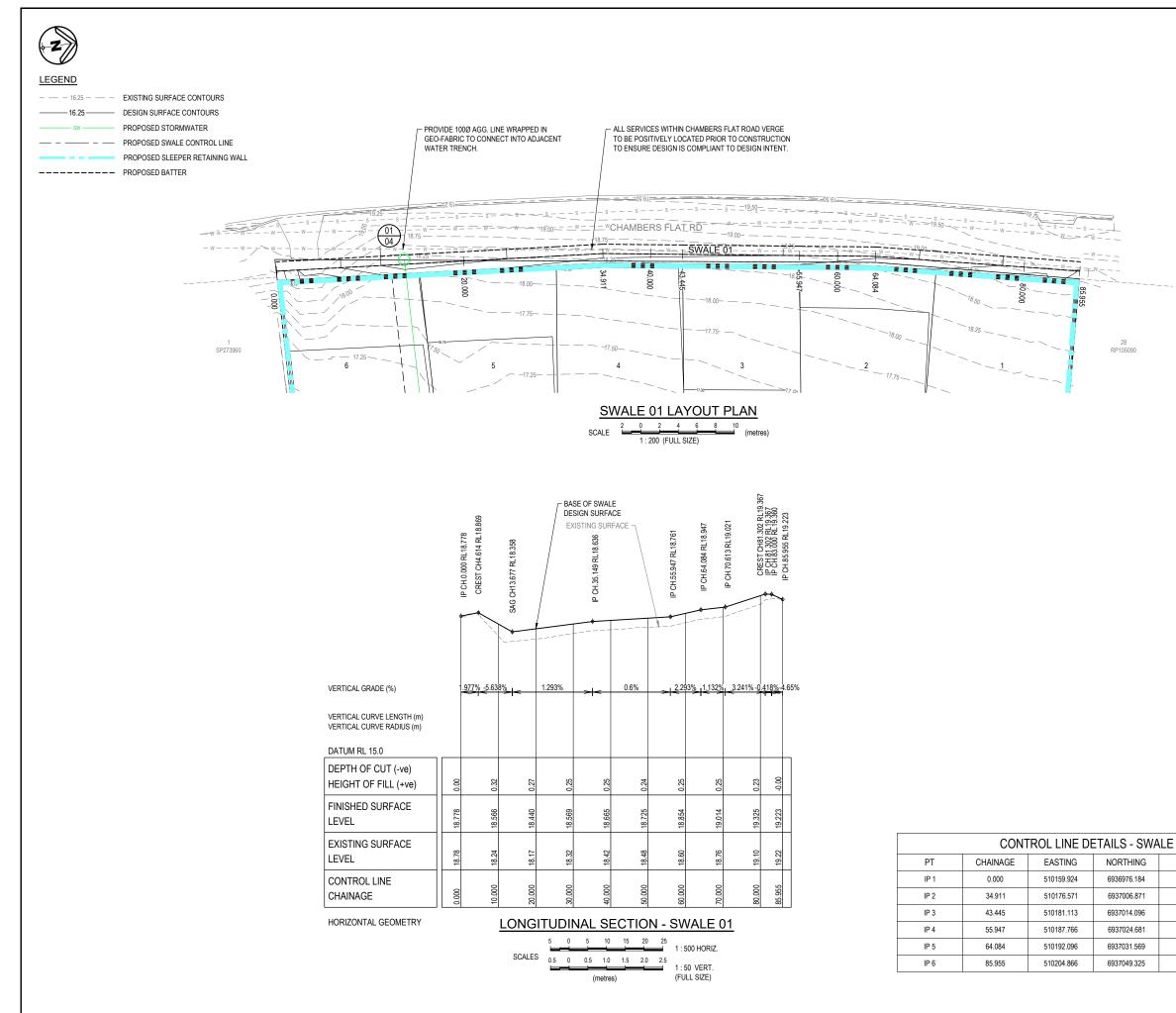
- ORGANIC MATTER CONTENT AT LEAST 3% (W/W). AN ORGANIC CONTENT HIGHER THAN 5% IS LIKELY TO RESULT IN LEACHING OF NUTRIENTS.
- PH-AS SPECIFIED FOR NATURAL SOILS AND SOIL BLENDS' 5.5-7.5 (PH 1:5 IN WATER)
- SANDY LOAM WITH 400-500mm/hr SATURATED HYDRAULIC CONDUCTIVITY
 IN-SITU HYDRAULIC CONDUCTIVITY TO REACH 180mm/hr ONCE SETTLEMENT AND
- COMPACTION HAS TAKEN PLACE.
- ORTHOPHOSPHATE CONTENT <80mg/kg
- TOTAL NITROGEN (TN) CONTENT <1000mg/kg

BIO-RETENTION NOTES:

- B.R.1. ALL OTHER DETAILS FOR BIO RETENTION DEVICES TO BE IN ACCORDANCE WITH IPWEA STD. DRG. DS-070 TO DS-078.
- B.R.2. BIO-FILTER TO BE DENSELY VEGETATED TO A HEIGHT OF 250mm.
- B.R.3. PLANT SPECIES TO BE IN ACCORDANCE WITH LANDSCAPE ARCHITECTS DRAWINGS AND HEALTHY WATERWAYS WSUD TECHNICAL DESIGN GUIDELINES.
- B.R.4. TO ALLOW FOR FUTURE MAINTENANCE, PIPES IN THE GRAVEL LAYER TO BE PUSH FIT JOINTED ONLY (NOT GLUED)
- B.R.5. 100 DIA. UPVC PIPES ARE TO HAVE 150mm x 2mm LONGITUDINAL SLOTS AT 350mm CENTRES AT 4 EQUAL SPACINGS AROUND THE CIRCUMFERENCE.
- B.R.6. ALL LEVELS NOTED ON BIO-FILTERS REFER TO FINISHED SAND LEVEL.
- B.R.7. ALL BIO-FILTERS ARE TO HAVE SIGNAGE TO EDUCATE RESIDENTS OF THE FUNCTION OF THE BIORETENTION BASINS. REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR DETAILS.
- B.R.8. THE CONSTRUCTION AND ESTABLISHMENT OF THE STORMWATER TREATMENT DEVICES ARE TO BE IN ACCORDANCE WITH THE "CONSTRUCTION AND ESTABLISHMENT GUIDELINES". SWALES, BIO-RETENTION SYSTEMS AND WETLANDS (VERSION 1.1 APRIL 2010), PREPARED BY WATER BY DESIGN. THE SUPERINTENDENT IS TO COMPLETE SIGN OFF FORMS TO ENSURE THE CORRECT CONSTRUCTION AND CERTIFICATION PROCESS IS FOLLOWED.
- B.R.9. THE TABLES BELOW HAVE BEEN PROVIDED FOR THE SITE FOREMAN TO MANAGE HOLD POINTS. WITH REFERENCE TO THE WATER BY DESIGN GUIDELINES, THE FOLLOWING SUMMARY CHECKLIST WITH HOLD POINTS IS PROVIDED TO ASSIST ON-SITE. THE COMPLETE CHECKLIST AND SIGN-OFF FORMS ARE TO BE COMPLETED, AND SUBMITTED WITH THE CERTIFICATION DOCUMENTATION:

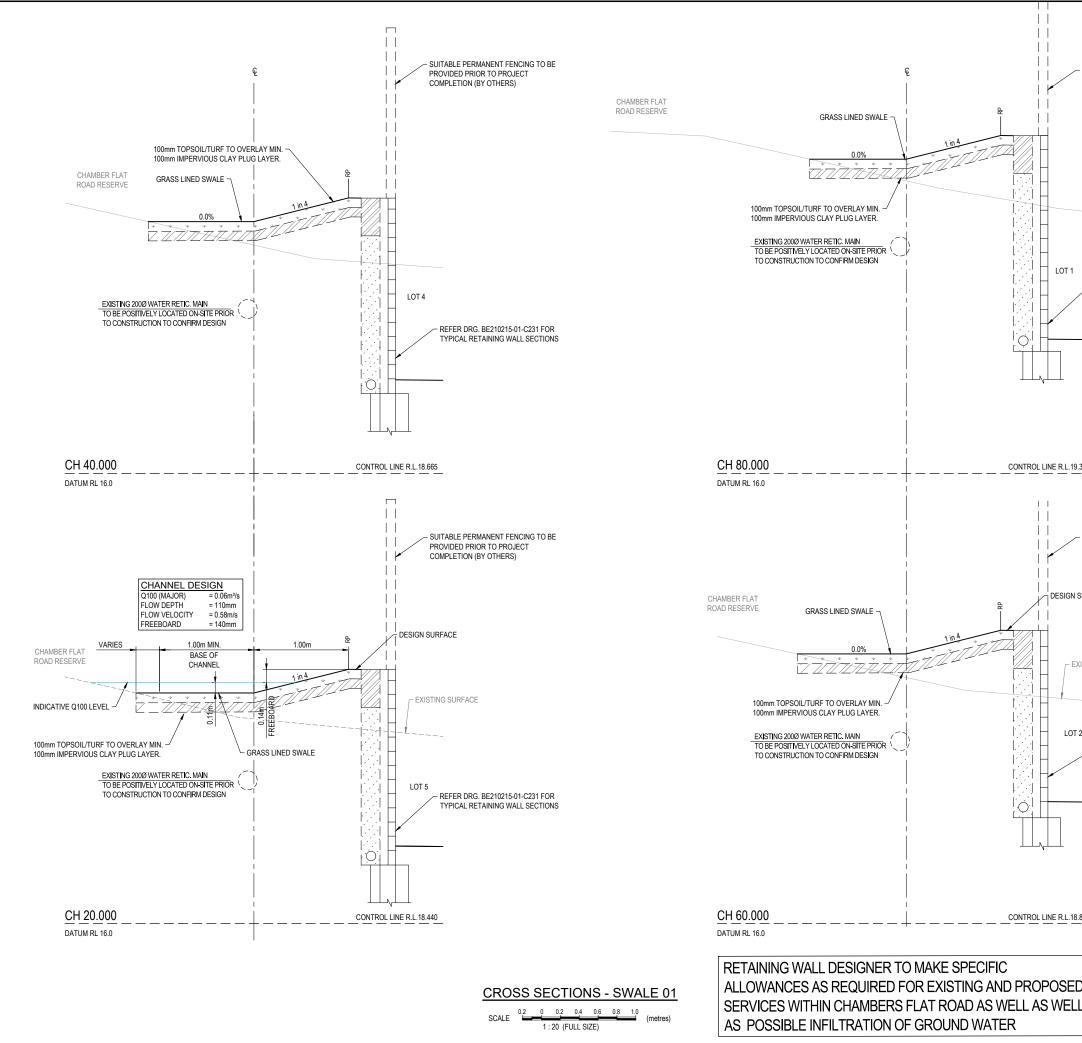
BIO-RETENTION BASIN - CH	ECKLIST
HOLD POINT	HOLD POINT RELEASED BY SUPERINTENDENT, ENSURING ALL COMPONENTS OF THE SIGN-OFF FORM HAVE BEEN COMPLETED
PRE-START MEETING	
FORM A - EARTHWORKS & FUNCTIONAL STRUCTURES	
FORM B - UNDER DRAINAGE	
FORM C - BIORETENTION MEDIA	
FORM D - FINISHED LEVELS	
FORM E - COURSE SEDIMENT FOREBAY	
FORM F- PROTECTIVE MEASURE	
FORM G - LANDSCAPE INSTALLATION	
FORM H - LANDSCAPE ESTABLISHMENT	

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD						
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TYPICAL BASIN NOTES						
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PROJE	CT LEADER : ROBERT	TO DI FABIO				
DESIG	NER : G.P.C.					
	SPERSON : L.D.L.					
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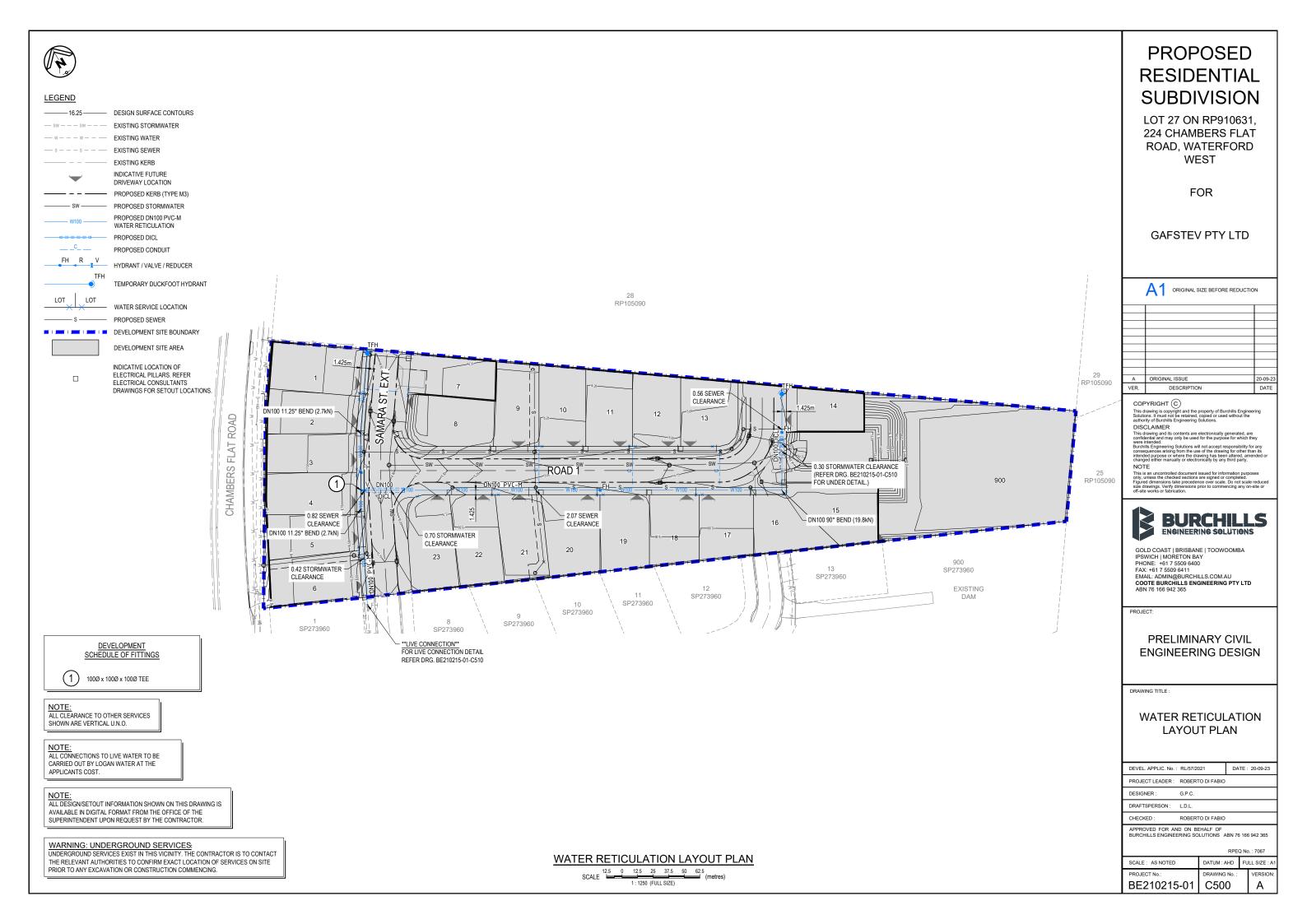


	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD								
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	SPERSON : L.D.L.								
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01	
HEIGHT	BEARING
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18.633	
18.686	
18.761	
18.947	
	35°43'27.85"



- SUITABLE PERMANENT FENCING TO BE PROVIDED PRIOR TO PROJECT COMPLETION (BY OTHERS)	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST
	FOR
	GAFSTEV PTY LTD
REFER DRG. BE210215-01-C231 FOR TYPICAL RETAINING WALL SECTIONS	A1 ORIGINAL SIZE BEFORE REDUCTION
	B RFI RESPONSE 19-02-24 A ORIGINAL ISSUE 03-11-23 VER. DESCRIPTION DATE
325 - SUITABLE PERMANENT FENCING TO BE PROVIDED PRIOR TO PROJECT COMPLETION (BY OTHERS)	COPYRIGHT (C) This drawing is copyright and the property of Burchills Engineering Solutions: It must not be relatined, copied or used without the authority of Burchills Engineering Solutions. DISCLAIMEN This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they burchills Engineering Solutions will not accept responsibility for any consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party. DTDE This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figured dimensions take precisions ports to commencing any on-site or off-site works or fabrication.
SURFACE	BURCHILLS ENGINEERING SOLUTIONS
KISTING SURFACE	GOLD COAST BRISBANE TOOWOOMBA IPSWICH MORETON BAY PHONE: +61 7 5509 6400 FAX: 461 7 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU COOTE BURCHILLS ENGINEERING PTY LTD ABN 76 166 942 365
2 REFER DRG. BE210215-01-C231 FOR TYPICAL RETAINING WALL SECTIONS	PROJECT: 224 CHAMBERS FLAT ROAD
	DRAWING TITLE: SWALE 01 CROSS SECTIONS
854	DEVEL. APPLIC. No. : RL/57/2021 DATE : 19-02-24 PROJECT LEADER : ROBERTO DI FABIO DESIGNER : G.P.C.
	DRAFTSPERSON: LD.L. CHECKED: ROBERTO DI FABIO APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
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WATER MAIN NOTES:

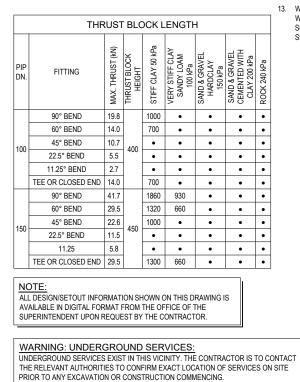
- WATER MAIN ALIGNMENT IS 1.425m FROM ROAD RESERVE BOUNDARY UNLESS SHOWN OTHERWISE
- 2. ALL WATER MAINS ARE TO BE PVC-M SERIES 2 PN 16 (RRJ).
- MINIMUM COVER TO WATER MAINS SHALL BE 600mm (MEASURED 3. FROM LIP OF KERB)
- ALL WATER MAINS AND FITTINGS ARE TO BE CONSTRUCTED IN 4. ACCORDANCE WITH THE S.E.Q. WATER SUPPLY STANDARD DRAWINGS
- FOR LOCATIONS OF ELECTRICAL ROAD CROSSING CONDUITS 5 REFER ELECTRICAL CONSULTANT'S DRAWINGS.
- WATER SERVICE LOCATIONS SHALL NOT BE IN CONFLICT WITH 6 ELECTRICAL PILLARS. SUPERINTENDENT TO BE NOTIFIED PRIOR TO CONSTRUCTION IF CONFLICT IS APPARENT.
- 7 ALL HYDRANTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH S.E.Q. STD. DRG. SEQ-WAT-1300-1 TO SEQ-WAT-1303-01 INCLUSIVE
- 8. ALL WATER MAIN ROAD CROSSINGS TO BE DICL CLASS PN35 POLYETHYLENE SLEEVED AS SPECIFIED.
- CONTRACTOR TO ENSURE ALL WATER FITTINGS (VALVES AND 9. HYDRANTS) ARE LOCATED CLEAR OF FUTURE DRIVEWAYS.
- WATER SERVICES TO ALLOTMENTS FROM MAINS TO BE VIA AN APPROVED TAPPING BAND IN ACCORDANCE WITH THE SEQ CODE IPAM PRODUCT LIST.

VEGETATION PROTECTION NOTES:

- TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED
- WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD 2. GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- 3. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- 4. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST

SOIL NOTES:

- TOPSOIL AND SUBSOIL SHALL BE STOCKPILED SEPARATELY.
- CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING 2. THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.

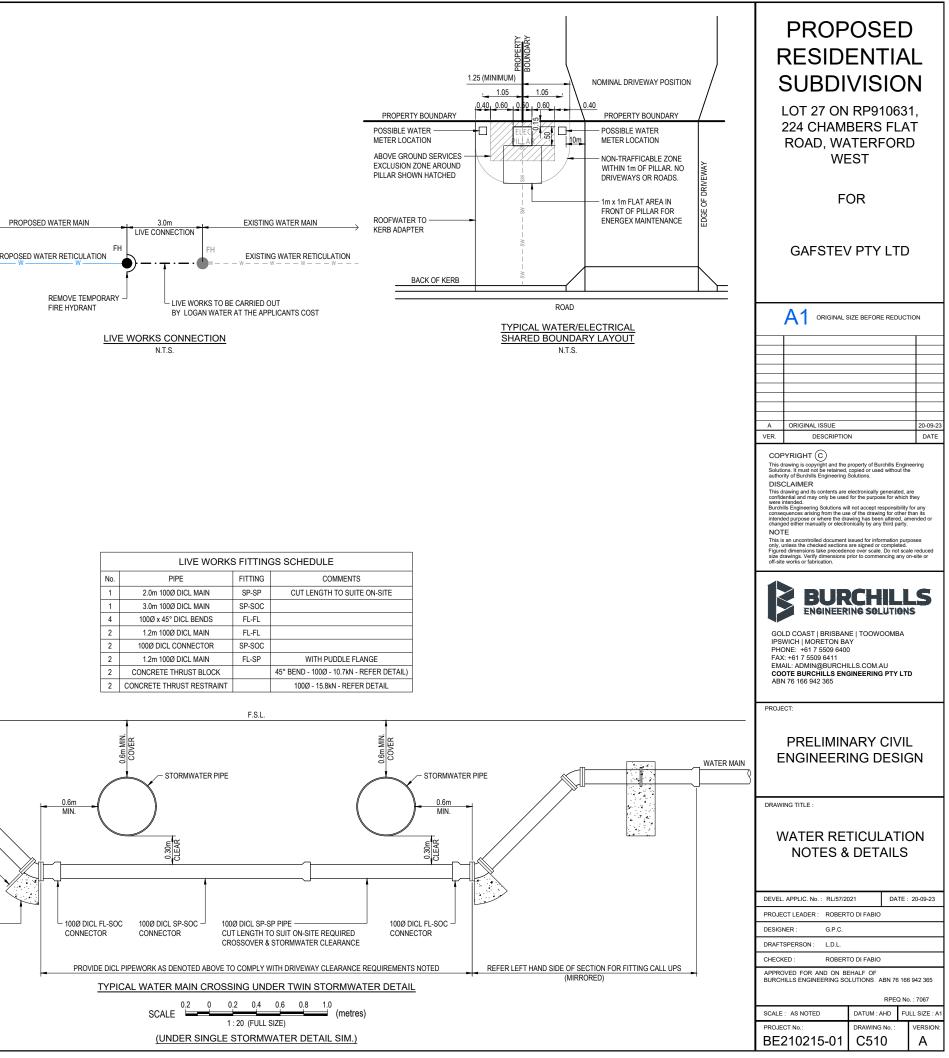


REHABILITATION NOTES:

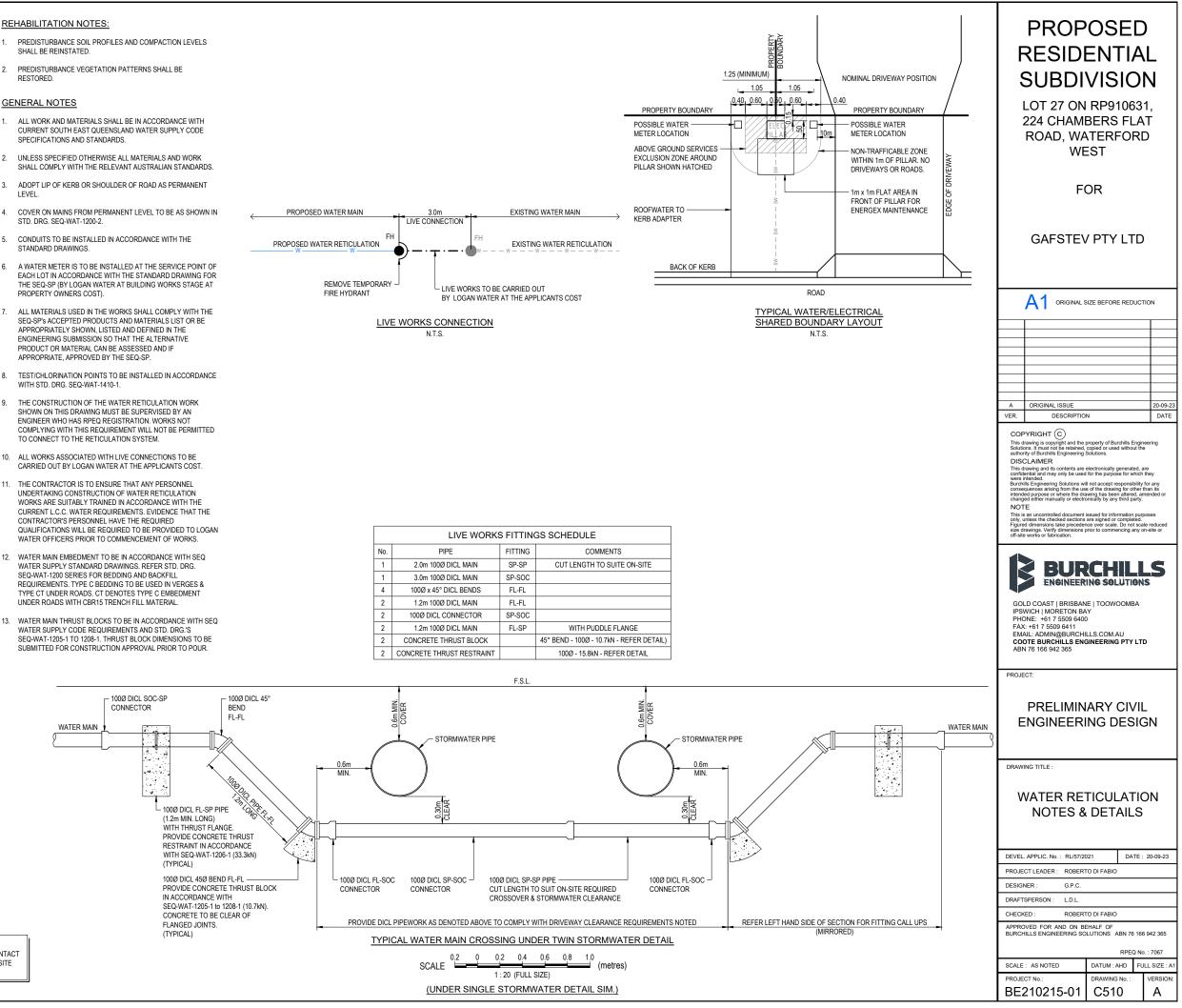
- PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
- RESTORED

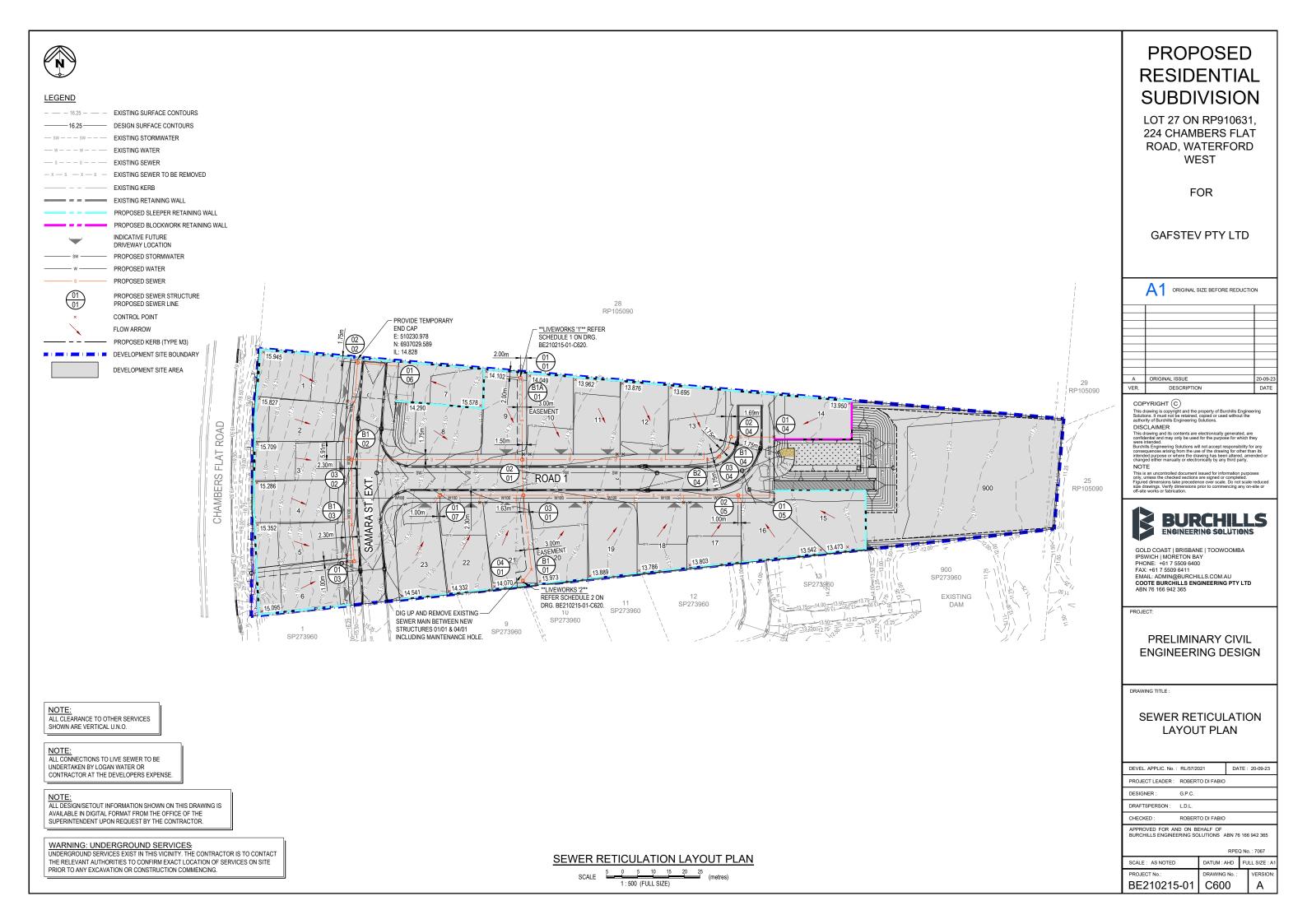
GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH 1 CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
- SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- 3. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL
- 4. COVER ON MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN STD, DRG, SEQ-WAT-1200-2,
- 5. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWINGS
- 6. A WATER METER IS TO BE INSTALLED AT THE SERVICE POINT OF FACH LOT IN ACCORDANCE WITH THE STANDARD DRAWING FOR THE SEQ-SP (BY LOGAN WATER AT BUILDING WORKS STAGE AT PROPERTY OWNERS COST).
- ALL MATERIALS USED IN THE WORKS SHALL COMPLY WITH THE 7 SEQ-SP's ACCEPTED PRODUCTS AND MATERIALS LIST OR BE APPROPRIATELY SHOWN, LISTED AND DEFINED IN THE ENGINEERING SUBMISSION SO THAT THE ALTERNATIVE PRODUCT OR MATERIAL CAN BE ASSESSED AND IF APPROPRIATE, APPROVED BY THE SEQ-SP.
- 8. WITH STD. DRG. SEQ-WAT-1410-1
- 9. SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.
- 10. ALL WORKS ASSOCIATED WITH LIVE CONNECTIONS TO BE CARRIED OUT BY LOGAN WATER AT THE APPLICANTS COST.
- LINDERTAKING CONSTRUCTION OF WATER RETICULATION WORKS ARE SUITABLY TRAINED IN ACCORDANCE WITH THE CURRENT L.C.C. WATER REQUIREMENTS. EVIDENCE THAT THE CONTRACTOR'S PERSONNEL HAVE THE REQUIRED QUALIFICATIONS WILL BE REQUIRED TO BE PROVIDED TO LOGAN WATER OFFICERS PRIOR TO COMMENCEMENT OF WORKS.
- 12. WATER MAIN EMBEDMENT TO BE IN ACCORDANCE WITH SEQ. WATER SUPPLY STANDARD DRAWINGS. REFER STD. DRG. SEQ-WAT-1200 SERIES FOR BEDDING AND BACKFILL REQUIREMENTS. TYPE C BEDDING TO BE USED IN VERGES & TYPE CT UNDER ROADS. CT DENOTES TYPE C EMBEDMENT UNDER ROADS WITH CBR15 TRENCH FILL MATERIAL.
- WATER SUPPLY CODE REQUIREMENTS AND STD. DRG.'S SEQ-WAT-1205-1 TO 1208-1, THRUST BLOCK DIMENSIONS TO BE SUBMITTED FOR CONSTRUCTION APPROVAL PRIOR TO POUR



	LIVE WORKS FITTINGS SCHEDULE									
No.	PIPE	FITTING	COMMENTS							
1	2.0m 100Ø DICL MAIN	SP-SP	CUT LENGTH TO SUITE ON-SITE							
1	3.0m 100Ø DICL MAIN	SP-SOC								
4	100Ø x 45° DICL BENDS	FL-FL								
2	1.2m 100Ø DICL MAIN	FL-FL								
2	100Ø DICL CONNECTOR	SP-SOC								
2	1.2m 100Ø DICL MAIN	FL-SP	WITH PUDDLE FLANGE							
2	CONCRETE THRUST BLOCK		45° BEND - 100Ø - 10.7kN - REFER DETAIL)							
2	CONCRETE THRUST RESTRAINT		100Ø - 15.8kN - REFER DETAIL							





STRUCTURE No	$\gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	(02/01) (03/02) (B1/02) (02/02)	(03/02) (B1/03) (01/03) (02/01) (B2/04) (03/04) (B1/04)
MH TYPE & DROP	P2 BEND P2 V V V S5 23:8"m W	P2 Y V V V V	P2 8BEND 3°39727m 7 92 V 15°007m 15°007m 15°007m 15°007m 15°007m
MH/MSCOVER TYPE	B P2 C V V V V V V V V V V V V V V V V V V	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D P2 BEF V V V V V V V V V V V V V V V V V V V
JUNCT. LINE No.	00 05	00 03 04 01	6 6 6 6
JUNCT. DROP TYPES	> > > >	> > > >	> > >
HC DEPTH		1.313 1.272 1.252 1.252 1.253 1.254 1.254	1.314 1.318 1.315 1.326
HC INVERT LEVEL		13.847 14.022 14.025 15.025 15.024 15.034	14.834 14.864 14.864 13.650 13.650 13.651 13.645 13.645
HC TYPE		a a a a a	
HC LOT No.		ο ω ο ο ο ο	13 13 13 14 14
HC CH. TO DS MH		2.137 14.249 54.828 54.828 0.893 12.870	19.092 9.572 9.572 30.557 46.057 58.513
NOTES 1. ALL LEVELS, CHAINAGES AND DISTANCES IN METRES. 2. REFER SEQ-SEW-1200 SERIES FOR BEDDING AND BACKFILL REQUIREMENTS. 3. REFER SEQ-SEW-1000 (NUSEWER) SERIES FOR MAINTENANCE STRUCTURE TYPES AND DROPS AND FOR RIGGS COMPLIANT APPURTEANCES. 4. PIPE MATERIAL TO BE PVC (SN8). 5. REFER SEQ-SEW-1104 AND SEQ-SEW-1105 FOR PROPERTY CONNECTION TYPES. 6. DETAILS OF STANDARD DN150 LONG RADIUS PVC BENDS ARE SHOWN AT SEQ-SEW-1314-3 7. MANHOLES GREATER THAN 4.0m DEPTH TO BE PE LINED IN ACCORDANCE WITH SEQ CODE AND APPROVED IPAM LIST FOR LOGAN WATER *P2' MANHOLE PRECAST DN1050 IN ACCORDANCE WITH SEQ -SEW-1300-1 *P28' MANHOLE *PRECAST DN1200 *P2" TYPE IN ACCORDANCE WITH SEQ-SEW-1300-1	MATER DN100 C101 MATER DN100 C101 MATER DN100 C101 DESIGN SURFACE EXISTING SURFACE **LIVEWORKS 7** REFER **LIVEWORKS 1*** REFER	I SOLATE SET TEMPORARY F ST	
	SCHEDULE 2 ON DRG. SCHEDULE 1 ON DRG.		
TYPE '2' MANHOLE DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. DN150 SN8 PVC 180 180 180 180	ROAD RESERVE DN150 \$N8 PVC 76.923 80.000 TYPE 3	ROAD RESERVE ROAD RESERVE DN150 \$N8 PVC DN150 \$N8 PVC 80.000 80.000 100.000 80.000 TYPE 3 TYPE 3 TYPE 3
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 SN8 PVC 180 180 100.000	DN150 \$N8 PVC	DN150 \$N8 PVC 80.0000 80.0000 80.0000 80.0000 80.0000 80.0000 80.000
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 SN8 PVC 180 180 100.000 TYPE 3 TYPE 3	DN150 \$N8 PVC	DN150 \$N8 PVC 80.000 TYPE 3 DN150 \$N8 PVC 100.000 TYPE 3 DN150 \$N8 PVC 100.000 TYPE 3 DN150 \$N8 PVC 100.000 100.000 TYPE 3 DN150 \$N8 PVC DN150 \$N8
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 <sn8 pvc<="" td=""> 100.000 100.000 180 180 100.000 100.000 TYPE 3 -1.000 100.000 100.000</sn8>	DN150 \$N8 PVC 76.923 80.000 80.00 TYPE 3 0.000	DN150 \$N8 PVC DN150 \$N8 PVC 80.000 80.000 100.000 80.000 80.000 TYPE 3 TYPE 3 -1.000 100.000 100.000 100.000
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANFOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 <sn8 pvc<="" td=""> 100.000 100.000 180 180 100.000 100.000 TYPE 3 -1.000 100.000 100.000</sn8>	DN150 \$N8 PVC 76.923 80.000 80.00 0.000 0.000 80 90 90 90 90 90 90 90 90 90 90 90 90 90	DN150 SN8 PVC 80.000 80.000 TYPE 3 1.000 S8 2 2 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE 'B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT BELOW FSL	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 SN8 PVC 180 180 100.000 TYPE 3 7.000 00071 12322 00071 5882 00071 100.000 1000 100.000	DN150 SN8 PVC 76.923 80.000 80.00 779 76.923 782 76.923 70.0 0 779 7 76.923 70.0 1325 779 7 76.923 70.0 1325 779 7 76.923 70.0 1325 779 76.92 77 76.923 70.0 1325 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92 77 76.923 779 76.92	DN150 SN8 PVC DN150 SN8 PVC DN150 SN8 PVC 14236 T148 TYPE 3 100.000 80.000 TYPE 3 11428 TYPE 3 1148 113000 113000 113000 113000 113121 1148 113121 11881 113121 11881 113121 11881
DN1050 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE B' MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 # - CORROSION PROTECTION AS PER SEQ D&C APPROVED IPAM LIST TYPE J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT BELOW FSL INVERT LEVEL FINISH SURFACE	BE210215-01-C620. BE210215-01-C620. ALLOTMENT R.R. ALLOTMENT DN150 <sn8 pvc<="" td=""> 100.000 180 180 100.000 TYPE 3 100.000 000 100.000 000 100.000 000 100.000 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 100.000 180 100.000 1900 100.000 1000 100.000 1000 100.000 1000 100.000 1000 100.000 1000 100.000 1000 100.000 1000 100.000<</sn8>	DN150 SN8 PVC 76.923 80.000 80.00 779 76.923 755 755 755 755 755 755 755 755 755 75	DN150 SN8 PVC DN150 SN8 PVC 14728 100.000 80.000 TYPE 3 100.000 100.000 1000 101232 11428 1.000 111232 11428 1.000 111232 11322 1.000 11322 11322 1.000 113223 11322 1.1000 113223 113223 113121 11421 113223 113121 11421 113223 113121 11421 113223 113121 113223 113223 113121 113223 113223 113121 113223 11323 11313000 112923 11323 1131301 11612 11323 113131 11881 11333

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 1 0 1 2 3 4 5 1:100 (metres) HORIZONTAL SCALE 10 0 10 20 30 40 50 1:1000 (metres) (FULL SIZE)

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			1.325	
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			14	
			13.814 14	
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	PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD							
	A1 ORIGINAL S	SIZE BEFORE REDU	CTION					
A	ORIGINAL ISSUE		20-09-23					
VER.	DESCRIPTIO	N	DATE					
Confid were in consections NOT This is only, in Size do off-site GO IPS PHH FAX	DISCLAIMER This drawing only be used for the purpose for which they were intended. This drawing solutions will not accept the drawing for other than its intended purpose or whore the drawing fast been altered, amended or charged either manually or electronically by any third party. The is an uncontrolled document issued for information purposes of site works or fabrications are signed or completed. Figured dimensions take precedence over scale. Do not scale reduced size drawing, Sverify dimensions prior to commending any on-site or of-site works or fabrication. EXPENDENCE DESCRETIONS DE							
ABI PROJE	N 76 166 942 365							
E	PRELIMIN NGINEERI	-						
DRAW	ING TITLE :							
s	SEWER LONGITUDINAL SECTIONS							
DEVEL	. APPLIC. No. : RL/57/20	D21 DATE	E: 20-09-23					
PROJE	CT LEADER : ROBERT	TO DI FABIO						
DESIG								
	SPERSON : L.D.L.							
CHECK	ED : ROBERT							
BURCH	HILLS ENGINEERING SC	LUTIONS ABN 76 1	66 942 365					
		RPEQ	No. : 7067					
	: AS NOTED		ULL SIZE : A1					
	^{ст №.:} 210215-01	DRAWING No. :						
			$1 \frown$					

MAINTENANCE STRUCTURE №	(03/	/01)			(02)	(05)	01/05	(02	102)	(01/06)	(03/	/01)	(01
MH TYPE & DROP	5	>			52 52	>	BD	P2	>	END	P2	~	5
MH/MSCOVER TYPE					D			Ω			۵		Δ
JUNCT. LINE No.	6	07						02			6	05	
JUNCT. DROP TYPES	>	~						>			>	>	
HC DEPTH		1.290	1.320	1.307	1.366		1.404		1.407			1.293	1.239
HC INVERT LEVEL		13.703	13.577	13.494	13.442	13.404	13.350		15.314			13.831 13.937	14.273
HC TYPE		۵	۵	m	в	в	۲		٩			A A	۷
HC LOT No.		50	19	18	17		15		4			21 22	23
HC CH. TO DS MH		19.661	35.548	51.543	0.000	0.000	11.537		13.200			2.242 14.037	26.756
ALL LEVELS, CHAINAGES AND DISTANCES IN METRES. REFER SEQ-SEW-1200 SERIES FOR BEDDING AND BACKFILL REQUIREMENTS. REFER SEQ-SEW-1300 (NUSEWER) SERIES FOR MAINTENANCE STRUCTURE TYPES AND DROPS AND FOR RIGGS COMPLIANT APPURTEANCES. PIPE MATERIAL TO BE PVC (SN8). SEFER SEQ-SEW-1104 AND SEQ-SEW-1105 FOR PROPERTY CONNECTION TYPES. DETAILS OF STANDARD DN150 LONG RADIUS PVC BENDS ARE SHOWN AT SEQ-SEW-1314-3 MANHOLES GREATER THAN 4.0m DEPTH TO BE PE LINED IN ACCORDANCE WITH SEQ CODE AND APPROVED IPAM LIST FOR LOGAN WATER PRECAST DN150 IN ACCORDANCE WITH SEQ SEW-1300-1 '22' MANHOLE PRECAST DN1500 IN ACCORDANCE WITH SEQ-SEW-1300-1 '22' MANHOLE PRECAST DN1200 P2' TYPE IN ACCORDANCE WITH SEQ-SEW-1300-1 '22' MANHOLE DN1505 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 TYPE IM MANHOLE DN1200 CAST IN-SITU MANHOLE IN ACCORDANCE WITH SEQ-SEW-1307-1 #CORROWN FRECHT	DESIGN		×	×		WATER DN100 CL0.48				<u>-</u>		×	
MORE APPROVED IPAM LIST <u>'MS' MAINTENANCE SHAFT</u> TYPE 'J'1 AS PER SEQ-SEW-1314-2										\ \			
APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT TYPE 'J'1 AS PER SEQ-SEW-1314-2			ROAI	RESER	VE				R.R	<u> </u>			
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE 'J'1 AS PER SEQ-SEW-1314-2 PIPE LOCATION			-	D RESER			-	DN	R.R 1150 SN		D	R.R. 0N150 SN8	PV
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE U'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE			-	50 SN8 P		80.000	-	DN	1150 SN	18 PVC	D	40.000)
APPROVED IPAM LIST <u>'MS' MAINTENANCE SHAFT</u> TYPE''J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x)			DN15	50 SN8 P		80.000		DM	150 SN	18 PVC	D	N150 SN8)
APPROVED IPAM LIST <u>'MS' MAINTENANCE SHAFT</u> TYPE'U'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE	1	-1.000	DN15	50 SN8 P		80.000		DI	1150 SN	18 PVC	D	40.000)
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE 'J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION	12.259		DN15	50 SN8 P		80.000		14.828 JU	1150 SN 50.00 TYPE	18 PVC		40.000 TYPE)
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE UT AS PER SEQ-SEW-1314-2 PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT			DN15	50 SN8 P	VC >	<			1150 SN 50.00 TYPE	18 PVC		40.000 TYPE 0.000) 3 2
APPROVED IPAM LIST 'MS' MAINTENANCE SHAFT	2.882	13.450	DN15	50 SN8 P	1.636 O	1.606	-	1.853 14.828	1150 SN 50.00 TYPE 2.000	18 PVC 10 23 0 0	12.259	40.000 TYPE 0.000 682 21)
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE'J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT BELOW FSL	12.229 2.882	2.802 13.450	DN15	50 SN8 P	1.636 O	1.606	1.320	1.853 14.828	2.000	18 PVC	12.229 2.882 12.259	40.000 TYPE 0.000 682 21	1.393
APPROVED IPAM LIST <u>MS' MAINTENANCE SHAFT</u> TYPE'J'I AS PER SEQ-SEW-1314-2 PIPE LOCATION PIPE DIA & TYPE PIPE GRADE (1 in x) EMBEDMENT TYPE DATUM JUNCTION INVERT LEVEL DEPTH OF INVERT BELOW FSL INVERT LEVEL FINISH SURFACE	12.229 2.882	12.309 2.802 13.450	DN15	50 SN8 P	1.636 O	13.202 1.606	13.346 1.320 1.320	1.853 14.828	2.000	15.142 1.579 0 1 2 1 4 8	12.229 2.882 12.259	139450 1994 1994 1994 1994 1994 1995	1.393

SEWER LONGITUDINAL SECTION

VERTICAL SCALE	1	Q	1	2	3	4	5	1:100 (metres)
HORIZONTAL SCALE	10	0	10 (FU	20 LL SIZ	30 E)	40	50	1:1000 (metres)

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD					
		SIZE BEFORE REDUCT	TION		
B	RFI RESPONSE ORIGINAL ISSUE		22-12-23 03-11-23		
VER.	DESCRIPTIO	N	DATE		
<text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text>					
224 CHAMBERS FLAT ROAD					
DRAM					
SEWER LONGITUDINAL SECTIONS - SHEET 2					
DEVEL. APPLIC. No. : RL/57/2021 DATE : 22-12-23					
PROJECT LEADER : ROBERTO DI FABIO					
DESIGNER : G.P.C.					
DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO					
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365					
Jonor					
SCALE	: AS NOTED	RPEQ No DATUM : AHD FU	0. : 7067 ILL SIZE : A1		
	CT No.:	DRAWING No. :	VERSION:		
BE	210215-01	C611	В		

SEWER NOTES:

- 1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE SPECIFICATIONS AND STANDARDS.
- 2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE SEQ SERVICE PROVIDER SEWERAGE SYSTEM.
- 4. ALL PIPES AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
- EACH LOT SHALL BE SERVED BY A DN100 PVC PROPERTY CONNECTION. FOR LOTS OTHER THAN SINGLE RESIDENTIAL, A DN150 PVC PROPERTY CONNECTION SHALL BE PROVIDED.
- 6. PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
- 7. PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300mm AND A MAXIMUM OF 1000mm.
- 8. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING WILL BE CARRIED OUT AFTER EACH ALTERNATIVE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE SEQ SERVICE PROVIDER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
- 9. WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SEQ SEWER CODE.
- 10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
- 11. SEWERS SHALL BE DISUSED / ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ SEWER CODE.
- 12. BENCH MARK AND LEVELS TO AHD.
- 13. FOR SEWERAGE RETICULATION ALIGNMENTS AND STRUCTURE LOCATIONS REFER LONGITUDINAL SECTIONS.
- THE CONTRACTOR SHALL MAINTAIN MINIMUM VERTICAL CLEARANCE FROM ALL EXISTING UTILITIES WHERE CROSSING OCCUR IN ACCORDANCE WITH SEQ SEWERAGE CODE SPECIFICATION.
- 15. THE CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION DRAWINGS AND ALL RELEVANT STANDARD DRAWINGS AND STANDARD SPECIFICATIONS ON SITE AT ALL TIMES DURING THE CONSTRUCTION PHASE.
- 16. ALL WORKS ASSOCIATED WITH CONNECTIONS TO LIVE SEWERS OR MAINTENANCE HOLES TO BE PERFORMED BY AN APPROVED CONTRACTOR UNDER THE SUPERVISION OF LOGAN WATER AT THE DEVELOPER'S EXPENSE.
- 17. STORMWATER MAINS >= Ø600 CROSSING OVER SEWER ARE TO BE SUPPORTED BY A BRIDGING STRUCTURE IN ACCORDANCE WITH CL4.4.5.2 OF WSA02-2002-2.3 AMENDED BY SEQ WSS DESIGN AND CONSTRUCTION CODE.
- 18. THE CONTRACTOR IS TO ENSURE THAT ANY PERSONNEL UNDERTAKING CONSTRUCTION OF SEWERAGE RETICULATION WORKS ARE SUITABLY TRAINED IN ACCORDANCE WITH THE CURRENT LOGAN WATER REQUIREMENTS. EVIDENCE THAT THE CONTRACTOR'S PERSONNEL HAVE THE REQUIRED QUALIFICATIONS WILL BE REQUIRED TO BE PROVIDED TO LOGAN WATER OFFICERS PRIOR TO COMMENCEMENT OF WORKS.
- TYPE 4 SUPPORT TO BE USED WHERE MIGRATORY NATIVE SOILS (OR SAND OR FINE CLAY MATERIAL) ARE ENCOUNTERED ADJACENT TO THE EMBEDMENT ZONE AND SINGLE SIZED AGGREGATE IS USED) AND COUNCIL STANDARDS FOR ROAR ROADWAYS. WHICHEVER IS MORE ONEROUS.

REHABILITATION NOTES:

1. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.

2. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

SAFETY

1. THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

ENVIRONMENTAL CONDITIONS NOTES VEGETATION PROTECTION NOTES:

- 1. TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
- WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- 4. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL NOTES:

- 1. TOPSOIL AND SUBSOIL SHALL BE STOCKPILES SEPARATELY.
- CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM FROM ENTERING THE STORMWATER RCP SYSTEM.
 THIS MAY INVOLVE PLACING APPROPRIATE CONTROLS AROUND STOCKPILES.
- ACID SULPHATE SOIL
 A SUITABILITY QUALIFIED GEOTECHNICAL ENGINEER SHOULD BE ON SITE DURING THE TRENCH EXCAVATION AND THE PRESENCE OF ACID SULPHATE SOILS BE CONSIDERED FROM VISUAL ASSESSMENT ONLY. IF ACID SULPHATE SOILS ARE CONSIDERED PRESENT, A 0.5kg SOIL SAMPLE IS TO BE TAKEN FROM THE TRENCH AND TESTED.

NOTE: ALL ENVIRONMENTAL PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING COMMENCING.

NAME OF ESTATE			224 CHAMBERS FLAT RE			
	SUBDIVIDER		GAFSTEV			
	APPLICATION	No.				
	SP DELEGATE	Ξ				
	APPROVAL D	ATE				
	DRAWING/PLA	AN No.	BE21021			
	No. OF LOTS		23			
	AREA IN Ha.		1.567			
	LENGTH OF	DN100	-			
	SEWERS	DN150	392			

SERVICE PROVIDER AND CONSTRUCTION LIVE SEWER WORKS - SCHEDULE										
No.	DESCRIPTION	DIA. SEWER	MH No.	MH/MS TYPE	COVER TYPE	LOT No.	F.S.L.	E.S.L.	I.L.	DEPTH TO INVERT
1(A)	CONTRACTOR TO CONSTRUCT NEW MANHOLE 01/01 OVER EXISTING SEWER AND BENCH AND RENDER UP TO PIPE BUT NOT REMOVE CROWN OF PIPE.	150	01/01	P2	D	9	15.507	14.836	12.619	2.888
1(B)	CONTRACTOR TO LAY LINE 01 AND ANY ASSOCIATED BRANCH LINES AND INSTALL HOUSE CONENECTIONS.	150	01/01	P2	D	9	15.507	14.836	12.619	2.888
1(C)	UPON ACCEPTANCE OF TESTING AND SUCCESSFUL PRE-LIVE CONNECTION INSPECTION BY LOGAN WATER, CONTRACTOR TO MAKE LIVE CONNECTION INTO EXISTING LINE	150	01/01	P2	D	9	15.507	14.836	12.619	2.888
2(A)	CONTRACTOR TO CONSTRUCT NEW MANHOLE 04/01 OVER EXISTING SEWER AND BENCH AND RENDER UP TO PIPE BUT NOT REMOVE CROWN OF PIPE.	150	04/01	P2	D	21	15.493	14.182	11.960	3.533
2(B)	CONTRACTOR TO LAY LINE 01 AND ANY ASSOCIATED BRANCH LINES AND INSTALL HOUSE CONENECTIONS.	150	04/01	P2	D	21	15.493	14.182	11.960	3.533
2(C)	UPON ACCEPTANCE OF TESTING AND SUCCESSFUL PRE-LIVE CONNECTION INSPECTION BY LOGAN WATER, LOGAN WATER TO MAKE LIVE CONNECTION INTO EXISTING LINE	150	04/01	P2	D	21	15.493	14.182	11.960	3.533

D, WATERFORD WEST
PTY LTD
215-01
3
67
2

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST					
	GAFSTE	/ PTY LT	D		
	A1 ORIGINAL S	SIZE BEFORE REDU	ICTIO	N	
A VER.	ORIGINAL ISSUE DESCRIPTIO	N		20-09-23 DATE	
<text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text>					
PRELIMINARY CIVIL ENGINEERING DESIGN					
DRAW	ING TITLE :				
SEWER RETICULATION NOTES & DETAILS					
DEVEL	. APPLIC. No. : RL/57/20	021 DAT	E: 20	-09-23	
PROJECT LEADER : ROBERTO DI FABIO					
DESIGNER : G.P.C.					
DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO					
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365					
BURCH	ILLO ENGINEERING SU				
SCALE	: AS NOTED	1	No. : 7	7067 SIZE : A1	
	CT No.:	DRAWING No. :	_	ERSION:	
BE	210215-01	C620		А	

QMS RISK & OPPORTUNITIES REGISTER							
	SAFETY IN DESIGN – NORMAL DESIGN RISKS - CIVIL						
Design Element	Associated risks & opportunities	Raw risk assessment		Raw risk rating	Treatment Measures to avoid, minimize or treat the risk.	Responsibility	Residual risk rating
		Like od	Con ven ce	_			
CONSTRUCTION PHASE	CONSTRUCTION PHASE						
SITE ACCESS	Unsafe site access and egress point, restricted access, flooding, unauthorised access from persons or animals	L	м	L-M	Prepare site specific Construction Traffic Management Plan and Workplace Health and Safety Management Plan	Principal Contractor	L
CLEARING & DEMOLITION	Removal of existing structures, decommision of services, vegetation clearing and fauna management	м	н	M-H	Contractor to obtain Demolition Permit, arrange all service disconnections with asset ownerand carry out vegetation works in accordance with Vegetation and Fauna Management Plan	Principal Contractor	L
EXISTING SERVICES	Distrub or damage existing services and infrastructure, overhead powerlines, work adjacent to existing services, existing service relocations	м	н	М-Н	Client to commission detailed site survey and service potholing at critical locations. Contractor to undertake Dial Before You Dig and service verification with service authoritiy providers and undertake additional potholing prior to construction	Client and Principal Contractor	L-M
EXCAVATION & TRENCHING	Unstable existing slopes and landslip, steep cut profiles, deep trench excavations, working at heights, intercept water table, dispersive soils, acid sulphate soils	м	н	М-Н	Client to commission a geotechnical investigation and contractors to undertake own investigations. Temporary and final earthworks profiles confirmed by client's geotechnical consultant. Tempory earthworks profile to be confirmed by Contractor's geotechnical consultant. Contractor to provide temporary benching, fencing, stabilisation and shoring.	Client and Principal Contractor	L
MATERIALS HANDLING	Manual handling, handling and disposal of sharps, repeative work processeds, hazardous substances	н	м	М-Н	Contractor or provide a site specific Workplace Health and Safety Management Plan including Material Safety Data Sheets	Principal Contractor	L
PLANT & EQUIPMENT	Operation of plant and machinery, site access by visitors, material deliveries and waste removal	м	н	M-H	Contractor or provide a site specific Workplace Health and Safety Management Plan including register of operator machinery tickets. Contractor to maintain a site visitor register and provide site specific induction to all visitors	Principal Contractor	L
OPERATIONAL PHASE							
ROADS & PATHWAYS	General road safety, flood free access, pedestrian and cyclist injuries, inadequate signage	L	н	м	Design, approvals and construction undertaken in accordance with Australian, State Government and Local Authority standards, codes, guidelines and best practice	Asset Owner	L
STORWATER / FLOODING	Hazard from storm and flood water depths and velocities, ponding and access to inlets, outlets and basins	м	н	М-Н	Design, approvals and construction undertaken in accordance with Australian, State Government and Local Authority standards, codes, guidelines and best practice	Asset Owner	L
WATER & SEWER	Blockages, contamination, interuption to service, access to fittings, confined space access	L	м	L-M	Design, approvals and construction undertaken in accordance with Australian, State Government and Local Authority standards, codes, guidelines and best practice	Asset Owner	L
WALLS & FENCING	Risk of falls, unauthoried access from persons and animals, structural failure	м	м	м	Design, approvals and construction undertaken in accordance with Australian, State Government and Local Authority standards, codes, guidelines and best practice	Asset Owner	L
MAINTENANCE PHASE							
ROADS & PATHWAYS	All as for construction and operation phases					Asset Owner	
STORWATER / FLOODING	All as for construction and operation phases					Asset Owner	
WATER & SEWER	All as for construction and operation phases					Asset Owner	
WALLS & FENCING	All as for construction and operation phases					Asset Owner	
REFURBISHMENT PHASE							
ROADS & PATHWAYS	All as for construction and operation phases					Asset Owner	
STORWATER / FLOODING	All as for construction and operation phases					Asset Owner	
WATER & SEWER	All as for construction and operation phases					Asset Owner	
WALLS & FENCING	All as for construction and operation phases					Asset Owner	
DEMOLITION PHASE							
ROADS & PATHWAYS	All as for construction and operation phases					Asset Owner	
STORWATER / FLOODING	All as for construction and operation phases					Asset Owner	
WATER & SEWER	All as for construction and operation phases					Asset Owner	
WALLS & FENCING	All as for construction and operation phases					Asset Owner	
MALD & FENCING	and operation phases						

PROPOSED RESIDENTIAL SUBDIVISION LOT 27 ON RP910631, 224 CHAMBERS FLAT ROAD, WATERFORD WEST FOR GAFSTEV PTY LTD				
	IZE BEFORE REDUC	TION		
B RFI RESPONSE A ORIGINAL ISSUE		19-02-24 03-11-23		
VER. DESCRIPTIO	N	DATE		
<text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text>				
PHONE: +61 7 5509 6400 FAX: +61 7 5509 6411 EMAIL: ADMIN@BURCHILLS.COM.AU COOTE BURCHILLS ENGINEERING PTY LTD ABN 76 166 942 365 PROJECT:				
224 CHAMBERS FLAT ROAD				
DRAWING TITLE :				
HAZARD RISK REGISTER - DESIGN RISKS				
DEVEL. APPLIC. No.: RL/57/20	DATE	: 19-02-24		
PROJECT LEADER : ROBERT	O DI FABIO			
DESIGNER : G.P.C.				
DRAFTSPERSON : L.D.L. CHECKED : ROBERTO DI FABIO				
APPROVED FOR AND ON BE	HALF OF	6 942 365		
BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365				
RPEQ No. : 7067 SCALE : AS NOTED DATUM : AHD FULL SIZE : A1				
PROJECT No.:	DRAWING No. :	VERSION:		
BE210215-01	C900	В		