# PROPOSED DEVELOPMENT 33 Pile Road, Somersby STORMWATER / CIVIL WORKS

## GENERAL NOTES

- G1. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED.
- G2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS. REFER ARCHITECTS DRAWINGS FOR ALL DIMENSIONS.
- G3. REFER ANY DISCREPANCY TO THE ENGINEER/ARCHITECT
- G4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE APPROPRIATE SAA SPECIFICATIONS OR CODE AND WITH THE REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY
- G5. THE ALIGNMENT AND LEVEL OF ALL SERVICES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM THE POSITION AND LEVEL OF ALL SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.
- G6. NO WORKS ARE TO COMMENCE UNTIL THE REQUIRED TREE REMOVAL PERMITS HAVE BEEN GRANTED BY RELEVANT LOCAL AUTHORITY, AND THE APPROPRIATE NOTICE OF INTENTION TO COMMENCE GIVEN.
- G7. ALL SERVICES, OR CONDUITS FOR SERVICING SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF PAVEMENT CONSTRUCTION.
- G8. SUBSOIL DRAINAGE, COMPRISING 100 AGRICULTURE PIPE IN GEO-STOCKING TO BE PLACED AS SHOWN AND AS MAY BE DIRECTED BY THE SUPERINTENDENT. SUBSOIL DRAINAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY
- CONSTRUCTION SPECIFICATION G9. NO WORK IS PERMITTED WITHIN ADJOINING PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY.

## DRAINAGE NOTES

- D1. ALL DRAINAGE OUTLET LEVELS SHALL BE CONFIRMED ON SITE, PRIOR TO CONSTRUCTION COMMENCING D2. ALL PIPES WITHIN THE PROPERTY TO BE MIN. 100 DIA UPVC @ 1% MIN. GRADE, UNO.
- D3. ALL PITS WITHIN THE PROPERTY ARE TO BE FITTED WITH "WELDLOK" OR APPROVED EQUIVALENT GRATES: - LIGHT DUTY FOR LANDSCAPED AREAS
- HEAVY DUTY WHERE SUBJECTED TO VEHICULAR TRAFFIC
- D4. PITS WITHIN THE PROPERTY MAY BE CONSTRUCTED AS:
- 1) PRECAST STORMWATER PITS 2) CAST INSITU MASS CONCRETE
- 3) CEMENT RENDERED 230mm BRICKWORK
- SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION. D5. ENSURE ALL GRATES TO PITS ARE SET BELOW FINISHED SURFACE LEVEL WITHIN THE PROPERTY. TOP OF PIT RL'S ARE APPROXIMATE ONLY AND MAY BE VARIED SUBJECT TO APPROVAL OF THE ENGINEER. ALL INVERT LEVELS ARE TO BE ACHIEVED.
- D6. ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP. UNO
- D7. ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINUOUS HINGE.
- D8. PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN 1200 IN DEPTH. D9. TRENCH BACK FILL IN ROADWAYS SHALL COMPRISE SHARP, CLEAN GRANULAR BACK FILL IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION TO NON-TRAFFICABLE AREAS TO BE COMPACTED BY RODDING AND TAMPING USING A FLAT PLATE VIBRATOR.
- D10. WHERE A HIGH EARLY DISCHARGE (HED) PIT IS PROVIDED ALL PIPES ARE TO BE CONNECTED TO THE HED PIT, UNO.
- D11. DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100
- COLORBOND/ZINCALUME STEEL, UNO. D12. COLORBOND OR ZINCALUME STEEL BOX GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150
- DEEP D13. EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA)
- COLORBOND OR ZINCALUME STEEL, UNO. D14. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO.

### EARTHWORKS NOTES

- E1. THE EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT
- GEOTECHNICAL REPORT. E2. THE SITE OF THE WORKS SHALL BE PREPARED BY STRIPPING ALL EXISTING TOPSOIL, FILL AND VEGETATION
- E3. SUBGRADE SHALL BE COMPACTED UNTIL A DRY DENSITY HAS BEEN ACHIEVED OF NOT LESS THAN 100% OF THE STANDARD MAXIMUM DRY DENSITY WHEN TESTED IN
- ACCORDANCE WITH AS 1289 TESTS E.1.1. OR E.1.2. E4. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED TO DETECT ANY SOFT OR WET
- AREAS WHICH SHOULD BE LOCALLY EXCAVATED AND BACK FILLED WITH SELECTED MATERIAI E5. THE BACK FILLING MATERIAL SHALL BE IMPORTED GRANULAR FILL OF LOW PLASTICITY,
- PREFERABLY CRUSHED SANDSTONE, AND TO BE PLACED IN LAYERS NOT EXCEEDING 150 LOOSE THICKNESS AND COMPACTED TO 98% OF STANDARD DRY DENSITY AT A MOISTURE CONTENT WITHIN 2% OF OPTIMUM.
- SITE WORKS ARE TO BE BATTERED TO ADJACENT PROPERTY LEVELS.
- STORMWATER MUST NOT BE CONCENTRATED ON TO AN ADJACENT PROPERTY. E8. AT NO TIME DURING OR AFTER CONSTRUCTION IS STORMWATER TO BE PONDED ON ADJOINING PROPERTIES.
- E9. THE SITE SHALL BE GRADED AND DRAINED SO THAT STORMWATER WILL BE DIRECTED AWAY FROM THE BUILDING PLATFORM. E10. STORMWATER DRAINAGE SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE
- COURSE OF CONSTRUCTION. ALL STORMWATER RUNOFF SHALL BE GRADED AWAY FROM THE SITE WORKS AND DISPOSED OF VIA SURFACE CATCHDRAINS AND STORMWATER COLLECTION PITS. E11. ALL SURFACE CATCH DRAINS SHALL BE GRADED AT 1% (1 IN 100) MINIMUM. THE GROUND
- SHALL GRADE AWAY FROM ANY DWELLING AT 5% (1 IN 20) FOR THE FIRST METRE THEN AT 2.5% (1 IN 40).
- E12. WHERE A CUT FILL PLATFORM IS USED THERE SHALL BE A MINIMUM BERM 1000 WIDE TO THE PERIMETER OF THE SITE WORKS WHICH SHALL BE SUPPORTED BY BATTERS OF 3:1 IN FILL.
- E13. ANY VERTICAL OR NEAR VERTICAL PERMANENT EXCAVATION (CUT) DEEPER THAN 600 IN MATERIAL OTHER THAN ROCK SHALL BE ADEQUATELY RETAINED OR BATTERED AT A MINIMUM OF 3:1.
- E14. WHERE BATTERS CANNOT BE PROVIDED TO SUPPORT THE CUT OR FILL, THEY SHALL BE ADEQUATELY RETAINED.
- E15. RETAINING WALLS ARE TO BE CONSTRUCTED WITH ADEQUATE SUBSOIL DRAINAGE.

### CONCRETE PAVEMENT

- C1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS. C2. PROVIDE JOINTING AT MINIMUM 6000 MAX. INTERVALS OR AS OTHERWISE SPECIFIED IN THE DRAWINGS.
- C3. CONCRETE SHALL COMPRISE A MIN. COMPRESSIVE STRENGTH OF 32MPa AT 28 DAYS IN
- ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION, UNO.
- C4. ANY SUB-BASE MATERIAL SHALL BE COMPACTED AS OUTLINED IN EARTHWORKS. C5. CONCRETE KERB AND GUTTER SHALL COMPRISE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa, UNO.
- C6. CONCRETE WORKS ARE TO BE CURED BY ONE OF THE FOLLOWING MEANS: i) WETTING TWICE DAILY FOR THE FIRST THREE DAYS: ii) USING AN APPROVED CURING COMPOUNDED FOR A MINIMUM OF 7 DAYS COMMENCING IMMEDIATELY AFTER POURING.

### FLEXIBLE PAVEMENT NOTES

- F1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS. F2. PAVEMENT MATERIAL SHALL CONSIST OF APPROVED OR RIPPED SANDSTONE, NATURAL GRAVEL OR FINE CRUSH ROCK AS PER THE RELEVANT COUNCIL AUTHORITY SPECIFICATION.
- F3. PAVEMENT MATERIALS SHALL BE SPREAD IN LAYERS NOT EXCEEDING 150 AND NOT LESS 75 COMPACTED THICKNESS.
- F4. PAVEMENT MATERIALS SHALL BE SIZED AND OF A STANDARD OUTLINED IN AS1141. F5. CRUSHED OR RIPPED SANDSTONE SHALL BE MINUS 75 NOMINAL SIZE DERIVED FROM
- SOUND, CLEAN SANDSTONE FREE FROM OVERBURDEN, CLAY SEAMS, SHALE AND OTHER DELETERIOUS MATERIAL F6. PAVEMENT MATERIALS SHALL BE COMPACTED BY SUITABLE MEANS TO SATISFY THE
- FOLLOWING MINIMUM SPECIFICATIONS (AS PER AS1289.2)

DESCRIPTION	MEDIUM DENSITY RATIO
SUB-BASE	98% MOD
BASE COURSE	98% MOD
ASPHALTIC CONCRETE	97% MOD

- AND SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
- F7. TESTING FOR EACH LAYER SHALL BE UNDERTAKEN BY A N.A.T.A. REGISTERED LABORATORY IN ACCORDANCE WITH AS1289, AT NOT MORE THAN 50m INTERVALS AND A MINIMUM OF TWO PER LAYER. FURTHER FREQUENCY OF TESTING SHALL BE NO LESS THAN THAT REQUIRED BY AS3978.

### PAVED AREAS NOTES

- A1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
- A2. ALL PAVERS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- A3. TRAFFICABLE AREAS:

SUB-BASE TO BE 150 COMPACTED THICKNESS DGS75.
SUB-BASE TO BE SUITABLY COMPACTED TO MEDIUM DENSITY 98% MOD
SUB-BASE TO EXTEND AT LEAST 200 BEYOND PAVED SURFACE.
PAVERS TO BE 80 THICK INTERLOCKING PAVERS ON 50 SAND BEDDING

### A4. NON TRAFFICABLE AREAS: SUB BASE AS PER TRAFFICABLE AREAS PAVERS TO BE 60 INTERLOCKING PAVERS ON 50 SAND BEDDING (UNO).

## **EROSION AND SEDIMENT NOTES**

- B1. THIS PLAN TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS ATTACHED.
- B2. THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND TO THE SATISFACTION OF THE RELEVANT LOCAL AUTHORITY PRIOR TO THE COMMENCEMENT OF AND DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT THE RELEVANT LOCAL AUTHORITY APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS".
- B3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREAS SUCH AS DRAINAGE LINES. THIS TOPSOIL SHALL BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILISED ONLY, (I.E. ALL FOOTPATHS, BATTERS, SITE REGARDING AREAS, BASINS AND CATCHDRAINS). TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF
- B4. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM SUCH DEVICES SUCH THAT MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED AND FURTHER AS MAY BE DIRECTED BY THE SUPERINTENDENT OR COUNCIL.
- LAY TURF STRIP (MIN 300 WIDE) ON 100 TOPSOIL BEHIND ALL KERB WITH 1000 LONG RETURNS EVERY 6000 AND AROUND STRUCTURES IMMEDIATELY AFTER BACKFILLING AS PER THE RELEVANT LOCAL AUTHORITY SPECIFICATION.
- THE CONTRACTOR SHALL GRASS SEED ALL DISTURBED AREAS WITH AN APPROVED MIX AS SOON AS PRACTICABLE AFTER COMPLETION OF EARTHWORKS AND REGRADING.
- VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS. B8 WHEN ANY DEVICES ARE TO BE HANDED OVER TO COUNCIL THEY SHALL BE IN CLEAN AND
- STABLE CONDITION. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN (BUT
- NOT SATURATING) DISTURBED AREA. B10. PROVIDE AND MAINTAIN SILT TRAPS AROUND ALL SURFACE INLET PITS UNTIL CATCHMENT
- IS REVEGETATED OR PAVED. REVEGETATE ALL TRENCHES IMMEDIATELY UPON COMPLETION OF BACKFILLING. B12. ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL:
- DOWNPIPES CONNECTED - PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER

## CONCRETE STRUCTURES NOTES

S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS. S2. CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS, UNO:

ELEMENT	SLUMP mm	MAX. SIZE AGG. mm	CEMENT TYPE	f'c AT 28 DAYS - MPa	ADMIXTURE
OTINGS	80	20	А	25	-
RS & CAPS	80	20	A	25	-
ABS ON GROUND	80	20	А	32	-
SPENDED SLABS	80	20	A	32	-
S	80	20	A	25	-

S3. MINIMUM CLEAR CONCRETE COVER TO REINFORCEMENT INCLUDING TIES AND STIRRUPS SHALL BE AS FOLLOWS UNO.

	MINIMUM COVER (mm)						
EXPOSURE ASSIFICATION	CONCRETE STRENGTH (fc)						
	20 MPa	25 MPa	32 MPa	40 MPa	>50 MPa		
A1	20	20	20	20	20		
A2	(50)	30	25	20	20		
B1	-	(60)	40	30	25		
B2	-	-	(65)	45	35		
С	-	-	-	(70)	50		

FOR BRACKETED FIGURES REFER TO AS 3600 CURRENT EDITION TABLE 4.10.3.2 S4. MINIMUM COVER FOR FIRE RESISTANCE LEVEL (FRL) SHALL BE AS FOLLOWS;

	MINIMUM ELEMENT WIDTH OR THICKNESS / MIN COVER (mm)						
۱۲	BEAM	SLAB	COLUMN	WALL			
	125 / 30	80 / 20	200 / 20	80 / 20			
	150 / 45	100 / 25	250 / 35	100 / 35			
0	200 / 55	120 / 30	300 / 45	120 / 40			
0	240 / 70	150 / 45	400 / 60	150 / 45			
0	270 / 80	170 / 55	450 / 70	170 / 50			

NOTE : 1. REFER TO AS 3600 CURRENT EDITION FOR REDUCED COVERS IF GREATER ELEMENT THICKNESSES ARE ADOPTED FOR BEAMS & COLUMNS.

2. COVER IS MEASURED TO THE MAIN REINFORCEMENT S5. COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF APPROVED BAR CHAIRS.

ALL CHAIRS SHALL BE SPACED AT 1000 CTS MAXIMUM. S6. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE

S7. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES. S8. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE FNGINFFR

S9. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO APPROVAL OF THE ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE SCABBLED OVER THE WHOLE FACE AND ANY UNSOUND MATERIAL REMOVED

S10. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY; IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION S11. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE ENGINEER. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT AS SPECIFIED IN AS3600. COGS AND HOOKS SHALL BE STANDARD UNLESS SHOWN OTHERWISE.

S12. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER. S13. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.

S14. REINFORCEMENT SYMBOLS: N - DENOTES DEFORMED GRADE 500 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671

R - DENOTES PLAIN ROUND GRADE 250 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671

SL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH TO AS/NZS 4671 RL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH

TO AS/NZS 4671 L--TM - DENOTES DEFORMED GRADE 500 LOW DUCTILITY TRENCH MESH TO

AS/NZS 4671. S15. ALL REINFORCING FABRIC SHALL COMPLY WITH AS1303 AND AS1304 AND SHALL BE SUPPLIED IN FLAT SHEETS.

S16. SPLICES IN FABRIC: THE OUTERMOST TRANSVERSE WIRES SHALL BE OVERLAPPED BY AT LEAST THE SPACING OF THESE TRANSVERSE WIRES PLUS 25 mm.



- N12 AT WIRE CENTRES x 1200 LONG

S17. EXPOSED CORNERS SHALL BE 20 mm CHAMFERED UNO. S18. ALL REINFORCEMENT SHALL BE INSPECTED BY THE SUPERINTENDENT OR ENGINEER PRIOR

TO PLACING CONCRETE. S19. ALL SLAB CONCRETE TO BE CURED IN AN APPROVED MANNER FOR A MINIMUM OF 7 DAYS. S20. ALL FORMWORK AND PROPS FOR SLABS AND BEAMS SHALL BE REMOVED BEFORE

CONSTRUCTION OF ANY MASONRY WALLS OR PARTITIONS ON THE FLOOR. S21. ALL ABBREVIATIONS ARE IN ACCORDANCE WITH AS1100. S22. FORMWORK SHALL NOT BE STRIPPED UNTIL CONCRETE HAS ACHIEVED A MINIMUM STRENGTH OF 20 MPa. THE CONCRETE SLAB AND BEAMS SHALL BE TEMPORARLIY BACK PROPPED UNTIL THE CONCRETE HAS ACHIEVED 28 DAY STRENGTH AND ANY PROPPING TO HIGHER LEVEL FORMS HAVE BEEN REMOVED. S23. WHERE A SUSPENDED SLAB IS TO BE SUPPORTED OFF A SUSPENDED SLAB BELOW.

WRITTEN APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO ANY SITE WORKS.

### MASONRY

- M1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700
- M2. THE DESIGN STRENGTH OF MASONRY SHALL BE AS FOLLOWS U.N.O.

EXPOSURE	MASONRY	MASONRY SALT	DURABILITY	MORTAR MIX	
CLASSIFICATION	COMPRESSIVE	RESISTANCE	CLASSIFICATION	GP PORTLAND	f'c
10 AS 3600	MPa (f'm)	GRADE	OF BUILT IN COMPONENTS	CEMENT : LIME : SAND	MPa
				0	
A1 / A2	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B1	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B2	> 6.7	Exposure	R4 (Stainless)	1.0 : 0.5 : 4.5	2.8

M3. ALL MASONRY WALLS SUPPORTING SLABS AND BEAMS SHALL HAVE A PRE-GREASED TWO LAYER GALVANISED STEEL SLIP JOINT BETWEEN CONCRETE AND MASONRY.

- M4. ALL MASONRY WALLS SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.
- M5. NON LOAD BEARING WALLS SHALL BE SEPARATED FROM CONCRETE ABOVE BY 20 mm THICK CLOSED CELL POLYETHYLENE STRIP.
- M6. MASONRY SHALL BE ARTICULATED IN ACCORDANCE WITH TECHNICAL NOTE 61 FROM THE CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA. VERTICAL CONTROL JOINTS SHALL NOT EXCEED 5 METRES MAXIMUM CENTRES, AND 4 METRES MAXIMUM FROM CORNERS IN MASONRY WALLS, AND **BETWEEN NEW & EXISTING BRICKWORK**
- M7. MASONARY RETAINING WALLS ARE TO BE BACKFILLED WITH EITHER OF THE FOLLOWING MATERIAL: - COARSE GRAINED SOIL WITH LOW SILT CONTENT - RESIDUAL SOIL CONTAINING STONES
  - FINE SILTY SAND - GRANULAR MATERIALS WITH LOW CLAY CONTENT

## BLOCKWORK

- B1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
- B2. REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING, UNO: - BLOCKS : GRADE 15 CONFORMING TO AS1500. - MORTAR : 1 CEMENT / 0.25 LIME / 3 SAND.
  - PROVIDE CLEANOUT HOLES AT BASE OF WALL & ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS. - CORE FILLING : fc = 20 MPa, 10 AGG, 230 SLUMP +/- 30 mm. - COVER : 55 mm MIN. FROM OUTSIDE OF BLOCKWORK.
- B3. BACKFILL TO RETAINING WALLS TO BE FREE DRAINING GRANULAR MATERIAL, UNO.
- PROVIDE SUBSOIL DRAIN BEHIND WALL AND AT WEEP HOLES.
- B4. VERTICAL CONTROL JOINTS SHALL BE PROVIDED AT 10 m MAX. CENTRES.
- B5. NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

## STANDARD LINE TYPES AND SYMBOLS:

	PROPOSED KERB & GUTTER
	EXISTING KERB & GUTTER
	PROPOSED BELOW GROUND PIPELINE
	PROPOSED SUSPENDED PIPELINE
	EXISTING PIPELINE
SS SS	SUBSOIL DRAINAGE LINE
	PROPOSED KERB INLET PIT
	EXISTING KERB INLET PIT
	PROPOSED JUNCTION OR INLET PIT
	EXISTING JUNCTION OR INLET PIT
	DESIGN CENTRELINE
	EXISTING EDGE OF BITUMEN
TTT	TELECOMUNICATION CONDUIT
G G	GAS MAIN
w w	WATER MAIN
S S S	SEWER MAIN
v v	UNDERGROUND ELECTRICITY CABLES
	PERMANENT MARK & S.S.M.
Δ Δ	BENCH MARK, SURVEY STATION



SCHEDU	SCHEDULE OF DRAWINGS				
SHEET No	DESCRIPTION				
C100	GENERAL NOTES				
C101	SEDIMENT & EROSION CONTROL PLAN				
C102	SEDIMENT BASIN DETAILS				
C103	PRE-DEVELOPMENT STORMWATER CATCHMENT AREA PLAN				
C104	POST-DEVELOPMENT STORMWATER CATCHMENT AREA PLAN				
C105	STORMWATER DRAINAGE KEY PLAN				
C106	STORMWATER DRAINAGE PLAN SHEET 1 OF 3				
C107	STORMWATER DRAINAGE PLAN SHEET 2 OF 3				
C108	STORMWATER DRAINAGE PLAN SHEET 3 OF 3				
C109	EXTERNAL PAVEMENT PLAN SHEET 1 OF 3				
C110	EXTERNAL PAVEMENT PLAN SHEET 2 OF 3				
C111	EXTERNAL PAVEMENT PLAN SHEET 3 OF 3				
C112	STORMWATER DETAILS SHEET 1 OF 2				
C113	STORMWATER DETAILS SHEET 2 OF 2				

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D	D 14.03.22 RE-ISSUED FOR APPROVAL				VAL	
С	C 26.11.20 RE-ISSUED FOR APPROVAL					
В	16.10.19	RE-IS	SUED FOR A	PPRO	VAL	
А	12.04.19	ISSUE	D FOR APPF	ROVAL		
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PROPOSED DEVELOPMENT						
33 Pile Road, Somersby						
For Borg Construction						
	GENERAL NOTES					
DESIGN SWH	DRAV	/N RCI	DATE AUG 2017	,	PROJECT No. 9346	

APPROVED

CHECKED

DRG No.

C100 - D

SCALE

FOR CONSTRUCTION



## WASHOUT AREA



### SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENCROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.

ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

### SOIL CONSERVATION NOTE:

PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE,' 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE. MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP AFTER EACH STORM.

SEDIMENT TRAP 1000 x 1000 x 500 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT. REFER TO TYPICAL TEMPORARY SEDIMENT TRAP SECTION.

### SEDIMENT FENCE

PROVIDE 'SEDIMENT FENCE ON DOWN SLOPE BOUNDARY AS SHOWN ON PLAN. FABRIC TO BE BURIED BELOW GROUND AT LOWER EDGE. REFER TO SD 6-8

### BUILDING MATERIAL STOCKPILES

ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION. THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM. REFER TO SD 4-1

## SEDIMENT & EROSION CONTROL PLAN

1:500

DENOTES SEDIMENT FENCE DENOTES TEMPORARY CATCH DRAIN (CD1) 1200 WIDE TO SEDIMENT BASIN - REFER TO TYPICAL DETAIL DENOTES CHECK DAM LOCATION ALONG CATCH DRAIN - REFER TO TYPICAL DETAIL CKD DENOTES SEDIMENT CATCHMENT BOUNDARY AREA ------ DENOTES EXTENT OF WORK TO BE COMPLETED UPON CONTROLLED ACTIVITY STATEMENT BEING APPROVED 

TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT. FILTERING



### GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE SPECIFICATION.

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

### STORMWATER DRAINAGE

THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3 - 1990 "STORMWATER DRAINAGE" & AS/NZS 3500.3.2-1998 "STORMWATER DRAINAGE - ACCEPTABLE SOLUTIONS".

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.

BOX COLORBOND OR ZINCALUME STEEL. GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.

EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

## FOR CONSTRUCTION

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В	16.10.19	RE-ISSUED FOR A	PPROVAL			
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## PROPOSED DEVELOPMENT

33 Pile Road, Somersby For Borg Construction

## SEDIMENT & EROSION CONTROL PLAN

DESIGN SWH	DRAWN RCL	DATE AUG 2017	PROJECT No. <b>9346</b>
CHECKED	APPROVED	SCALE 1:500	DRG No. C101 - D







TYPICAL BED SLOPE = 4.0% CATCH DRAIN CAPACITY = 0.600m<sup>3</sup> / sec PEAK FLOW = 0.427m<sup>3</sup> / sec

1:20



## TYPICAL CHECK DAM 'CKD' TO CATCH DRAIN DETAIL



## FOR CONSTRUCTION

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PROPOSED DEVELOPMENT 33 Pile Road, Somersby For Borg Construction							
SEDIMENT BASIN DETAILS							
DESIGN	DRAW			PROJECT №. 9346			
CHECKED	APPR	OVED	SCALE 1:50, 1:20	DRG No. C102 - D			



## STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 20 YEAR ARI STORM EVENT
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 100 YEAR ARI STORM EVENT
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 10 YEAR ARI STORM EVENT • ALL PIPES MUST HAVE MIN. 1.0% FALL
- ALL PITS AS NOTED ON PLAN SHALL HAVE SPEL STORMSACKS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
- ALL PAVEMENT CONSTRUCTED MUST HAVE MIN. 1.0% FALL IN ANY DIRECTION.
- ALL STORMWATER RUNOFF IS DIRECTED TO A STORMWATER QUALITY IMPROVEMENT DEVICE (SQID) PRIOR TO EXITING THE SITE.
- ON-SITE DETENTION HAS BEEN PROVIDED BASED ON THE PRE-DEVELOPMENT FLOWS FROM 33 PILE ROAD & 3-5 PINNACLE PLACE, TREATED AS A GREENFIELD SITE. POST DEVELOPMENT FLOWS INCLUDE THE FULL SITE AREA INCLUDING 1090 PACIFIC HIGHWAY.
- STORMWATER QUALITY MEASURES HAVE BEEN IMPLEMENTED TO MEET CENTRAL COAST COUNCIL GOSFORD COUNCIL'S REQUIREMENTS OF REDUCING POST - DEVELOPMENT RUNOFF POLLUTION LOADS BY PRE-DETERMINED AMOUNTS (REFER TREATMENT EFFECTIVENESS SUMMARY) • SQID'S USED ON THIS SITE INCLUDE:
- SPEL STORMSACKS -
  - HUMECEPTOR

-

- RAINWATER RE-USE ADOPTED FOR THE DESIGN:
- 3 x 5000L TANKS FOR WASTE WOOD BUILDING : 371 kL/YEAR (82.96%) -3 x 5000L TANKS FOR WORKSHOP BUILDING: 371 kL/YEAR (84.63%)
- -1 x 5000L TANKS FOR WAREHOUSE BUILDING: 111.2 kL/YEAR (82.43%) -

## FOR CONSTRUCTION

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PROPOSED DEVELOPMENT						
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- DENOTES STORMWATER CATCHMENT AREA BOUNDARY (IMPERVIOUS) - DENOTES STORMWATER CATCHMENT AREA BOUNDARY (PERVIOUS)

- = 23752 m<sup>2</sup>
- = 4609 m<sup>2</sup>
- = 9265 m²

PRE-DEVELOPMENT SW CATCHMENT AREA PLAN
--

DESIGN SWH	DRAWN RCL	DATE AUG 2017	PROJECT No. 9346
CHECKED	APPROVED	SCALE 1:500	DRG No. C103 - D



## POST DEVELOPMENT STORMWATER CATCHMENT AREA PLAN 1:500

- DENOTES STORMWATER CATCHMENT A	
TOTAL SITE DEVELOPMENT AREA	$= 23,752 \text{ m}^2$
ROOF AREA	= 9,655 m²
PAVEMENT AREA	= 11,677m <sup>2</sup>
LANDSCAPE AREA	= 2,420 m <sup>2</sup>

## STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 20 YEAR ARI STORM EVENT
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 100 YEAR ARI STORM EVENT
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 10 YEAR ARI STORM EVENT
- ALL PIPES MUST HAVE MIN. 1.0% FALL
- ALL PITS AS NOTED ON PLAN SHALL HAVE SPEL STORMSACKS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
- ALL PAVEMENT CONSTRUCTED MUST HAVE MIN. 1.0% FALL IN ANY DIRECTION.
- ALL STORMWATER RUNOFF IS DIRECTED TO A STORMWATER QUALITY IMPROVEMENT DEVICE (SQID) PRIOR TO EXITING THE SITE.
- ON-SITE DETENTION HAS BEEN PROVIDED BASED ON THE PRE-DEVELOPMENT FLOWS FROM 33 PILE ROAD & 3-5 PINNACLE PLACE, TREATED AS A GREENFIELD SITE. POST DEVELOPMENT FLOWS INCLUDE THE FULL SITE AREA INCLUDING 1090 PACIFIC HIGHWAY.
- STORMWATER QUALITY MEASURES HAVE BEEN IMPLEMENTED TO MEET CENTRAL COAST COUNCIL GOSFORD COUNCIL'S REQUIREMENTS OF REDUCING POST - DEVELOPMENT RUNOFF POLLUTION LOADS BY PRE-DETERMINED AMOUNTS (REFER TREATMENT EFFECTIVENESS SUMMARY) • SQID'S USED ON THIS SITE INCLUDE:
- SPEL STORMSACKS
  - HUMECEPTOR

-

- RAINWATER RE-USE ADOPTED FOR THE DESIGN:
- 3 x 5000L TANKS FOR WASTE WOOD BUILDING : 371 kL/YEAR (82.96%) -
- 3 x 5000L TANKS FOR WORKSHOP BUILDING: 371 kL/YEAR (84.63%) -1 x 5000L TANKS FOR WAREHOUSE BUILDING: 111.2 kL/YEAR (82.43%) -

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PROPOSED DEVELOPMENT 33 Pile Road, Somersby For Borg Construction							
POST	Γ-DE	VELO	PMENT	SW C	ATC	IMENT ARE	A PLAN
DESIGN SWH		DRAWN R	CL	DATE AUG	2017	PROJECT No. 934	6

APPROVED

SCALE 1:500

DRG No. C104 - D

CHECKED





## STORMWATER DRAINAGE KEY PLAN 1:500

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO. ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO. FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER SIZE, EG1 = 24500 mm<sup>2</sup> (250 HALF ROUND) MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500 THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

- DP = Ø150 DOWN PIPE, UNO.
- SIP = SURFACE INLET PIT (NO LINTEL)
- P1 = 2 680mm x 873mm VEE DRAIN
- P2 = 900 SQ SURFACE INLET PIT (SIP) X 100.00 = PROPOSED FINISHED SURFACE LEVEL
- = DENOTES ON-SITE DETENTION TRENCH
- (ss) = DENOTES STORMWATER PIT TO BE FITTED WITH **SPEL STORMSACK** - REFER TYPICAL DETAIL
- ST = DENOTES SEDIMENT TRAP LOCATION



## STORMWATER DRAINAGE STRATEGY

- ALL GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 20 YEAR ARI STORM EVENT
- BOX GUTTERS & DOWNPIPES ARE DESIGNED TO ACCEPT A 100 YEAR ARI STORM EVENT
- ALL PITS & PIPES ARE DESIGNED TO ACCEPT A 10 YEAR ARI STORM EVENT
- ALL PIPES MUST HAVE MIN. 1.0% FALL • ALL PITS AS NOTED ON PLAN SHALL HAVE SPEL STORMSACKS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
- ALL PAVEMENT CONSTRUCTED MUST HAVE MIN. 1.0% FALL IN ANY DIRECTION.
- ALL STORMWATER RUNOFF IS DIRECTED TO A STORMWATER QUALITY IMPROVEMENT DEVICE (SQID) PRIOR TO EXITING THE SITE.
- ON-SITE DETENTION HAS BEEN PROVIDED BASED ON THE PRE-DEVELOPMENT FLOWS FROM 33 PILE ROAD & 3-5 PINNACLE PLACE, TREATED AS A GREENFIELD SITE. POST DEVELOPMENT FLOWS INCLUDE THE FULL SITE AREA INCLUDING 1090 PACIFIC HIGHWAY.
- STORMWATER QUALITY MEASURES HAVE BEEN IMPLEMENTED TO MEET CENTRAL COAST COUNCIL GOSFORD COUNCIL'S REQUIREMENTS OF REDUCING POST - DEVELOPMENT RUNOFF POLLUTION LOADS BY PRE-DETERMINED AMOUNTS (REFER TREATMENT EFFECTIVENESS SUMMARY)
- SQID'S USED ON THIS SITE INCLUDE: SPEL STORMSACKS -
  - HUMECEPTOR

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- RAINWATER RE-USE ADOPTED FOR THE DESIGN:
- 3 x 5000L TANKS FOR WASTE WOOD BUILDING : 371 kL/YEAR (82.96%) -
  - 3 x 5000L TANKS FOR WORKSHOP BUILDING: 371 kL/YEAR (84.63%) 1 x 5000L TANKS FOR WAREHOUSE BUILDING: 111.2 kL/YEAR (82.43%)

## **ON-SITE DETENTION DESIGN SUMMARY**

TOTAL SITE AREA ON DP = 23,752 m<sup>2</sup>

DRAINS MODEL HAS BEEN PREPARED FOR CALCULATION OF PRE & POST DEVELOPMENT FLOWS.

PRE-DEVELOPMENT IMPERVIOUS AREA = 0 m<sup>2</sup> (100% OF SITE) POST-DEVELOPMENT IMPERVIOUS AREA = 21,255 (89.49%) TOTAL SITE DRAINING TO OSD = 88%

TOTAL OSD STORAGE VOLUME REQUIRED = 830 m<sup>3</sup> OSD VOLUME PROVIDED = 890 m<sup>3</sup>

PRE & POST DEVELOPMENT FLOWS				
	1 YEAR ARI	5 YEAR ARI	20 YEAR ARI	100 YEAR ARI
PRE - DEVELOPMENT FLOW (I/s)	121	378	551	752
POST - DEVELOPMENT FLOW (I/s)	121	228	276	493
STORAGE REQUIRED (m <sup>3</sup> )	305	520	705	830

## WATER QUALITY DESIGN SUMMARY A MUSIC MODEL HAS BEEN PREPARED TO DETERMINE EFFECTIVENESS OF WATER QUALITY TREATMENT DEVICES.

TREATMENT EFFECTIVENESS SUMMARY					
	SOURCES	RESIDUAL LOAD	% REDUCTION	% TARGET	
FLOW (ML/yr)	20.7	19.8	-	-	]
TOTAL SUSPENDED SOLIDS (kg/yr)	2530	335	86.8	80	] <sup>ਮ</sup>
TOTAL PHOSPHORUS (kg/yr)	4.86	2.25	53.7	45	
TOTAL NITROGEN (kg/yr)	58.4	32	45.2	45	
GROSS POLLUTANTS (kg/yr)	564	26.9	95.2	80	

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## PROPOSED DEVELOPMENT

33 Pile Road, Somersby

For Borg Construction

## STORMWATER DRAINAGE KEY PLAN

DESIGN SWH	DRAWN RCL	DATE AUG 2017	PROJECT No. 9346
CHECKED	APPROVED	SCALE 1:500	DRG No. C105 - D





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PROPOSED DEVELOPMENT						
	33 Pile Road, Somersby For Borg Construction					
ST	STORMWATER DRAINAGE PLAN SHEET 1 OF 3					

DESIGN	WH	DRAWN RCL	DATE AUG 2017	PROJECT №. 9346
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## FOR CONSTRUCTION

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PROPOSED DEVELOPMENT						
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For Borg Construction						
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STORMWATER DRAINAGE PLAN SHEET 2 OF 3

DESIGN SWH	DRAWN RCL	DATE AUG 2017	PROJECT №. <b>9346</b>
CHECKED	APPROVED	SCALE 1:250	DRG No. C107 - E



## STORMWATER DRAINAGE PLAN SHEET 3 OF 3

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO. ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO. FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER SIZE, EG1 = 24500 mm<sup>2</sup> (250 HALF ROUND) MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500 THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

- DP = Ø150 DOWN PIPE, UNO. SIP = SURFACE INLET PIT (NO LINTEL)
- P1 = 2 680mm x 873mm VEE DRAIN
- P2 = 900 SQ SURFACE INLET PIT (SIP)

P3 = 600 SQ SURFACE INLET PIT (SIP) X 100.00 = PROPOSED FINISHED SURFACE LEVEL

= DENOTES ON-SITE DETENTION TRENCH

SS = DENOTES STORMWATER PIT TO BE FITTED WITH SPEL STORMSACK - REFER TYPICAL DETAIL

ST = DENOTES SEDIMENT TRAP LOCATION

## FOR CONSTRUCTION

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PROPOSED DEVELOPMENT					
33 Pile Road, Somersby For Borg Construction					
ST	STORMWATER DRAINAGE PLAN SHEET 3 OF 3				

DESIGN SWH	DRAWN RCL	DATE AUG 2017	PROJECT No. <b>9346</b>
CHECKED	APPROVED	SCALE 1:250	DRG No. C108 - D



C.J. S.J. D.J.

## EXTERNAL PAVEMENT PLAN - SHEET 1 OF 3

1:250

DENOTES **150 THICK SLAB** WITH **SL82 MESH TOP** THROUGHOUT CONCRETE STRENGTH = **32 MPa** 

DENOTES 200 THICK DRIVEWAY SLAB WITH SL82 MESH TOP & BOTTOM THROUGHOUT CONCRETE STRENGTH = 32 MPa

2-N12 (75 SPACING 1200 LONG) TRIMMERS TOP SHALL BE LOCATED 50 FROM ALL RE-ENTRANT

REINFORCEMENT COVER TO GROUND FLOOR SLAB SHALL BE AS FOLLOWS:

40mm - TO UNPROTECTED GROUND

40mm - EXTERNAL EXPOSURE

30mm - TO A MEMBRANE IN CONTACT WITH GROUND 30mm - INTERNAL EXPOSURE

DENOTES CONSTRUCTION JOINT

DENOTES SAW CUT JOINT

CORNERS, TYPICAL U.N.O.

DENOTES DOWEL JOINT







## 1:250

CONCRETE STRENGTH = 32 MPa

CONCRETE STRENGTH = 32 MPa

CORNERS, TYPICAL U.N.O.

40mm - TO UNPROTECTED GROUND 40mm - EXTERNAL EXPOSURE 30mm - INTERNAL EXPOSURE

DENOTES CONSTRUCTION JOINT

DENOTES DOWEL JOINT





EXTERNAL	PAVEMENT	Ρ
1:250		

	DENOTES 150 THICK SLAB WITH SL82 MESH TOP CONCRETE STRENGTH = 32 MPa
	DENOTES 200 THICK DRIVEWAY SLAB WITH SL82 CONCRETE STRENGTH = 32 MPa
	2-N12 (75 SPACING 1200 LONG) TRIMMERS TOP S CORNERS, TYPICAL U.N.O.
	REINFORCEMENT COVER TO GROUND FLOOR SL 40mm - TO UNPROTECTED GROUND 40mm - EXTERNAL EXPOSURE 30mm - TO A MEMBRANE IN CONTACT WITH G 30mm - INTERNAL EXPOSURE
C.J	DENOTES CONSTRUCTION JOINT
S.J.	DENOTES SAW CUT JOINT

DENOTES DOWEL JOINT





- ANY DESIGNED ACCESS LID INTO RAINWATER RE-USE TANK
- IS TO HAVE A LOCKABLE LID. IF THE LID IS DESIGNED TO BE ACCESSED BY A MAINTENANCE PERSON. IT MUST BE AT
- MAINS WATER TO BYPASS TO TANK (BY PLUMBER) FOR LOW

FOR CONSTRUCTION					
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	STORM	JSED L 33 Pile Roa For Borg ( WATER DE	EVE Id, Son Constru ETAILS	LO nersl iction	PMENT

- REFER TO PROJECT DRAWING FOR ACTUAL REQUIREMENTS         S         m3         INCL. SHAFT) = 1130 kg         AB = 575 kg         MBLY DRAWING FOR FIXING DETAILS         AILS         N-SEAL INSTALLATION INSTRUCTIONS         IDED FOR LIFTING ALL COMPONENTS         'URERS RECOMMENDATIONS.	IKE	M.Z.	23-01-03	DFW
- REFER TO PROJECT DRAWING FOR ACTUAL REQUIREMENTS ARD S m3 (INCL. SHAFT) = 1130 kg AB = 575 kg (MBLY DRAWING FOR FIXING DETAILS AILS N-SEAL INSTALLATION INSTRUCTIONS IDED FOR LIFTING ALL COMPONENTS 'URERS RECOMMENDATIONS.		RIM	17-00-03	DFW
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