BELLS REACH, LOCAL CENTRE DEVELOPMENT APPLICATION

for STOCKLAND CALOUNDRA DOWNS PTY LTD

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Stockland

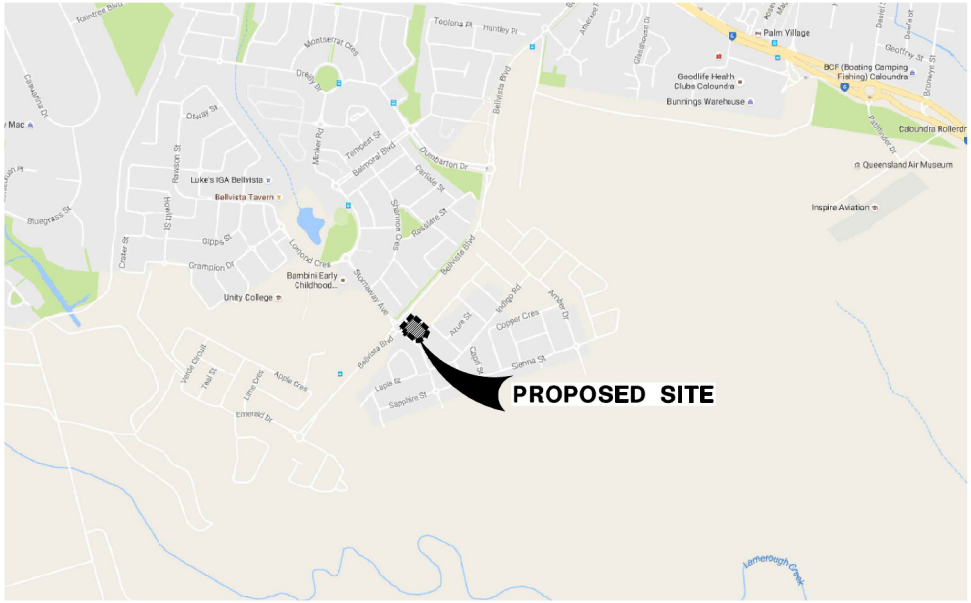
Bells Reach
Make every moment count

RP DESCRIPTION
PART OF LOT 8001 ON SP245185
PARISH OF BRIBIE COUNTY OF CANNING

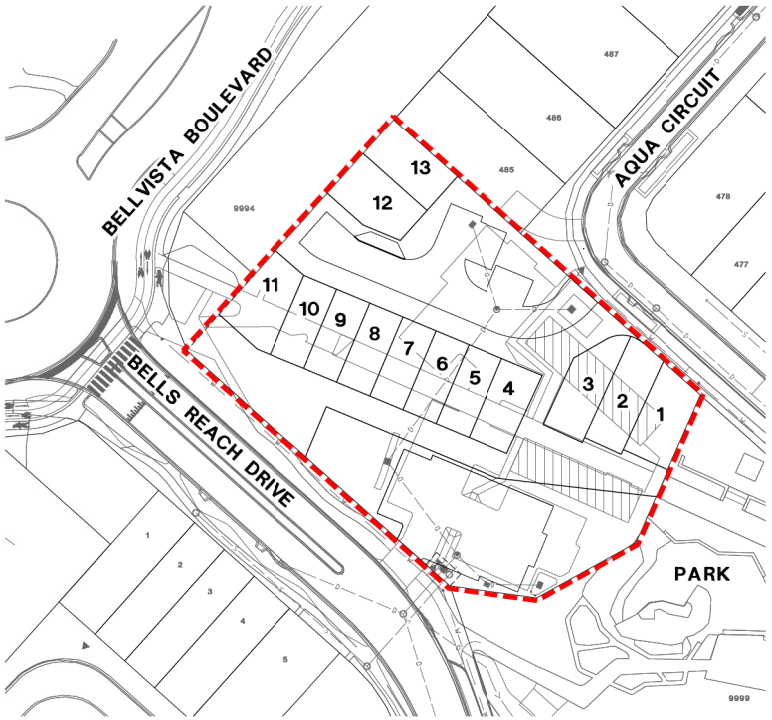
PSM: PSM 132061 , RL9.252m (AHD)

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2016/819
Date: 17 MAY 2017

Queensland Government



LOCALITY PLAN
N.T.S



SITE PLAN
SCALE 1:500 (A1)

FILE: 16-002679-100.dwg DATE: 27-04-2017 TIME: 14:36
Xref's: X-16-002679-TIT X-16-002679-BASE USR: scott dobson

FIRST ISSUE		CALCS DWH	DRAWN DWH	DATE 11.11.16	AMENDMENT DETAILS
AMENDMENTS	A	AT	AT	10.02.16	AMENDED AS PER EDQ RFI
	B	SD	SD	01.03.17	DETAILS AMENDED FOR TENDER DRAWINGS
	C	SD	AS	19.04.17	DRAWING INDEX UPDATED
	D	SD	SD	28.04.17	DRAWING INDEX UPDATED
	E				
	F				

DESIGN CHECK
DRAWN CHECK
SCALE (METRES) AS ABOVE
MICROFILM No.
PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED
BRAD THOMPSON RPEQ 07819
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD
PROJECT: BELLS REACH LOCAL CENTRE

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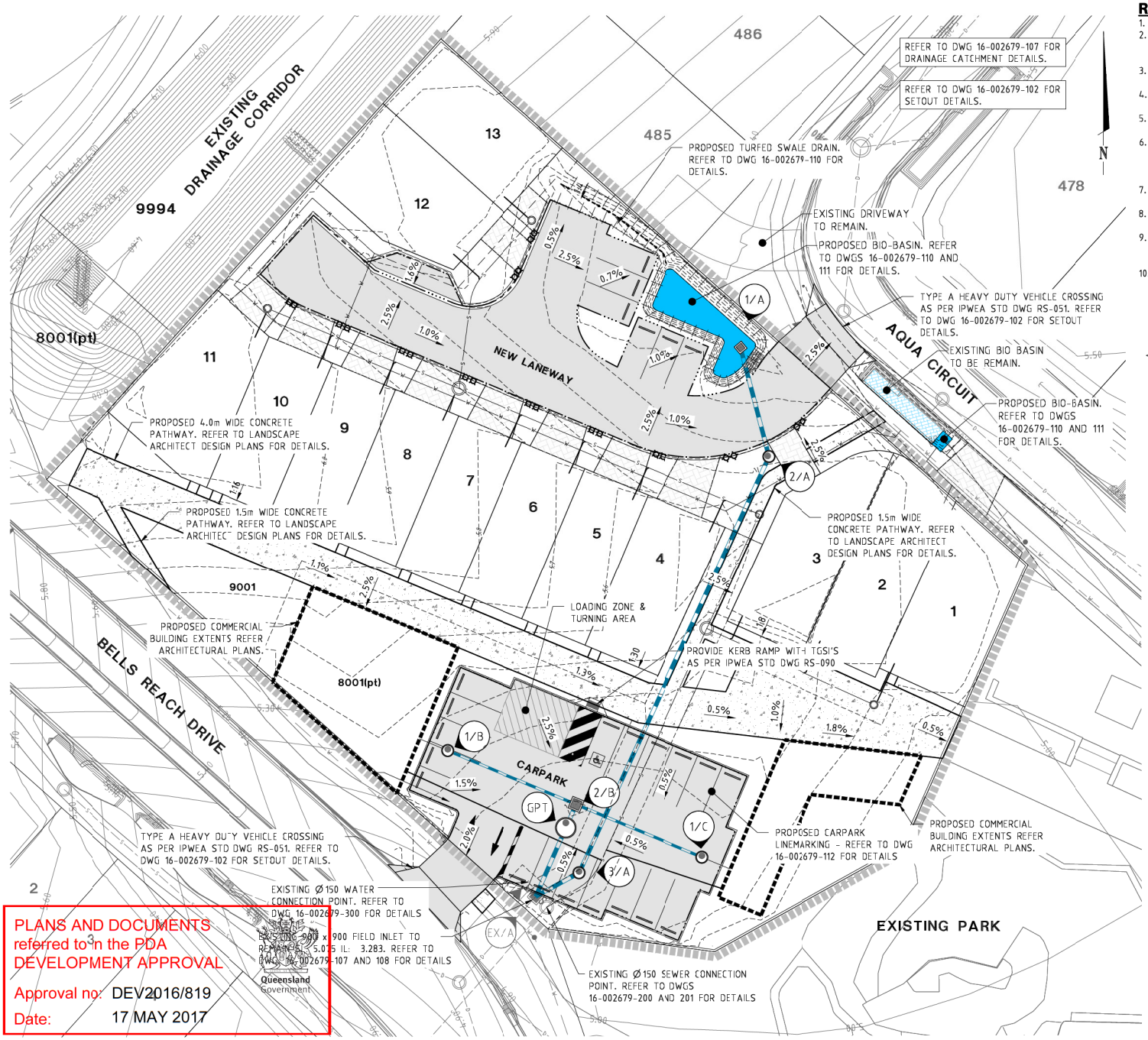
Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

Quality Assurance Company ISO 9001 Lic-0064

DRAWING TITLE: SITE LOCALITY AND DRAWING INDEX
DRAWING NUMBER: 16-002679-100
ISSUE: D



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

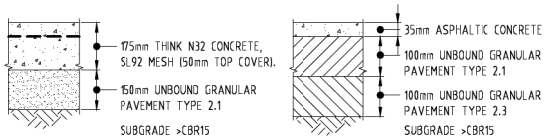
Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

ROADWORKS & DRAINAGE NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
2. CONTRACTOR TO LIAISE WITH ALL THE RELEVANT SERVICE AUTHORITIES TO ASCERTAIN SERVICES PRESENT ON-SITE. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT BY THAT SERVICE AUTHORITY ONLY.
3. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF DEMOLISHING ANY EXISTING STRUCTURES WITHIN THE SITE AREAS.
4. ALL ALLOTMENT FILL IS TO BE COMPACTED TO THE REQUIREMENTS OF AS3798-2007 AND IN ACCORDANCE WITH CURRENT SCC. SPECIFICATIONS.
5. VERGE AND BATTERS TO HAVE A MINIMUM OF 75mm TOPSOIL AND FULL WIDTH TURF IF ORDERED.
6. SUBGRADE TEST RESULTS TO BE FORWARDED TO SUPERINTENDENT FOR DETERMINATION OF BOX DEPTHS PRIOR TO EXCAVATION TESTS SHALL INCLUDE SOAKED CBR AND/OR OTHER TESTS AS REQUESTED BY THE SUPERINTENDENT.THE CONTRACTOR SHALL ALLOW ADEQUATE TIME FOR COUNCIL APPROVAL OF PAVEMENT DESIGN.
7. LEVELS FOR KERB AND CHANNELLING/EDGE OF PAVEMENT CONSTRUCTION ARE AT EQUAL INTERVALS AT LIP OF CHANNEL UNLESS SHOWN OTHERWISE.
8. SIDE DRAINS TO BE CONSTRUCTED UNDER ALL KERBS AND ALL KERB AND CHANNEL AS PER SCC STANDARDS. REFER STANDARD DRAWING SEQ R-140 FOR DETAILS.
9. THE STORMWATER PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY, AND THE CONTRACTOR SHALL ASSESS ANTICIPATED CONSTRUCTION LOADS AND UPGRADE THE PIPE CLASSES, IF NECESSARY, IN ACCORDANCE WITH A.S 3725-1989. AT THE CONTRACTORS COST.
10. CONCRETE FOOTPATHS TO BE INSTALLED BY THE CIVIL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO SCC STD DWG SEQ-R-065 FOR CONSTRUCTION DETAILS.



NOTE: DRIVEWAY PAVEMENT TO BE CONCRETE OR ASPHALTIC CONCRETE AND IS SUBJECT TO FINAL PAVEMENT DESIGN. SUPERINTENDENT TO CONFIRMED PRIOR TO CONSTRUCTION.

TYPICAL PAVEMENT DETAILS

N.T.S

LEGEND

- BOUNDARY OF WORKS
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWER RETICULATION
- PROPOSED WATER RETICULATION
- MOUNTABLE KERB AND CHANNEL - TYPE M1
- BARRIER KERB ONLY - TYPE B2 (CARPARK)
- MOUNTABLE KERB ONLY - TYPE M4
- EDGE RESTRANT - TYPE ER2
- INVERT KERB (CARPARK)
- PROPOSED CONCRETE FOOTPATH
- 2.20 DESIGN CONTOURS (0.1m INTERVALS)
- 3.50 EXISTING CONTOURS (0.1m INTERVALS)
- CONCRETE WHEEL STOP
- CONCRETE/AC DRIVEWAY
- PRIVATE DRIVEWAY (BY OTHERS)
- EXISTING DRAINAGE
- EXISTING SEWER
- KERB ADAPTOR (2 PER LOT)

FILE: 16-002679-101.dwg DATE: 28-04-2017 TIME: 16:09
Xref's: X-16-002679-BASE X-16-002679-TIT USR: scott dobson

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
C	SD	SD	28.04.17	ENERGEX EASEMENT ADDED
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1 : 200 2 1 0 2 4 6 8 10 A1
1 : 400 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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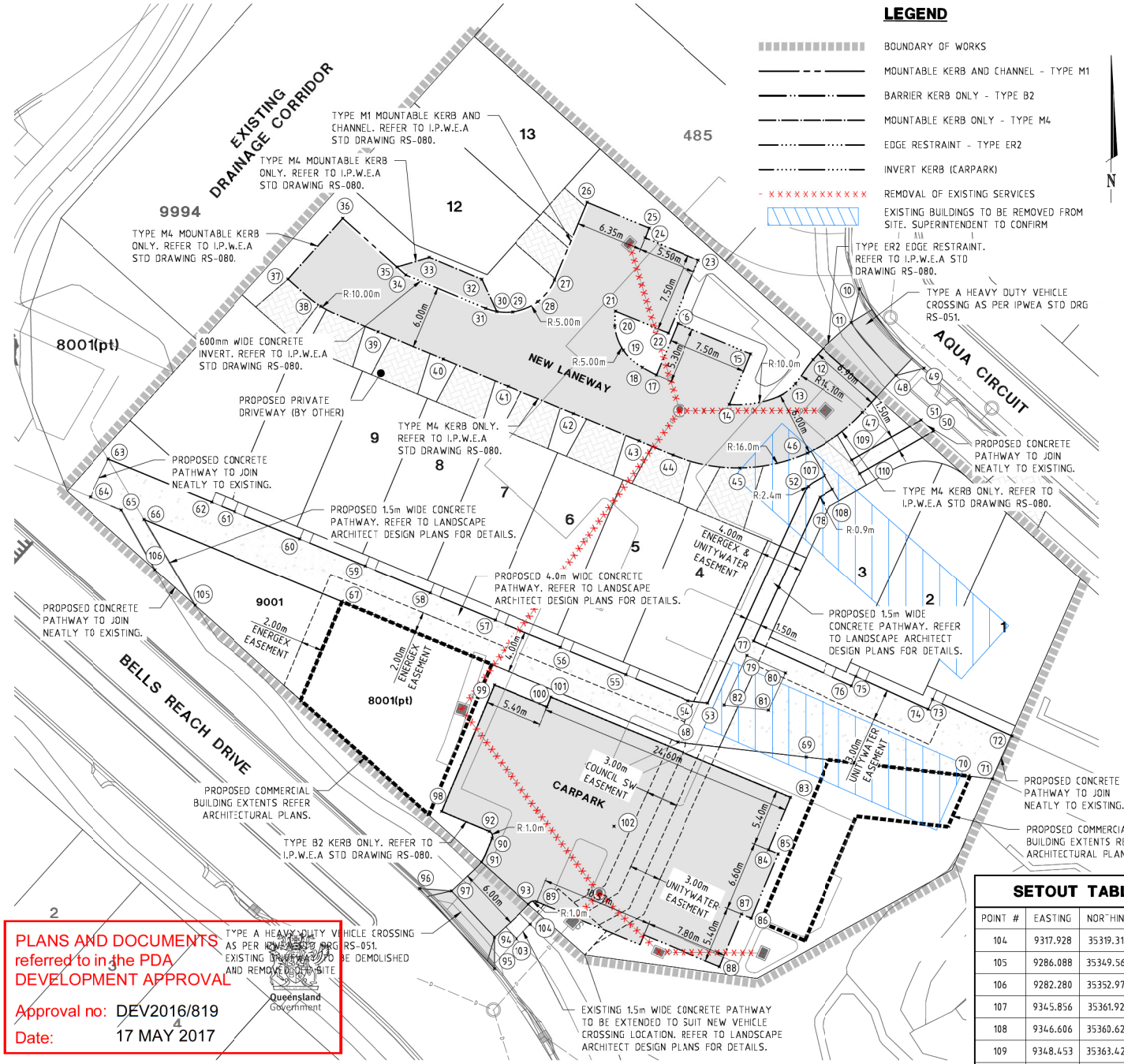
Quality Environment Company ISO 9001 Lic-4084

DRAWING TITLE: ROADWORKS & DRAINAGE DETAIL PLAN

DRAWING NUMBER: 16-002679-101

ISSUE: C



SETOUT TABLE

POINT #	EASTING	NORTHING	LEVEL
10	9349.197	35379.670	5.044
11	9348.403	35376.467	5.209
12	9344.709	35372.945	5.203
13	9343.050	35370.651	5.227
14	9336.803	35368.687	5.320
15	9338.809	35373.482	5.294
16	9331.890	35376.376	5.225
17	9329.841	35371.479	5.381
18	9328.512	35372.198	5.389
19	9326.722	35373.836	5.384
20	9325.913	35376.126	5.333
21	9325.981	35377.539	5.311
22	9330.963	35375.455	5.247
23	9333.857	35382.374	5.244
24	9328.777	35384.499	5.272
25	9329.163	35385.422	5.267
26	9323.304	35387.873	5.394
27	9320.217	35380.493	5.434
28	9318.634	35378.445	5.462
29	9316.239	35377.463	5.486
30	9314.727	35377.500	5.498
31	9313.674	35377.810	5.506
32	9313.303	35380.566	5.615
33	9308.122	35382.650	5.659
34	9306.099	35380.979	5.569
35	9305.258	35381.732	5.585
36	9300.099	35386.352	5.695
37	9294.933	35380.585	5.817
38	9298.023	35378.004	5.786
39	9303.460	35375.579	5.740
40	9309.641	35372.993	5.689
41	9315.822	35370.407	5.637
42	9322.003	35367.822	5.586
43	9328.184	35365.236	5.534
44	9331.408	35363.887	5.507
45	9337.820	35362.647	5.456
46	9344.193	35364.070	5.404
47	9349.460	35367.927	5.304
48	9352.625	35371.432	5.187
49	9355.272	35372.127	4.987
50	9356.764	35366.154	5.114
51	9354.995	35367.210	5.104
52	9344.279	35360.884	5.633
53	9334.753	35340.285	5.426
54	9332.893	35340.502	5.428
55	9326.952	35342.988	5.513
56	9320.771	35345.573	5.602

SETOUT TABLE

POINT #	EASTING	NORTHING	LEVEL
57	9314.590	35348.159	5.682
58	9308.409	35350.745	5.763
59	9302.229	35353.330	5.843
60	9296.048	35355.916	5.923
61	9289.867	35358.502	6.003
62	9287.653	35359.428	6.032
63	9277.870	35363.520	6.120
64	9276.119	35359.917	6.100
65	9279.104	35358.668	6.023
66	9281.258	35357.767	5.995
67	9300.039	35349.910	5.751
68	9331.870	35336.594	5.321
69	9344.063	35335.173	5.349
70	9358.596	35333.479	5.093
71	9361.762	35333.094	5.945
72	9363.627	35337.171	5.945
73	9356.075	35340.641	5.217
74	9355.651	35339.711	5.200
75	9348.826	35342.821	5.317
76	9348.413	35341.915	5.323
77	9339.088	35346.171	5.465
78	9345.389	35359.876	5.671
79	9338.465	35344.806	5.451
80	9342.104	35343.146	5.423
81	9340.493	35339.616	5.379
82	9336.319	35340.103	5.398
83	9342.575	35331.357	5.120
84	9340.491	35326.376	5.093
85	9341.413	35325.990	5.088
86	9338.866	35319.901	5.088
87	9337.944	35320.287	5.084
88	9335.860	35315.305	5.111
89	9318.523	35321.474	5.067
90	9314.285	35327.475	5.124
91	9313.270	35325.220	5.070
92	9314.016	35328.129	5.141
93	9317.751	35321.207	5.064
94	9314.511	35318.092	5.028
95	9314.511	35315.111	4.775
96	9307.405	35322.712	4.828
97	9310.431	35322.491	5.051
98	9309.496	35330.020	5.247
99	9314.513	35342.013	5.347
100	9319.495	35339.929	5.304
101	9319.881	35340.851	5.324
102	9325.830	35328.607	4.993
103	9316.634	35317.944	5.046

SETOUT TABLE

POINT #	EASTING	NORTHING	LEVEL
104	9317.928	35319.313	5.046
105	9286.088	35349.565	5.713
106	9282.280	35352.975	5.857
107	9345.856	35361.927	5.608
108	9346.606	35360.629	5.645
109	9348.453	35363.429	5.567
110	9349.204	35362.130	5.605

FILE: 16-002679-102.dwg DATE: 28-04-2017 TIME: 15:55
Xref's: X-16-002679-TIT X-16-002679-BASE USR: scott dobson

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
B	SD	SD	01.03.17	DETAILS AMENDED FOR TENDER DRAWINGS
C	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
D	SD	SD	28.04.17	ENERGEX EASEMENT ADDED
E				
F				

DESIGN CHECK
DRAWN CHECK
SCALE (METRES) 1 : 200 1 : 400 A1 A3
MICROFILM No.
PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD
PROJECT: BELLS REACH LOCAL CENTRE

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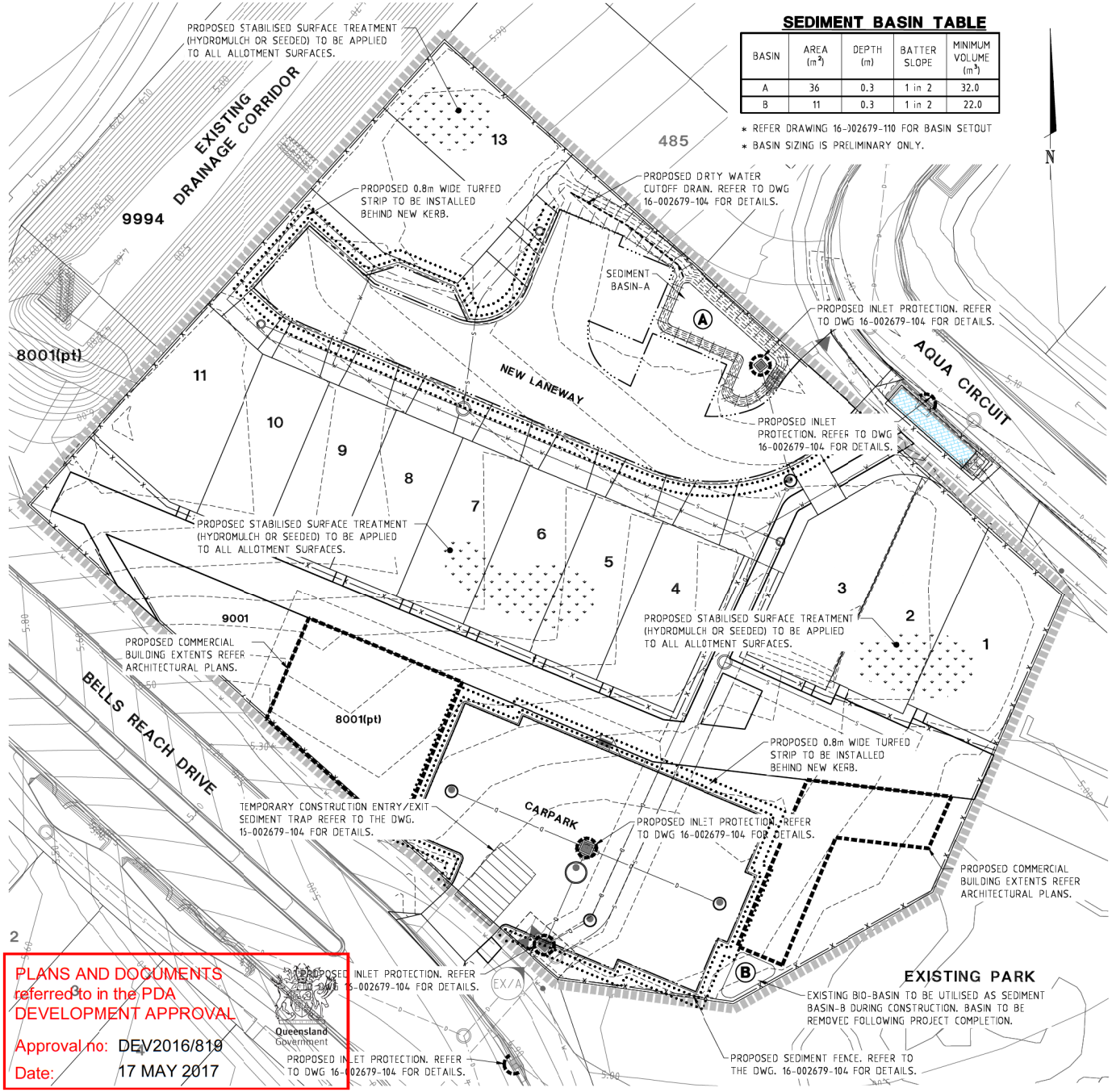
DRAWING TITLE: SURVEY SETOUT PLAN
DRAWING NUMBER: 16-002679-102
ISSUE: D



SEDIMENT BASIN TABLE

BASIN	AREA (m^2)	DEPTH (m)	BATTER SLOPE	MINIMUM VOLUME (m^3)
A	36	0.3	1 in 2	32.0
B	11	0.3	1 in 2	22.0

* REFER DRAWING 16-002679-110 FOR BASIN SETOUT
* BASIN SIZING IS PRELIMINARY ONLY.

CONCEPTUAL SEDIMENT MANAGEMENT PROGRAM

DESCRIPTION OF WORKS

SEWER/ROOFWATER /STORMWATER /SERVICES

- EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH AND TO PROTECT PIPE WORK AND DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS.
- EFFECTIVELY STABILISE AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER AND ROOFWATER DRAINAGE CONSTRUCTION.
- DEPRESS GROUND AROUND TEMPORARY FIELD INLETS TO CREATE SEDIMENT POND.
- PROVIDE 2.0M TURF STRIPS OVER ROOFWATER AND SEWER TRENCHES.

STOCKPILE

- SEDIMENT FENCE TO BE ERECTED 5M FROM TOE OF BATTER ON LOW SIDE OF STOCKPILE.
- STOCKPILE SITE TO BE CLEAR OF STAGE BOUNDARIES SO AS TO NOT CAUSE A NUISANCE TO ADJOINING PROPERTIES.
- STOCKPILES NOT INTENDED TO BE WORKED FOR MORE THAN 10 DAYS ARE TO BE EFFECTIVELY STABILISED.

ROADWORKS

- SEDIMENT FENCES TO ALLOTMENTS TO BE RE-ERECTED AS REQUIRED.
- KERB INLET PROTECTION TO BE PROVIDED TO ALL GULLIES.
- INSTALL FULL WIDTH VERGE (INCLUDING BATTERS) TURFING FOLLOWING KERB AND CHANNEL INSTALLATION.
- UTILISE UNDERGROUND DRAINAGE SYSTEM AS CONVEYANCE SYSTEM OF DIRTY WATER TO BASINS (WHERE APPROPRIATE) TO AVOID SCOUR OF ROAD BOX PROFILE.

ALLOTMENTS

- EFFECTIVELY STABILISE ALLOTMENTS.
- SEDIMENT FENCES TO ALLOTMENTS TO BE RE-ERECTED.
- PRIOR TO EFFECTIVE STABILISATION, TOP SOIL TO BE TESTED TO ENSURE SATISFACTORY CONDITIONS EXIST TO ACHEVE THE REQUIRED EFFECTIVE STABILISATION.
- CONTRACTOR TO AMELIORATE SOIL WHERE NECESSARY.
- CUTOFF DRAINS TO LIMIT SLOPE LENGTHS TO LESS THAN 80m TO BE IMPLEMENTED.

MAINTENANCE

- THE SEDIMENT FENCES ARE TO BE INSPECTED WEEKLY AND FOLLOWING RAIN FALL EVENTS. ANY REPAIRS REQUIRED ARE TO BE EFFECTED IMMEDIATELY.
- SEDIMENT AFTER RAIN OR CONSTRUCTION TRAFFIC IS TO BE CLEANED FROM STREETS AND ALLOTMENTS IMMEDIATELY AND CORRECTIVE ACTION TAKEN.

LEGEND

- BOUNDARY OF WORKS
- SEDIMENT FENCE (OR AS DIRECTED BY SITE SUPERINTENDENT)
- CLEAN WATER CUTOFF DRAIN (DIRECT FLOW TO SEDIMENT BASIN)
- DIRTY WATER CUTOFF DRAIN (DIRECT FLOW TO SEDIMENT BASIN)
- STABILISED SURFACE (HYDROMULCH, MULCH OR SEED) TO ALLOTMENTS
- 3.50 NATURAL SURFACE CONTOURS
- 3.50 PROPOSED DESIGN SURFACE CONTOURS
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWER RETICULATION
- PROPOSED WATER RETICULATION
- GRASS STRIP BEHIND KERB AND CHANNEL (0.8m)
- INLET PROTECTON

THE EROSION & SEDIMENT CONTROL PLAN IS A CONCEPT PLAN DEMONSTRATING AN APPROACH TO EROSION & SEDIMENTATION CONTROL FOR THE SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE AN EROSION & SEDIMENT CONTROL DESIGN AND A COMPLETED DESIGN CERTIFICATE PRIOR TO COMMENCEMENT OF WORK. CERTIFICATION MUST BE UNDERTAKEN BY A SUITABLY QUALIFIED, EXPERIENCED PROFESSIONAL NOT DIRECTLY EMPLOYED BY THE PRINCIPAL.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

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	D				
	E				
	F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1 : 200 2 1 0 2 4 6 8 10 A1
1 : 400 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

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PROJECT: BELLS REACH LOCAL CENTRE

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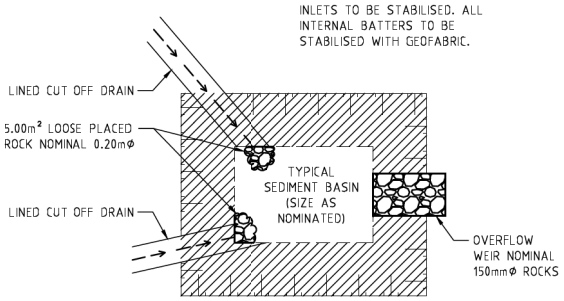
Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast
Quality Assurance ISO9001 Lic-0064

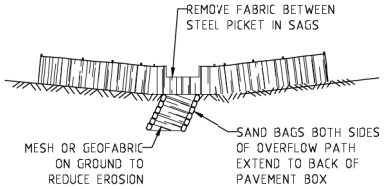
DRAWING TITLE: SEDIMENT & EROSION CONTROL PLAN

DRAWING NUMBER: 16-002679-103

ISSUE: C

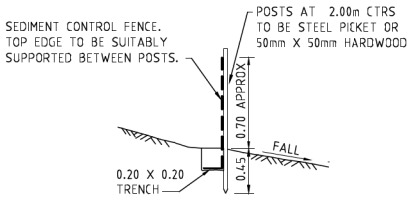


TYPICAL SEDIMENT BASIN

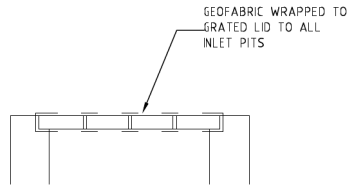


SPILL THROUGH WEIR DETAIL

INSTALL AT ALL SAG POINTS IN SILT FENCES



SEDIMENT FENCE DETAIL



INLET GULLY DETAILS

N.T.S.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

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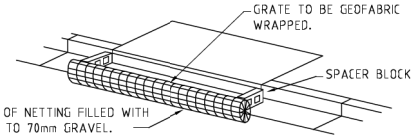
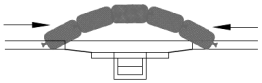
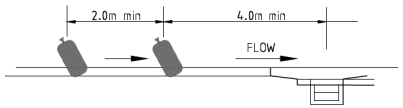


KERB INLET PROTECTOR



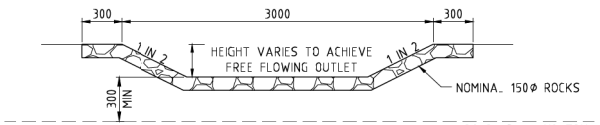
SANDBAGS AT SAG GULLIES

TO BE PROVIDED AT ALL SAG GULLIES

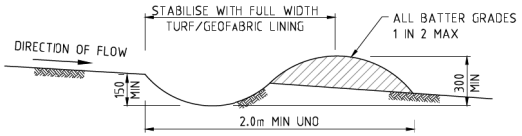


SANDBAGS AT GULLIES ON GRADE

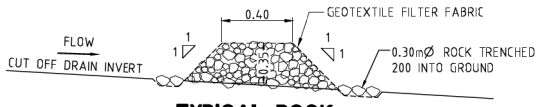
TO BE PROVIDED AT ALL ON-GRADE GULLIES



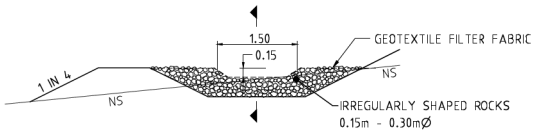
OVERFLOW WEIR DETAIL



CLEAN WATER CUTOFF DRAIN DETAIL

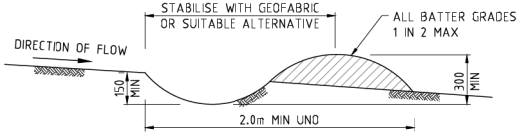


TYPICAL ROCK CHECK DAM SECTION



TYPICAL ROCK CHECK DAM DETAIL

ROCK CHECK DAMS TO BE EVERY 50.00m

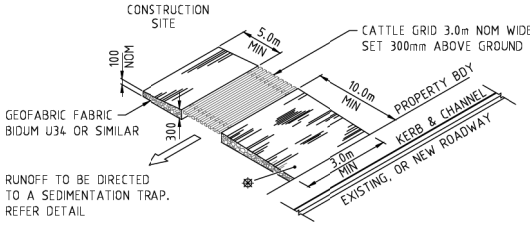


DIRTY WATER CUTOFF DRAIN DETAIL

CUTOFF DRAINS - MAINTENANCE PROGRAM

1. INSPECTIONS TO BE CARRIED OUT AFTER EACH RUNOFF EVENT.
2. SEDIMENT BUILD UP TO BE REMOVED DURING CONSTRUCTION AS REQUIRED BY THE SUPERINTENDENT.

NOTE: DRAIN TO BE CIRCULAR PARABOLIC OR TRAPEZOIDAL, V SHAPED IS NOT ACCEPTABLE. GRADIANT BETWEEN 1.0% TO 5.0%



NOTE:-

THE TOP ELEVATION OF THE AGGREGATE AND THE MESH FILTER SHALL BE AT LEAST 150mm BELOW THE SURROUNDING GROUND LEVEL INCLUDING ANY NECESSARY PERIMETER BERMS.

UNBOUND PAVEMENT MATERIAL (GRAVEL) TO GRADING 'B', TABLE 9 OF QT SPECIFICATION MRS11.05, EXCLUDE MATERIAL FINER THAN A.S. SIEVE 2.36mm

TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP

NTS

FILE: 16-002679-104.dwg DATE: 20-04-2017 TIME: 14:57
Xref's: X-16-002679-TT USR: anthony skaric

FIRST ISSUE	CALCS	DRAWN	DATE
	DWH	DWH	11.11.16

AMENDMENTS

	AMENDMENT DETAILS
A	
B	
C	
D	
E	
F	

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED
BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND CALOUNDRA DOWNS PTY LTD

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Quality Assurance Company ISO 9001 Lic-4084

DRAWING TITLE
SEDIMENT & EROSION CONTROL TYPICAL DETAILS

DRAWING NUMBER
16-002679-104

ISSUE
-

GENERAL NOTES

1. THIS DESIGN FOR EROSION AND SEDIMENT CONTROL IS CONCEPTUAL ONLY. THE CONTRACTOR SHALL MODIFY OR INSTALL ADDITONAL/ ALTERNATIVE MEASURES DURING THE CONSTRUCTION ANC MAINTENANCE PERIOD IN ORDER TO COMPLY WITH BEST PRACTICE STANDARDS IN ACCORDANCE WITH BUT NOT LIMITED TO CALIBRE CONSULTING'S SPECIFICATION 17 , THE MANUAL FOR EROSION AND SEDIMENT CONTROL (V1.2) AND ALL STATUTORY REQUIREMENTS .

2. PRESCRIBED WATER CONTAMINANTS (AS DEFINED IN THE ENVIRONMENTAL PROTECTION ACT 1994) MUST NOT BE RELEASED FROM THE SITE, OR BE LIKELY TO BE RELEASED SHOULD RAINFALL OCCJR, UNLESS ALL REASONABLE AND PRACTICABLE MEASURES ARE TAKEN TO PREVENT OR MINMISE THE RELEASE AND CONCENTRATION OF CONTAMINATION. THESE MEASURES MUST INCLUDE AS A MINIMUM, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   A. ENSURE NON ESSENTIAL EXPOSURE OF SOIL IS PREVENTED BY: RESTRICTING THE EXTENT OF CLEARING TO THAT NECESSARY FOR ACCESS TO, AND SAFE CONSTRUCTION OF, THE APPROVED WORKS; PROTECTING VEGETATION IN ALL OTHER AREAS OF THE SITE; AND BY MINIMISING THE DURATION OF SOIL EXPOSURE BY:
      - STAGING THE WORKS TO MINIMISE THE AREA OF SOIL EXPOSED AT ANY ONE TIME;
      - EFFECTIVELY STABILISING CLEARED AREAS PRIOR TO RAINFALL IF WORKS ARE DELAYED OR WORKS ARE NOT INTENDED TO OCCUR IMMEDIATELY. SEE E&SC ADVICE NOTE 1;
      - EFFECTIVELY STABILISING AREAS AT FINISHED LEVEL WITHOUT DELAY AND PRIOR TO RAINFALL; AND
      - EFFECTIVELY STABILISING STEEP AREAS, SUCH AS STOCKPILES, BATTERS AND EMBANKMENTS, WHICH ARE NOT BEING ACTIVELY WORKED AND PRIOR TO RAINFALL.
   B. WHERE IT IS NOT FEASIBLE TO EFFECTIVELY STABILISE CLEARED AREAS OF EXPOSED SOIL, SUCH AS AREAS BEING ACTIVELY WORKED, IMPLEMENT A FULL SUITE OF EROSION AND SEDIMENT CONTROLS TO MAXIMISE SEDIMENT CAPTURE IN THOSE AREAS AND TO MINIMISE EROSION SUCH THAT EROSION BY ALL FORMS OTHER THAN SPLASH (RAINDROP IMPACT) EROSION AND SHEET EROSION DOES NOT OCCUR; AND
   C. IN AREAS OF EXPOSED SOIL WHERE IT IS NOT FEASIBLE TO EITHER EFFECTIVELY STABILISE THE SURFACE OR IMPLEMENT A FULL SUITE OF EROSION AND SEDIMENT CONTROLS, FOR EXAMPLE IN THE AREAS BEING ACTIVELY WORKED AND WHERE THE IMPLEMENTATION OF SOME EROSION AND SEDIMENT CONTROLS WOULD IMPEDE CONSTRUCTION ACTIVITIES, ENSURE CONTINGENCY MEASURES ARE AVAILABLE ON SITE AND ARE IMPLEMENTED, PRIOR TO RAIN, TO MAXIMISE SEDIMENT CAPTURE AND TO MINIMISE EROSION SUCH THAT EROSICN BY ALL FORMS OTHER THAN SPLASH (RAINDROP IMPACT) EROSION AND SHEET EROSION DOES NOT OCCUR
   D. EFFECTIVELY STABILISE ALL STOCKPILES, BATTERS AND EMBANKMENTS WITHOUT DELAY. WHERE IT IS NOT FEASIBLE TO EFFECTIVELY STABILISE A STOCKPILE, BATTER OR EMBANKMENT, SUCH AS AREAS BEING ACTIVELY WORKED, ENSURE THAT SEDIMENT CONTROLS ARE INSTALLED AND SURFACE STORMWATER FLOWS ARE MANAGED SUCH THAT EROSION OF STOCKPILES, BATTERS OR EMBANKMENTS IS NOT CAUSED BY CONCENTRATED STORMWATER FLOWS.
   E. ENSURE CLEAN STORMWATER IS DIVERTED OR MANAGED AROUND OR THROUGH THE SITE WITHOUT INCREASING THE CONCENTRATION OF TOTAL SUSPENDED SOLIDS OR OTHER CONTAMINANTS IN THE FLOW AND WITHOUT CAUSING EROSION (ON SITE OR OFF SITE). IF IT IS NOT FEASIBLE TO DIVERT ALL AREAS DISCHARGING CLEAN STORMWATER AROUND OR THROUGH THE SITE, MANAGE THE CLEAN STORMWATER RUNOFF AS FOR CONTAMINATED STORMWATER RUNOFF, AND ENSURE THAT SEDIMENT BASINS ARE SIZED TO ACCOMMODATE THE ADDITIONAL VOLUME OF RUNOFF (SEE E&SC ADVICE NOTE 2).
   F. ENSURE SHEET FLOWS OF STORMWATER ARE MANAGED SUCH THAT SHEET AND RILL EROSION IS PREVENTED OR MINIMISED.
   G. ENSURE THAT ALL CONCENTRATED STORMWATER FLOWS INCLUDING DRAINAGE LINES, DIVERSION DRAINS, CHANNELS AND BATTER CHUTES ARE MANAGED ONTO, THROUGH, AND AT RELEASE POINTS FROM THE SITE IN ALL RAIN EVENTS UP TO AND INCLUDING THE AVERAGE RECURRENCE INTERVAL (ARI) EVENT OF 1 IN 2 YEAR ARI WITHOUT CAUSING WATER CONTAMINATION, SHEET, RILL OR GULLY EROSION, SEDIMENTATION, OR DAMAGE TO STRUCTURES OR PROPERTY
   H. ENSURE MEASURES HAVE BEEN IMPLEMENTED SUCH THAT THE RUNOFF FROM ALL DISTURBED AREAS FLOWS TO A SEDIMENT BASIN OR BASINS. WHERE IT IS NOT FEASIBLE TO DIVERT RUNOFF FROM DISTURBED AREAS OF THE SITE TO A SEDIMENT BASIN, IMPLEMENT COMPENSATORY EROSION AND DRAINAGE CONTROLS PRIOR TO RAINFALL TO ENSURE THAT EROSION OF THOSE AREAS DOES NOT OCCUR, INCLUDING EROSION CAUSED BY EITHER SPLASH (RAINDROP IMPACT), SHEET, RILL OR GULLY EROSION PROCESSES (SEE E&SC ADVICE NOTE 3).
   I. ENSURE EACH SEDIMENT BASIN HAS THE CAPACITY TO TREAT FLOWS TO CURRENT BEST PRACTICE STANDARDS (SEE E&SC ADVICE NOTE 4) AND AS A MINIMUM TO CONTAIN ALL THE STORMWATER RUNOFF FROM THE 80TH PERCENTILE 5 DAY RAINFALL DEPTH AND STORE 2 MONTHS SEDIMENT FROM THE RECEIVING CATCHMENT, AS DETERMINED USING THE REVISED UNIVERSAL SOIL LOSS EQUATION.
   J. ENSURE SEDIMENT BASINS ARE MAINTAINED WITH SUFFICIENT STORAGE CAPACITY TO CAPTURE AND TREAT THE RUNOFF FOR THE DESIGN RAINFALL DEPTH OR EVENT. WHERE SEDIMENT BASINS ARE PROPOSED TO BE OVERSIZED FOR STORAGE OF CAPTURED WATER FOR RE-USE, INSTALL SURVEY MARKERS IN EACH SUCH BASIN TO INDICATE THE LEVEL THAT WATER WITHIN THE BASIN MUST BE LOWERED TO, IN ORDER TO MEET THE STORAGE CAPACITY SPECIFIED IN THE ABOVE REQUIREMENT.
   K. ENSURE SEDIMENT BASINS ARE DEWATERED AS SOON AS PRACTICABLE AFTER EACH RAINFALL EVENT.
   L. ENSURE THAT DURING DEWATERING, THE CONCENTRATION OF TOTAL SUSPENDED SOLIDS (TSS) DISCHARGED DOES NOT EXCEED 50MG/L AND THAT PH IS WITHIN THE RANGE OF 6.5-8.5. THE CONCENTRATION OF TSS RELEASED BY DEWATERING MAY ONLY EXCEED 50MG/L WHERE IT CAN BE DEMONSTRATED AND SUPPORTED THROUGH DOCUMENTATION THAT:
      - FURTHER SIGNIFICANT RAINFALL IS FORECAST TO OCCUR BEFORE THE TSS CONCENTRATION IS LIKELY TO BE REDUCED TO 50MG/L ; AND
      - RELEASING A HIGHER CONCENTRATION OF TOTAL SUSPENDED SOLID WILL RESULT IN A BETTER ENVIRONMENTAL OUTCOME BY PROVIDING STORAGE FOR THE CAPTURE AND TREATMENT OF RUNOFF FROM THE IMMINENT RAINFALL AND RUNOFF; AND
      - FLOCCULENT HAS BEEN APPLIED AND THE CONCENTRATION OF TSS IN THE CAPTURED WATER HAS ALREADY SIGNIFICANTLY DECREASED.
   M. ENSURE SEDIMENT BASINS AND ASSOCIATED STRUCTURES SUCH AS INLETS, OUTLETS AND SPILLWAYS ARE STRUCTURALLY SOUND FOR 10 YEAR ARI RAINFALL EVENT.
   N. ENSURE ACCUMULATED SEDIMENT FROM BASINS AND OTHER CONTROLS IS REMOVED AND DISPOSED OF APPROPRIATELY WITHOUT CAUSING WATER CONTAMINATION.
   O. ENSURE SEDIMENT DOES NOT LEAVE THE SITE ON THE TYRES OF VEHICLES.

3. THE ENVIRONMENTAL PROTECTION ACT 1994 STATES THAT A PERSON MUST NOT CARRY OUT ANY ACTIVITY THAT CAUSES, OR IS LIKELY TO CAUSE, ENVIRONMENTAL HARM UNLESS THAT PERSON TAKES ALL REASONABLE AND PRACTICAL MEASURES TO PREVENT OR MINIMISE THE HARM. ENVIRONMENTAL HARM INCLUDES ENVIRONMENTAL NUISANCE. IN REGARD PERSONS AND ENTITIES, INVOLVED IN THE CIVIL, EARTHWORKS AND CONSTRUCTION PHASES OF THIS DEVELOPMENT, ARE TO ADHERE TO THEIR 'GENERAL ENVIRONMENTAL DUTY' TO MINIMISE THE RISK OF CAUSING ENVIRONMENTAL HARM.

   ENVIRONMENTAL; HARM IS DEFINED BY THE ACT AS ANY ADVERSE AFFECT, OR POTENTIAL ADVERSE AFFECT WHETHER TEMPORARY OR PERMANENT AND OF WHATEVER MAGNITUDE, DURATION OR FREQUENCY ON AN ENVIRONMENTAL VALUE AND INCLUDES ENVIRONMENTAL NUISANCE. THEREFORE, NO PERSON SHOULD CAUSE ANY INTERFERENCE WITH THE ENVIRONMENT OR AMENITY OF THE AREA BY REASON OF THE EMISSION OF NOISE, VIBRATION, SMELL, FUMES, SMOKE, VAPOR, STEAM, SOOT, ASH, DUST, WASTE WATER, WASTE PRODUCTS, GRIT, SEDIMENT, OIL OR OTHERWISE, OR CAUSE HAZARDS LIKELY IN THE OPINION OF THE ADMINISTERING AUTHORITY TO CAUSE UNDUE DISTURBANCE OR ANNOYANCE TO PERSONS OR AFFECT PROPERTY NOT CONNECTED WITH THE USE.

4. THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.

5. WHERE IT IS REQUIRED TO SLASH EXISTING VEGETATION EITHER PRIOR TO THE COMMENCEMENT OF WORKS, DURING THE CONSTRUCTION WORKS AND / OR DURING THE MAINTENANCE PERIOD, SAID VEGETATION SHALL BE SLASHED TO A MINIMUM HEIGHT OF 75mm TO ASSIST WITH THE RETENTION OF SOILS ON SITE (I.E. ASSIST IN THE PREVENTION OF EROSION).

6. WHERE THE EXISTING VEGETATION WITHIN THE PROPOSED LOTS AND / OR PARKLAND IS DISTURBED AS A RESULT OF THE CONSTRUCTION WORKS, SAID EARTHWORKS ARE TO BE TOPSOILED AND EFFECTIVELY STABILISED WITHIN FIVE (5) DAYS, (EARLIER IF RAIN EXPECTED) OF FINAL ALLOTMENT EARTHWORKS. AN EFFECTIVELY STABILISED SURFACE IS DEFINED AS ONE THAT DOES NOT HAVE
   - VISIBLE EVIDENCE OF SOIL LOSS CAUSED BY SHEET, RILL OR GULLY EROSION OR
   - LEAD TO SEDIMENTATION, OR
   - LEAD TO WATER CONTAMINATION.

7. ALL CONSTRUCTION VEHICLES ARE TO ACCESS THE SITE VIA A SINGLE POINT OF ACCESS; THE POINT OF ACCESS, TOGETHER WITH THE MEASURES TO BE IMPLEMENTED, ARE TO BE AGREED WITH COUNCIL'S DESIGNATED REPRESENTATIVE ON SITE. THE PRINCIPLE AIM OF THE MEASURE(S) TO BE IMPLEMENTED IS / ARE TO LIMIT THE TRACKING OF DELETERIOUS MATERIALS ONTO THE SURROUNDING ROAD NETWORK.

8. THE CONTRACTOR SHALL PROVIDE GULLY INLET PROTECTION TO ALL GULLY INLET STRUCTURES LOCATED, DIRECTLY DOWNSTREAM OF THE PROPOSED DEVELOPMENT WORKS.

9. APPROPRIATE PROVISIONS ARE TO BE PROVIDED TO THE INTERFACE BETWEEN THE EXISTING ROADWAY PAVEMENTS AND THE NEW ROADWORK'S CONSTRUCTION. THE PROVISIONS SHALL ADDRESS WORKPLACE HEALTH AND SAFETY CONCERNS (I.E. RESTRICTING ACCESS BY THE GENERAL PUBLIC TO THE SITE).

10. THE LOCATION OF THE CONSTRUCTION VEHICLE COMPOUND, SITE CFFICE AND THE VEHICLE SERVICING AREA SHALL BE AGREED WITH COUNCIL'S DESIGNATED REPRESENTATIVE ON SITE, PRIOR TO THE COMMENCEMENT OF WORKS.

11. CLEARED VEGETATION IS TO NOT BE BURNED ON SITE, ALL VEGETATIVE WASTE(S) SHALL BE MULCHED AND THEREAFTER RETAINED ON SITE FOR USE AS PART OF THE EROSION AND SEDIMENTATION CONTROL STRATEGY OR THE LANDSCAPING / REVEGETATION WORKS. ALL STUMPS AND / OR OTHER ORGANIC MATTER NOT SUITABLE FOR MULCHING SHALL BE DISPOSED OF AT AN APPROVED WASTE DISPOSAL FACILITY.

12. SEDIMENT FENCE AND TURFING RUNNING DOWNSLOPES SHALL HAVE REGULAR FLOW DISSIPATERS AT 45° TO SLOPE AS DIRECTED CONSISTING OF SAND BAGS OR SIMILAR AS REQUIRED.

13. DURING THE CONSTRUCTION PROCESS INCLUDING THAT PERIOD DURING WHICH THE WORKS ARE "ON MAINTENANCE" SHOULD COUNCIL'S DESIGNATED REPRESENTATIVE REQUEST ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES BE IMPLEMENTED, SAID MEASJRES SHALL BE IMPLEMENTED AT THE EARLIEST TIME POSSIBLE. NOTWITHSTANDING THE ABOVE REQUIREMENT ANY MEASURES REQUESTED TO BE IMPLEMENTED BY COUNCIL'S DESIGNATED REPRESENTATIVE SHALL BE IMPLEMENTED WITHIN 24 HOURS OF THE TIME OF THE REQUEST.

14. ALL ROOFWATER / SEWER RETICULATION TRENCHES EITHER ADJACENT TO EXISTING DEVELOPMENT OR PERPENDICULAR TO THE CROSSFALL OF THE LAND ARE TO BE TOPSOILED (75mm MINIMUM) AND TURFED. FOR A MINIMUM 900mm WIDTH.

15. THE CONTRACTOR SHALL CONSTRUCT LINED CUTOFF DRAINS IN WORK AREAS SO AS TO LIMIT SLOPE LENGTHS TO A MAXIMUM OF 80M.

16. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO RELEASE OR FLOW IS PERMITTED FROM THE SITE, THROUGHOUT THE EARTHWORKS AND CONSTRUCTION PERIOD TO ANY WATER WAYS OR STORMWATER DRAINLINES LEADING TO A WATERWAY OR AREA OF NATIVE VEGETATION UNLESS THE LEVELS OF TOTAL SUSPENDED SOLIDS DOES NOT EXCEED A CONCENTRATION OF 50 MGL.

17. ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 50%.

18. ALL PERIMETER BANK/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.

19. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND PROTECT OR STABILISE ANY DOWNSTREAM CONSTRUCTION AND GULLY INLETS.

20. CLEARING OF SITE AND STOCK PILE AREAS TO BE AS DIRECTED BY THE SUPERINTENDENT.

21. WHERE PRACTICAL THE CONTRACTOR SHALL DIVERT CLEAN WATER ENTERING THE SITE FROM EXTERNAL CATCHMENT(S) AND DIRECTED TO THE STORMWATER SYSTEM. THIS DISCHARGE POINT SHOULD BE ROCK LINED. REGULAR ROCK CHECK DAMS SHOULD BE POSITIONED ALONG THE VEGETATED DRAINAGE LINE LEADING TO THIS DISCHARGE POINT.

22. REGULAR INSPECTIONS AND MAINTENANCE OF VEHICLE WASHDOWN AREA, SITE AND STORAGE COMPOUND TO BE CARRIED OUT BY CONTRACTOR.

23. AREAS USED FOR STORAGE OF CHEMICALS USED FOR CONSTRUCTION PURPOSES SHALL HAVE STORMWATER CONTROL DEVICES ERECTED ADJACENT TO THEM (I.E. EARTH BUND AND SEDIMENT FENCES). UPON COMPLETION OF ROADWORKS WASTE PRODUCTS ARE TO BE DISPOSED OF AS PER LOCAL AUTHORITY GUIDELINES AND TEMPORARY DEVICES ARE TO BE REMOVED AND AREA REHABILITATED.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-105.dwg DATE: 21-04-2017 TIME: 11:43
Xref's: X-16-002679-TIT USR: anthony skaric

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	SD	AS	20.04.17	DRAWING TITLE AMENDED TO SUIT INDEX
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
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APPROVED BRAD THOMPSON RPEQ 07811
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CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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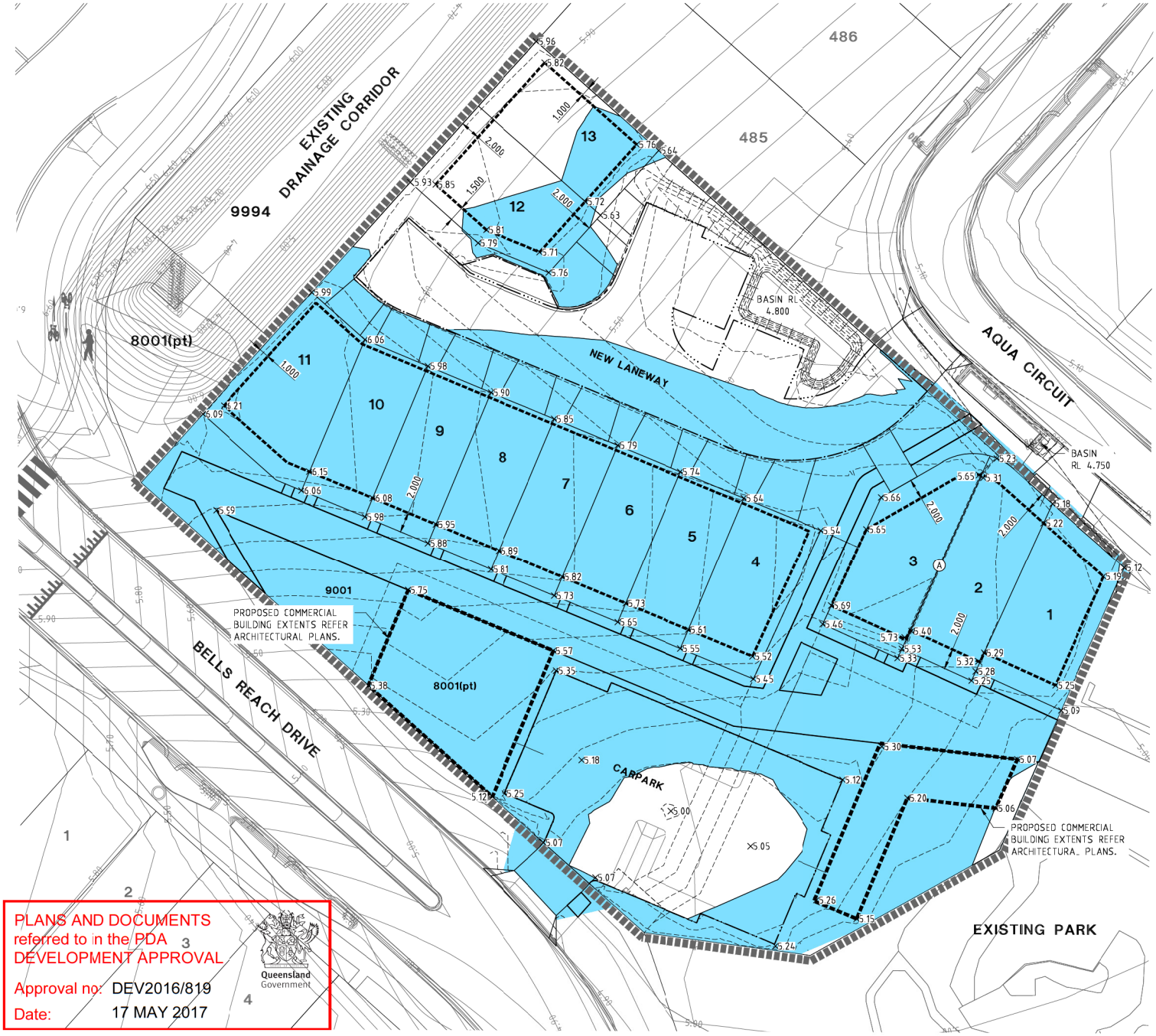
DRAWING TITLE: SEDIMENT & EROSION CONTROL TYPICAL NOTES

DRAWING NUMBER: 16-002679-105

ISSUE: A



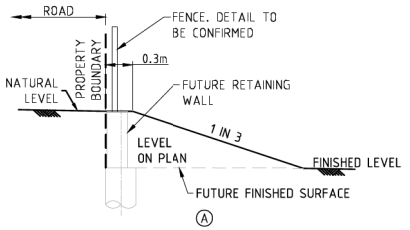
EARTHWORKS NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING SERVICES WITH THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. THE CONTRACTOR SHALL REMOVE ALL STRUCTURES, DEBRIS AND FENCES FROM THE SITE TO THE SATISFACTION OF THE SUPERINTENDENT.
3. EXISTING SURFACE IS TO BE CLEAR OF VEGETATION MATTER PRIOR TO THE START OF FILLING.
4. FILL IS TO BE OF GOOD QUALITY AND FREE OF UNSUITABLE MATERIAL.
5. NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT DURING CONSTRUCTION. SIMILARLY, THE FINISHED SURFACE LEVELS MAY BE ADJUSTED BY THE WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION AFTER AMENDED DRAWINGS HAVE BEEN APPROVED BY COUNCIL.
6. ALL EXCAVATION AND FILLING SHALL BE CONSTRUCTED TO THE REQUIREMENTS OF AS3798-2007 AND IN ACCORDANCE WITH THE CURRENT COUNCIL SPECIFICATIONS AND STANDARD DRAWINGS.
7. LEVEL 1 CERTIFICATION IS REQUIRED ON ALL LOTS IN ACCORDANCE WITH AS3798-2007.
8. ALL DRAINAGE STRUCTURES ARE BE PRESERVED FROM THE EFFECTS OF STRUCTURAL LOADING GENERATED BY THE EARTHWORKS.
9. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

ANY AREA DISTURBED OUTSIDE OF THE WORKS AREA SHOWN SHALL BE REHABILITATED TO A MINIMUM OF THE PRE-CONSTRUCTION CONDITIONS, AT THE CONTRACTORS EXPENSE.

LEGEND

- BOUNDARY OF WORKS
- 3.50 — NATURAL SURFACE CONTOURS
- 3.50 — PROPOSED DESIGN SURFACE CONTOURS
- AREA OF FILL
- AREA OF CUT
- × 5.09 — DESIGN FINISHED SURFACE LEVEL
- PROPOSED BUILDING OUTLINE



TYPICAL BATTER TREATMENTS

NTS

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-106.dwg DATE: 28-04-2017 TIME: 15:15
Xref's: X-16-002679-TIT X-16-002679-BASE X-16-002679-CUT FILL HATCH USR: scott dobson

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
C	SD	SD	28.04.17	ENERGEX EASEMENT ADDED
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1 : 200 2 1 0 2 4 6 8 10 A1
1 : 400 A3

MICROFILM No.

PROJECT No. 16-002679

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APPROVED
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FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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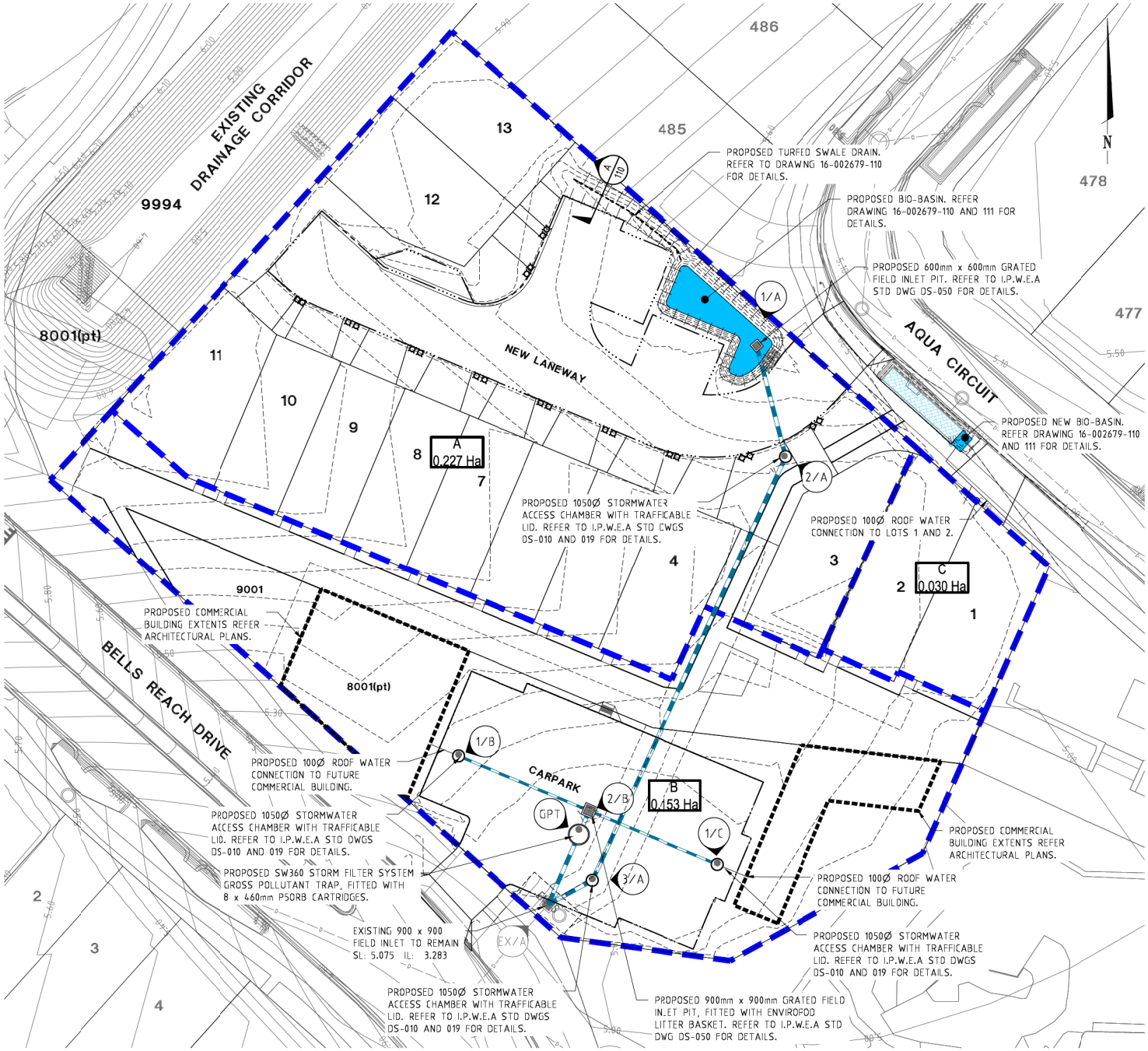
Quality Environment Company ISO 9001 Lic-1084

DRAWING TITLE: EARTHWORKS DETAIL PLAN

DRAWING NUMBER: 16-002679-106

ISSUE: C



CATCHMENT TABLE

CATCHMENT NAME	CATCHMENT AREA (Ha)	RUNOFF COEFF (MINOR)	RUNOFF COEFF (MAJOR)	IMPERVIOUS CATCHMENT AREA MAJOR (Ha)
A	0.227	0.9	1	0.201
B	0.153	0.9	1	0.135
C	0.030	0.9	1	0.027

LEGEND

- CATCHMENT BOUNDARY
- PROPOSED DRAINAGE LINES
- EXISTING DRAINAGE LINES
- 1/B — PIT NAME/LINE NAME
- 3.50 — NATURAL SURFACE CONTOURS
- 3.50 — PROPOSED DESIGN SURFACE CONTOUR
- KERB ADAPTOR (2 PER LOT)
- A 0.245 Ha — CATCHMENT NAME AND AREA

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-107.dwg DATE: 28-04-2017 TIME: 15:15
Xref's: X-16-002679-BASE X-16-002679-TIT USR: scott dobson

AMENDMENTS	FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A		AT	AT	10.02.17	AMENDED AS PER EDQ RFI
B		SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
C		SD	SD	28.04.17	ENERGEX EASEMENT ADDED
D					
E					
F					

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1 : 200 2 1 0 2 4 6 8 10 A1
1 : 400 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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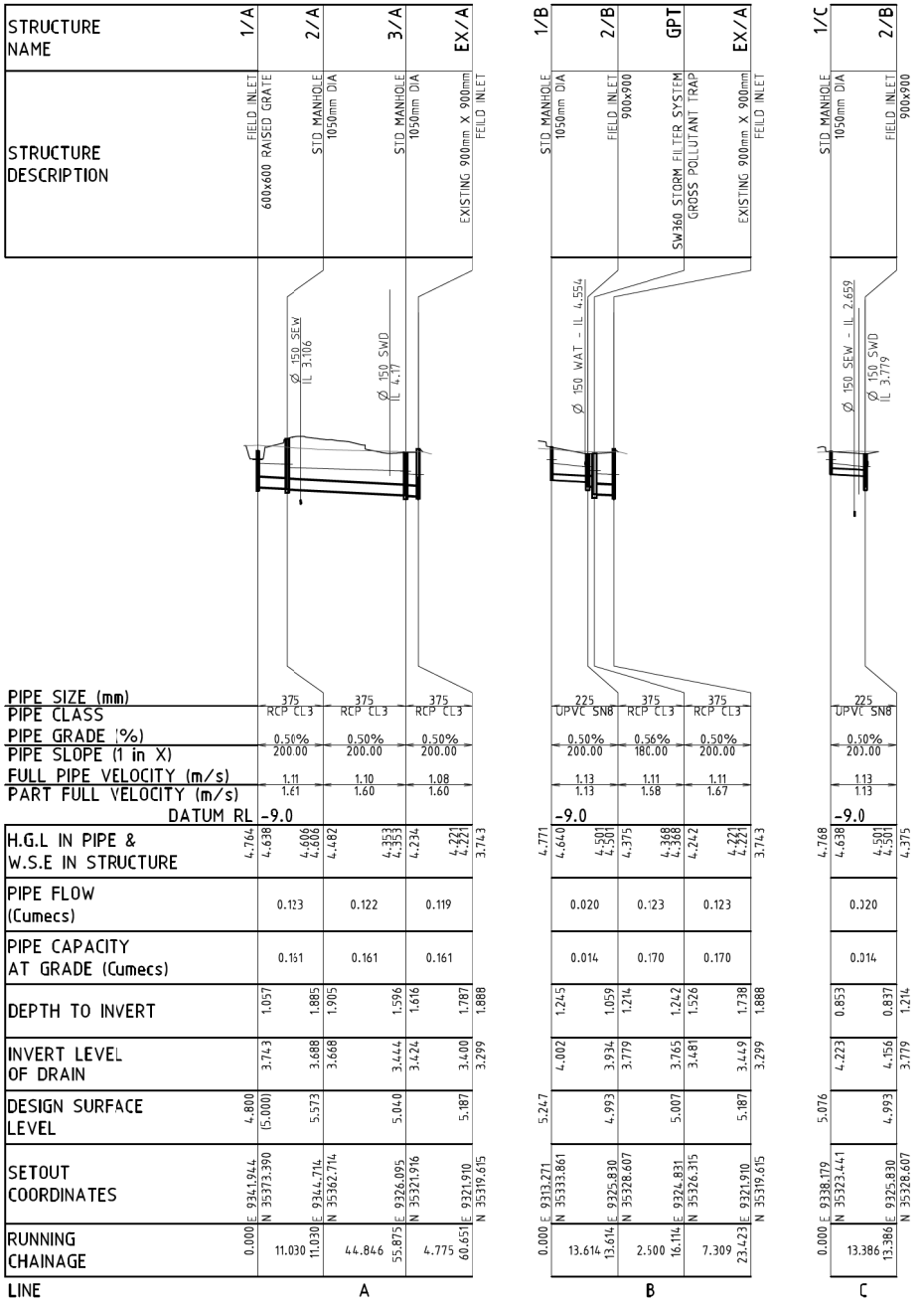
Quality Endorsed Company ISO 9001 Lic-4084

DRAWING TITLE: STORMWATER CATCHMENT PLAN

DRAWING NUMBER: 16-002679-107

ISSUE: C

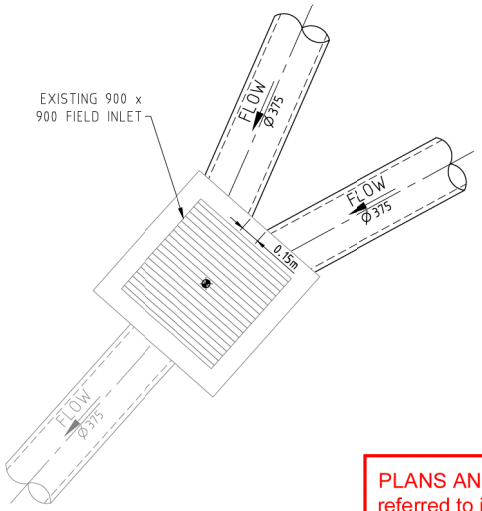


NOTES:

1. REFER TO IPWEA STD DRG DS-010 TO DS-017 FOR ACCESS CHAMBER DETAILS.
2. REFER TO IPWEA STD DRG DS-030 TO DS-031 FOR BEDDING BACKFILL AND EXCAVATION DETAILS.
3. REFER TO IPWEA STD DRG DS-050 FOR FIELD INLET DETAILS.

REFERENCE POINT LOCATION FOR DRAINAGE STRUCTURES

STRUCTURE TYPE	HORIZONTAL CONTROL (REFERENCE POINT LOCATION)	VERTICAL CONTROL (REFERENCE LEVEL)
MANHOLE	CL MAIN SHAFT	FINISHED SURFACE LEVEL
GULLY PIT	ON NOMINAL KERB LINE (INVERT LINE OF KERB AND CHANNEL)	INVERT OF KERB AND CHANNEL
HEADWALL	INTERSECTION OF HEADWALL FACE & PIPE CENTRE LINE	INVERT LEVEL
FIELD INLET PIT	CL MAIN SHAFT	FINISHED SURFACE LEVEL



EXISTING FIELD INLET DETAIL
SCALE 1:20 (A1)

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2016/819
Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-108.dwg DATE: 20-04-2017 TIME: 14:57
Xref's: X-16-002679-SWD X-16-002679-TIT X-16-002679-BASE USR: anthony skoric

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	DWH	DWH	11.11.16	
B	SD	SD	01.03.17	DETAILS AMENDED FOR TENDER DRAWINGS
C				
D				
E				
F				

DESIGN CHECK
DRAWN CHECK
SCALE (METRES)
1:1000 10 5 0 10 20 30 40 50 A1
1:2000 HORIZONTAL A3
1:100 1 0 1 2 3 4 5 A1
1:200 VERTICAL A3
MICROFILM No.
PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07819
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD
PROJECT: BELLS REACH LOCAL CENTRE

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Quality Assured to ISO 9001 Lic-0591

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS
DRAWING NUMBER: 16-002679-108
ISSUE: A

LOCATION		CATCHMENT PROPERTIES			FULL AREA RUNOFF					PART AREA RUNOFF					INLET DESIGN											DRAIN DESIGN								HEADLOSSES									PART FULL		DESIGN LEVELS							
		fi	Ci	Cp	tc	I	A	CA	Q	tc	I	A	CA	Q	Qa							Qg	Qb		tc	I	CA	Qp	L	S		Vf	S/Do	Qg/Qo	Du/Do		Vf2/2g	Ku	hu	Kw	hw	Sf	hf	dn	Vn								
STRUCTURE No.	DRAIN SECTION	FRACTION IMPERVIOUS	COEFFICIENT OF RUNOFF IMPERVIOUS AREA	COEFFICIENT OF RUNOFF PERVIOUS AREA	TIME OF CONCENTRATION	RAINFALL INTENSITY	SUB-CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	TIME OF CONCENTRATION	RAINFALL INTENSITY	PARTIAL CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	FLOW IN K&C(INC. BYPASS)	FLOW WIDTH	FLOW DEPTH	FLOW DxV	ROAD GRADE AT INLET	ROAD XFALL AT INLET	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE SIZE	FULL PIPE VELOCITY	SUBMERGENCE RATIO	GRATE FLOW RATIO	DIAMETER RATIO	CHART(S) USED	VELOCITY HEAD	U/S HEAD LOSS COEFFICIENT	U/S HEAD LOSS	W.S.E COEFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEAD LOSS	NORMAL DEPTH	NORMAL DEPTH VEL.	PIPE U/S I.L	PIPE D/S I.L	PIPE U/S H.G.L	PIPE D/S H.G.L	W.S.E	GRATE LEVEL	FREEBOARD	STRUCTURE No.
					min	mm/h	ha	ha	L/s	min	mm/h	ha	ha	L/s	L/s	m	m		%	%		L/s	L/s		min	mm/hr	ha	L/s	m	%	mm	m/s					m	m			m	%	m	m	m/s	m	m	m	m	m	m	m	
1/A	1/A to 2/A	90	0.9	0.75	5	220	0.227	0.201	123	5	220	0.227	0.201	123	123					0	RSIP-6x6	123	0	LOST	5	220	0.201	123	11.03	0.5	375	1.11					0.063	2	0.126		0.126	0.29	0.032	0.245	1.61	3.743	3.688	4.638	4.606	4.764	5.1	0.336	1/A
2/A	2/A to 3/A	0																			MH1050				5.09	219	0.201	122	44.846	0.5	375	1.1					0.062	2	0.124		0.124	0.29	0.128	0.244	1.6	3.668	3.444	4.482	4.353	4.606	5.573	0.967	2/A
3/A	3/A to EX/A	0																			MH1050				5.47	214	0.201	119	4.775	0.5	375	1.08					0.059	2	0.119		0.119	0.27	0.013	0.24	1.6	3.424	3.4	4.234	4.221	4.353	5.04	0.687	3/A
EX/A																					MH																												4.221			EX/A
1/B	1/B to 2/B	0					0	0	0			0	0	0	0						MH	0	0		5	220	0	20	13.614	0.5	150	1.13					0.065	2	0.131		0.131	1.02	0.139	0.15	1.13	4.002	3.934	4.64	4.501	4.771	5.247	0.476	1/B
2/B	2/B to GPT	90	0.9	0.75	5	220	0.153	0.135	83	5	220	0.153	0.135	83	83						RSIP-9x9	83	0	LOST	5	220	0.135	123	2.5	0.56	375	1.11					0.063	2	0.126		0.126	0.29	0.007	0.236	1.68	3.779	3.765	4.375	4.368	4.501	4.993	0.492	2/B
GPT	GPT to EX/A	0																			MH1500				5.02	220	0.135	123	7.309	0.56	375	1.11					0.063	2	0.126		0.126	0.29	0.021	0.236	1.67	3.745	3.704	4.242	4.221	4.368	5.007	0.638	GPT
EX/A																					MH																												4.221			EX/A
1/C	1/C to 2/B	0					0	0	0			0	0	0	0						MH	0	0		5	220	0	20	13.386	0.5	150	1.13					0.065	2	0.131		0.131	1.02	0.136	0.15	1.13	4.223	4.156	4.638	4.501	4.768	5.076	0.307	1/C
2/B																					RSIP-9x9																												4.501			2/B

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-109.dwg DATE: 20-04-2017 TIME: 14:58
Xref's: X-16-002679-TIT X-16-002679-SWD USR: anthony skoric

FIRST ISSUE	CALCS	DRAWN	DATE
	DWH	DWH	11.11.16

AMENDMENTS

	AMENDMENT DETAILS
A	
B	
C	
D	
E	
F	

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

MICROFILM No.

PROJECT No.
16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED
BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT
BELLS REACH
LOCAL CENTRE

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Quality Assurance Company ISO 9001 Lic-0591

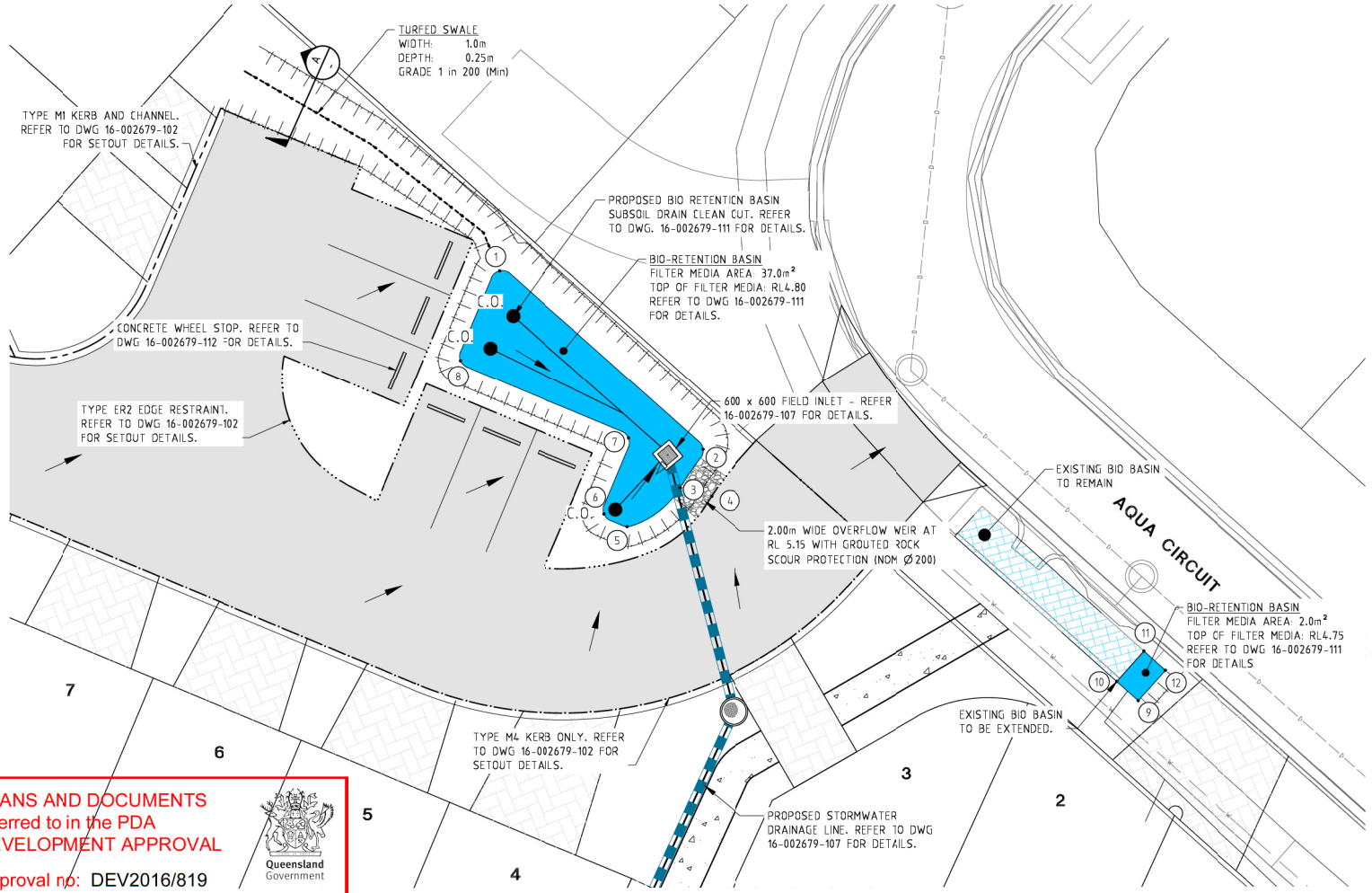
DRAWING TITLE
STORMWATER DRAINAGE
Q10 CALCULATIONS TABLE

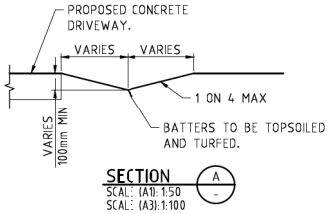
DRAWING NUMBER
16-002679-109

ISSUE
-

SETOUT DATA

COORD No.	EASTING	NORTHING	LEVEL
1	9334.957	35381.091	4.800
2	9343.411	35373.625	4.800
3	9342.455	35372.023	4.800
4	9343.773	35371.675	5.150
5	9340.266	35370.410	4.800
6	9339.310	35370.933	4.800
7	9340.318	35374.101	4.800
8	9333.321	35377.345	4.800
9	9361.569	35363.167	4.750
10	9360.675	35363.968	4.750
11	9361.809	35365.234	4.750
12	9362.703	35364.434	4.750





SECTION A
SCAL: (A1): 1:50
SCAL: (A3): 1:100

LEGEND

- BIO RETENTION FILTER MEDIA
- EDGE RESTRAINT - TYPE ER2
- MOUNTABLE KERB AND CHANNEL - TYPE M1
- MOUNTABLE KERB ONLY - TYPE M4
- PROPOSED TABLE DRAIN
- PROPOSED STORMWATER DRAINAGE
- TOP OF BATTER
- TOE OF BATTER
- C.O. BIO RETENTION BASIN SUBSOIL DRAIN CLEANOUT

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-110.dwg DATE: 21-04-2017 TIME: 11:59
Xref's: X-16-002679-TIT X-16-002679-BASE USR: anthony skorit

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
C				
D				
E				
F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:100 1 5 0 1 2 3 4 5 A1
1:200 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
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APPROVED BRAD THOMPSON RPEQ 07811
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CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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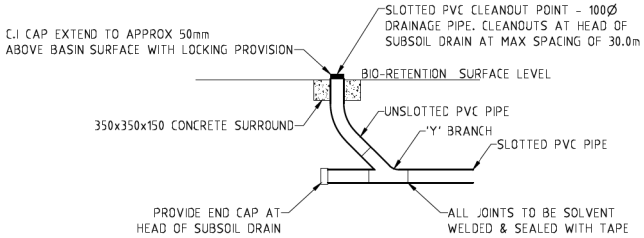
DRAWING TITLE: BIO BASIN DETAIL PLAN SHEET 1 OF 2

DRAWING NUMBER: 16-002679-110

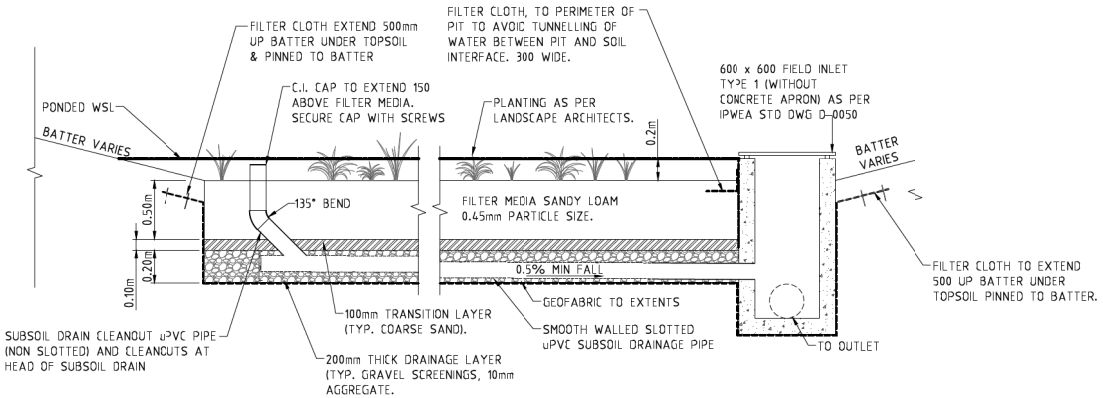
ISSUE: B



BIO RETENTION BASIN SUBSOIL DRAIN CLEANOUT

SCALE 1:20

NOTE: ALL SUBSOIL DRAINS WITHIN THE BIORETENTION BASIN MUST HAVE A MINIMUM OF 50mm COVER WITH DRAINAGE LAYER MEDIA.



TYPICAL BIO-RETENTION BASIN FILTER DETAIL

SCALE 1:20 (A1)
SCALE 1:40 (A3)

BIO RETENTION BASIN CONSTRUCTION SEQUENCE NOTES:

THE CONSTRUCTION AND ESTABLISHMENT OF BIO RETENTION BASINS IS TO BE STAGED AS FOLLOWS:

1. FUNCTIONAL INSTALLATION - BIO RETENTION BASIN TO BE CONSTRUCTED AS SEDIMENT BASIN DURING THE INITIAL PHASE OF SITE WORKS.(EROSION AND SEDIMENT CONTROL)
2. +ONCE THE MAJORITY OF THE SUBDIVISION WORKS ARE COMPLETE, THE BASIN CONSTRUCTION INCLUDING EARTHWORKS, INLETS, OUTLET STRUCTURES, SUBSOIL DRAINAGE TRANSITION LAYERS, FILTER MATERIAL, PROTECTIVE LAYERS AND EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE UNDERTAKEN BY THE CIVIL CONTRACTOR. THE FILTER MEDIA WITHIN THE BIO RETENTION BASIN IS TO BE COVERED WITH A PROTECTIVE GEOFABRIC LAYER (FILTER CLOTH), THEN COVERED WITH 75MM OF TOPSOIL AND TURFED OR GRASS SEEDED TO THE SATISFACTION OF COUNCIL. SILT FENCES ARE TO BE ERECTED AROUND THE OUTSIDE OF THE BASIN. ACCEPTANCE OF THE COMPLETED SUBDIVISION WORKS ON AND OFF MAINTENANCE BY COUNCIL IS TO EXCLUDE THE PROTECTIVE LAYERS WITHIN THE BIO BASINS.
3. BUILDING CONSTRUCTION - THE PROTECTIVE GEOFABRIC AND GRASS LAYER AND THE EROSION AND SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE DURING THE BUILDING CONSTRUCTION PHASE. THE BUILDING CONSTRUCTION PHASE IS TO BE THE TIME FOR COMPLETION OF 75% OF THE BUILDING CONSTRUCTION AND SITE ESTABLISHMENT WORKS ON ALLOTMENTS OR 12 MONTHS FOLLOWING COMPLETION OF THE SUBDIVISION WORKS, WHICHEVER IS SHORTER. THE MAINTENANCE OF THE BASINS INCLUDING INLETS, OUTLETS AND EROSION AND SEDIMENT CONTROL MEASURES IS TO BE UNDERTAKEN BY THE CIVIL CONTRACTOR FOR THE DURATION OF THE BUILDING CONSTRUCTION PHASE.
4. OPERATIONAL ESTABLISHMENT - FOLLOWING COMPLETION OF THE BUILDING CONSTRUCTION PHASE, THE TURF, TOPSOIL AND PROTECTIVE GEOFABRIC IS TO BE REMOVED AND THE BASIN RE-PLANTED WITH VEGETATION AND LANDSCAPING AS PER THE LANDSCAPE DESIGN DRAWINGS. WORKS UNDERTAKEN FOR OPERATIONAL ESTABLISHMENT ARE TO BE UNDERTAKEN BY OTHERS AND WILL BE SUBJECT TO A SEPARATE ACCEPTANCE BY COUNCIL FOR ON AND OFF MAINTENANCE.
5. IN-SITU INFILTRATION TEST - AN IN-SITU INFILTRATION TEST WILL BE REQUIRED PRIOR TO ON-MAINTENNACE BEING GRANTED BY COUNCIL. THE TEST WILL NEED TO ACHIEVE AN AVERAGE RATE OF 180mm/h INFILTRATION (WITHIN APPROPRIATE TOLERANCES) WITH AT LEAST 4 SAMPLE LOCATIONS AROUND THE BASIN. ANDTHER IN-SITU INFILTRATION TEST WILL BE REQUIRED FOR OFF-MAINTENANCE.

BIO RETENTION PARTICLE SIZE DISTRIBUTION AND PROPERTIES GUIDE:

(SOURCE: BIOFILTRATION MEDIA GUIDELINES (VERSION 3.01), PREPARED BY THE FACILITY FOR ADVANCING WATER BIOFILTRATION (FAWB), JUNE 2009.)

MATERIAL COMPOSITION RANGE GUIDE:

CLAY AND SILT	<3%	(<0.05mm)
VERY FINE SAND	5-30%	(0.05-0.15mm)
FINE SAND	10-30%	(0.15-0.25mm)
MEDIUM TO COARSE SAND	40-60%	(0.25-1.0mm)
COARSE SAND	7-10%	(1.0-2.0mm)
FINE SAND	<3.0%	(2.0-3.4mm)

IT IS ESSENTIAL THAT THE TOTAL CLAY AND SILT MIX IS LESS THAN 3% (w/w) TO REDUCE THE LIKELIHOOD OF STRUCTURAL COLLAPSE OF SUCH SOILS.

SOIL SPECIFICATIONS:

- TOTAL NITROGEN CONTENT - <1000mg/kg
- ORTHOPHOSPHATE CONTENT - <80mg/kg SOILS WITH TOTAL PHOSPHORUS CONCENTRATIONS >100mg/kg SHOULD BE TESTED FOR POTENTIAL LEACHING. WHERE PLANTS WITH MODERATE PHOSPHORUS SENSITIVITY ARE TO BE USED, TOTAL PHOSPHORUS CONCENTRATIONS SHOULD BE <20mg/kg)
- ORGANIC MATTER CONTENT - AT LEAST 3% (w/w. AN ORGANIC CONTENT LOWER THAN 3% IS LIKELY TO HAVE TOO LOW A WATER HOLDING CAPACITY TO SUPPORT HEALTHY PLANT GROWTH. IN ORDER TO COMPLY WITH BOTH THIS AND THE TOTAL NITROGEN AND ORTHOPHOSPHATE CONTENT REQUIREMENTS, A LOW NUTRIENT ORGANIC MATTER WILL BE REQUIRED.
- pH - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' 5.5-7.5 (pH 1:5 IN WATER)
- ELECTRICAL CONDUCTIVITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' <1.2 dS/m.

BIO RETENTION INSTALLATION NOTES:

THE PLACEMENT OF DRAINAGE, TRANSITION AND FILTER MEDIA LAYERS MUST BE UNDERTAKEN CAREFULLY TO ENSURE CORRECT DEPTH, SLOPE AND COMPACTION:
DEPTH: FILTER MEDIA SHOULD BE INSTALLED AND COMPACTED IN TWO LIFTS FOR DEPTHS OVER 500mm.
SLOPE: THE TOP SURFACE OF THE DRAINAGE LAYER, TRANSITION LAYER AND FILTER MEDIA LAYER SHOULD BE FLAT. A SPREADER BAR SHOULD LEVEL THE SURFACE OF EACH LAYER.
COMPACTION: THE FILTER MEDIA MUST BE LIGHTLY COMPACTED DURING INSTALLATION TO PREVENT THE MIGRATION OF FINE PARTICLES. THIS CAN BE ACHIEVED WITH A SINGLE PASS OF A LIGHT ROLLER SUCH AS A DRUM LAWN ROLLER. A VIBRATING PLATE CAN ALSO BE USED TO COMPACT SMALL BIO RETENTION SYSTEMS OR 'POZITRACK' BOBCATS CAN BE USED FOR LARGE SYSTEMS. ENSURE ONLY ONE COMPACTING PASS IS MADE OVER THE MEDIA FOR LIGHT COMPACTION.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-111.dwg DATE: 20-04-2017 TIME: 14:58
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FIRST ISSUE	CALCS	DRAWN	DATE
	DWH	DWH	11.11.16

AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES): AS ABOVE

MICROFILM No.

PROJECT No.: 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED: BRAD THOMPSON RPEQ 07819
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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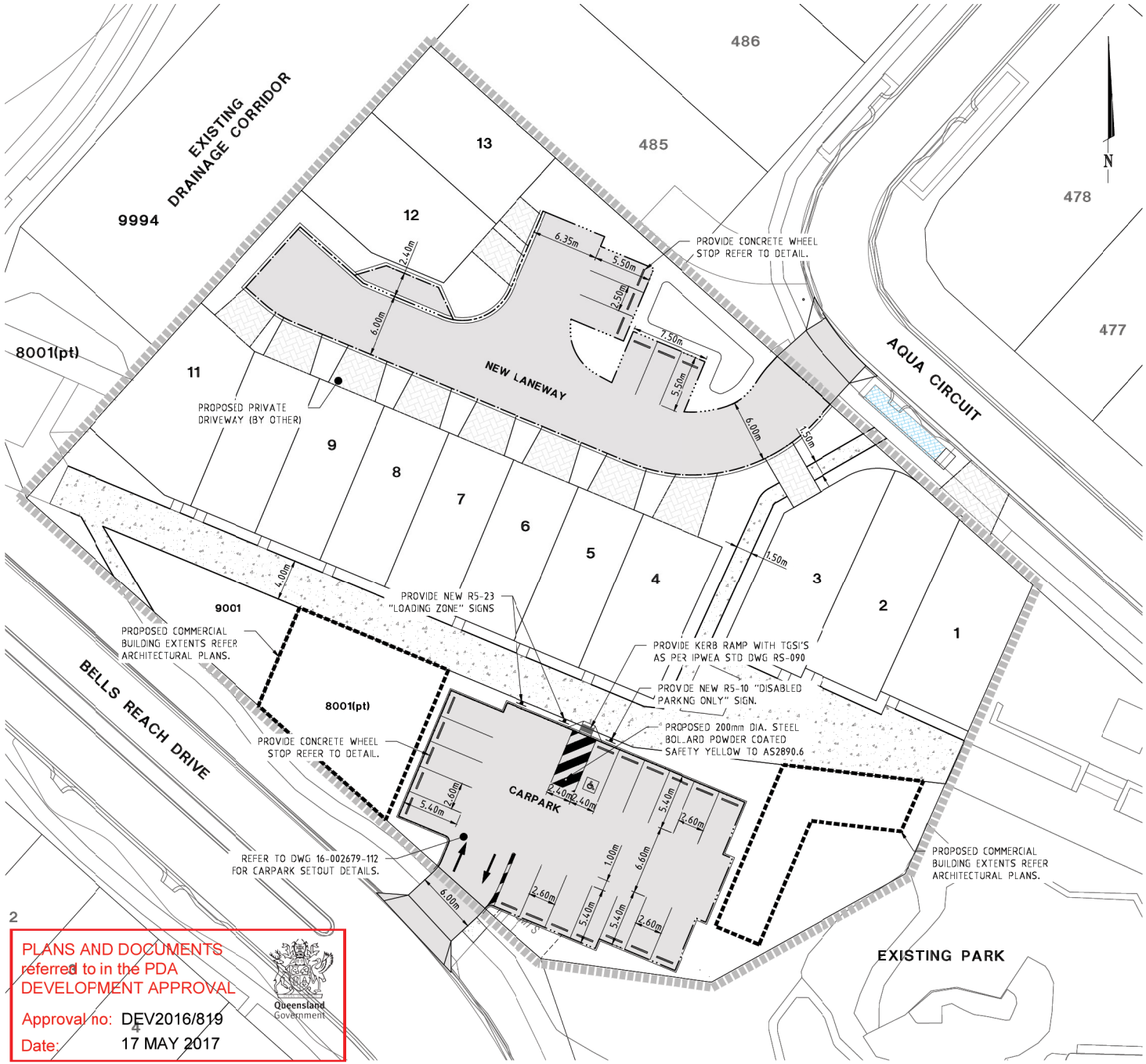
Quality Assurance Company ISO 9001 Lic-0064

DRAWING TITLE: BIO BASIN DETAIL PLAN SHEET 2 OF 2

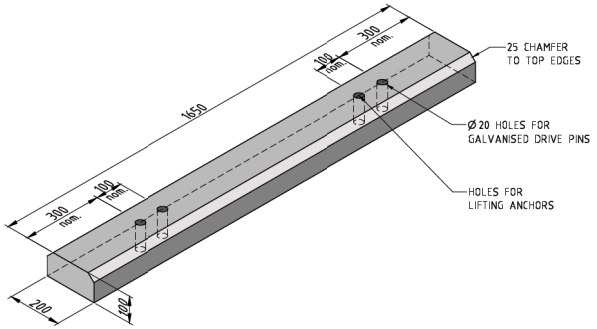
DRAWING NUMBER: 16-002679-111

ISSUE: -



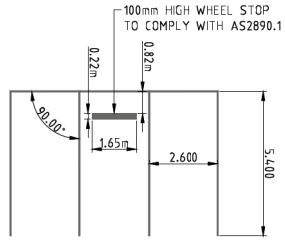
LINEMARKING LEGEND

- CARPARK LINEMARKING
- CHEVRON PAVEMENT MARKING
- STEEL BOLLARD
- CONCRETE DRIVEWAY
- PRIVATE DRIVEWAY (BY OTHERS)
- CONCRETE WHEEL STOP
- BOUNDARY OF WORKS



CARPARK WHEEL STOP DETAIL

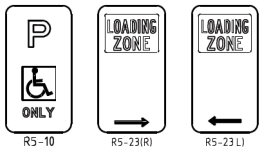
INDICATIVE ONLY
SCALE 1:10



TYPICAL 90° CARPARK DETAIL

SCALE 1:100

SIGNS



NOTES

1. LOCATION OF WHEEL STOPS TO BE IN ACCORDANCE WITH AS2890.1.
2. CONCRETE TO BE GRADE N30 TO AS3600.
3. FIX WHEEL STOPS TO PAVEMENT WITH Ø16 x 300 LG GALVANISED DRIVE PINS AT SPECIFIED LOCATIONS BOTH ENDS.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

Queensland Government

FILE: 16-002679-112.dwg DATE: 21-04-2017 TIME: 12:01
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FIRST ISSUE		CALCS	DRAWN	DATE	AMENDMENT DETAILS
AMENDMENTS	A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
	B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
	C				
	D				
	E				
	F				

DESIGN CHECK
DRAWN CHECK
SCALE (METRES) 1 : 200 1 : 400 2 1 0 2 4 6 8 10 A1 A3
MICROFILM No.
PROJECT No. 16-002679

RPS GROUP
1 INNOVATION PARKWAY, BIRTINYA
P. 07 5436 7888 F. 07 5493 6630

APPROVED BRAD THOMPSON RPEQ 07811
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD
PROJECT: BELLS REACH LOCAL CENTRE

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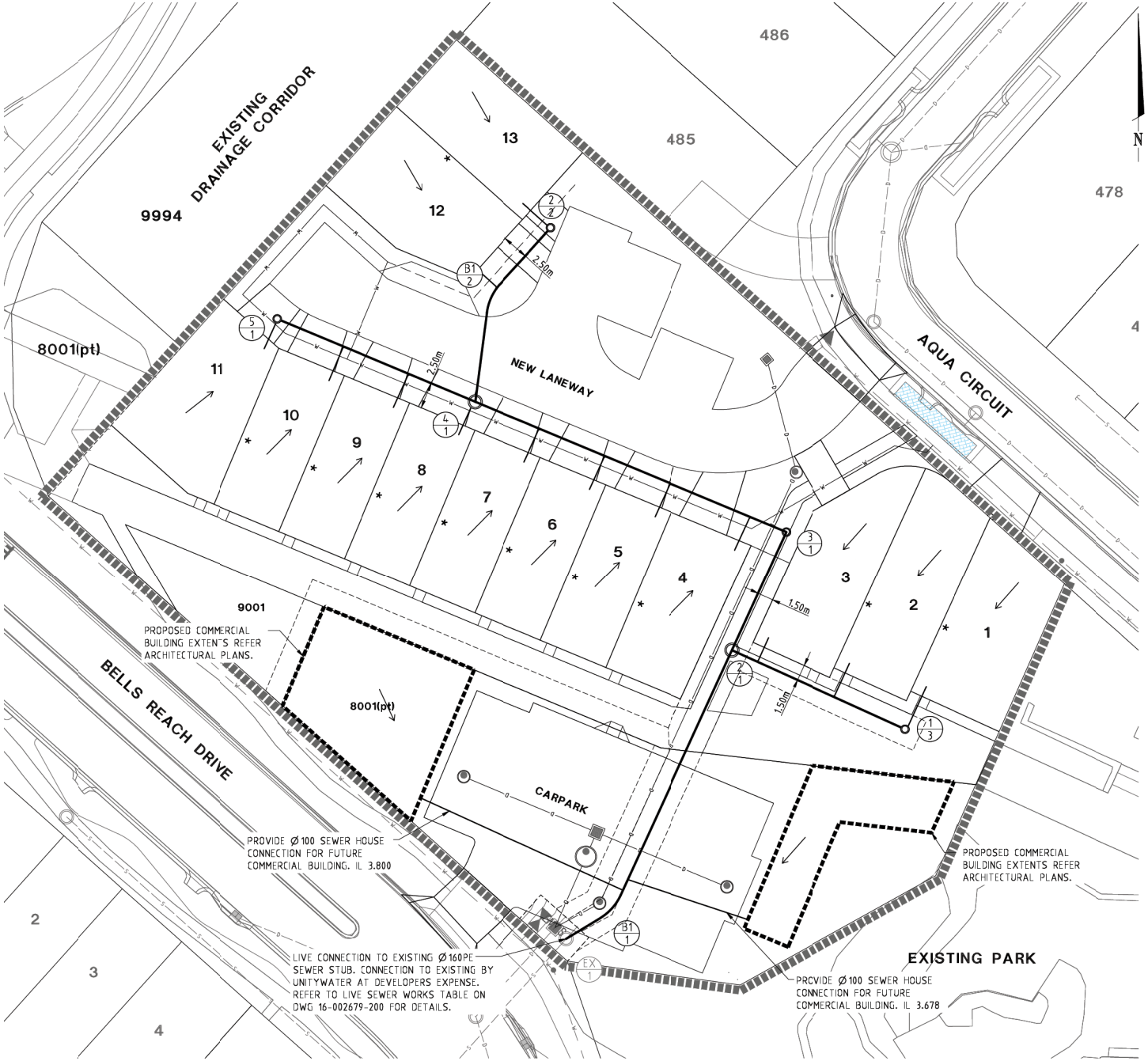
Quality Environment Company ISO 9001 Lic-10564

DRAWING TITLE: LINEMARKING AND SIGNAGE DETAIL PLAN
DRAWING NUMBER: 16-002679-112
ISSUE: B



LEGEND

- EXISTING SEWER
- EXISTING DRAINAGE LINES
- EXISTING WATER MAIN
- PROPOSED Ø150 SEWERMAIN
- PROPOSED SEWER EASEMENT
- PROPOSED SEWER HOUSE CONNECTION
- ZERO LOT LINE
- DIRECTION TO HOUSE CONNECTION
- PROPOSED WATER MAIN
- PROPOSED STORMWATER DRAINAGE
- BOUNDARY OF WORKS
- PROPOSED SEWER STRUCTURE NUMBER
- EXISTING SEWER STRUCTURE NUMBER

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

Date: 17 MAY 2017

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FIRST ISSUE		CALC'S	DRAWN	DATE	AMENDMENT DETAILS
AMENDMENTS	A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
	B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
	C	SD	SD	28.04.17	ENERGEX EASEMENT ADDED
	D				
	E				
	F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:200 2 1 0 2 4 6 8 10 A1
1:400 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
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CLIENT: STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT: BELLS REACH LOCAL CENTRE

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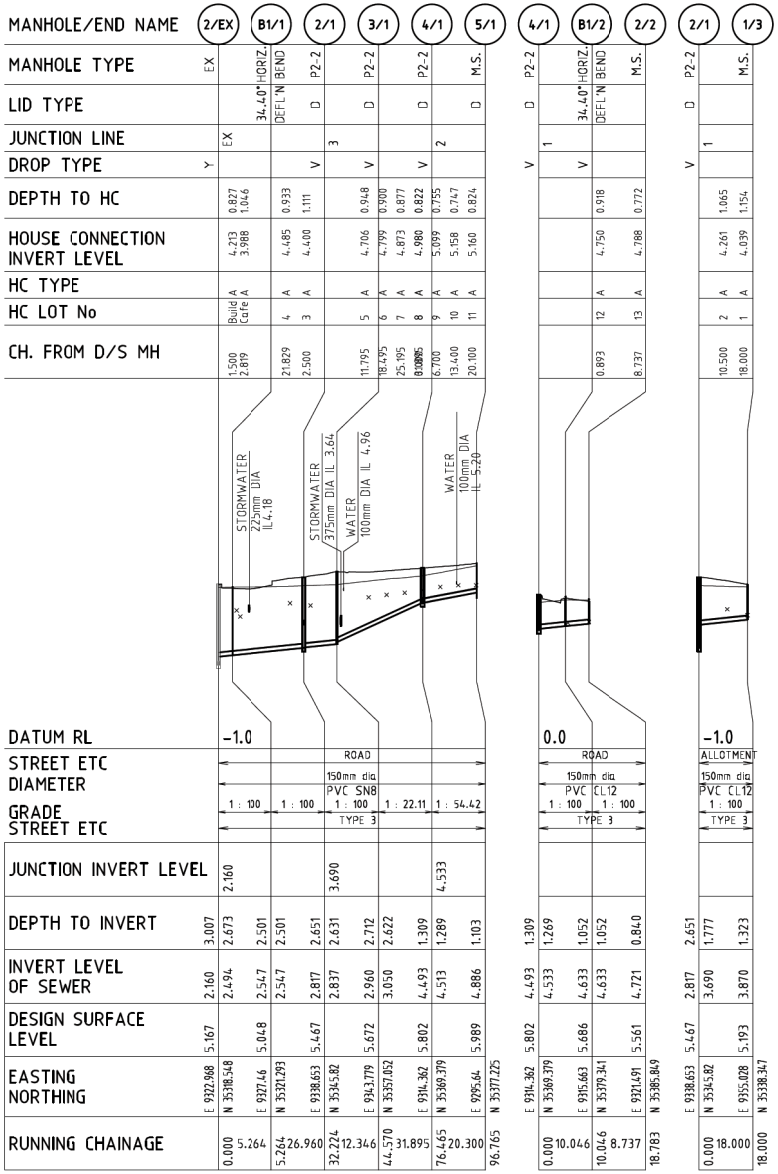
Quality Environment Company ISO 9001 Lic-4584

DRAWING TITLE: SEWER RETICULATION DETAIL PLAN

DRAWING NUMBER: 16-002679-200

ISSUE: C



LIVE SEWER WORKS TABLE

No.	DESCRIPTION	DIA SEWER	MH No.	COVER TYPE	MH TYPE	LOT No.	F.S.L.	E.S.L.	I.L.	DEPTH
1a.	UNITYWATER TO BREAK INTO EXISTING MAINTENANCE HOLE EX/1 AND CONSTRUCT A 150mm STUB (TEMPORARILY END CAPPED) PRIOR TO START OF CONSTRUCTION.	Ø150	EX/1	EX	EX	-	5.075	5.075	2.160	2.915
1b.	0.5m FROM STUB END CAP, CONSTRUCTOR TO LAY NEW LINE 1. AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY UNITYWATER.									

CONTRACTOR TO CONFIRM AND PROVIDE LEVEL DETAILS TO SUPERINTENDENT, FOR ALL AS CONSTRUCTED LEVELS FOR SERVICE CONNECTION POINTS PRIOR TO COMMENCEMENT OF CONSTRUCTION

LONGITUDINAL SECTION NOTES:

1. ALL SEWER WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH SEQ WATER AND SEWERAGE DESIGN AND CONSTRUCTION CODE (SEQ-WSS CODE).
2. CONTRACTOR TO ENSURE MANHOLE LIDS ARE CONSTRUCTED 100mm PROUD OF F.S.L's. WHERE LOCATED IN ROADWAYS OR DRIVEWAYS, LIDS ARE TO BE FLUSH.
3. FOR MANHOLE AND COVER DETAILS REFER SEQ-SEW-1300 SERIES STD DRGS.
4. FOR MANHOLE DROP TYPES REFER SEQ-SEW-1300 SERIES STD DRGS.
5. FOR HOUSE CONNECTION DETAILS REFER SEQ-SEW-1100 SERIES STD DRGS.
6. HOUSE CONNECTIONS IN EXCESS OF 3.0m DEEP MUST BE "SUDGEN" TYPE AND CONSTRUCTED IN ACCORDANCE WITH UNITYWATER'S STANDARDS AND REQUIREMENTS
7. MANHOLE COVER TYPES:
   B - NON TRAFFICABLE
   D - TRAFFICABLE
   DI - DUCTILE IRON
   DIBD - DUCTILE IRON BOLT DOWN
8. FOR PIPELINE CONSTRUCTION BEDDING AND BACKFILLING REQUIREMENTS, REFER SEQ-SEW-1200 SERIES STD DRGS.
9. REFER SEQ SEWERAGE CODE SECTION 10.6 FOR ACCEPTABLE PIPE MATERIALS AND CLASSES.
10. MANHOLE DROPS AND FALLS:
    RIGSS SEWER ARRANGEMENT
    F = FALL THROUGH MANHOLE UP TO 80mm (REFER SEQ-SEW-1303-1 FOR FALL DEPTHS)
    V = DROP UP TO 250mm
    W = DROP 250 - 600mm
    X = DROP 600mm+ (INTERNAL DROP)
    Y = DROP 600mm+ (EXTERNAL DROP)

    NuSEWER ARRANGEMENT
    F = FALL THROUGH MANHOLE UP TO 80mm (REFER SEQ-SEW-1301-4 FOR FALL DEPTHS)
    A = DROP UP TO 250mm
    C = DROP 250 - 600mm
    ID = DROP 600mm+ (INTERNAL DROP)
    D = DROP 600mm+ (EXTERNAL DROP)

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

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B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:200 2 1 0 2 4 6 8 10 A1
1:400 A3

MICROFILM No.

PROJECT No. 16-002679

RPS GROUP
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APPROVED
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CLIENT
STOCKLAND CALOUNDRA DOWNS PTY LTD

PROJECT
BELLS REACH
LOCAL CENTRE

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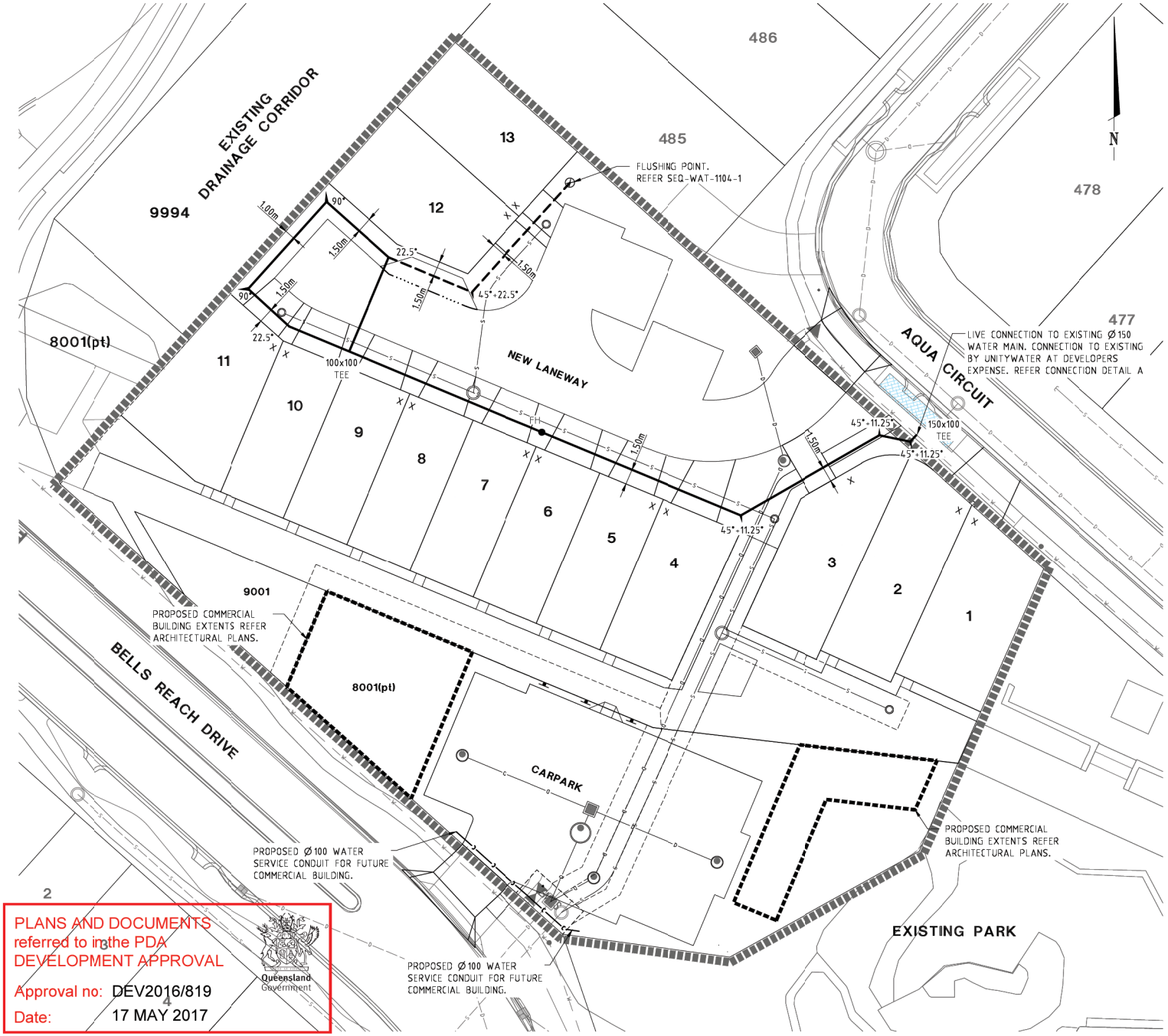
DRAWING TITLE
SEWER RETICULATION
LONGITUDINAL SECTIONS

DRAWING NUMBER 16-002679-201

ISSUE A



LEGEND

- EXISTING WATER MAIN
- EXISTING SEWER
- EXISTING DRAINAGE LINES
- PROPOSED Ø100 WATER MAIN
- PROPOSED Ø63 WATER MAIN
- FH — FIRE HYDRANT
- SV — STOP VALVE
- RED — REDUCER
- DEC — DEAD END CAP
- SERVICE CONDUITS
- X — SERVICE LOCATION
- BOUNDARY OF WORKS
- WATER THRUST DIRECTION

TYPICAL LIVE WATER WORKS SEQUENCE

1. CONTRACTOR TO LAY WATERMAIN TO WORKS EXTENTS.
2. CONTRACTOR TO TEST MAIN TO UNITYWATER STANDARDS.
3. AFTER SUCCESSFUL INSPECTION BY UNITYWATER, UNITYWATER TO BREAK INTO AND CONNECT TO EXISTING WATER MAIN INFRASTRUCTURE.
4. UNITYWATER TO REMOVE TEMPORARY DEAD END CAP AND CONNECT TO NEW WATERMAIN.

NOTE

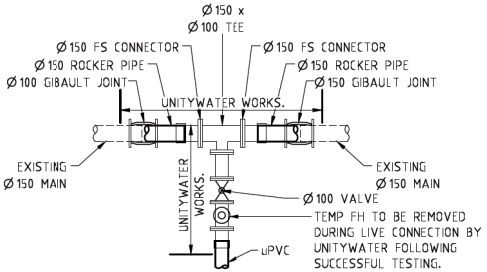
ALL WORKS ON EXISTING MAINS BY UNITYWATER AT DEVELOPER'S EXPENSE

NOTE

CONTRACTOR TO CONFIRM THE LOCATION OF EXISTING SERVICES VIA POTHOLE SURVEY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

CONNECTION NOTE

WATER MAINS ARE TO BE CONSTRUCTED ON A SUITABLE ALIGNMENT AND LEVEL TO MATCH THE EXISTING WATER MAINS.



CONNECTION DETAIL A

NOT TO SCALE

UNITYWATER CONNECTION:-MAINLINE WORKS

INSTALL Ø150 x Ø100 TEE
INSTALL Ø150 FS CONNECTORS
INSTALL Ø150 ROCKER PIPE LENGTHS
INSTALL Ø150 GIBAULT JOINTS
INSTALL Ø100 VALVE
INSTALL Ø100xØ80 HYDRANT TEE WITH HYDRANT
INSTALL Ø100 PIPE LENGTHS
INSTALL Ø100 FL-SO CONNECTOR
INSTALL NEW THRUST BLOCKS

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2016/819

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	A	AT	AT	10.02.17	AMENDED AS PER EDQ RFI
	B	SD	AS	19.04.17	NEW LANEWAY AND BASIN AMENDED AS PER LOCAL AUTHORITY COMMENTS
	C	SD	SD	28.04.17	ENERGEX EASEMENT ADDED
	D				
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DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:200 2 1 0 2 4 6 8 10 A1
1:400 A3

MICROFILM No.

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DRAWING TITLE: WATER RETICULATION DETAIL PLAN

DRAWING NUMBER: 16-002679-300

ISSUE: C