

23 May 2019

Mirvac
Level 17, 123 Eagle Street
Brisbane QLD 4000

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2019/1039

Date: 11 December 2019



Level 7, 500 Queen Street Brisbane QLD 4000
PO Box 10183 Brisbane QLD 4000

www.engeny.com.au

P: 07 3221 7174

F: 07 3236 2399

E: admin@engeny.com.au

Attention: Brendan Saur

Dear Brendan,

**RE: EVERLEIGH PRECINCT 2 ROL – STORMWATER DETENTION AND WATER
QUALITY ANALYSIS**

Engeny Water Management (Engeny) has been commissioned by Mirvac to undertake water quantity and quality analysis for Precinct 2 of the Everleigh development in Greenbank. It is proposed to utilise the existing Precinct 1 bioretention system and detention basin in order to meet water quality and quantity requirements for Precinct 2. This letter outlines the following:

- The hydrologic analysis undertaken to confirm that the Precinct 1 detention basin has adequate capacity to cater for the Precinct 2 (P2) peak flows.
- The water quality analysis undertaken to confirm the existing P1 bioretention system is sufficiently sized to meet water quality objectives for Precinct 1 and 2.

Stormwater Quantity Analysis

Previously, a hydrologic analysis utilising XPRAFTS has been undertaken to confirm the Everleigh Precinct 1 (P1) detention basin has the capacity to cater for peak flows received from P1, P2 and some portion of Precinct 12 (P12) (if necessary). The analysis demonstrated the basin will mitigate peak flows to existing magnitude at key reporting locations downstream of the basin. This analysis was undertaken utilising as constructed storage curves (inclusive of the GB2 pump pad), outlet configurations and spillway configurations of the constructed P1 detention basin. As constructed drawings of the detention basin is enclosed with this letter.

Since this analysis was undertaken, P2 has progressed to RoL stage and the boundary and contributing catchment for P2 to the detention basin has been altered. It is proposed that the entire P2 catchment be conveyed to the Everleigh Precinct 1 Detention Basin via piped and overland flow. The following sections outline the updated hydrologic analysis.

Land Use and Catchment Delineation

The latest XPRAFTS hydrologic model developed by Engeny representative of the maximum development to be received by the P1 temporary detention basin was

utilised for the stormwater quantity analysis. The contributing catchment boundary was updated in reflection of the P2 ROL boundary. The land use and contributing catchment reflected in XPRAFTS for this updated P2 ROL assessment is shown in Figure 1.

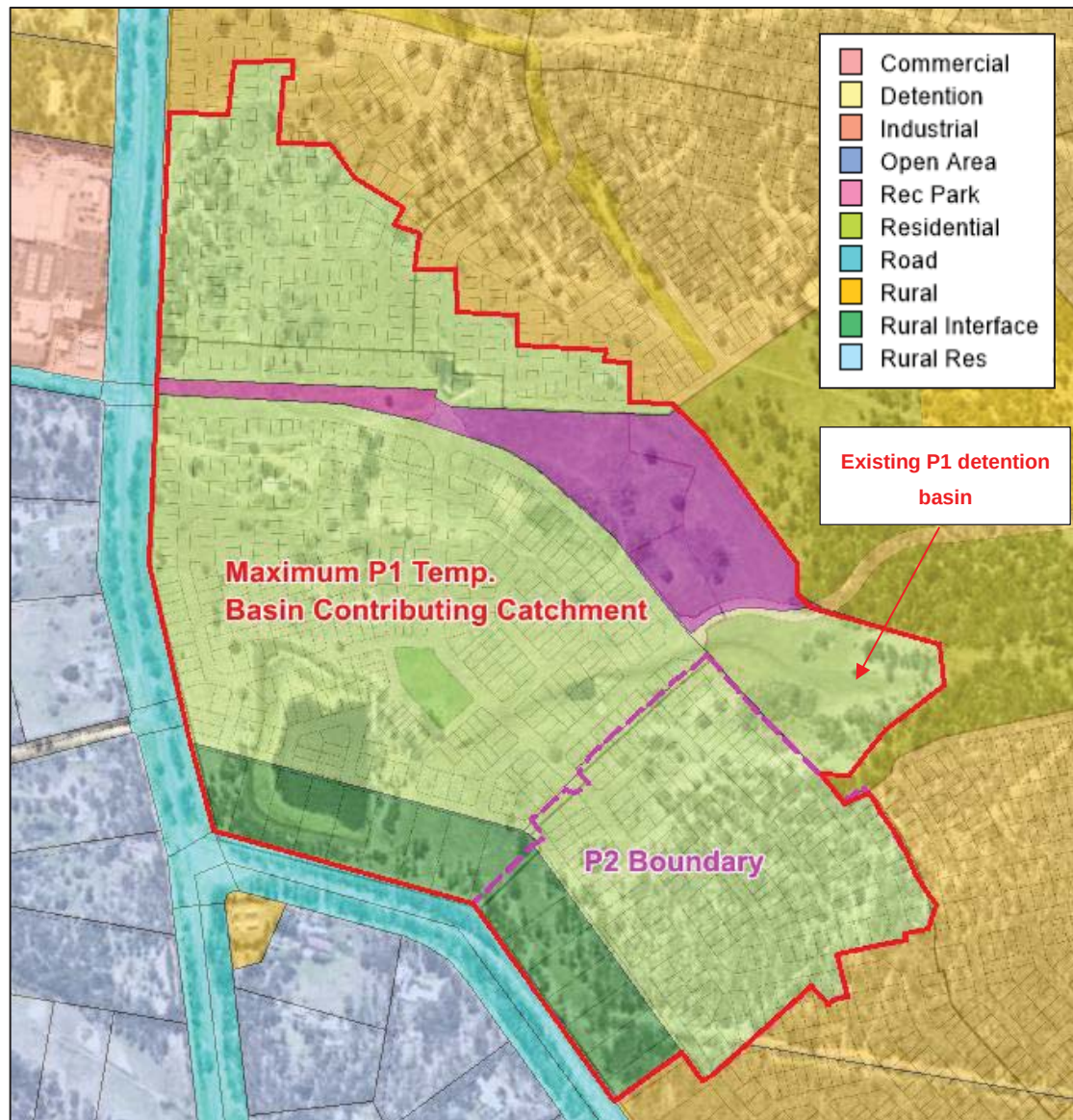


Figure 1 P1 Temp Basin Contributing Catchment and Land Use

XPRAFTS Analysis Results

In accordance with the previous stormwater quantity assessment, and the required performance of the detention basin, an analysis of peak flows at two reporting locations for the full range of storm events from the 2-year ARI to 100 year ARI was undertaken for the critical duration envelope of 30-120 minutes. The reporting locations are indicated in Figure 2, and are located at the Everleigh site boundary and downstream at Greenhill Road.



Figure 2 Stormwater Quantity Analysis Reporting Locations

A summary of the modelled peak flows is provided at the site boundary in Table 1 and at Greenhill Road, downstream of the Site, in Table 2. The results show that the P1 detention basin performs in a similar manner to the previous analysis undertaken, with only a 0.2%, 30 L/s increase observed at the Site boundary in the 2 year ARI storm event, as also shown in the previous analysis.

Table 1 Peak Flow Reporting – Site Boundary

Storm Event	Existing Peak Flow (m ³ /s)	Mitigated Peak Flow (m ³ /s)	Difference (%)
2 year ARI	16.00	16.03	0.2%
5 year ARI	23.26	22.92	-1.4%
10 year ARI	27.71	26.88	-3.0%
20 year ARI	32.27	31.99	-0.9%
50 year ARI	40.93	38.60	-5.7%
100 year ARI	47.24	44.90	-5.0%

Table 2 Peak Flow Reporting – Greenhill Road

Storm Event	Existing Peak Flow (m³/s)	Mitigated Peak Flow (m³/s)	Difference (%)
2 year ARI	49.39	49.26	-0.3%
5 year ARI	71.08	70.39	-1.0%
10 year ARI	83.87	82.87	-1.2%
20 year ARI	99.92	99.42	-0.5%
50 year ARI	123.87	120.33	-2.9%
100 year ARI	142.45	138.96	-2.5%

The performance of the basin in the 100 year ARI event, under both normal conditions and for the spillway capacity assessment condition where the lower set of outlets are blocked, is summarised in Table 3. This shows that the current available storage, defined crest height, and outlet configurations are suitable to ensure that the basin has a 300 mm freeboard available above the 100 year ARI level and that the crest is not overtopped under blocked 100 year ARI conditions.

Table 3 P1 Temporary Detention Basin Performance

Parameter	Result
Basin Crest	42.35 m AHD
100 year peak level (unblocked)	42.05 m AHD
Freeboard Under Normal Conditions	300 mm
100 year peak level (blocked)	42.35 m AHD

Stormwater Quantity Analysis Summary

The assessment shows that the P1 temporary detention basin performs in accordance with the previous assessments undertaken, with the basin meeting the required peak flow mitigation targets and the crest located at a suitable elevation to meet the 100 year ARI plus 300mm freeboard and 100 year ARI blocked scenario requirements.

Stormwater Quality Analysis

A MUSIC model was previously developed for Precinct 1 to verify that water quality objectives were met. The model was set up in accordance with the MUSIC Modelling Guidelines for South East Queensland (Water by Design, 2010). The model used rainfall data from the Greenbank (Thompson Road) station for the 10 years between 1980 and 1989 at six (6) minute intervals.

Bioretention System

The bioretention node was modelled in accordance with the bioretention design for Precinct 1. The key bioretention parameters modelled are outlined in Table 4. The Precinct 1 bioretention as constructed drawings are enclosed with this letter.

Table 4 Bioretention Parameters

Parameter	Value
Extended Detention Depth (m)	300
Filter media Area (m ²)	2000
Filter depth (m)	600
TN Content of Filter Media (mg/kg)	400
Orthophosphate Content of Filter Media (mg/kg)	

Water Quality Catchments

This MUSIC model has been updated to reflect the catchment areas for Precinct 1 and 2 as outlined in Figure 3. The catchments were modelled as outlined in Table 5.

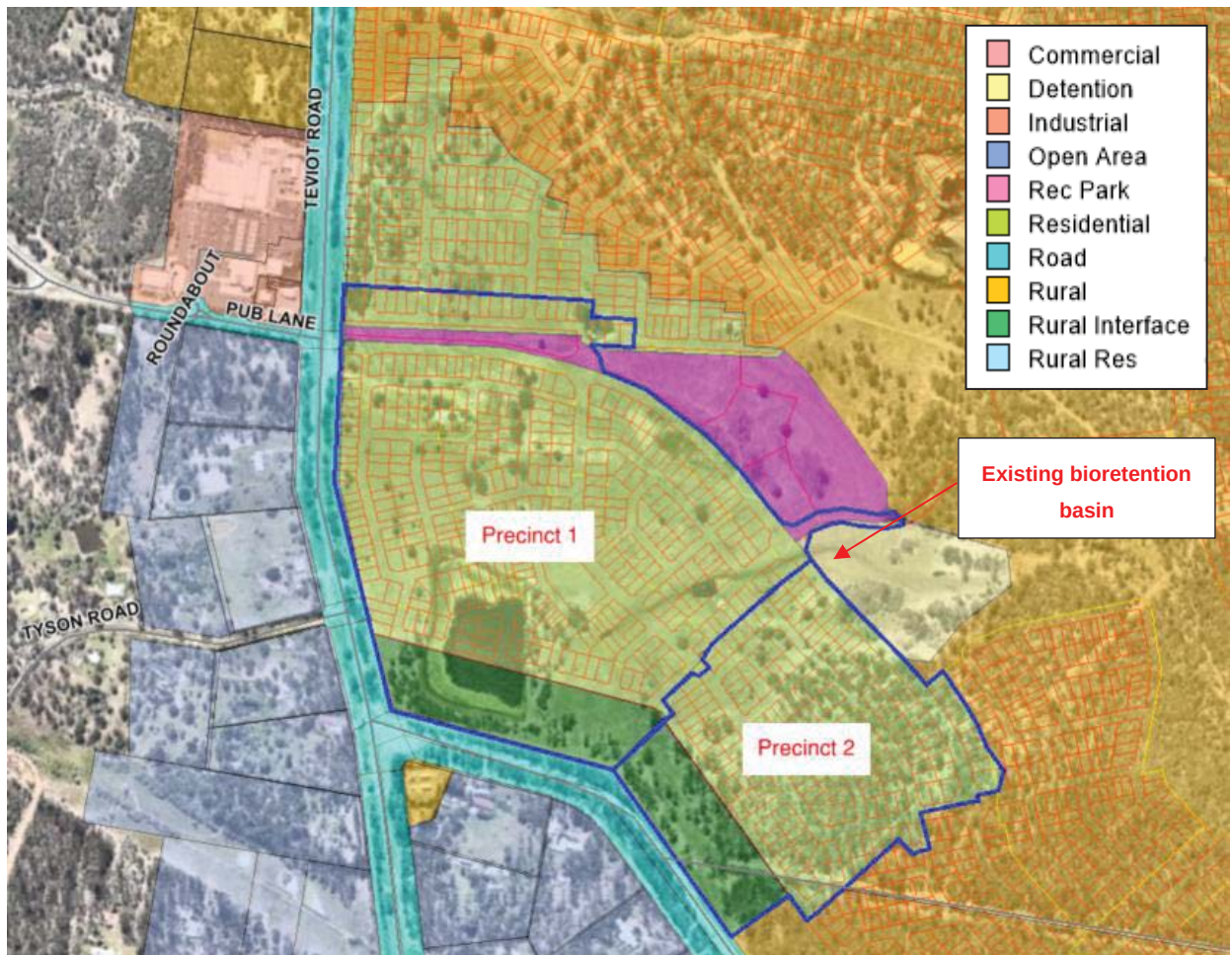


Figure 3 Water Quality Catchments

Table 5 Catchment Parameters

Catchment	Landuse	Area (ha)	Faction Impervious
Precinct 1	Urban	31.4	55%
Precinct 2	Urban	15.8	55%

Water Quality Results

Results from the MUSIC model are presented in Table 5. The results from the MUSIC model indicate that the load-based reduction targets have been achieved by directing both the Precinct 1 and 2 catchments to the existing P1 bioretention system. As such, it is deemed acceptable for the existing P1 bioretention system to treat stormwater from Precinct 2.

Table 6 Water Quality Results

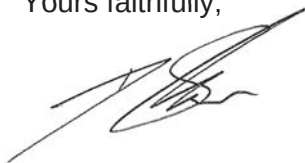
Pollutant	Load Based Reduction Target (%)	Modelled Reduction (%)
TSS	80	85.1
TP	60	72.3
TN	45	47.4
GP	90	100

Conclusion

An assessment has been undertaken to determine whether the existing P1 detention basin and P1 bioretention system at Everleigh achieve stormwater quality and quantity requirements for Precinct 1 and the proposed Precinct 2. The assessment has indicated the following:

- The existing P1 detention basin meets the required peak flow mitigation and freeboard targets for both Precinct 1 and 2.
- The existing bioretention system has sufficient filter media area to ensure water quality objects can be met for both Precinct 1 and 2.

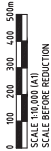
Yours faithfully,



David Sexton
Principal, RPEQ NO. 20884

Enc. Everleigh Precinct 1 – Detention and Bioretention As-constructed Survey

MIRVAC EVERLEIGH PRECINCT 1 DETENTION & BIORETENTION WORKS

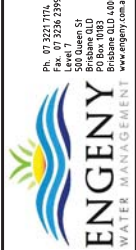


This drawing is confidential and shall only be used by Engeny's Client for which it was prepared

No.		BY	DATE	ISSUED FOR CONSTRUCTION	REVISION
0	1	HT	23.02.18		

DOC NUMBER		DS	APPD
REFERENCE DOCUMENTS			

DOC NUMBER		DOCUMENT TITLE
REFERENCE DOCUMENTS		



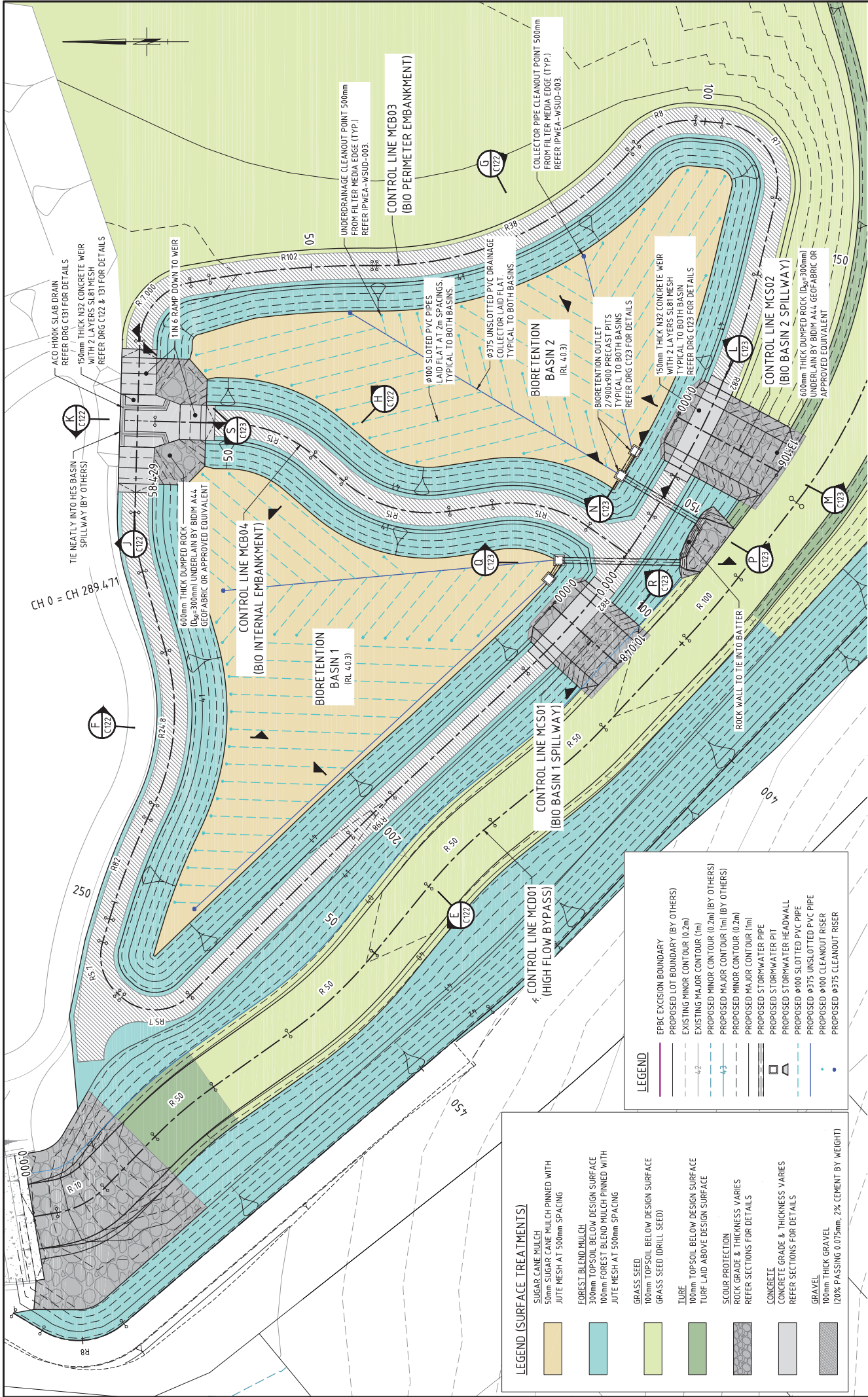
FOR CONSTRUCTION			
DESIGNED	TH	CHECKED	DS
DRAWN	HT	CHECKED	DS
APPROVED	DS	DATE	23.02.18
REFD	TANDELL	SPEC No.	10000

MIRVAC

EVERLEIGH PRECINCT 1 – DETENTION & BIORETENTION
COVER SHEET, LOCALITY PLAN & DRAWING INDEX

Original Size		Drawing Size	
A1		M4:3000-010-C001	
0		0	

DRAWING INDEX	
DRAWING No.	DRAWING TITLE
M4:3000-010-C001	COVER SHEET, LOCALITY PLAN & DRAWING INDEX
M4:3000-010-C002	GENERAL NOTES
M4:3000-010-C100	GENERAL ARRANGEMENT PLAN
M4:3000-010-C101	DETAIL PLAN – BIORETENTION BASINS
M4:3000-010-C102	DETAIL PLAN – DETENTION BASIN OUTLET
M4:3000-010-C121	TYPICAL SECTIONS & DETAILS – SHEET 1 OF 4
M4:3000-010-C122	TYPICAL SECTIONS & DETAILS – SHEET 2 OF 4
M4:3000-010-C123	TYPICAL SECTIONS & DETAILS – SHEET 3 OF 4
M4:3000-010-C124	TYPICAL SECTIONS & DETAILS – SHEET 3 OF 4
M4:3000-010-C131	CONCRETE JOINTING & REINFORCEMENT DETAILS
M4:3000-010-C141	LONGITUDINAL SECTION – SHEET 1 OF 2
M4:3000-010-C142	LONGITUDINAL SECTION – SHEET 2 OF 2
M4:3000-010-C151	CONTROL LINE SETOUT TABLES
M4:3000-010-C152	DETAILED SETOUT PLAN – BIO RETENTION BASINS INLET & OUTLET
M4:3000-010-C153	DETAILED SETOUT PLAN – BIO BASIN 1 UNDERDRAINAGE
M4:3000-010-C154	DETAILED SETOUT PLAN – BIO BASIN 2 UNDERDRAINAGE
M4:3000-010-C155	DETAILED SETOUT PLAN – DETENTION BASIN INLET & OUTLET



DETAIL PLAN - BIORETENTION BASINS
SCALE 1:200

LEGEND (SURFACE TREATMENTS)

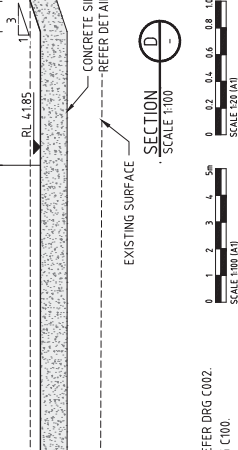
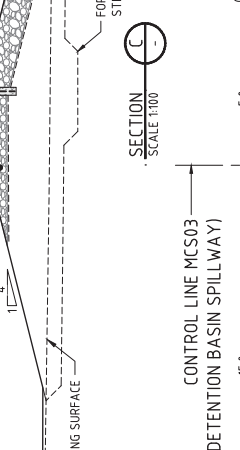
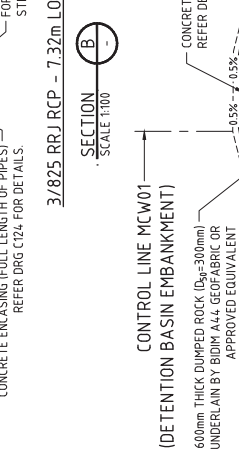
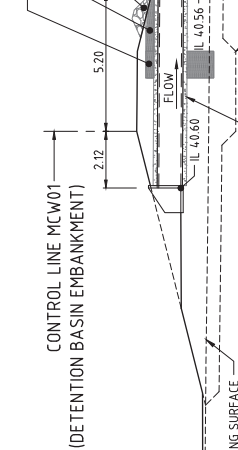
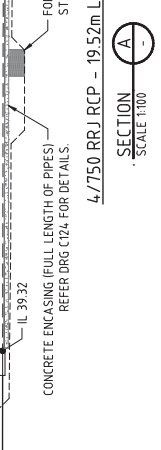
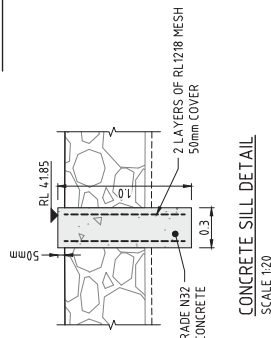
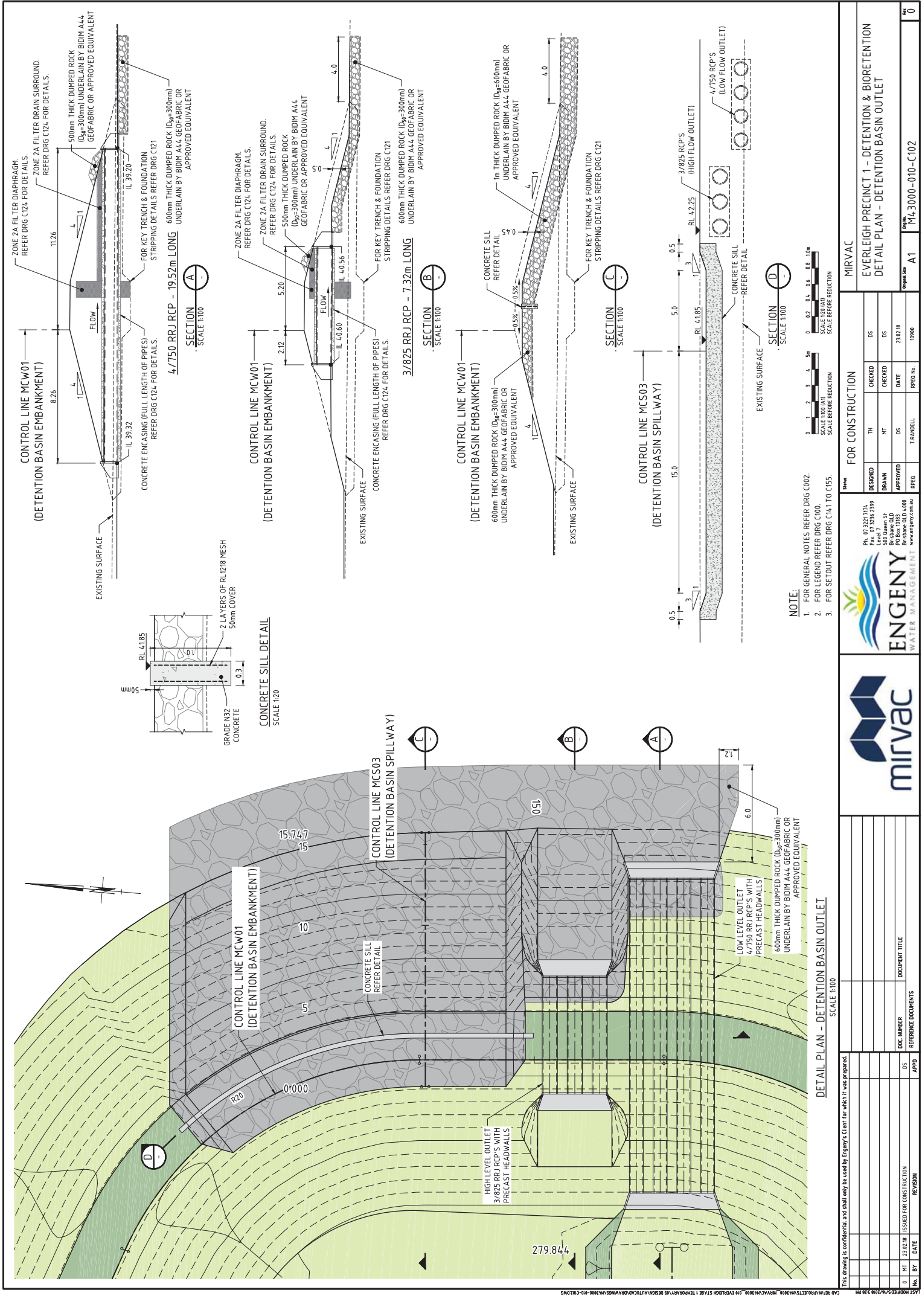
- SUGAR CANE MULCH
50mm SUGAR CANE MULCH PINNED WITH JUTE MESH AT 500mm SPACING
- FOREST BLEND MULCH
300mm TOPSOIL BELOW DESIGN SURFACE
100mm FOREST BLEND MULCH PINNED WITH JUTE MESH AT 500mm SPACING
- GRASS SEED
100mm TOPSOIL BELOW DESIGN SURFACE
GRASS SEED (DRILL SEED)
- TURF
100mm TOPSOIL BELOW DESIGN SURFACE
TURF Laid ABOVE DESIGN SURFACE
- SCOUR PROTECTION
ROCK GRADE & THICKNESS VARIES
REFER SECTIONS FOR DETAILS
- CONCRETE
CONCRETE GRADE & THICKNESS VARIES
REFER SECTIONS FOR DETAILS
- GRAVEL
100mm THICK GRAVEL
(20% PASSING 0.075mm, 2% (EMENT BY WEIGHT)

LEGEND

- EPBC EXCISION BOUNDARY
- PROPOSED LOT BOUNDARY (BY OTHERS)
- EXISTING LOT BOUNDARY (BY OTHERS)
- EXISTING MINOR CONTOUR (0.2m)
- EXISTING MAJOR CONTOUR (1m)
- PROPOSED MINOR CONTOUR (0.2m) (BY OTHERS)
- PROPOSED MAJOR CONTOUR (1m) (BY OTHERS)
- PROPOSED MINOR CONTOUR (0.2m)
- PROPOSED MAJOR CONTOUR (1m)
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER PIT
- PROPOSED STORMWATER HEADWALL
- PROPOSED 100mm SLOTTED PVC PIPE
- PROPOSED 375mm UNLOTTED PVC PIPE
- PROPOSED 375mm CLEANOUT RISER
- PROPOSED 375mm CLEANOUT RISER

NOTE:
1. FOR GENERAL NOTES REFER DRG C002.
2. FOR SETOUT REFER DRGS C141 TO C155.
This drawing is confidential and shall only be used by Engany's Client for which it was prepared.

No.		BY	DATE	ISSUED FOR CONSTRUCTION	REVISION	DOC NUMBER		DOCUMENT TITLE	REFERENCE DOCUMENTS	
0	1	HT	23.02.18			DS	APPD			
FOR CONSTRUCTION										
DESIGNED	TH	CHECKED	DS							
DRAWN	HT	CHECKED	DS							
APPROVED	DS	DATE	23.02.18							
REGD	TANDELL	SPEC No.	10900							
MIRVAC										
EVERLEIGH PRECINCT 1 - DETENTION & BIORETENTION										
DETAIL PLAN - BIORETENTION BASINS										
Original Size		A1	M43000-010-C101		Sheet No.		0			



0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000

1001

1002

1003

1004

1005

1006

1007

1008

1009

1010

1011

1012

1013

1014

1015

1016

1017

1018

1019

1020

1021

1022

1023

1024

1025

1026

1027

1028

1029

1030

1031

1032

1033

1034

1035

1036

1037

1038

1039

1040

1041

1042

1043

1044

1045

1046

1047

1048

1049

1050

1051

1052

1053

1054

1055

1056

1057

1058

1059

1060

1061

1062

1063

1064

1065

1066

1067

1068

1069

1070

1071

1072

1073

1074

1075

1076

1077

1078

1079

1080

1081

1082

1083

1084

1085

1086

1087

1088

1089

1090

1091

1092

1093

1094

1095

1096

1097

1098

1099

1100

1101

1102

1103

1104

1105

1106

1107

1108

1109

1110

1111

1112

1113

1114

1115

1116

1117

1118

1119

1120

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1131

1132

1133

1134

1135

1136

1137

1138

1139

1140

1141

1142

1143

1144

1145

1146

1147

1148

1149

1150

1151

1152

1153

1154

1155

1156

1157

1158

1159

1160

1161

1162

1163

1164

1165

1166

1167

1168

1169

1170

1171

1172

1173

1174

1175

1176

1177

1178

1179

1180

1181

1182

1183

1184

1185

1186

1187

1188

1189

1190

1191

1192

1193

1194

1195

1196

1197

1198

1199

1200

1201

1202

1203

1204

1205

1206

1207

1208

1209

1210

1211

1212

1213

1214

1215

1216

1217

1218

1219

1220

1221

1222

1223

1224

1225

1226

1227

1228

1229

1230

1231

1232

1233

1234

1235

1236

1237

1238

1239

1240

1241

1242

1243

1244

1245

1246

1247

1248

1249

1250

1251

1252

1253

1254

1255

1256

1257

1258

1259

1260

1261

1262

1263

1264

1265

1266

1267

1268

1269

1270

1271

1272

1273

1274

1275

1276

1277

1278

1279

1280

1281

1282

1283

1284

1285

1286

1287

1288

1289

1290

1291

1292

1293

1294

1295

1296

1297

1298

1299

1300

1301

1302

1303

1304

1305

1306

1307

1308

1309

1310

1311

1312

1313

1314

1315

1316

1317

1318

1319

1320

1321

1322

1323

1324

1325

1326

1327

1328

1329

1330

1331

1332

1333

1334

1335

1336

1337

1338

1339

1340

1341

1342

1343

1344

1345

1346

1347

1348

1349

1350

1351

1352

1353

1354

1355

1356

1357

1358

1359

1360

1361

1362

1363

1364

1365

1366

1367

1368

1369

1370

1371

1372

1373

1374

1375

1376

1377

1378

1379

1380

1381

1382

1383

1384

1385

1386

1387

1388

1389

1390

1391

1392

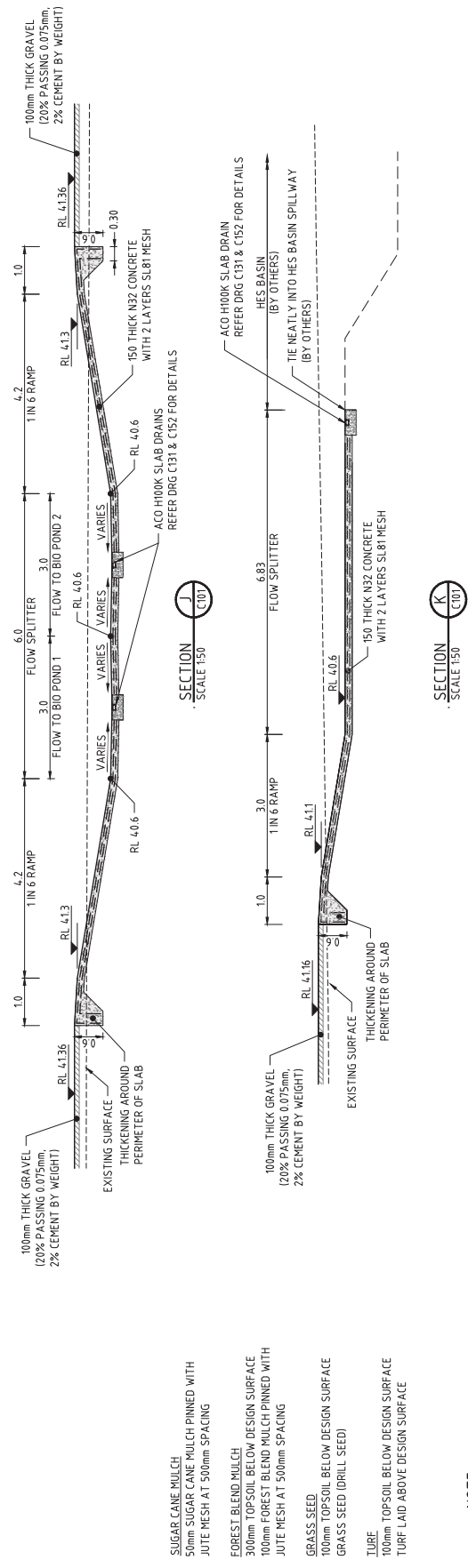
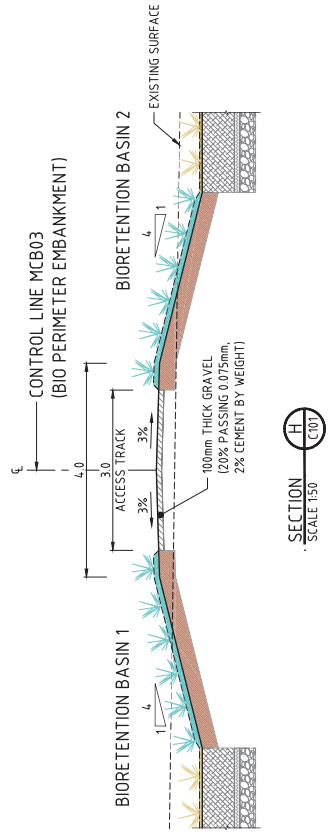
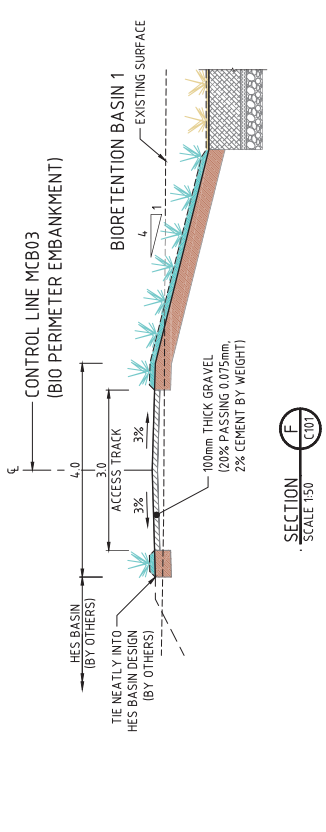
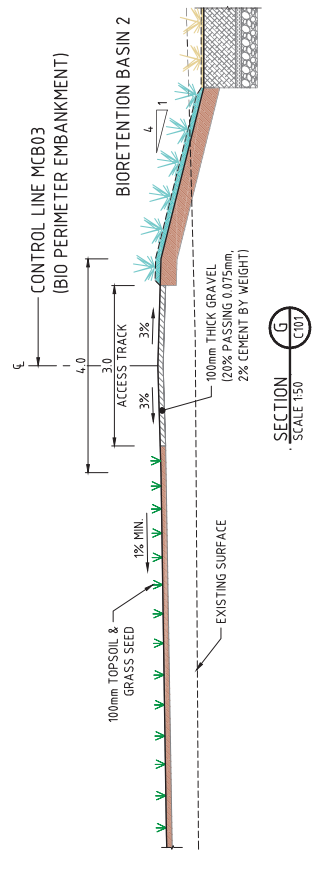
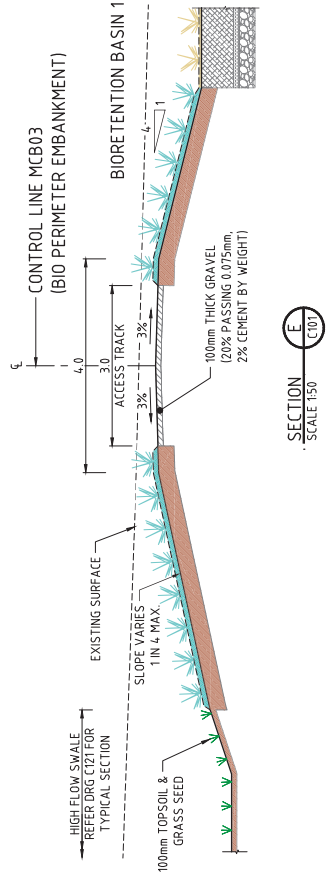
1393

1394

1395

1396

1



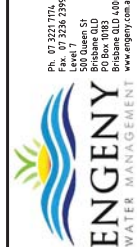
- LEGEND**
- SUGAR CANE MULCH
 - 50mm SUGAR CANE MULCH PINNED WITH JUTE MESH AT 500mm SPACING
 - FOREST BLEND MULCH
 - 300mm TOPSOIL BELOW DESIGN SURFACE
 - 100mm FOREST BLEND MULCH PINNED WITH JUTE MESH AT 500mm SPACING
 - GRASS SEED
 - 100mm TOPSOIL BELOW DESIGN SURFACE
 - GRASS SEED (DRILL SEED)
 - TURF
 - 100mm TOPSOIL BELOW DESIGN SURFACE
 - TURF LAID ABOVE DESIGN SURFACE

NOTE:
1. FOR GENERAL NOTES REFER DRG C002.
2. FOR SETOUT REFER DRGS C14 TO C155.

This drawing is confidential and shall only be used by Engeny's Client for which it was prepared

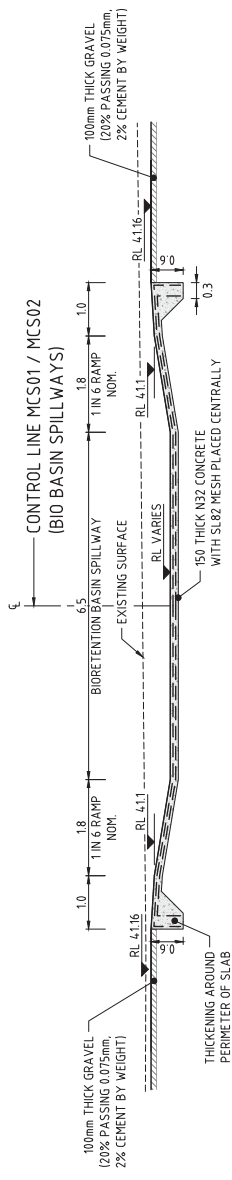
No.	BY	DATE	ISSUED FOR CONSTRUCTION	REVISION
0	HT	23.02.18		

DOC NUMBER	DOCUMENT TITLE	REFERENCE DOCUMENTS
DS		APPD

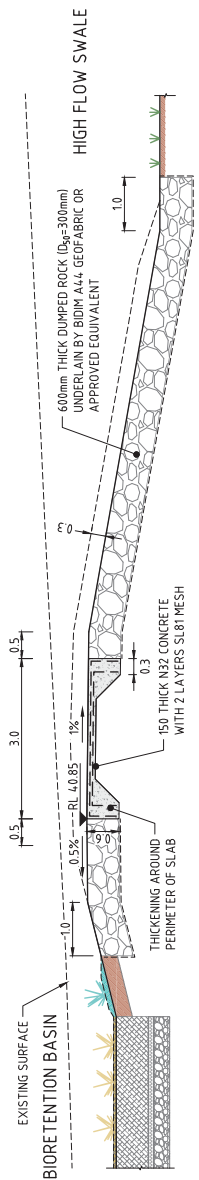


FOR CONSTRUCTION			
DESIGNED	TH	CHECKED	RPEQ No.
DRAWN	MT	CHECKED	
APPROVED	DS	DATE	
RPEQ	T.RANDELL		

MIRVAC
EVERLEIGH PRECINCT 1 – DETENTION & BIORETENTION
TYPICAL SECTIONS & DETAILS
SHEET 2 OF 4

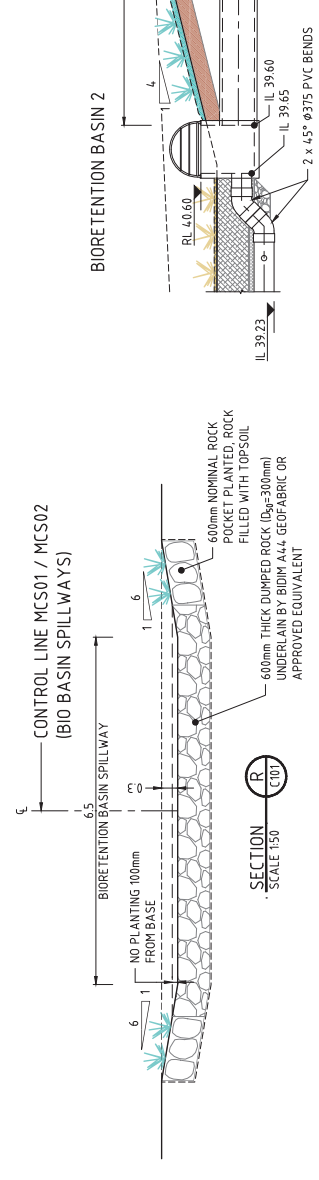


SECTION L SCALE 150

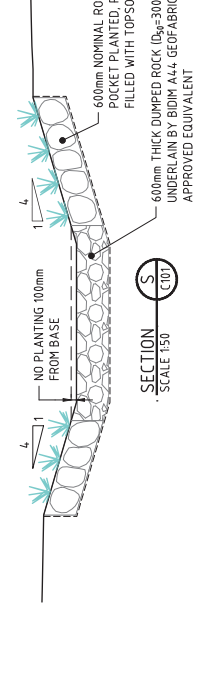


SECTION M SCALE 150

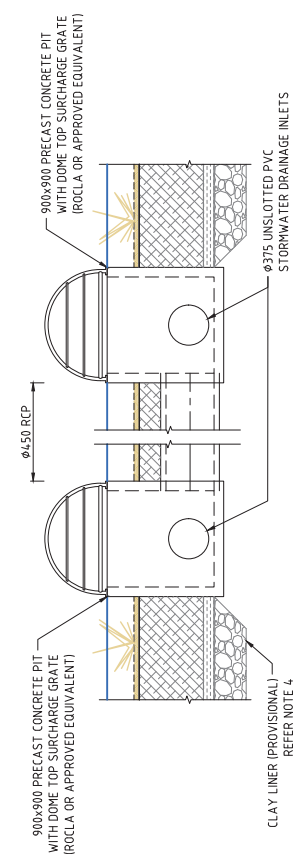
CONTROL LINE MCS01 / MCS02 (BIO BASIN SPILLWAYS)



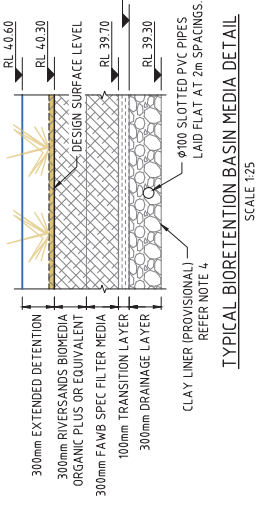
SECTION R SCALE 150



SECTION S SCALE 150

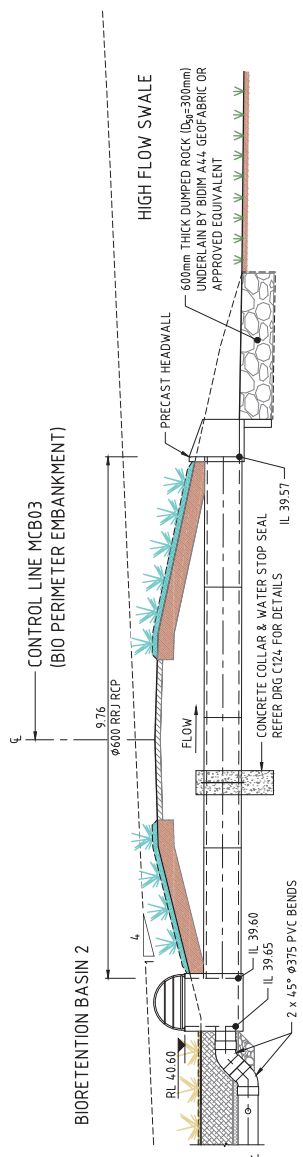


SECTION N SCALE 125



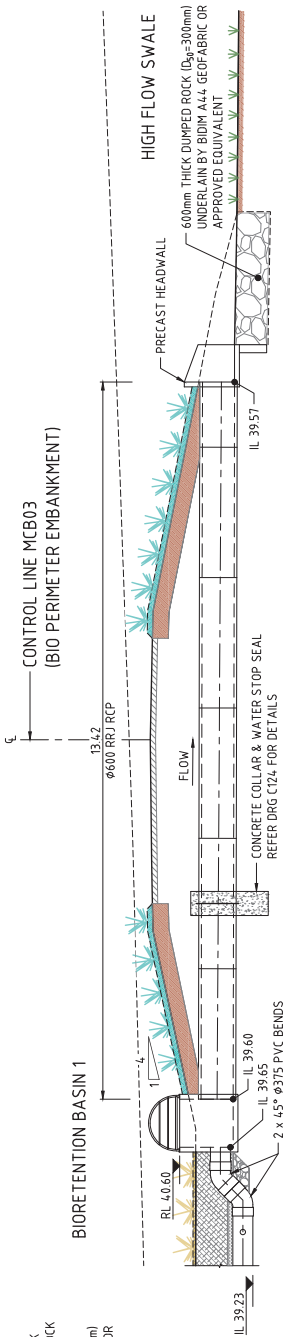
TYPICAL BIORETENTION BASIN MEDIA DETAIL SCALE 125

CONTROL LINE MCB03 (BIO PERIMETER EMBANKMENT)



SECTION P SCALE 150

CONTROL LINE MCB03 (BIO PERIMETER EMBANKMENT)



SECTION Q SCALE 150

- NOTE:
1. FOR GENERAL NOTES REFER DRG C002.
 2. FOR SETOUT REFER DRGS C151 TO C155.
 3. FOR LEGEND REFER DRG C122.
 4. CLAY LINER IS A PROVISIONAL ITEM & IS SUBJECT TO INSPECTION OF THE EXISTING MATERIAL BY THE SUPERINTENDENT AT THE TIME OF CONSTRUCTION. HYDRAULIC CONDUCTIVITY OF NATURAL SUBGRADE MATERIAL SHOULD BE LESS THAN 1x10⁻⁸ m/s.

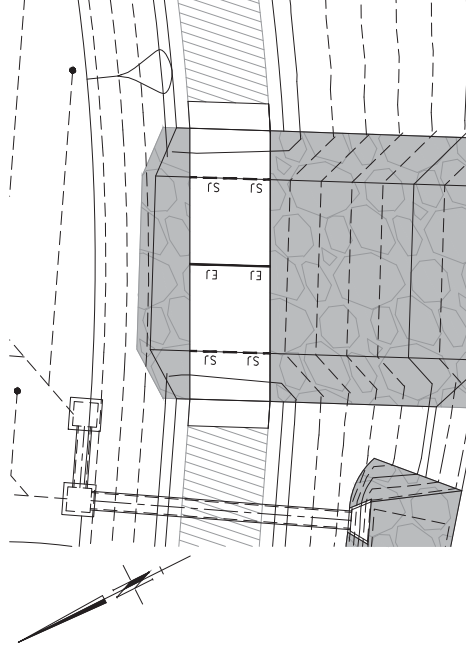
This drawing is confidential and shall only be used by Engeny's Client for which it was prepared

No.		BY	DATE	ISSUED FOR CONSTRUCTION	REVISION
0	1	HT	23.02.18		

Doc. Number		Document Title
DS	APPD	REFERENCE DOCUMENTS

FOR CONSTRUCTION					
Drawn	DESIGNED	TH	CHECKED	DS	
07. 03.2221.17174, ax. 07.3226.23999 100 Queens St Brisbane QLD 4000	DRAHNN	MT	CHECKED	DS	
PO Box 11983 Brisbane QLD 4000 au	APPROVED	DS	DATE	23.02.18	
www.engsply.com.au	RFPQ	T RANDELL	RFPQ No.	10000	

MIRVAC		Original Size	A1	Proj. No.	M4-3000-010-C123
EVERLEIGH PRECINCT 1 - DETENTION & BIORETENTION		TYPICAL SECTIONS & DETAILS			
SHEET 3 OF 4					



JOINTING PLAN - BIO BASIN 2 SPILLWAY
SCALE 1:100

SAW JOINT (SJ)

SAW JOINT (SJ)

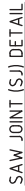
SAW JOINT (SJ)



SL81. DISCONTINUE TOP MESH
ACROSS JOINT AND MAINTAIN COVER.

SL81. CONTINUE BOTTOM MESH
ACROSS JOINT AND MAINTAIN COVER.

SAW CUT 1/4 TO 1/3 SLAB DEPTH 4-12
HOURS AFTER INITIAL CONCRETE SET.
SEAL JOINT USING SIKAFLEX PRO.



NOT TO SCALE



DETAIL
SCALE 1:5

ACO SLAB DRAIN - TYPICAL CORNER REINFORCING DETAIL

		Ph. 07 3221 7174 Fax. 07 3226 2399 508 Queens St Brisbane QLD 4000 PO Box 1093 Brisbane QLD 4000 www.engeny.com.au	FOR CONSTRUCTION			
			DESIGNED	TH	CHECKED	D5
			DRAWN	MT	CHECKED	D5
			APPROVED	D5	DATE	23.02.08
			RFQC	TRAEDEL	RFQC No.	109602

MIRVAC			
EVERLEIGH PRECINCT 1 - DETENTION & BIORETENTION CONCRETE JOINTING & REINFORCEMENT DETAILS		Draw No M43000-010-C131	Date 0

1. FOR GENERAL NOTES REFER DRG C002
2. FOR SETOUT REFER DRGS C141 TO C155

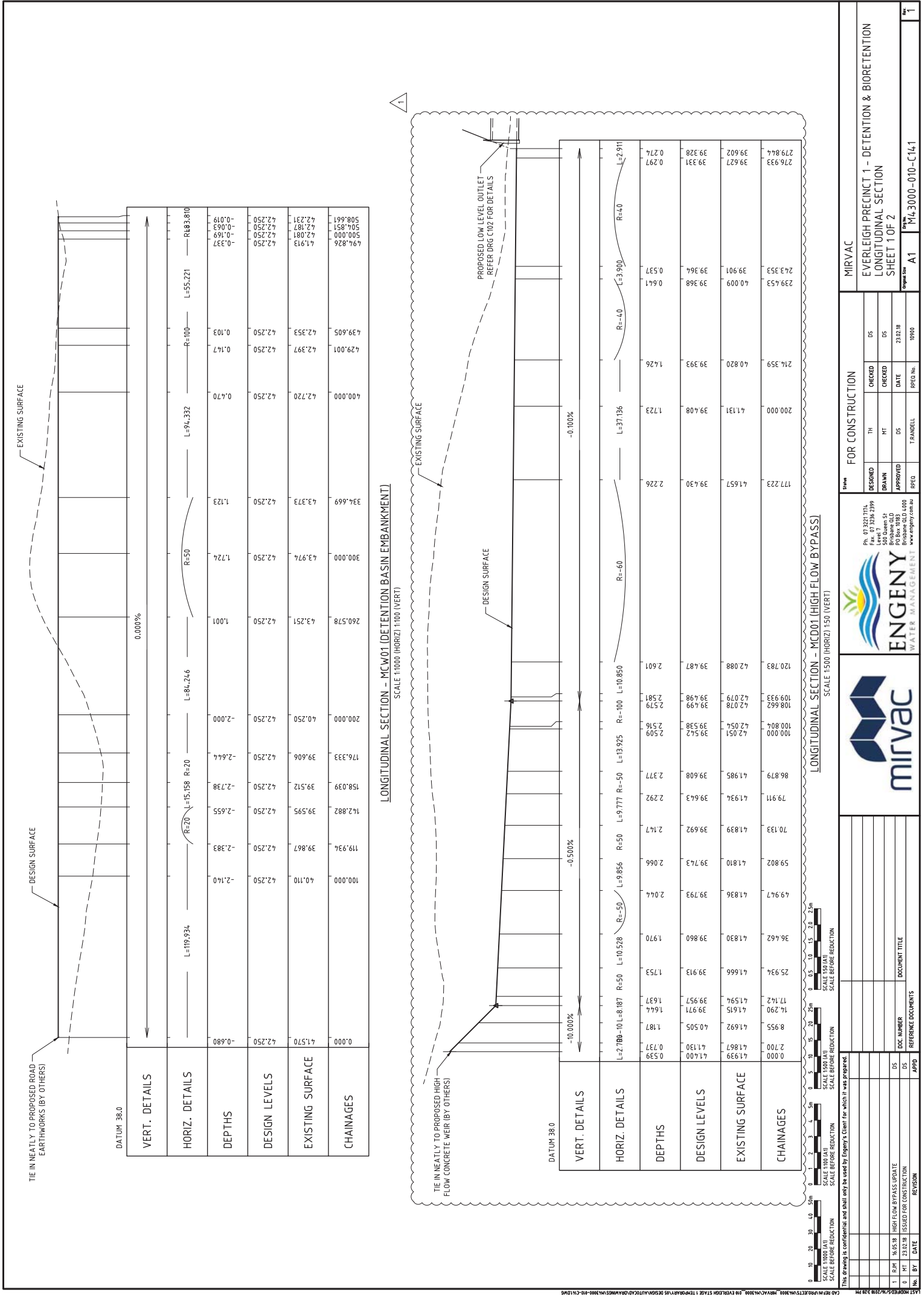
This drawing is confidential and shall only be used by Engeny's Client for which it was prepared

[illegible][illegible][illegible][illegible]

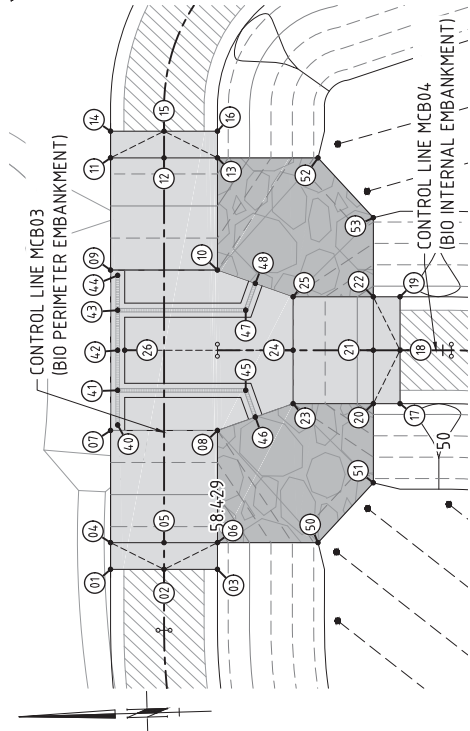
0	MT	23 02 18	ISSUED FOR CONSTRUCTION
---	----	----------	-------------------------

REV	BY	DATE	REVISION
-----	----	------	----------

NO.	DATE	DESCRIPTION
1	10/1/19	...
2	10/2/19	...
3	10/3/19	...
4	10/4/19	...
5	10/5/19	...
6	10/6/19	...
7	10/7/19	...
8	10/8/19	...
9	10/9/19	...
10	10/10/19	...
11	10/11/19	...
12	10/12/19	...
13	10/13/19	...
14	10/14/19	...
15	10/15/19	...
16	10/16/19	...
17	10/17/19	...
18	10/18/19	...
19	10/19/19	...
20	10/20/19	...
21	10/21/19	...
22	10/22/19	...
23	10/23/19	...
24	10/24/19	...
25	10/25/19	...
26	10/26/19	...
27	10/27/19	...
28	10/28/19	...
29	10/29/19	...
30	10/30/19	...
31	10/31/19	...



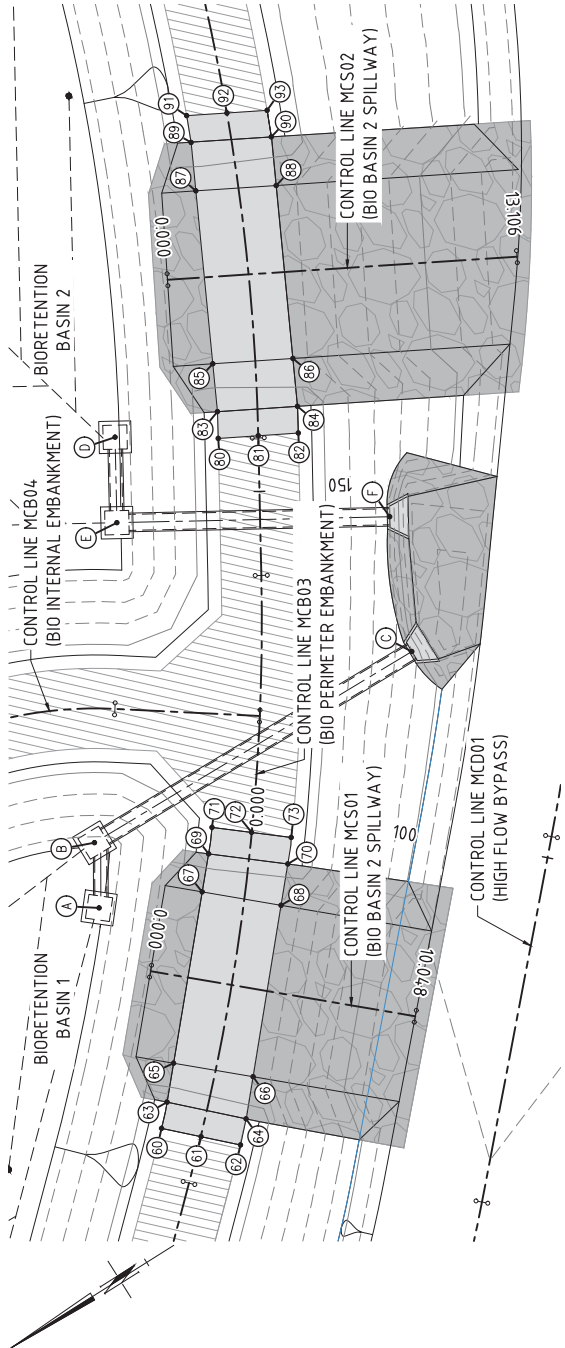
CONTROL MCB03 (BIO PERIMETER EMBANKMENT)					
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	RADIUS
IP 1	0.000	9261.088	31426.416	41.360	R = 22.000
IP 2	3.438	9264.435	31427.387	41.360	
CT	6.876	9267.900	31427.888	41.360	
IP 3	10.314	9271.365	31428.389	41.327	R = 7.000
IP 4	13.752	9274.830	31428.890	41.360	
CT	17.190	9278.295	31429.391	41.360	
IP 5	20.628	9281.760	31429.892	41.360	R = 102.000
IP 6	24.066	9285.225	31430.393	41.160	
CT	27.504	9288.690	31430.894	41.160	
IP 7	30.942	9292.155	31431.395	41.160	R = -38.000
IP 8	34.380	9295.620	31431.896	41.160	
CT	37.818	9299.085	31432.397	41.160	
IP 9	41.256	9302.550	31432.898	41.160	R = 8.000
IP 10	44.694	9306.015	31433.399	41.160	
CT	48.132	9309.480	31433.900	41.160	
IP 11	51.570	9312.945	31434.401	41.160	R = -38.000
IP 12	55.008	9316.410	31434.902	41.160	
CT	58.446	9319.875	31435.403	41.160	
IP 13	61.884	9323.340	31435.904	41.160	R = 8.000
IP 14	65.322	9326.805	31436.405	41.160	
CT	68.760	9330.270	31436.906	41.160	
IP 15	72.198	9333.735	31437.407	41.160	R = 8.000
IP 16	75.636	9337.200	31437.908	41.160	
CT	79.074	9340.665	31438.409	41.160	
IP 17	82.512	9344.130	31438.910	41.160	R = 8.000
IP 18	85.950	9347.595	31439.411	41.160	
CT	89.388	9351.060	31439.912	41.160	
IP 19	92.826	9354.525	31440.413	41.160	R = 8.000
IP 20	96.264	9357.990	31440.914	41.160	
CT	99.702	9361.455	31441.415	41.160	
IP 21	103.140	9364.920	31441.916	41.160	R = 8.000
IP 22	106.578	9368.385	31442.417	41.160	
CT	110.016	9371.850	31442.918	41.160	
IP 23	113.454	9375.315	31443.419	41.160	R = 8.000
IP 24	116.892	9378.780	31443.920	41.160	
CT	120.330	9382.245	31444.421	41.160	
IP 25	123.768	9385.710	31444.922	41.160	R = 8.000
IP 26	127.206	9389.175	31445.423	41.160	
CT	130.644	9392.640	31445.924	41.160	
IP 27	134.082	9396.105	31446.425	41.160	R = 8.000
IP 28	137.520	9399.570	31446.926	41.160	
CT	140.958	9403.035	31447.427	41.160	
IP 29	144.396	9406.500	31447.928	41.160	R = 8.000
IP 30	147.834	9409.965	31448.429	41.160	
CT	151.272	9413.430	31448.930	41.160	
IP 31	154.710	9416.895	31449.431	41.160	R = 8.000
IP 32	158.148	9420.360	31449.932	41.160	
CT	161.586	9423.825	31450.433	41.160	
IP 33	165.024	9427.290	31450.934	41.160	R = 8.000
IP 34	168.462	9430.755	31451.435	41.160	
CT	171.900	9434.220	31451.936	41.160	
IP 35	175.338	9437.685	31452.437	41.160	R = 8.000
IP 36	178.776	9441.150	31452.938	41.160	
CT	182.214	9444.615	31453.439	41.160	
IP 37	185.652	9448.080	31453.940	41.160	R = 8.000
IP 38	189.090	9451.545	31454.441	41.160	
CT	192.528	9455.010	31454.942	41.160	
IP 39	195.966	9458.475	31455.443	41.160	R = 8.000
IP 40	199.404	9461.940	31455.944	41.160	
CT	202.842	9465.405	31456.445	41.160	
IP 41	206.280	9468.870	31456.946	41.160	R = 8.000
IP 42	209.718	9472.335	31457.447	41.160	
CT	213.156	9475.800	31457.948	41.160	
IP 43	216.594	9479.265	31458.449	41.160	R = 8.000
IP 44	220.032	9482.730	31458.950	41.160	
CT	223.470	9486.195	31459.451	41.160	
IP 45	226.908	9489.660	31459.952	41.160	R = 8.000
IP 46	230.346	9493.125	31460.453	41.160	
CT	233.784	9496.590	31460.954	41.160	
IP 47	237.222	9499.055	31461.455	41.160	R = 8.000
IP 48	240.660	9502.520	31461.956	41.160	
CT	244.098	9505.985	31462.457	41.160	
IP 49	247.536	9509.450	31462.958	41.160	R = 8.000
IP 50	250.974	9512.915	31463.459	41.160	
CT	254.412	9516.380	31463.960	41.160	
IP 51	257.850	9519.845	31464.461	41.160	R = 8.000
IP 52	261.288	9523.310	31464.962	41.160	
CT	264.726	9526.775	31465.463	41.160	
IP 53	268.164	9530.240	31465.964	41.160	R = 8.000
IP 54	271.602	9533.705	31466.465	41.160	
CT	275.040	9537.170	31466.966	41.160	
IP 55	278.478	9540.635	31467.467	41.160	R = 8.000
IP 56	281.916	9544.100	31467.968	41.160	
CT	285.354	9547.565	31468.469	41.160	
IP 57	288.792	9551.030	31468.970	41.160	R = 8.000
IP 58	292.230	9554.495	31469.471	41.160	
CT	295.668	9557.960	31469.972	41.160	
IP 59	299.106	9561.425	31470.473	41.160	R = 8.000
IP 60	302.544	9564.890	31470.974	41.160	
CT	305.982	9568.355	31471.475	41.160	
IP 61	309.420	9571.820	31471.976	41.160	R = 8.000
IP 62	312.858	9575.285	31472.477	41.160	
CT	316.296	9578.750	31472.978	41.160	
IP 63	319.734	9582.215	31473.479	41.160	R = 8.000
IP 64	323.172	9585.680	31473.980	41.160	
CT	326.610	9589.145	31474.481	41.160	
IP 65	330.048	9592.610	31474.982	41.160	R = 8.000
IP 66	333.486	9596.075	31475.483	41.160	
CT	336.924	9599.540	31475.984	41.160	
IP 67	340.362	9603.005	31476.485	41.160	R = 8.000
IP 68	343.800	9606.470	31476.986	41.160	
CT	347.238	9609.935	31477.487	41.160	
IP 69	350.676	9613.400	31477.988	41.160	R = 8.000
IP 70	354.114	9616.865	31478.489	41.160	
CT	357.552	9620.330	31478.990	41.160	
IP 71	360.990	9623.795	31479.491	41.160	R = 8.000
IP 72	364.428	9627.260	31479.992	41.160	
CT	367.866	9630.725	31480.493	41.160	
IP 73	371.304	9634.190	31480.994	41.160	R = 8.000
IP 74	374.742	9637.655	31481.495	41.160	
CT	378.180	9641.120	31481.996	41.160	
IP 75	381.618	9644.585	31482.497	41.160	R = 8.000
IP 76	385.056	9648.050	31482.998	41.160	
CT	388.494	9651.515	31483.499	41.160	
IP 77	391.932	9654.980	31483.999	41.160	R = 8.000
IP 78	395.370	9658.445	31484.500	41.160	
CT	398.808	9661.910	31484.999	41.160	
IP 79	402.246	9665.375	31485.500	41.160	R = 8.000
IP 80	405.684	9668.840	31485.999	41.160	
CT	409.122	9672.305	31486.500	41.160	
IP 81	412.560	9675.770	31486.999	41.160	R = 8.000
IP 82	416.000	9679.235	31487.500	41.160	
CT	419.438	9682.700	31487.999	41.160	
IP 83	422.876	9686.165	31488.500	41.160	R = 8.000
IP 84	426.314	9689.630	31488.999	41.160	
CT	429.752	9693.095	31489.500	41.160	
IP 85	433.190	9696.560	31489.999	41.160	R = 8.000
IP 86	436.628	9699.025	31490.500	41.160	
CT	440.066	9702.490	31490.999	41.160	
IP 87	443.504	9705.955	31491.500	41.160	R = 8.000
IP 88	446.942	9709.420	31491.999	41.160	
CT	450.380	9712.885	31492.500	41.160	
IP 89	453.818	9716.350	31492.999	41.160	R = 8.000
IP 90	457.256	9719.815	31493.500	41.160	
CT	460.694	9723.280	31493.999	41.160	
IP 91	464.132	9726.745	31494.500	41.160	R = 8.000
IP 92	467.570	9730.210	31494.999	41.160	
CT	471.008	9733.675	31495.500	41.160	
IP 93	474.446	9737.140	31495.999	41.160	R = 8.000
IP 94	477.884	9740.605	31496.500	41.160	
CT	481.322	9744.070	31496.999	41.160	
IP 95	484.760	9747.535	31497.500	41.160	R = 8.000
IP 96	488.198	9750.999	31497.999	41.160	
CT	491.636	9754.464	31498.500	41.160	
IP 97	495.074	9757.929	31498.999	41.160	R = 8.000
IP 98	498.512	9761.394	31499.500	41.160	
CT	501.950	9764.859	31499.999	41.160	
IP 99	505.388	9768.324	31500.500	41.160	R = 8.000
IP 100	508.826	9771.789	31500.999	41.160	
CT	512.264	9775.254	31501.500	41.160	
IP 101	515.702	9778.719	31501.999	41.160	R = 8.000
IP 102	519.140	9782.184	31502.500	41.160	
CT	522.578	9785.649	31502.999	41.160	
IP 103	526.016	9789.114	31503.500	41.160	R = 8.000
IP 104	529.454	9792.579	31503.999	41.160	
CT	532.892	9796.044	31504.500	41.160	
IP 105	536.330	9799.509	31504.999	41.160	R = 8.000
IP 106	539.768	9802.974	31505.500	41.160	
CT	543.206	9806.439	31505.999	41.160	
IP 107	546.644	9809.904	31506.500	41.160	R = 8.000
IP 108	550.082	9813.369	31506.999	41.160	
CT	553.520	9816.834	31507.500	41.160	
IP 109	556.958	9819.845	31507.999	41.160	R = 8.000
IP 110	560.396	9823.310	31508.500	41.160	
CT	563.834	9826.775	31508.999	41.160	
IP 111	567.272	9830.240	31509.500	41.160	R = 8.000
IP 112	570.710	9833.705	31509.999	41.160	
CT	574.148	9837.170	31510.500	41.160	
IP 113	577.586	9840.635	31510.999	41.160	R = 8.000
IP 114	581.024	9844.100	31511.500	41.160	
CT	584.462	9847.565	31511.999	41.160	
IP 115	587.900	9851.030	31512.500	41.160	R = 8.000
IP 116	591.338	9854.495	31512.999	41.160	
CT	594.776	9857.960	31513.500	41.160	
IP 117	598.214	9861.425	31513.999	41.160	R = 8.000
IP 118	601.652	9864.890	31514.500	41.160	
CT	605.090	9868.355	31514.999	41.160	
IP 119	608.528	9871.820	31515.500	41.160	R = 8.000
IP 120	611.966	9875.285	31515.999	41.160	
CT	615.404	9878.750	31516.500	41.160	
IP 121	618.842	9882.215	31516.999	41.160	R = 8.000
IP 122	622.280	9885.680	31517.500	41.160	
CT	625.718	9889.145	31517.999	41.160	



SETOUT PLAN – BIO BASINS INLET
SCALE 1:100

SETOUT POINTS – BIO BASINS INLET

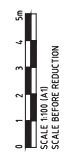
POINT No.	COORDINATES		LEVEL	COMMENT
	EASTING	NORTHING		
01	9270.238	31429.222	41.30	
02	9270.180	31427.222	41.36	
03	9270.123	31425.223	41.30	
04	9271.237	31425.193	41.30	
05	9271.180	31427.194	41.30	
06	9271.123	31425.195	41.30	
07	9275.435	31429.073	40.60	
08	9275.378	31429.073	40.60	
09	9281.430	31428.901	40.60	
10	9281.319	31424.903	40.60	
11	9285.631	31428.781	41.30	
12	9285.574	31426.782	41.30	
13	9285.517	31424.783	41.30	
14	9286.631	31428.753	41.30	
15	9286.574	31426.754	41.36	
16	9286.517	31424.754	41.30	
17	9278.123	31418.106	41.36	
18	9278.123	31418.106	41.36	
19	9280.124	31418.106	41.30	
20	9276.154	31419.220	41.30	
21	9278.153	31419.163	41.30	
22	9280.152	31419.106	41.30	
23	9276.240	31422.219	40.60	
24	9278.239	31422.162	40.60	
25	9280.238	31422.104	40.60	
26	9278.479	31428.457	40.60	
40	9275.628	31428.802	40.60	
41	9276.927	31428.766	40.58	
42	9278.427	31428.722	40.60	
43	9279.926	31428.678	40.58	
44	9281.226	31428.642	40.60	
45	9276.790	31423.974	40.53	
46	9275.780	31423.647	40.52	
47	9275.780	31423.568	40.53	
48	9280.778	31423.504	40.52	
50	9271.015	31421.436	40.30	
51	9273.195	31419.304	40.30	
52	9285.409	31421.025	40.30	
53	9283.111	31419.021	40.30	



SETOUT PLAN – BIO BASINS OUTLETS
SCALE 1:100

SETOUT POINTS – BIO BASINS OUTLETS

POINT No.	COORDINATES		LEVEL	COMMENT
	EASTING	NORTHING		
60	9252.052	31382.372	41.12	
61	9251.000	31381.288	41.16	
62	9249.949	31380.203	41.12	
63	9252.770	31381.676	41.12	
64	9253.666	31385.591	41.12	
65	9253.666	31388.901	40.85	
66	9251.859	31378.443	40.82	
67	9258.729	31376.366	40.85	
68	9256.729	31374.139	40.82	
69	9259.803	31375.405	41.12	
70	9257.903	31373.100	41.12	
71	9260.574	31374.770	41.12	
72	9259.625	31373.617	41.16	
73	9258.675	31372.464	41.12	
80	9272.766	31366.809	41.12	
81	9272.052	31365.488	41.16	
82	9271.338	31364.166	41.12	
83	9273.627	31366.299	41.12	
84	9272.201	31363.660	41.12	
85	9275.238	31365.491	40.85	
86	9275.238	31362.575	40.82	
87	9281.551	31359.926	40.82	
88	9279.618	31361.759	41.12	
89	9281.255	31359.108	41.12	
90	9283.614	31361.365	41.12	
91	9282.896	31360.039	41.16	
92	9282.896	31358.773	41.12	
93	9282.177	31379.950	39.60	
A	9260.276	31378.194	39.60	
B	9262.433	31364.932	39.57	
C	9262.157	31370.049	39.60	
D	9274.864	31377.696	39.60	
E	9272.120	31362.943	39.57	
F	9266.865			



This drawing is confidential and shall only be used by Engeny's Client for which it was prepared.

No.	BY	DATE	ISSUED FOR CONSTRUCTION	REVISION	
				DATE	REVISION
0	HT	23.02.18			

Doc. Number	Document Title	Reference Documents	APPD
DS			



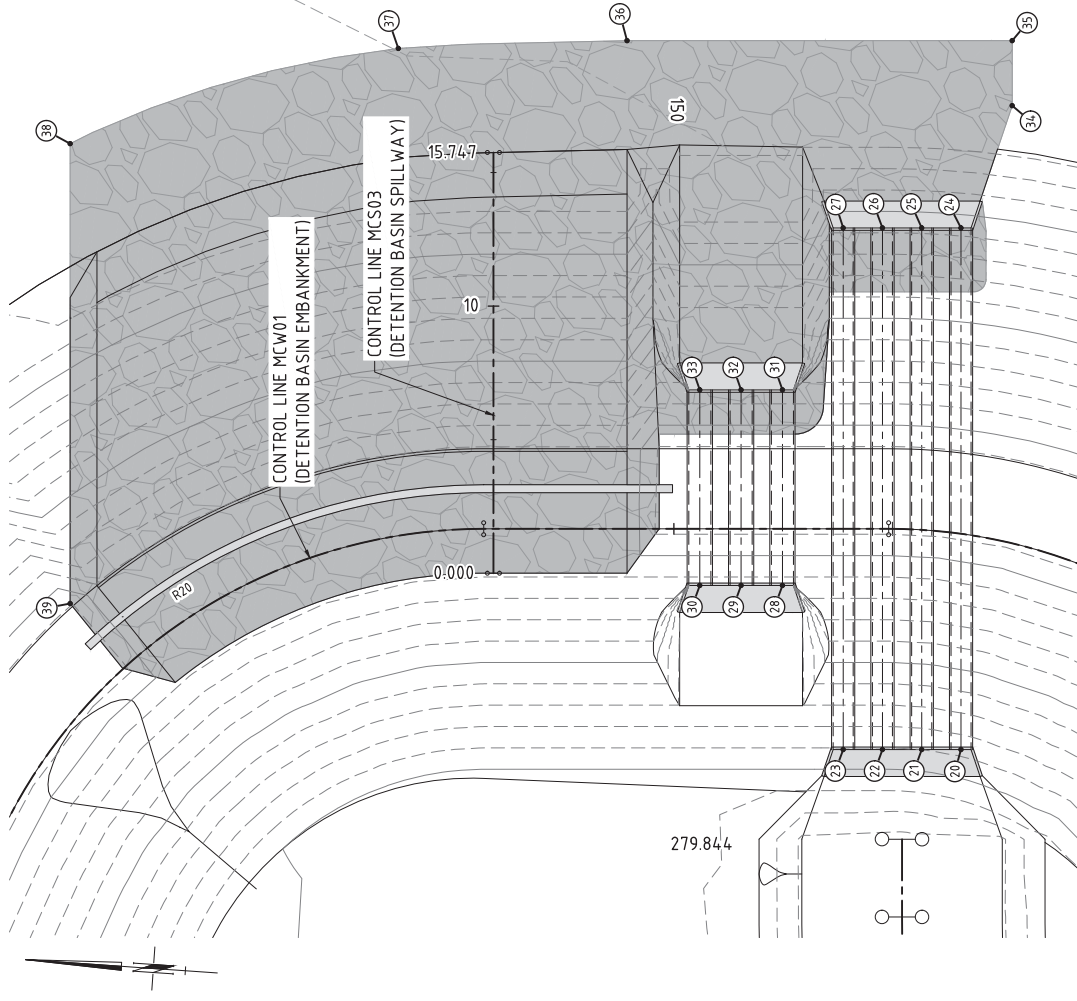
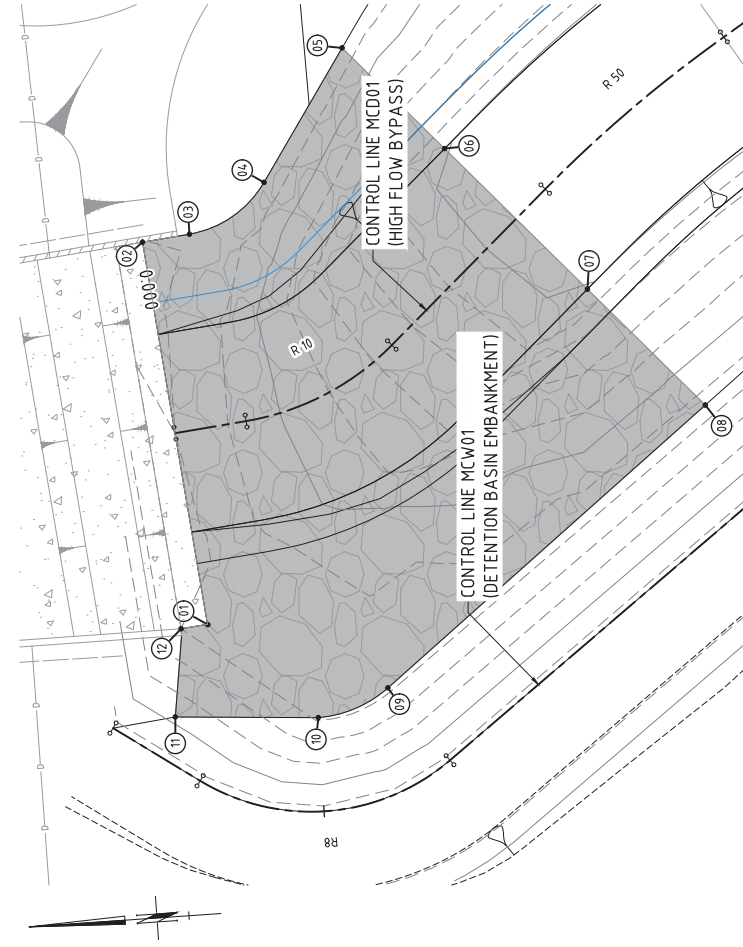
Ph: 03 9201 1701
Fax: 03 9201 3799
Level 7
800 Glenelg
Bridgeway
PO Box 1083
Bridgeway QLD 4800
www.engeny.com.au

FOR CONSTRUCTION

DESIGNED	TH	CHECKED	DS
DRAWN	HT	CHECKED	DS
APPROVED	DS	DATE	23.02.18
REFG	TANDELL	SPEC No.	10000

MIRVAC

EVERLEIGH PRECINCT 1 – DETENTION & BIORETENTION DETAILED SETOUT PLAN BIO RETENTION BASINS INLET & OUTLETS		
Original Size	A1	0

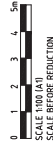


POINT			COORDINATES		LEVEL
No.	EASTING	NORTHING			
01	9180.210	314.37.620		414.0	
02	9194.524	314.40.067		414.0	
03	9194.823	314.38.308		41.36	
04	9196.759	314.35.518		41.36	
05	9201.795	314.32.596		41.33	
06	9198.025	314.28.763		40.00	
07	9192.766	314.23.417		41.30	
08	91884.76	314.9.005		41.30	
09	9187.852	314.33.838		41.35	
10	9187.755	314.33.838		41.35	
11	9176.755	314.38.838		42.00	
12	9180.056	314.38.622		41.40	

POINT			COORDINATES		LEVEL
No.	EASTING	NORTHING			
20	9180.210	31982.209		39.32	
21	9145.047	31983.657		39.32	
22	9194.823	31983.141		39.32	
23	9145.842	31986.608		39.32	
24	9145.622	31983.566		39.20	
25	9143.520	31985.033		39.20	
26	9143.547	31986.499		39.20	
27	9143.535	31987.966		39.20	
28	91421809	31989.303		40.60	
29	91421702	31990.845		40.60	
30	91421594	31992.387		40.60	
31	91429.112	31989.812		40.56	
32	91429.004	31991.354		40.56	
33	91428.897	31992.896		40.56	
34	91419.319	31981.974		-	
35	91417.718	31983.234		-	
36	9141.7166	31996.520		-	
37	91440.858	31405.039		-	
38	91436.452	31417.041		-	
39	91419.280	31415.844		-	

POINT No.	COORDINATES		LEVEL
	EASTING	NORTHING	
01	9180.270	31437.620	414.0
02	9194.523	31440.067	414.0
03	9194.824	31438.308	413.8
04	9196.959	31435.518	413.6
05	9198.103	31436.576	413.3
06	9198.103	31436.576	413.3
07	9192.166	31423.477	400.0
08	9188.126	31419.005	413.0
09	9177.845	31430.882	413.5
10	9176.132	31433.488	413.6
11	9176.755	31438.838	420.0
12	9180.056	31438.622	414.0

POINT No.	COORDINATES		INVERT ELEVATION
	EASTING	NORTHING	
20	9416.149	31382.209	39.32
21	9416.047	31383.675	39.32
22	9415.945	31385.141	39.32
23	9415.843	31386.607	39.32
24	9415.742	31388.073	39.20
25	9415.520	31385.033	39.20
26	9415.315	31386.966	39.20
27	9415.315	31387.966	39.20
28	9421.009	31389.203	40.60
29	9421.194	31390.669	40.60
30	9421.194	31392.387	40.60
31	9429.112	31389.812	40.56
32	9429.004	31391.354	40.56
33	9428.897	31392.896	40.56
34	9440.319	31381.974	-
35	9440.319	31390.520	-
36	9441.116	31396.570	-
37	9440.858	31405.039	-
38	9436.152	31417.041	-
39	9436.450	31415.844	-



This drawing is confidential and shall only be used by Engenry's Client for which it was prepared.

[illegible][illegible]

FOR CONSTRUCTION		TH	CHECKED
DESIGNED		MT	CHECKED
DRAWN		DS	DATE
APPROVED		T. RANDELL	RPEQ N
RPEQ			

MIRVAC

EVERLEIGH PRECINCT 1 - DETENTION & BIORETENTION
DETAILED SETOUT PLAN
DETENTION BASIN INLET & OUTLET

Original State	A1	Org No. M4 3000-010-C155	Rev. 0
----------------	----	-----------------------------	-----------

I, LEE SCORRAR, hereby certify that the vertical and horizontal locations and dimensions shown on this plan are a true and correct record and were located by survey.

Registered Surveyor (sig) _____ Reg. Surveyor No. SA 6609 Date: 19/12/2018

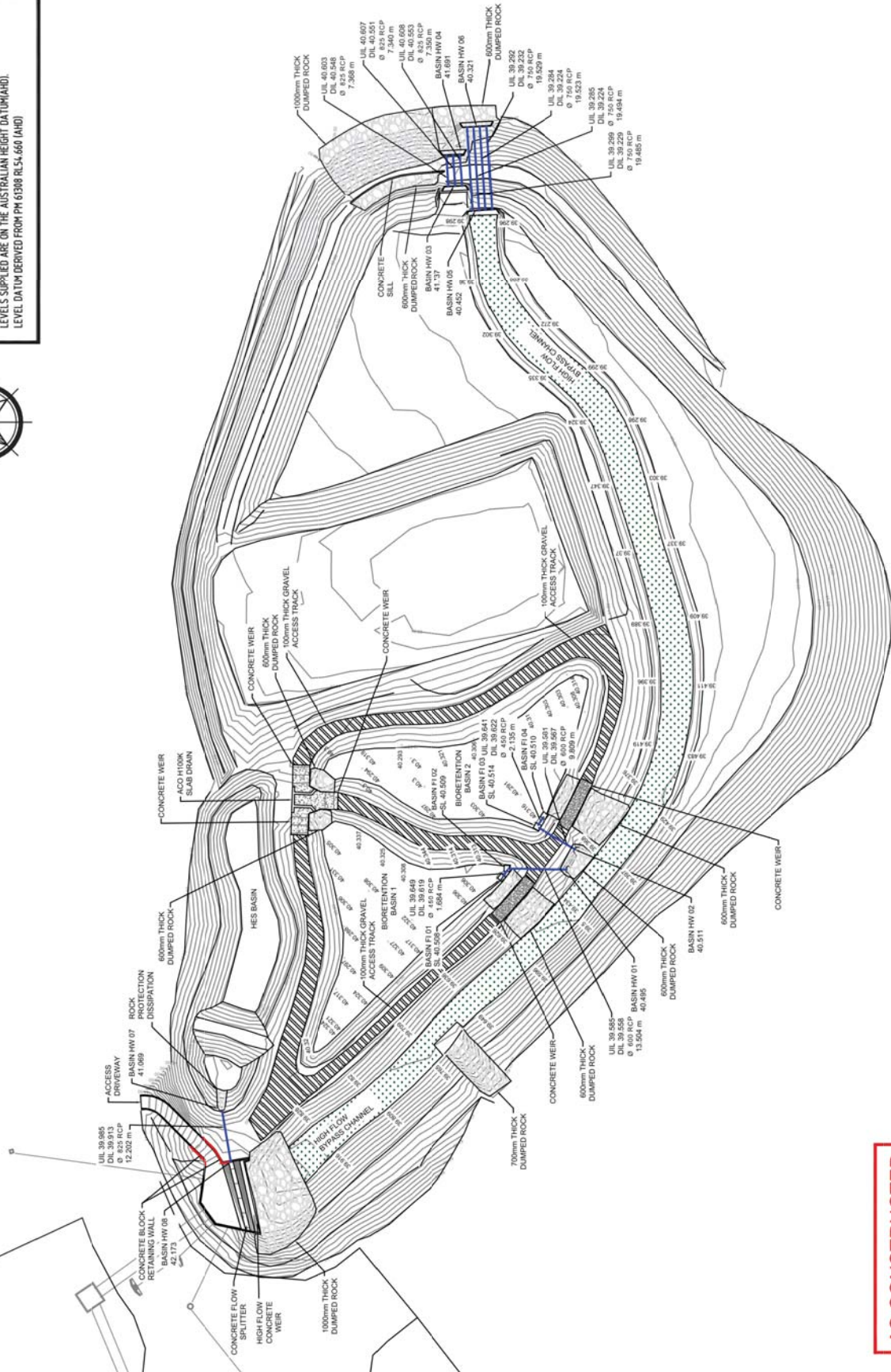
DAVID SEXTON hereby certify that:

The information contained in this drawing / document is in compliance with approved drawings and design.

RPEQ (signature) RPEQ No. 20884 Date: 10.12.2018

300mm EXTENDED DETENTION
3300mm RIVERSANDS BIOMEDIA ORGANIC PLUS
300mm FAWB SPEC FILTER MEDIA
100mm TRANSITION LAYER
300mm DRAINAGE LAYER

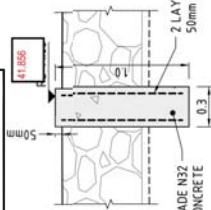
1. COORDINATE DATA:
SURVEYOR: SHAFORTH
HORIZONTAL COORDINATE SYSTEM: SUPPLIED ARE MAPPING GRID OF AUSTRALIAN (AHD), ZONE 56 BASED ON THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION AND THE GEODETIC DATUM OF AUSTRALIA 1991.
HORIZONTAL DATUM DERIVED FROM PM 61308
LEVELS SUPPLIED ARE ON THE AUSTRALIAN HEIGHT DATUM (AHD).
LEVEL DATUM DERIVED FROM PM 61308 RL54.660 (AHD)



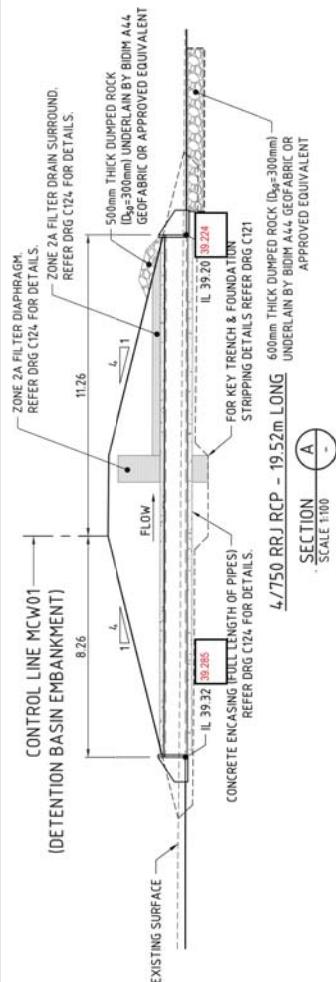
AS CONSTRUCTED

[illegible]

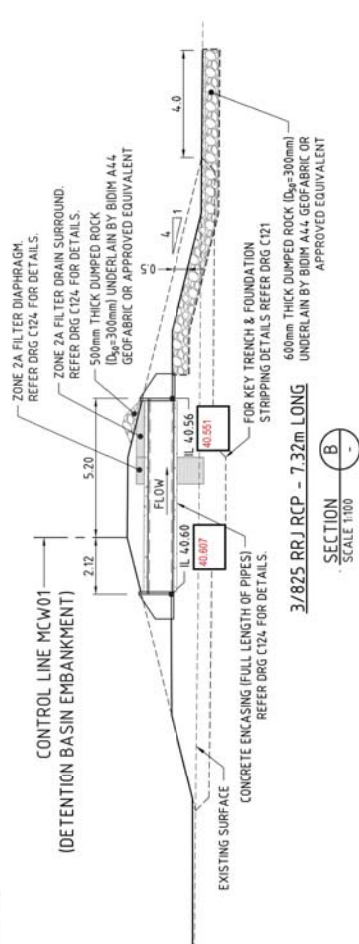
RPEQ (signature) RPEQ No. 20884 Date: 10.12.2018



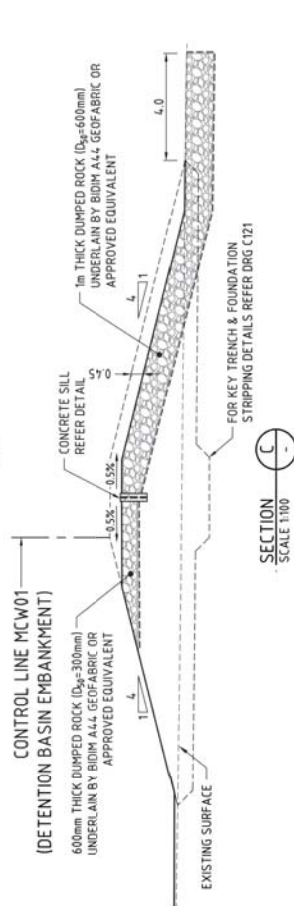
CONCRETE SILL DETAIL
SCALE 1:20



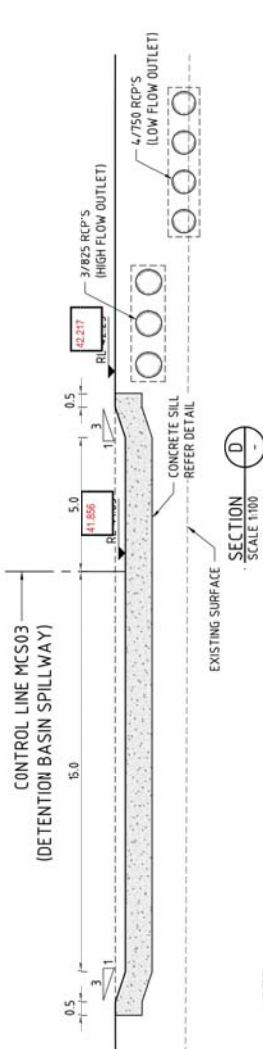
SECTION
SCALE 1:100



SECTION
SCALE 1:100



SECTION
SCALE 1:100



SECTION
SCALE 1:100

NOTE:

1. FOR GENERAL NOTES REFER DRG C002.
2. FOR LEGEND REFER DRG C100.
3. FOR SETOUT REFER DRG C141 TO C155.

AS CONSTRUCTED



ENGENY

FOR CONSTRUCTION

DESIGNED	TH	CHECKED	DS
DRAWN	MT	CHECKED	DS
APPROVED	DS	DATE	23.02.18

MIRVAC

EVERLEIGH PRECINCT 1 - DETENTION & BIORETENTION
DETAIL PLAN - DETENTION BASIN OUTLET

A1	Org. No. M43000-010-C102
----	-----------------------------

DETAIL PLAN - DETENTION BASIN OUTLET

SCALE 1:100

[illegible]

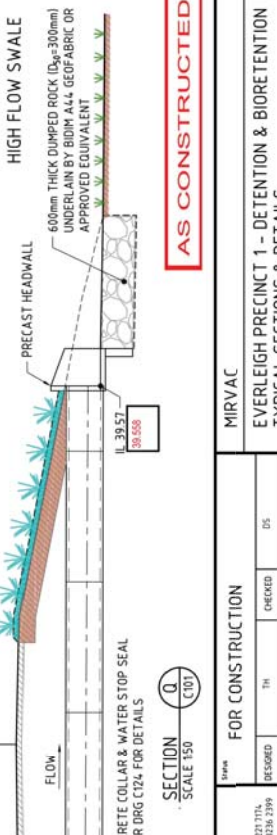
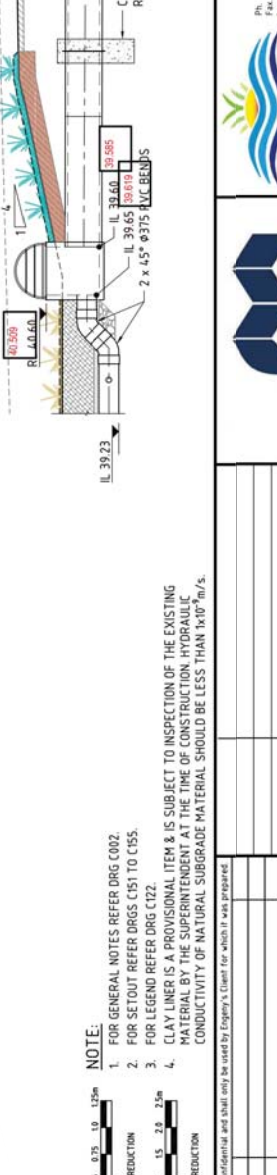
This drawing is confidential and shall only be used by Enogen's Client for which it was prepared

[illegible][illegible][illegible][illegible]

1	DAM	8.12.16	AS CONSTRUCTED	
---	-----	---------	----------------	--

[illegible]

No.	BY	DATE	REVISION	APPD
-----	----	------	----------	------



AS CONSTRUCTED

[illegible]