

REF: 3182G-001

24th March 2017

Vassallo Constructions Pty Ltd

PO Box 8158

Mt Pleasant QLD 4740

Attention: **Mr Bob Bradley** | Senior Estimator

RE: Woodlands stages 7 & 8 Level 1 Supervision

Dear Bob,

Supervision of the earthworks for the proposed site was carried out between 2nd October 2016 and 31st January 2017. Pargroup completed the following during the project:

- Reviewed and accepted the earthwork notes as indicated on the supplied drawings No.12121-CO00, C002, C011, C012, C020, C030, C031 prepared by Bornhorst & Ward Pty Ltd;
- Inspected, tested and proof-rolled subgrade areas prior to placement of Engineered Fill;
- Carried out and reviewed Compaction testing results;
- Completed and reviewed daily site visit records.

We are satisfied that the earthworks carried out were in accordance with the requirements of A.S. 3798 – 2007 “Guidelines on Earthworks for Commercial Residential Developments” and also comply with the nominated specified materials’ quality and compaction level for the project.

Based on the observations carried out during our supervision, inspections and review of test results during the course of the project, we conclude that the earthworks for the project achieved the adequate stability, and all cut and fill operations have been carried out in accordance with AS3798, and any unsuitable material encountered has been replaced with suitable replacement material. This certification includes cut and fill batters, the material quality and compaction of this fill material only and not include any other requirement for the project.

Prior to construction activities on the above building pads, it is recommended that footings are designed in accordance with A.S. 2870 – 1996 “Residential Slabs & Footings – Construction”. Please note that footings design and construction involves a number of steps; site classification, selection of a footing system, structural design, construction in accordance with the required design details and construction methods, and proper maintenance. The owner has a responsibility to ensure that the sites are properly maintained.



PARGROUP GEOTECHNICAL SERVICES PTY LTD
LEVEL 36, 71 EAGLE ST
BRISBANE, QLD 4000 AUSTRALIA
PH: 07)3121 3250

UNIT 12, 30 MARGARET VELLA DRIVE, PAGET
MACKAY QLD 4740
PH: (07) 4968 0777, FAX: (07) 49680770
EMAIL: reception@pargroup.com.au

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Frank Parrotta', written in a cursive style.

Frank Parrotta
Director, B.Eng RPEQ 4932



EMBANKMENT FILL (EM)

Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Not less than 80% and not more than 100% of Optimum Moisture Content
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Embankment fill within 300mm of subgrade to be not As specified
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut.
				Trim batters neatly to shapes specified

EARTHWORKS NOTES

1. NOMINATING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWING IS THE RESPONSIBILITY OF THE SUPERINTENDENT. THE SUPERINTENDENT AT THE PRE-START MEETING, ALTERATIONS TO THE EARTHWORKS MAY BE INSTRUCTED BY THE SUPERINTENDENT DURING CONSTRUCTION. FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY THE SUPERINTENDENT DURING CONSTRUCTION.
2. REFER TO THE SPECIFICATION FOR COMPACTION DETAILS. ALL FILL MATERIALS WILL BE PLACED IN ACCORDANCE WITH THE APPROVED SPECIFICATION.
3. NOMINATED SITE FILLING SHALL BE LOCATED ON SITE AS DIRECTED BY THE SUPERINTENDENT.
4. ALL SITE PREPARATION SHALL BE CARRIED OUT IN ACCORDANCE WITH RESIDENTIAL DEVELOPMENT "EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENT".
5. WHERE UNSUITABLE MATERIAL IN AREAS TO BE FILLED IS ENCOUNTERED, THIS WILL BE TREATED AS SET OUT IN THE SPECIFICATION.
6. LIGHT TAMPING & TESTING IS TO BE CARRIED OUT ON THE SITE IN ACCORDANCE WITH AS 3798:2007 "REQUIREMENTS FOR EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENT". THE INSPECTION & TESTING AUTHORITY IS TO PROVIDE A COMPLIANCE CERTIFICATE & CARRIED OUT DURING THE BUILDING & TESTING.
7. THE TOTAL COST OF THE GEOTECHNICAL INSPECTION & TESTING AUTHORITY (GITA) FOR THE LEVEL 1 INSPECTION & TESTING IS TO BE INCLUDED IN THE LUMP SUM OF THE TENDER. THE GITA IS TO BE CARRIED OUT DURING THE BUILDING & TESTING.
8. UNLESS NOTED OTHERWISE, THE FREQUENCY OF TESTING IS TO BE IN ACCORDANCE WITH TABLE 6.1 OF AS 3798:2007.
9. THE CONTRACTOR IS TO COMPLY WITH ALL REGULATIONS CONCERNING THE REMOVAL OF WASTING STONES, FENCING OR SECURITY & EMISSIONS FROM HIS SITE.
10. FILL BATTER SLOPES ARE TO BE OVERLAPPED & TRIMMED BACK TO PROFILE.
11. ALL VEHICLES TRAILING FROM THE SITE WILL DO SO VIA THE TEMPORARY DRIVEWAY. ALL WASTE MATERIAL FROM TEMPORARY VEHICLES WILL BE COLLECTED & TREATED AS TO REGIONAL PUBLIC ROADS, REFER EROSION & SEDIMENT CONTROL DRAWINGS FOR FURTHER DETAILS.

LEGEND

EXISTING	PROPOSED
M/S MONUMENTAL KERB AND CHANNEL	M/S MONUMENTAL KERB AND CHANNEL
M/S CARPARK KERB	M/S CARPARK KERB
M/S DISH DRAIN	M/S DISH DRAIN
M/S FAC FLUSH KERB	M/S FAC FLUSH KERB
PROPERTY BOUNDARY	PROPERTY BOUNDARY
EASEMENT	EASEMENT
DRIVEWAY	DRIVEWAY
STORMWATER DRAINAGE	STORMWATER DRAINAGE
OPEN CHANNEL	OPEN CHANNEL
TOP OF WATER	TOP OF WATER
BATTER	BATTER
CONTOURS	CONTOURS
FENCE	FENCE
SEWER	SEWER
RISING MAIN	RISING MAIN
WATER	WATER
TESTRA	TESTRA
FOOTPATH	FOOTPATH
STAGE BOUNDARY	STAGE BOUNDARY
TREE	TREE
TREE TO BE REMOVED	TREE TO BE REMOVED
EARTHWORKS LEVEL	EARTHWORKS LEVEL
CUT	CUT
FILL	FILL
PALM TREE CLUMP	PALM TREE CLUMP

NOTE:
ALL EXISTING UNCOMPACTED FILL ON SITE BELOW DESIGN SURFACE TO BE EXCAVATED AND COMPACTED.

PROJECT MARK

UNRELEASED
UNLOADED
UNREVISIONED

SCALE: 1:500 / 1:1000

1 0 25 50 100 1.25m

1:25 / 1:50

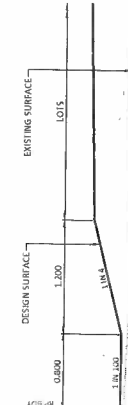
FOR CONSTRUCTION

PROJECT: ANDERGROVE, MACKAY
STAGE 8

PROJECT No: 12121D

FORMWORKS: E

COLL: C011



NO.	DATE	DESCRIPTION	BY	CHECKED	DATE
1	28/05/2013	ISSUE FOR CONSTRUCTION	NICK ROZIS	J. TAYLOR	28/05/2013
2	14/06/14	ISSUE FOR APPROVAL	NICK ROZIS	J. TAYLOR	14/06/14
3	14/06/14	FOR THE COMPLETION	NICK ROZIS	J. TAYLOR	14/06/14
4	28/05/13	ISSUE FOR CONSTRUCTION	NICK ROZIS	J. TAYLOR	28/05/13

BORNHORST + WARD CONSULTING ENGINEERS
CIVIL AND STRUCTURAL
Level 10, 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

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD	Report Number: 16S-0906
Address: PO Box 8158, Mt Pleasant, QLD 4870	Report Date: 9/08/2016
Job Number : 3182 G	Test Request Number: -
Project : Woodlands Stage 7 & 8 Level 1	Test Method: AS1289.5.8.1
Location : Lot 1 - Dam Fill	

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Lab No :	16S-0906	16S-0908	16S-0910	16S-0912
ID No :	1	2	3	4
Lot No :	EM001	EM001	EM001	EM001
Time Tested :	11:52	11:59	14:37	14:46
Date Tested :	5/08/2016	5/08/2016	5/08/2016	5/08/2016
Material Source :	Onsite Select Material	Onsite Select Material	Onsite Select Material	Onsite Select Material
For Use As :	General Fill	General Fill	General Fill	General Fill
Sample Location :	Location 3 Fill Above Dam Woodlands	Location 4 Fill Above Dam Woodlands	Location 5 Fill Above Dam Woodlands	Location 6 Fill Above Dam Woodlands
Test/Layer Depth (mm)	300 / 300+	300 / 300+	300 / 300+	300 / 300+
Max Size (mm) :	19.0	19.0	19.0	19.0
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :	0	0	0	0
Field Moisture (%) :	10.0	9.5	11.0	12.0
MDR No :	16S-0915	16S-917	16S-0919	16S-0921
Assigned MDR :	No	No	No	No
Field Dry Density (t/m ³)	1.94	2.01	1.98	1.97
DD (t/m ³) Completed:	8/08/2016	8/08/2016	8/08/2016	8/08/2016
DD (t/m ³) :	1.96	1.99	1.95	1.97
Adjusted MDD (t/m ³) :	1.96	1.99	1.95	1.97
OMC (%) :	10.5	10.0	10.5	10.0
Adjusted OMC (%) :	10.5	10.0	10.5	10.0
Variation from OMC	0.5% (Dry)	0.5% (Dry)	0.5% (Wet)	2.0% (Wet)
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	AS1289.5.1.1	AS1289.5.1.1
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
MC Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Compactive Effort :	Standard	Standard	Standard	Standard
Moisture Ratio (%) :	97.0	93.0	107.0	121.0
Dry Density Ratio (%) :	99.0	101.5	101.5	100.0
Min Dry Dens Ratio (%)	97	97	97	97
Soil Discription :	Onsite Select Fill	Onsite Select Fill	Onsite Select Fill	Onsite Select Fill

NATA

WORLD RECOGNISED
ACCREDITATION

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APPROVED SIGNATORY



Michael Smoothy
NATA Accred. No. 19400

FORM NUMBER



PARR055

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD	Report Number: 16S-0902
Address: PO Box 8158, Mt Pleasant, QLD 4870	Report Date: 9/08/2016
Job Number : 3182 G	Test Request Number: -
Project : Woodlands Stage 7 & 8 Level 1	Test Method: AS1289.5.8.1
Location : Lot 1 - Dam Fill	

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Lab No :	16S-0902	16S-0904	
ID No :	1	2	
Lot No :	EM001	EM001	
Time Tested :	4:57pm	5:15pm	
Date Tested :	4/08/2016	4/08/2016	
Material Source :	Onsite Select Material	Onsite Select Material	
For Use As :	General Fill	General Fill	
Sample Location :	Location 1 Dam Fill Woodlands -	Location 2 Dam Fill Woodlands -	
Test/Layer Depth (mm)	300 / 300+	300 / 300+	
Max Size (mm) :	19.0	19.0	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :	0	0	
Field Moisture (%) :	9.0	9.0	
MDR No :	16S-0903	16S-0905	
Assigned MDR :	No	No	
Field Dry Density (t/m ³)	1.99	2.02	
Field Dry Density (t/m ³) Completed:	4/08/2016	5/08/2016	
MDD (t/m ³) :	1.97	1.96	
Adjusted MDD (t/m ³) :	1.97	1.96	
OMC (%) :	10.5	9.5	
Adjusted OMC (%) :	10.5	9.5	
Variation from OMC	1.5% (Dry)	0.5% (Dry)	
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
MC Method :	AS1289.2.1.1	AS1289.2.1.1	
Compactive Effort :	Standard	Standard	
Moisture Ratio (%) :	83.5	96.0	
Dry Density Ratio (%) :	101.0	103.5	
Min Dry Dens Ratio (%)	97	97	
Soil Discription :	Onsite Select Fill	Onsite Select Fill	

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EMBANKMENT FILL (EM)



Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Not less than 80% and not more than 100% of Optimum Moisture Content
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Embankment fill within 300mm of subgrade to be not As specified
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut. Trim batters neatly to shapes specified

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD	Report Number: 16S-0914
Address: PO Box 8158, Mt Pleasant, QLD 4870	Report Date: 9/08/2016
Job Number : 3182 G	Test Request Number: -
Project : Woodlands Stage 7 & 8 Level 1	Test Method: AS1289.5.8.1
Location : Lot 1 - Fill Above Dam	

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Lab No :	16S-0914	16S-0916	16S-0918	16S-0920
ID No :	1	2	3	4
Lot No :	EM002	EM002	EM002	EM002
Time Tested :	10:12	10:19	14:50	14:59
Date Tested :	8/08/2016	8/08/2016	8/08/2016	8/08/2016
Material Source :	Onsite Select Material	Onsite Select Material	Onsite Select Material	Onsite Select Material
For Use As :	General Fill	General Fill	General Fill	General Fill
Sample Location :	Location 1 Fill Above Dam Woodlands	Location 2 Fill Above Dam Woodlands	Location 3 Fill Above Dam Woodlands	Location 4 Fill Above Dam Woodlands
Test/Layer Depth (mm)	300 / 300+	300 / 300+	300 / 300+	300 / 300+
Max Size (mm) :	19.0	19.0	19.0	19.0
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :	0	0	0	0
Field Moisture (%) :	9.5	10.5	10.0	11.5
MDR No :	16S-0915	16S-917	16S-0919	16S-0921
Assigned MDR :	No	No	No	No
Field Dry Density (t/m ³)	1.95	2.00	2.00	1.98
MDD (t/m ³) Completed:	8/08/2016	8/08/2016	8/08/2016	8/08/2016
DD (t/m ³) :	1.95	1.96	1.97	1.95
Adjusted MDD (t/m ³) :	1.95	1.96	1.97	1.95
OMC (%) :	10.5	9.5	11.5	10.5
Adjusted OMC (%) :	10.5	9.5	11.5	10.5
Variation from OMC	1.0% (Dry)	1.0% (Wet)	1.5% (Dry)	1.0% (Wet)
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	AS1289.5.1.1	AS1289.5.1.1
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
MC Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Compactive Effort :	Standard	Standard	Standard	Standard
Moisture Ratio (%) :	93.0	107.0	87.0	110.0
Dry Density Ratio (%) :	100.5	102.0	101.5	101.5
Min Dry Dens Ratio (%)	97	97	97	97
Soil Discription :	Onsite Select Fill	Onsite Select Fill	Onsite Select Fill	Onsite Select Fill

 <p>NATA WORLD RECOGNISED ACCREDITATION</p> <p>Accredited for compliance with ISO/IEC 17025. This test report shall not be reproduced except in full, without written approval of the laboratory.</p>	<p>APPROVED SIGNATORY</p>  <p>Michael Smoothy NATA Accred. No. 19400</p>	<p>FORM NUMBER</p> <p>PARROSS</p>
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Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD Address: PO Box 8158, Mt Pleasant, QLD 4870 Job Number : 3182 G Project : Woodlands Stage 7 & 8 Level 1 Location : Lot 2 - Select Fill	Report Number: 16S-0942 Report Date: 12/08/2016 Test Request Number: - Test Method: AS1289.5.8.1
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Lab No :	16S-0942	16S-0944	
ID No :	1	2	
Lot No :	EM003	EM003	
Time Tested :	7:29	7:38	
Date Tested :	11/08/2016	11/08/2016	
Material Source :	Onsite Select Material	Onsite Select Material	
For Use As :	General Fill	General Fill	
Sample Location :	Location 3 Stage 8 Woodlands	Location 4 Stage 8 Woodlands	
Test/Layer Depth (mm)	300 / 300+	300 / 300+	
Max Size (mm) :	19.0	19.0	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :	0	0	
Field Moisture (%) :	9.5	10.5	
MDR No :	16S-0943	16S-945	
Assigned MDR :	No	No	
Field Dry Density (t/m ³)	2.04	2.03	
MDD (t/m ³) Completed:	11/08/2016	11/08/2016	
(t/m ³) :	1.99	1.98	
Adjusted MDD (t/m ³) :	1.99	1.97	
OMC (%) :	10.0	11.0	
Adjusted OMC (%) :	10.0	11.0	
Variation from OMC	0.5% (Dry)	0.5% (Dry)	
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
MC Method :	AS1289.2.1.1	AS1289.2.1.1	
Compactive Effort :	Standard	Standard	
Moisture Ratio (%) :	93.5	97.0	
Dry Density Ratio (%) :	102.5	103.0	
Min Dry Dens Ratio (%)	97	97	
Soil Discription :	Onsite Select Fill	Onsite Select Fill	



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APPROVED SIGNATORY



Michael Smoothy
NATA Accred. No. 19400

FORM NUMBER

PARR055

EMBANKMENT FILL (EM)

Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area Place fill in uniform layers	Visual inspection Visual inspection and measurement	Whole area Every layer	Even compact surface Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm
	Fill to be compacted	Field density test	Every 500m ³	Not less than 80% and not more than 100% of Optimum Moisture Content
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
<i>Stepping of ground surface</i>	Steps cut	Visual	Continuous	Embankment fill within 300mm of subgrade to be not As specified
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut. Trim batters neatly to shapes specified

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD Address: PO Box 8158, Mt Pleasant, QLD 4870 Job Number : 3182 G Project : Woodlands Stage 7 & 8 Level 1 Location : Select Fill	Report Number: 16S-1012 Report Date: 19/08/2016 Test Request Number: - Test Method: AS1289.5.8.1
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Page 1 of 1

Lab No :	16S-1012	16S-1014		
ID No :	1	2		
Lot No :	EM004	EM004		
Time Tested :	7:12	7:22		
Date Tested :	17/08/2016	17/08/2016		
Material Source :	Onsite Select Material	Onsite Select Material		
For Use As :	General Fill	General Fill		
Sample Location :	Location 1 Stage 8 Woodlands -	Location 2 Stage 8 Woodlands -		
Test/Layer Depth (mm)	300 / 300+	300 / 300+		
Max Size (mm) :	19.0	19.0		
Oversize Wet (%) :	0	0		
Oversize Dry (%) :	0	0		
Field Moisture (%) :	14.0	13.5		
MDR No :	16S-1013	16S-1015		
Assigned MDR :	No	No		
Field Dry Density (t/m ³)	1.86	1.88		
MDD (t/m ³) Completed:	17/08/2016	18/08/2016		
MDD (t/m ³) :	1.88	1.88		
Adjusted MDD (t/m ³) :	1.87	1.88		
OMC (%) :	13.5	12.5		
Adjusted OMC (%) :	13.5	12.5		
Variation from OMC	0.5% (Wet)	1.0% (Wet)		
MDR Method :	AS1289.5.1.1	AS1289.5.1.1		
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1		
MC Method :	AS1289.2.1.1	AS1289.2.1.1		
Compactive Effort :	Standard	Standard		
Moisture Ratio (%) :	100.5	104.0		
Dry Density Ratio (%) :	99.0	100.0		
Min Dry Dens Ratio (%)	97	97		
Soil Discription :	Onsite Select Fill	Onsite Select Fill		



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FORM NUMBER

PARR055

Dry Density Ratio Report

Client :	Vassallo Constructions PTY LTD	Report Number:	16S-0980
Address:	PO Box 8158, Mt Pleasant, QLD 4670	Report Date:	17/08/2016
Job Number :	3182 G	Test Request Number:	-
Project :	Woodlands Stage 7 & 8 Level 1	Test Method:	AS1289.5.8.1
Location :	Select Fill		

Page 1 of 1

Lab No :	16S-0980		
ID No :	1		
Lot No :	EM004		
Time Tested :	7:25		
Date Tested :	15/08/2016		
Material Source :	Onsite Select Material		
For Use As :	General Fill		
Sample Location :	Location 5 Stage 8 Woodlands		
Test/Layer Depth (mm)	300 / 300+		
Max Size (mm) :	19.0		
Oversize Wet (%) :	0		
Oversize Dry (%) :	0		
Field Moisture (%) :	7.5		
MDR No :	16S-0981		
Assigned MDR :	No		
Field Dry Density (t/m ³)	2.02		
MDD (t/m ³) Completed:	15/08/2016		
(t/m ³) :	1.99		
Adjusted MDD (t/m ³) :	1.99		
OMC (%) :	13.5		
Adjusted OMC (%) :	13.5		
Variation from OMC	6.0% (Dry)		
MDR Method :	AS1289.5.1.1		
Field Density Method :	AS1289.5.8.1		
MC Method :	AS1289.2.1.1		
Compactive Effort :	Standard		
Moisture Ratio (%) :	56.5		
Dry Density Ratio (%) :	101.5		
Min Dry Dens Ratio (%)	97		
Soil Discription :	Onsite Select Fill		



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FORM NUMBER

PARR055

EMBANKMENT FILL (EM)



Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Not less than 80% and not more than 100% of Optimum Moisture Content
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Embankment fill within 300mm of subgrade to be not As specified
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut.
				Trim batters neatly to shapes specified

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD Address: PO Box 8158, Mt Pleasant, QLD 4870 Job Number : 3182 G Project : Woodlands Estate Stage 8 - Level 1 Location : Stage 8	Report Number: 16S-1135 Report Date: 9/09/2016 Test Request Number: - Test Method: AS1289.5.8.1
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Page 1 of 1

Lab No :	16S-1135	16S-1137	
ID No :	1	2	
Lot No :	EM005	EM005	
Time Tested :	7:26	7:49	
Tested :	6/09/2016	6/09/2016	
Material Source :	Insitu Material	Insitu Material	
For Use As :	Select Fill	Select Fill	
Sample Location :	Woodlands Estate N -21.085864 E 149.179467 Stage 8	Woodlands Estate N -21.08564 E 149.179463 Stage 8	
Test/Layer Depth (mm)	300 / 300+	300 / 300+	
Max Size (mm) :	19.0	19.0	
Oversize Wet (%) :	10	10	
Oversize Dry (%) :	10	10	
Field Moisture (%) :	8.0	9.5	
MDR No :	16S-1136	16S-1138	
Assigned MDR :	No	No	
Field Dry Density (t/m ³)	1.94	1.88	
Field Dry Density (t/m ³) Completed:	7/09/2016	7/09/2016	
Field Dry Density (t/m ³) :	1.91	1.82	
Adjusted MDD (t/m ³) :	2.00	1.91	
OMC (%) :	11.0	12.0	
Adjusted OMC (%) :	10.0	10.5	
Variation from OMC	2.0% (Dry)	1.0% (Dry)	
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
MC Method :	AS1289.2.1.1	AS1289.2.1.1	
Compactive Effort :	Standard	Standard	
Moisture Ratio (%) :	82.5	92.0	
Dry Density Ratio (%) :	97.0	98.5	
Min Dry Dens Ratio (%)	97	97	
Soil Discription :	Clayey Gravel	Clayey Gravel	

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EMBANKMENT FILL (EM)

Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm Not less than 80% and not more than 100% of Optimum Moisture Content
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill within 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut.
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Trim batters neatly to shapes specified

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD Address: PO Box 8158, Mt Pleasant, QLD 4870 Job Number : 3182 G Project : Woodlands Estate Level 1 Location : Stage 8	Report Number: 16S-1213 Report Date: 22/09/2016 Test Request Number: - Test Method: AS1289.5.8.1
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Page 1 of 1

Lab No :	16S-1213	16S-1215	
ID No :	1	2	
Lot No :	EM006	EM006	
Time Tested :	7:14	7:28	
Tested :	20/09/2016	20/09/2016	
Material Source :	Imported Fill	Imported Fill	
For Use As :	Fill	Fill	
Sample Location :	Woodlands Estate N -21.085863 E 149.179773 Stage 8	Woodlands Estate N -21.086033 E 149.179514 Stage 8	
Test/Layer Depth (mm)	300 / 300+	300 / 300+	
Max Size (mm) :	19.0	19.0	
Oversize Wet (%) :	17	19	
Oversize Dry (%) :	18	21	
Field Moisture (%) :	8.5	8.5	
MDR No :	16S-1214	16S-1216	
Assigned MDR :	No	No	
Field Dry Density (t/m ³)	1.97	1.99	
MDR (t/m ³) Completed:	21/09/2016	21/09/2016	
(t/m ³) :	1.95	2.00	
Adjusted MDD (t/m ³) :	2.01	2.06	
OMC (%) :	14.0	11.5	
Adjusted OMC (%) :	11.5	9.5	
Variation from OMC	3.0% (Dry)	1.0% (Dry)	
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
MC Method :	AS1289.2.1.1	AS1289.2.1.1	
Compactive Effort :	Standard	Standard	
Moisture Ratio (%) :	74.0	90.0	
Dry Density Ratio (%) :	98.5	97.0	
Min Dry Dens Ratio (%)	97	97	
Soil Discription :	Clayey Gravel	Clayey Gravel	



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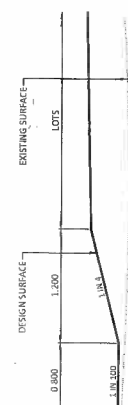
Michael Smoothy
 NATA Accred. No. 19400

FORM NUMBER

PARR055

EARTHWORKS NOTES

- NOTWITHSTANDING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT AT THE PRE-START MEETING. ALTERATIONS TO THE DRAWINGS SHALL BE MADE BY THE SUPERINTENDENT DURING CONSTRUCTION. FILLING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION.
- REFER TO THE SPECIFICATION FOR COMPACTION DETAILS. ALL FILL SHALL BE PLACED IN ACCORDANCE WITH THE APPROVED SPECIFICATION.
- EXCAVATED MATERIAL (NOT REQUIRED FOR ROADWORKS OR NOMINATED SITE FILLING) SHALL BE LOCATED ON SITE AS DIRECTED BY THE SUPERINTENDENT. FILLING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 3798:2007, "GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENTS".
- WHERE UNSUITABLE MATERIAL IN AREAS TO BE FILLED IS IDENTIFIED, THIS WILL BE TREATED AS SET OUT IN THE SPECIFICATION.
- LEVEL 1 INSPECTION & TESTING IS TO BE IMPLEMENTED ON THE SITE IN ACCORDANCE WITH AS 3798:2007 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENTS". THE INSPECTION & TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE WRITTEN DIRECTION OF THE SUPERINTENDENT. SAMPLING & TESTING SHALL BE CARRIED OUT DURING THE BULK EARTHWORKS.
- THE TOTAL COST OF THE GEOTECHNICAL INSPECTION & TESTING AUTHORITY (GTA) FOR THE LEVEL 1 INSPECTION & TESTING IS TO BE MAINTAINED ON THE RECORD SHEETS AS SET OUT IN AS 3798:2007.
- UNLESS NOTED OTHERWISE, THE FREQUENCY OF TESTING IS TO BE IN ACCORDANCE WITH TABLE 8.1 OF AS 3798:2007.
- WORKING METHODS, INCLUDING DUST, WATER, SILT, NOISE & SHOCK, FROM THE SITE INCLUDING DUST, WATER, SILT, NOISE & SHOCK, WORKING METHODS, WARNINGS SIGNS, FENCING OR SECURITY & EMISSIONS FROM THE SITE SHALL BE TREATED AS SET OUT IN THE SPECIFICATION.
- ALL BATTERS SHALL BE TO BE OVERFILLED & FINISHED BACK TO ORIGINAL GRADE.
- PROTECT ALL EXISTING UTILITIES FROM THE SITE. ALL EXISTING UTILITIES CONCERNING CONSTRUCTION ENTRY/EXIT, SEDIMENT TRAP, VEHICLES WILL BE CLEANED & TREATED AS TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ON THE ADJOINING PUBLIC ROADS. REFER EROSION & SEDIMENT CONTROL DRAWINGS FOR FURTHER DETAILS.



TYPICAL SWALE SECTION
SCALE B



PLAN
SCALE A

LEGEND

EXISTING	PROPOSED
MFC NON-VARIABLE KERB AND CHANNEL	MFC NON-VARIABLE KERB AND CHANNEL
MFC CARPARK KERB	MFC CARPARK KERB
MFC DISH DRAIN	MFC DISH DRAIN
IPWEAVE FLUSH KERB	IPWEAVE FLUSH KERB
PROPERTY BOUNDARY	PROPERTY BOUNDARY
EASEMENT	EASEMENT
DRIVEWAY	DRIVEWAY
STORMWATER DRAINAGE	STORMWATER DRAINAGE
OPEN CHANNEL	OPEN CHANNEL
BATTER	BATTER
CONTOURS	CONTOURS
FENCE	FENCE
SEWER	SEWER
RISING MAIN	RISING MAIN
WATER	WATER
TELSTRA	TELSTRA
FOOTPATH	FOOTPATH
STAGE BOUNDARY	STAGE BOUNDARY
TREE	TREE
TREE TO BE REMOVED	TREE TO BE REMOVED
EARTHWORKS LEVEL	EARTHWORKS LEVEL
CUT	CUT
FILL	FILL
PALM TREE CLUMP	PALM TREE CLUMP

NOTE:
ALL EXISTING UNCOMPACTED FILL ON SITE BELOW DESIGN SURFACE TO BE EXCAVATED AND COMPACTED.

FOR CONSTRUCTION

PROJECT NO. 12121D
SUBPROJECT: EARTHWORKS PLAN
REVISION: C011 E

SCALE: 1:25 / 1:50

UNRENDERED / REWORKED

DATE: 28/05/2013

NO.	REVISION	DATE	BY	CHKD.	APP'D.	DATE	DESCRIPTION
1	ISSUED FOR CONSTRUCTION	28/05/2013	NICK ROZIS	J. TAYLOR	NICK ROZIS	28/05/2013	ISSUED FOR CONSTRUCTION
2	ISSUED FOR CONSTRUCTION	28/05/2013	NICK ROZIS	J. TAYLOR	NICK ROZIS	28/05/2013	ISSUED FOR CONSTRUCTION
3	ISSUED FOR CONSTRUCTION	28/05/2013	NICK ROZIS	J. TAYLOR	NICK ROZIS	28/05/2013	ISSUED FOR CONSTRUCTION
4	ISSUED FOR CONSTRUCTION	28/05/2013	NICK ROZIS	J. TAYLOR	NICK ROZIS	28/05/2013	ISSUED FOR CONSTRUCTION
5	ISSUED FOR CONSTRUCTION	28/05/2013	NICK ROZIS	J. TAYLOR	NICK ROZIS	28/05/2013	ISSUED FOR CONSTRUCTION

ASSOCIATED CONSULTANTS

BORNHORST + WARD CONSULTING ENGINEERS
Civil and Structural
Level 4, 47 Acacia Avenue, Spring Hill, QLD 4000
Phone: (07) 3043 6633
Fax: (07) 3043 6633
Email: info@bornhorstward.com.au
www.bornhorstward.com.au

APPROVED
NICK ROZIS 728
DATE: 28/05/2013

CHECKED
J. TAYLOR
DATE: 28/05/2013



URBAN LAND DEVELOPMENT AUTHORITY
STAGE 8
ANDERGROVE, MACKAY

Dry Density Ratio Report

Client : Vassallo Constructions PTY LTD Address: PO Box 8158, Mt Pleasant, QLD 4870 Job Number : 3182 G Project : Woodlands Estate Level 1 Location : Stage 8	Report Number: 16S-1217 Report Date: 23/09/2016 Test Request Number: - Test Method: AS1289.5.8.1
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Page 1 of 1

Lab No :	16S-1217	16S-1219	
ID No :	1	2	
Lot No :	EM007	EM007	
Time Tested :	7:36	7:48	
Date Tested :	20/09/2016	20/09/2016	
Material Source :	Imported Fill	Imported Fill	
For Use As :	Fill	Fill	
Sample Location :	Woodlands Estate N -21.085839 E 149.179553 Stage 8	Woodlands Estate N -21.086097 E 149.179769 Stage 8	
Test/Layer Depth (mm)	300 / 300+	300 / 300+	
Max Size (mm) :	19.0	19.0	
Oversize Wet (%) :	18	17	
Oversize Dry (%) :	20	18	
Field Moisture (%) :	8.5	7.0	
MDR No :	16S-1218	16S-1220	
Assigned MDR :	No	No	
Field Dry Density (t/m ³)	1.96	1.92	
MDD (t/m ³) Completed:	21/09/2016	21/09/2016	
M (t/m ³) :	1.95	1.90	
Adjusted MDD (t/m ³) :	2.01	1.97	
OMC (%) :	12.0	13.5	
Adjusted OMC (%) :	10.0	11.0	
Variation from OMC	1.5% (Dry)	4.0% (Dry)	
MDR Method :	AS1289.5.1.1	AS1289.5.1.1	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
MC Method :	AS1289.2.1.1	AS1289.2.1.1	
Compactive Effort :	Standard	Standard	
Moisture Ratio (%) :	88.5	66.0	
Dry Density Ratio (%) :	97.0	97.5	
Min Dry Dens Ratio (%)	97	97	
Soil Discription :	Clayey Gravel	Clayey Gravel	

 WORLD RECOGNISED ACCREDITATION	Accredited for compliance with ISO/IEC 17025. This test report shall not be reproduced except in full, without written approval of the laboratory.	APPROVED SIGNATORY  Michael Smoothy NATA Accred. No. 19400	FORM NUMBER PARR055
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EMBANKMENT FILL (EM)

Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm. Not less than 80% and not more than 100% of Optimum Moisture Content
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Embankment fill within 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut.
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Trim batters neatly to shapes specified



LEGEND

- | | | |
|----------|----------|--------------------------------|
| EXISTING | PROPOSED | MRC MOUNTABLE KERB AND CHANNEL |
| --- | --- | MRC CARPARK KERB |
| --- | --- | MRC DISH DRAIN |
| --- | --- | IPWEAQ FLUSH KERB |
| --- | --- | PROPERTY BOUNDARY |
| --- | --- | EASEMENT |
| --- | --- | DRIVEWAY |
| --- | --- | STORMWATER DRAINAGE |
| --- | --- | OPEN CHANNEL |
| --- | --- | BATTER |
| --- | --- | CONTOURS |
| --- | --- | FENCE |
| --- | --- | SEWER |
| --- | --- | RISING MAIN |
| --- | --- | WATER |
| --- | --- | TELSTRA |
| --- | --- | FOOTPATH |
| --- | --- | STAGE BOUNDARY |
| --- | --- | TREE |
| --- | --- | TREE TO BE REMOVED |
| --- | --- | EARTHWORKS LEVEL |
| --- | --- | CUT |
| --- | --- | FILL |
| --- | --- | PALM TREE CLUMP |

NOTE:
 ALL EXISTING UNCOMPACTED FILL ON SITE BELOW DESIGN SURFACE TO BE EXCAVATED AND COMPACTED.

**COMPLETED
 STAGE BY OTHERS**

STAGE 8

EXISTING FOOTPATH IN NEW LOTS TO BE REMOVED

EXISTING KERB AND CHANNEL TO BE REMOVED AT NEW INTERSECTION

EXISTING KERB AND CHANNEL TO BE REMOVED AT NEW INTERSECTION

11 10 9 8

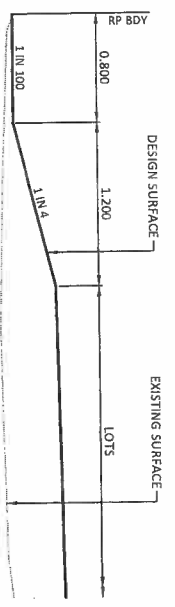
A B

EMBANKMENT FILL (EM)

Activity	Quality Check	Test Method	Test Frequency	Specified Quality
<i>Prepare sub grade</i>	Remove all vegetable matter from under fill area	Visual inspection	Whole area	Area free of vegetable matter
<i>Fill placement</i>	Level and compact fill area	Visual inspection	Whole area	Even compact surface
	Place fill in uniform layers	Visual inspection and measurement	Every layer	Minimum uncompacted depth 150mm
	Fill to be correct moisture content	Visual and moisture content test	Every 500m ³	Maximum uncompacted depth 300mm Not less than 80% and not more than 100% of Optimum Moisture Content
<i>Stepping of ground surface</i>	Fill to be compacted	Field density test	Every 500m ³	Embankment fill below 300mm of subgrade to be not As specified
	Fill to be compacted	Field density test	Every 500m ³	Embankment fill within 300mm of subgrade to be not As specified
	Steps cut	Visual	Continuous	Where ground surface is constructed on a transverse slope steeper than 1 on 8, a horizontal step not less than 300mm high shall be cut.
<i>Trim Batters</i>	Batters trimmed to specifications	Visual	Continuous	Trim batters neatly to shapes specified

EARTHWORKS NOTES

1. NOTWITHSTANDING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT AT THE PRE-SMART MEETING. ATTENTIONS TO THE EARTHWORKS MAY BE INSTRUCTED BY THE SUPERINTENDENT DURING CONSTRUCTION. FINISHED SURFACE COUNTAINS MAY BE ADJUSTED BY THE WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION.
2. REFER TO THE SPECIFICATION FOR COMPACTION DETAILS. ALL FILL MATERIALS WILL BE PLACED IN ACCORDANCE WITH THE APPROVED SPECIFICATION.
3. EXCAVATED MATERIAL NOT REQUIRED FOR ROADWORKS OR NOMINATED SITE FILLING SHALL BE LOCATED ON SITE AS DIRECTED BY THE SUPERINTENDENT.
4. ALL SITE PREPARATION SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3798-2007, "GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENTS".
5. WHERE UNSUITABLE MATERIAL IN AREAS TO BE FILLED IS ENCOUNTERED, THIS WILL BE TREATED AS SET OUT IN THE SPECIFICATION.
6. LEVEL 1 INSPECTION & TESTING IS TO BE IMPLEMENTED ON THE SITE IN ACCORDANCE WITH AS 3798-2007, "GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENTS". THE INSPECTION & TESTING AUTHORITY IS TO PROVIDE A COMPLIANCE CERTIFICATE & REPORT SETTING OUT THE INSPECTIONS, SAMPLING & TESTING CARRIED OUT DURING THE BULK EARTHWORKS.
7. THE TOTAL COST OF THE GEOTECHNICAL INSPECTION & TESTING AUTHORITY (GTA) FOR THE LEVEL 1 INSPECTION & TESTING IS TO BE INCLUDED IN THE LUMP SUM OF THE TENDER. THE GTA IS TO MAINTAIN DAILY SITE RECORD SHEETS AS SET OUT IN AS 3798-2007. UNLESS NOTED OTHERWISE, THE FREQUENCY OF TESTING IS TO BE IN ACCORDANCE WITH TABLE 8.1 OF AS 3798-2007.
8. THE CONTRACTOR IS TO COMPLY WITH ALL REGULATIONS CONCERNING WORK HOURS, WARNING SIGNS, FENCING ON SECURITY & EMISSIONS FROM THE SITE INCLUDING DUST, WATER, SILT, NOISE & SMOKE.
9. FILL BATTER SLOPES ARE TO BE OVERFILLED & TRIMMED BACK TO PROFILE.
10. ALL VEHICLES EXITING FROM THE SITE WILL DO SO VIA THE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP. VEHICLES WILL BE CLEANED & TREATED AS TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ON THE ADJOINING PUBLIC ROADS. REFER EROSION & SEDIMENT CONTROL DRAWINGS FOR FURTHER DETAILS.



TYPICAL SWALE SECTION
SCALE B

