

**TEST REPORT No. 15/02**

Page 1 of 5 pages

**REFERENCE:** PSP Ltd  
PO Box 101851  
NSMC  
Auckland 0754

Performance tests on cavity cladding façade mock-up for Mainfreight Building, Hamilton, in accordance with the method of AS/NZS 4284: 2008 Testing of Building Facades, excluding the deflection test.

ULS test pressures calculated by Mathew Paget of Aurecon New Zealand Limited

**DATE OF TEST:** 28 May - 17 June 2015**SUMMARY****Preliminary tests**

Preliminary static water penetration tests resulted in significant leakage around the bottom corners of the frame, and into the cavity space. Subsequent investigation showed the absence of end dams on the sill tray that formed part of the window sill.

Subsequent in-situ addition of end dams, and resealing of the window perimeter failed to fully prevent penetration into the cavity below the window corners. Subsequent investigation of the window design revealed that the window supplied was not designed for the face sealed installation method required for the cavity cladding used. The window was removed and modified with replacement glazing beads and sill tray with end dams before reinstallation and resealing. The full test was then commenced.

**Structural test at serviceability limit state wind pressure**

The façade mock-up was subjected to the serviceability test pressures of  $\pm 1750$  Pa, but without any deflection measurements being made. There were no problems observed.

**Water penetration test by static pressure**

With the exception of the meterbox, the façade mock-up complied with the specified test requirements at test pressures of 525 Pa. Following reconstruction and seal modifications, the window achieved the equivalent NZS 4211 water penetration performance at the specified positive serviceability pressure of 1750 Pa.

**Water penetration test by cyclic pressure**

With the exception of the meterbox, the façade mock-up complied with the specified test requirements.

**Structural test at ultimate limit state wind pressure**

Tested by...John Yolland (Deceased)

Checked by...John Burgess...

No structural damage or collapse was observed during the Ultimate Limit State Structural test, at the specified pressures of +2500 Pa, and -2500 Pa.

**DESCRIPTION:**

The test mock-up was specified by BSW Architects, and consisted of a timber frame structure incorporating Alpolic FR™ aluminium composite material (ACM) panels supplied by PSP Ltd and installed by CCS Manufacture and Installations Ltd. The ACM cladding is a 4mm thick pre-coated sheet product containing two 0.5 mm aluminium skins over a non-combustible mineral core. It is V routed and folded into panels with aluminium profile reinforcing on panels which exceed certain dimensions. The panels are screw fixed over packers to timber framing with silicon sealant over PEF rods in the inter-panel joints.

The timber framing was 140 x 45 mm single studs running full height of 3550 mm. Stud spacing was generally at 400 mm centers with nogs at approximately 800 mm centers. The rigid air barrier was simulated by 4.5mm clear polycarbonate sheet fixed over the framing with flashing tape over the joints.

The test sample included; a parapet, internal and external corners, simulated meterbox, scupper, soffit junctions, top and bottom plate and all window junctions.

The client representative (Alisa Bennett) has verified that the sample was a true representation of the system details attached in the appendix of this report.



Tested by...John Yolland (Deceased)

Checked by...John Burgess...

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### **SPECIFICATIONS:**

The following performance requirements were agreed with the clients for assessing performance :

Serviceability Wind Pressure	$\pm 1750$ Pa,
Water penetration by Static pressure;	+ 525 Pa
Water penetration by Cyclic pressures	up to + 525 to + 1050 Pa
Structural Test at Ultimate Limit State	$\pm 2500$ Pa

These exceeded the specifications for the Mainfreight Building, Hamilton façade contract which specified maximum serviceability pressures of +1300 Pa and -1200 Pa and the Ultimate Limit State pressures of +1900 Pa and -1800 Pa.

Tested by...John Yolland (Deceased)

Checked by...John Burgess...

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## TESTING

The tests were performed by John Yolland using the testing procedures of AS/NZS 4284:2008 Testing of Building Facades, in the IANZ accredited window test facility Facadelab Ltd, Rosedale Road, Albany, Auckland with representatives of the client in attendance.

During the preliminary water penetration tests, water penetration was evident through the sill area of the fixed window and into the cavity below the bottom corners of the window installation. This was addressed during the preliminary test phase.

The standard order of AS/NZS 4284 tests was undertaken except that the client elected not to measure the deflection during the serviceability structural test.

Following the unfortunate demise of John Yolland before the report could be completed, this test report was completed by John Burgess from worksheets, materials and evidence taken during the testing. The worksheets for the information reported in Appendix 1 could not be found, so this information has been taken outside of the formal test report.

Similarly, the drawings provided by the client are attached, however there is insufficient information available to confirm that these drawings represent the sample tested.

## TEST RESULTS:

### **PRELIMINARY TEST Static Pressure 28/5/15**

The façade mockup was exposed to the agreed Serviceability test pressures of  $\pm 1750$  Pa, for the specified 10 seconds.

### **PRELIMINARY TEST Water - Initial test, 28/5/15**

The façade mockup was exposed to the static water penetration test at the agreed test pressures of 525 Pa for 15 minutes. Significant water penetration was evident from the window installation. The test was stopped to allow investigation of the window installation.

### **PRELIMINARY TEST Static Pressure, 8/6/15**

The façade mockup was exposed to the agreed serviceability test pressures of  $\pm 1750$  Pa, for the specified 10 seconds, with no leakage evident.

### **PRELIMINARY TEST Water - Initial test 8/6/15**

The façade mockup was exposed to the static water penetration test at the agreed test pressures of 525 Pa and cyclic pressures of 525 – 1050 Pa. No water leakage evident.

### **STRUCTURAL TEST AT SERVICEABILITY LIMIT STATE 8/6/15**

The façade mock-up was subjected to the serviceability test pressures of  $\pm 1750$  Pa, but without any deflection measurements being made. There were no problems observed.

### **WATER PENETRATION TEST BY STATIC PRESSURE 10/6/15**

Tested by...John Yolland (Deceased)

Checked by...John Burgess...

During this test water leakage through the glazing seals of the window occurred and flowed into the cavity. On investigation the window glazing beads were found to be incorrect. The window glazing was remedied and reinstated. Testing resumed once sealants had cured.

**WATER PENETRATION TEST BY STATIC PRESSURE 17/6/15**

Due to the delay in resuming testing the serviceability pressures of  $\pm 1750$  Pa were reapplied before restarting the static water penetration test. The façade mock-up complied with the specified test requirements at test pressures of 525 Pa with the exception of the meterbox which was found to have leakage through the spot welds and was removed from the test.

**WATER PENETRATION TEST BY CYCLIC PRESSURE 17/6/15**

The façade mock-up complied with the specified test requirements.

**STRUCTURAL TEST AT ULTIMATE LIMIT STATE WIND PRESSURE 17/6/15**

No structural damage or collapse was observed during the Ultimate Limit State Structural test, at the specified pressures of +2500 Pa, and -2500 Pa.



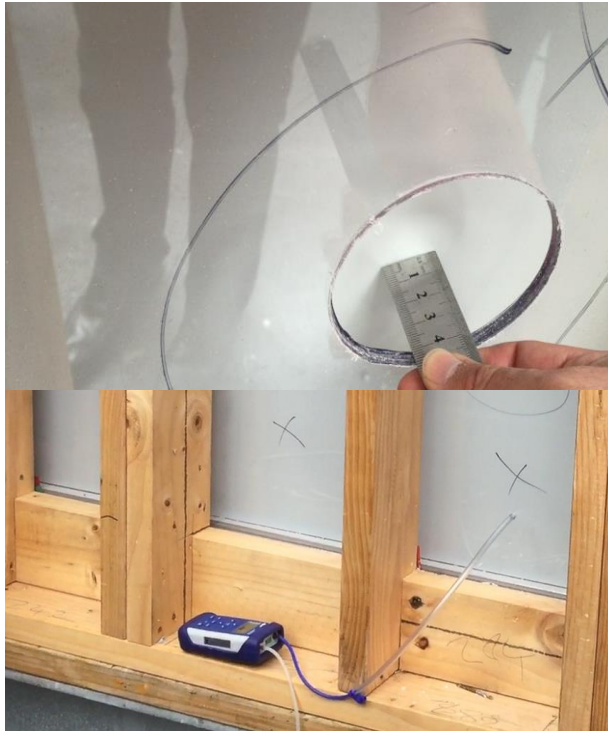
John Burgess  
IANZ accredited engineer  
July 2017

## APPENDIX 1

To confirm the panels were able to withstand the site specific wind loadings without permanent deformation or collapse, ULS pressures of +1900 Pa and -1800 Pa were applied across the panel. This was achieved by cutting holes of approximately 120 mm diameter in the rigid air barrier throughout the test sample. Pressure measurements were made on either side of the panels, in the booth and cavity to determine pressure differential. Pressure was maintained for several minutes during which time measurements were taken with a steel ruler to give an indication of panel deflection at the ULS. These were taken at three points approximately halfway between stiffener pairs, where maximum displacement was expected.

No damage or collapse was observed.

The panel was found to deflect by approximately 10 mm in either direction from a 50 mm base measurement.

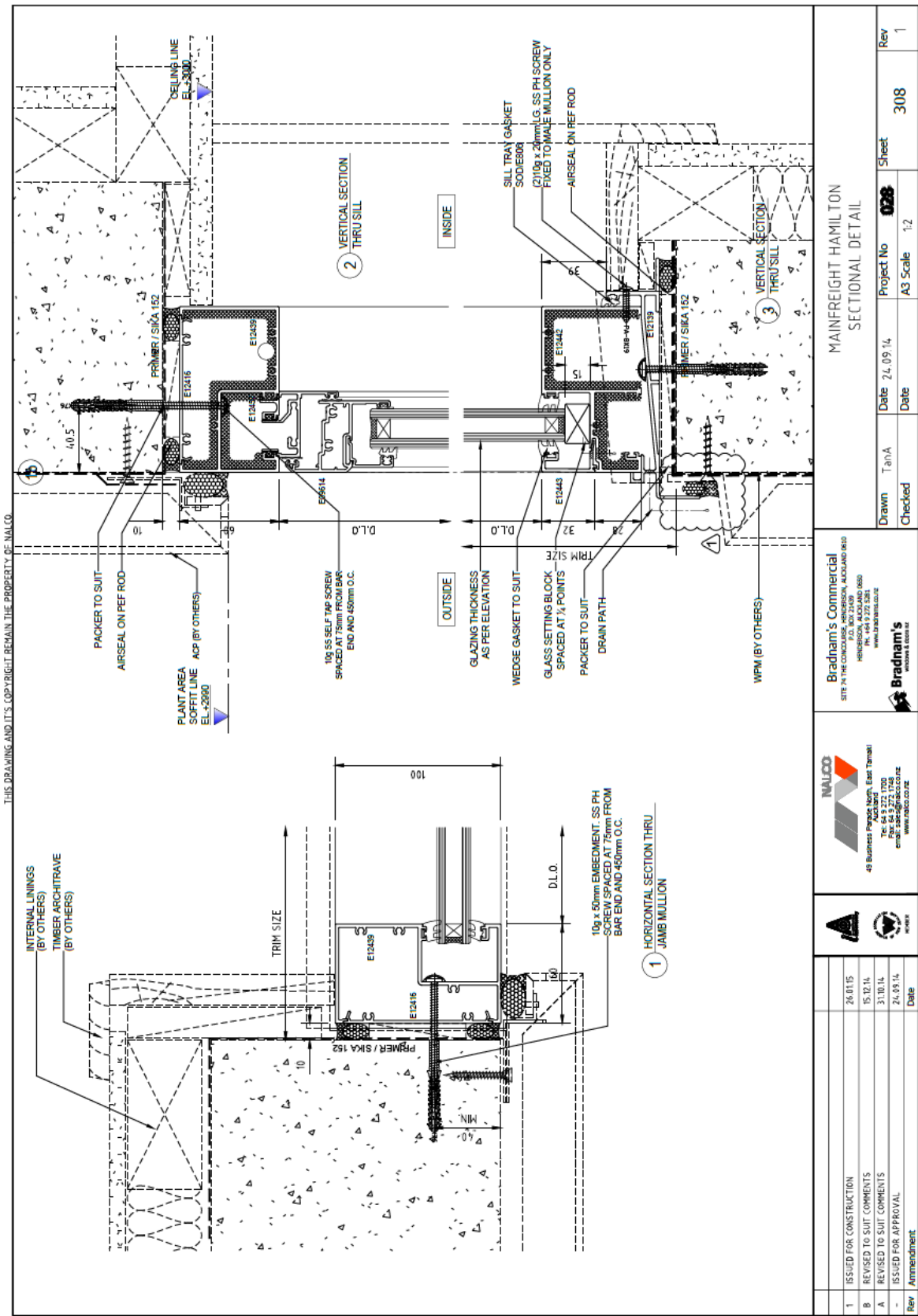


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Checked by...John Burgess...

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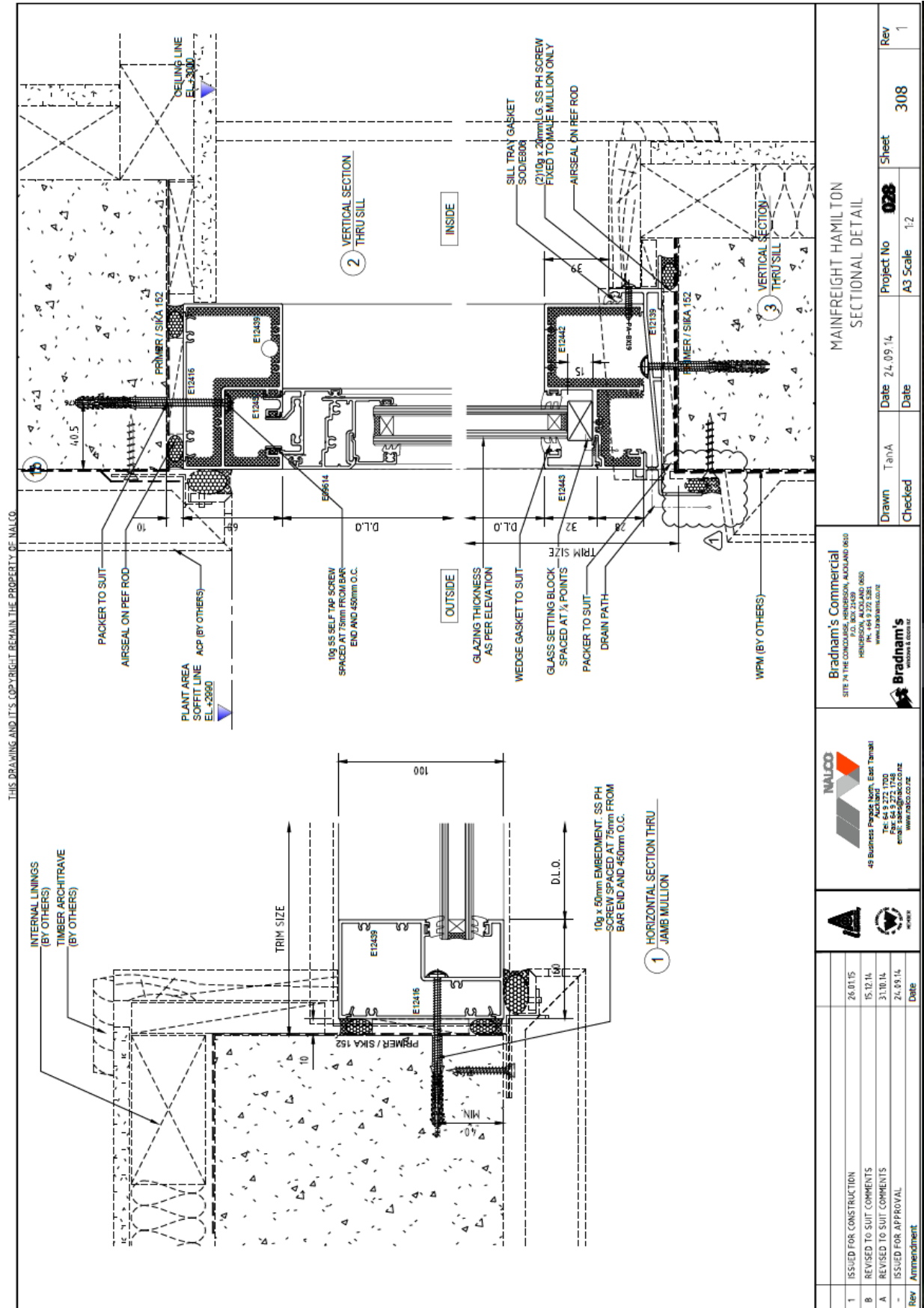
Drawings



<p>THIS DRAWING AND IT'S COPYRIGHT REMAIN THE PROPERTY OF MALCO</p>	
<p>INTERNAL LININGS (BY OTHERS) TIMBER ARCHITRAVE (BY OTHERS)</p>	<p>PACKER TO SUIT AIRSEAL ON REF ROD</p>
<p>PLANT AREA SOFFIT LINE ACP (BY OTHERS) EL. 2.280</p>	<p>CEILING LINE EL. 2.300</p>
<p>10g SELF TAP SCREW SPACED AT 75mm FROM BAR END AND 450mm O.C.</p>	<p>2 VERTICAL SECTION THRU SILL</p>
<p>GLAZING THICKNESS AS PER ELEVATION</p>	<p>INSIDE</p>
<p>WEDGE GASKET TO SUIT</p>	<p>OUTSIDE</p>
<p>GLASS SETTING BLOCK SPACED AT 1/4 POINTS</p>	<p>3 VERTICAL SECTION THRU SILL</p>
<p>PACKER TO SUIT DRAIN PATH</p>	<p>WPM (BY OTHERS)</p>
<p>10g x 50mm EMBEDMENT. SS PH SCREW SPACED AT 75mm FROM BAR END AND 450mm O.C.</p>	<p>1 HORIZONTAL SECTION THRU JAMB MULLION</p>
<p>MAINFREIGHT HAMILTON SECTIONAL DETAIL</p>	
<p>Bradnam's Commercial SITE AT THE CONCRETE WORKS, AUCKLAND ROAD 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</p>	<p>48 Business Park, East Tamaki Auckland New Zealand Tel: 04 377 1100 email: sales@malco.co.nz www.malco.co.nz</p>
<p>1 ISSUED FOR CONSTRUCTION 26.01.15</p>	<p>2 REVISED TO SUIT COMMENTS 15.12.14</p>
<p>3 REVISED TO SUIT COMMENTS 31.10.14</p>	<p>4 ISSUED FOR APPROVAL 24.09.14</p>
<p>Rev</p>	<p>Amendment</p>
<p>Drawn TamA</p>	<p>Checked</p>
<p>Date 24.09.14</p>	<p>Date</p>
<p>Project No 028</p>	<p>Sheet 308</p>
<p>A3 Scale 1:2</p>	<p>Rev 1</p>

Tested by...John Yolland (Deceased)

Checked by...John Burgess...



MAINFREIGHT HAMILTON  
SECTIONAL DETAIL

Bradnam's Commercial  
SITE 74 THE CONCOURSE, HENDERSON, AUCKLAND 0650  
HENDERSON, AUCKLAND 0650  
PH: 049 9 272 5381  
www.bradnams.co.nz

MALCO  
48 Business Park North, East Tamaki  
PH: 049 9 272 1700  
PH: 049 9 272 0100  
www.malco.co.nz

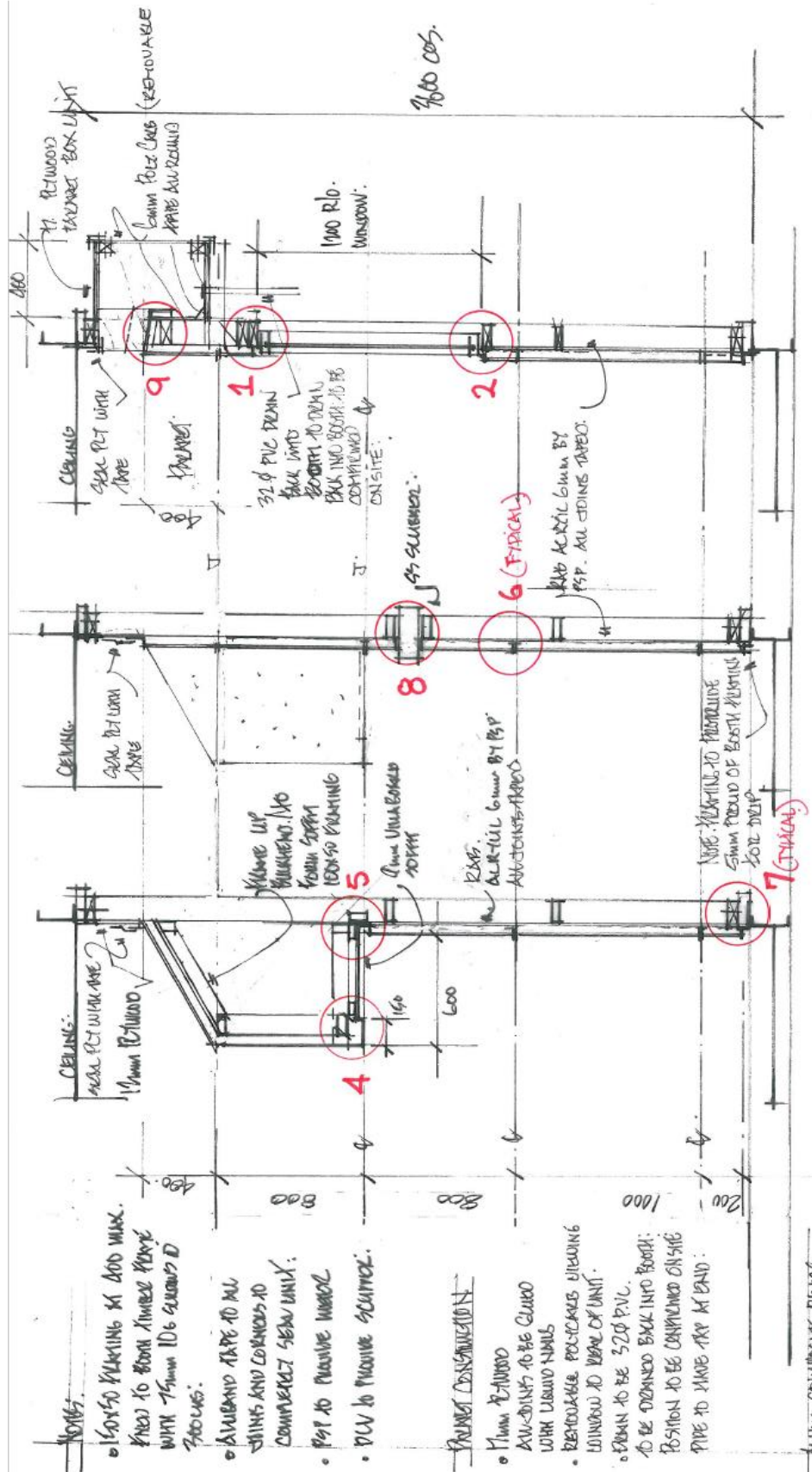


Rev	Amendment	Date
1	ISSUED FOR CONSTRUCTION	26.01.15
B	REVISED TO SUIT COMMENTS	15.12.14
A	REVISED TO SUIT COMMENTS	31.01.14
-	ISSUED FOR APPROVAL	24.09.14

Drawn	Taha	Date	24.09.14	Project No	028	Sheet	308	Rev	1
Checked		Date		A3 Scale	1:2				





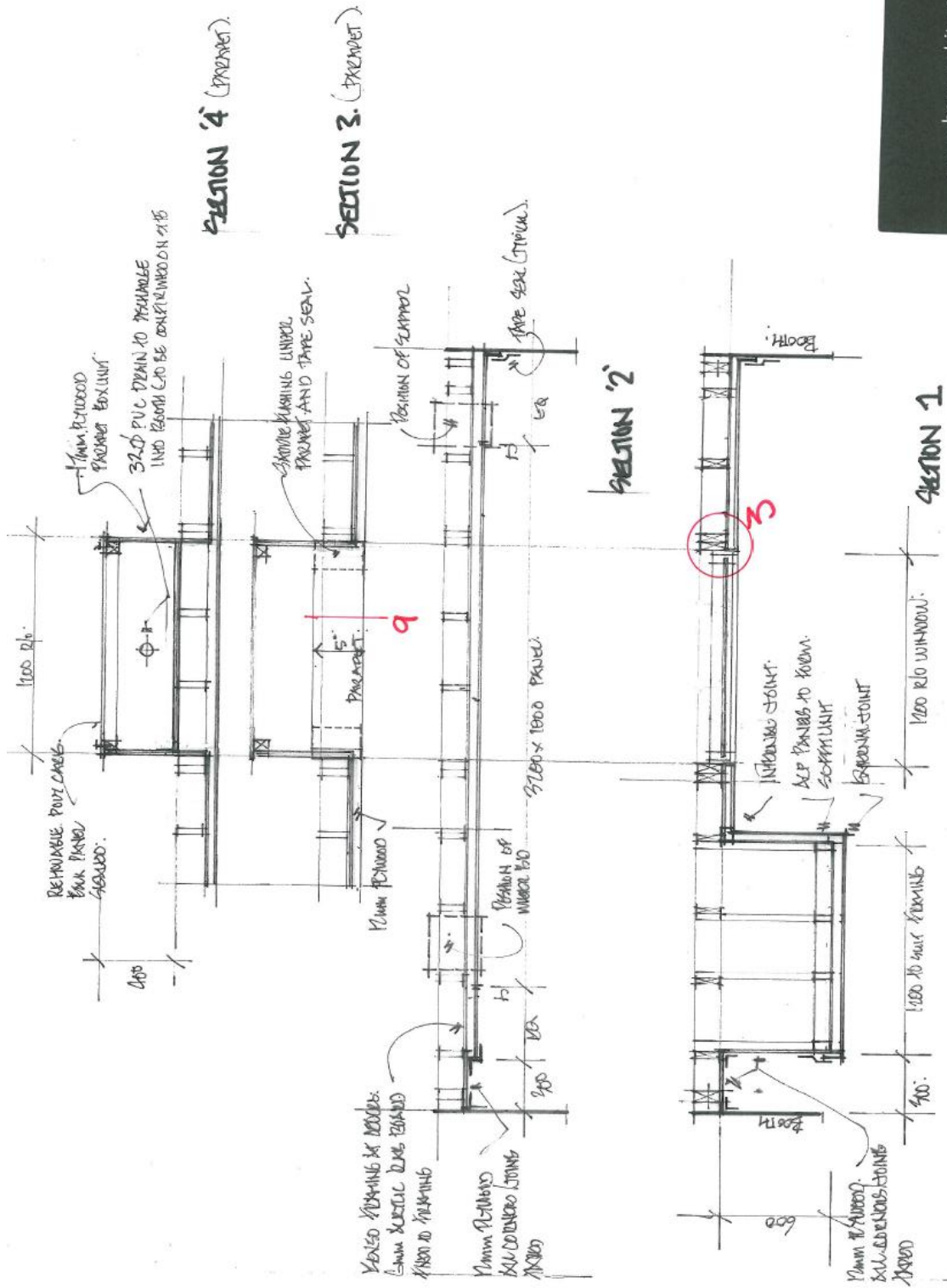


SECTION A SCALE 1:10 SECTION B SCALE 1:10 SECTION C SCALE 1:20

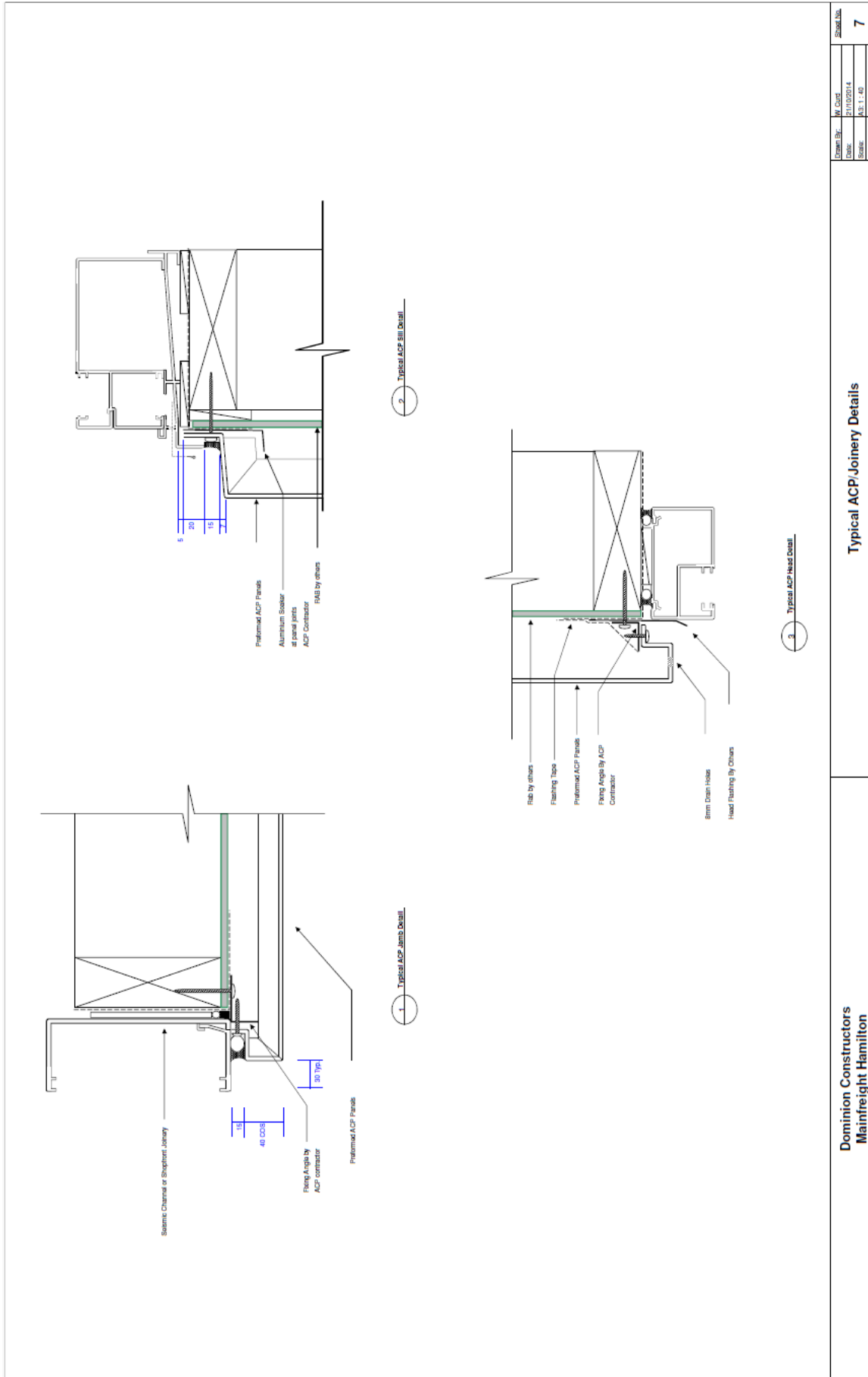
ALUMINUM COMPOSITE PANELS  
 • POINTS OF PANELS TO BOOTH/JUAL CONNECTION TO BE REINFORCED WITH CGLS IN 2 AND PSP AS ENSURE COMPLETE WORK TIGHTNESS

**1st BOOTH DETAILS** SCALE 1:20 22-03-15 REV 'C'





NEXT ROOM DETAILS SCALE: 1:50 02/02/15 Plan 'B'



Drawn By:	W. Coop	Sheet No.	7
Date:	21/10/2014		
Scale:	A3: 1:40		

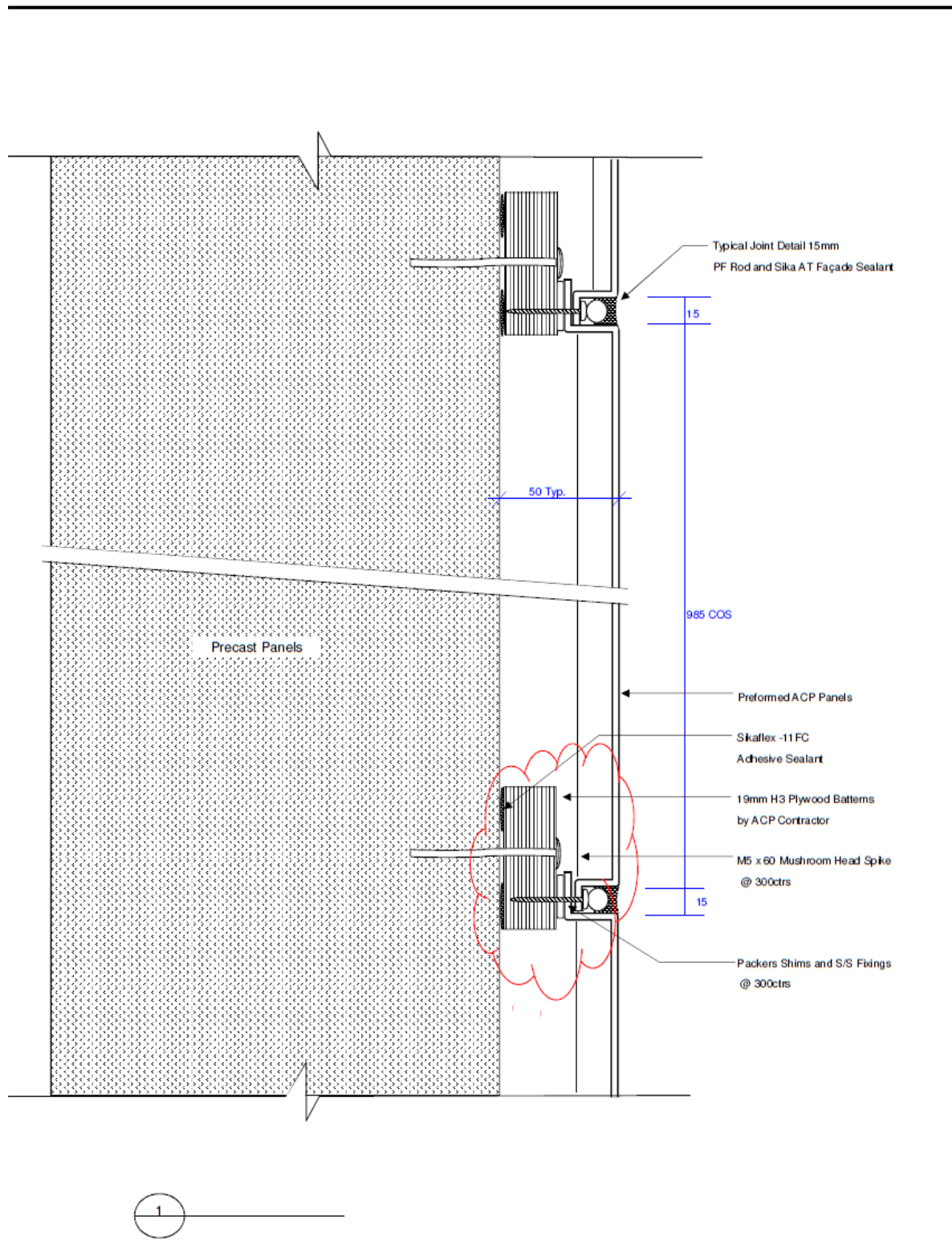
Typical ACP/Joinery Details

Dominion Constructors  
 Mainfreight Hamilton

Tested by...John Yolland (Deceased)

Checked by...John Burgess...

CCS Manufacture and Installations Ltd

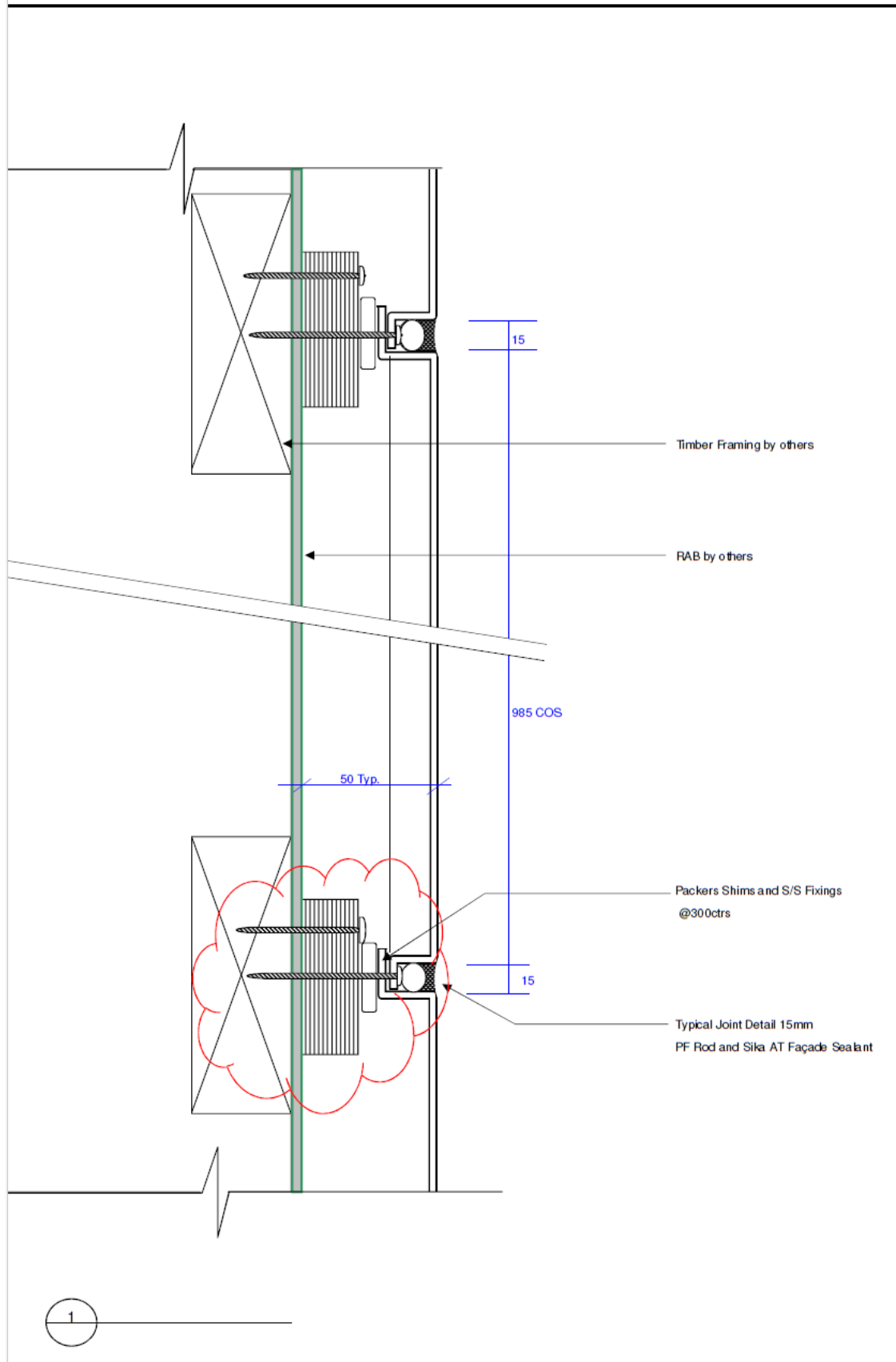


Tested by...John Yolland (Deceased)

Checked by...John Burgess...

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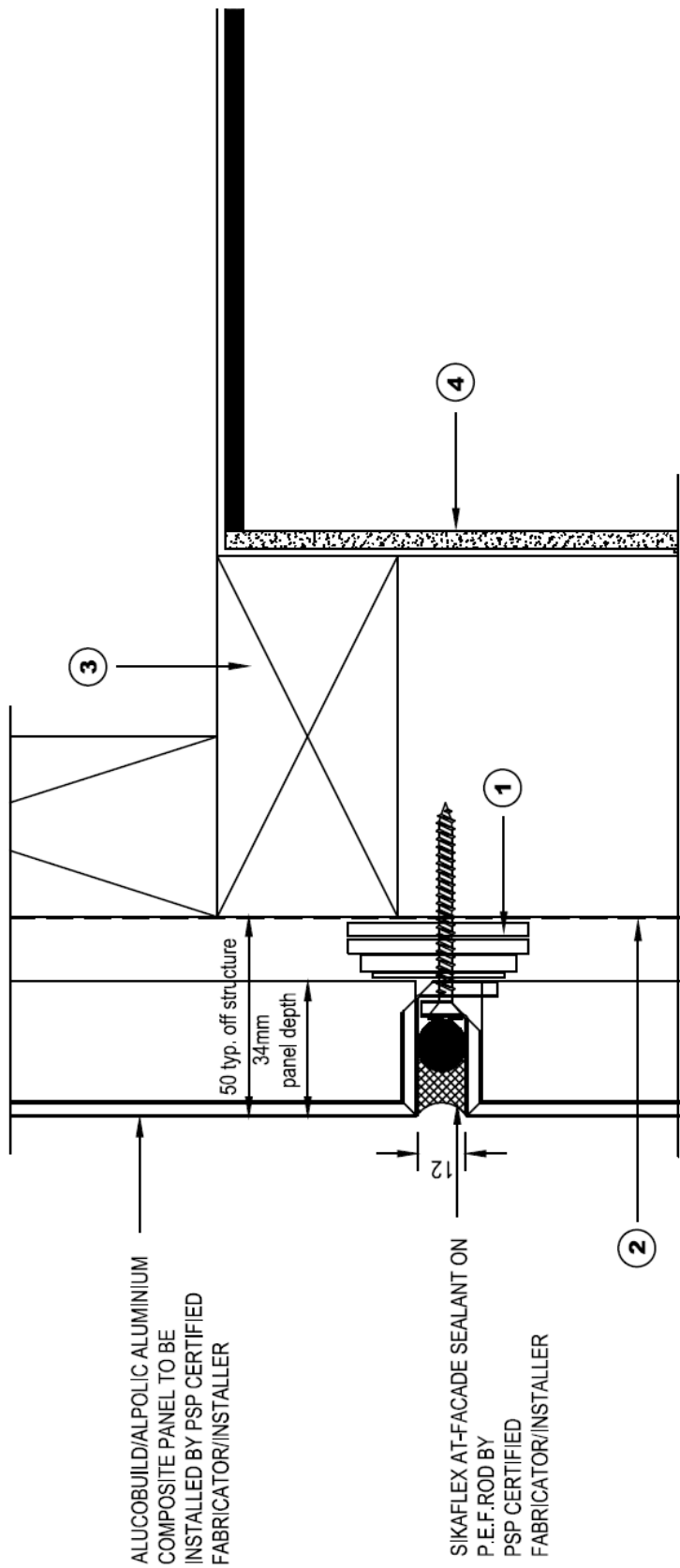
CCS Manufacture and Installations Ltd



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STANDARD JOINT DETAIL - HORIZONTAL/VERTICAL

SCALE 1:2

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Checked by...John Burgess...

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**NOTES:**

1. Panel of choice is black. Choice of alternative finish.
2. All dimensions indicated to be confirmed by the manufacturer.

**MATERIAL: ALUCOBUILD/ALPOLIC ALUMINIUM COMPOSITE PANEL TO BE INSTALLED BY PSP CERTIFIED FABRICATOR/INSTALLER**

**DESIGN: PSP CERTIFIED FABRICATOR/INSTALLER**

**FINISH: BLACK (R10) (RAL 9005) OR BLACK (R10) (RAL 9005) OR BLACK (R10) (RAL 9005) OR BLACK (R10) (RAL 9005) OR BLACK (R10) (RAL 9005)**

**SEALANT: SILICONE WHITE BLACK (R10) (RAL 9005) OR SILICONE WHITE BLACK (R10) (RAL 9005) OR SILICONE WHITE BLACK (R10) (RAL 9005) OR SILICONE WHITE BLACK (R10) (RAL 9005) OR SILICONE WHITE BLACK (R10) (RAL 9005)**

**INSTALLATION: PSP CERTIFIED FABRICATOR/INSTALLER**

**LEGEND:**

- 1 WALL WRAP OR RAIN DOWNER FINISH OR TIMBER FINISH BY OTHERS
- 2 TIMBER FRAMING (ALL BY OTHERS)
- 3 ALUCOBUILD/ALPOLIC FINING ANGLE TO BE INSTALLED BY PSP CERTIFIED FABRICATOR/INSTALLER
- 4 PROTECTO FLASHING TAPE LAPPED OVER FINING ANGLE BY PSP CERTIFIED FABRICATOR/INSTALLER
- 5 2880 DRAINAGE HOLE PER PANEL

**BASE DETAIL (TIMBER)**  
SCALE 1:2

**BASE DETAIL (CONCRETE)**  
SCALE 1:2

**CLIENT:** PSP  
**PROJECT:**  
**DATE:**

**REV:**  
**NO:**  
**DATE:**  
**BY:**  
**APP:**

**CONTRACT:**

**BASE DETAILS**

**UNIVERSITY OF WALES SWANSEA**  
**UNIVERSITY OF WALES SWANSEA**  
**UNIVERSITY OF WALES SWANSEA**

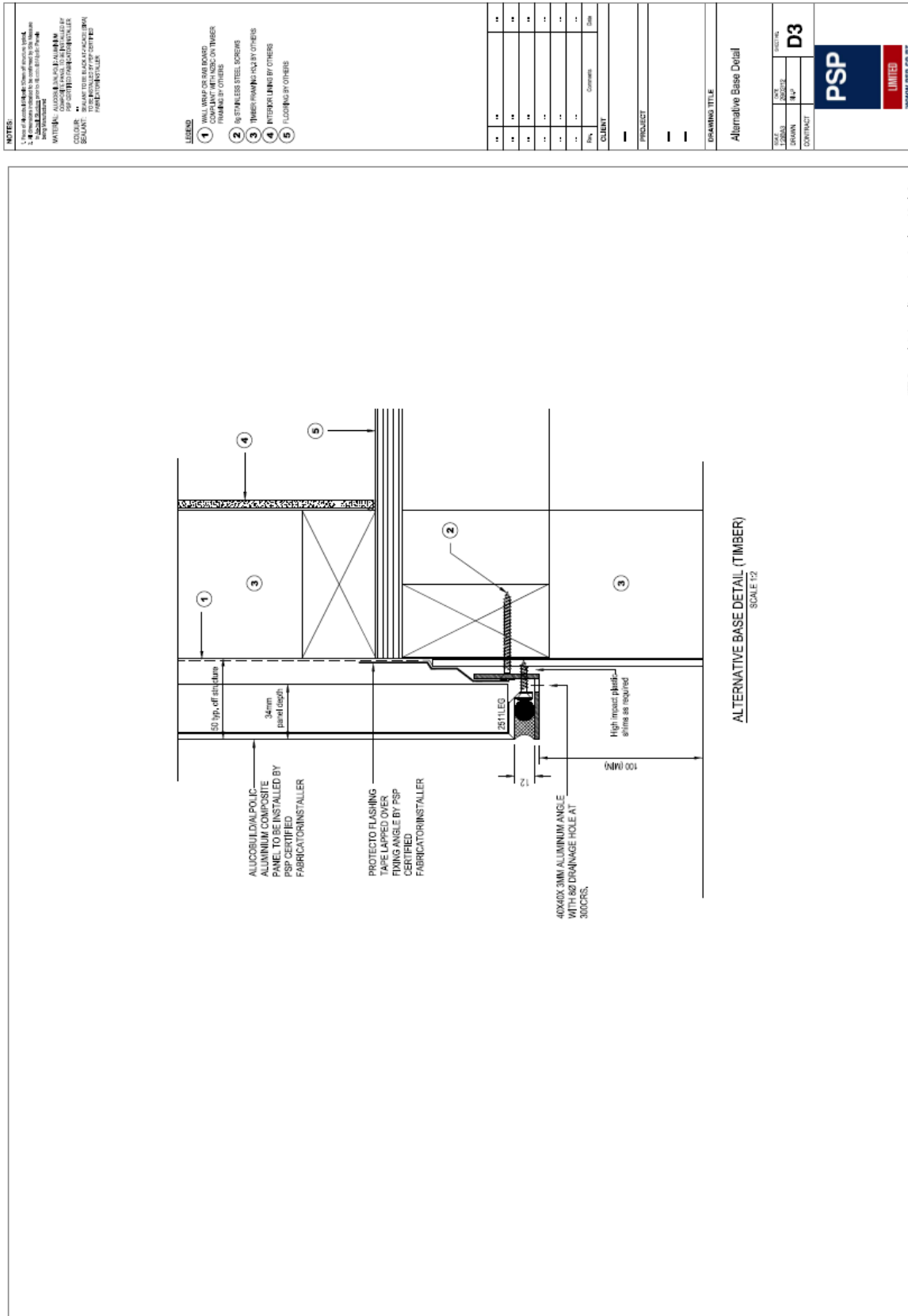
**04-NOVEMBER 2011**  
**WWW.PSP.CO.UK**

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Tested by...John Yolland (Deceased)

Checked by...John Burgess...

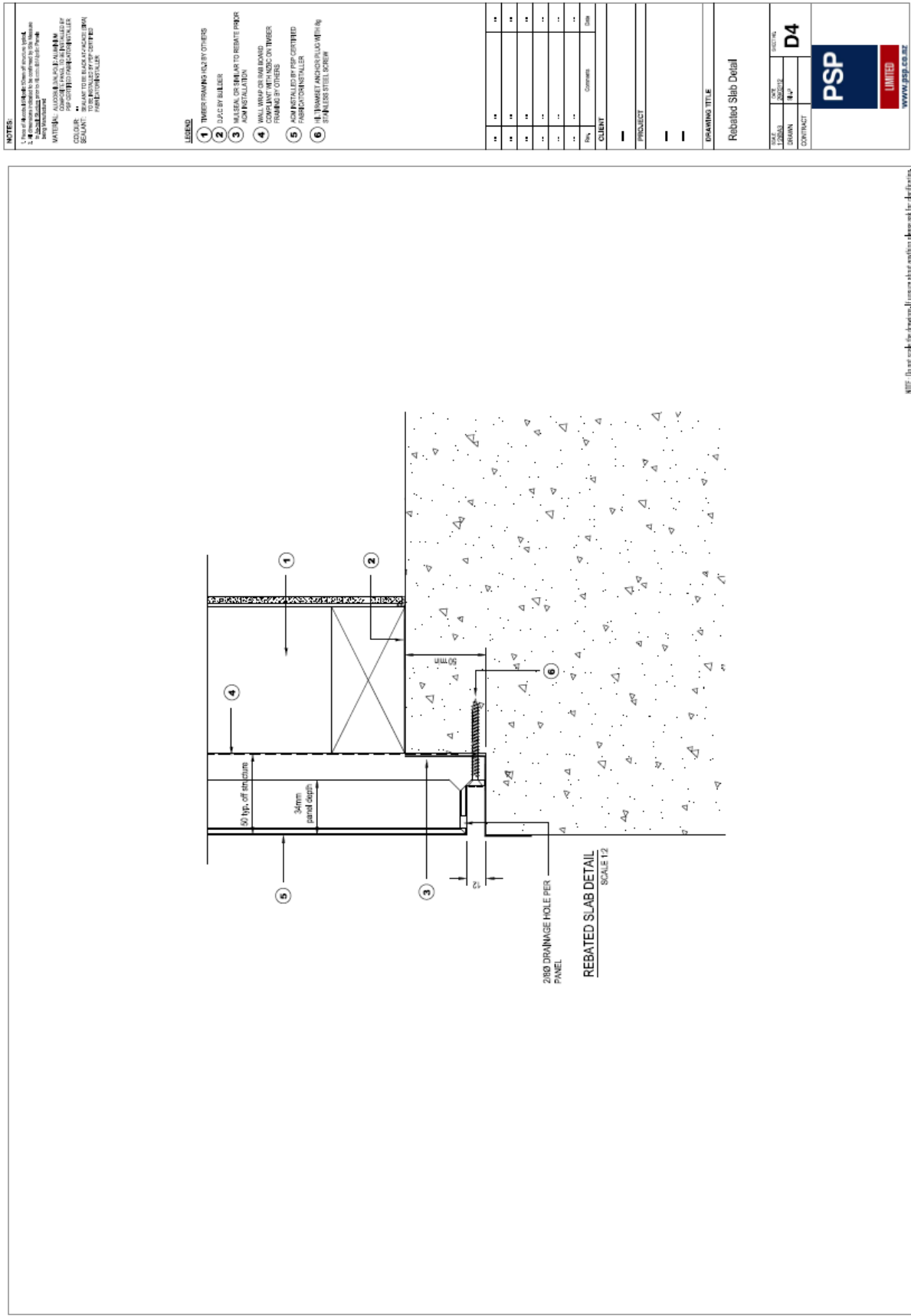




Tested by...John Yolland (Deceased)

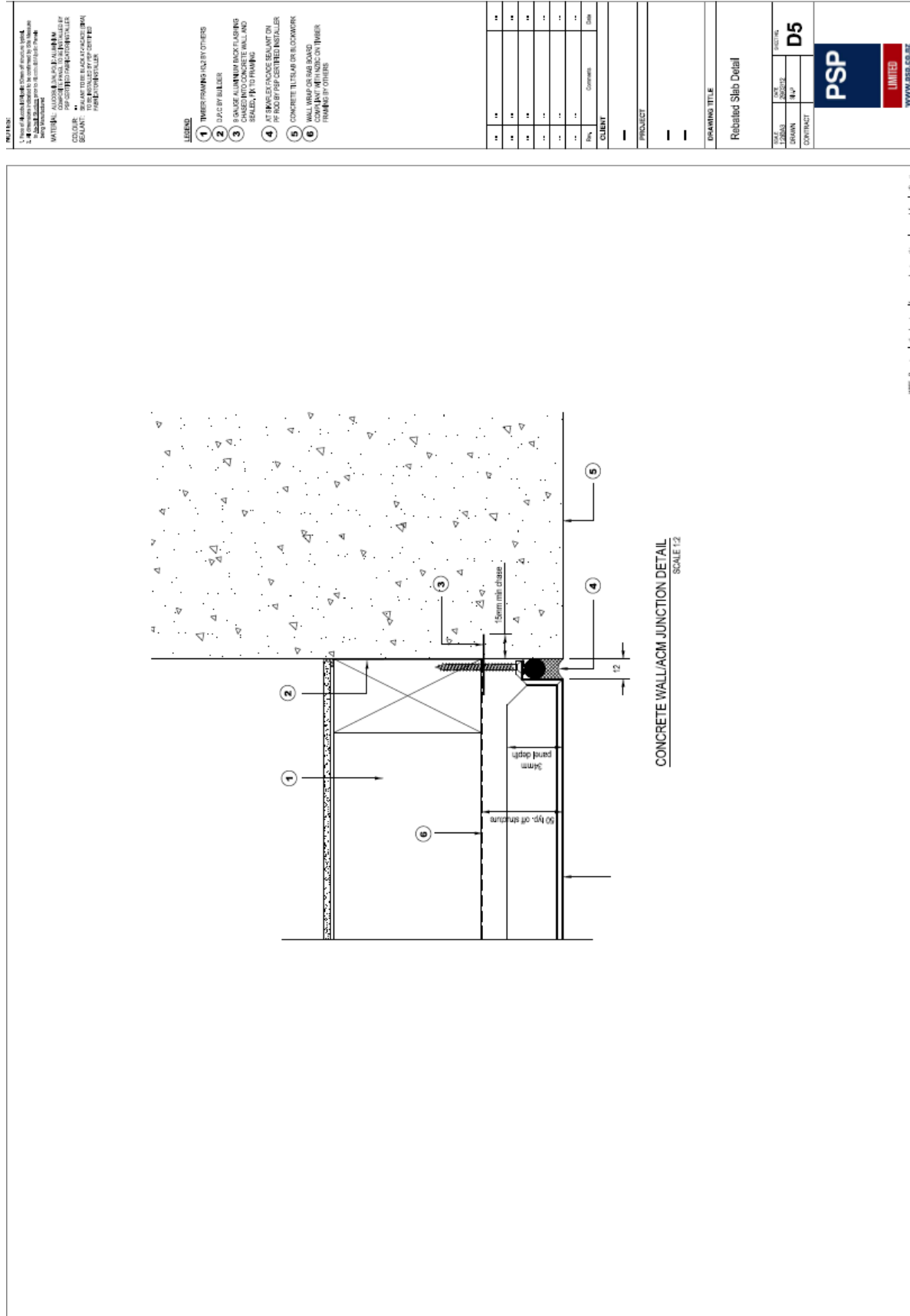
Checked by...John Burgess...

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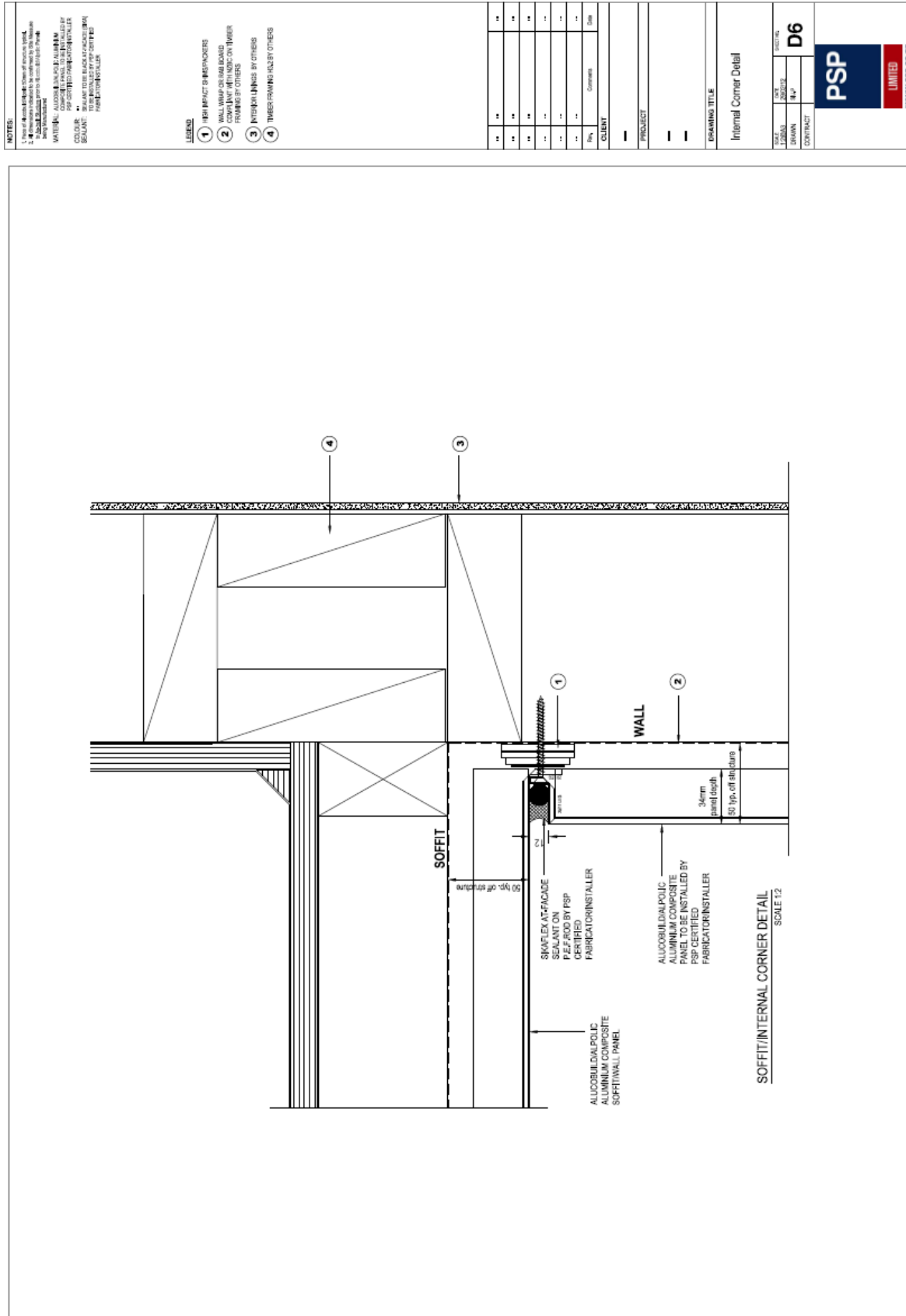
Checked by...John Burgess...



Tested by...John Yolland (Deceased)

Checked by...John Burgess...

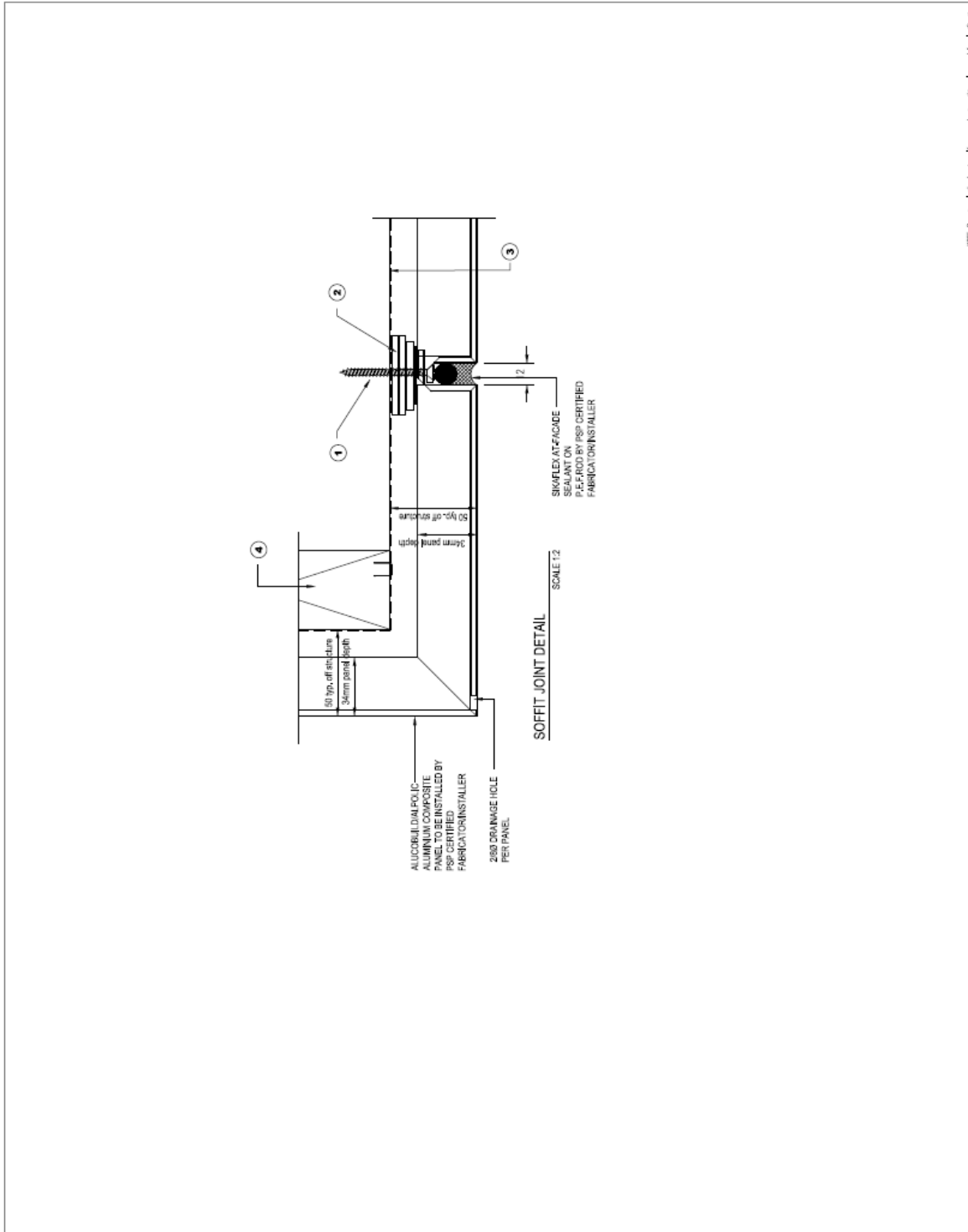
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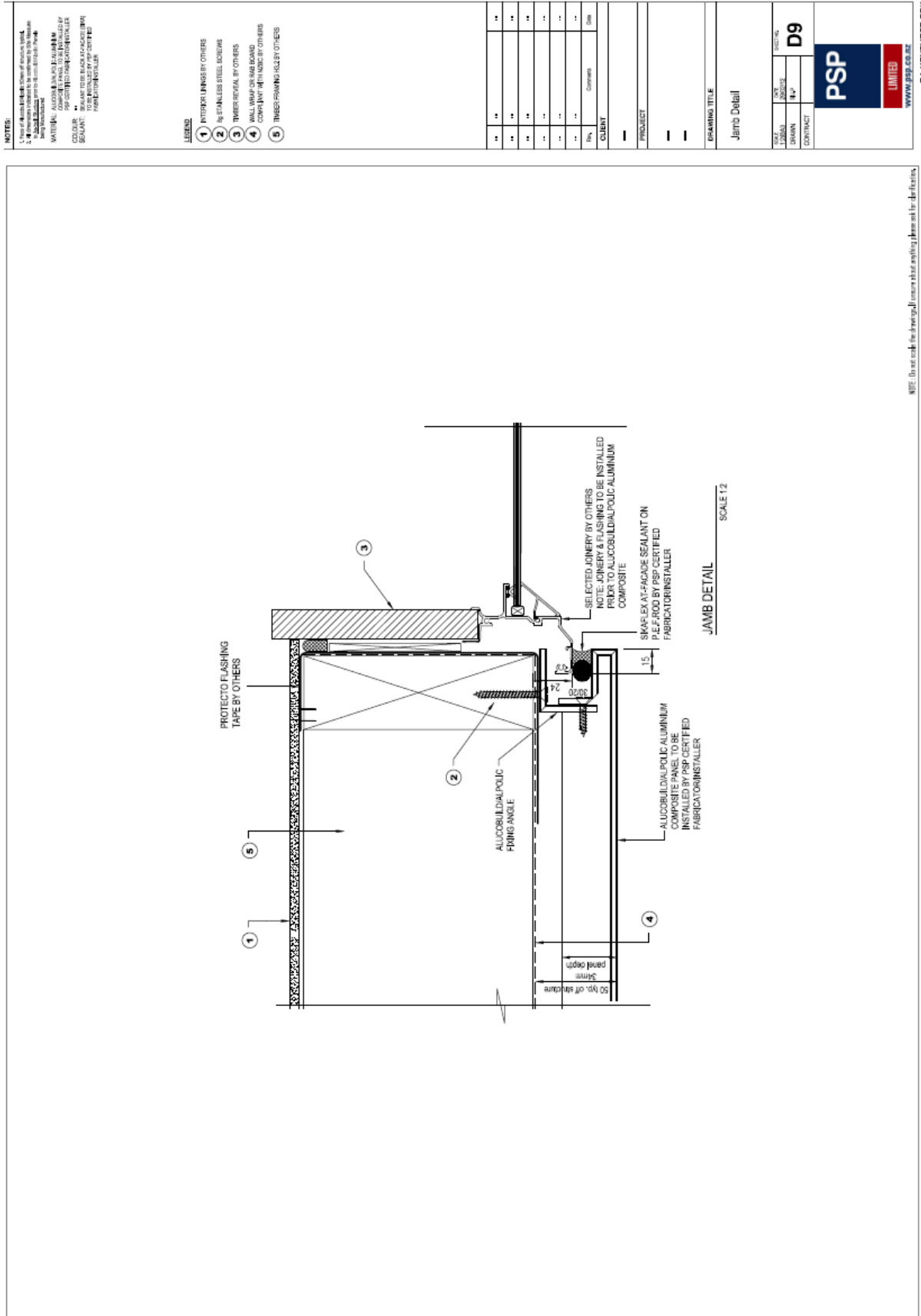
Tested by...John Yolland (Deceased)

Checked by...John Burgess...

<p><b>NOTES:</b></p> <p>1. Type of the finish to be: System of structure type, A. All components to be finished with the same finish as the main structure.</p> <p>2. All components to be finished with the same finish as the main structure.</p> <p>3. All components to be finished with the same finish as the main structure.</p> <p>4. All components to be finished with the same finish as the main structure.</p>	
<p><b>LEGEND:</b></p> <p>① 30 STAINLESS STEEL SCREWS</p> <p>② HIGH IMPACT SEALING</p> <p>③ WALL WRAP OR RAM BOARD COMPLIANT WITH CODES BY OTHERS</p> <p>④ THUNDER DRAINING INQUIRY OTHERS</p>	
<p>DATE: 15/02/2011</p> <p>DRAWN: [Name]</p> <p>CHECKED: [Name]</p> <p>SCALE: D7</p>	<p><b>PSP</b></p> <p><b>UNITED</b></p> <p>WWW.PSP.CO.UK</p>
<p><b>DRAWING TITLE:</b> Soffit Joint Detail</p>	
<p><b>PROJECT:</b></p>	
<p><b>CLIENT:</b></p>	



<p><b>NOTES:</b></p> <p>1. Refer to details of Fixing of Fixtures to Work</p> <p>2. All dimensions are to be confirmed by the Manufacturer</p> <p><b>MATERIALS:</b> ALUMINIUM ANGLE TO BE SUPPLIED BY THE FABRICATOR</p> <p><b>COLOUR:</b> AS SHOWN ON THE DRAWING</p> <p><b>FINISH:</b> AS SHOWN ON THE DRAWING</p> <p><b>SEALANT:</b> AS SHOWN ON THE DRAWING</p> <p><b>FASTENERS:</b> AS SHOWN ON THE DRAWING</p>	<p><b>LEGEND:</b></p> <p>1 WALL WRAP OR END BOARD 2 WALL WRAP OR END BOARD 3 HIGH IMPACT SIMS 4 INTERIOR LININGS BY OTHERS 5 TIMBER FRAMING OR BY OTHERS</p>	..	..	..	..	..	..	..	..	..	..					
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<p><b>CLIENT:</b> PSP Ltd</p> <p><b>PROJECT:</b></p> <p><b>DRAWING TITLE:</b> External Corner Detail</p> <p><b>DATE:</b> 04 NOVEMBER 2011</p> <p><b>SCALE:</b> SCALE 1:2</p> <p><b>REVISIONS:</b></p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>04/11/2011</td> <td>D8</td> </tr> </table>											NO.	DATE	DESCRIPTION	1	04/11/2011	D8
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<p><b>EXTERNAL CORNER DETAIL</b></p> <p><b>EXTERNAL CORNER DETAIL</b> SCALE 1:2</p>																
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**NOTES:**  
 1. Type of finish to be used on exterior panels.  
 2. Material to be used for interior panels.  
 3. Material to be used for exterior panels.  
 4. Material to be used for interior panels.  
 5. Material to be used for exterior panels.  
 6. Material to be used for interior panels.  
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 10. Material to be used for interior panels.

- LEGEND:**
- 1 INTERIOR LINERS BY OTHERS
  - 2 8x STAINLESS STEEL SCREWS
  - 3 TIMERS REVEAL BY OTHERS
  - 4 WALL W/WHIP OR RAS BOARD COMPLIANT WITH NBC BY OTHERS
  - 5 TIMERS FRAMING INS BY OTHERS

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**PROJECT TITLE:**  
Jamb Detail

SCALE	1:2
DATE	04 NOVEMBER 2011
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**D9**

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Checked by...John Burgess...

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**NOTES:**

1. View of details to be checked by the contractor.
2. All dimensions are to be confirmed by the contractor.
3. All materials to be used must be approved by the contractor.
4. All materials to be used must be approved by the contractor.
5. All materials to be used must be approved by the contractor.
6. All materials to be used must be approved by the contractor.

**LEGEND:**

- 1 SELECTED JOINTS BY OTHERS.  
 NOTE: JOINTS AND LASHING TO BE INSTALLED PER TO: ALUMINIUM COMPOSITE
- 2 BUILDING WORK PRESENT TO OPENING WITH PROTECTO-FLASHING TAPE INSTALLED OVER WINDOW JOINTS
- 3 INTERIOR LININGS BY OTHERS
- 4 16 STAINLESS STEEL SCREW
- 5 TRIMMER FINISHING W/2 BY OTHERS
- 6 WALL FINISHING W/2 BY OTHERS

**CLIENT:** PSP Ltd

**PROJECT:** Commercial Window Jamb Detail

**DRAWING TITLE:** Commercial Window Jamb Detail

DATE	SCALE	STATUS
2011/11/04	1:1	REVISED
2011/11/04	1:1	ISSUED
2011/11/04	1:1	REVISED
2011/11/04	1:1	ISSUED

**D10**

**PSP**

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**04 NOVEMBER 2011**

**COMMERCIAL WINDOW JAMB DETAIL 1**  
 SCALE 1:1

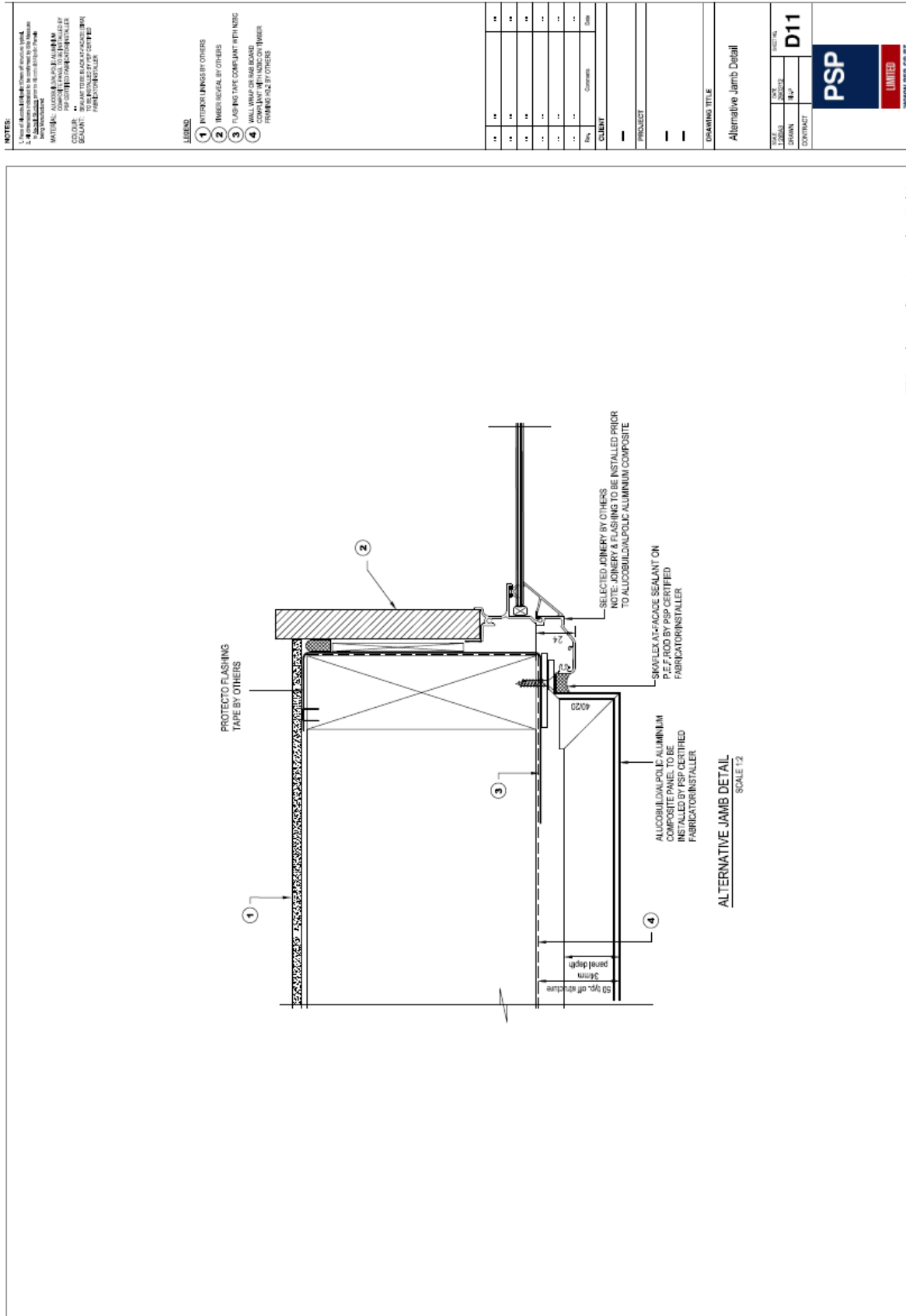
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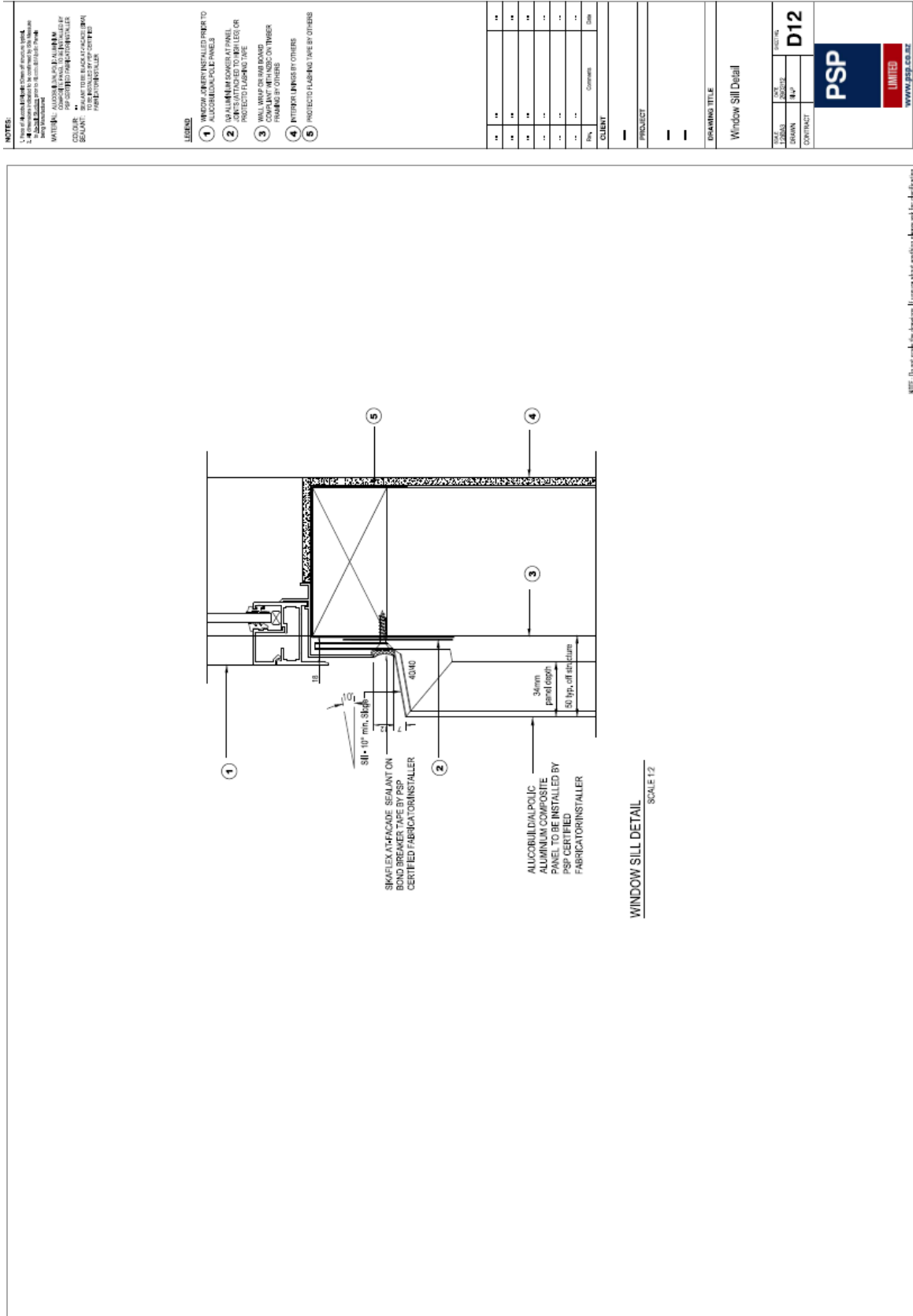




Tested by...John Yolland (Deceased)

Checked by...John Burgess...

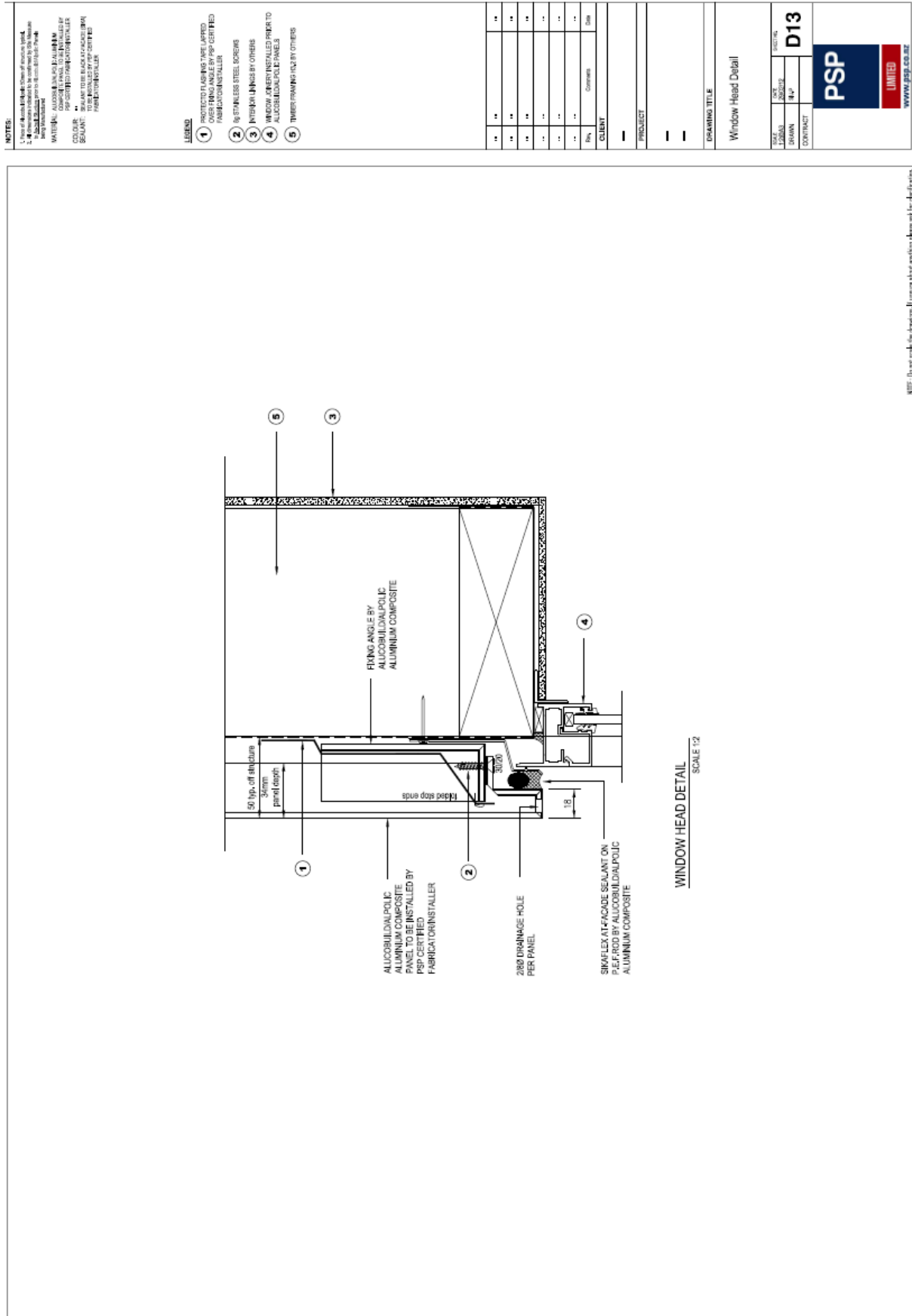
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**NOTES:**

1. Part of Aluminium Fixing Bracket of parapet, which is used to fix the parapet panels to the concrete slab.
2. The parapet panels are to be fixed to the concrete slab.

**MATERIALS:** ALUMINIUM ALLOY ANGLE IRON  
**COLOUR:** ANTI-CORROSION COATING  
**FINISH:** ANTI-CORROSION COATING  
**REMARKS:** BRACKET TO BE INSTALLED TO PARAPET PANELS TO HOLD THE PANELS.

**LEGEND:**

- 1 BUTYNG TO BE INSTALLED FIRST TO ALUMINIUM ALLOY PANELS
- 2 WALL WRAP OR BRIDGE COMPLANT METHOD BY OTHERS
- 3 THUMB NAILING OR BY OTHERS

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**CLIENT:** PSP Ltd

**PRODUCT:** Parapet Detail

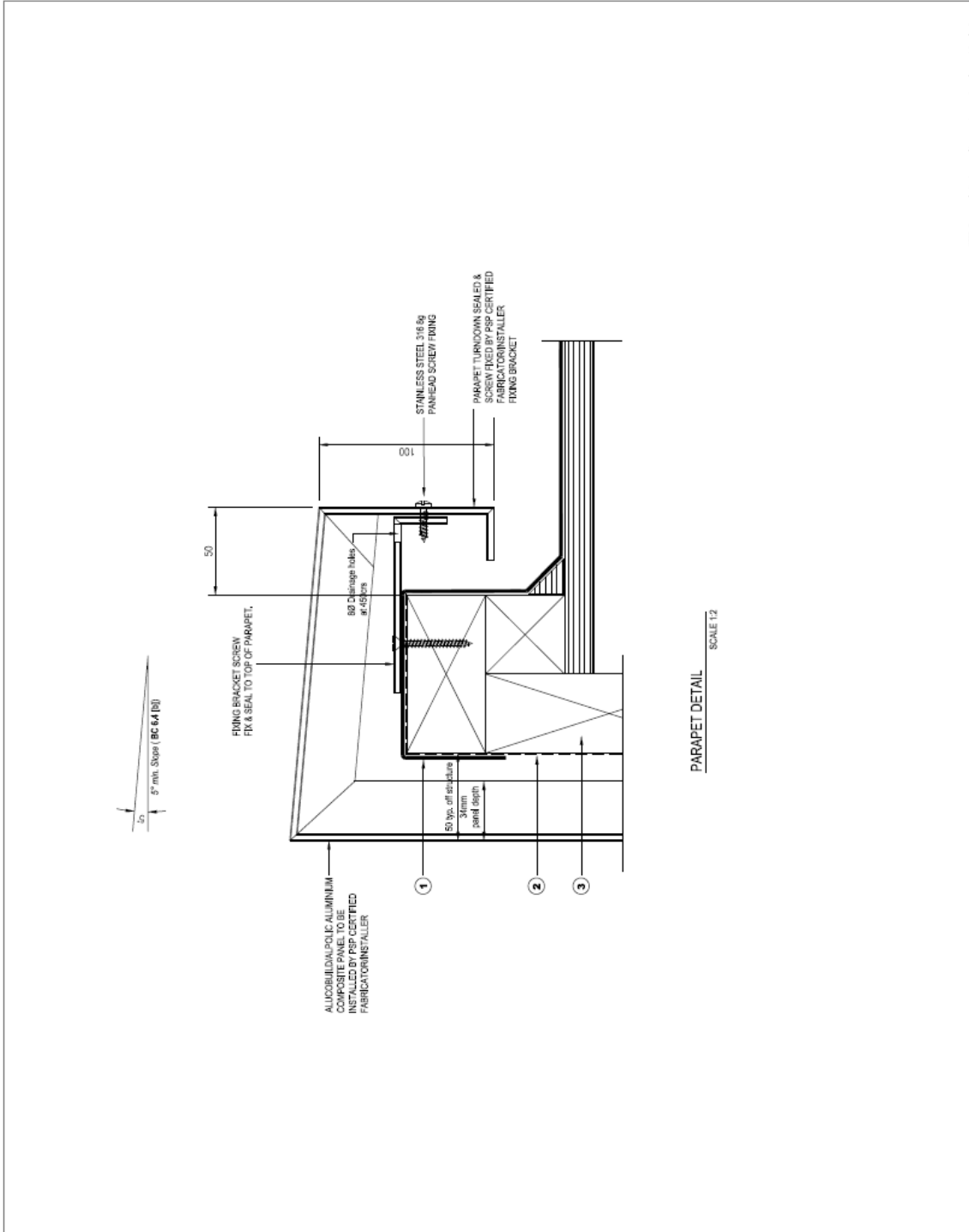
**DRAWING TITLE:** Parapet Detail

NO.	DATE	BY	REVISION
1	15/02/2015	JY	D15
2	15/02/2015	JY	D15

**CONTRACT:** PSP Ltd

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www.psp.co.uk

**04 NOVEMBER 2011**



**NOTES:**

1. Refer to Appendix B (Notes of Approval) and Appendix C (Notes of Approval) for further details.
2. All materials must be installed in accordance with the manufacturer's instructions.
3. All materials must be installed in accordance with the manufacturer's instructions.
4. All materials must be installed in accordance with the manufacturer's instructions.
5. All materials must be installed in accordance with the manufacturer's instructions.
6. All materials must be installed in accordance with the manufacturer's instructions.

**LEGEND:**

- 1 SEAL WITH PROTECTIVE FLASHING TYPE APPROPRIATE TO WEATHER EXPOSURE
- 2 WALL BRICKS OR OTHERS COMPATIBLE WITH BRICKS BY OTHERS
- 3 1/2" STAINLESS STEEL SCREWS
- 4 HIGH IMPACT SHAPE
- 5 INTERIOR LININGS BY OTHERS
- 6 TIMBER FRAMING HOLD BY OTHERS

SCALE	DATE	ISSUE NO.	REVISED	BY	DATE
AS SHOWN	15/02	1			
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<b>PSP LIMITED</b>					
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04 NOVEMBER 2011

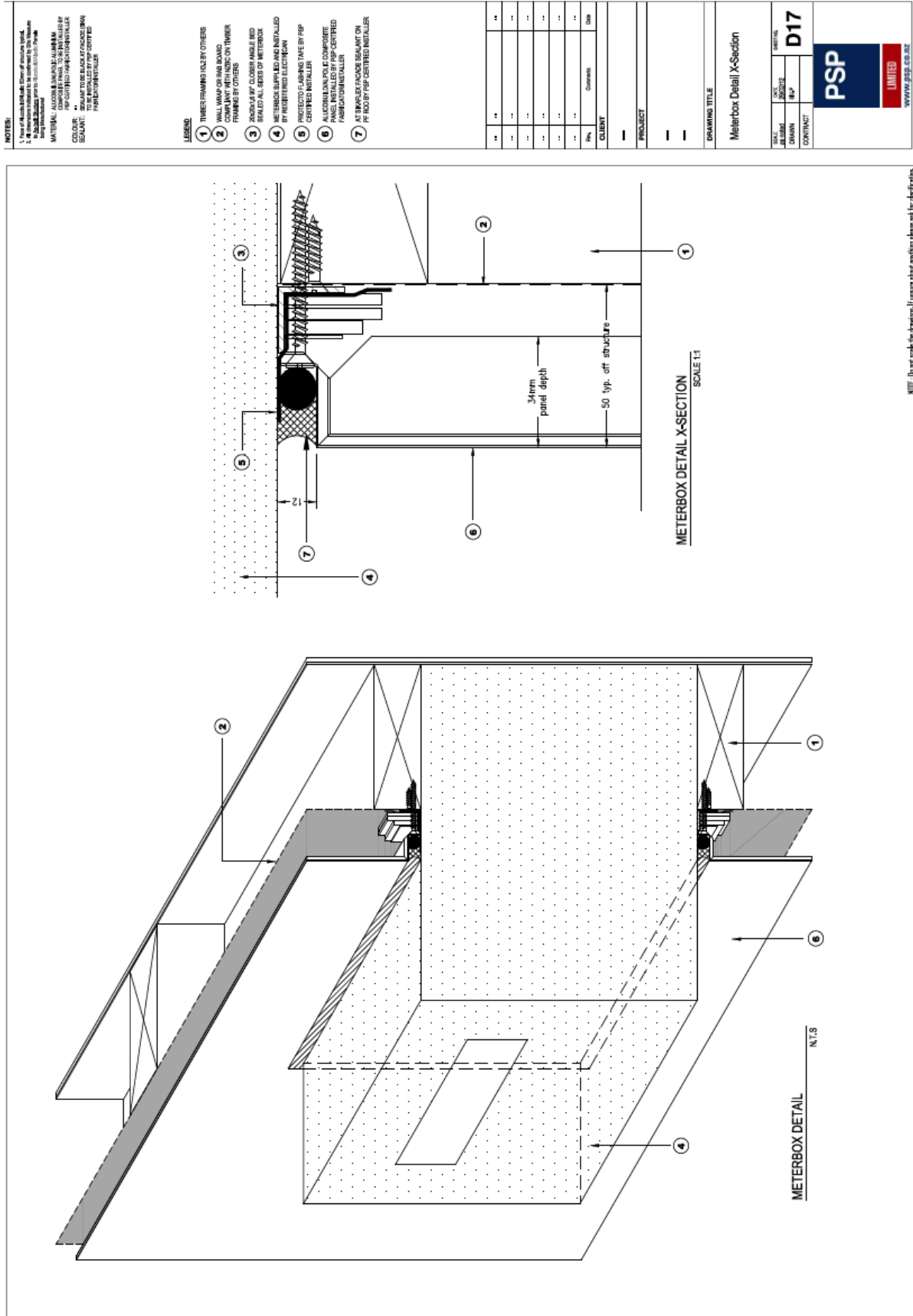
  

**OPEN JOINT DETAIL**  
 SCALE 1:2

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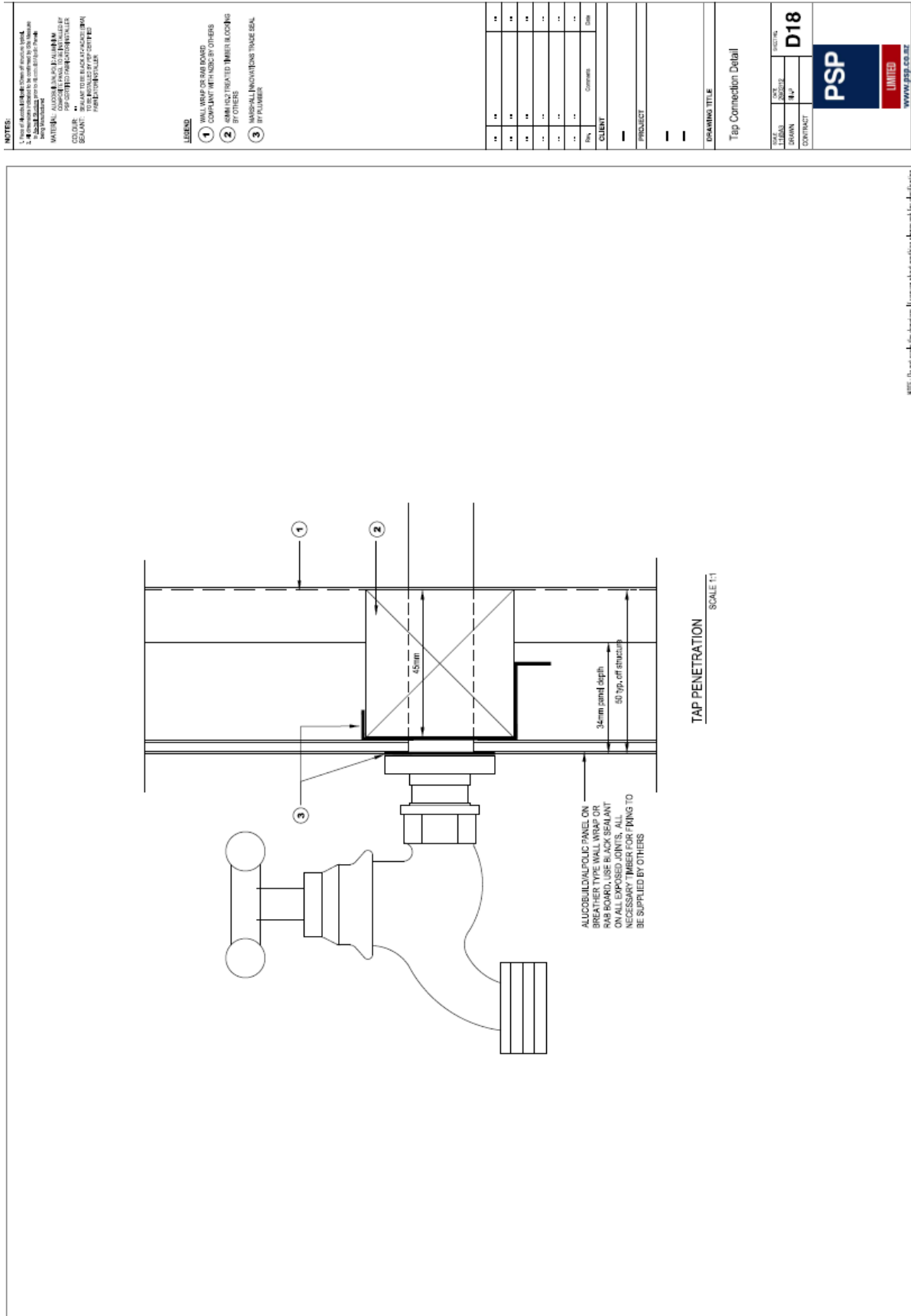
Checked by...John Burgess...



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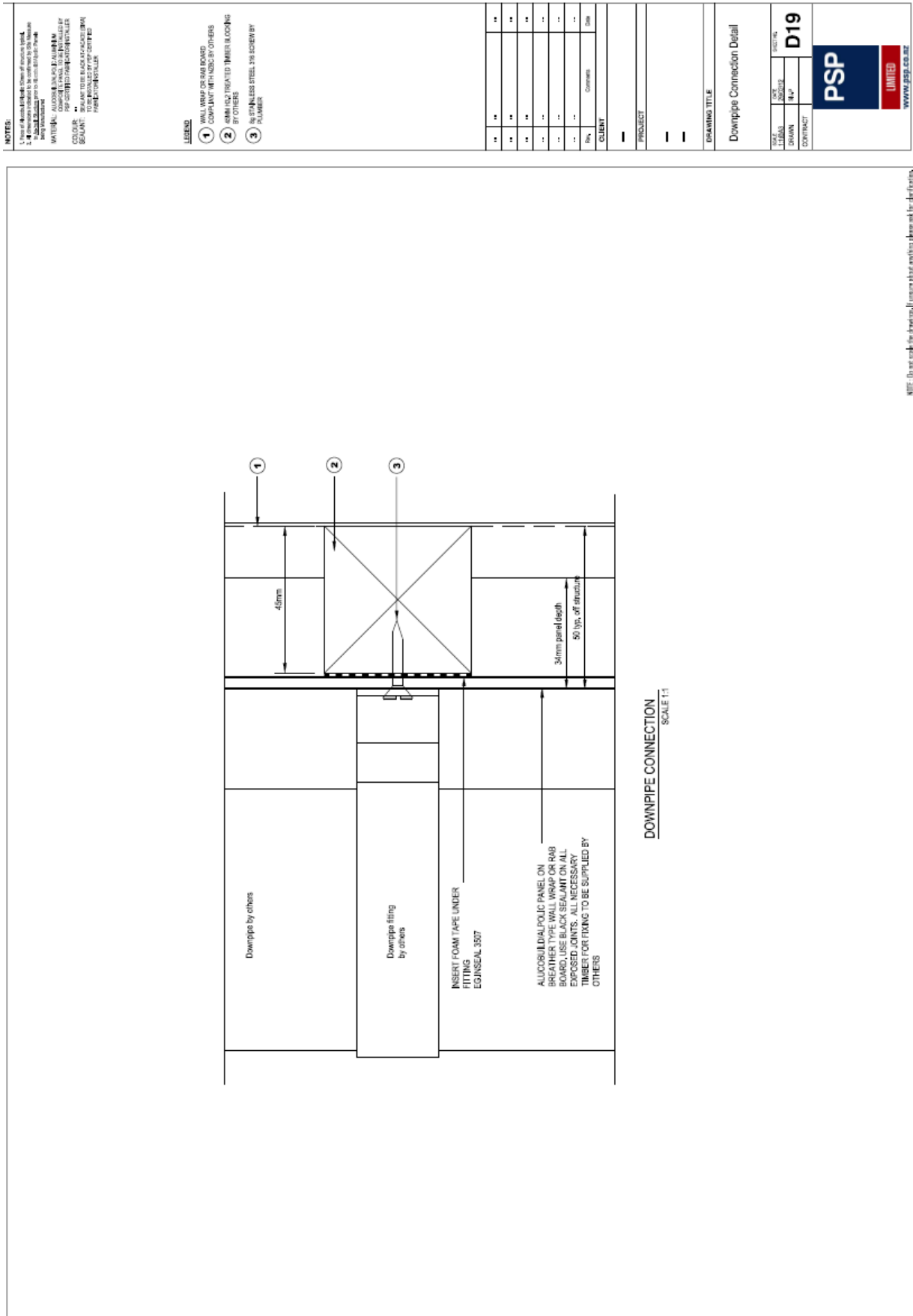


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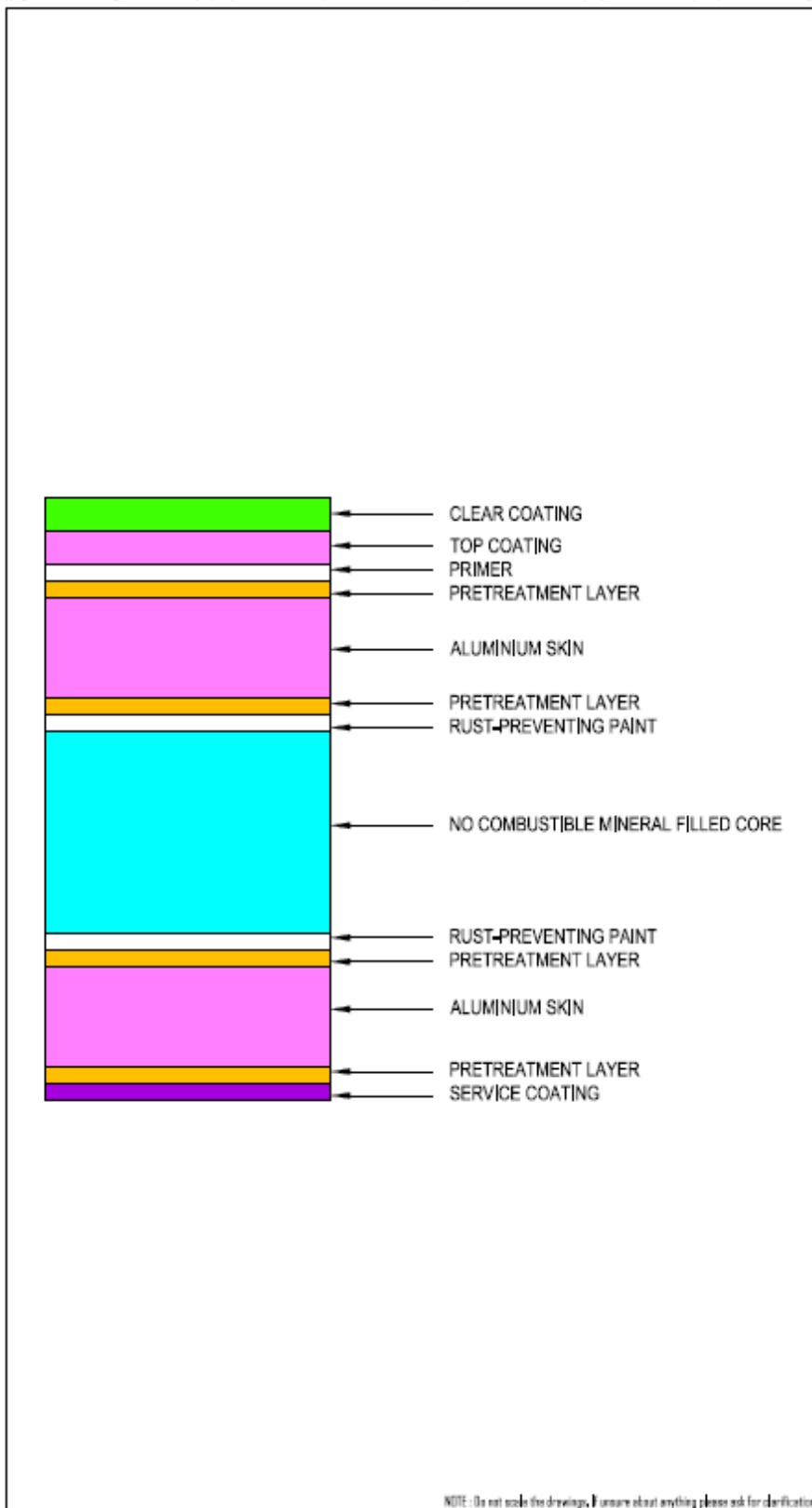




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SCALE N.T.S.	DATE 29/02/12	SHEET NO. <b>D20</b>
DRAWN HVP		
CONTRACT		



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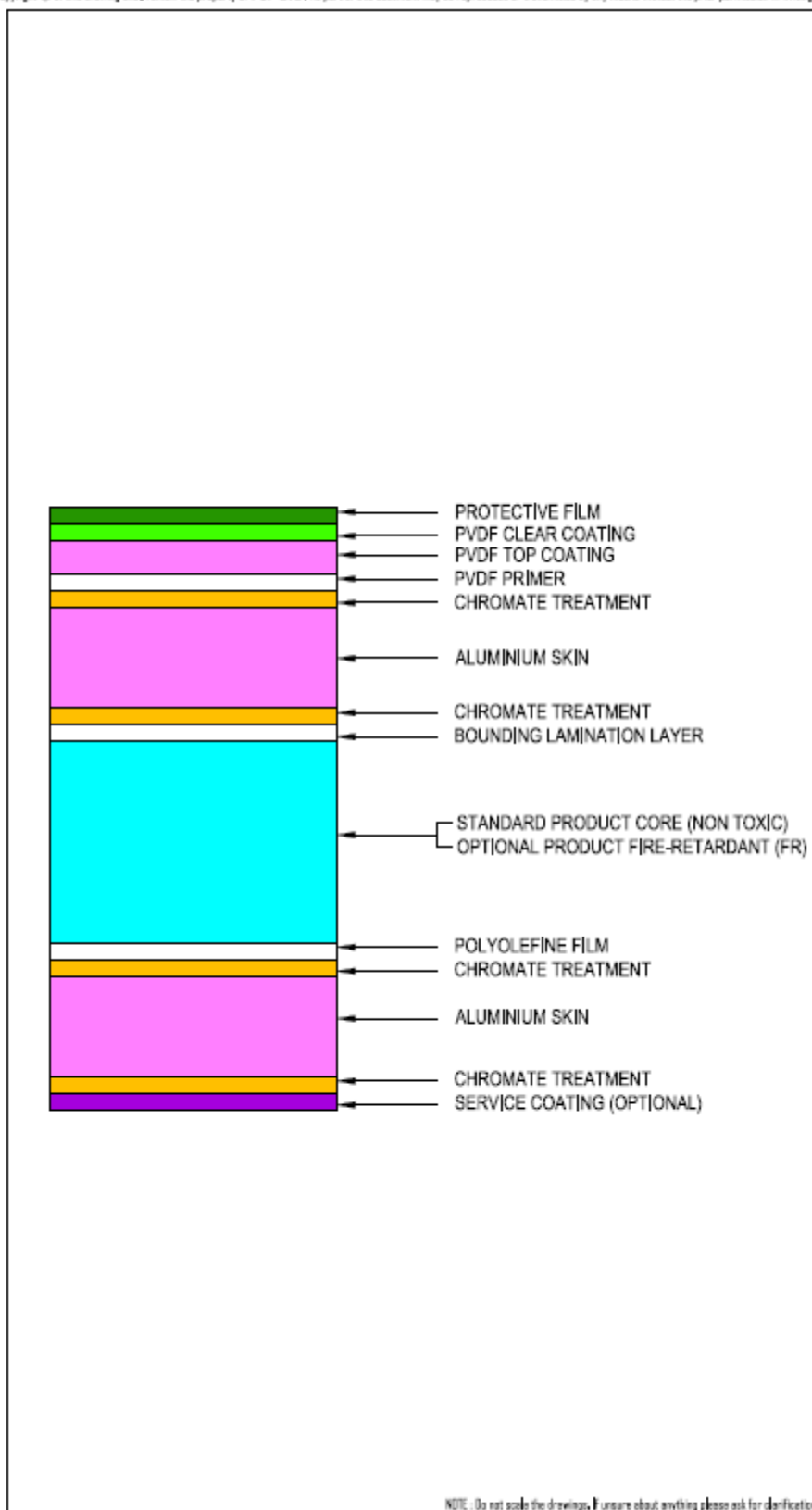
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N.T.S.	20/02/15	D21
DRAWN	HP	
CONTRACT		

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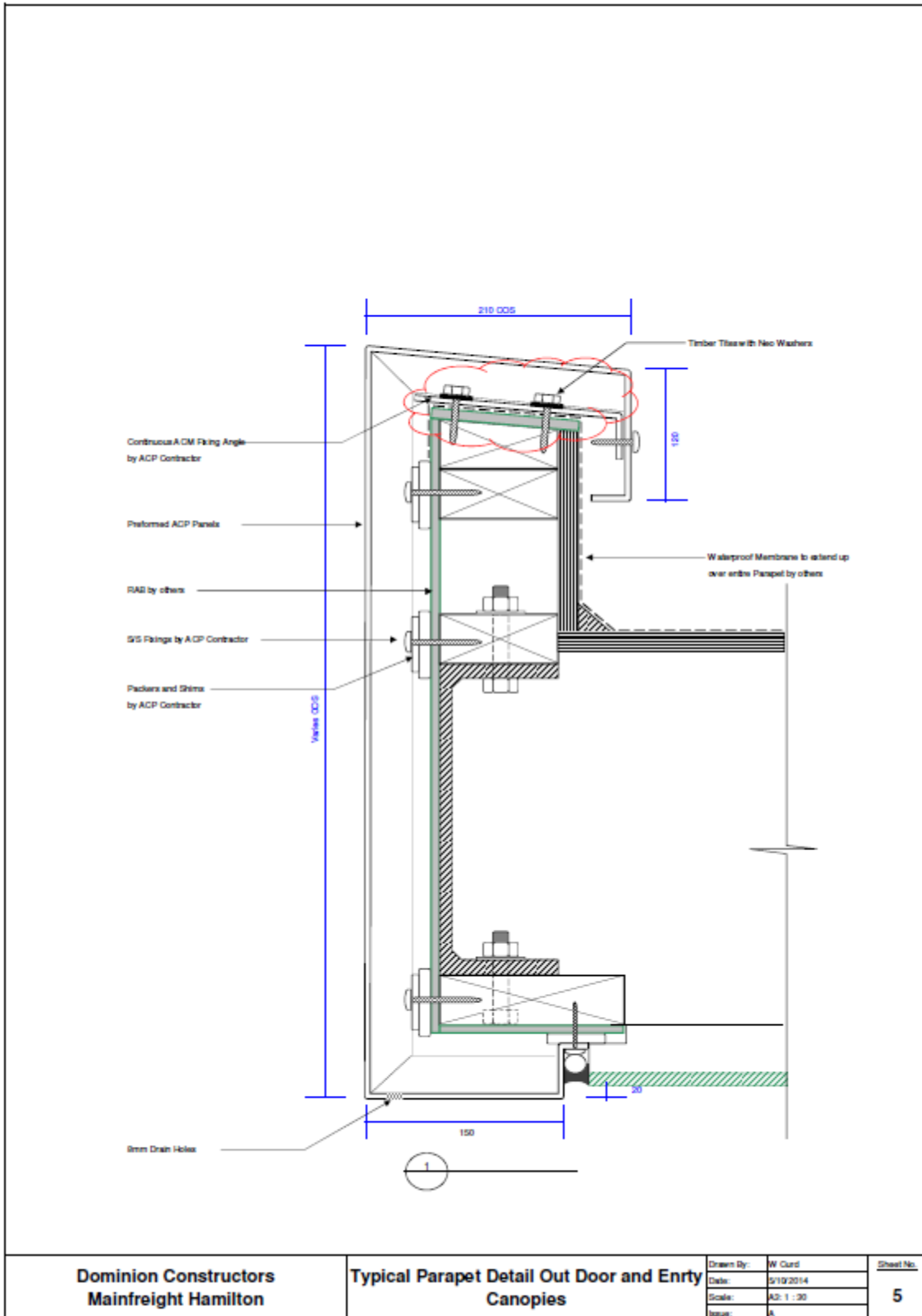
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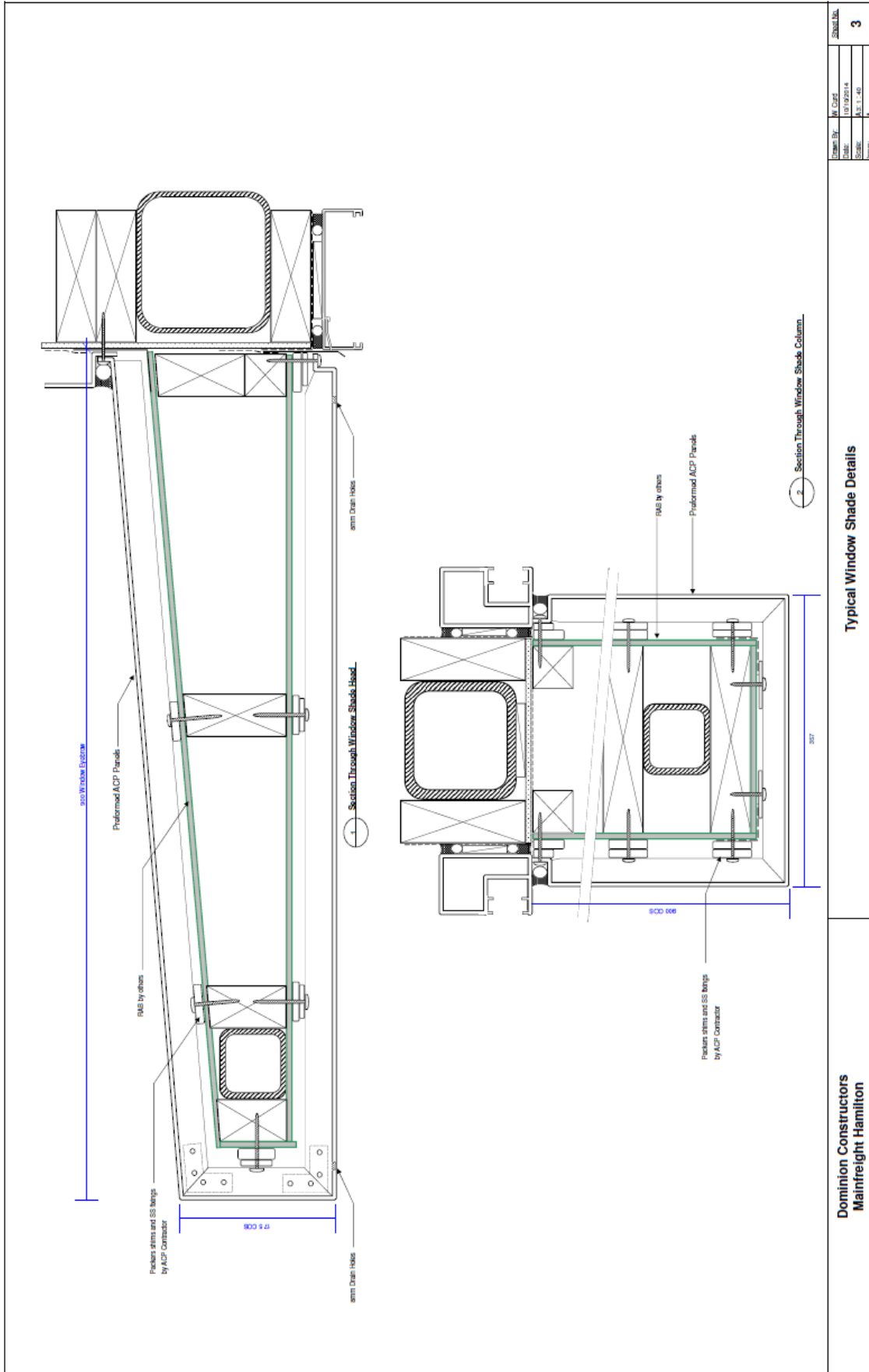
CCS Manufacture and Installations Ltd



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Typical Window Shade Details

Dominion Constructors  
 Mainfreight Hamilton

Drawn By:	M. GALE	Sheet No.	3
Date:	10/10/2014		
Scale:	AS 1:1		
Issue:			

Tested by...John Yolland (Deceased)

Checked by...John Burgess...

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