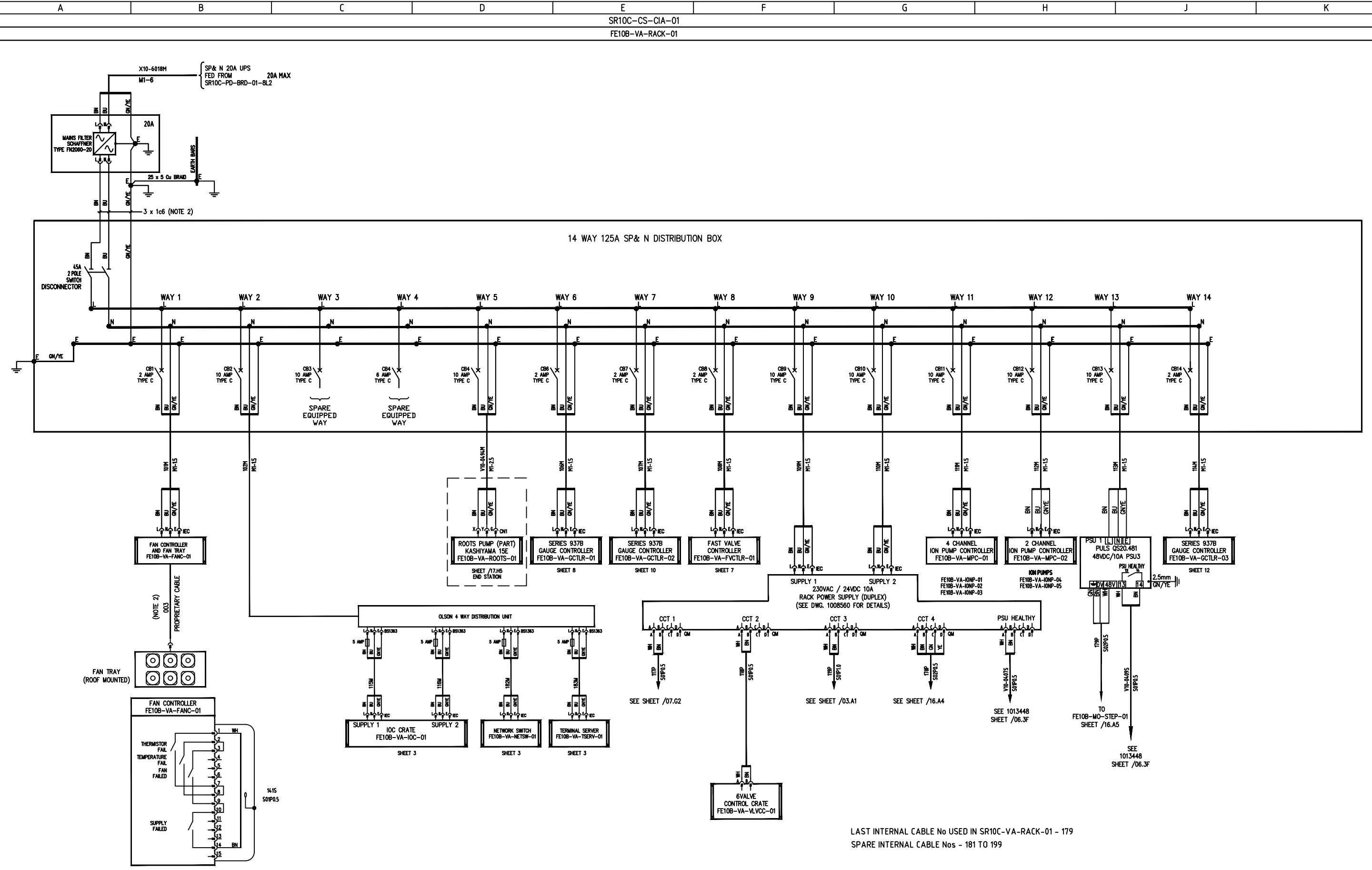


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| <b>STORAGE RING CELL 10<br/>FE10B FRONT END CONTROL SYSTEM<br/>HOOK-UP DRAWING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| <b>REFERENCE DRAWINGS / DOCUMENTATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| REFERENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | TITLE                                                                                                                                                                                                                     |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1149579                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STORAGE RING CELL 10<br>FRONT END 10B CONTROL SYSTEMS<br>SYSTEM GUIDE                                                                                                                                                     |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1147699                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STORAGE RING CELL 10<br>FRONT END 10B CONTROL SYSTEMS<br>GENERAL ARRANGEMENT                                                                                                                                              |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1147701                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STORAGE RING CELL 10<br>FRONT END 10B CONTROL SYSTEMS<br>LABELS                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1008560                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | GENERIC CONTROL EQUIPMENT<br>DUPLEX 24VDC POWER SUPPLY UNIT<br>WIRING DIAGRAM                                                                                                                                             |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1008690                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CONTROL RACK EQUIPMENT<br>RS232/422 COMMUNICATION LEADS<br>WIRING DIAGRAM                                                                                                                                                 |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1058899                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | VAT FAST FLAP<br>VALVE CONTROLLER<br>WIRING DIAGRAM                                                                                                                                                                       |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1008741 / 1008742                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 6 VALVE CONTROL CRATE                                                                                                                                                                                                     |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1025895                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STEPPER DRIVE CRATE                                                                                                                                                                                                       |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1013448                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STORAGE RING CELL 10<br>VACUUM INSTRUMENTATION & CONTROL<br>HOOK-UP DRAWING                                                                                                                                               |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| TDI-VAC-CTRL-031                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | VACUUM COATING R&D FACILITY:<br>MULTI-PURPOSE DEVELOPMENT FRONT-END SPECIFICATION                                                                                                                                         |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| <b>HOOK-UP DRAWING DRAWINGS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SHEET</th><th>DESCRIPTION</th></tr> </thead> <tbody> <tr><td>1</td><td>HOOK-UP DRAWING INDEX</td></tr> <tr><td>2</td><td>FE10B-VA-RACK-01 230VAC / 24VDC POWER DISTRIBUTION.</td></tr> <tr><td>3</td><td>FE10B-VA-RACK-01 24V DISTRIBUTION</td></tr> <tr><td>4</td><td>FE10B-VA-RACK-01 NETWORK / COMMS (SERIAL)</td></tr> <tr><td>5</td><td>FE10B-VA-ABSB-01, FE10B-VA-VALVE-01 AND FE10B-VA-VALVE-02 CONTROL</td></tr> <tr><td>6</td><td>FE10B-VA-VALVE-03, FE10B-VA-VALVE-04 AND FE10B-VA-VALVE-05 CONTROL</td></tr> <tr><td>7</td><td>SR10C-FE-FCTLR-01 FAST FLAP CONTROLLER 01, SR10C-VA-FVALV-01</td></tr> <tr><td>8</td><td>GCTLR-01 SR10C-FE-IMG-01/02, SR10C-VA-PIRG-01/02 CONTROL.</td></tr> <tr><td>9</td><td>MPC-01 SR10C-FE-IONP-01, 02, 03 AND 04 CONTROL.</td></tr> <tr><td>10</td><td>GCTRL-02 SR10C-VA-IMG-03/04, SR10C-VA-PIRG-03/04, CONTROL.</td></tr> <tr><td>11</td><td>MPC-02 SR10C-FE-IONP-05 AND 06 CONTROL.</td></tr> <tr><td>12</td><td>GCTRL-03 SR10C-VA-IMG-05/06, SR10C-VA-PIRG-05/06, CONTROL.</td></tr> <tr><td>13</td><td>SR10C MODULE ASSEMBLY 01 &amp; 02 WATER FLOWS &amp; TEMPERATURE SWITCHES</td></tr> <tr><td>14</td><td>FE10B-CS-GRIO-01 RGA RESET</td></tr> <tr><td>15</td><td>END STATION VALVES 06, 07, 12, 13, 14, 15 AND FE10B-RS-VALVE-11</td></tr> <tr><td>16</td><td>SLITS 01 AXIS X &amp; Y MOTION CONTROL</td></tr> <tr><td>17</td><td>ROOT PUMP AND TURBO PUMP CONTROL</td></tr> <tr><td>18</td><td></td></tr> <tr><td>19</td><td></td></tr> <tr><td>20</td><td></td></tr> <tr><td>21</td><td></td></tr> <tr><td>22</td><td></td></tr> <tr><td>23</td><td></td></tr> <tr><td>24</td><td></td></tr> <tr><td>25</td><td></td></tr> </tbody> </table> |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   | SHEET     | DESCRIPTION | 1        | HOOK-UP DRAWING INDEX                                                 | 2          | FE10B-VA-RACK-01 230VAC / 24VDC POWER DISTRIBUTION.                          | 3           | FE10B-VA-RACK-01 24V DISTRIBUTION                               | 4            | FE10B-VA-RACK-01 NETWORK / COMMS (SERIAL)                                     | 5       | FE10B-VA-ABSB-01, FE10B-VA-VALVE-01 AND FE10B-VA-VALVE-02 CONTROL         | 6        | FE10B-VA-VALVE-03, FE10B-VA-VALVE-04 AND FE10B-VA-VALVE-05 CONTROL | 7                      | SR10C-FE-FCTLR-01 FAST FLAP CONTROLLER 01, SR10C-VA-FVALV-01 | 8       | GCTLR-01 SR10C-FE-IMG-01/02, SR10C-VA-PIRG-01/02 CONTROL. | 9       | MPC-01 SR10C-FE-IONP-01, 02, 03 AND 04 CONTROL.                             | 10                     | GCTRL-02 SR10C-VA-IMG-03/04, SR10C-VA-PIRG-03/04, CONTROL. | 11               | MPC-02 SR10C-FE-IONP-05 AND 06 CONTROL.                                           | 12 | GCTRL-03 SR10C-VA-IMG-05/06, SR10C-VA-PIRG-05/06, CONTROL. | 13                     | SR10C MODULE ASSEMBLY 01 & 02 WATER FLOWS & TEMPERATURE SWITCHES | 14    | FE10B-CS-GRIO-01 RGA RESET | 15 | END STATION VALVES 06, 07, 12, 13, 14, 15 AND FE10B-RS-VALVE-11 | 16 | SLITS 01 AXIS X & Y MOTION CONTROL | 17 | ROOT PUMP AND TURBO PUMP CONTROL | 18 |  | 19 |  | 20 |  | 21 |  | 22 |  | 23 |  | 24 |  | 25 |  |
| SHEET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DESCRIPTION                                                                                                                                                                                                               |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FE10B-VA-RACK-01 230VAC / 24VDC POWER DISTRIBUTION.                                                                                                                                                                       |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FE10B-VA-RACK-01 24V DISTRIBUTION                                                                                                                                                                                         |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FE10B-VA-RACK-01 NETWORK / COMMS (SERIAL)                                                                                                                                                                                 |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FE10B-VA-ABSB-01, FE10B-VA-VALVE-01 AND FE10B-VA-VALVE-02 CONTROL                                                                                                                                                         |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FE10B-VA-VALVE-03, FE10B-VA-VALVE-04 AND FE10B-VA-VALVE-05 CONTROL                                                                                                                                                        |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SR10C-FE-FCTLR-01 FAST FLAP CONTROLLER 01, SR10C-VA-FVALV-01                                                                                                                                                              |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | GCTLR-01 SR10C-FE-IMG-01/02, SR10C-VA-PIRG-01/02 CONTROL.                                                                                                                                                                 |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MPC-01 SR10C-FE-IONP-01, 02, 03 AND 04 CONTROL.                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | GCTRL-02 SR10C-VA-IMG-03/04, SR10C-VA-PIRG-03/04, CONTROL.                                                                                                                                                                |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MPC-02 SR10C-FE-IONP-05 AND 06 CONTROL.                                                                                                                                                                                   |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | GCTRL-03 SR10C-VA-IMG-05/06, SR10C-VA-PIRG-05/06, CONTROL.                                                                                                                                                                |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SR10C MODULE ASSEMBLY 01 & 02 WATER FLOWS & TEMPERATURE SWITCHES                                                                                                                                                          |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FE10B-CS-GRIO-01 RGA RESET                                                                                                                                                                                                |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | END STATION VALVES 06, 07, 12, 13, 14, 15 AND FE10B-RS-VALVE-11                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SLITS 01 AXIS X & Y MOTION CONTROL                                                                                                                                                                                        |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ROOT PUMP AND TURBO PUMP CONTROL                                                                                                                                                                                          |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| <b>BECKHOFF ETHERCAT MODULE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MODULE</th><th>PART No.</th><th>FUNCTION</th><th>SEE SHEET No.</th><th>POWER REQ.</th><th>ACC. POWER</th></tr> </thead> <tbody> <tr> <td>BUS COUPLER</td><td>EK 1100</td><td>24VDC SUPPLY</td><td>/08.G6</td><td>70mA</td><td></td></tr> <tr> <td>01</td><td>ES 3702</td><td>2 X ANALOGUE 0-10V I/P</td><td>/08.F6</td><td>200mA</td><td>200mA</td></tr> <tr> <td>02</td><td>ES 3702</td><td>2 X ANALOGUE 0-10V I/P</td><td>/10.F6</td><td>200mA</td><td>400mA</td></tr> <tr> <td>03</td><td>ES 3702</td><td>2 X ANALOGUE 0-10V I/P</td><td>/12.F6</td><td>200mA</td><td>600mA</td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   | MODULE    | PART No.    | FUNCTION | SEE SHEET No.                                                         | POWER REQ. | ACC. POWER                                                                   | BUS COUPLER | EK 1100                                                         | 24VDC SUPPLY | /08.G6                                                                        | 70mA    |                                                                           | 01       | ES 3702                                                            | 2 X ANALOGUE 0-10V I/P | /08.F6                                                       | 200mA   | 200mA                                                     | 02      | ES 3702                                                                     | 2 X ANALOGUE 0-10V I/P | /10.F6                                                     | 200mA            | 400mA                                                                             | 03 | ES 3702                                                    | 2 X ANALOGUE 0-10V I/P | /12.F6                                                           | 200mA | 600mA                      |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| MODULE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PART No.                                                                                                                                                                                                                  | FUNCTION               | SEE SHEET No. | POWER REQ. | ACC. POWER |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| BUS COUPLER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EK 1100                                                                                                                                                                                                                   | 24VDC SUPPLY           | /08.G6        | 70mA       |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ES 3702                                                                                                                                                                                                                   | 2 X ANALOGUE 0-10V I/P | /08.F6        | 200mA      | 200mA      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ES 3702                                                                                                                                                                                                                   | 2 X ANALOGUE 0-10V I/P | /10.F6        | 200mA      | 400mA      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ES 3702                                                                                                                                                                                                                   | 2 X ANALOGUE 0-10V I/P | /12.F6        | 200mA      | 600mA      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| DRN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NMP                                                                                                                                                                                                                       |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15/05/20                                                                                                                                                                                                                  |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| MWP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| MWP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                           |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15/05/20                                                                                                                                                                                                                  |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
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| 05/04/19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 05/04/19                                                                                                                                                                                                                  |                        |               |            |            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |           |             |          |                                                                       |            |                                                                              |             |                                                                 |              |                                                                               |         |                                                                           |          |                                                                    |                        |                                                              |         |                                                           |         |                                                                             |                        |                                                            |                  |                                                                                   |    |                                                            |                        |                                                                  |       |                            |    |                                                                 |    |                                    |    |                                  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |



A FIRST ISSUE

B  
ALL SHEETS: REVIEWED  
CABLE NAMES TO COMPLY  
WITH CABLE SCHEDULE

C

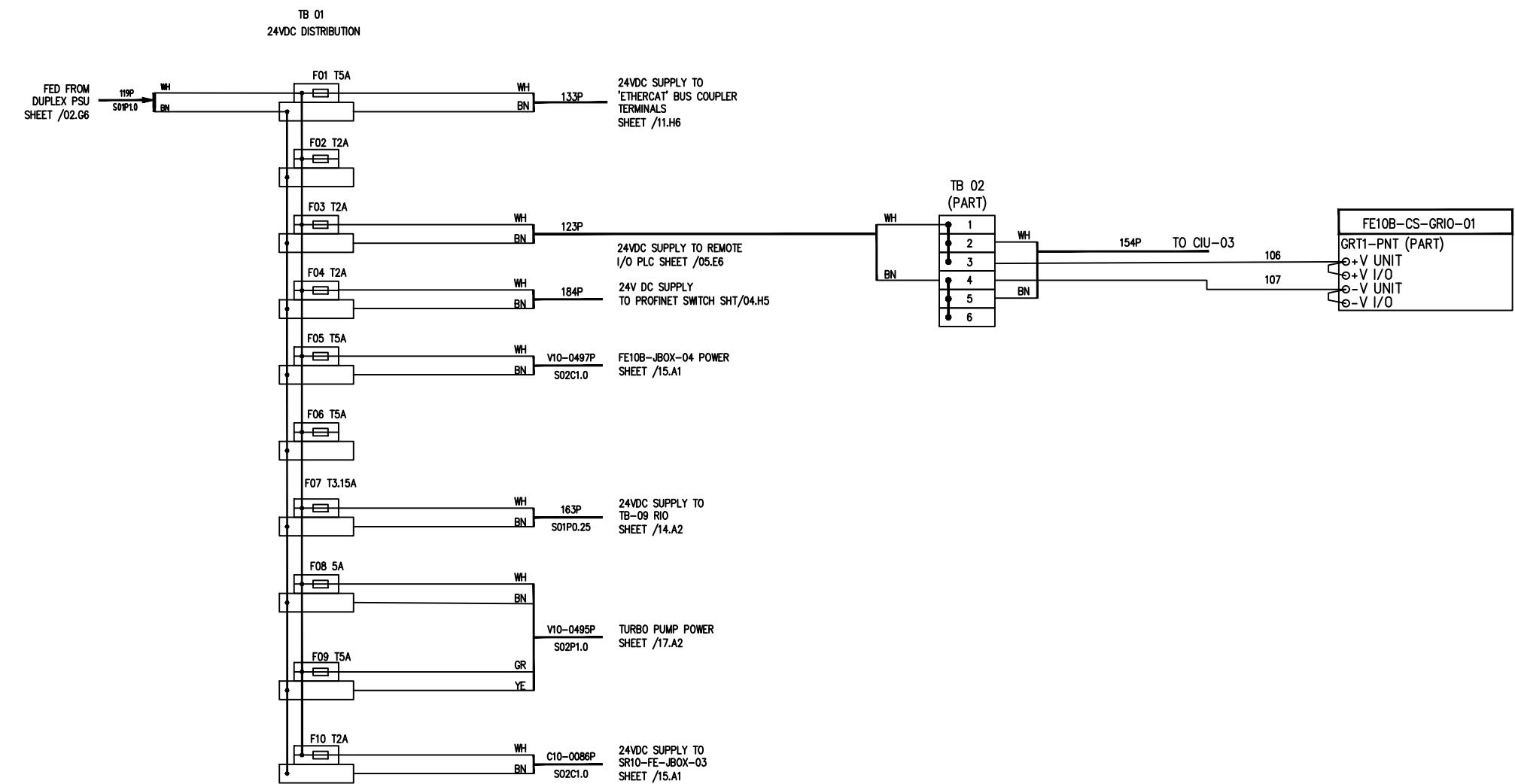
SHEET 01: ADDED SHT. 17.  
SHEET 02: ADDED POWER  
TO ROOT PUMP.  
SHEET 3 ADDED POWER TO  
JBOX-04 AND TURBO PUMP.  
SHEET 04: UPDATED  
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SHEET 05: ADDED COMM  
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SHEET 10 AND 1: ADDED  
MODULE TO RIO 01.  
SHEET 15: ADDED JBOX-04  
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STATION.  
SHEET 17: ADDED ROOT  
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D

REV D CREATED FOR  
Idrawings BUG NO CHANGES  
FROM REV C.

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DIAMOND HOUSE  
HARWELL SCIENCE AND INNOVATION  
CAMPUS  
DIDCOT, OXFORDSHIRE  
OX11 0DE

THIS  
REVISION  
DRN NMP  
DATE 15/05/20  
CHK MWP  
DATE 15/05/20  
APPD MWP  
DATE 15/05/20  
AUTOCAD DRG No.  
1147700  
TITLE  
STORAGE RING CELL 10  
FRONT END 10B CONTROL SYSTEM  
HOOK-UP  
ORIGINATOR DATE 05/04/19  
NMP 05/04/19  
DRG STATUS Approved  
SHEET 2 OF 17 REV. D



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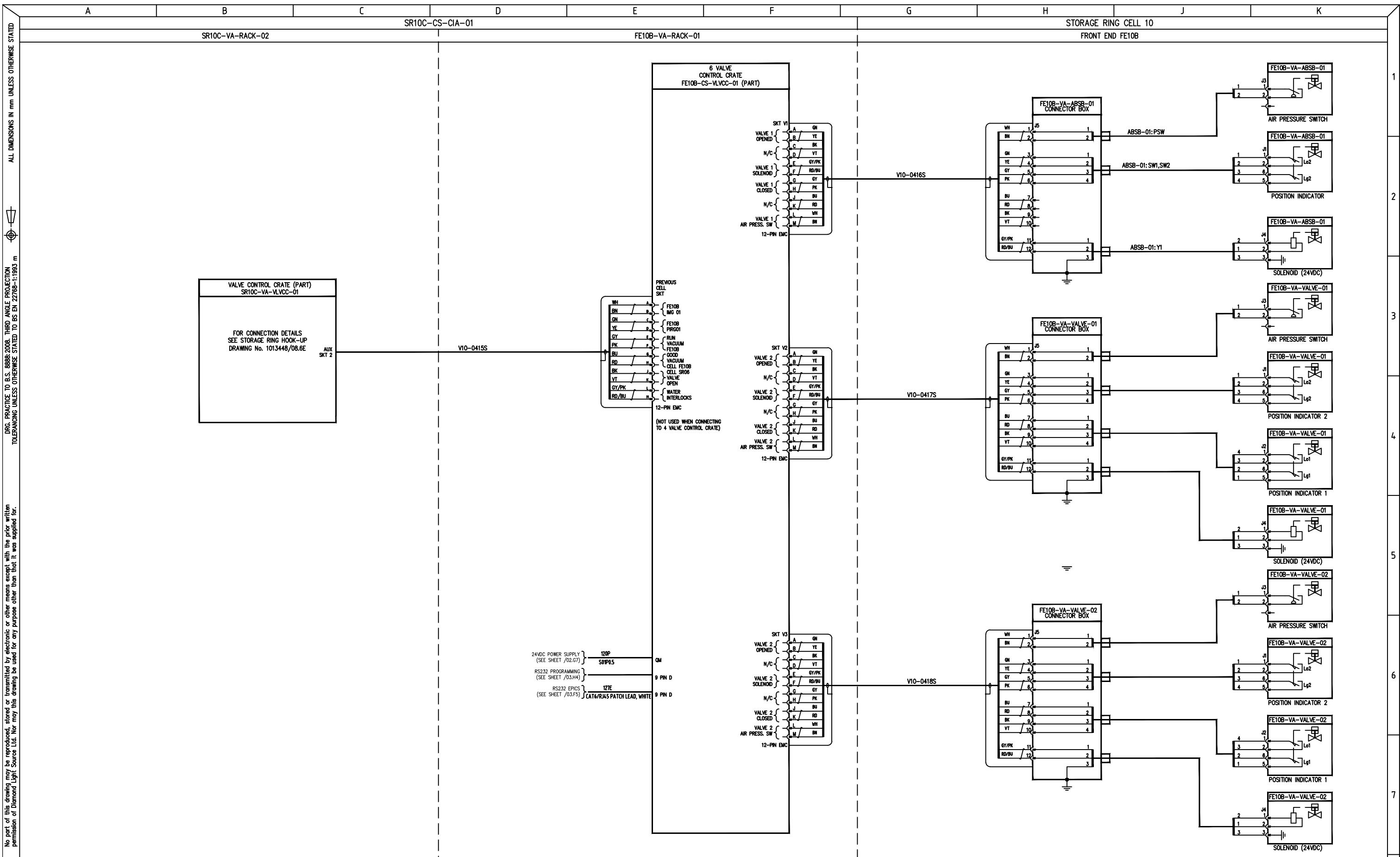


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SHEET 3 OF 17 REV. **D**

**STORAGE RING CELL 10  
FRONT END 10B CONTROL SYSTEM  
HOOK-UP**

FOR CIRCUIT LOCATIONS SEE TABLE ON SHEET 1

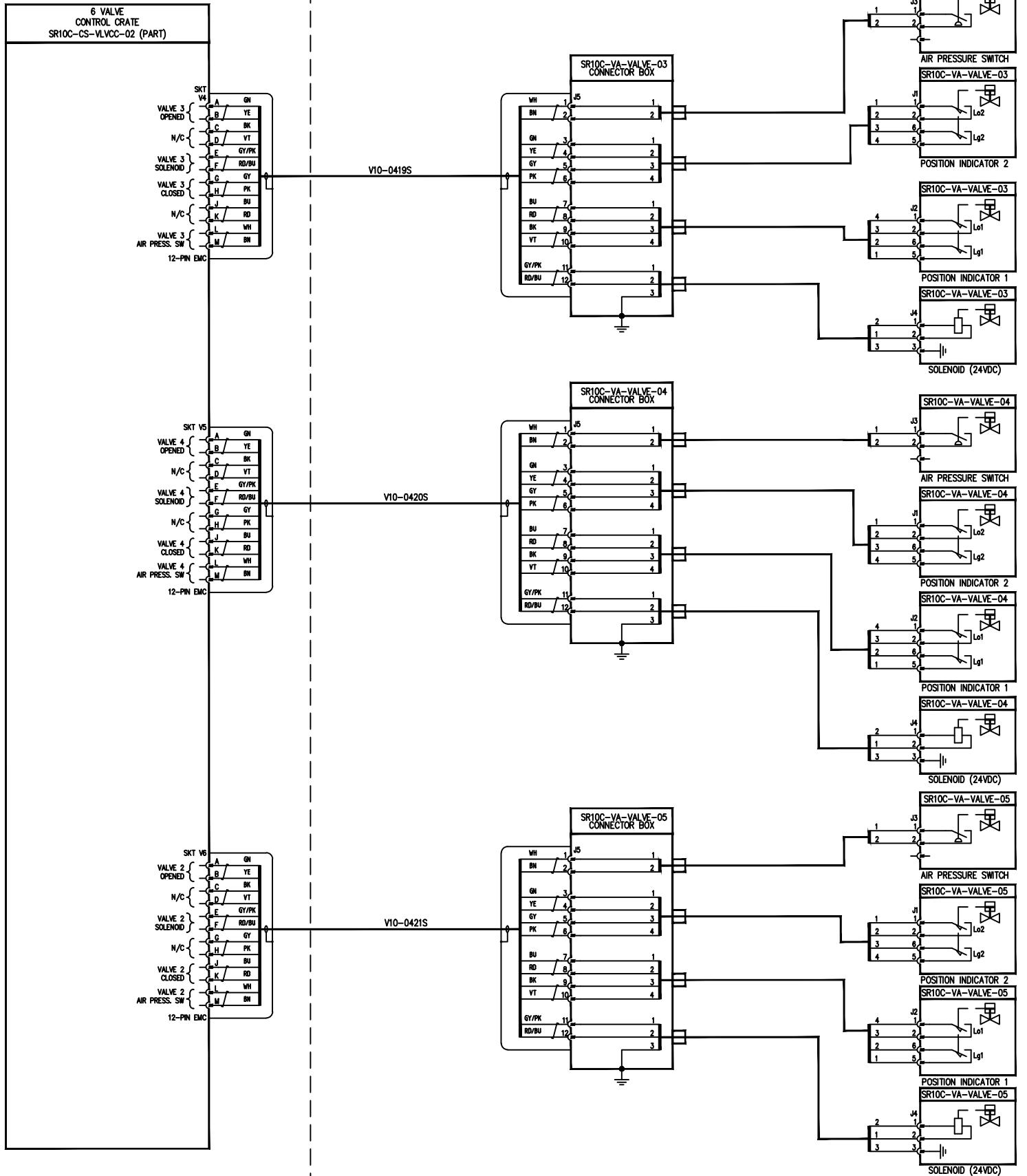
| A | FIRST ISSUE | B | ALL SHEETS: REVIEWED<br>FOR<br>ACCURATE NAMES TO COMPLY<br>WITH CABLE SCHEDULE |  | C | SHEET 01: ADDED SH17.<br>SHEET 02: ADDED POWER<br>TO ROOT PUMP.<br>SHEET 03 ADDED POWER TO<br>BOXY-04 AND TURBO PUMP.<br>SHEET 04: UPDATED<br>PROFIBUS NETWORK..<br>SHEET 05: ADDED COMMS<br>TO RIO 02.<br>SHEET 10 AND 1: ADDED<br>MODULE TO RIO 01.<br>SHEET 15: ADDED IBOX-04<br>AND MODULES TO SECOND<br>VALVE ADDED VALUES TO END<br>TATATION.<br>SHEET 17: ADDED ROOT<br>AND TURBO PUMP LOGIC |  | D | EV D CREATED FOR<br>drawings BUG.NO CHANGES<br>FROM REV C. |             | THIS<br>REVISION   |             | TITLE         |          |
|---|-------------|---|--------------------------------------------------------------------------------|--|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|------------------------------------------------------------|-------------|--------------------|-------------|---------------|----------|
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | DRN<br>DATE                                                | NMP<br>DATE | ORIGINATOR<br>DATE | NMP<br>DATE | DRG<br>STATUS | Approved |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | DRN<br>DATE                                                | MWP<br>DATE |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | 15/05/20                                                   | 15/05/20    |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | APPD<br>DATE                                               | MWP<br>DATE |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | 15/05/20                                                   | 15/05/20    |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | AUTOCAD                                                    | DRG<br>No.  |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | 1147700                                                    | 4 OF 17     |                    |             |               |          |
|   |             |   |                                                                                |  |   |                                                                                                                                                                                                                                                                                                                                                                                                     |  |   | SHEET                                                      | REV.        |                    |             |               |          |
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SR10C-VA-RACK-02

FE10B-VA-RACK-01

FRONT END FE10B



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DIAMOND LIGHT SOURCE LTD  
DIAMOND HOUSE  
HARWELL SCIENCE AND INNOVATION  
CAMPUS  
DIDCOT, OXFORDSHIRE  
OX11 0DE

THIS  
REVISION  
DRN NMP  
DATE 15/05/20  
CHK MWP  
DATE 15/05/20  
APPD MWP  
DATE 15/05/20  
AUTOCAD DRG No.  
ORIGINATOR DATE 05/04/19  
NMP 05/04/19  
DRG STATUS Approved  
SHEET 6 OF 17  
REV. D

**A**

SR10C-VA-RACK-02

**B**

FE10B-VA-RACK-01

FRONT END FE10B

**C**

FIRST ISSUE  
ALL SHEETS: REVIEWED  
CABLE NAMES TO COMPLY  
WITH CABLE SCHEDULE

**D**

REV D CREATED FOR  
Idrawings BUG NO CHANGES  
FROM REV C.

1

2

3

4

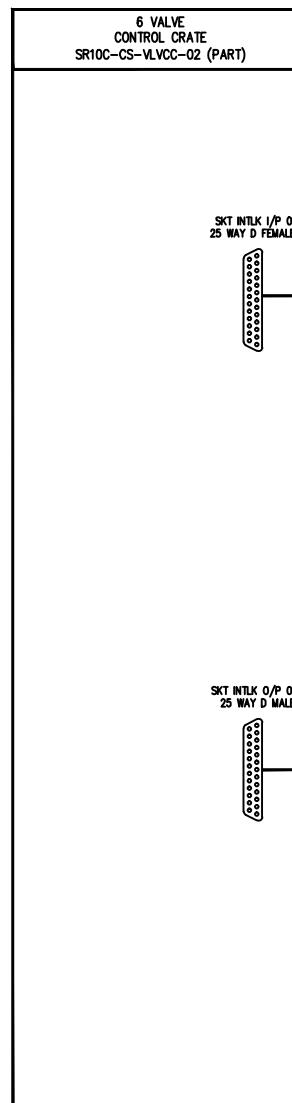
5

6

7

8

A FIRST ISSUE  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K



REV D CREATED FOR  
DRAWINGS BUG NO CHANGES  
FROM REV C.

D

SR10-CS-CIA-01  
FE10B-VA-RACK-01

135S S12P0.14

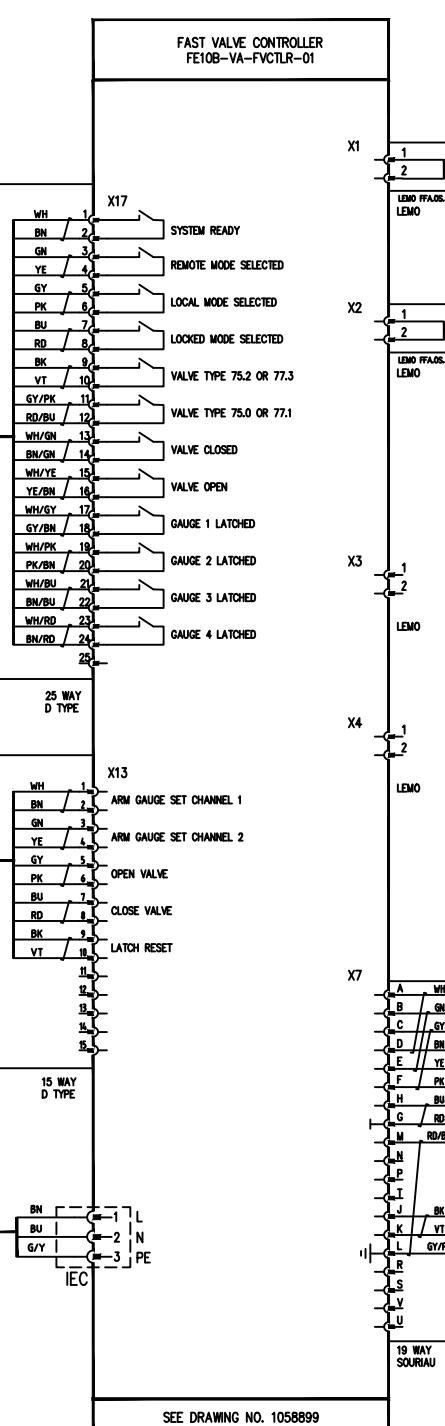
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230VAC FROM  
CBB (C2A)  
(SEE SHEET 2/F5)

108M

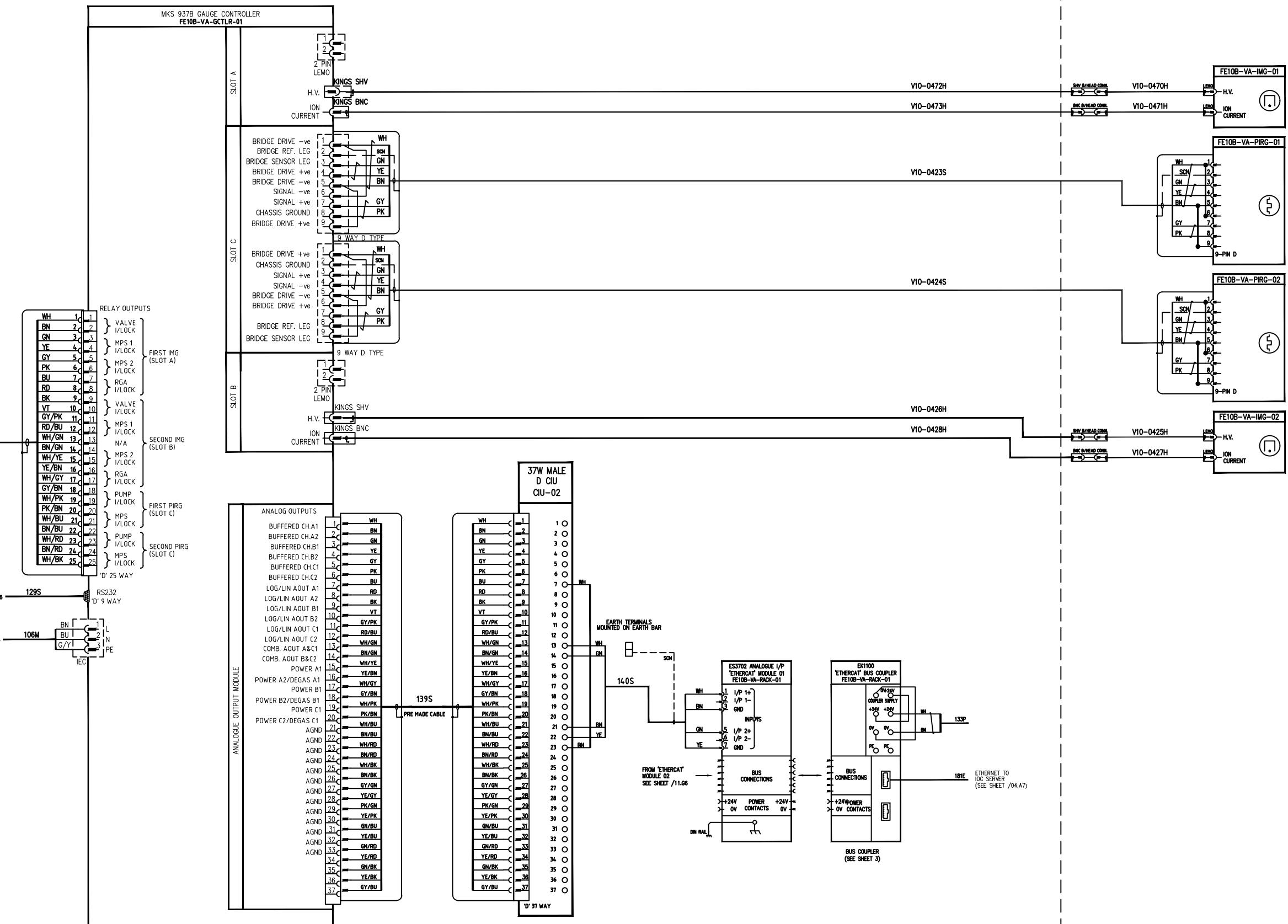
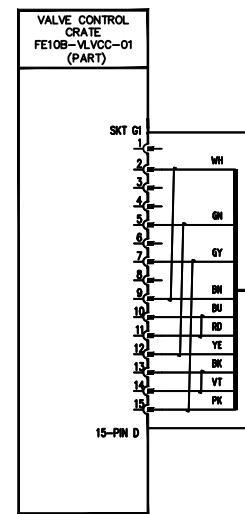
IEC

SEE DRAWING NO. 1058699



**diamond**  
DIAMOND LIGHT SOURCE LTD  
DIAMOND HOUSE  
HARWELL SCIENCE AND INNOVATION  
CAMPUS  
DIDCOT, OXFORDSHIRE  
OX11 0DE

| THIS REVISION |                 | TITLE                                                           |            |
|---------------|-----------------|-----------------------------------------------------------------|------------|
| DRN DATE      | NMP             | STORAGE RING CELL 10<br>FRONT END 10B CONTROL SYSTEM<br>HOOK-UP |            |
| CHK DATE      | MWP             |                                                                 |            |
| APPD DATE     | MWP             |                                                                 |            |
| DRG No.       | ORIGINATOR DATE | NMP                                                             | DRG STATUS |
| 1147700       | 05/04/19        | Approved                                                        |            |
| AUTOCAD       | DRG No.         | SHEET 7 OF 17                                                   | REV. D     |



A FIRST ISSUE

B

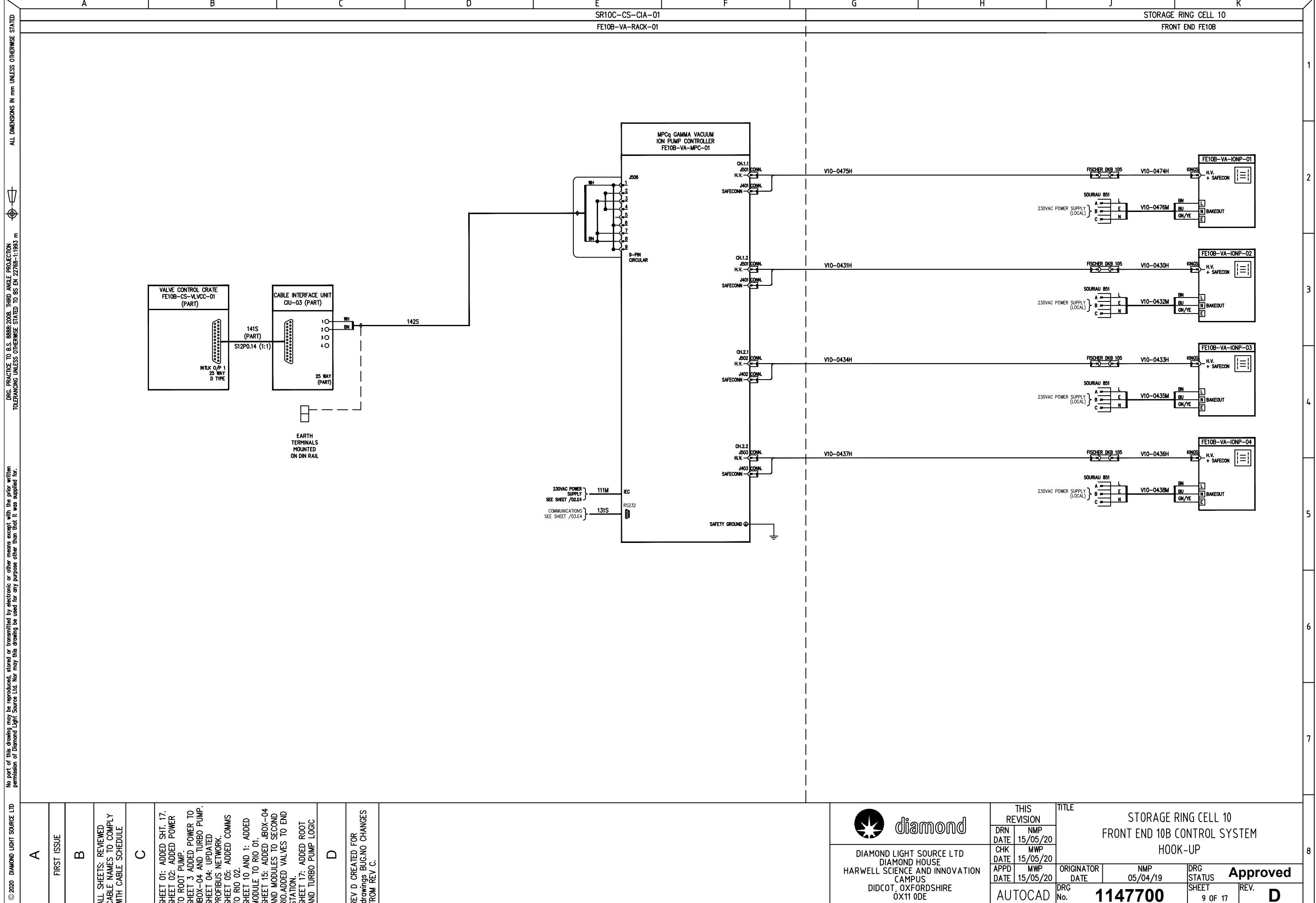
ALL SHEETS: REVIEWED  
CABLE NAMES TO COMPLY  
WITH CABLE SCHEDULE

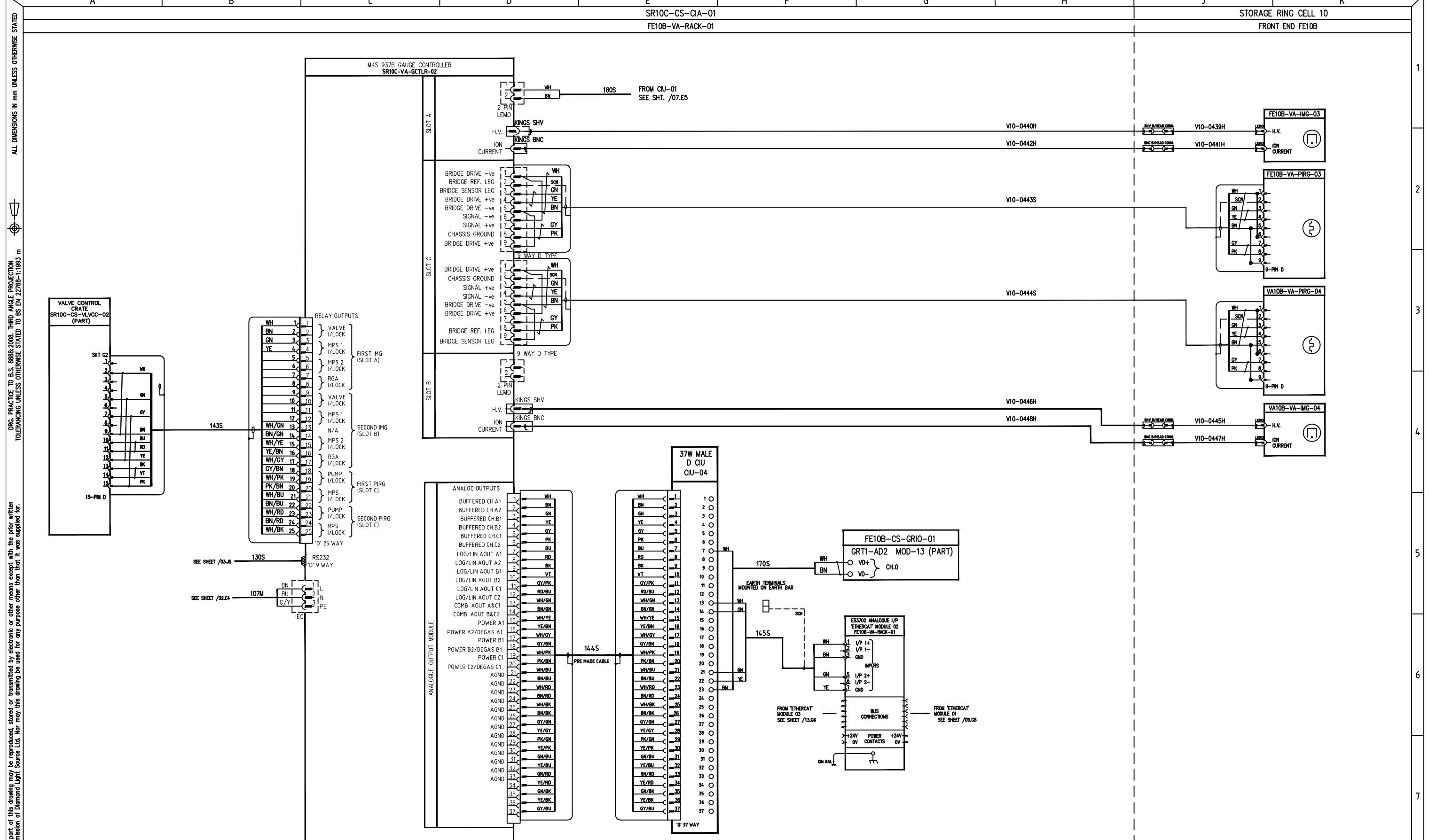
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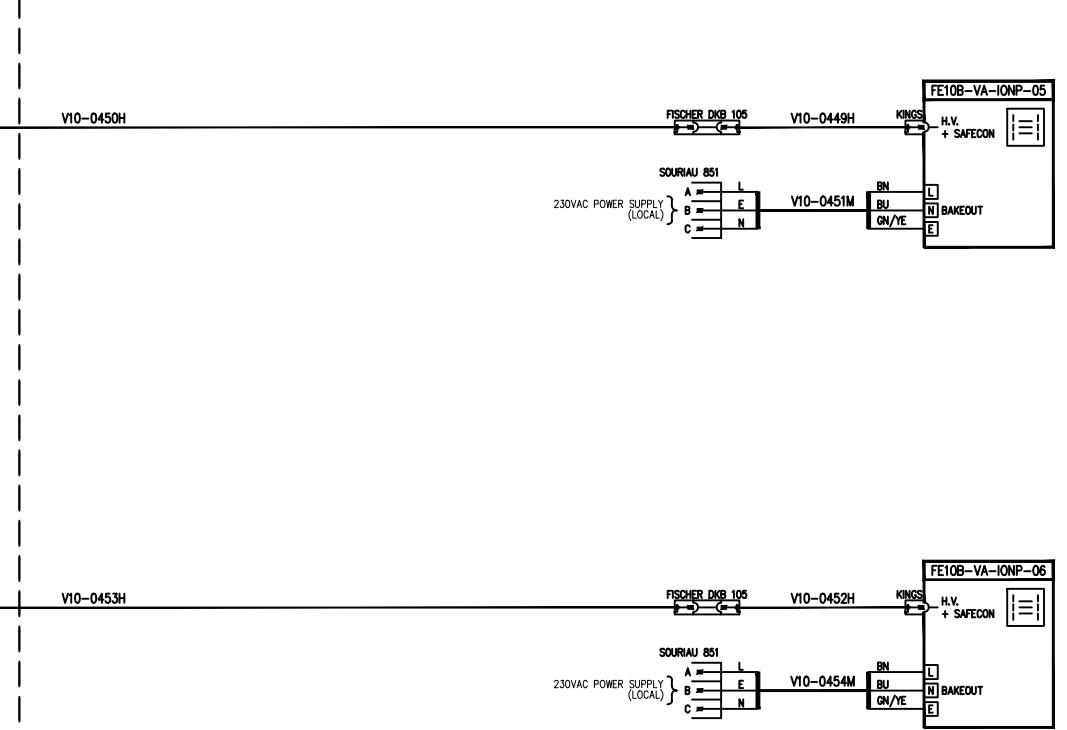
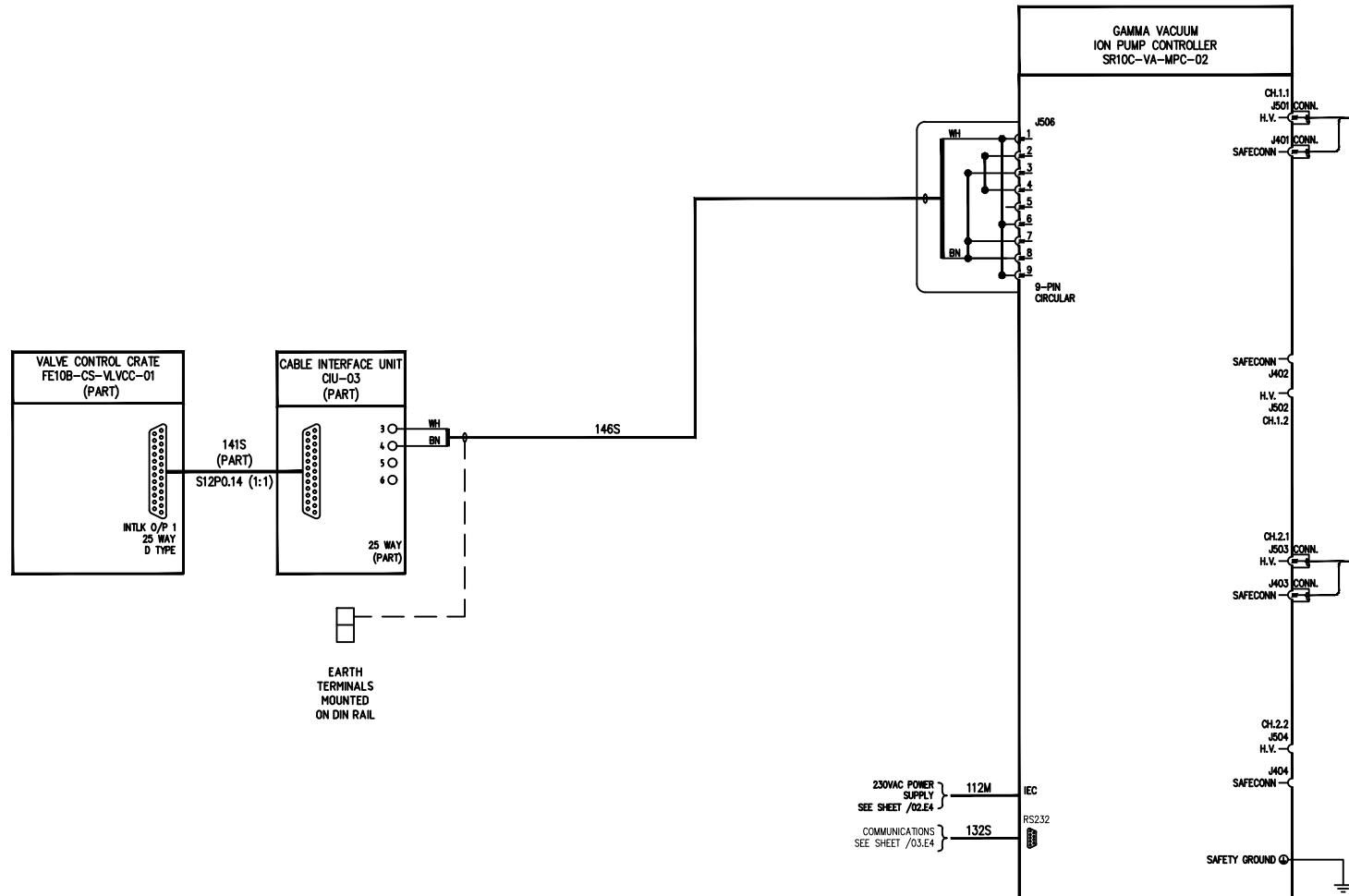
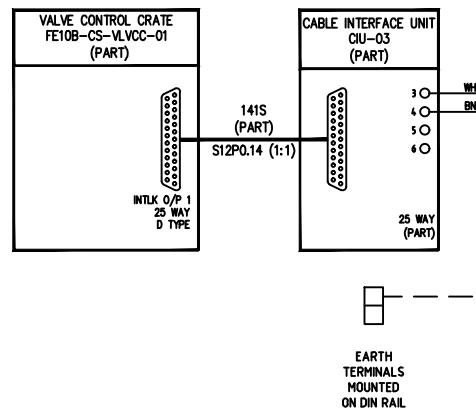
SHEET 01: ADDED SHT. 17.  
SHEET 02: ADDED POWER  
TO ROOT PUMP.  
SHEET 3 ADDED POWER TO  
JB0X-04 AND TURBO PUMP.  
SHEET 04: UPDATED  
PROFIBUS NETWORK.  
SHEET 05: ADDED COMM  
TO RIO 02.  
SHEET 10 AND 1: ADDED  
MODULE TO RIO 01.  
SHEET 15: ADDED JB0X-04  
AND MODULES TO SECOND  
ROADED VALVES TO END  
STATION.  
SHEET 17: ADDED ROOT  
AND TURBO PUMP LOGIC

D

REV D CREATED FOR  
Diamonds BUG NO CHANGES  
FROM REV C.







A FIRST ISSUE

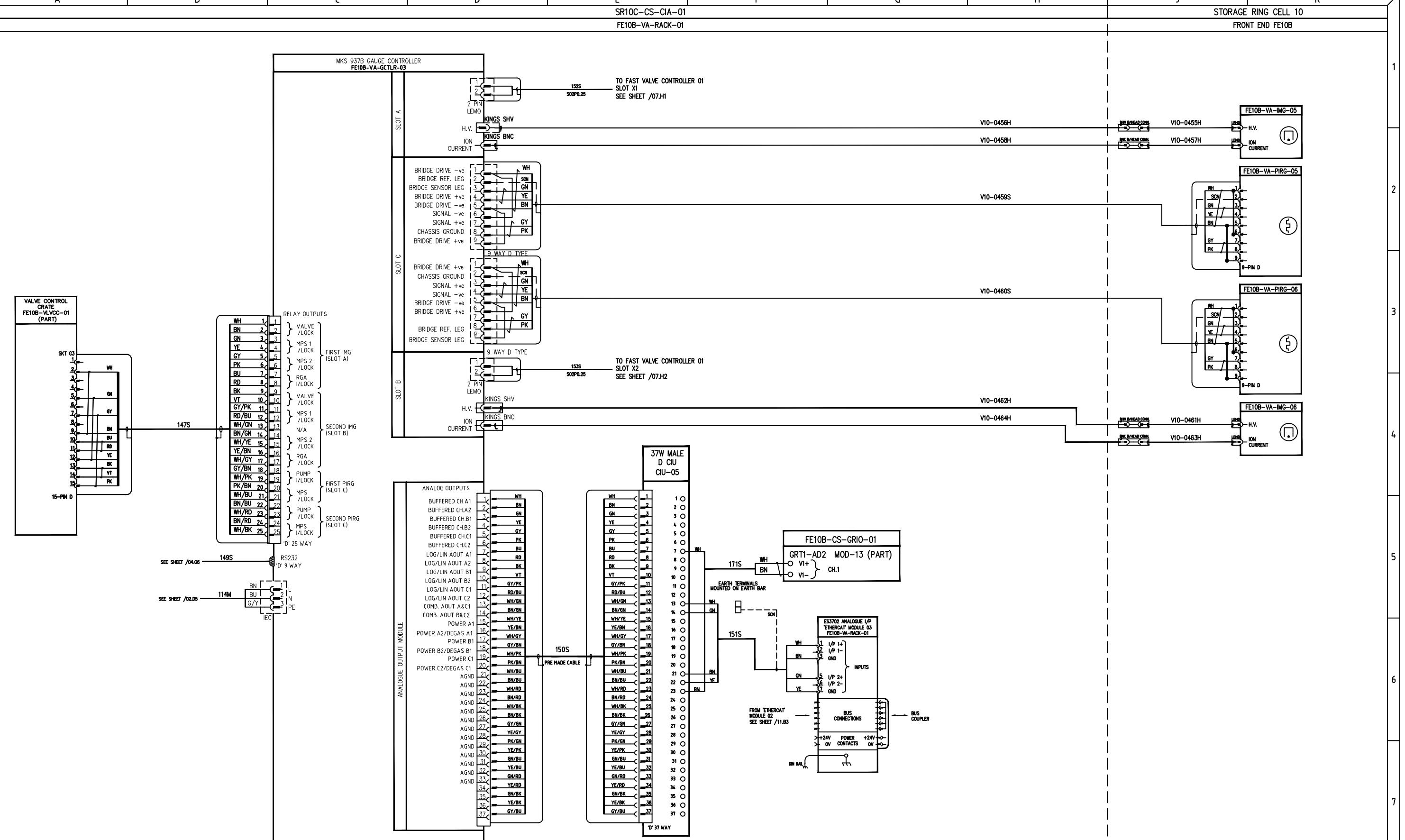
B ALL SHEETS REVIEWED  
CABLE NAMES TO COMPLY  
WITH CABLE SCHEDULE

C

SHEET 01: ADDED SHT. 17.  
SHEET 02: ADDED POWER  
TO ROOT PUMP.  
SHEET 3 ADDED POWER TO  
JBOX-04 AND TURBO PUMP.  
SHEET 04: UPDATED  
PROFIBUS NETWORK.  
SHEET 05: ADDED COMMS  
TO RIO 02.  
SHEET 10 AND 11: ADDED  
MODULE TO RIO 01.  
SHEET 15: ADDED JBOX-04  
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D REV D CREATED FOR  
DRAWINGS BUG NO CHANGES  
FROM REV C.

| THIS<br>REVISION |          | TITLE                        |          |            |
|------------------|----------|------------------------------|----------|------------|
| DRN              | NMP      | STORAGE RING CELL 10         |          |            |
| DATE             | 15/05/20 | FRONT END 10B CONTROL SYSTEM |          |            |
| CHK              | MWP      | HOOK-UP                      |          |            |
| DATE             | 15/05/20 | APPD                         | MWP      | ORIGINATOR |
| DATE             | 15/05/20 | DATE                         | 05/04/19 | NMP        |
| AUTOCAD          | DRG No.  | DRG STATUS                   | Approved | REV.       |
|                  | 1147700  | SHEET                        | 10 OF 17 | D          |



| A           | B | C |
|-------------|---|---|
| FIRST ISSUE |   |   |

ALL SHEETS: REVIEWED

CABLE NAMES TO COMPLY

WITH CABLE SCHEDULE

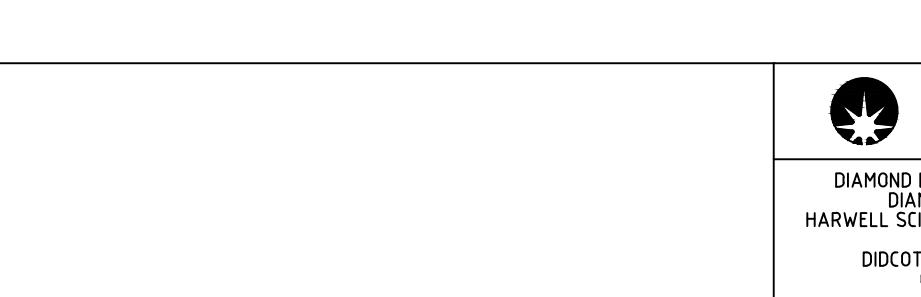
SHEET 01: ADDED SHT. 17.  
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 AND TURBO PUMP LOGIC

REV D CREATED FOR

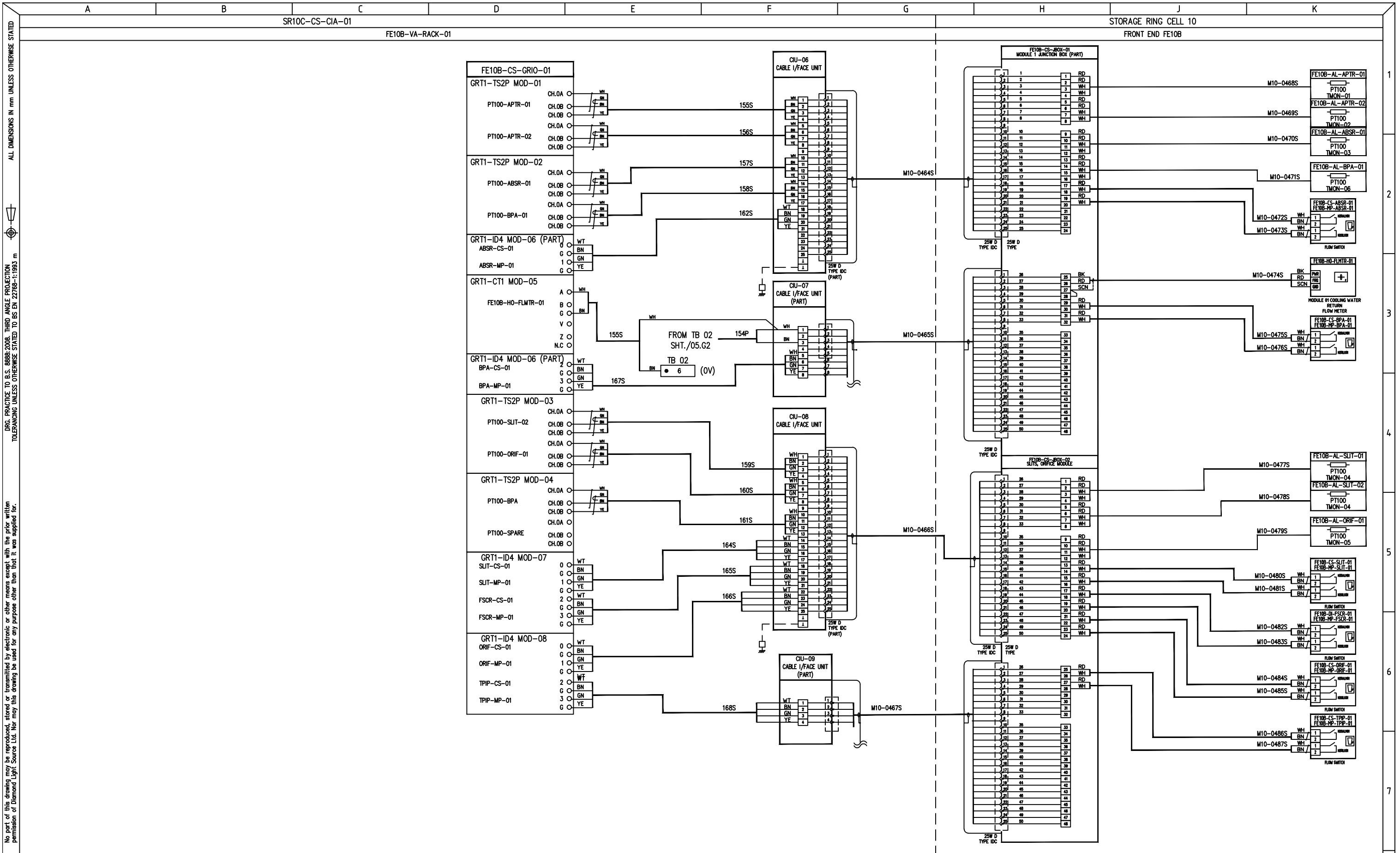
Idrawings BUG NO CHANGES

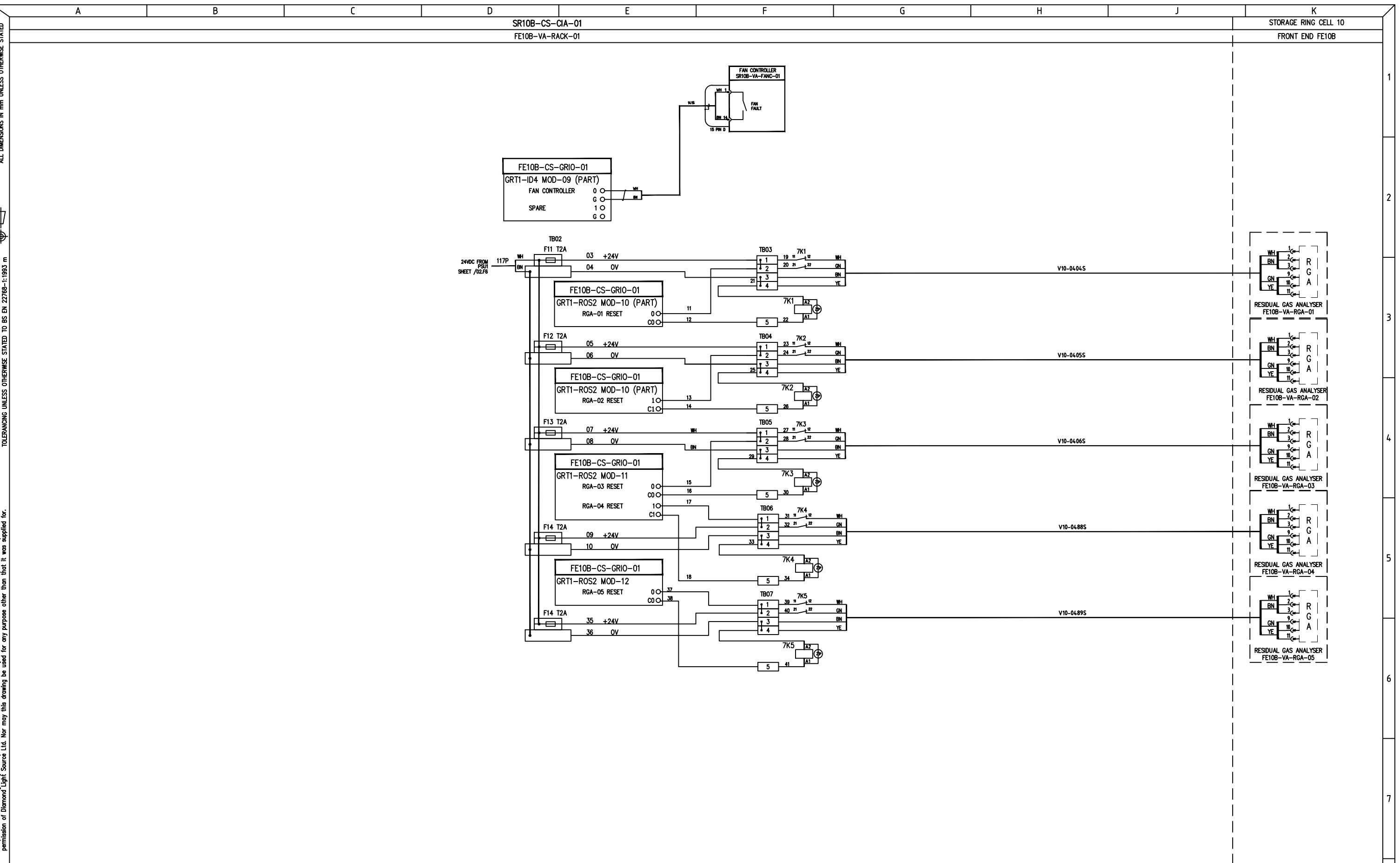
FROM REV C.

D

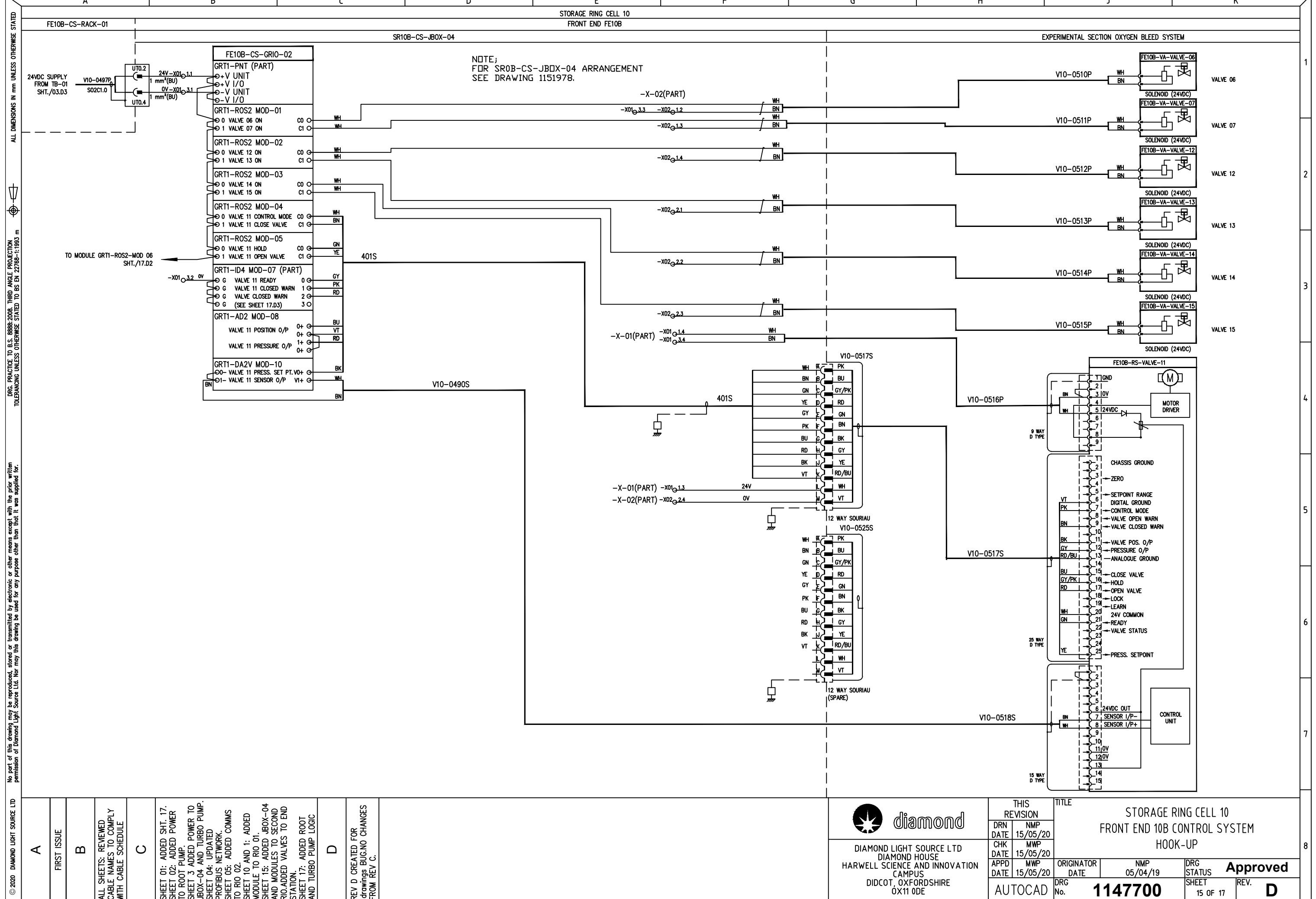


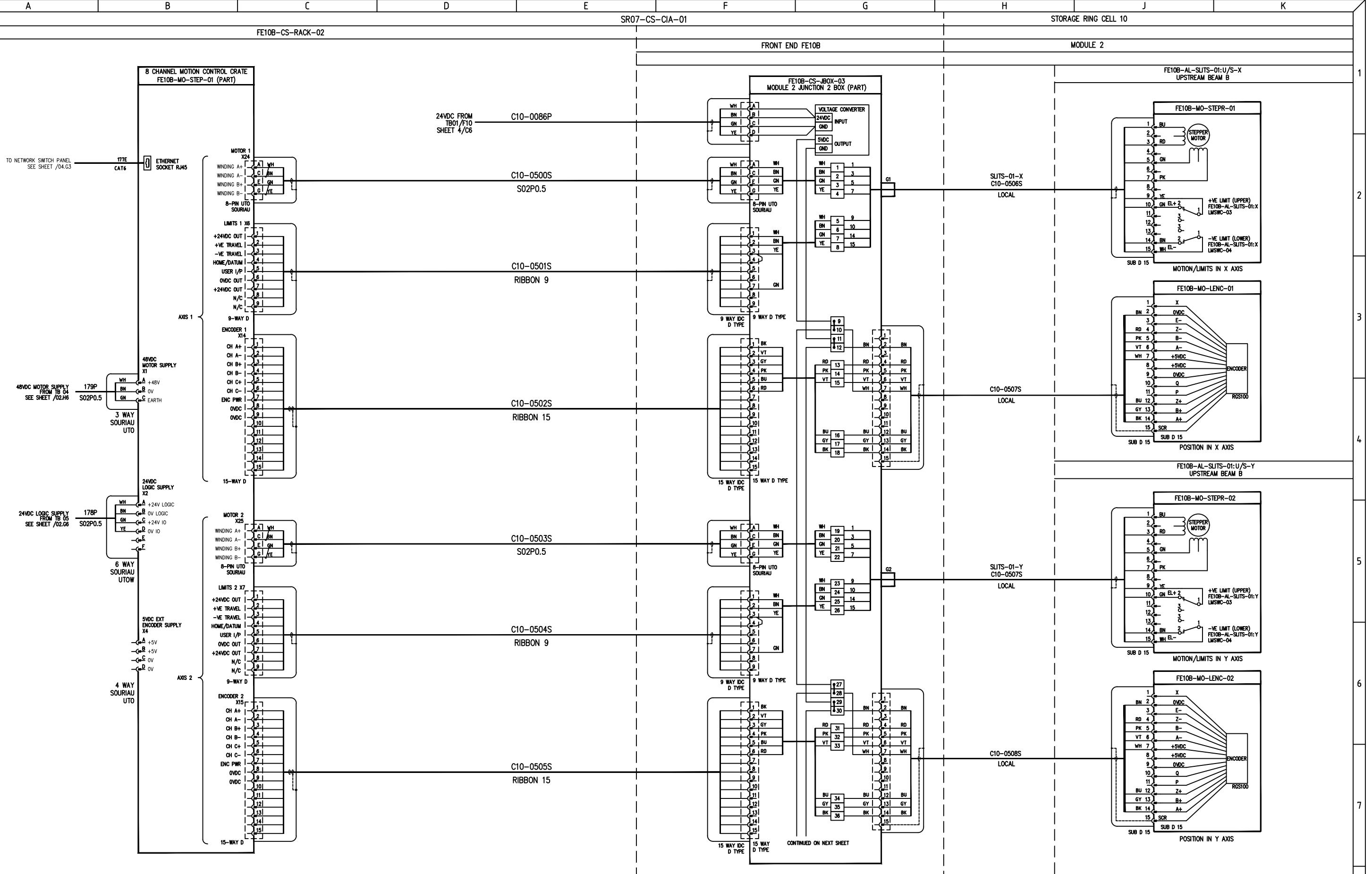
| THIS REVISION |          | TITLE                                                           |                 |              |
|---------------|----------|-----------------------------------------------------------------|-----------------|--------------|
| DRN           | NMP DATE | STORAGE RING CELL 10<br>FRONT END 10B CONTROL SYSTEM<br>HOOK-UP |                 |              |
| CHK           | MWP DATE | 15/05/20                                                        |                 |              |
| APPD          | MWP DATE | 15/05/20                                                        | ORIGINATOR DATE | NMP 05/04/19 |
|               |          |                                                                 | DRG STATUS      | Approved     |
| AUTOCAD       | DRG No.  | 1147700                                                         | SHEET 12 OF 17  | REV. D       |





| THIS<br>REVISION |          | TITLE                        |                   |
|------------------|----------|------------------------------|-------------------|
| DRN              | NMP      | STORAGE RING CELL 10         |                   |
| DATE             | 15/05/20 | FRONT END 10B CONTROL SYSTEM |                   |
| CHK              | MWP      | HOOK-UP                      |                   |
| DATE             | 15/05/20 |                              |                   |
| APPD             | MWP      | ORIGINATOR                   | NMP               |
| DATE             | 15/05/20 | DATE                         | 05/04/19          |
| DRG STATUS       | Approved | DRG STATUS                   |                   |
| AUTOCAD          | DRG No.  | 1147700                      | SHEET<br>14 OF 17 |
|                  |          |                              | REV.<br>D         |





A

FIRST ISSUE

B

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CABLE NAMES TO COMPLY  
WITH CABLE SCHEDULE

C

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Diamonds BUG NO CHANGES  
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THIS  
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APPD MWP  
DATE 15/05/20

ORIGINATOR  
DATE 05/04/19

DRG STATUS Approved

AUTOCAD DRG No.

1147700  
SHEET  
16 OF 17  
REV. D

STORAGE RING CELL 10  
FRONT END 10B CONTROL SYSTEM  
HOOK-UP

8

