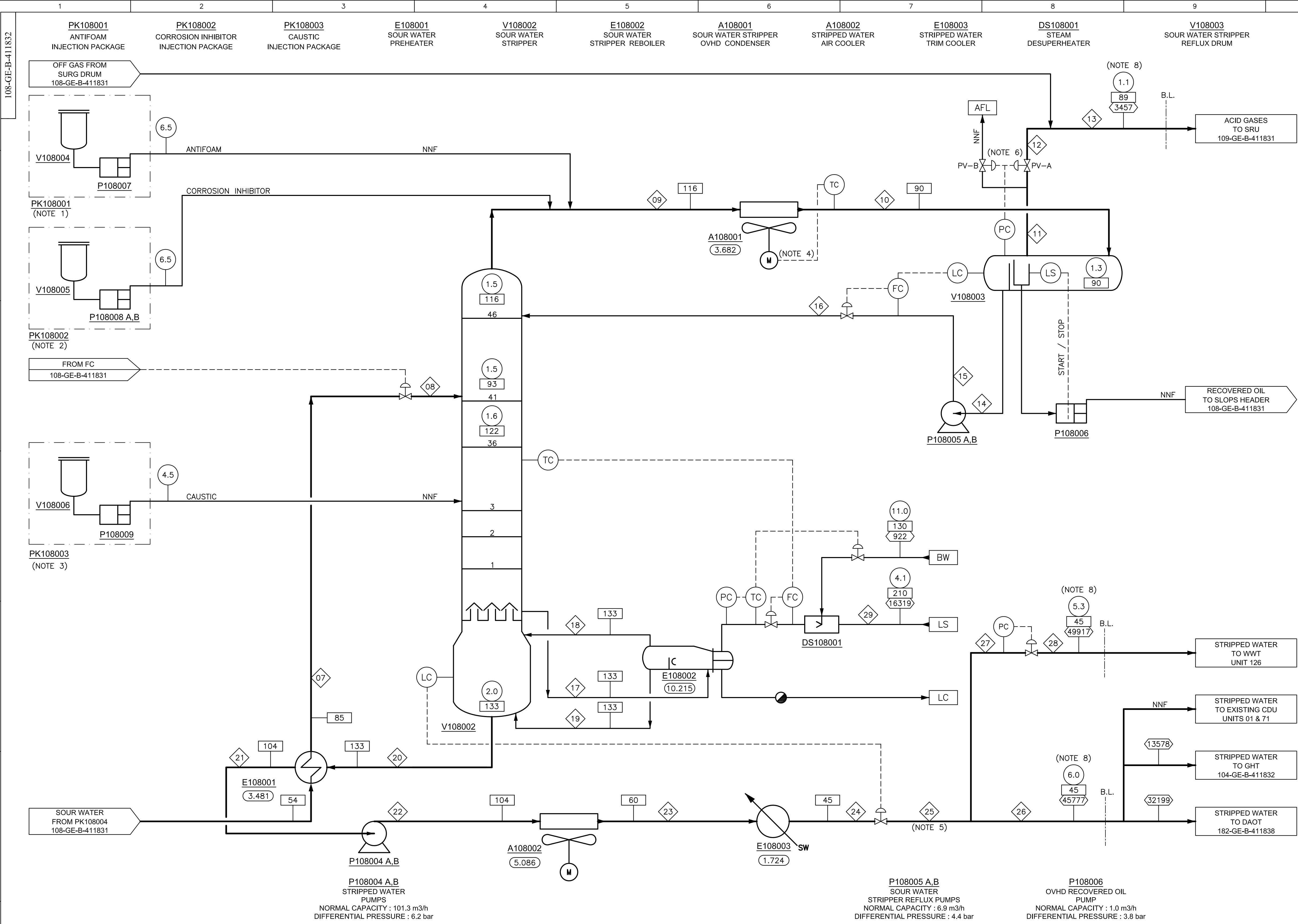




| Stream Number                |         | 07                               | 08                     | 09                     | 10                             | 12                 | 13               | 15               | 16                 | 17                   | 18                          | 20                           | 22                                | 25                    | 26                              | 28                         | 29           |
|------------------------------|---------|----------------------------------|------------------------|------------------------|--------------------------------|--------------------|------------------|------------------|--------------------|----------------------|-----------------------------|------------------------------|-----------------------------------|-----------------------|---------------------------------|----------------------------|--------------|
| Stream Description           |         | PREHEATED SOUR WATER TO STRIPPER | SOUR WATER TO STRIPPER | ACID GAS FROM STRIPPER | COOLED ACID GAS TO REFLUX DRUM | ACID GAS TO HEADER | ACID GAS TO PUMP | REFLUX FROM PUMP | REFLUX TO STRIPPER | STRIPPER TO REBOILER | REBOILER VAPORS TO STRIPPER | STRIPPED WATER FROM STRIPPER | STRIPPED WATER PUMP TO AIR COOLER | STRIPPED WATER HEADER | STRIPPED WATER TO PROCESS UNITS | STRIPPED WATER TO WWT UNIT | LS FROM B.L. |
| Vapor Mass Percent           | wt%     | 0.00                             | 0.09                   | 100.00                 | 35.78                          | 100.00             | 100.00           | 0.00             | 0.00               | 0.00                 | 100.00                      | 0.00                         | 0.00                              | 0.00                  | 0.00                            | 0.00                       | 100.00       |
| Temperature                  | °C      | 85                               | 85                     | 116                    | 90                             | 90                 | 89               | 90               | 90                 | 133                  | 133                         | 133                          | 104                               | 45                    | 45                              | 45                         | 210          |
| Pressure                     | bar g   | 5.7                              | 1.6                    | 1.5                    | 1.3                            | 1.1                | 1.1              | 6.0              | 5.1                | 2.1                  | 2.0                         | 2.2                          | 8.2                               | 6.3                   | 6.3                             | 5.6                        | 4.1          |
| Total Mole Flow              | kmol/h  | 5456.4                           | 5456.4                 | 477.8                  | 477.8                          | 144.6              | 145.1            | 333.2            | 333.2              | 6245.9               | 934.0                       | 5311.9                       | 5311.9                            | 5311.9                | 2541.0                          | 2770.8                     | 905.8        |
| Total Mass Flow              | kg/h    | 99133.7                          | 99133.7                | 9613.1                 | 9613.1                         | 3439.7             | 3456.9           | 6173.4           | 6173.4             | 112520.6             | 16826.6                     | 95694.0                      | 95694.0                           | 95694.0               | 45777.0                         | 49917.0                    | 16318.7      |
| Total Flowing Density        | kg/m³   | 939.2                            | 735.6                  | 1.6                    | 5.1                            | 1.7                | 1.7              | 888.9            | 888.8              | 919.1                | 1.6                         | 919.1                        | 945.0                             | 992.3                 | 992.3                           | 992.3                      | 2.4          |
| Total Molecular Weight       | kg/kmol | 18.17                            | 18.17                  | 20.12                  | 20.12                          | 23.79              | 23.82            | 18.53            | 18.53              | 18.02                | 18.02                       | 18.02                        | 18.02                             | 18.02                 | 18.02                           | 18.02                      | 18.02        |
| Composition (NOTE 7)         |         | mol%                             |                        |                        |                                |                    |                  |                  |                    |                      |                             |                              |                                   |                       |                                 |                            |              |
| Hydrogen                     |         | 0.0018                           | 0.0018                 | 0.0207                 | 0.0207                         | 0.0682             | 0.2460           | 0.0000           | 0.0000             | 0.0000               | 0.0000                      | 0.0000                       | 0.0000                            | 0.0000                | 0.0000                          | 0.0000                     | 0.0000       |
| C5+                          |         | 0.0043                           | 0.0043                 | 0.0494                 | 0.0494                         | 0.1634             | 0.2441           | 0.0000           | 0.0000             | 0.0000               | 0.0000                      | 0.0000                       | 0.0000                            | 0.0000                | 0.0000                          | 0.0000                     | 0.0000       |
| H2S                          |         | 0.9948                           | 0.9948                 | 14.0225                | 14.0225                        | 37.5452            | 37.5071          | 3.8163           | 3.8163             | < 7 ppmw             | < 7 ppmw                    | < 7 ppmw                     | < 7 ppmw                          | < 7 ppmw              | < 7 ppmw                        | < 7 ppmw                   | 0.0000       |
| Ammonia                      |         | 0.9587                           | 0.9587                 | 18.0466                | 18.0466                        | 36.1334            | 35.9886          | 10.1989          | 10.1989            | 0.0031               | < 23 ppmw                   | < 23 ppmw                    | < 23 ppmw                         | < 23 ppmw             | < 23 ppmw                       | < 23 ppmw                  | 0.0000       |
| Water                        |         | 98.04                            | 98.04                  | 67.86                  | 67.86                          | 26.09              | 26.00            | 85.99            | 85.99              | 100.00               | 99.99                       | 100.00                       | 100.00                            | 100.00                | 100.00                          | 100.00                     | 100.00       |
| Liquid Flowing Density       | kg/m³   | 939.2                            | 939.8                  | -                      | 889.1                          | -                  | -                | 888.9            | 888.8              | 919.1                | -                           | 919.1                        | 945.0                             | 992.3                 | 992.3                           | 992.3                      | -            |
| Liquid Flow Rate @ STD Cond. | m³/h    | 102.5                            | 102.3                  | -                      | 6.5                            | -                  | -                | 6.5              | 6.5                | 110.9                | -                           | 94.3                         | 94.3                              | 94.3                  | 45.1                            | 49.2                       | -            |
| Liquid Sp. Gr. @ STD Cond.   |         | 1.0                              | 1.0                    | -                      | 1.0                            | -                  | -                | 1.0              | 1.0                | 1.0                  | -                           | 1.0                          | 1.0                               | 1.0                   | 1.0                             | 1.0                        | -            |
| Liquid Molecular Weight      | kg/kmol | 18.2                             | 18.2                   | -                      | 18.5                           | -                  | -                | 18.5             | 18.5               | 18.0                 | -                           | 18.0                         | 18.0                              | 18.0                  | 18.0                            | 18.0                       | -            |
| Vapor Flowing Density        | kg/m³   | -                                | 2.923                  | 1.588                  | 1.849                          | 1.688              | 1.691            | -                | -                  | -                    | 1.618                       | -                            | -                                 | -                     | -                               | -                          | 2.352        |
| Vapor Flow Rate @ Op. Cond.  | m³/h    | -                                | 29.4                   | 6053.6                 | 1860.8                         | 2037.6             | 2044.5           | -                | -                  | -                    | 10398.3                     | -                            | -                                 | -                     | -                               | -                          | 6939.7       |
| Vapor Molecular Weight       | kg/kmol | -                                | 32.99                  | 20.12                  | 23.79                          | 23.79              | 23.82            | -                | -                  | -                    | 18.02                       | -                            | -                                 | -                     | -                               | -                          | 18.02        |

| REFERENCE DRAWINGS    |  | DWG NO.         | Rev. |
|-----------------------|--|-----------------|------|
| PFD SYMBOLS & LEGENDS |  | 000-GE-B-411831 | B0   |
| BLOCK FLOW DIAGRAM    |  | 108-GC-B-411831 | B0   |

GENERAL NOTES

NOTES

- 1- ANTIFOAM INJECTION PACKAGE TO BE FINALIZED BY VENDOR DURING DETAIL ENGINEERING. FOR INJECTION RATE, REFER TO CHEMICAL CONSUMPTION LIST (108-GM-E-411838).
- 2- CORROSION INHIBITOR INJECTION PACKAGE TO BE FINALIZED BY VENDOR DURING DETAIL ENGINEERING. FOR INJECTION RATE, REFER TO CHEMICAL CONSUMPTION LIST (108-GM-E-411838).
- 3-CAUSTIC INJECTION PACKAGE TO BE FINALIZED BY VENDOR DURING DETAIL ENGINEERING. FOR INJECTION RATE, REFER TO CHEMICAL CONSUMPTION LIST (108-GM-E-411838). CAUSTIC INJECTION IS PERFORMED WITH 10% wt KOH SOLUTION.
- 4- 50% OF FANS SHALL BE VARIABLE SPEED CONTROL.
- 5- STRIPPED WATER SPECIFICATIONS:  
MAXIMUM H2S CONTENT: 7 ppmw  
MAXIMUM NH3 CONTENT: 23 ppmw
- 6- SPLIT RANGE:
- 
- 7- FOR DETAIL COMPOSITION REFER TO HEAT AND MATERIAL BALANCE, 108-GP-E-411833.
- 8- BATTERY LIMIT CONDITIONS SHALL BE CONFIRMED DURING DETAIL ENGINEERING DESIGN.

LEGEND

|  |                       |  |                             |
|--|-----------------------|--|-----------------------------|
|  | TEMPERATURE [°C]      |  | HEAT DUTY [MW]              |
|  | PRESS. [bar g]        |  | LIQUID FLOW RATE [Act-m³/h] |
|  | MASS FLOW RATE [kg/h] |  | GAS FLOW RATE [Nm³/h]       |
|  | STREAM NUMBER         |  |                             |

|                                                                                                                                                                   |             |                           |                                                                                                            |       |                     |       |   |   |   |    |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------|------------------------------------------------------------------------------------------------------------|-------|---------------------|-------|---|---|---|----|--|--|
| 3                                                                                                                                                                 | 2021.DEC.22 | APPROVED FOR BEDP         | SMA                                                                                                        | ARY   | AAD                 | BGO   |   |   |   |    |  |  |
| 2                                                                                                                                                                 | 2021.JUN.28 | ISSUED FOR APPROVAL (IFA) | SMA                                                                                                        | ARY   | AAD                 | BGO   |   |   |   |    |  |  |
| 1                                                                                                                                                                 | 2021.APR.05 | ISSUED FOR APPROVAL (IFA) | SMA                                                                                                        | ARY   | AAD                 | BGO   |   |   |   |    |  |  |
| 0                                                                                                                                                                 | 2021.FEB.09 | ISSUED FOR COMMENT (IFC)  | SMA                                                                                                        | ARY   | AAD                 | BGO   |   |   |   |    |  |  |
| REV.                                                                                                                                                              | DATE        | DESCRIPTION               | DWN.                                                                                                       | PREP. | CHECK               | APPD. |   |   |   |    |  |  |
| OWNER:<br><br>شرکت پالایش نفت بندر عباس<br>BANDAR ABBAS OIL REFINING COMPANY |             |                           | PHASE<br><br>EB                                                                                            |       |                     |       |   |   |   |    |  |  |
| MC:<br><br>شرکت توسعه صنعت انرژی هرمزان<br>HEIDCO                            |             |                           | SCALE<br><br>N.T.S                                                                                         |       | SHEET<br><br>1 OF 1 |       |   |   |   |    |  |  |
| CONSULTANT:<br><br>RESEARCH INSTITUTE OF PETROLEUM INDUSTRY                  |             |                           | JOB NO.<br><br>1668                                                                                        |       |                     |       |   |   |   |    |  |  |
| PROJECT:<br><br>BANDAR ABBAS OIL REFINERY<br>HEAVY PRODUCTS QUALITY UPGRADING PROJECT<br>BASED ON USING DELAYED COKER                                             |             |                           | REV. NO.<br><table border="1"><tr><td>0</td><td>1</td><td>2</td><td>B0</td><td></td><td></td></tr></table> |       |                     |       | 0 | 1 | 2 | B0 |  |  |
| 0                                                                                                                                                                 | 1           | 2                         | B0                                                                                                         |       |                     |       |   |   |   |    |  |  |
| DRAWING TITLE:<br><br>SOUR WATER STRIPPER (SWS)<br>PROCESS FLOW DIAGRAM (PFD)<br>STRIPPER SECTION                                                                 |             |                           | DRAWING NO.<br><br>108-GE-B-411832                                                                         |       |                     |       |   |   |   |    |  |  |