


| PLAN HISTORY                                                                        |              |                                                                    |                      |   |
|-------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------|----------------------|---|
| REV. NO                                                                             | DATE         | DESCRIPTION                                                        | REMARK               |   |
| 0                                                                                   | 2023.05.30.  | PREPARED BY OUTFITTING DESIGN TEAM                                 |                      |   |
|                                                                                     |              |                                                                    |                      |   |
|                                                                                     |              |                                                                    |                      |   |
|                                                                                     |              |                                                                    |                      |   |
|                                                                                     |              |                                                                    |                      |   |
|                                                                                     |              |                                                                    |                      |   |
| ( 7 SHEETS WITH COVER )                                                             |              |                                                                    |                      |   |
| 본 도면은 대한민국 정부의 ”친환경중소형선박 기술역량 강화사업 ”의 일환으로 작성된 문서입니다.                               |              |                                                                    |                      |   |
| MANGER                                                                              | K. D. OK     | DATE : 2023. 05. 30                                                | SCALE                |   |
| APPROVED                                                                            | S. S. SHIN   | DWT 13,000 Ton Class Methanol Fueled<br>Product/Chemical Tanker    | -                    |   |
| CHECKED                                                                             | B. J. SANG   | LFSS (LOW FLASH-POINT FUEL SUPPLY SYSTEM )<br>PROCESS FLOW DIAGRAM | TEAM                 |   |
| DRAWN                                                                               | H. S. LEE    |                                                                    | OUTFITTING<br>DESIGN |   |
| TEL.                                                                                | 051-260-7824 |                                                                    | REV.                 | 0 |
|  |              | 친환경선박설계기술 사업단                                                      |                      |   |

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## 1. LEGEND

| SYMBOL | DESCRIPTION                                  | SYMBOL | DESCRIPTION                         |
|--------|----------------------------------------------|--------|-------------------------------------|
|        | CROSSING PIPE, NOT CONNECTED                 |        | AUTOMATIC CONTROL VALVE             |
|        | CROSSING PIPE, CONNECTED                     |        | BUTTERFLY VALVE                     |
|        | FLANGED JOINT                                |        | GLOBE VALVE                         |
|        | WELDED JOINT                                 |        | BALL VALVE                          |
|        | REMOVABLE SPOOL PIECE                        |        | LIFT CHECK VALVE                    |
|        | EXPANSION BELLOWS                            |        | SWING CHECK VALVE                   |
|        | BLANK FLANGE                                 |        | FLAP CHECK VALVE                    |
|        | SPECTACLE FLANGE                             |        | SCREW DOWN NON RETURN VALVE (GLOBE) |
|        | REDUCER                                      |        | NEEDLE VALVE (GLOBE)                |
|        | LNG FUEL PIPE INSULATION (PU FOAM)           |        | RELIEF VALVE (SPRING LOADED TYPE)   |
|        | DOUBLE WALL PIPE                             |        | RELIEF VALVE (PILOT OPERATED TYPE)  |
|        | PNEUMATIC TYPE ACTUATOR                      |        | HIGH VELOCITY PRESSURE/VACUUM VALVE |
|        | HYD. REMOTE OPERATED VALVE (OPEN/SHUT TYPE)  |        | FLAME ARRESTER                      |
|        | HYD. REMOTE OPERATED VALVE (THROTTLING TYPE) |        | EL-MOTOR DRIVEN PUMP                |
|        | ESD VALVE                                    |        | RUPTURE DISC                        |
|        | MANUAL HANDLE                                |        | FLOW METER                          |
|        | MOTOR TYPE VALVE ACTUATOR                    |        | STRAINER                            |

2. PARTICULARS OF MACHINERY

| NAME                           | TYPE                                 | CAPACITY                  | Q'TY   | LOCATION                                |
|--------------------------------|--------------------------------------|---------------------------|--------|-----------------------------------------|
| METHANOL FUEL<br>TRANSFER PUMP | SUBMERGED, CENTRIFUGAL,<br>HYD-MOTOR | Abt. 15 m3/h x 26 mTH     | 2 SETS | IN METHANOL FUEL<br>STORAGE TANK        |
| LOW PRESSURE<br>SUPPLY PUMP    | CENTRIFUGAL,<br>EL.-MOTOR (VFD)      | Abt. 1.63 m3/h x 20 mTH   | 1 SET  | IN METHANOL FUEL<br>PREPARATION<br>ROOM |
| HIGH PRESSURE<br>SUPPLY PUMP   | CENTRIFUGAL,<br>EL.-MOTOR (VFD)      | Abt. 1.63 m3/h x 188 mTH  | 1 SET  |                                         |
| HEAT EXCHANGER                 | SHELL & PLATE OR<br>EQUIVALENT       | MAKER'S<br>RECOMMENDATION | 1 SET  |                                         |
| FILTER                         | DUPLEX                               | 10 MICRONS                | 2 SETS |                                         |

### 3. PIPE TABLE

| SERVICE                        | DESIGN CONDITION |                  | PIPE            |                                   |                           |                |      |                | PIPE CONNECTION          |        |                                   | VALVE                   |                                    | REMARK                             |      |
|--------------------------------|------------------|------------------|-----------------|-----------------------------------|---------------------------|----------------|------|----------------|--------------------------|--------|-----------------------------------|-------------------------|------------------------------------|------------------------------------|------|
|                                | PRESS.<br>(barG) | TEMP.<br>( DegC) | NOM. DIA<br>(A) | MATE-<br>RIAL                     | MAT.<br>MARK              | TEST<br>PRESS. |      | TREAT-<br>MENT | WELD.<br>EXP-<br>COUP.   | FLANGE |                                   | CONN.                   | MATERIAL                           |                                    |      |
|                                |                  |                  |                 |                                   |                           | SHOP           | SHIP |                |                          | STD.   | MAT.                              |                         | BODY                               |                                    | SEAT |
| LIQUID,<br>VAPOUR,<br>P/V VENT | 16               | 65               | 100             | WELDED<br>STAIN-<br>LESS<br>STEEL | SUS316-<br>ERW<br>SCH.10S | -              | -    | -              | FLANGE,<br>BUTT-<br>WELD | 16K    | STAIN-<br>LESS<br>STEEL<br>SUS316 | FLANGE,<br>OR<br>WELDED | STAIN-<br>LESS<br>STEEL<br>SUS316L | STAIN-<br>LESS<br>STEEL<br>SUS316L |      |
|                                |                  |                  | 80              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |
|                                |                  |                  | 65              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |
|                                |                  |                  | 50              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |
|                                |                  |                  | 40              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |
|                                |                  |                  | 25              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |
|                                |                  |                  | 15              |                                   |                           |                |      |                |                          |        |                                   |                         |                                    |                                    |      |

