

|                |                               |            |          |            |             |
|----------------|-------------------------------|------------|----------|------------|-------------|
|                |                               |            |          |            |             |
| 2              | ISSUED FOR CONSTRUCTION(供施工用) | 12/15' 17  | 魏磊       | 崔永双        | 社晓楠         |
| REV. NO.<br>版次 | DESCRIPTION<br>说明             | DATE<br>日期 | BY<br>设计 | CHK.<br>校核 | APPR.<br>审核 |

## A/G PIPING ISOMETRIC DRAWING LIST



京鼎工程建设有限公司  
CTCI Beijing Co., Ltd.

凝析油分离装置整改修复工程  
(设计质量评估整改技73项)

| CLIENT: 腾龙芳烃（漳州）有限公司        |                   |       |                             |       |               |       |                        |
|-----------------------------|-------------------|-------|-----------------------------|-------|---------------|-------|------------------------|
| PROJECT NAME: 凝析油分离装置整改修复工程 |                   |       |                             |       |               |       |                        |
| PROJECT NO: 17E3166A        |                   |       |                             |       |               |       |                        |
| SER.                        | DWG NO            | SH'T  | LINE NO                     | AREA  | REVISION DATE |       | REMARK                 |
|                             |                   | NO    |                             |       | REV.2         | REV.3 |                        |
| 1                           | 13-CS-26014 OLD   | 1/6   | 13-1 1/2"-CS-26014-A51SF    | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 2                           | 13-FG-18001 OLD   | 7/6   | 13-10"-FG-18001-A51F-ST     | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 3                           | 13-FLG-32001 OLD  | 5/8   | 13-48"-FLG-32001-A51F       | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0633/Z0635 |
| 4                           | 13-LA-18005 OLD   | 1/10  | 13-6"-LA-18005-A5S1F        | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 5                           | XG32-13-LS0-08024 | 1/1   | 13-8"-LS0-08024-A51F        | 73-41 | 12/15/2017    |       | SJ-PX-LPEC-1900        |
| 6                           | 13-LS0-08024 OLD  | 1/1   | 13-8"-LS0-08024-A51F        | 73-41 | 12/15/2017    |       | SJ-PX-LPEC-1900        |
| 7                           | 13-LS0-08002 OLD  | 3/3   | 13-10"-LS0-08024-A51F       | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 8                           | XG32-13-OG-08004A | 1/4   | 13-3/4"-OG-08004A-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 9                           | XG32-13-OG-08004A | 2/4   | 13-3/4"-OG-08004A-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 10                          | XG32-13-OG-08004A | 3/4   | 13-3/4"-OG-08004A-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 11                          | XG32-13-OG-08004A | 4/4   | 13-3/4"-OG-08004A-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 12                          | XG32-13-OG-08004B | 1/4   | 13-3/4"-OG-08004B-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 13                          | XG32-13-OG-08004B | 2/4   | 13-3/4"-OG-08004B-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 14                          | XG32-13-OG-08004B | 3/4   | 13-3/4"-OG-08004B-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 15                          | XG32-13-OG-08004B | 4/4   | 13-3/4"-OG-08004B-A53F      | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 16                          | 13-P-01001 OLD    | 1/9   | 13-12"-P-01001-A53F         | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 17                          | XG32-13-P-01010   | 1/2   | 13-8"-P-01010-A53F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 18                          | XG32-13-P-01010   | 2/2   | 13-8"-P-01010-A53F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 19                          | 13-P-01010 OLD    | 1/1   | 13-8"-P-01010-A53F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 20                          | 13-P-01011 OLD    | 1/1   | 13-8"-P-01011-A51F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 21                          | XG32-13-P-01014   | 1/1   | 13-8"-P-01014-A53F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 22                          | XG32-13-P-01015   | 1/1   | 13-8"-P-01015-A51F          | 73-42 | 12/15/2017    |       | SJ-PX-LPEC-Z0631       |
| 23                          | 13-P-08004 OLD    | 8/10  | 13-8"-P-08004-A53F          | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 24                          | 13-P-08005 OLD    | 2/5   | 13-4"-P-08005-A53F          | 73-46 | 12/15/2017    |       | SJ-PX-LPEC-Z0635       |
| 25                          | 13-P-12005 OLD    | 8/8   | 13-8"-P-12005-A51F          | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 26                          | 13-P-14011 OLD    | 12/12 | 13-8"-P-14011-A53F-H        | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 27                          | 13-P-15003 OLD    | 1/5   | 13-14"-P-15003-A51F-H       | 73-35 | 12/15/2017    |       | SJ-PX-LPEC-1862        |
| 28                          | XG32-13-P-26037   | 1/1   | 13-3/4"-P-26037-A51F        | 73-58 | 12/15/2017    |       | SJ-PX-LPEC-Z0649       |
| 29                          | 13-RA-18003 OLD   | 15/15 | 13-4"-RA-15003-A5S1F        | 73-38 | 12/15/2017    |       | SJ-PX-LPEC-1886        |
| 30                          | 13-RCS-26010 OLD  | 4/7   | 13-1 1/2"-RCS-26010-A5S1F-H | 73-32 | 12/15/2017    |       | SJ-PX-LPEC-1838        |

## FABRICATION MATERIALS

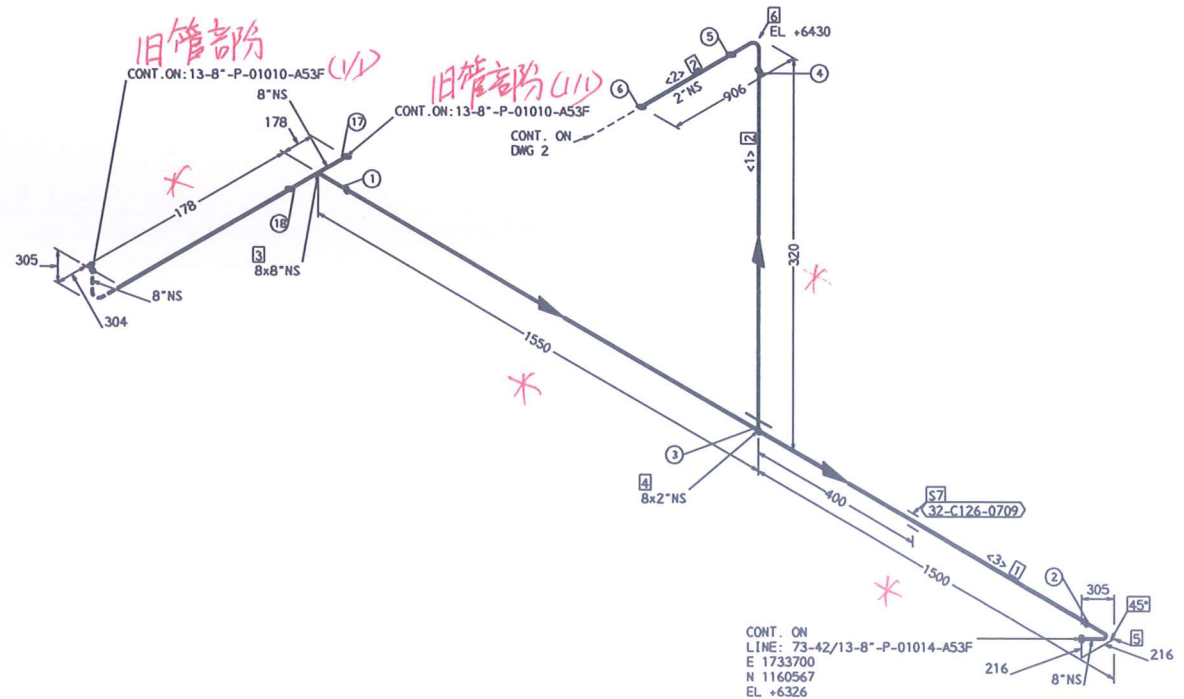
| PT<br>NO | COMPONENT DESCRIPTION                                                      | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|----------------------------------------------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-60, CS A106-B ASME                                       | 8            | PPA1415A60021 | 2.6M |
| 2        | PIPE, SMLS, BE, S-80, CS A106-B ASME                                       | 2            | PPA1415A80021 | 1.0M |
| 3        | TEE, SMLS, BW, S-60, CS A234-WPB ASME                                      | 8 x 8        | STA1621A60019 | 1    |
| 4        | NOZZLE WELD WITH REINF. PIPE, CS A106-B S-60, 90 DEG., AS PER JOB ST D DWG | 8 x 2        | W6A0Z15A6TESZ | 1    |
| 5        | 90 ELL SMLS, BW, S-60, CS A234-WPB ASME                                    | 8            | NEA1621A60019 | 1    |
| 6        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                                    | 2            | NEA1621A80019 | 1    |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE    | QTY |
|----------|-----------------------|--------------|--------------|-----|
| 7        | PIPE SUPPORT          |              | 32-C126-0709 | 1   |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <1>         | 139           | 2            |         | <2>         | 830           | 2            |         |
| <3>         | 2567          | 8            |         |             |               |              |         |



“\*” 依现场实际调整

|                     |        |        |              |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      |                            |          |                    |       |   |        |
|---------------------|--------|--------|--------------|-----------|------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|----------|--------------------|-------|---|--------|
| OPER. TEMP.         | 35     | °C     | PAINTING     |           | REF. DWG.        |  |                                                                                                                                                                                |                  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armoities (Qingzhou) Co., Ltd. (DMC)</div> |      |                            |          |                    |       |   |        |
| OPER. PRESS.        | 1.5    | MPa(g) | CODE         | PER. SPEC | XG31-0201-154A/B |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      |                            |          |                    |       |   |        |
| DESIGN TEMP.        | 70     | °C     | NOTE         |           |                  |  | <div> 京建工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京世纪泰和工程技术有限公司</div> FOR 腾龙芳烃原油分离装置整改修复工程 |                  |                                                                                                                                                               |      |                            |          |                    |       |   |        |
| DESIGN PRESS.       | 3.5    | MPa(g) | INSULATION   |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      |                            |          |                    |       |   |        |
| TEST PRESSURE       | 5.3    | MPa(g) | HP'S<br>TYPE |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      | TITLE PIPING ISOMETRIC DWG |          |                    |       |   |        |
| TEST FLUID          | HYDRO. |        |              |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      | PROJ. NO.                  | 17E3166A | UNIT               | 73-42 |   |        |
| INSPECTION<br>X-RAY | 10     | %      |              |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      | DRAWN                      | WL       | DATE<br>12/08/2017 | REV.  | 2 |        |
| P.W.H.T             | NO     |        |              |           |                  |  | 2                                                                                                                                                                              | FOR CONSTRUCTION | CYS                                                                                                                                                           | DXS  | 12/15<br>2017              | LINE NO. | 13-8"-P-01010-A53F |       |   | SHEET  |
| CATEGORY            | GC2    |        |              |           |                  |  | REV.                                                                                                                                                                           | DESCRIPTION      | CHKD                                                                                                                                                          | APPR | DATE                       | DWG. NO. | XG32-13-P-01010    |       |   |        |
|                     |        |        |              |           |                  |  |                                                                                                                                                                                |                  |                                                                                                                                                               |      |                            |          |                    |       |   | 1 OF 2 |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|-----------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-80, CS A106-B ASME    | 2            | PPA1415A80021 | 1.4M |
| 2        | PIPE, SMLS, BE, S-80, CS A106-B ASME    | 2            | PPA1415A80021 | 1.3M |
| 3        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME | 2            | NEA1621A80019 | 2    |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME | 2            | NEA1621A80019 | 2    |
| 5        | WN FLG 300# RF S-80, CS A105 ASME       | 2            | FWA3111A80015 | 3    |
| 6        | WN FLG 300# RF S-80, CS A105 ASME       | 2            | FWA3111A80015 | 1    |

## ERECTION MATERIALS

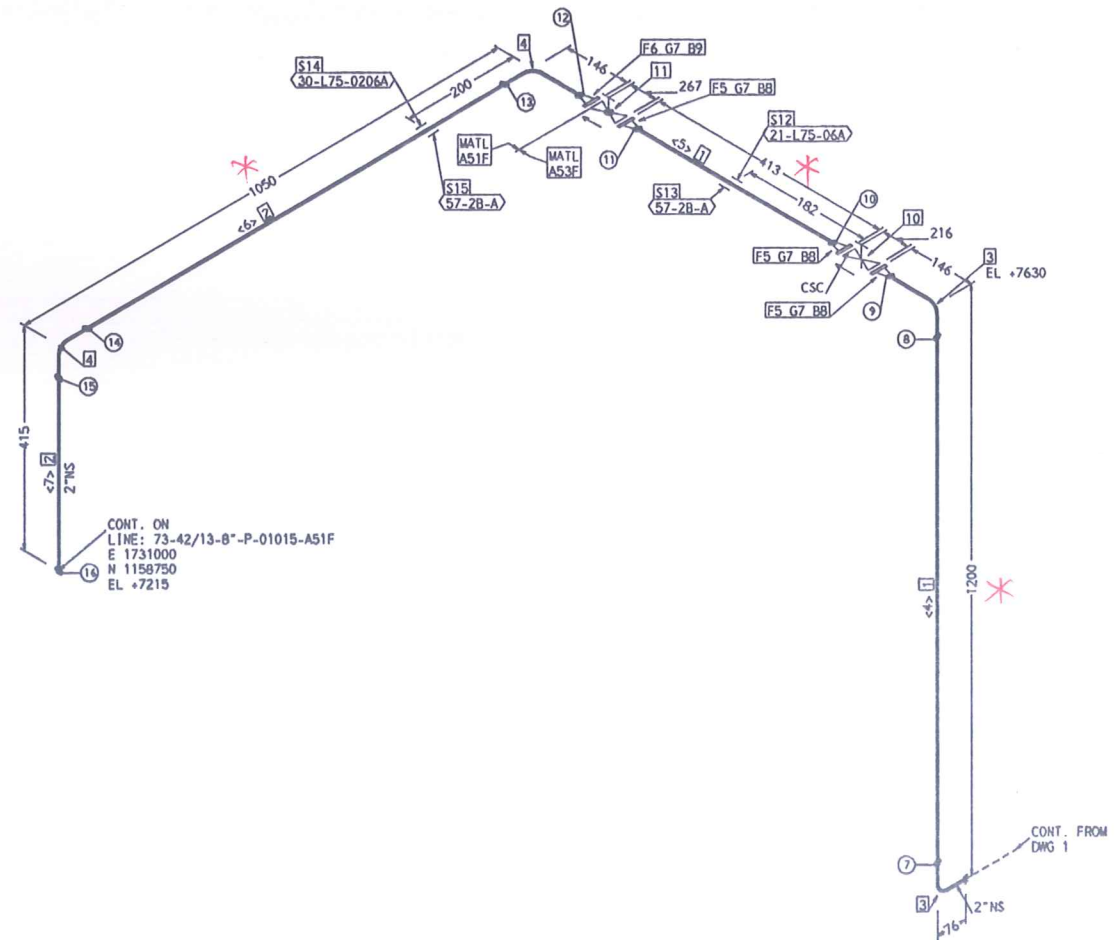
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-----|
| 7        | GASKET, 300# RF, 4.5MM(3/16") SP-WD SS 316 AND FILLER FLEX. GRAPHITE ASB. FREE W/ I.R. SS 316 AND O.R. LOW CS ASME | 2            | GKA3APE0300B1 | 4   |
| 8        | 90 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 24  |
| 9        | 90 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 8   |
| 10       | GATE VALVE, 300# RF CS A216-WCB BODY 13CR AND HARD FACED TR API TR #8 FLEX WG OS&Y BB API-600 ASME-B16.5           | 2            | VGA31220003A5 | 1   |
| 11       | GLOBE VALVE, 300# RF CS A216-WCB BODY 13CR AND HARD FACED TR API TR #8 LOOSE DISC OS&Y BB, ASME-B16.34 B16.5       | 2            | VLA31220001A1 | 1   |

## SUPPORTS

|    |              |  |              |   |
|----|--------------|--|--------------|---|
| 12 | PIPE SUPPORT |  | 21-L75-06A   | 1 |
| 13 | PIPE SUPPORT |  | 57-28-A      | 1 |
| 14 | PIPE SUPPORT |  | 30-L75-0206A | 1 |
| 15 | PIPE SUPPORT |  | 57-28-A      | 1 |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <4>         | 1048          | 2            |         | <5>         | 273           | 2            |         |
| <6>         | 897           | 2            |         | <7>         | 339           | 2            |         |



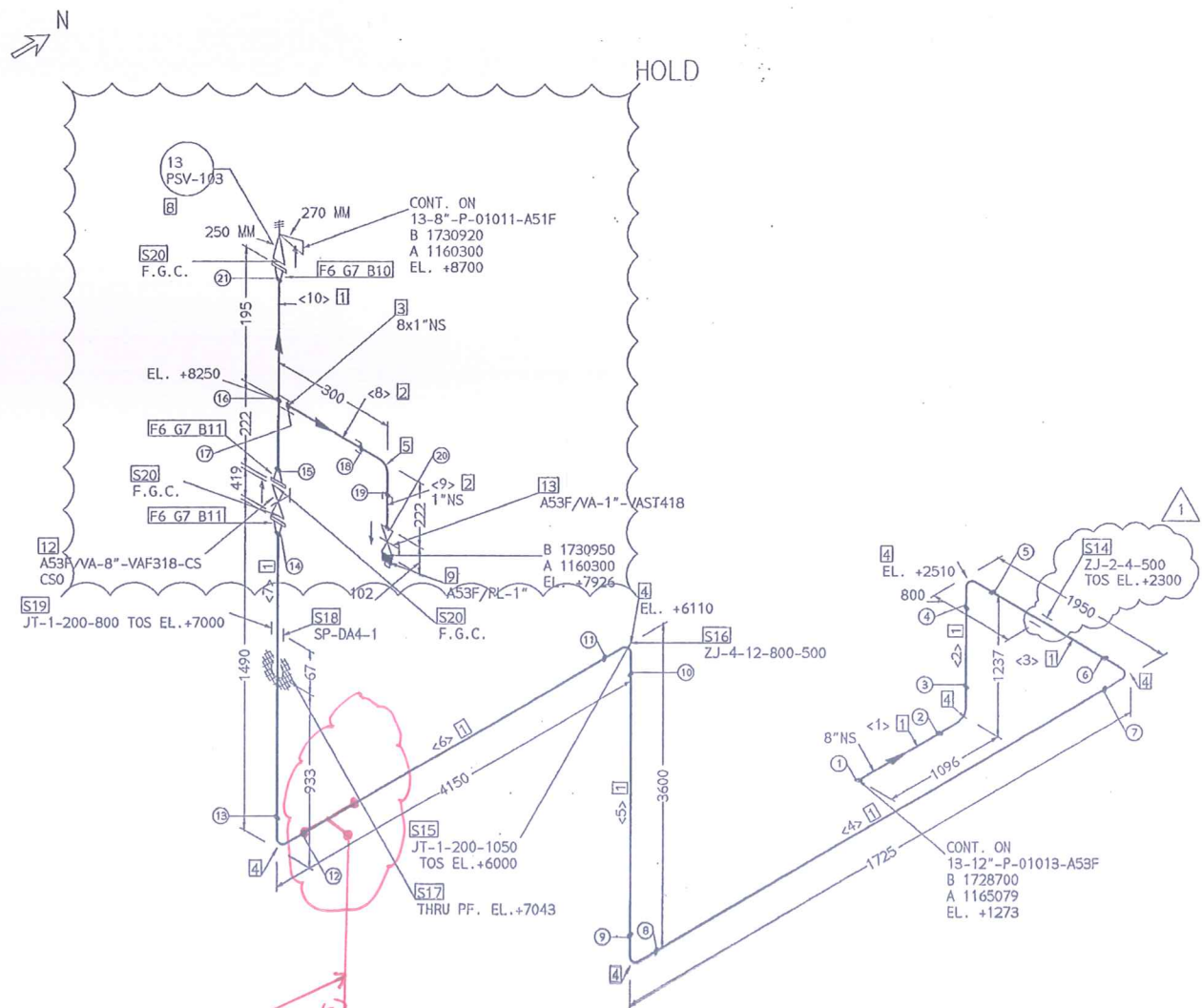
\* 依现场实际调整

|                  |            |            |           |                  |                  |      |      |                                                              |          |                   |            |
|------------------|------------|------------|-----------|------------------|------------------|------|------|--------------------------------------------------------------|----------|-------------------|------------|
| OPER. TEMP.      | 35 °C      | PAINTING   | REF. DWG. | XG31-0201-154A/B |                  |      |      | 腾龙芳烃(漳州)有限公司<br>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC) |          |                   |            |
| OPER. PRESS.     | 1.5 MPa(g) | CODE       | PER. SPEC |                  |                  |      |      |                                                              |          |                   |            |
| DESIGN TEMP.     | 70 °C      | INSULATION | NOTE      |                  |                  |      |      | 京南工程技术有限公司<br>CTCL Beijing Co., Ltd.<br>北京京南工程技术有限公司         |          |                   |            |
| DESIGN PRESS.    | 3.5 MPa(g) |            |           |                  |                  |      |      | FOR 腾龙芳烃原油分离装置检修工程                                           |          |                   |            |
| TEST PRESSURE    | 5.3 MPa(g) |            |           |                  |                  |      |      | TITLE PIPING ISOMETRIC DWG                                   |          |                   |            |
| TEST FLUID       | HYDRO.     |            |           |                  |                  |      |      | PROJ. NO.                                                    | 17B3166A | UNIT              | 73-42      |
| INSPECTION X-RAY | 10 %       |            |           |                  |                  |      |      | DRAWN                                                        | WL       | DATE              | 12/08/2017 |
| P.W.H.T          | NO         |            |           | 2                | FOR CONSTRUCTION | CYS  | DXS  | 12/15/2017                                                   | LINE NO. | 13-8-P-01010-A53F | SHEET      |
| CATEGORY         | GC2        |            |           | REV.             | DESCRIPTION      | CHKD | APPR | DATE                                                         | DWG. NO. | XG32-13-P-01010   | 2 OF 2     |

| PT<br>NO | DESCRIPTION & MATERIAL                                                                                                              | N. S.<br>(INS) | ITEM<br>CODE       | QTY   |
|----------|-------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|-------|
|          | <u>PIPE</u>                                                                                                                         |                |                    |       |
| 1        | PIPE A106 GR.B SCH60 SMLS BE ASME<br>B36.10W                                                                                        | 8              | A53F/P-8"-60       | 11.7W |
| 2        | PIPE A106 GR.B SCH80 SMLS PE ASME<br>B36.10W                                                                                        | 1              | A53F/P-1"-80       | 0.4W  |
|          | <u>FITTINGS</u>                                                                                                                     |                |                    |       |
| 3        | HALF COUPLING CL3000 SW A105 ASME<br>B16.11                                                                                         | 8 x 1          | A53F/CHS-8"x1"     | 1     |
| 4        | 90 DEG. ELBOW LR A234 GR.WF8 SCH60 SMLS<br>BW ASME B16.9                                                                            | 8              | A53F/EB-8"x90      | 6     |
| 5        | 90 DEG. ELBOW CL3000 SW A105 ASME<br>B16.11                                                                                         | 1              | A53F/ES-1"x90      | 1     |
|          | <u>FLANGES</u>                                                                                                                      |                |                    |       |
| 6        | FLANGE CL300 RF NH A105 SCH60 BORE ASME<br>B16.5                                                                                    | 8              | A53F/WFR-8"        | 3     |
|          | <u>GASKETS</u>                                                                                                                      |                |                    |       |
| 7        | GASKET CL300 RF 4.5mm 316SS SPIRAL<br>WOUND FILLER FLEXIBLE GRAPHITE INNER<br>RING 316SS OUTER RING LOW CS (G214ACU)<br>ASME B16.20 | 8              | A53F/GR-8"-G214ACU | 3     |
|          | <u>INSTRUMENTS</u>                                                                                                                  |                |                    |       |
| 8        | SAFETY VALVE CL300XCL150 RF 13 PSY-103                                                                                              | 8              |                    | 1     |

| PT<br>NO          | DESCRIPTION & MATERIAL                                                                                                       | H.S.<br>(1HS) | ITEM<br>CODE         | QTY |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----|
| <b>FITTINGS</b>   |                                                                                                                              |               |                      |     |
| 9                 | PLUS A105 HEXAGONAL TYPE SCRD(U-NPT)<br>ASME B16.11                                                                          | 1             | A53F/PL-1*           | 1   |
| <b>BOLTS</b>      |                                                                                                                              |               |                      |     |
| 10                | 165 IW LONG STUD BOLT - W22 A193 GR.B7<br>W/HEX HEAD HEAVY NUT A194 GR.2H                                                    |               | A53F/BSF-B"-165+     | 12  |
| 11                | 140 IW LONG STUD BOLT - W22 A193 GR.B7<br>W/HEX HEAD HEAVY NUT A194 GR.2H                                                    |               | A53F/BSF-B"-140      | 24  |
| <b>COMPONENTS</b> |                                                                                                                              |               |                      |     |
| 12                | GATE VALVE CL300 RF A216 GR.WCB BODY #8<br>TRIUM FLEXIBLE WEDGE OSKY B3 ASME B16.10<br>API600 WITH CAR SEALED COVER (VAF318) | 8             | A53F/VA-8"-VAF318-CS | 1   |
| 13                | GATE VALVE CL600 SH/SCRD(NPT) A501 BODY<br>#8 TRIUM SOLID WEDGE OSKY B3 API602 BY<br>UFR (VAST418)                           | 1             | A53F/VA-1"-VAST418   | 1   |
| <b>SUPPORTS</b>   |                                                                                                                              |               |                      |     |
| 14                | PIPE SUPPORT (J2-2.4-500)                                                                                                    | 8             | SUP/J2-2.4-8"        | 1   |
| 15                | PIPE SUPPORT (J2-4-209-1050)                                                                                                 | 8             | SUP/JT-1-8"          | 1   |
| 16                | PIPE SUPPORT (J2-4-12-800-500)                                                                                               | 6             | SUP/J2-4-8"          | 1   |
| 17                | FLOOR HOLE (THRU PF. EL.+7043)                                                                                               | 8             | A53F/HOLE-8"         | 1   |
| 18                | SPECIAL SUPPORT (SP-DA4-1)                                                                                                   | 8             | SUP/DA4-1-8"VH       | 1   |
| 19                | PIPE SUPPORT (JT-1-200-800 TOS EL.+7000)                                                                                     | 6             | SUP/JT-1-8"          | 1   |
| 20                | FLANGE GROUNDING CONDUCTOR (CL300)<br>(F.G.C.)                                                                               | 8             | FGC/FGC-8"CL300      | 8   |

| PIECE<br>NO | CUT<br>LENGTH | H.S.<br>(INS) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | H.S.<br>(INS) | REMARKS |
|-------------|---------------|---------------|---------|-------------|---------------|---------------|---------|
| <1>         | 792           | 8             |         | <2>         | 627           | 8             |         |
| <3>         | 1340          | 8             |         | <4>         | 1116          | 8             |         |
| <5>         | 2990          | 8             |         | <6>         | 3541          | 8             |         |
| <7>         | 1074          | 8             |         | <8>         | 142           | 1             |         |
| <9>         | 200           | 1             |         | <10>        | 195           | 8             |         |



CONT. ON  
XG32-13-P-01010 (1/2)

73-42工页

“\*”依现场实际调整

REVISÉD FOR CONSTRUCTION

September 05, 2011

|          |            |                       |          |         |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                 |                    |                       |                    |           |                                                                                                                                  |       |
|----------|------------|-----------------------|----------|---------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|--------------------|-----------------------|--------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------|-------|
| △        |            |                       |          |         |        | OPR. PRESS.: 1.5 MPa(G)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OPR. TEMP.: 35 °C   | CLASS: A53F     | D/W.N.             | P.L.DONG              | 06/01/2011         | REVISED   |  富台工程股份有限公司<br>FU-TAI ENGINEERING CO., LTD. |       |
| △        |            |                       |          |         |        | DES. PRESS.: 2.5 MPa(G)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DES. TEMP.: 70 °C   | INSULATION: --- | DES.N.             | N.Y.HSU               | 06/01/2011         |           |                                                                                                                                  |       |
| △        | 08/31/2011 | REV. FOR CONSTRUCTION | P.L.DONG | Y.C.CHO | A.F.WU | HYDRO TEST: WATER 3.75 MPa(G)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PWHT: NO            | TRACING: ---    | CHK.               | Y.C.CHO               | 06/01/2011         |           |                                                                                                                                  |       |
| △        | 07/08/2011 | FOR CONSTRUCTION      | P.L.DONG | Y.C.CHO | A.F.WU | PAINTING: PER SPEC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | STEAM OUT: YES      | RT: 10          | APPR.              | A.F.WU                | 06/01/2011         |           |                                                                                                                                  |       |
| △        | 06/01/2011 | FOR APPROVAL          | P.L.DONG | Y.C.CHO | A.F.WU |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                 |                    |                       |                    |           |                                                                                                                                  |       |
| REV. NO. | DATE       | REVISION DESCRIPTION  | BY       | CHK.    | APPR.  |          | DWG NO.: 154A, 154B |                 |                    | CONTRACT: C192502     |                    | LINE NO.: | SHT.                                                                                                                             | ISSUE |
|          |            |                       |          |         |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                 | DIA. NO.: 1208-001 | FILE NO.: 13-P01010-1 | 13-B*-P-01010-A53F | 1 OF 1    | 1                                                                                                                                |       |



## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY  |
|-------|-----------------------------------------|-----------|---------------|------|
| 1     | PIPE, SMLS, BE, S-60, CS A106-B ASME    | 8         | PPA1415A60021 | 1.3M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME        | 8 x 1     | SHA7511000021 | 1    |
| 3     | 45 ELL SMLS, BW, S-60, CS A234-WPB ASME | 8         | NFA1621A60019 | 1    |
| 4     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1    |
| 5     | WN FLG 300# RF S-60, CS A105 ASME       | 8         | FWA3111A60015 | 3    |

## ERECTION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                                                                               | N.S. (IN) | ITEM CODE     | QTY  |
|-------|---------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 6     | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                                | 1         | PPA1115A80021 | 0.4M |
| 7     | PIPE NIPPLE, SMLS, POE/TOE, S-80, CS A106-B L=75MM (3"), ASME                                                       | 1         | PHA1D15A80321 | 1    |
| 8     | CAP, 6000# FNPT, CS A105 ASME                                                                                       | 1         | NCA8211000021 | 1    |
| 9     | GASKET, 300# RF, 4.5MM (3/16") SP-WD SS 316 AND FILLER FLEX. GRAPHITE ASB. FREE W/ I.R. SS 316 AND O.R. LOW CS ASME | 8         | GKA3APE0300B1 | 3    |
| 10    | 140 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 22 MM     | GMA04310000E1 | 36   |
| 11    | GATE VALVE, 300# RF CS A216-WCB BODY 13CR AND HARD FACED TR API TR #8 FLEX WG OS&Y BB API-600 ASME-B16.5            | 8         | VGA31220003A5 | 1    |
| 12    | GATE VALVE, 800# SW, CS A105 BODY 13CR AND HARD FACED TR API TR #8 SOLID WG OS&Y BB API-602                         | 1         | VGA8512000111 | 1    |

## INSTRUMENTS

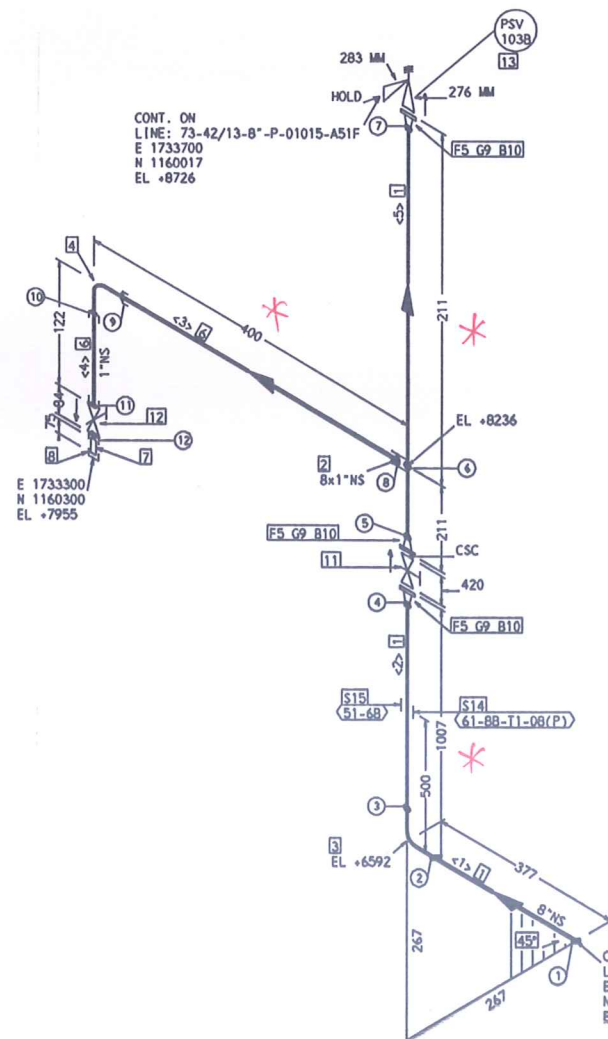
|    |                     |   |  |   |
|----|---------------------|---|--|---|
| 13 | INSTRUMENT PSV 103B | 8 |  | 1 |
|----|---------------------|---|--|---|

## SUPPORTS

|    |              |  |                |   |
|----|--------------|--|----------------|---|
| 14 | PIPE SUPPORT |  | 61-8B-T1-08(P) | 1 |
| 15 | PIPE SUPPORT |  | 51-6B          | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 251        | 8         |         | <2>      | 769        | 8         |         |
| <3>      | 240        | 1         |         | <4>      | 100        | 1         |         |
| <5>      | 200        | 8         |         |          |            |           |         |



\*\* 依现场实际调整

|                  |             |            |                    |                                                                                                                                                    |      |            |                                 |
|------------------|-------------|------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|---------------------------------|
| OPER. TEMP.      | 35 °C       | PAINTING   | REF. DWG.          | <br>腾龙芳烃(漳州)有限公司<br>Dragon Aromatics (Shanghai) Co., Ltd. (DACT)<br>京龍工程建設有限公司<br>CTCL Engineering Co., Ltd.<br>京龍工程建設有限公司<br>FOR 腾龙芳烃原油分离装置整改修复工程 |      |            |                                 |
| OPER. PRESS.     | 1.5 MPa(g)  | CODE       | NOTE               |                                                                                                                                                    |      |            |                                 |
| DESIGN TEMP.     | 70 °C       | PER. SPEC  |                    | TITLE PIPING ISOMETRIC DWG                                                                                                                         |      |            |                                 |
| DESIGN PRESS.    | 2.5 MPa(g)  | INSULATION |                    |                                                                                                                                                    |      |            |                                 |
| TEST PRESSURE    | 3.75 MPa(g) |            |                    | PROJ. NO. 17B3166A UNIT 73-42                                                                                                                      |      |            |                                 |
| TEST FLUID       | HYDRO.      |            |                    | DRAWN WL DATE 12/07/2017 REV. 2                                                                                                                    |      |            |                                 |
| INSPECTION X-RAY | 10 %        |            |                    | LINE NO. 13-B*-P-01014-A53F SHEET                                                                                                                  |      |            |                                 |
| P.W.H.T          | NO          |            | 2 FOR CONSTRUCTION | CYS                                                                                                                                                | DXS  | 12/15 2017 |                                 |
| CATEGORY         | GC2         |            | REV. DESCRIPTION   | CHKD                                                                                                                                               | APPR | DATE       | DWG. NO. XG32-13-P-01014 1 OF 1 |

## FABRICATION MATERIALS

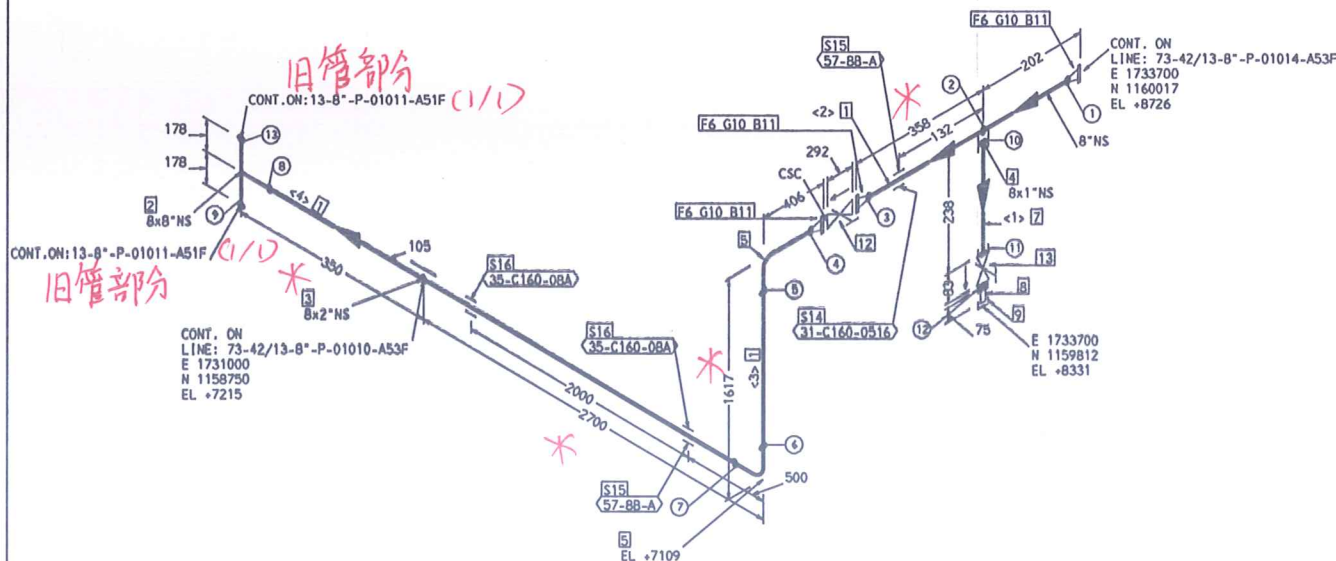
| PT<br>NO | COMPONENT DESCRIPTION                                                                    | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|------------------------------------------------------------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-20, CS A106-B ASME                                                     | 8            | PPA1415A20021 | 4.0M |
| 2        | TEE, SMLS, BW, S-20, CS A234-WPB ASME                                                    | 8 x 8        | STA1621A20019 | 1    |
| 3        | NOZZLE WELD WITH REINF. PIPE, CS<br>A672-B65 CL.22 S-20, 90 DEG., AS PER JOB<br>ST D DWG | 8 x 2        | W640Z2CA2TESZ | 1    |
| 4        | HALF CPLG 3000# SW, CS A105 ASME                                                         | 8 x 1        | SHA7511000021 | 1    |
| 5        | 90 ELL SMLS, BW, S-20, CS A234-WPB ASME                                                  | 8            | NEA1621A20019 | 2    |
| 6        | WN FLG 150# RF S-20, CS A105 ASME                                                        | 8            | FWA1111A20015 | 3    |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                                    | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                                     | 1            | PPA1115A80021 | 0.1M |
| 8        | PIPE NIPPLE, SMLS, POE/TOE, S-80, CS<br>A106-B L=75MM (3"), ASME                                                         | 1            | PNA1D15A80321 | 1    |
| 9        | CAP, 3000# FNPT, CS A105 ASME                                                                                            | 1            | NCA7211000021 | 1    |
| 10       | GASKET, 150# RF, 4.5MM(3/16") SP-WD SS<br>316 AND FILLER FLEX. GRAPHITE ASB. FREE<br>W/ I.R. SS 316 AND O.R. LOW CS ASME | 8            | GKA1APE0300B1 | 3    |
| 11       | 110 MM BOLT LENGTH, BOLT & NUT METRIC,<br>COARSE, STUD AS A193-B7 W/ NUTS A194-2H<br>ISO                                 | 20 MM        | GMA04310000E1 | 24   |
| 12       | GATE VALVE, 150# RF CS A216-WCB BODY<br>13CR TR API TR #1 FLEX WG OS&Y BB<br>API-600 ASME-B16.5                          | 8            | VGA11210003A5 | 1    |
| 13       | GATE VALVE, 800# SW/FNPT, CS A105 BODY<br>13CR AND HARD FACED TR API TR #8 SOLID<br>WG OS&Y BB API-602                   | 1            | VGA8712000111 | 1    |
| SUPPORTS |                                                                                                                          |              |               |      |
| 14       | PIPE SUPPORT                                                                                                             |              | 31-C160-0516  | 1    |
| 15       | PIPE SUPPORT                                                                                                             |              | 57-BB-A       | 2    |
| 16       | PIPE SUPPORT                                                                                                             |              | 35-C160-08A   | 2    |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <1>         | 100           | 1            |         | <2>         | 356           | 8            |         |
| <3>         | 1007          | 8            |         | <4>         | 2567          | 8            |         |



\* 依现场实际调整

|                  |        |        |            |           |                                                                                                             |  |  |  |
|------------------|--------|--------|------------|-----------|-------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 35     | °C     | PAINTING   | REF. DWG. | <br><br>腾龙芳烃(漳州)有限公司<br>Dragon Armaties (Changshou) Co., Ltd. (DMC)<br>CTCI Beijing Co., Ltd.<br>北京腾龙芳烃有限公司 |  |  |  |
| OPER. PRESS.     | 1      | MPa(g) | CODE       | PER. SPEC |                                                                                                             |  |  |  |
| DESIGN TEMP.     | 70     | °C     | INSULATION | NOTE      | FOR 腾龙芳烃原油分离装置检修工程                                                                                          |  |  |  |
| DESIGN PRESS.    | 1.8    | MPa(g) |            |           | TITLE PIPING ISOMETRIC DWG                                                                                  |  |  |  |
| TEST PRESSURE    | 2.7    | MPa(g) |            |           | PROJ. NO. 17B3166A UNIT 73-42                                                                               |  |  |  |
| TEST FLUID       | HYDRO. |        |            |           | DRAWN WL DATE 12/07/2017 REV. 2                                                                             |  |  |  |
| INSPECTION X-RAY | 10     | %      |            |           | LINE NO. 13-8"-P-01015-A51F SHEET                                                                           |  |  |  |
| P.W.H.T          | NO     |        |            |           | DWG. NO. XG32-13-P-01015 1 OF 1                                                                             |  |  |  |
| CATEGORY         | GC2    |        |            |           |                                                                                                             |  |  |  |