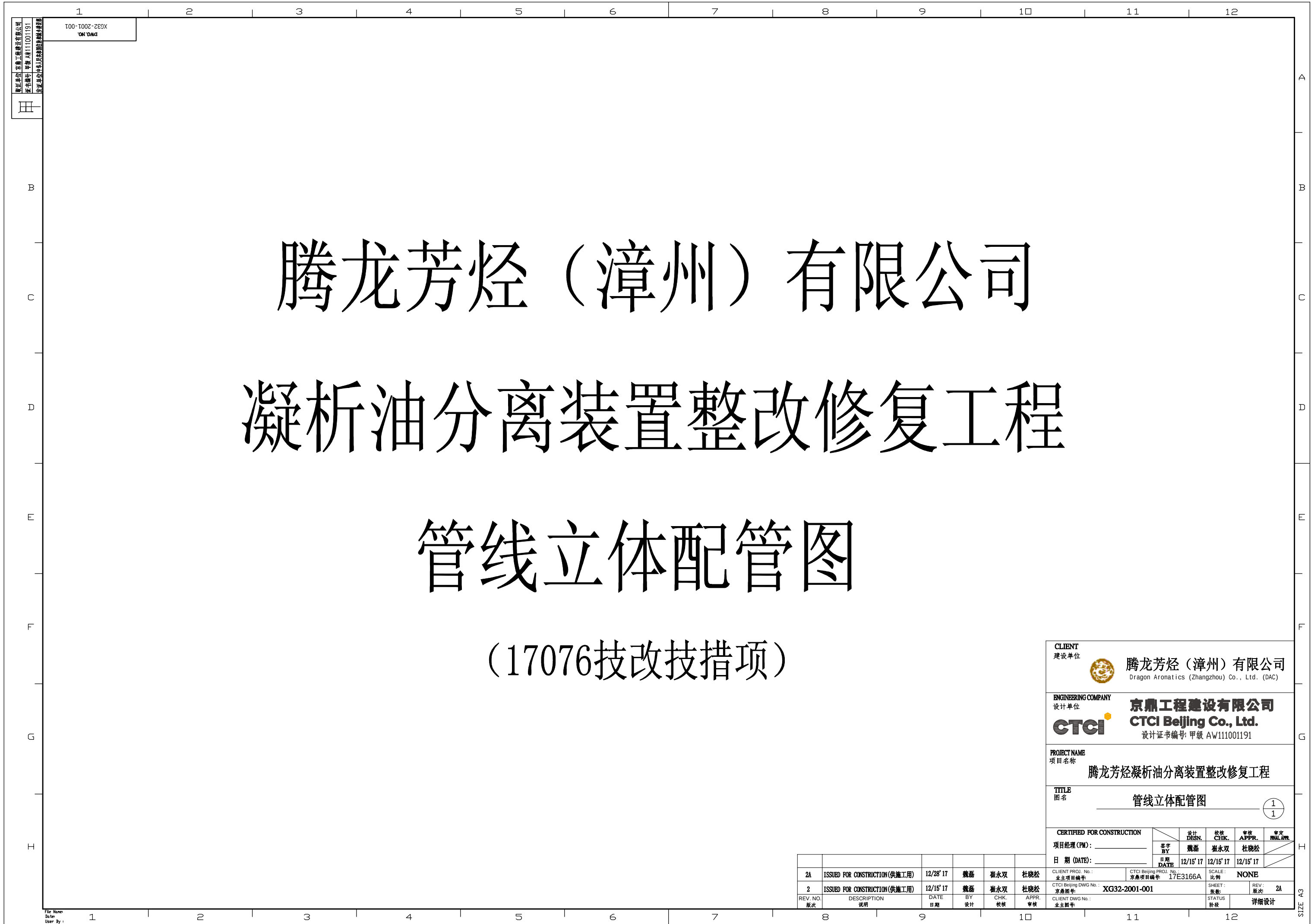




腾龙芳烃（漳州）有限公司  
设计单位：京鼎工程技术有限公司  
设计证书编号：甲级 AW111001191

100-1002-283X

001 DWG



腾龙芳烃（漳州）有限公司  
Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)



京鼎工程建设有限公司  
CTCI Beijing Co., Ltd.  
设计证书编号：甲级 AW111001191

项目名称  
腾龙芳烃凝析油分离装置整改修复工程

图名  
管线立体配管图

1  
1

| CERTIFIED FOR CONSTRUCTION     |  | 设计<br>DESIGN                       | 校核<br>CHK. | 审核<br>APPR.   | 审定<br>FINAL APPR. |
|--------------------------------|--|------------------------------------|------------|---------------|-------------------|
| 项目经理 (PM):                     |  | 签字<br>BY                           | 魏磊         | 崔永双           | 杜晓松               |
| 日期 (DATE):                     |  | 日期<br>DATE                         | 12/15' 17  | 12/15' 17     | 12/15' 17         |
| CLIENT PROJ. No.:<br>业主项目编号:   |  | CTCI Beijing PROJ. No.:<br>京鼎项目编号: |            | SCALE:<br>比例: |                   |
| CTCI Beijing DWG No.:<br>京鼎图号: |  | XG32-2001-001                      |            | SHEET:<br>张数: |                   |
| CLIENT DWG No.:<br>业主图号:       |  |                                    |            | REV:<br>版本:   |                   |
|                                |  |                                    |            | STATUS<br>状态: |                   |
|                                |  |                                    |            | 详细设计          |                   |

|                |                               |            |          |            |             |
|----------------|-------------------------------|------------|----------|------------|-------------|
| 2A             | ISSUED FOR CONSTRUCTION(供施工用) | 12/28' 17  | 魏磊       | 崔永双        | 杜晓松         |
| 2              | ISSUED FOR CONSTRUCTION(供施工用) | 12/15' 17  | 魏磊       | 崔永双        | 杜晓松         |
| 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  
(17076技改技措项)

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.2A |        |
| 1    | XG32-13-CWR-02016 | 1/1  | 13-1"-CWR-02016-L01F     | 17076 | 12/15/2017    |        |        |
| 2    | XG32-13-CWR-02017 | 1/1  | 13-1"-CWR-02017-L01F     | 17076 | 12/15/2017    |        |        |
| 3    | XG32-13-CWR-04027 | 1/1  | 13-1"-CWR-04027-L01F     | 17076 | 12/15/2017    |        |        |
| 4    | XG32-13-CWR-04028 | 1/1  | 13-1"-CWR-04028-L01F     | 17076 | 12/15/2017    |        |        |
| 5    | XG32-13-CWR-07036 | 1/1  | 13-1"-CWR-07036-L01F     | 17076 | 12/15/2017    |        |        |
| 6    | XG32-13-CWR-07037 | 1/1  | 13-1"-CWR-07037-L01F     | 17076 | 12/15/2017    |        |        |
| 7    | XG32-13-CWR-11022 | 1/1  | 13-1-1/2"-CWR-11022-L01F | 17076 | 12/15/2017    |        |        |
| 8    | XG32-13-CWR-11023 | 1/1  | 13-1-1/2"-CWR-11023-L01F | 17076 | 12/15/2017    |        |        |
| 9    | XG32-13-CWR-11037 | 1/1  | 13-2"-CWR-11037-L01F     | 17076 | 12/15/2017    |        |        |
| 10   | XG32-13-CWR-11038 | 1/1  | 13-2"-CWR-11038-L01F     | 17076 | 12/15/2017    |        |        |
| 11   | XG32-13-CWR-12019 | 1/2  | 13-1"-CWR-12019-L01F     | 17076 | 12/15/2017    |        |        |
| 12   | XG32-13-CWR-12019 | 2/2  | 13-1"-CWR-12019-L01F     | 17076 | 12/15/2017    |        |        |
| 13   | XG32-13-CWR-12020 | 1/2  | 13-1"-CWR-12020-L01F     | 17076 | 12/15/2017    |        |        |
| 14   | XG32-13-CWR-12020 | 2/2  | 13-1"-CWR-12020-L01F     | 17076 | 12/15/2017    |        |        |
| 15   | XG32-13-CWR-13013 | 1/2  | 13-1-1/2"-CWR-13013-L01F | 17076 | 12/15/2017    |        |        |
| 16   | XG32-13-CWR-13013 | 2/2  | 13-1-1/2"-CWR-13013-L01F | 17076 | 12/15/2017    |        |        |
| 17   | XG32-13-CWR-13014 | 1/2  | 13-1-1/2"-CWR-13014-L01F | 17076 | 12/15/2017    |        |        |
| 18   | XG32-13-CWR-13014 | 2/2  | 13-1-1/2"-CWR-13014-L01F | 17076 | 12/15/2017    |        |        |
| 19   | XG32-13-CWR-14025 | 1/1  | 13-2"-CWR-14025-L01F     | 17076 | 12/15/2017    |        |        |
| 20   | XG32-13-CWR-14026 | 1/1  | 13-2"-CWR-14026-L01F     | 17076 | 12/15/2017    |        |        |
| 21   | XG32-13-CWR-14027 | 1/1  | 13-2"-CWR-14027-L01F     | 17076 | 12/15/2017    |        |        |
| 22   | XG32-13-CWR-14028 | 1/1  | 13-2"-CWR-14028-L01F     | 17076 | 12/15/2017    |        |        |
| 23   | XG32-13-CWR-15017 | 1/2  | 13-1-1/2"-CWR-15017-L01F | 17076 | 12/15/2017    |        |        |
| 24   | XG32-13-CWR-15017 | 2/2  | 13-1-1/2"-CWR-15017-L01F | 17076 | 12/15/2017    |        |        |
| 25   | XG32-13-CWR-15018 | 1/2  | 13-1-1/2"-CWR-15018-L01F | 17076 | 12/15/2017    |        |        |
| 26   | XG32-13-CWR-15018 | 2/2  | 13-1-1/2"-CWR-15018-L01F | 17076 | 12/15/2017    |        |        |
| 27   | XG32-13-CWR-16015 | 1/2  | 13-1"-CWR-16015-L01F     | 17076 | 12/15/2017    |        |        |
| 28   | XG32-13-CWR-16015 | 2/2  | 13-1"-CWR-16015-L01F     | 17076 | 12/15/2017    |        |        |
| 29   | XG32-13-CWR-16016 | 1/2  | 13-1"-CWR-16016-L01F     | 17076 | 12/15/2017    |        |        |
| 30   | XG32-13-CWR-16016 | 2/2  | 13-1"-CWR-16016-L01F     | 17076 | 12/15/2017    |        |        |

# 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  
(17076技改技措项)

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.2A     |        |
| 31   | XG32-13-CWR-18022  | 1/1  | 13-1"-CWR-18022-L01F     | 17076 | 12/15/2017    |            |        |
| 32   | XG32-13-CWR-18023  | 1/1  | 13-1"-CWR-18023-L01F     | 17076 | 12/15/2017    |            |        |
| 33   | XG32-13-CWR-18026  | 1/1  | 13-3/4"-CWR-18026-L01F   | 17076 | 12/15/2017    |            |        |
| 34   | XG32-13-CWR-18027  | 1/1  | 13-3/4"-CWR-18027-L01F   | 17076 | 12/15/2017    |            |        |
| 35   | XG32-13-CWR-20001  | 1/3  | 13-1"-CWR-20001-L01F     | 17076 | 12/28/2017    |            |        |
| 36   | XG32-13-CWR-20001  | 2/3  | 13-1"-CWR-20001-L01F     | 17076 | 12/28/2017    |            |        |
| 37   | XG32-13-CWR-20001  | 3/3  | 13-1"-CWR-20001-L01F     | 17076 | 12/28/2017    |            |        |
| 38   | XG32-13-CWR-33010  | 1/1  | 13-3/4"-CWR-33010-L01F   | 17076 | 12/15/2017    |            |        |
| 39   | XG32-13-CWR-33011  | 1/1  | 13-3/4"-CWR-33011-L01F   | 17076 | 12/15/2017    |            |        |
| 40   | XG32-13-CWR-35028A | 1/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 41   | XG32-13-CWR-35028A | 2/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 42   | XG32-13-CWR-35028A | 3/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 43   | XG32-13-CWR-35028A | 4/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 44   | XG32-13-CWR-35028A | 5/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 45   | XG32-13-CWR-35028A | 6/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 46   | XG32-13-CWR-35028A | 7/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 47   | XG32-13-CWR-35028A | 8/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 48   | XG32-13-CWR-35028A | 9/9  | 13-6"-CWR-35028A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 49   | XG32-13-CWR-35059  | 1/1  | 13-2"-CWR-35059-D41F     | 17076 | 12/28/2017    |            |        |
| 50   | 13-CWR-35059 OLD   | 8/13 | 13-2"-CWR-35059-D41F     | 17076 | 12/28/2017    |            |        |
| 51   | XG32-13-CWS-35007  | 1/2  | 13-1-1/2"-CWS-35007-L01F | 17076 | 12/15/2017    |            |        |
| 52   | XG32-13-CWS-35007  | 2/2  | 13-1-1/2"-CWS-35007-L01F | 17076 | 12/15/2017    |            |        |
| 53   | XG32-13-CWS-35008  | 1/2  | 13-1-1/2"-CWS-35008-L01F | 17076 | 12/15/2017    |            |        |
| 54   | XG32-13-CWS-35008  | 2/2  | 13-1-1/2"-CWS-35008-L01F | 17076 | 12/15/2017    |            |        |
| 55   | XG32-13-CWS-35009  | 1/1  | 13-1"-CWS-35009-L01F     | 17076 | 12/15/2017    |            |        |
| 56   | XG32-13-CWS-35010  | 1/1  | 13-1"-CWS-35010-L01F     | 17076 | 12/15/2017    |            |        |
| 57   | XG32-13-CWS-35012  | 1/1  | 13-1-1/2"-CWS-35012-L01F | 17076 | 12/15/2017    |            |        |
| 58   | XG32-13-CWS-35013  | 1/1  | 13-1-1/2"-CWS-35013-L01F | 17076 | 12/15/2017    |            |        |
| 59   | XG32-13-CWS-35015  | 1/1  | 13-2"-CWS-35015-L01F     | 17076 | 12/15/2017    |            |        |
| 60   | XG32-13-CWS-35016  | 1/1  | 13-2"-CWS-35016-L01F     | 17076 | 12/15/2017    |            |        |

## 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  
(17076技改技措项)

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.2A     |        |
| 61   | XG32-13-CWS-35017  | 1/1   | 13-2"-CWS-35017-L01F     | 17076 | 12/15/2017    |            |        |
| 62   | XG32-13-CWS-35018  | 1/1   | 13-2"-CWS-35018-L01F     | 17076 | 12/15/2017    |            |        |
| 63   | XG32-13-CWS-35020  | 1/1   | 13-1-1/2"-CWS-35020-L01F | 17076 | 12/15/2017    |            |        |
| 64   | XG32-13-CWS-35021  | 1/1   | 13-1-1/2"-CWS-35021-L01F | 17076 | 12/15/2017    |            |        |
| 65   | XG32-13-CWS-35027A | 1/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 66   | XG32-13-CWS-35027A | 2/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 67   | XG32-13-CWS-35027A | 3/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 68   | XG32-13-CWS-35027A | 4/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 69   | XG32-13-CWS-35027A | 5/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 70   | XG32-13-CWS-35027A | 6/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 71   | XG32-13-CWS-35027A | 7/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 72   | XG32-13-CWS-35027A | 8/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 73   | XG32-13-CWS-35027A | 9/10  | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 74   | XG32-13-CWS-35027A | 10/10 | 13-6"-CWS-35027A-D41F    | 17076 | 12/15/2017    | 12/28/2017 |        |
| 75   | XG32-13-CWS-35032  | 1/1   | 13-1"-CWS-35032-L01F     | 17076 | 12/15/2017    |            |        |
| 76   | XG32-13-CWS-35033  | 1/1   | 13-1"-CWS-35033-L01F     | 17076 | 12/15/2017    |            |        |
| 77   | XG32-13-CWS-35034  | 1/1   | 13-1"-CWS-35034-L01F     | 17076 | 12/15/2017    |            |        |
| 78   | XG32-13-CWS-35035  | 1/2   | 13-1"-CWS-35035-L01F     | 17076 | 12/15/2017    |            |        |
| 79   | XG32-13-CWS-35035  | 2/2   | 13-1"-CWS-35035-L01F     | 17076 | 12/15/2017    |            |        |
| 80   | XG32-13-CWS-35036  | 1/2   | 13-1"-CWS-35036-L01F     | 17076 | 12/15/2017    |            |        |
| 81   | XG32-13-CWS-35036  | 2/2   | 13-1"-CWS-35036-L01F     | 17076 | 12/15/2017    |            |        |
| 82   | XG32-13-CWS-35037  | 1/2   | 13-1"-CWS-35037-L01F     | 17076 | 12/15/2017    |            |        |
| 83   | XG32-13-CWS-35037  | 2/2   | 13-1"-CWS-35037-L01F     | 17076 | 12/15/2017    |            |        |
| 84   | XG32-13-CWS-35038  | 1/1   | 13-2"-CWS-35038-L01F     | 17076 | 12/15/2017    |            |        |
| 85   | XG32-13-CWS-35039  | 1/1   | 13-2"-CWS-35039-L01F     | 17076 | 12/15/2017    |            |        |
| 86   | XG32-13-CWS-35040  | 1/1   | 13-1"-CWS-35040-L01F     | 17076 | 12/15/2017    |            |        |
| 87   | XG32-13-CWS-35041  | 1/1   | 13-1"-CWS-35041-L01F     | 17076 | 12/15/2017    |            |        |
| 88   | XG32-13-CWS-35046  | 1/1   | 13-1"-CWS-35046-L01F     | 17076 | 12/15/2017    |            |        |
| 89   | XG32-13-CWS-35047  | 1/1   | 13-1"-CWS-35047-L01F     | 17076 | 12/15/2017    |            |        |
| 90   | XG32-13-CWS-35050  | 1/2   | 13-3/4"-CWS-35050-L01F   | 17076 | 12/15/2017    |            |        |

## 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  
(17076技改技措项)

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

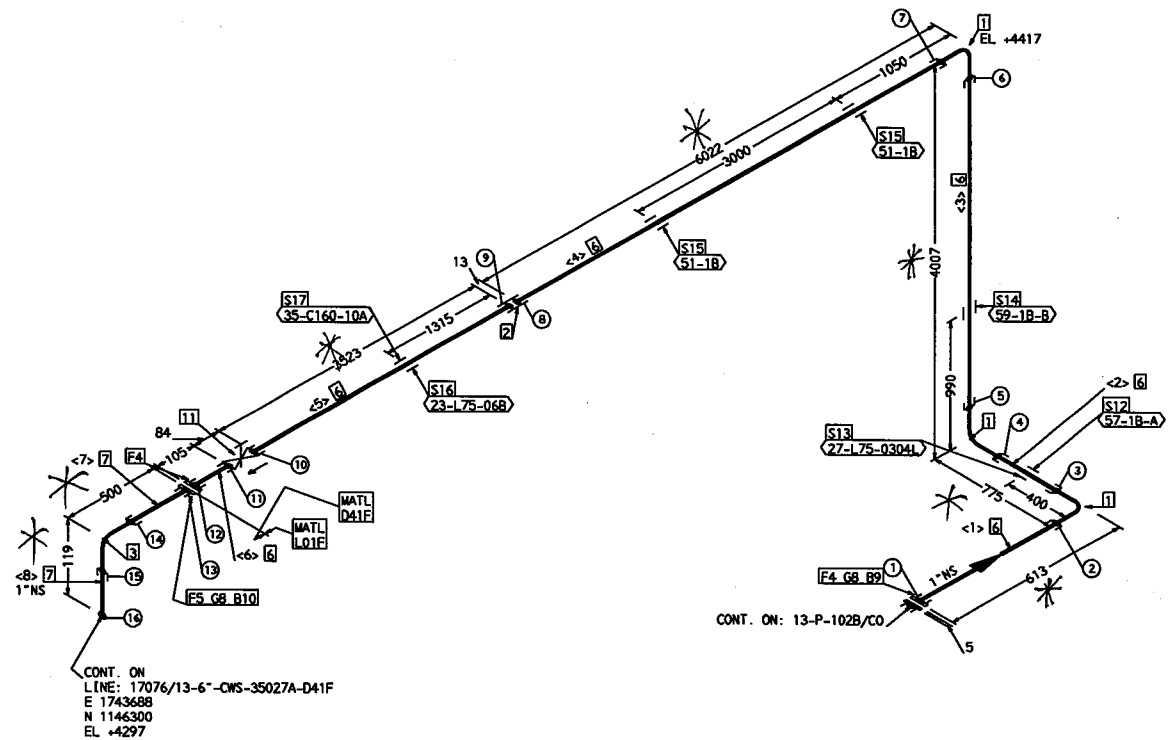
| SER. | DWG NO            | SH'T | LINE NO                | AREA  | REVISION DATE |        | REMARK |
|------|-------------------|------|------------------------|-------|---------------|--------|--------|
|      |                   | NO   |                        |       | REV.2         | REV.2A |        |
| 91   | XG32-13-CWS-35050 | 2/2  | 13-3/4"-CWS-35050-L01F | 17076 | 12/15/2017    |        |        |
| 92   | XG32-13-CWS-35051 | 1/2  | 13-3/4"-CWS-35051-L01F | 17076 | 12/15/2017    |        |        |
| 93   | XG32-13-CWS-35051 | 2/2  | 13-3/4"-CWS-35051-L01F | 17076 | 12/15/2017    |        |        |
| 94   | XG32-13-CWS-35054 | 1/1  | 13-3/4"-CWS-35054-L01F | 17076 | 12/15/2017    |        |        |
| 95   | XG32-13-CWS-35055 | 1/1  | 13-3/4"-CWS-35055-L01F | 17076 | 12/15/2017    |        |        |
| 96   | XG32-13-CWS-35056 | 1/3  | 13-1"-CWS-35056-L01F   | 17076 | 12/28/2017    |        |        |
| 97   | XG32-13-CWS-35056 | 2/3  | 13-1"-CWS-35056-L01F   | 17076 | 12/28/2017    |        |        |
| 98   | XG32-13-CWS-35056 | 3/3  | 13-1"-CWS-35056-L01F   | 17076 | 12/28/2017    |        |        |
| 99   | XG32-13-CWS-35058 | 1/1  | 13-2"-CWS-35058-D41F   | 17076 | 12/28/2017    |        |        |
| 100  | 13-CWS-35058 OLD  | 1/14 | 13-2"-CWS-35058-D41F   | 17076 | 12/28/2017    |        |        |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                                    | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| ---      | -----                                                                                                                    | ----         | -----         | ----  |
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304<br>ASME                                                                             | 1            | PPA11A1AJ0022 | 15.0M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                                     | 1            | PPA1115A80021 | 0.6M  |
| 8        | 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 | 1            | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC ,<br>COARSE, STUD AS A193-B7 W/ NUTS A194-2H<br>ISO                                 | 12 MM        | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC ,<br>COARSE, STUD AS A193-B7 W/ NUTS A194-2H<br>ISO                                 | 12 MM        | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY<br>SS 304 TR API TR #2 SOLID WG OS&Y BB<br>API-602                                | 1            | VGAB5A1000111 | 1     |

|    |              |              |   |
|----|--------------|--------------|---|
| 12 | PIPE SUPPORT | 57-18-A      | 1 |
| 13 | PIPE SUPPORT | 27-L75-0304L | 1 |
| 14 | PIPE SUPPORT | 59-18-B      | 1 |
| 15 | PIPE SUPPORT | 51-18        | 2 |
| 16 | PIPE SUPPORT | 23-L75-06B   | 1 |
| 17 | PIPE SUPPORT | 35-C160-10A  | 1 |

| PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <1>         | 586           | 1            |         | <2>         | 731           | 1            |         |
| <3>         | 3962          | 1            |         | <4>         | 6000          | 1            |         |
| <5>         | 3523          | 1            |         | <6>         | 100           | 1            |         |
| <7>         | 474           | 1            |         | <8>         | 97            | 1            |         |



CONT. ON: 13-P-102B/CO.

**“\*”依现场实际调整**

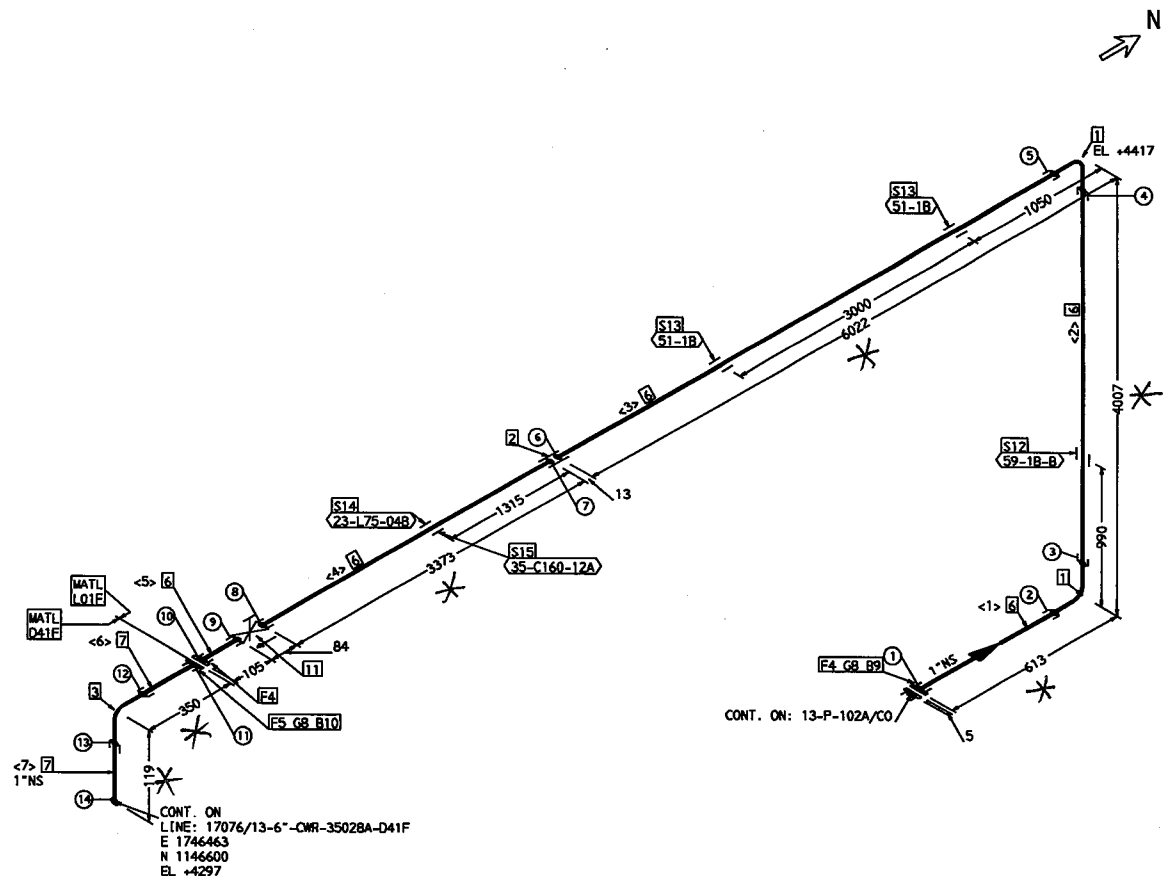
|                     |            |                |  |  |  |                         |      |                  |      |                                                                                                                                                               |               |                    |                      |      |                 |
|---------------------|------------|----------------|--|--|--|-------------------------|------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|------|-----------------|
| OPER. TEMP.         | 34 °C      | PAINTING       |  |  |  | REF. DWG.               |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Zhaozhou) Co., Ltd. (DAC)</div> |               |                    |                      |      |                 |
| OPER. PRESS.        | 0.3 MPa(g) | PER. SPEC      |  |  |  |                         |      |                  |      |                                                                                                                                                               |               |                    |                      | NOTE |                 |
| DESIGN TEMP.        | 80 °C      | INSULATION     |  |  |  | FOR<br>腾龙芳烃原油分离装置整改修复工程 |      |                  |      |                                                                                                                                                               |               |                    |                      |      |                 |
| DESIGN PRESS.       | 1.2 MPa(g) |                |  |  |  |                         |      |                  |      |                                                                                                                                                               |               |                    |                      |      |                 |
| TEST PRESSURE       | 1.8 MPa(g) | MPa(g)<br>TYPE |  |  |  |                         |      |                  |      | TITLE PIPING ISOMETRIC DWG                                                                                                                                    |               |                    |                      |      |                 |
| TEST FLUID          | HYDRO.     |                |  |  |  |                         |      |                  |      | PROJ. NO.                                                                                                                                                     | 17E3166A      | UNIT               | 17076                |      |                 |
| INSPECTION<br>X-RAY | 5 %        |                |  |  |  |                         |      |                  |      | DRAWN                                                                                                                                                         | WL            | DATE<br>12/18/2017 | REV.                 | 2    |                 |
| P.W.H.T             | -          |                |  |  |  |                         | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                           | 12/15<br>2017 | LINE NO.           | 13-1"-CWR-02016-L01F |      | SHEET<br>1 OF 1 |
| CATEGORY            | -          |                |  |  |  |                         | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                          | DATE          | DWG. NO.           | XG32-13-CWR-02016    |      |                 |

| ERECTION MATERIALS |

## SUPPORTS

## | 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>         | 586           | 1             |         | <2>         | 3962          | 1             |         |
| <3>         | 6000          | 1             |         | <4>         | 3373          | 1             |         |
| <5>         | 100           | 1             |         | <6>         | 324           | 1             |         |
| <7>         | 97            | 1             |         |             |               |               |         |



**“\*”依现场实际调整**

|                  |        |        |                                          |           |  |  |                   |            |                  |      |                                                                                                                                                         |                            |          |                      |        |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-------------------|------------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|----------------------|--------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG.         |            |                  |      |  腾龙芳烃（漳州）有限公司<br>Qinglong Petrochemical (Zhuozhou) Co., Ltd. (QAC) |                            |          |                      |        |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |                   |            |                  |      |  京福工程设备有限公司<br>CTCI Beijing Co., Ltd.<br>北京市朝阳区平谷路1011101111       |                            |          |                      |        |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |                   | INSULATION |                  |      |                                                                                                                                                         | FOR                        |          |                      |        |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  | 腾龙芳烃减压油分离装置整改修复工程 |            |                  |      |                                                                                                                                                         |                            |          |                      |        |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |                   |            |                  |      |                                                                                                                                                         | TITLE PIPING ISOMETRIC DWG |          |                      |        |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |                   |            |                  |      |                                                                                                                                                         | PROJ. NO.                  | 17E3166A | UNIT                 | 17076  |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |                   |            |                  |      |                                                                                                                                                         | DRAWN                      | WL       | DATE 12/18/2017      | REV. 2 |        |
| P.W.H.T          | -      |        |                                          |           |  |  |                   | 2          | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                     | 12/15 2017                 | LINE NO. | 13-1"-CWR-02017-L01F |        | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |                   | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                    | DATE                       | DWG. NO. | XG32-13-CWR-02017    |        | 1 OF 1 |

## FABRICATION MATERIALS

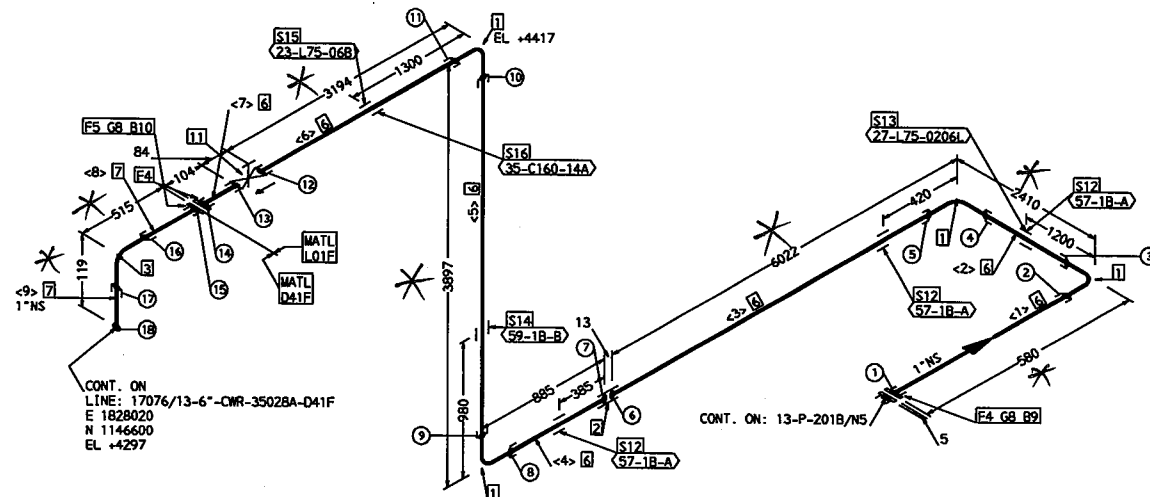
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 4   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 17.0M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGAB5A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 3     |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0206L  | 1     |
| 14       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 15       | PIPE SUPPORT                                                                                                       |              | 23-L75-068    | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 35-C160-14A   | 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>         | 553           | 1            |         | <2>         | 2366          | 1            |         |
| <3>         | 6000          | 1            |         | <4>         | 863           | 1            |         |
| <5>         | 3852          | 1            |         | <6>         | 3172          | 1            |         |
| <7>         | 100           | 1            |         | <8>         | 488           | 1            |         |
| <9>         | 97            | 1            |         |             |               |              |         |



\* 依现场实际调整

|                  |            |                |           |                                                                                                                                                       |                      |              |            |
|------------------|------------|----------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|------------|
| OPER. TEMP.      | 34 °C      | PAINTING       | REF. DWG. |  腾龙芳烃(漳州)有限公司<br>Tenglong Aromatics (Zhangzhou) Co., Ltd. (GACC) |                      |              |            |
| OPER. PRESS.     | 0.3 MPa(g) | CODE PER. SPEC | NOTE      |                                                                                                                                                       |                      |              |            |
| DESIGN TEMP.     | 80 °C      | INSULATION     |           |  京能工程建设有限公司<br>CTCL Beijing Co., Ltd.<br>SINCE 1987 WE ARE HERE  |                      |              |            |
| DESIGN PRESS.    | 1.2 MPa(g) |                |           | FOR 腾龙芳烃原油分离装置检修工程                                                                                                                                    |                      |              |            |
| TEST PRESSURE    | 1.8 MPa(g) |                |           | TITLE PIPING ISOMETRIC DWG                                                                                                                            |                      |              |            |
| TEST FLUID       | HYDRO.     |                |           | PROJ. NO.                                                                                                                                             | 17E3166A             | UNIT         | 17076      |
| INSPECTION X-RAY | 5 %        |                |           | DRAWN                                                                                                                                                 | WL                   | DATE         | 12/18/2017 |
| P.W.H.T          | -          |                |           | LINE NO.                                                                                                                                              | 13-1"-CWR-04027-L01F | REV.         | 2          |
| CATEGORY         | -          |                |           | DWG. NO.                                                                                                                                              | XG32-13-CWR-04027    | SHEET 1 OF 1 |            |

## FABRICATION MATERIALS

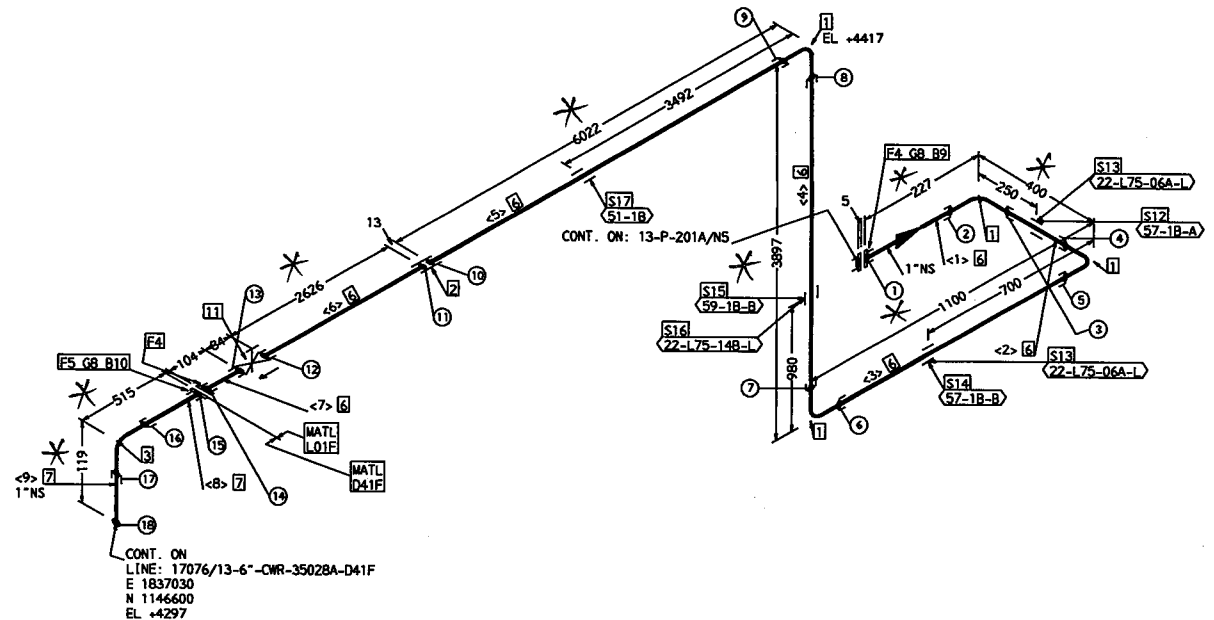
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 4   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 14.2M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 8        | GASKET, 150# RF, 4.5MM(3/16") SP-WD SS 316 AND FILLER FLEX. GRAPHITE ASD. FREE W/ I.R. SS 316 AND O.R. LOW CS ASME | 1            | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGAB5A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-18-A       | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 22-L75-06A-L  | 2     |
| 14       | PIPE SUPPORT                                                                                                       |              | 57-18-B       | 1     |
| 15       | PIPE SUPPORT                                                                                                       |              | 59-18-B       | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 22-L75-148-L  | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 1     |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS |
|-------------|-----------------------|------|---------|-------------|-----------------------|------|---------|
| <1>         | 200                   | 1    |         | <2>         | 356                   | 1    |         |
| <3>         | 1056                  | 1    |         | <4>         | 3852                  | 1    |         |
| <5>         | 6000                  | 1    |         | <6>         | 2626                  | 1    |         |
| <7>         | 100                   | 1    |         | <8>         | 488                   | 1    |         |
| <9>         | 97                    | 1    |         |             |                       |      |         |



\* 依现场实际调整

|                  |        |        |            |           |                                                                 |                   |        |            |
|------------------|--------|--------|------------|-----------|-----------------------------------------------------------------|-------------------|--------|------------|
| OPER. TEMP.      | 34     | °C     | PAINTING   | REF. DWG. | <br>腾龙芳烃(漳州)有限公司<br>Dragon Aromatic (Changzhou) Co., Ltd. (DAC) |                   |        |            |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE       | PER. SPEC |                                                                 |                   |        |            |
| DESIGN TEMP.     | 80     | °C     | INSULATION | NOTE      | <br>京通工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>京通工程技术有限公司          |                   |        |            |
| DESIGN PRESS.    | 1.2    | MPa(g) |            |           |                                                                 |                   |        |            |
| TEST PRESSURE    | 1.8    | MPa(g) |            |           | TITLE                                                           |                   |        |            |
| TEST FLUID       | HYDRO. |        |            |           | PIPING ISOMETRIC DWG                                            |                   |        |            |
| INSPECTION X-RAY | 5      | %      |            |           | PROJ. NO.                                                       | 17E3166A          | UNIT   | 17076      |
| P.V.H.T          | -      |        |            |           | DRAWN                                                           | WL                | DATE   | 12/18/2017 |
| CATEGORY         | -      |        |            |           | REV.                                                            | 2                 | REV.   | 2          |
|                  |        |        |            |           | FOR CONSTRUCTION                                                | CYS               | DKS    | 12/15/2017 |
|                  |        |        |            |           | DESCRIPTION                                                     | CHKD              | APPR   | DATE       |
|                  |        |        |            |           | DWG. NO.                                                        | XG32-13-CWR-04028 | SHEET  |            |
|                  |        |        |            |           |                                                                 |                   | 1 OF 1 |            |

## | FABRICATION MATERIALS |

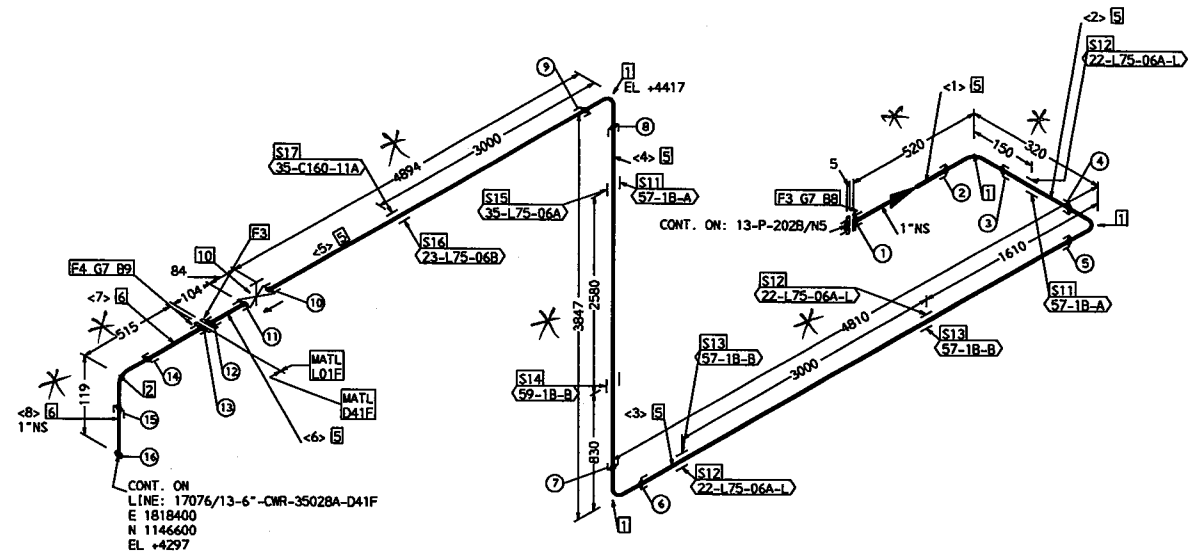
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 4   |
| 2        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 5        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 14.4M |
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 11       | PIPE SUPPORT                                                                                                       |              | 57-18-A       | 2     |
| 12       | PIPE SUPPORT                                                                                                       |              | 22-L75-06A-L  | 3     |
| 13       | PIPE SUPPORT                                                                                                       |              | 57-18-B       | 2     |
| 14       | PIPE SUPPORT                                                                                                       |              | 59-18-B       | 1     |
| 15       | PIPE SUPPORT                                                                                                       |              | 35-L75-06A    | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 23-L75-06B    | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 35-C160-11A   | 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>         | 493           | 1            |         | <2>         | 276           | 1            |         |
| <3>         | 4766          | 1            |         | <4>         | 3802          | 1            |         |
| <5>         | 4872          | 1            |         | <6>         | 100           | 1            |         |
| <7>         | 488           | 1            |         | <8>         | 97            | 1            |         |



“\*”依现场实际调整

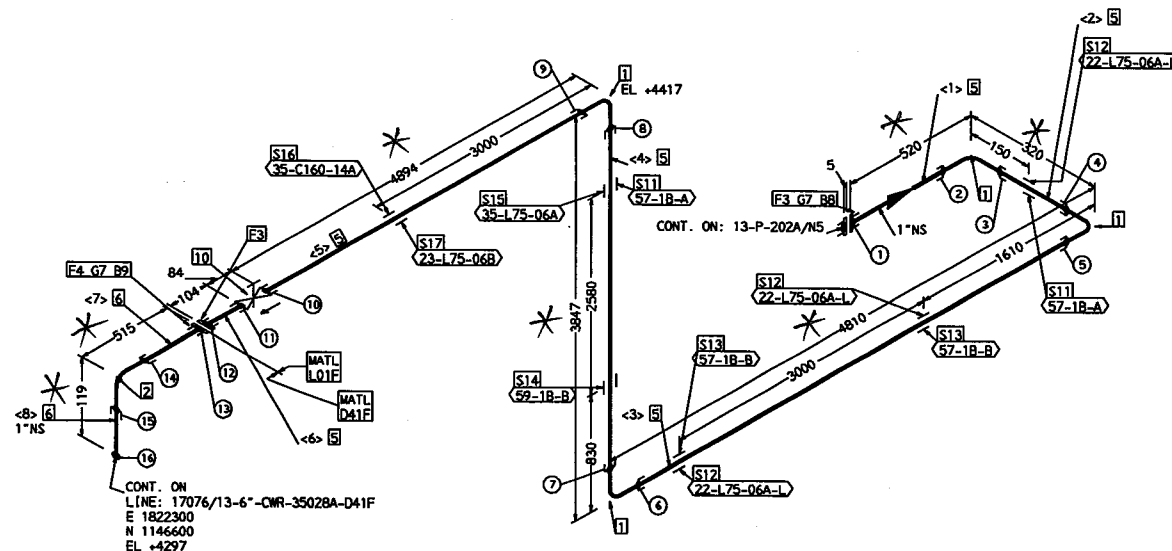
|                  |            |            |           |                                                                                                                                                             |  |  |  |
|------------------|------------|------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34 °C      | PAINING    | REF. DWG. | <p>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Changzhou) Co., Ltd. (DACC)</p> <p>京龍工程建設有限公司<br/>CTCL Beijing Co., Ltd.<br/>京龍工程建設有限公司</p> <p>FOR 腾龙芳烃原油分离装置检修工程</p> |  |  |  |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                             |  |  |  |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      | TITLE PIPING ISOMETRIC DWG                                                                                                                                  |  |  |  |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           | PROJ. NO. 17B3166A UNIT 17076                                                                                                                               |  |  |  |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | DRAWN WL DATE 12/18/2017 REV. 2                                                                                                                             |  |  |  |
| TEST FLUID       | HYDRO.     |            |           | LINE NO. 13-1-CWR-07036-L01F SHEET                                                                                                                          |  |  |  |
| INSPECTION X-RAY | 5 %        |            |           | DWG. NO. XG32-13-CWR-07036 1 OF 1                                                                                                                           |  |  |  |
| P.W.H.T          | -          |            |           |                                                                                                                                                             |  |  |  |
| CATEGORY         | -          |            |           |                                                                                                                                                             |  |  |  |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

**"\*"依现场实际调整**



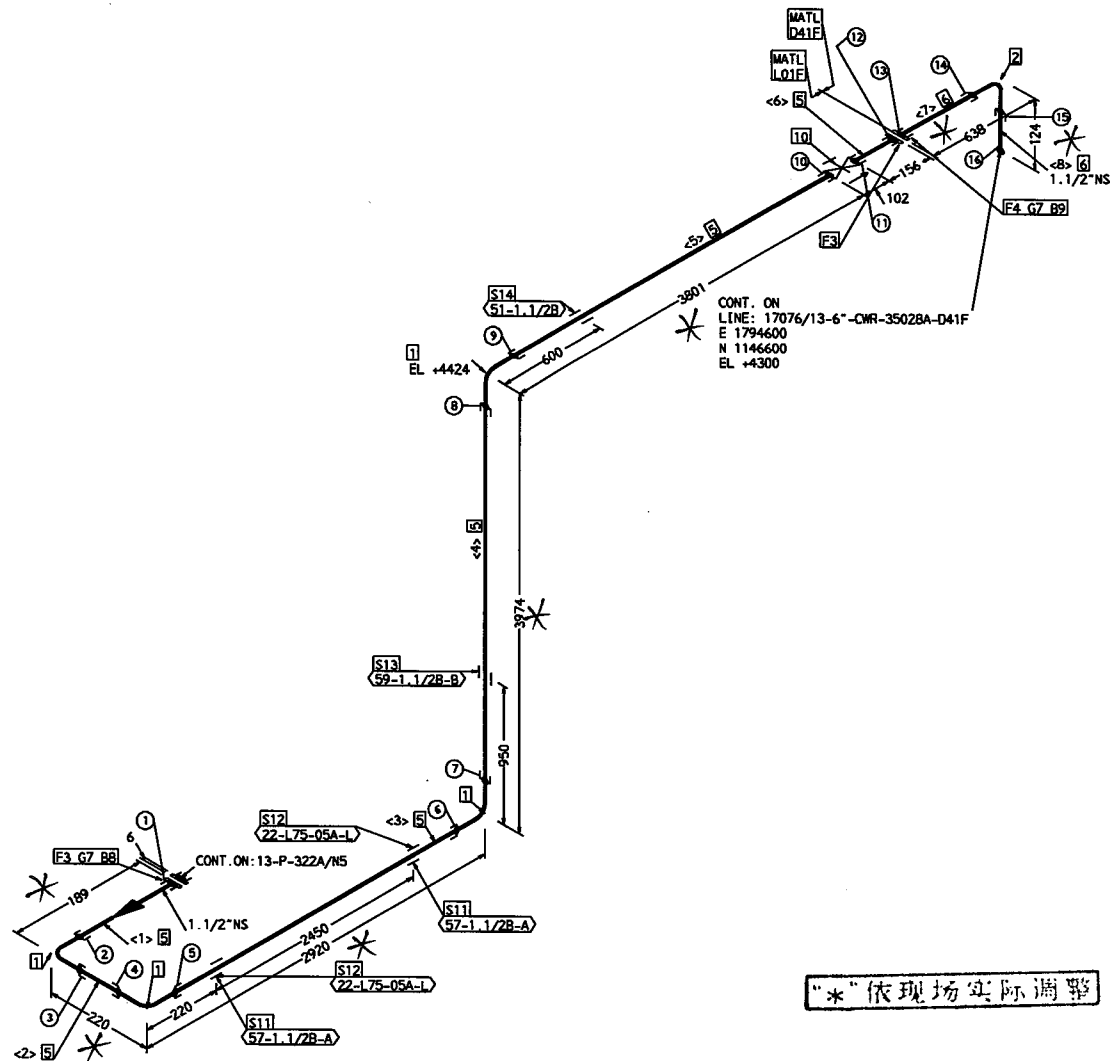
|                  |        |        |                                          |           |  |  |           |      |                                                                                                                                                          |  |                                                                                                                                                                      |      |                            |          |                      |        |       |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|----------|----------------------|--------|-------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                                                                                                                                                          |  | <div> 腾龙芳烃（漳州）有限公司<br/>Tenglong Petrochemical (Zhouzhou) Co., Ltd. (QACZ)</div> |      |                            |          |                      |        |       |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE | <div> 京能工程技术有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京中石油工程技术有限公司</div> |  |                                                                                                                                                                      |      |                            |          |                      |        |       |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      | FOR                                                                                                                                                      |  |                                                                                                                                                                      |      |                            |          |                      |        |       |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                                                                                                                                                          |  | 腾龙芳烃原油分离装置检修修复工程                                                                                                                                                     |      |                            |          |                      |        |       |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |  |  |           |      |                                                                                                                                                          |  |                                                                                                                                                                      |      | TITLE PIPING ISOMETRIC DWG |          |                      |        |       |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                                                                                                                                                          |  |                                                                                                                                                                      |      | PROJ. NO.                  | 17E3166A | UNIT                 | 17076  |       |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                                                                                                                                                          |  |                                                                                                                                                                      |      | DRAWN                      | WL       | DATE 12/18/2017      | REV.   | 2     |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION                                                                                                                                         |  | CYS                                                                                                                                                                  | DXS  | 12/15 2017                 | LINE NO. | 13-1"-CWR-07037-L01F |        | SHEET |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION                                                                                                                                              |  | CHKD                                                                                                                                                                 | APPR | DATE                       | DWG. NO. | XG32-13-CWR-07037    |        |       |
|                  |        |        |                                          |           |  |  |           |      |                                                                                                                                                          |  |                                                                                                                                                                      |      |                            | SHEET    |                      | 1 OF 1 |       |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 150           | 1.1/2         |         | <2>         | 156           | 1.1/2         |         |
| <3>         | 2858          | 1.1/2         |         | <4>         | 3910          | 1.1/2         |         |
| <5>         | 3769          | 1.1/2         |         | <6>         | 150           | 1.1/2         |         |
| <7>         | 600           | 1.1/2         |         | <8>         | 92            | 1.1/2         |         |



“\*”依现场实际调整

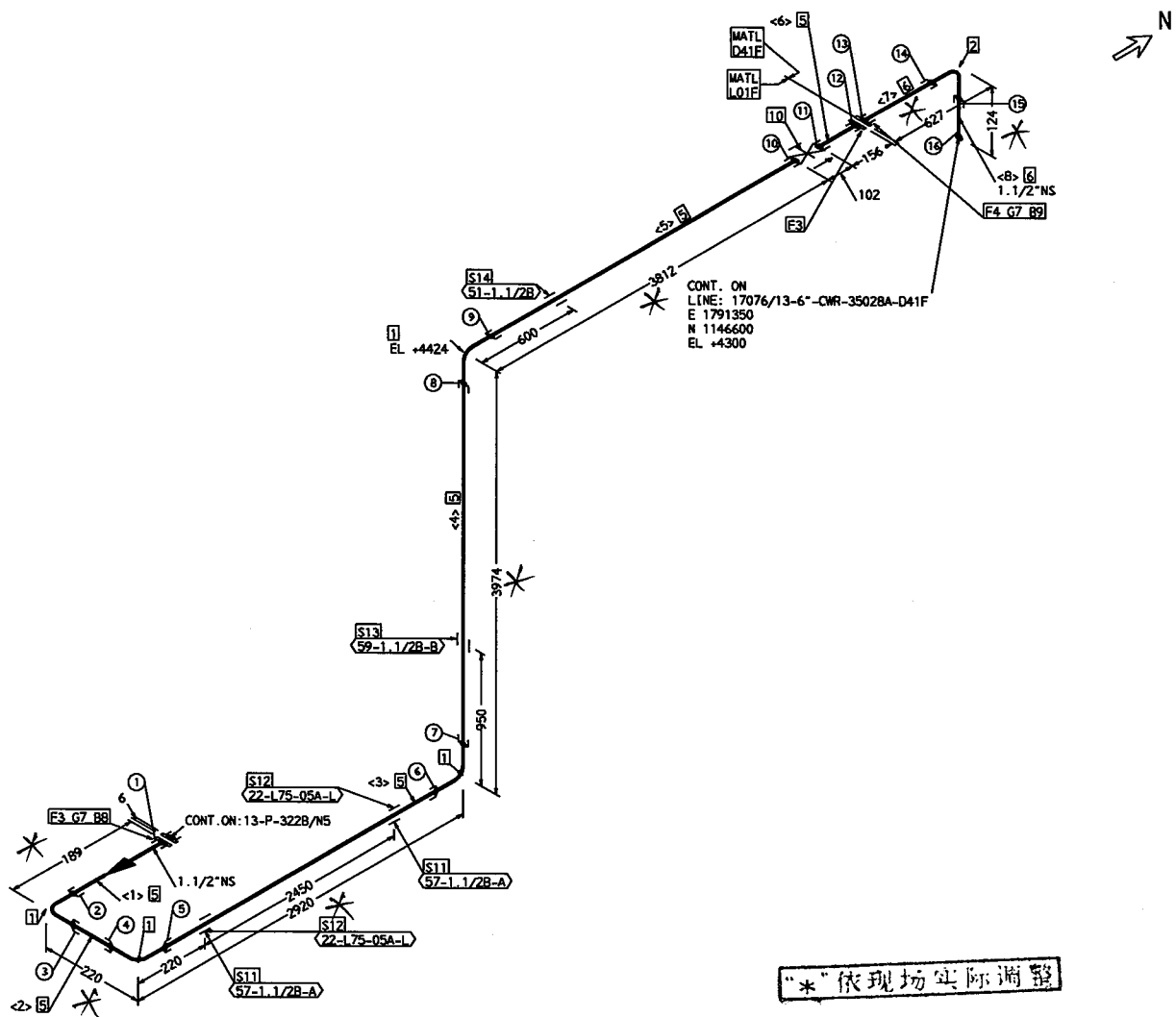
|                  |        |        |                                          |           |  |  |                      |      |                  |      |                                                                                                                                                            |                                                                                                                                                                |                            |                          |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|----------------------|------|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG.            |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Arrow (Zhangzhou) Co., Ltd. (GMD)</div> |                                                                                                                                                                |                            |                          |       |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |                      |      |                  |      | NOTE                                                                                                                                                       | <div> 京福工程建设有限公司<br/>CTCT Beijing Co., Ltd.<br/>北京市昌平区北土城大街111号1111</div> |                            |                          |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  | FOR 腾龙芳烃原油分离装置整改修复工程 |      |                  |      |                                                                                                                                                            |                                                                                                                                                                |                            |                          |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |                      |      |                  |      |                                                                                                                                                            |                                                                                                                                                                |                            |                          |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |  |  |                      |      |                  |      |                                                                                                                                                            |                                                                                                                                                                | TITLE PIPING ISOMETRIC DWG |                          |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |                      |      |                  |      |                                                                                                                                                            | PROJ. NO.                                                                                                                                                      | 17E3166A                   | UNIT                     | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |                      |      |                  |      |                                                                                                                                                            | DRAWN                                                                                                                                                          | WL                         | DATE 12/18/2017          | REV.  | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |                      | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                        | 12/15/2017                                                                                                                                                     | LINE NO.                   | 13-1-1/2"-CWR-11022-L01F |       | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |                      | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                       | DATE                                                                                                                                                           | DWG. NO.                   | XG32-13-CWR-11022        |       | 1 OF 1 |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 150           | 1.1/2        |         | <2>         | 156           | 1.1/2        |         |
| <3>         | 2858          | 1.1/2        |         | <4>         | 3910          | 1.1/2        |         |
| <5>         | 3780          | 1.1/2        |         | <6>         | 150           | 1.1/2        |         |
| <7>         | 589           | 1.1/2        |         | <8>         | 92            | 1.1/2        |         |



|                  |        |        |                                                                                       |  |  |  |           |                  |      |      |                                                                                                                                                     |                            |                          |        |
|------------------|--------|--------|---------------------------------------------------------------------------------------|--|--|--|-----------|------------------|------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                                                              |  |  |  | REF. DWG. |                  |      |      |  腾龙芳烃 (漳州) 有限公司<br>Dragon Armetics (Zhangzhou) Co., Ltd. (DMC) |                            |                          |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE PER. SPEC                                                                        |  |  |  | NOTE      |                  |      |      |  京瑞工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>北京市昌平区北土城大街111号       |                            |                          |        |
| DESIGN TEMP.     | 80     | °C     |                                                                                       |  |  |  |           |                  |      |      | FOR 腾龙芳烃原油分离装置检修工程                                                                                                                                  |                            |                          |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                                                                            |  |  |  |           |                  |      |      |                                                                                                                                                     |                            |                          |        |
| TEST PRESSURE    | 1.8    | MPa(g) |  |  |  |  |           |                  |      |      |                                                                                                                                                     | TITLE PIPING ISOMETRIC DWG |                          |        |
| TEST FLUID       | HYDRO. |        |                                                                                       |  |  |  |           |                  |      |      | PROJ. NO.                                                                                                                                           | 17E3166A                   | UNIT                     | 17076  |
| INSPECTION X-RAY | 5      | %      |                                                                                       |  |  |  |           |                  |      |      | DRAWN                                                                                                                                               | WL                         | DATE 12/18/2017          | REV. 2 |
| P.W.H.T          | -      |        |                                                                                       |  |  |  | 2         | FOR CONSTRUCTION | CYS  | DKS  | 12/15/2017                                                                                                                                          | LINE NO.                   | 13-1-1/2"-CWR-11023-L01F | SHEET  |
| CATEGORY         | -      |        |                                                                                       |  |  |  | REV.      | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                | DWG. NO.                   | XG32-13-CWR-11023        | 1 OF 1 |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2         | PPA14A1AF0022 | 13.2M |
| 2     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2         | PPA1415A80021 | 0.6M  |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2 | RCA16B1AFAJ19 | 1     |
| 4     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2         | NEA16B1AF0019 | 4     |
| 5     | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2         | NEA1621A80019 | 1     |
| 6     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2         | FWA11A1AF0015 | 1     |
| 7     | WN FLG 150# RF S-80, CS A105 ASME                         | 2         | FWA1111A80015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2     | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

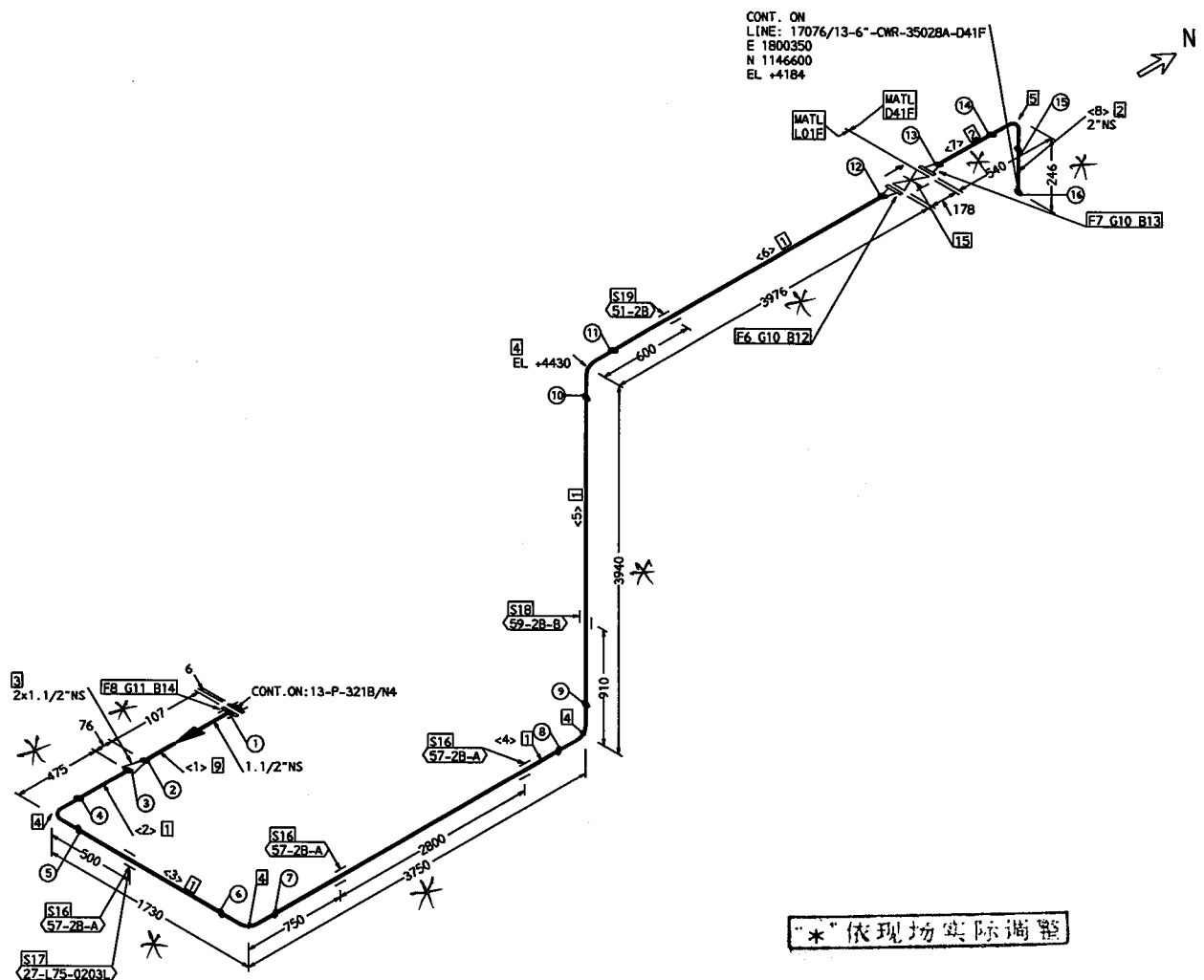
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 9     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 0.1M |
| 10    | GASKET, 150# 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         | GKA1APE0300B1 | 2    |
| 11    | GASKET, 150# 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 | 1.1/2     | GKA1APE0300B1 | 1    |
| 12    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 13    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 14    | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 15    | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2         | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 16 | PIPE SUPPORT | 57-2B-A      | 3 |
| 17 | PIPE SUPPORT | 27-L75-0203L | 1 |
| 18 | PIPE SUPPORT | 59-2B-B      | 1 |
| 19 | PIPE SUPPORT | 51-2B        | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. (IN) | REMARKS |
|----------|-----------------|-----------|---------|----------|-----------------|-----------|---------|
| <1>      | 100             | 1.1/2     |         | <2>      | 399             | 2         |         |
| <3>      | 1578            | 2         |         | <4>      | 3598            | 2         |         |
| <5>      | 3788            | 2         |         | <6>      | 3837            | 2         |         |
| <7>      | 400             | 2         |         | <8>      | 170             | 2         |         |



|                            |            |            |           |                                                                                                                                                    |      |            |  |
|----------------------------|------------|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|--|
| OPER. TEMP.                | 34 °C      | PAINTING   | REF. DWG. | <div> <p>腾龙芳烃(漳州)有限公司<br/>Tenglong Aromatics (Zhangzhou) Co., Ltd. (CTAC)</p> <p>京福工程技术有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-59887888</p> </div> |      |            |  |
| OPER. PRESS.               | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                    |      |            |  |
| DESIGN TEMP.               | 80 °C      | INSULATION | NOTE      |                                                                                                                                                    |      |            |  |
| DESIGN PRESS.              | 1.2 MPa(g) |            |           |                                                                                                                                                    |      |            |  |
| TEST PRESSURE              | 1.8 MPa(g) |            |           |                                                                                                                                                    |      |            |  |
| TEST FLUID                 | HYDRO.     |            |           |                                                                                                                                                    |      |            |  |
| INSPECTION X-RAY           | 5 %        |            |           |                                                                                                                                                    |      |            |  |
| P.W.H.T                    | -          |            |           |                                                                                                                                                    |      |            |  |
| CATEGORY                   | -          |            |           |                                                                                                                                                    |      |            |  |
| REV. DESCRIPTION           |            |            |           | CHKD                                                                                                                                               | APPR | DATE       |  |
| 2 FOR CONSTRUCTION         |            |            |           | CYS                                                                                                                                                | DXS  | 12/15/2017 |  |
| DWG. NO. XG32-13-CWR-11037 |            |            |           | SHEET 1 OF 1                                                                                                                                       |      |            |  |

\* 依现场实际调整

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2         | PPA14A1AF0022 | 10.5M |
| 2     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2         | PPA1415A80021 | 1.0M  |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2 | RCA16B1AFAJ19 | 1     |
| 4     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2         | NEA16B1AF0019 | 4     |
| 5     | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2         | NEA1621A80019 | 1     |
| 6     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2         | FWA11A1AF0015 | 1     |
| 7     | WN FLG 150# RF S-80, CS A105 ASME                         | 2         | FWA1111A80015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2     | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

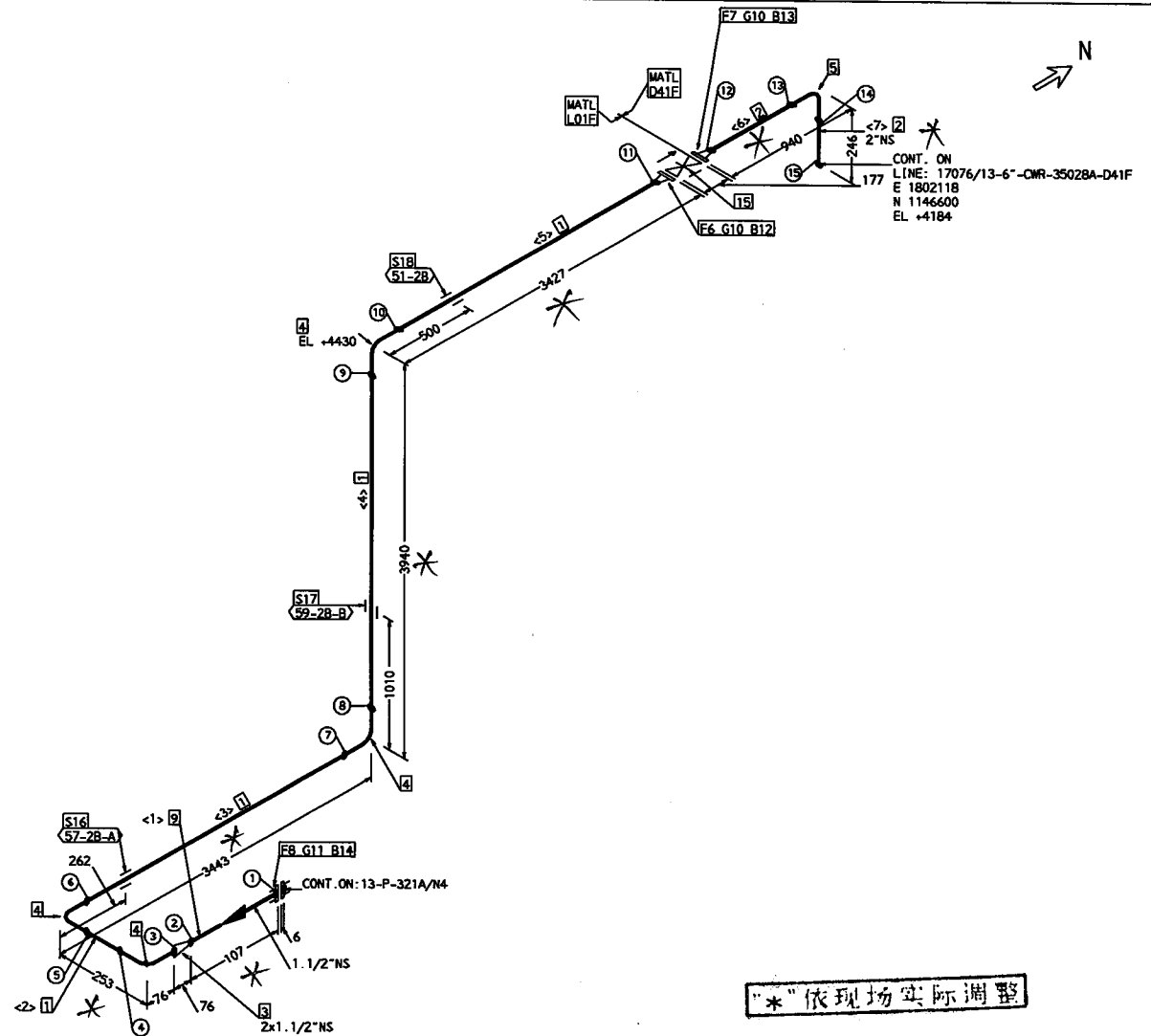
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 9     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 0.1M |
| 10    | GASKET, 150# 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         | GKA1APE0300B1 | 2    |
| 11    | GASKET, 150# 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 | 1.1/2     | GKA1APE0300B1 | 1    |
| 12    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 13    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 14    | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 15    | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2         | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |         |   |
|----|--------------|---------|---|
| 16 | PIPE SUPPORT | 57-2B-A | 1 |
| 17 | PIPE SUPPORT | 59-2B-B | 1 |
| 18 | PIPE SUPPORT | 51-2B   | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 100        | 1.1/2     |         | <2>      | 100        | 2         |         |
| <3>      | 3290       | 2         |         | <4>      | 3788       | 2         |         |
| <5>      | 3287       | 2         |         | <6>      | 800        | 2         |         |
| <7>      | 170        | 2         |         |          |            |           |         |



\*"依现场实际调整"

|                  |            |            |           |                                                                                                                                                                |                   |             |                      |
|------------------|------------|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|----------------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. |  <b>腾龙芳烃(漳州)有限公司</b><br>Dragon Armatex (Changzhou) Co., Ltd. (DAC)        |                   |             |                      |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                                |                   |             |                      |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      |  <b>CTCI</b><br>北京工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>101300 P.R. CHINA |                   |             |                      |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                                                                                                                |                   |             |                      |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                               |                   |             |                      |
| TEST FLUID       | HYDRO.     |            |           | TITLE PIPING ISOMETRIC DWG                                                                                                                                     |                   |             |                      |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO.                                                                                                                                                      | 17E3166A          | UNIT        | 17076                |
| P.W.H.T          | -          |            |           | DRAWN                                                                                                                                                          | WL                | DATE        | 12/18/2017           |
| CATEGORY         | -          |            |           | REV.                                                                                                                                                           | 2                 | DESCRIPTION | FOR CONSTRUCTION     |
|                  |            |            |           | CHKD                                                                                                                                                           | CYS               | DKS         | 12/15/2017           |
|                  |            |            |           | DATE                                                                                                                                                           | 12/15/2017        | LINE NO.    | 13-2"-CWR-11038-L01F |
|                  |            |            |           | DWG. NO.                                                                                                                                                       | XG32-13-CWR-11038 | SHEET       | 1 OF 1               |

## FABRICATION MATERIALS

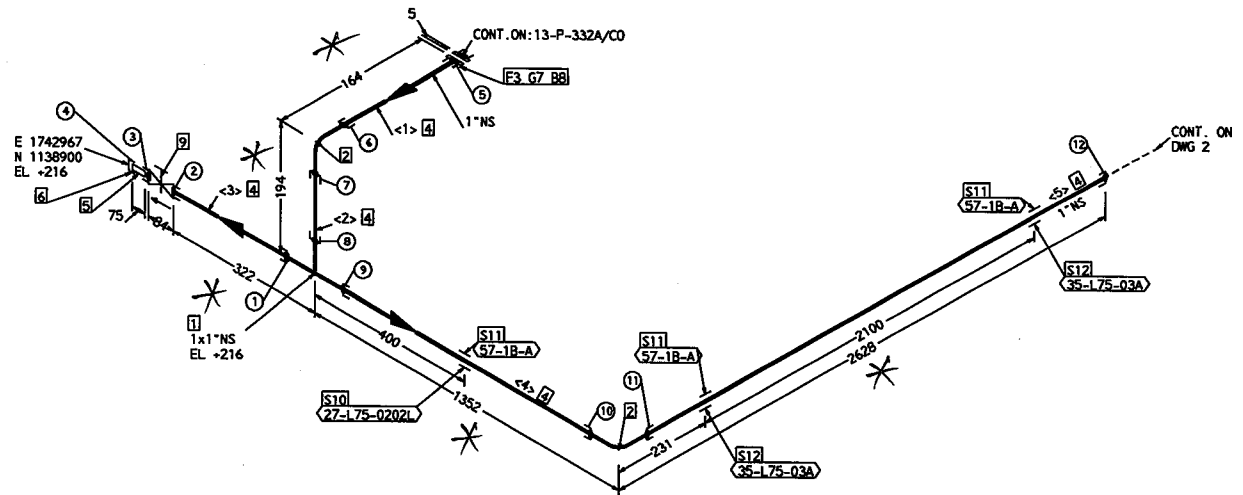
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 2   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                               | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1            | PPA11A1AJ0022 | 4.6M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                  | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                  | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                   | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                 | 1            | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                     |              |               |      |
| 10       | PIPE SUPPORT                                                                                                        |              | 27-L75-0202L  | 1    |
| 11       | PIPE SUPPORT                                                                                                        |              | 57-1B-A       | 3    |
| 12       | PIPE SUPPORT                                                                                                        |              | 35-L75-03A    | 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>         | 137           | 1            |         | <2>         | 150           | 1            |         |
| <3>         | 300           | 1            |         | <4>         | 1308          | 1            |         |
| <5>         | 2606          | 1            |         |             |               |              |         |



“\*”依现场实际调整

|                  |            |            |           |                                                                       |                      |              |            |
|------------------|------------|------------|-----------|-----------------------------------------------------------------------|----------------------|--------------|------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Tencen Aromatic Chemical (Zhangzhou) Co., Ltd. (CMC)  |                      |              |            |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                       |                      |              |            |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      | 京南工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>010-64697888 FAX 010-64697888 |                      |              |            |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                       |                      |              |            |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | TITLE PIPING ISOMETRIC DWG                                            |                      |              |            |
| TEST FLUID       | HYDRO.     |            |           | PROJ. NO.                                                             | 17E3166A             | UNIT         | 17076      |
| INSPECTION X-RAY | 5 %        |            |           | DRAWN                                                                 | WL                   | DATE         | 12/18/2017 |
| P.W.H.T          | -          |            |           | LINE NO.                                                              | 13-1"-CWR-12019-L01F | REV.         | 2          |
| CATEGORY         | -          |            |           | DWG. NO.                                                              | XG32-13-CWR-12019    | SHEET 1 OF 2 |            |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 2   |
| 2        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1            | NFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | PKA11A1AJ0015 | 1   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | PKA1111A80015 | 1   |

## ERECTION MATERIALS

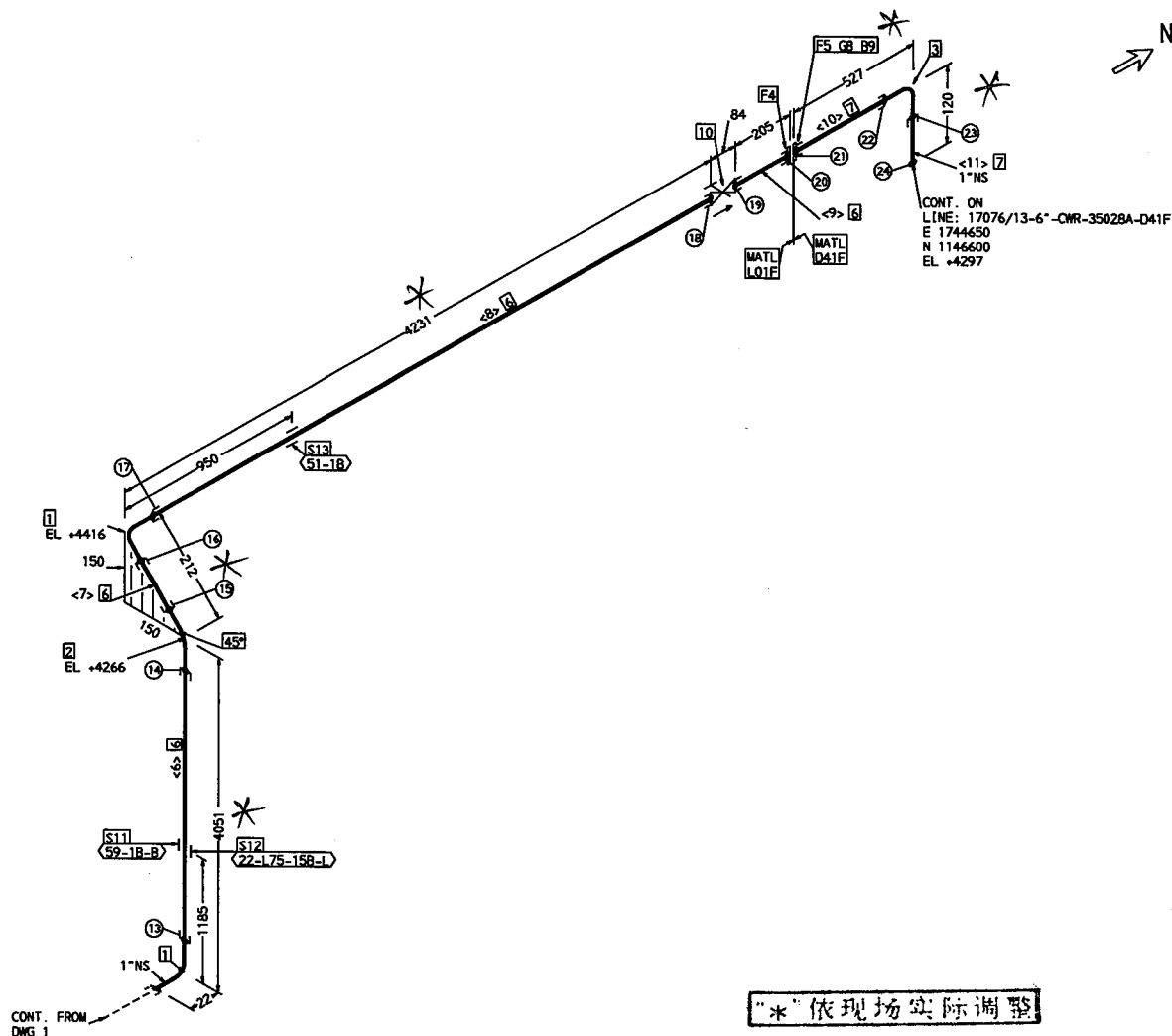
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 8.6M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 11 | PIPE SUPPORT | 59-1B-B      | 1 |
| 12 | PIPE SUPPORT | 22-L75-158-L | 1 |
| 13 | PIPE SUPPORT | 51-1B        | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <6>         | 4014          | 1            |         | <7>         | 176           | 1            |         |
| <8>         | 4209          | 1            |         | <9>         | 200           | 1            |         |
| <10>        | 500           | 1            |         | <11>        | 98            | 1            |         |



“\*” 依现场实际调整

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                  |                            |                     |                    |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|--------------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armatex (Zhangzhou) Co., Ltd. (DAC)</div> |                                                                                                                                                                  |                            |                     |                    |       |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                              | <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>8151 8888 78 00000000</div> |                            |                     |                    |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                  |                            |                     |                    |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |      | FOR<br>腾龙芳烃原油分离装置整改修复工程                                                                                                                                      |                                                                                                                                                                  |                            |                     |                    |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                  | TITLE PIPING ISOMETRIC DWG |                     |                    |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                  | PROJ. NO.                  | 17E3166A            | UNIT               | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                  | DRAWN                      | WL                  | DATE<br>12/18/2017 | REV.  | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                          | 12/15<br>2017                                                                                                                                                    | LINE NO.                   | 13-1-CWR-12019-L01F |                    |       | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                         | DATE                                                                                                                                                             | DWG. NO.                   | XG32-13-CWR-12019   |                    |       | 2 OF 2 |



## | FABRICATION MATERIALS |

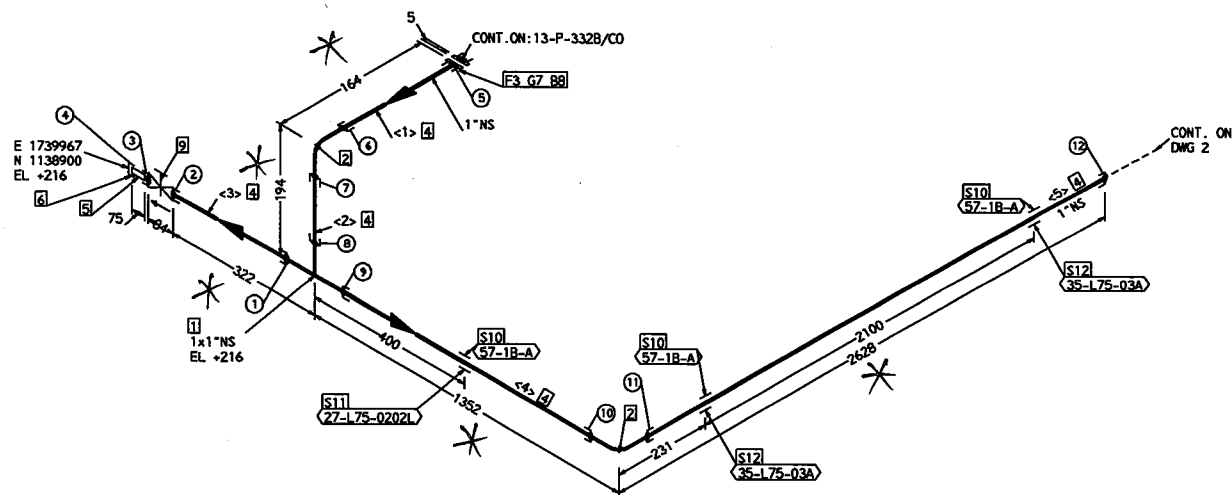
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 2   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FXA11A1AJ0015 | 1   |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                               | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1            | PPA11A1AJ0022 | 4.6M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                  | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                  | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                   | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                 | 1            | VGAB5A1000111 | 1    |
| SUPPORTS |                                                                                                                     |              |               |      |
| 10       | PIPE SUPPORT                                                                                                        |              | 57-1B-A       | 3    |
| 11       | PIPE SUPPORT                                                                                                        |              | 27-L75-0202L  | 1    |
| 12       | PIPE SUPPORT                                                                                                        |              | 35-L75-03A    | 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>         | 137           | 1            |         | <2>         | 150           | 1            |         |
| <3>         | 300           | 1            |         | <4>         | 1308          | 1            |         |
| <5>         | 2606          | 1            |         |             |               |              |         |



“\*” 依现场实际调整

|                  |            |            |           |                                                                                                                                                   |
|------------------|------------|------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. |  腾龙芳烃(漳州)有限公司<br>Dragon Aromatic (Changzhou) Co., Ltd. (DAC) |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       |           |                                                                                                                                                   |
| DESIGN TEMP.     | 80 °C      | PER. SPEC  | NOTE      |  京能工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>京能工程技术有限公司          |
| DESIGN PRESS.    | 1.2 MPa(g) | INSULATION |           |                                                                                                                                                   |
| TEST PRESSURE    | 1.8 MPa(g) | TYPE       |           | FOR 腾龙芳烃原油分高装置整改修复工程                                                                                                                              |
| TEST FLUID       | HYDRO.     |            |           | TITLE PIPING ISOMETRIC DWG                                                                                                                        |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO. 17E3166A UNIT 17076<br>DRAWN WL DATE 12/18/2017 REV. 2                                                                                  |
| P.W.H.T          | -          |            |           | LINE NO. 13-1"-CWR-12020-L01F SHEET<br>REV. DESCRIPTION CHKD APPR DATE                                                                            |
| CATEGORY         | -          |            |           | DWG. NO. XG32-13-CWR-12020 1 OF 2                                                                                                                 |

| ERECTION MATERIALS || CUT PIPE LENGTH |

**"\*"依现场实际调整**

|                  |        |        |                                          |           |  |  |                  |            |                  |      |                                                                                                                                                                |            |                            |                     |                 |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|------------------|------------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------|-----------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG.        |            |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Quilong Petrochemical (Zhou) Co., Ltd. (QAC)</div> |            |                            |                     |                 |       |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |                  |            |                  |      | <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>设计/制图/审核/出图/盖章</div>      |            |                            |                     |                 |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |                  | INSULATION |                  |      |                                                                                                                                                                | FOR        |                            |                     |                 |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  | 腾龙芳烃原油分离装置整改修复工程 |            |                  |      |                                                                                                                                                                |            |                            |                     |                 |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>SPS</div><div>TYPE</div></div> |           |  |  |                  |            |                  |      |                                                                                                                                                                |            | TITLE PIPING ISOMETRIC DWG |                     |                 |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |                  |            |                  |      |                                                                                                                                                                |            | PROJ. NO.                  | 17B3166A            | UNIT            | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |                  |            |                  |      |                                                                                                                                                                |            | DRAWN                      | WL                  | DATE 12/18/2017 | REV.  | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |                  | 2          | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                            | 12/15/2017 | LINE NO.                   | 13-1-CWR-12020-L01F |                 |       | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |                  | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                           | DATE       | DWG. NO.                   | XG32-13-CWR-12020   |                 |       | 2 OF 2 |

## FABRICATION MATERIALS

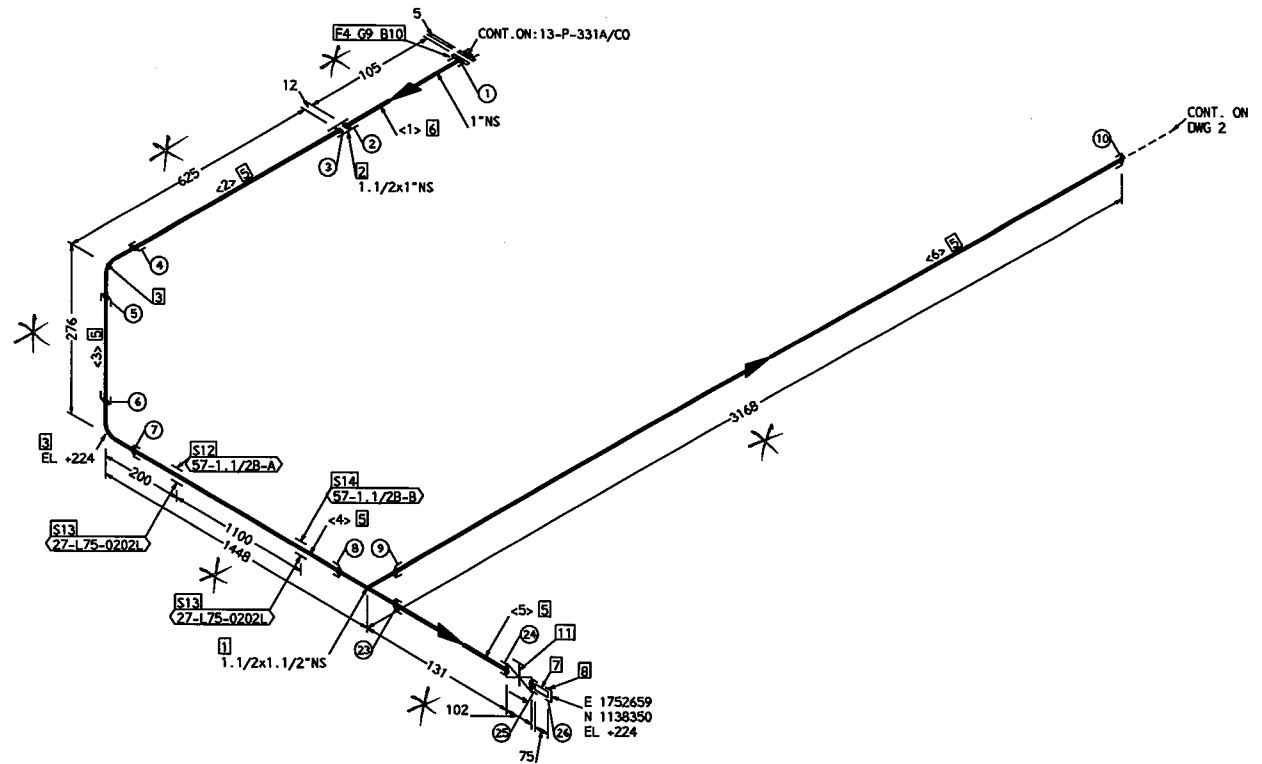
| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN)     | ITEM CODE     | QTY |
|----------|-------------------------------------------|------------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME          | 1.1/2 x<br>1.1/2 | STA75A1000021 | 1   |
| 2        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1        | RBA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2            | NEA75A1000021 | 2   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1                | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 5        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 5.5M |
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 0.1M |
| 7        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1.1/2        | PNA1DA1AJ0322 | 1    |
| 8        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1.1/2        | NCA72A1000021 | 1    |
| 9        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-1.1/2B-A   | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0202L  | 2    |
| 14       | PIPE SUPPORT                                                                                                       |              | 57-1.1/2B-B   | 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>         | 100           | 1            |         | <2>         | 593           | 1.1/2        |         |
| <3>         | 212           | 1.1/2        |         | <4>         | 1384          | 1.1/2        |         |
| <5>         | 100           | 1.1/2        |         | <6>         | 3136          | 1.1/2        |         |



“\*” 依现场实际调整

|                  |        |        |            |           |                                                                                                                                                  |                          |              |            |
|------------------|--------|--------|------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------|------------|
| OPER. TEMP.      | 34     | °C     | PAINTING   | REF. DWG. |  腾龙芳烃(漳州)有限公司<br>Dragon Armetec (Zhangzhou) Co., Ltd. (DAC) |                          |              |            |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE       | PER. SPEC |                                                                                                                                                  |                          |              |            |
| DESIGN TEMP.     | 80     | °C     | INSULATION | NOTE      |  京能工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>SHEP-YE AUTUMN     |                          |              |            |
| DESIGN PRESS.    | 1.2    | MPa(g) |            |           |                                                                                                                                                  |                          |              |            |
| TEST PRESSURE    | 1.8    | MPa(g) |            |           | TITLE PIPING ISOMETRIC DWG                                                                                                                       |                          |              |            |
| TEST FLUID       | HYDRO. |        |            |           | PROJ. NO.                                                                                                                                        | 17B3166A                 | UNIT         | 17076      |
| INSPECTION X-RAY | 5      | %      |            |           | DRAWN                                                                                                                                            | WL                       | DATE         | 12/18/2017 |
| P.W.H.T          | -      |        |            |           | LINE NO.                                                                                                                                         | 13-1-1/2"-CWR-13013-L01F | REV.         | 2          |
| CATEGORY         | -      |        |            |           | DWG. NO.                                                                                                                                         | XG32-13-CWR-13013        | SHEET 1 OF 2 |            |

## | FABRICATION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NEA75A1000021 | 2   |
| 2        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1.1/2        | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1.1/2        | FKA11A1AJ0015 | 1   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1.1/2        | FKA1111A80015 | 1   |

## | ERECTION MATERIALS |

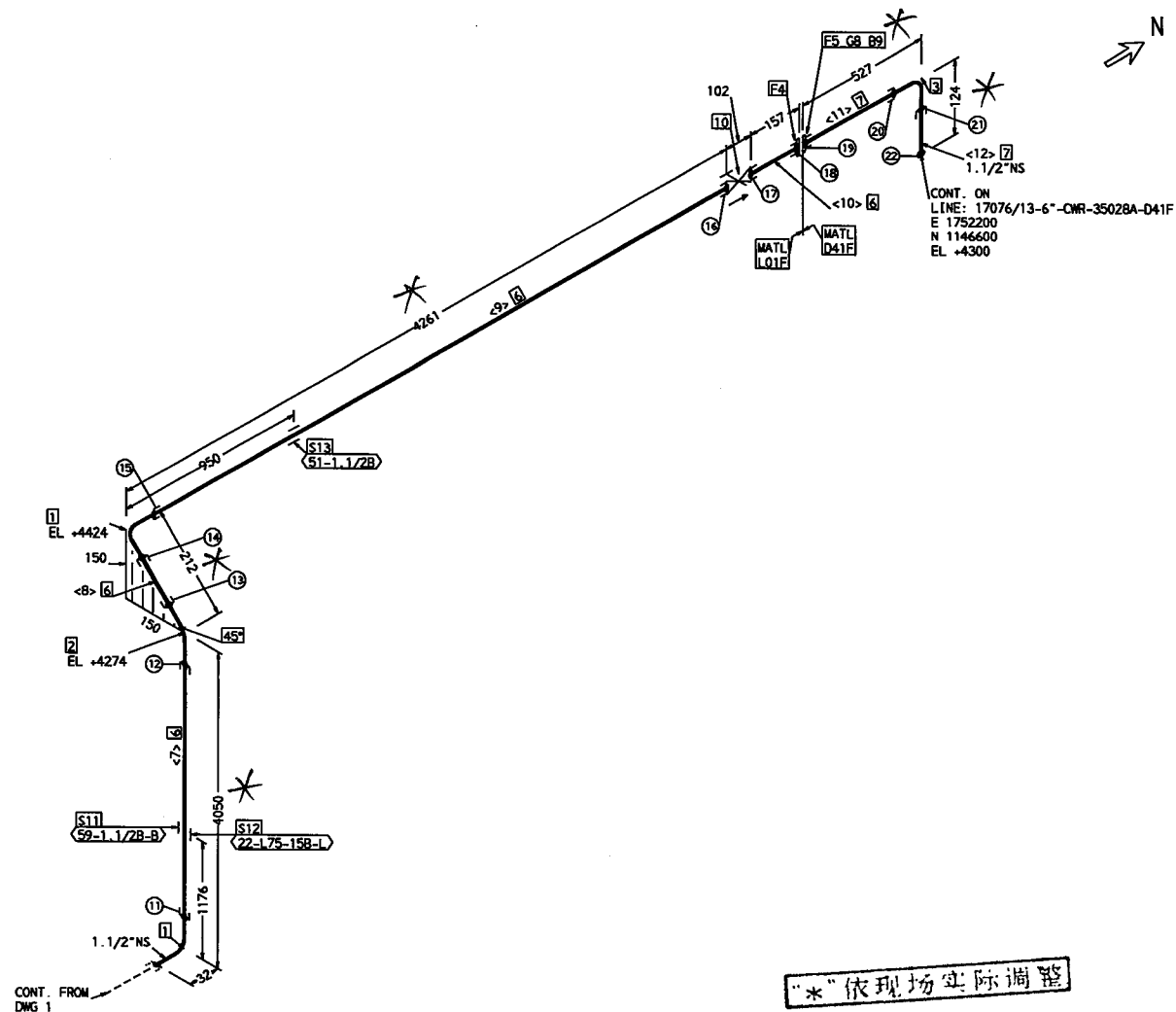
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 8.6M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.6M |
| 8        | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 9        | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGAB5A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 11 | PIPE SUPPORT | 59-1.1/2B-8  | 1 |
| 12 | PIPE SUPPORT | 22-L75-15B-L | 1 |
| 13 | PIPE SUPPORT | 51-1.1/2B    | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <7>         | 3997          | 1.1/2        |         | <8>         | 159           | 1.1/2        |         |
| <9>         | 4229          | 1.1/2        |         | <10>        | 150           | 1.1/2        |         |
| <11>        | 489           | 1.1/2        |         | <12>        | 92            | 1.1/2        |         |



“\*”依现场实际调整

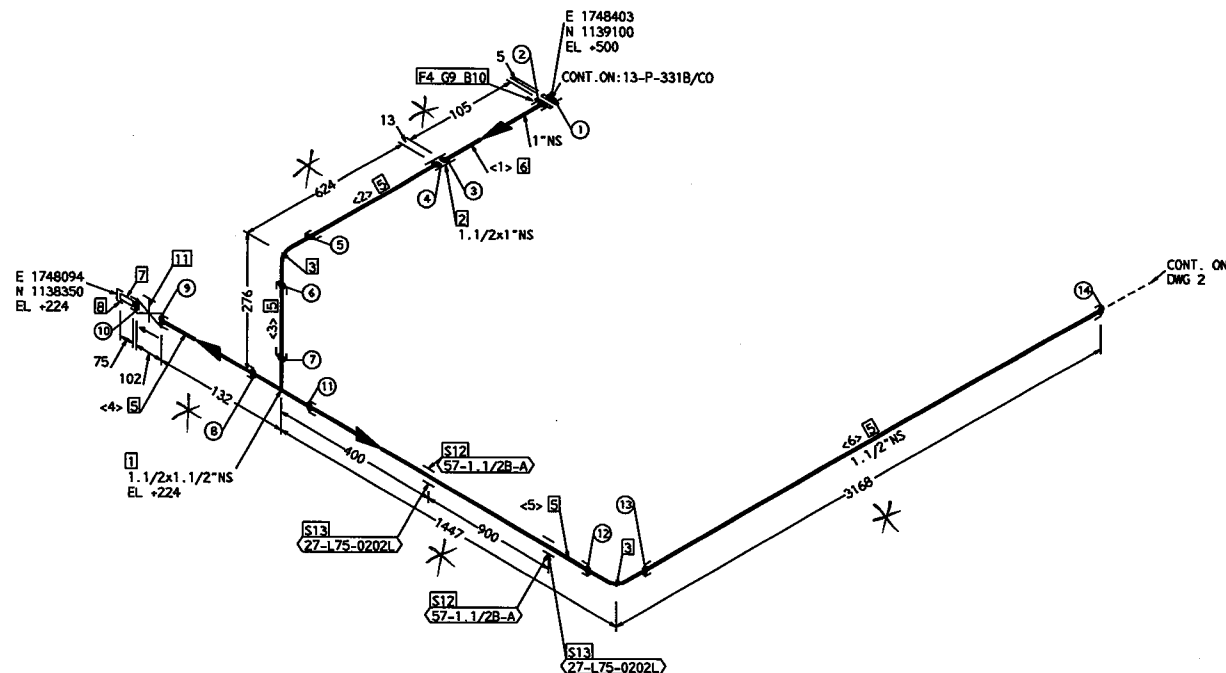
|                  |        |        |                                          |           |  |  |           |      |      |                  |                                                                                                                                                                |                                                                                                                                                                     |                            |          |                          |            |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--------------------------|------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |      |                  | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Changzhou) Co., Ltd. (DAC)</div> |                                                                                                                                                                     |                            |          |                          |            |      |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |      |                  |                                                                                                                                                                | <div> 京能工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京市西城区 广安门内大街 1111111111</div> |                            |          |                          |            |      |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |      |                  |                                                                                                                                                                |                                                                                                                                                                     |                            |          |                          |            |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |      |                  | FOR 腾龙芳烃原油分馏装置检修工程                                                                                                                                             |                                                                                                                                                                     |                            |          |                          |            |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |      |                  |                                                                                                                                                                |                                                                                                                                                                     | TITLE PIPING ISOMETRIC DWG |          |                          |            |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |      |                  |                                                                                                                                                                |                                                                                                                                                                     | PROJ. NO.                  | 17E3166A | UNIT                     | 17076      |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |      |                  |                                                                                                                                                                |                                                                                                                                                                     | DRAWN                      | WL       | DATE                     | 12/18/2017 | REV. | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |           |      | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                            | DXS                                                                                                                                                                 | 12/15 2017                 | LINE NO. | 13-1-1/2"-CWR-13013-L01F |            |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           |      | REV. | DESCRIPTION      | CHKD                                                                                                                                                           | APPR                                                                                                                                                                | DATE                       | DWG. NO. | XG32-13-CWR-13013        |            |      | 2 OF 2 |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整



|                     |        |        |                                          |           |  |  |                  |      |                  |      |                                                                                                                                                                      |               |           |                          |                    |       |        |
|---------------------|--------|--------|------------------------------------------|-----------|--|--|------------------|------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|--------------------------|--------------------|-------|--------|
| OPER. TEMP.         | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG.        |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Tenglong Petrochemical (Zhouzhou) Co., Ltd. (GACC)</div> |               |           |                          |                    |       |        |
| OPER. PRESS.        | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |                  |      |                  |      | <div> 京通工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京市昌平区北土城大街111号11111</div>      |               |           |                          |                    |       |        |
| DESIGN TEMP.        | 80     | °C     |                                          |           |  |  |                  | FOR  |                  |      |                                                                                                                                                                      |               |           |                          |                    |       |        |
| DESIGN PRESS.       | 1.2    | MPa(g) | INSULATION                               |           |  |  | 腾龙芳烃原油分离装置整改修复工程 |      |                  |      |                                                                                                                                                                      |               |           |                          |                    |       |        |
| TEST PRESSURE       | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |                  |      |                  |      |                                                                                                                                                                      |               | TITLE     | PIPING ISOMETRIC DWG     |                    |       |        |
| TEST FLUID          | HYDRO. |        |                                          |           |  |  |                  |      |                  |      |                                                                                                                                                                      |               | PROJ. NO. | 17B3166A                 | UNIT               | 17076 |        |
| INSPECTION<br>X-RAY | 5      | %      |                                          |           |  |  |                  |      |                  |      |                                                                                                                                                                      |               | DRAWN     | WL                       | DATE<br>12/18/2017 | REV.  | 2      |
| P.W.H.T             | -      |        |                                          |           |  |  |                  | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                  | 12/15<br>2017 | LINE NO.  | 13-1-1/2"-CWR-13014-L01F |                    |       | SHEET  |
| CATEGORY            | -      |        |                                          |           |  |  |                  | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                 | DATE          | DWG. NO.  | XG32-13-CWR-13014        |                    |       | 1 OF 2 |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NEA75A1000021 | 2   |
| 2        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1.1/2        | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1.1/2        | FKA11A1AJ0015 | 1   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1.1/2        | FKA1111A80015 | 1   |

## ERECTION MATERIALS

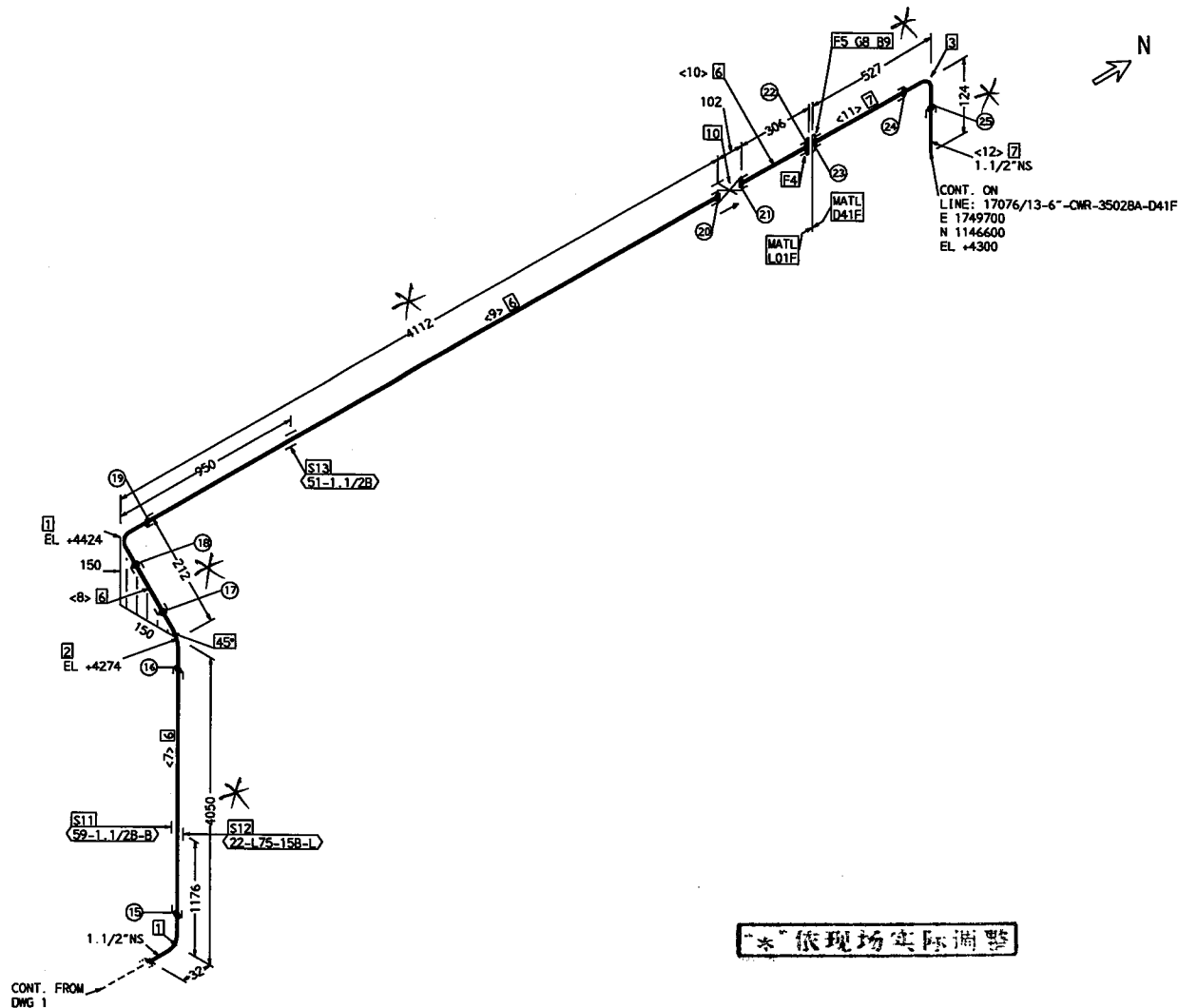
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 8.6M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.6M |
| 8        | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 9        | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 11 | PIPE SUPPORT | 59-1.1/2B-B  | 1 |
| 12 | PIPE SUPPORT | 22-L75-158-L | 1 |
| 13 | PIPE SUPPORT | 51-1.1/2B    | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <7>         | 3997          | 1.1/2        |         | <8>         | 159           | 1.1/2        |         |
| <9>         | 4080          | 1.1/2        |         | <10>        | 300           | 1.1/2        |         |
| <11>        | 489           | 1.1/2        |         | <12>        | 92            | 1.1/2        |         |



\*\*依现场实际调整

|                  |            |            |           |                                                                |                         |       |            |
|------------------|------------|------------|-----------|----------------------------------------------------------------|-------------------------|-------|------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. | <br>腾龙芳烃(漳州)有限公司<br>Dragon Ascent (Changzhou) Co., Ltd. (DACS) |                         |       |            |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                |                         |       |            |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      | <br>北京工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>北京工程技术有限公司         |                         |       |            |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                |                         |       |            |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | 腾龙芳烃原油分高装置检修工程                                                 |                         |       |            |
| TEST FLUID       | HYDRO.     |            |           | TITLE PIPING ISOMETRIC DWG                                     |                         |       |            |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO.                                                      | 17E3166A                | UNIT  | 17076      |
| P.W.H.T          | -          |            |           | DRAWN                                                          | WL                      | DATE  | 12/18/2017 |
| CATEGORY         | -          |            |           | REV.                                                           | 2                       | REV.  | 2          |
|                  |            |            |           | DESCRIPTION                                                    | FOR CONSTRUCTION        | DATE  | 12/15/2017 |
|                  |            |            |           | CHKD                                                           | CYS                     | APPR  | DXS        |
|                  |            |            |           | DWG. NO.                                                       | 13-1-1/2-CWR-13014-L01F | SHEET | 2 OF 2     |
|                  |            |            |           | DWG. NO.                                                       | XG32-13-CWR-13014       |       |            |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2         | PPA14A1AF0022 | 12.0M |
| 2     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2         | PPA1415A80021 | 0.8M  |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2 | RCA16B1AF019  | 1     |
| 4     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2         | NEA16B1AF0019 | 4     |
| 5     | 90 ELL SMLS, BW, S-80, CS A234-WP8 ASME                   | 2         | NEA1621A80019 | 1     |
| 6     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2         | FWA11A1AF0015 | 1     |
| 7     | WN FLG 150# RF S-80, CS A105 ASME                         | 2         | FWA1111A80015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2     | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

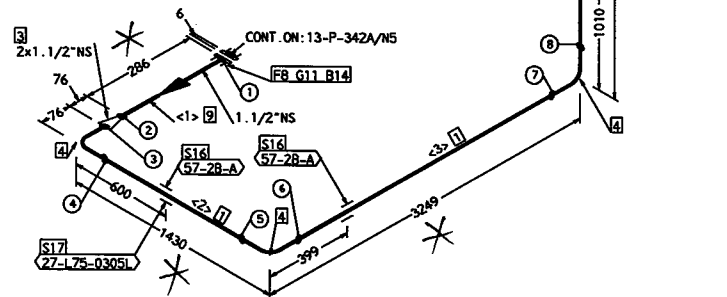
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 9     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 0.3M |
| 10    | GASKET, 150# 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         | GKA1APE0300B1 | 2    |
| 11    | GASKET, 150# 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 | 1.1/2     | GKA1APE0300B1 | 1    |
| 12    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 13    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 14    | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 15    | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2         | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 16 | PIPE SUPPORT | 57-2B-A      | 2 |
| 17 | PIPE SUPPORT | 27-L75-0305L | 1 |
| 18 | PIPE SUPPORT | 59-2B-B      | 1 |
| 19 | PIPE SUPPORT | 27-L75-0514L | 1 |
| 20 | PIPE SUPPORT | 51-2B        | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S.  | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|-------|---------|----------|-----------------|------|---------|
| <1>      | 279             | 1.1/2 |         | <2>      | 1278            | 2    |         |
| <3>      | 3096            | 2     |         | <4>      | 3788            | 2    |         |
| <5>      | 3831            | 2     |         | <6>      | 556             | 2    |         |
| <7>      | 170             | 2     |         |          |                 |      |         |



\* 依现场实际调整

|                  |            |            |           |                                                                                                                                                                      |                      |       |            |
|------------------|------------|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------|------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. |  <b>腾龙芳烃(漳州)有限公司</b><br>Dragon Armetec (Changzhou) Co., Ltd. (GDAC)             |                      |       |            |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                                      |                      |       |            |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      |  <b>CTCI</b><br>北京工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>524 000 000 000 000 000 |                      |       |            |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                                                                                                                      |                      |       |            |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | <b>腾龙芳烃原油分离装置整改修复工程</b><br>TITLE PIPING ISOMETRIC DWG                                                                                                                |                      |       |            |
| TEST FLUID       | HYDRO.     |            |           |                                                                                                                                                                      |                      |       |            |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO.                                                                                                                                                            | 17E3166A             | UNIT  | 17076      |
| P.W.H.T          | -          |            |           | DRAWN                                                                                                                                                                | WL                   | DATE  | 12/18/2017 |
| CATEGORY         | -          |            |           | REV.                                                                                                                                                                 | 2                    | REV.  | 2          |
|                  |            |            |           | LINE NO.                                                                                                                                                             | 13-2"-CWR-14025-L01F | SHEET |            |
|                  |            |            |           | DWG. NO.                                                                                                                                                             | XG32-13-CWR-14025    |       |            |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                     | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|-----------------------------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 12.0M |
| 2        | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2            | PPA1415A80021 | 0.8M  |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AF019  | 1     |
| 4        | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 5        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 6        | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 7        | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

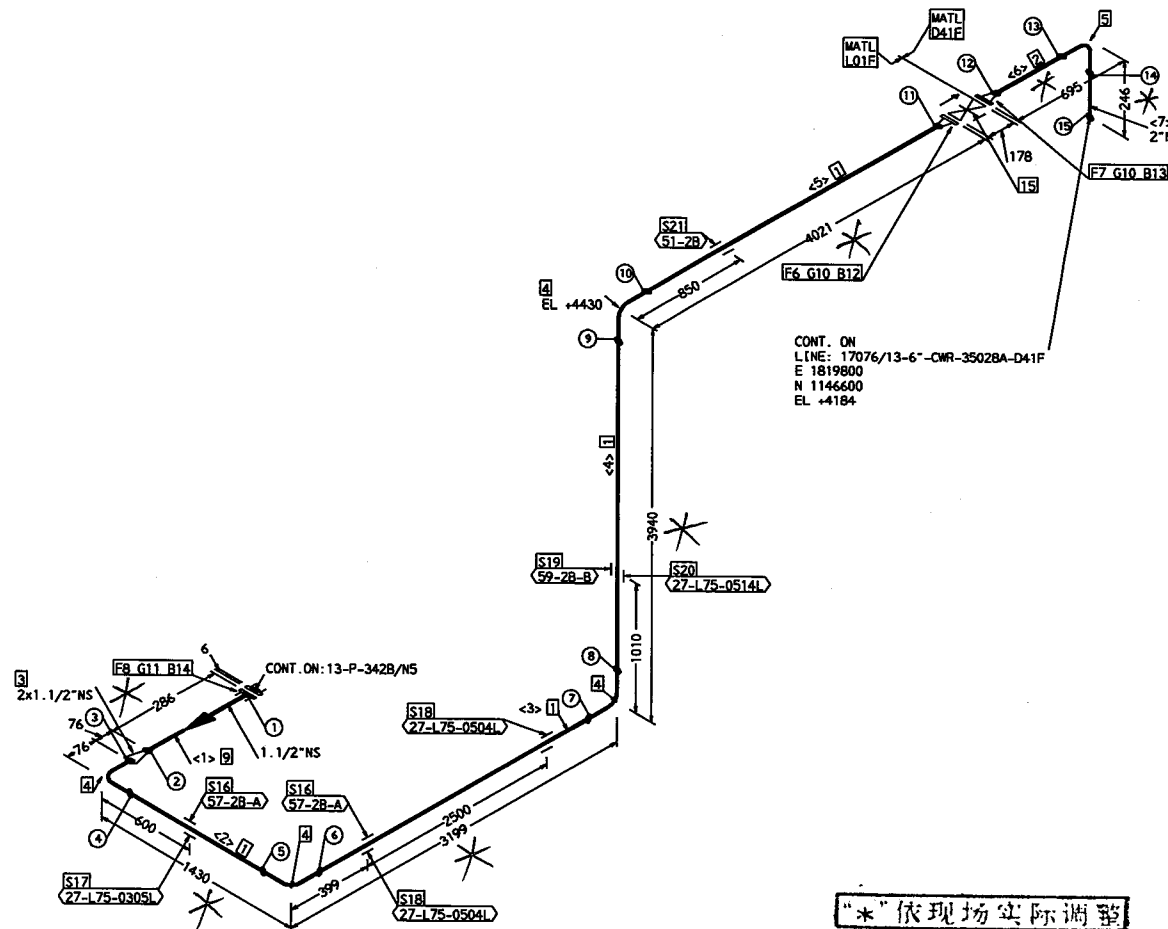
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.3M |
| 10       | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 4    |
| 13       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 4    |
| 14       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 15       | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 16 | PIPE SUPPORT | 57-2B-A      | 2 |
| 17 | PIPE SUPPORT | 27-L75-0305L | 1 |
| 18 | PIPE SUPPORT | 27-L75-0504L | 2 |
| 19 | PIPE SUPPORT | 59-2B-B      | 1 |
| 20 | PIPE SUPPORT | 27-L75-0514L | 1 |
| 21 | PIPE SUPPORT | 51-2B        | 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>         | 279           | 1.1/2        |         | <2>         | 1278          | 2            |         |
| <3>         | 3046          | 2            |         | <4>         | 3788          | 2            |         |
| <5>         | 3881          | 2            |         | <6>         | 556           | 2            |         |
| <7>         | 170           | 2            |         |             |               |              |         |



\* 依现场实际调整

|                  |            |            |           |                                                                         |
|------------------|------------|------------|-----------|-------------------------------------------------------------------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. | <br>腾龙芳烃(漳州)有限公司<br>Dragon Aromatic Chemicals (Zhou) Co., Ltd. (DMC)    |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                         |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      | <br>北京工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>设计制造工程技术有限公司                |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                         |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | 腾龙芳烃原油分离装置检修工程                                                          |
| TEST FLUID       | HYDRO.     |            |           |                                                                         |
| INSPECTION X-RAY | 5 %        |            |           | TITLE PIPING ISOMETRIC DWG                                              |
| P.V.H.T          | -          |            |           | PROJ. NO. 17E3166A UNIT 17076<br>DRAWN WL DATE 12/18/2017 REV. 2        |
| CATEGORY         | -          |            |           | LINE NO. 13-2-CWR-14026-L01F SHEET<br>DWG. NO. XG32-13-CWR-14026 1 OF 1 |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                     | N.S.<br>(IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|--------------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 13.4M |
| 2     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2            | PPA1415A80021 | 0.8M  |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AF019  | 1     |
| 4     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 5     | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 6     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 7     | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

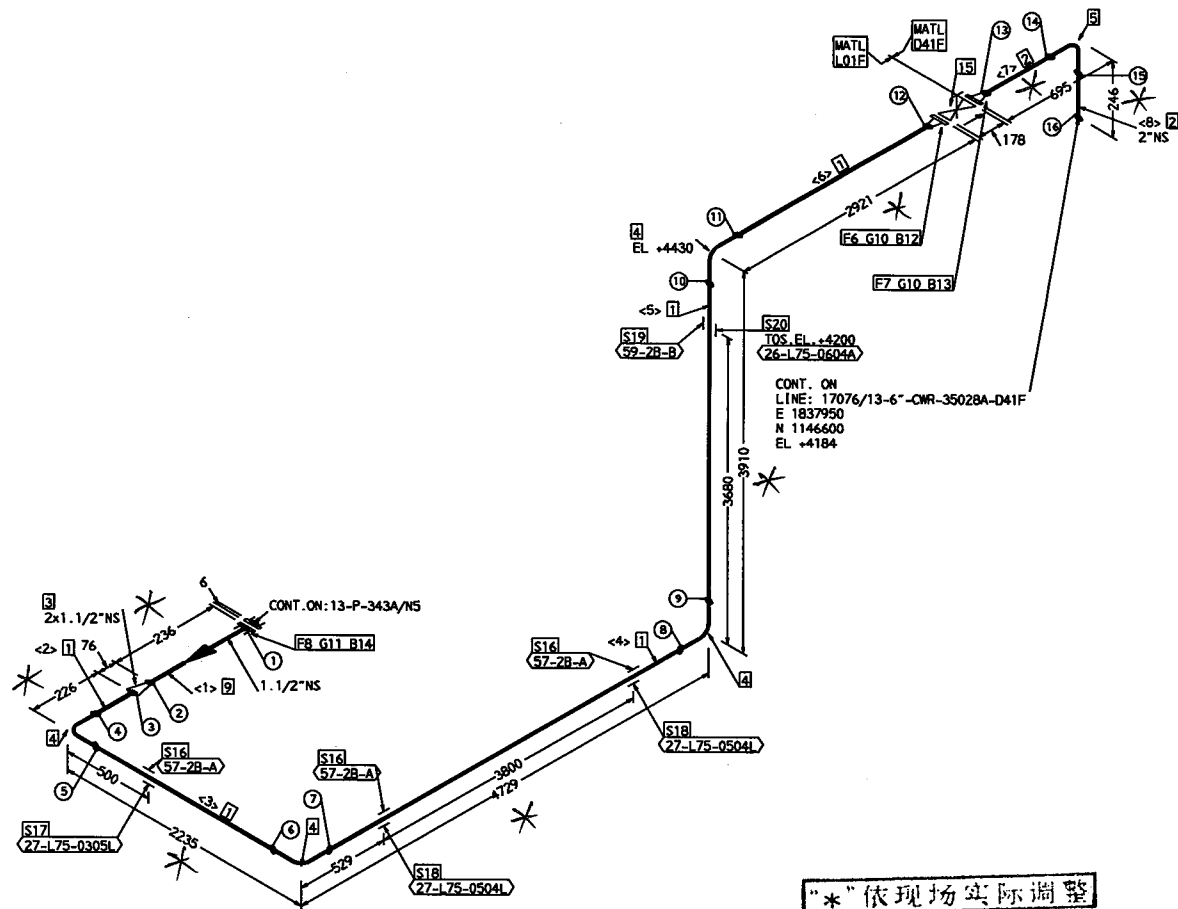
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.3M |
| 10    | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11    | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 4    |
| 13    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 4    |
| 14    | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 15    | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 16 | PIPE SUPPORT | 57-2B-A      | 3 |
| 17 | PIPE SUPPORT | 27-L75-0305L | 1 |
| 18 | PIPE SUPPORT | 27-L75-0504L | 2 |
| 19 | PIPE SUPPORT | 59-2B-B      | 1 |
| 20 | PIPE SUPPORT | 26-L75-0604A | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S.  | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|-------|---------|----------|-----------------|------|---------|
| <1>      | 229             | 1.1/2 |         | <2>      | 150             | 2    |         |
| <3>      | 2083            | 2     |         | <4>      | 4576            | 2    |         |
| <5>      | 3758            | 2     |         | <6>      | 2781            | 2    |         |
| <7>      | 556             | 2     |         | <8>      | 170             | 2    |         |



“\*”依现场实际调整

|                  |        |        |                                         |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      |                            |                               |                 |       |              |
|------------------|--------|--------|-----------------------------------------|-----------|-----------|--|------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|-------------------------------|-----------------|-------|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           | REF. DWG. |  |      |                  | <div><div>腾龙芳烃(漳州)有限公司<br/>Dragon Acoustics (Changzhou) Co., Ltd. (DAC)</div><div><div>京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-68897888</div></div><div>FOR 腾龙芳烃原油分离装置整改修复工程</div></div> |      |                            |                               |                 |       |              |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                    | PER. SPEC |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      |                            |                               | NOTE            |       |              |
| DESIGN TEMP.     | 80     | °C     | INSULATION                              |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      |                            |                               |                 |       |              |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                         |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      |                            |                               |                 |       |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      | TITLE PIPING ISOMETRIC DWG |                               |                 |       |              |
| TEST FLUID       | HYDRO. |        |                                         |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      | PROJ. NO.                  | 17E3166A                      | UNIT            | 17076 |              |
| INSPECTION X-RAY | 5      | %      |                                         |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                          |      | DRAWN                      | WL                            | DATE 12/18/2017 | REV.  | 2            |
| P.W.H.T          | -      |        |                                         |           |           |  | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                                      | DXS  | 12/15 2017                 | LINE NO. 13-2"-CWR-14027-L01F |                 |       | SHEET 1 OF 1 |
| CATEGORY         | -      |        |                                         |           |           |  | REV. | DESCRIPTION      | CHKD                                                                                                                                                                                                                                                                                                                                                                     | APPR | DATE                       | DWG. NO. XG32-13-CWR-14027    |                 |       |              |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2         | PPA14A1AF0022 | 13.5M |
| 2     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2         | PPA1415A80021 | 0.8M  |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2 | RCA16B1AF019  | 1     |
| 4     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2         | NEA16B1AF0019 | 4     |
| 5     | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2         | NEA1621A80019 | 1     |
| 6     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2         | FWA11A1AF0015 | 1     |
| 7     | WN FLG 150# RF S-80, CS A105 ASME                         | 2         | FWA1111A80015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2     | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

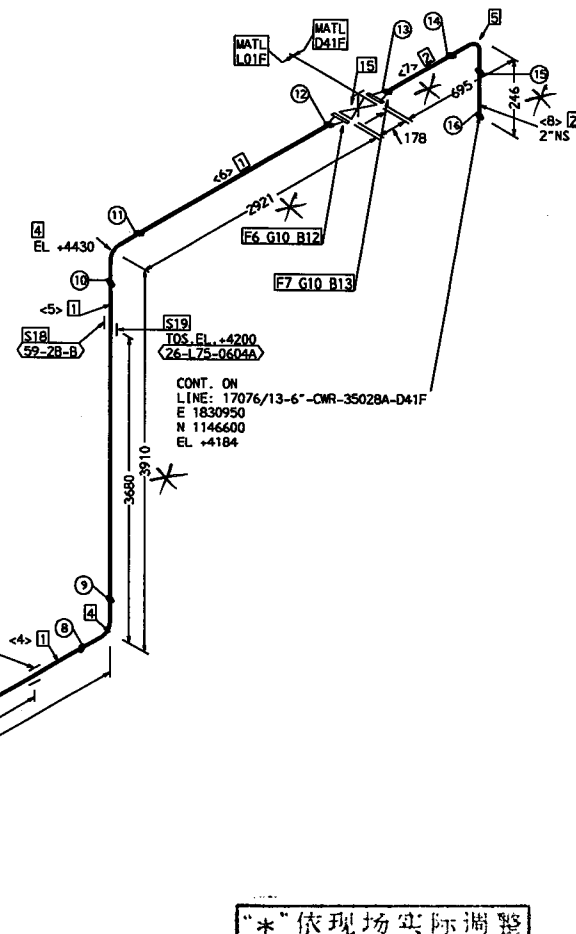
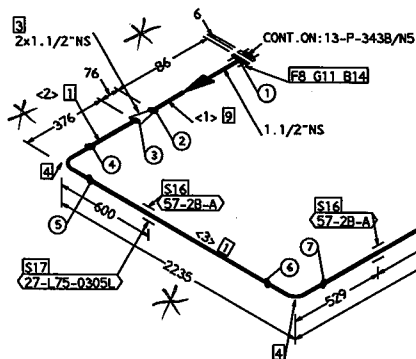
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 9     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 0.1M |
| 10    | GASKET, 150# 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         | GKA1APE0300B1 | 2    |
| 11    | GASKET, 150# 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 | 1.1/2     | GKA1APE0300B1 | 1    |
| 12    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 13    | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 4    |
| 14    | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 15    | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2         | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 16 | PIPE SUPPORT | 57-2B-A      | 3 |
| 17 | PIPE SUPPORT | 27-L75-0305L | 1 |
| 18 | PIPE SUPPORT | 59-2B-B      | 1 |
| 19 | PIPE SUPPORT | 26-L75-0604A | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S.  | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|-------|---------|----------|-----------------|------|---------|
| <1>      | 79              | 1.1/2 |         | <2>      | 300             | 2    |         |
| <3>      | 2083            | 2     |         | <4>      | 4576            | 2    |         |
| <5>      | 3758            | 2     |         | <6>      | 2781            | 2    |         |
| <7>      | 556             | 2     |         | <8>      | 170             | 2    |         |



\* 依现场实际调整

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                             |                                                                                                                                                       |          |                      |            |      |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------|------------|------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Armatex (Changshu) Co., Ltd. (DAC)</div> |                                                                                                                                                       |          |                      |            |      |       |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                             | <div> 京能工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>京能工程技术有限公司</div> |          |                      |            |      |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                             | FOR                                                                                                                                                   |          |                      |            |      |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |      | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                            |                                                                                                                                                       |          |                      |            |      |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                             | TITLE PIPING ISOMETRIC DWG                                                                                                                            |          |                      |            |      |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                             | PROJ. NO.                                                                                                                                             | 17B3166A | UNIT                 | 17076      |      |       |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |      |                                                                                                                                                             | DRAWN                                                                                                                                                 | WL       | DATE                 | 12/18/2017 | REV. | 2     |        |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                         | 12/15 2017                                                                                                                                            | LINE NO. | 13-2"-CWR-14028-L01F |            |      | SHEET |        |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                        | DATE                                                                                                                                                  | DWG. NO. | XG32-13-CWR-14028    |            |      |       |        |
|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                             |                                                                                                                                                       |          |                      |            |      |       | 1 OF 1 |



**腾龙芳烃(漳州)有限公司**  
Dragon Armatex (Changshu) Co., Ltd. (DAC)



**京能工程建设有限公司**  
CTCL Beijing Co., Ltd.  
京能工程技术有限公司

FOR

**腾龙芳烃原油分离装置检修工程**

TITLE PIPING ISOMETRIC DWG

PROJ. NO. 17E3166A UNIT 17076

DRAWN WL DATE 12/18/2017 REV. 2

LINE NO. 13-2"-CWR-14028-L01F

DWG. NO. XG32-13-CWR-14028

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                     | N.S. (IN)     | ITEM CODE     | QTY |
|-------|-------------------------------------------|---------------|---------------|-----|
| 1     | TEE, 3000# SW, SS A182-F304 ASME          | 1.1/2 x 1.1/2 | STA75A1000021 | 1   |
| 2     | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1     | RBA75A1000021 | 1   |
| 3     | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2         | NEA75A1000021 | 2   |
| 4     | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1             | FXA11A1A0015  | 1   |

## ERECTION MATERIALS

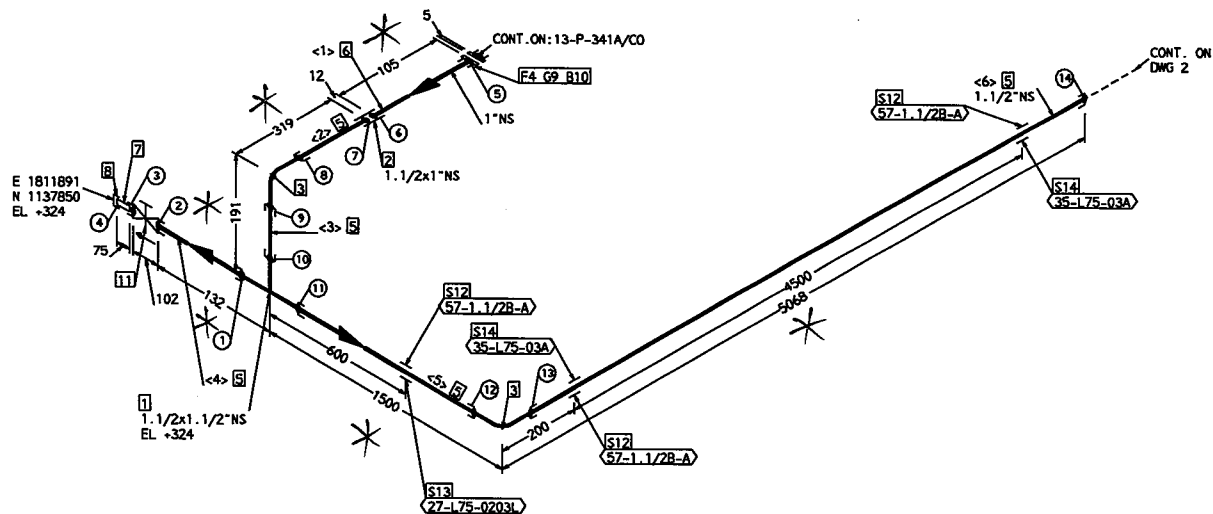
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 5     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 7.0M |
| 6     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 0.1M |
| 7     | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1.1/2     | PNA1DA1AJ0322 | 1    |
| 8     | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1.1/2     | NCA72A1000021 | 1    |
| 9     | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 1    |
| 10    | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 11    | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2     | VGA85A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 12 | PIPE SUPPORT | 57-1.1/2B-A  | 3 |
| 13 | PIPE SUPPORT | 27-L75-0203L | 1 |
| 14 | PIPE SUPPORT | 35-L75-03A   | 2 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 100        | 1         |         | <2>      | 287        | 1.1/2     |         |
| <3>      | 127        | 1.1/2     |         | <4>      | 100        | 1.1/2     |         |
| <5>      | 1436       | 1.1/2     |         | <6>      | 5036       | 1.1/2     |         |



\* 依现场实际调整

|                  |        |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      |                            |            |                                   |            |      |        |  |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|-----------------------------------|------------|------|--------|--|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armonia (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京建工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京中德合建工程咨询有限公司</div> <div>FOR 腾龙芳烃凝析油分离装置整改修复工程</div> |      |                            |            |                                   |            |      |        |  |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      |                            |            | NOTE                              |            |      |        |  |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      |                            |            |                                   |            |      |        |  |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      |                            |            |                                   |            |      |        |  |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>SPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      | TITLE PIPING ISOMETRIC DWG |            |                                   |            |      |        |  |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      | PROJ. NO.                  | 17E3166A   | UNIT                              | 17076      |      |        |  |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      | DRAWN                      | WL         | DATE                              | 12/18/2017 | REV. | 2      |  |
| P.V.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION |  |                                                                                                                                                                                                                                                                                                                                                         | CYS  | DKS                        | 12/15/2017 | LINE NO. 13-1.1/2"-CWR-15017-L01F |            |      | SHEET  |  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      |  |                                                                                                                                                                                                                                                                                                                                                         | CHKD | APPR                       | DATE       | DWG. NO. XG32-13-CWR-15017        |            |      |        |  |
|                  |        |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                         |      |                            |            |                                   |            |      | 1 OF 2 |  |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整

|                  |        |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                          |                            |          |                          |                                                                                                                                                       |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |            |                  |      |  腾龙芳烃（漳州）有限公司<br>Tenglong Petrochemical (Zhangzhou) Co., Ltd. (ZMC) |                            |          |                          |                                                                                                                                                       |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                                     |                            |          |                          |  京福工程勘察设计有限公司<br>CTCI Beijing Co., Ltd.<br>北京市西城区广安门内大街111号1111室 |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION |                  |      |                                                                                                                                                          |                            |          |                          | FOR                                                                                                                                                   |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |            |                  |      |                                                                                                                                                          |                            |          |                          |                                                                                                                                                       |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |            |                  |      |                                                                                                                                                          | TITLE PIPING ISOMETRIC DWG |          |                          |                                                                                                                                                       |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                          | PROJ. NO.                  | 17E3166A | UNIT                     | 17076                                                                                                                                                 |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |            |                  |      |                                                                                                                                                          | DRAWN                      | WL       | DATE 12/18/2017          | REV. 2                                                                                                                                                |
| P.V.H.T          | -      |        |                                          |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                      | 12/15/2017                 | LINE NO. | 13-1-1/2"-CWR-15017-L01F | SHEET                                                                                                                                                 |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                     | DATE                       | DWG. NO. | XG32-13-CWR-15017        | 2 OF 2                                                                                                                                                |

## | FABRICATION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN)     | ITEM CODE     | QTY |
|----------|-------------------------------------------|------------------|---------------|-----|
| 1        | TEE. 3000# SW, SS A182-F304 ASME          | 1.1/2 x<br>1.1/2 | STA75A1000021 | 1   |
| 2        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1        | RBA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2            | NEA75A1000021 | 2   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1                | FKA11A1AJ0015 | 1   |

## | ERECTION MATERIALS |

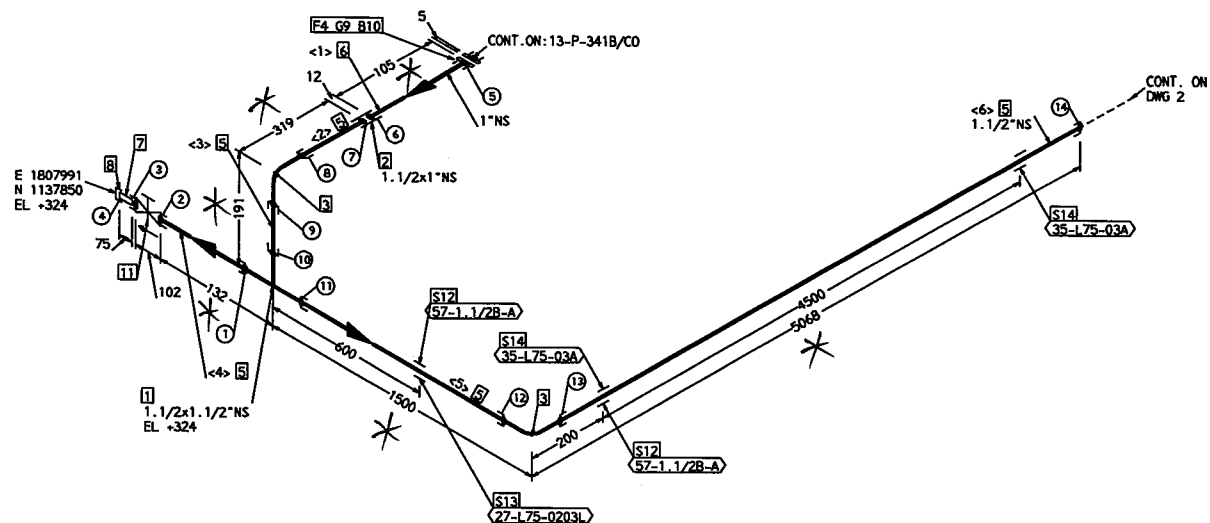
| PT<br>NO | COMPONENT DESCRIPTION                                                                                               | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 5        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1.1/2        | PPA11A1AJ0022 | 7.0M |
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1            | PPA11A1AJ0022 | 0.1M |
| 7        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                  | 1.1/2        | PNA1DA1AJ0322 | 1    |
| 8        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                  | 1.1/2        | NCA72A1000021 | 1    |
| 9        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                   | 12 MM        | GMA04310000E1 | 4    |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                 | 1.1/2        | VGA85A1000111 | 1    |

## SUPPORTS

|    |              |  |              |   |
|----|--------------|--|--------------|---|
| 12 | PIPE SUPPORT |  | 57-1.1/2B-A  | 2 |
| 13 | PIPE SUPPORT |  | 27-L75-0203L | 1 |
| 14 | PIPE SUPPORT |  | 35-L75-03A   | 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>         | 287           | 1.1/2        |         |
| <3>         | 127           | 1.1/2        |         | <4>         | 100           | 1.1/2        |         |
| <5>         | 1436          | 1.1/2        |         | <6>         | 5036          | 1.1/2        |         |



\* 依现场实际调整

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                |          |                          |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Armatex (Changzhou) Co., Ltd. (DAC)</div> |                                                                                                                                                                |          |                          |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                              | <div> 京通工程技术有限公司<br/>CTCI Beijing Co., Ltd.<br/>京通工程技术有限公司 (JITONG)</div> |          |                          |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              |                                                                                                                                                                |          |                          |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  | FOR       |      |                  |      | 腾龙芳烃原油分离装置检修工程                                                                                                                                               |                                                                                                                                                                |          |                          |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                              | TITLE PIPING ISOMETRIC DWG                                                                                                                                     |          |                          |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              | PROJ. NO.                                                                                                                                                      | 17B3166A | UNIT                     | 17076  |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |      |                                                                                                                                                              | DRAWN                                                                                                                                                          | WL       | DATE 12/18/2017          | REV. 2 |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                          | 12/15 2017                                                                                                                                                     | LINE NO. | 13-1-1/2"-CWR-15018-L01F | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKO | APPR                                                                                                                                                         | DATE                                                                                                                                                           | DWG. NO. | XG32-13-CWR-15018        | 1 OF 2 |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整

|                  |        |        |                                          |           |  |           |      |      |                  |                                                                                                                                                                     |                                                                                                                                                                 |            |                 |                   |
|------------------|--------|--------|------------------------------------------|-----------|--|-----------|------|------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|-------------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  | REF. DWG. |      |      |                  | <div> 腾龙芳烃（漳州）有限公司<br/>Tenglong Petrochemical (Zhangzhou) Co., Ltd. QHCS</div> |                                                                                                                                                                 |            |                 |                   |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |           | NOTE |      |                  |                                                                                                                                                                     | <div> 京福工程建筑设计有限公司<br/>CTCL Beijing Co., Ltd.<br/>地址: 北京市昌平区 北环路101号</div> |            |                 |                   |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |           |      |      |                  |                                                                                                                                                                     | FOR                                                                                                                                                             |            |                 |                   |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |           |      |      |                  | 腾龙芳烃聚析油分离装置整改修复工程                                                                                                                                                   |                                                                                                                                                                 |            |                 |                   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |  |           |      |      |                  |                                                                                                                                                                     | TITLE PIPING ISOMETRIC DWG                                                                                                                                      |            |                 |                   |
| TEST FLUID       | HYDRO. |        |                                          |           |  |           |      |      |                  |                                                                                                                                                                     | PROJ. NO.                                                                                                                                                       | 17B3166A   | UNIT            | 17076             |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |           |      |      |                  |                                                                                                                                                                     | DRAWN                                                                                                                                                           | WL         | DATE 12/18/2017 | REV. 2            |
| P.W.H.T          | -      |        |                                          |           |  |           |      | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                                 | DXS                                                                                                                                                             | 12/15 2017 |                 |                   |
| CATEGORY         | -      |        |                                          |           |  |           |      | REV. | DESCRIPTION      | CHKD                                                                                                                                                                | APPR                                                                                                                                                            | DATE       | DWG. NO.        | XG32-13-CWR-15018 |
|                  |        |        |                                          |           |  |           |      |      |                  |                                                                                                                                                                     |                                                                                                                                                                 |            |                 | 2 OF 2            |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

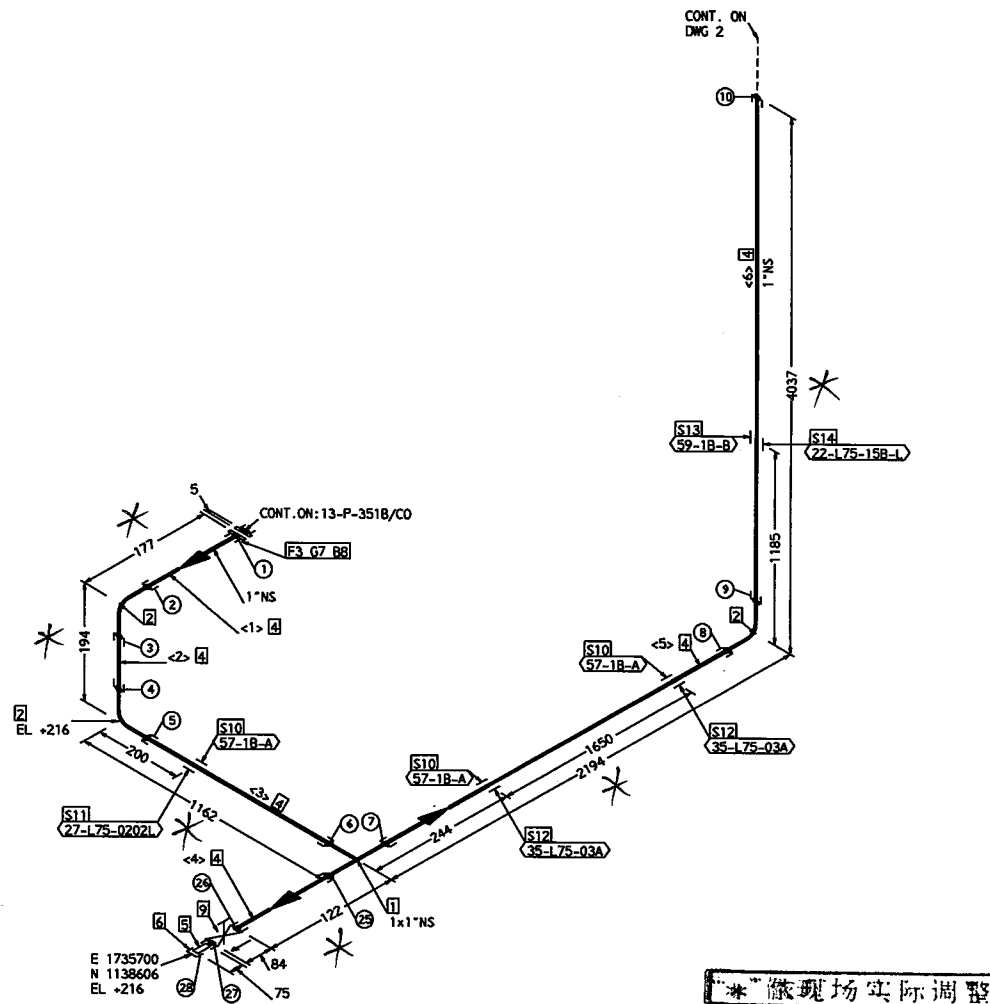
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 7.7M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGAB5A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 10 | PIPE SUPPORT | 57-1B-A      | 3 |
| 11 | PIPE SUPPORT | 27-L75-0202L | 1 |
| 12 | PIPE SUPPORT | 35-L75-03A   | 2 |
| 13 | PIPE SUPPORT | 59-1B-B      | 1 |
| 14 | PIPE SUPPORT | 22-L75-15B-L | 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>         | 150           | 1            |         | <2>         | 150           | 1            |         |
| <3>         | 1118          | 1            |         | <4>         | 100           | 1            |         |
| <5>         | 2150          | 1            |         | <6>         | 4014          | 1            |         |



|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                 |                                                                                                                                                                     |          |                      |            |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------|------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Automation (Shanghai) Co., Ltd. (DACS)</div> |                                                                                                                                                                     |          |                      |            |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                                 | <div> 京能工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>SINCE 1982 VIA AUTHORITY</div> |          |                      |            |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                 |                                                                                                                                                                     |          |                      |            |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  | FOR       |      |                  |      | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                                |                                                                                                                                                                     |          |                      |            |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>SPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                 | TITLE PIPING ISOMETRIC DWG                                                                                                                                          |          |                      |            |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                 | PROJ. NO.                                                                                                                                                           | 17E3166A | UNIT                 | 17076      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                 | DRAWN                                                                                                                                                               | WL       | DATE                 | 12/18/2017 |        |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                             | 12/15 2017                                                                                                                                                          | LINE NO. | 13-1"-CWR-16015-L01F |            | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                            | DATE                                                                                                                                                                | DWG. NO. | XG32-13-CWR-16015    |            | 1 OF 2 |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 45 ELL 3000# SW, SS A182-F304 ASME      | 1         | NFA75A1000021 | 1   |
| 2     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 3   |
| 3     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1   |
| 4     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | FKA11A1AJ0015 | 1   |
| 5     | SW FLG 150# RF S-80, CS A105 ASME       | 1         | FKA1111A80015 | 1   |

## ERECTION MATERIALS

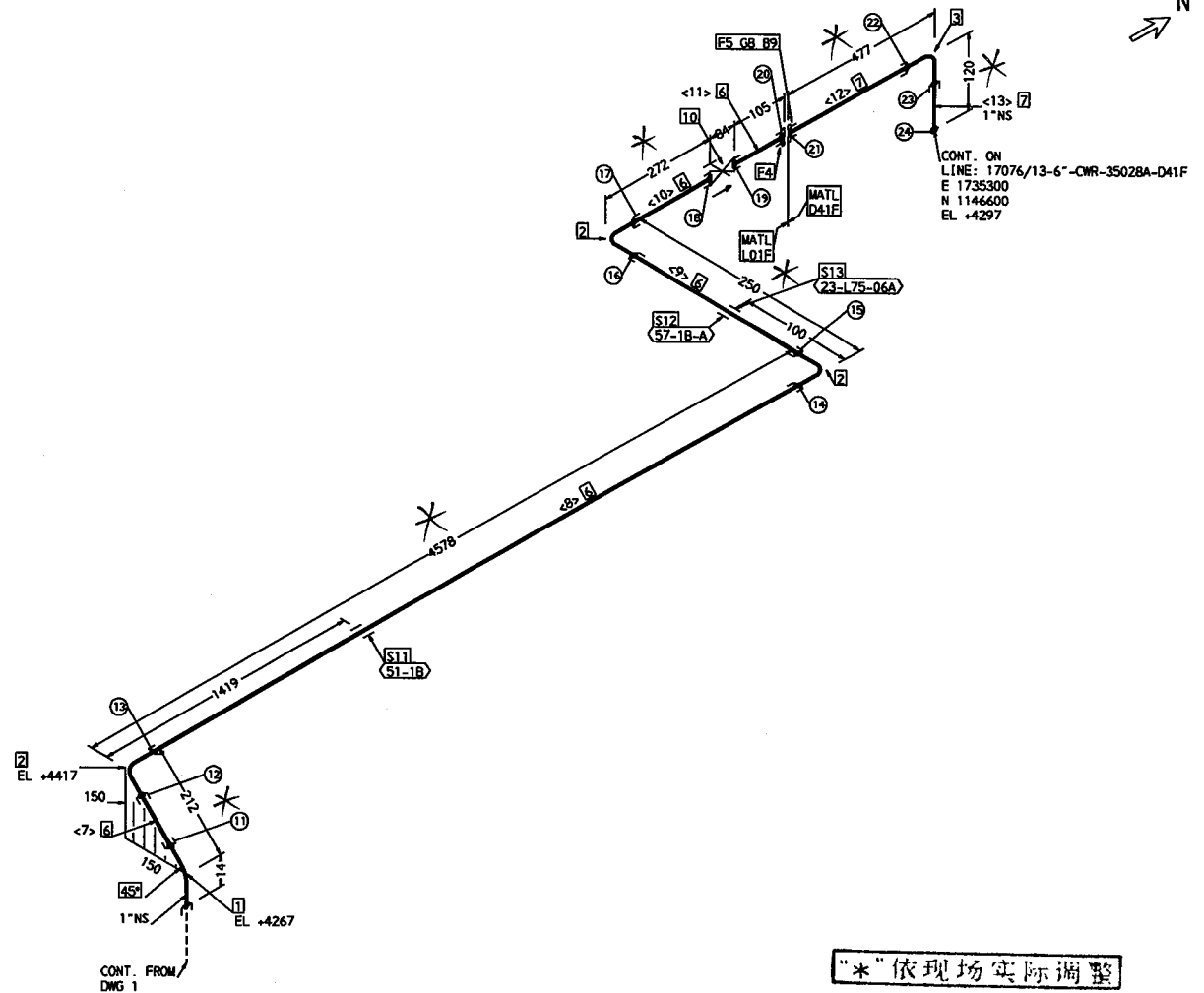
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 6     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 5.3M |
| 7     | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1         | PPA1115A80021 | 0.6M |
| 8     | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 1    |
| 9     | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 10    | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1         | VGABSA1000111 | 1    |

## SUPPORTS

|    |              |            |   |
|----|--------------|------------|---|
| 11 | PIPE SUPPORT | 51-1B      | 1 |
| 12 | PIPE SUPPORT | 57-1B-A    | 1 |
| 13 | PIPE SUPPORT | 23-L75-06A | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <7>      | 176        | 1         |         | <8>      | 4533       | 1         |         |
| <9>      | 206        | 1         |         | <10>     | 250        | 1         |         |
| <11>     | 100        | 1         |         | <12>     | 450        | 1         |         |
| <13>     | 97         | 1         |         |          |            |           |         |



\* 依现场实际调整

|                  |            |                |           |                                                             |                   |             |                     |
|------------------|------------|----------------|-----------|-------------------------------------------------------------|-------------------|-------------|---------------------|
| OPER. TEMP.      | 34 °C      | PAINTING       | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Dragon Aromatic (Changzhou) Co., Ltd. (DMC) |                   |             |                     |
| OPER. PRESS.     | 0.3 MPa(g) | CODE PER. SPEC |           |                                                             |                   |             |                     |
| DESIGN TEMP.     | 80 °C      | INSULATION     | NOTE      | 京通工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>京通工程技术有限公司          |                   |             |                     |
| DESIGN PRESS.    | 1.2 MPa(g) |                |           |                                                             |                   |             |                     |
| TEST PRESSURE    | 1.8 MPa(g) |                |           | FOR 腾龙芳烃原油分离装置检修工程                                          |                   |             |                     |
| TEST FLUID       | HYDRO.     |                |           | TITLE PIPING ISOMETRIC DWG                                  |                   |             |                     |
| INSPECTION X-RAY | 5 %        |                |           | PROJ. NO.                                                   | 17E3166A          | UNIT        | 17076               |
| P.W.H.T          | -          |                |           | DRAWN                                                       | WL                | DATE        | 12/18/2017          |
| CATEGORY         | -          |                |           | REV.                                                        | 2                 | DESCRIPTION | FOR CONSTRUCTION    |
|                  |            |                |           | CHKD                                                        | CYS               | DXS         | 12/15/2017          |
|                  |            |                |           | DATE                                                        |                   | LINE NO.    | 13-1-CWR-16015-L01F |
|                  |            |                |           | DWG. NO.                                                    | XG32-13-CWR-16015 | SHEET       | 2 OF 2              |

## FABRICATION MATERIALS

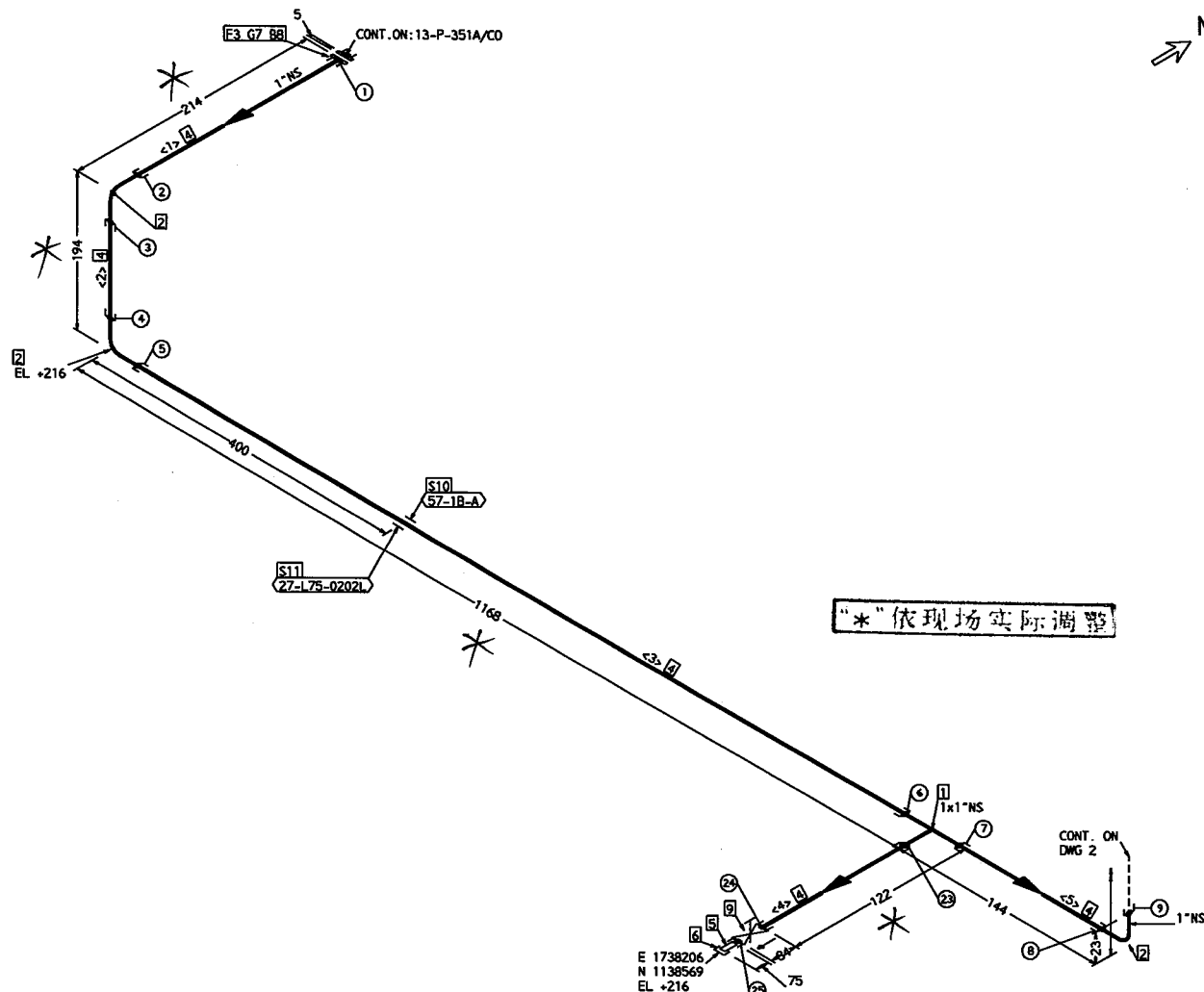
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 1.7M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1    |
| 10       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 1    |
| 11       | PIPE SUPPORT                                                                                                       |              | 27-L75-0202L  | 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>         | 187           | 1            |         | <2>         | 150           | 1            |         |
| <3>         | 1123          | 1            |         | <4>         | 100           | 1            |         |
| <5>         | 100           | 1            |         |             |               |              |         |



|                  |            |            |           |                                                                                                                                                      |
|------------------|------------|------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPER. TEMP.      | 34 °C      | PAINING    | REF. DWG. |  腾龙芳烃(漳州)有限公司<br>Tenglong Aromatics (Zhangzhou) Co., Ltd. (DAC) |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                      |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      |  京福工程建设有限公司<br>CTGI Beijing Co., Ltd.<br>DESIGN & CONSTRUCTION  |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                                                                                                      |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | FOR 腾龙芳烃原油分离装置改造修复工程                                                                                                                                 |
| TEST FLUID       | HYDRO.     |            |           | TITLE PIPING ISOMETRIC DWG                                                                                                                           |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO. 17E3166A UNIT 17076<br>DRAWN WL DATE 12/18/2017 REV. 2                                                                                     |
| P.W.H.T          | -          |            |           | LINE NO. 13-1"-CWR-16016-L01F SHEET<br>DWG. NO. XG32-13-CWR-16016 1 OF 2                                                                             |
| CATEGORY         | -          |            |           | REV. DESCRIPTION CHKD APPR DATE                                                                                                                      |

## FABRICATION MATERIALS

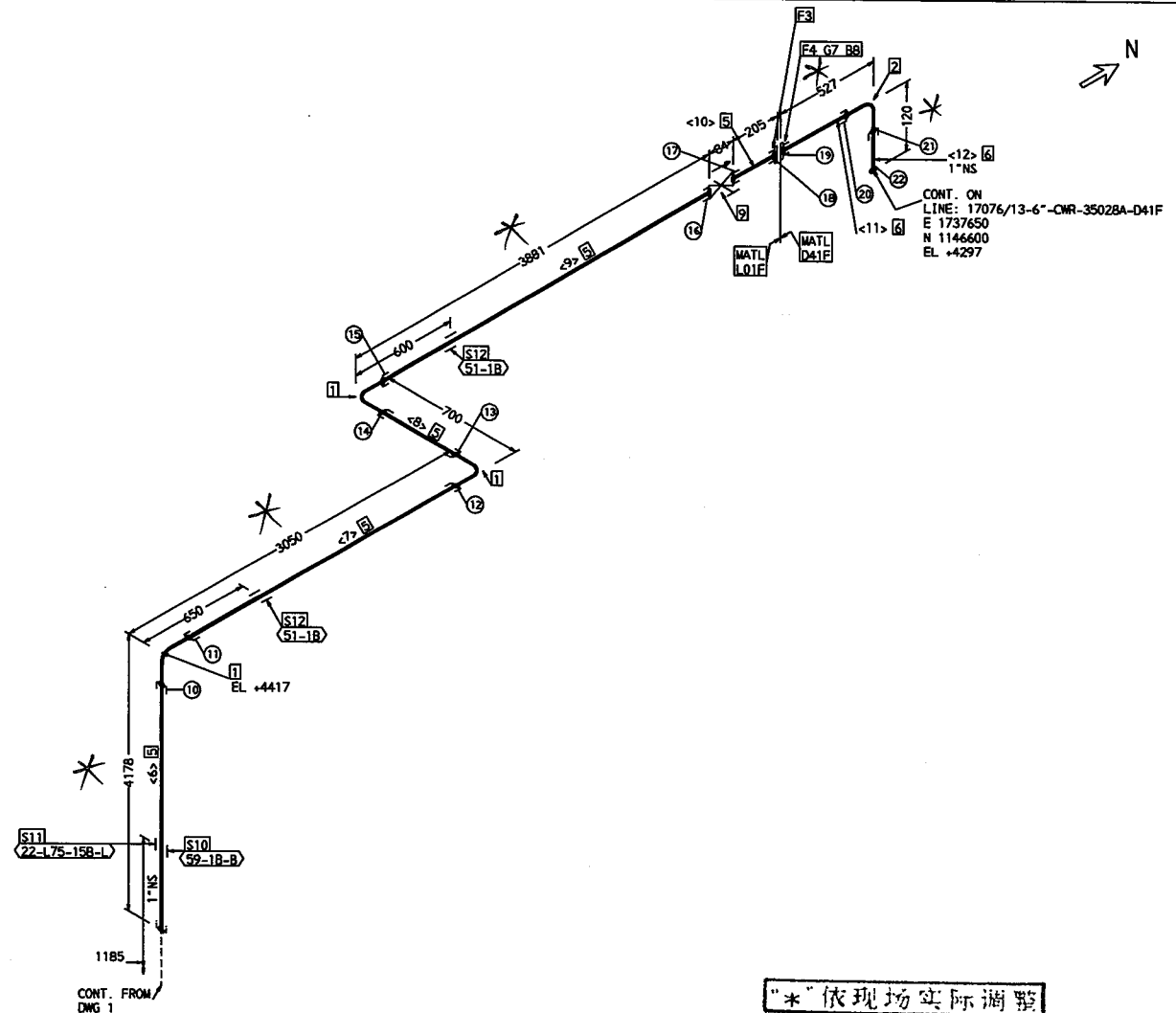
| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 3   |
| 2     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1   |
| 3     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | FKA11A1AJ0015 | 1   |
| 4     | SW FLG 150# RF S-80, CS A105 ASME       | 1         | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|-------|
| 5        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 11.9M |
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1         | PPA1115A80021 | 0.6M  |
| 7        | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 1     |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1         | VGAB5A1000111 | 1     |
| SUPPORTS |                                                                                                                    |           |               |       |
| 10       | PIPE SUPPORT                                                                                                       |           | 59-1B-B       | 1     |
| 11       | PIPE SUPPORT                                                                                                       |           | 22-L75-15B-L  | 1     |
| 12       | PIPE SUPPORT                                                                                                       |           | 51-1B         | 2     |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <6>      | 4156       | 1         |         | <7>      | 3006       | 1         |         |
| <8>      | 656        | 1         |         | <9>      | 3859       | 1         |         |
| <10>     | 200        | 1         |         | <11>     | 500        | 1         |         |
| <12>     | 97         | 1         |         |          |            |           |         |



\* 依现场实际调整

|                  |        |        |                                         |           |           |  |  |      |                                                                                                                                                                  |      |                            |            |                 |                      |              |
|------------------|--------|--------|-----------------------------------------|-----------|-----------|--|--|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|-----------------|----------------------|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           | REF. DWG. |  |  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</div>   |      |                            |            |                 |                      |              |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                    | PER. SPEC | NOTE      |  |  |      | <div> 京龍工程建設有限公司<br/>CTCL Beijing Co., Ltd.<br/>SINCE 1987 THE AROUND</div> |      |                            |            |                 |                      |              |
| DESIGN TEMP.     | 80     | °C     |                                         |           |           |  |  |      | FOR 騰龍芳烃原油分离装置检修工程                                                                                                                                               |      |                            |            |                 |                      |              |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                              |           |           |  |  |      |                                                                                                                                                                  |      |                            |            |                 |                      |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |           |  |  |      |                                                                                                                                                                  |      | TITLE PIPING ISOMETRIC DWG |            |                 |                      |              |
| TEST FLUID       | HYDRO. |        |                                         |           |           |  |  |      |                                                                                                                                                                  |      | PROJ. NO.                  | 17E3166A   | UNIT            | 17076                |              |
| INSPECTION X-RAY | 5      | %      |                                         |           |           |  |  |      |                                                                                                                                                                  |      | DRAWN                      | WL         | DATE 12/18/2017 | REV.                 | 2            |
| P.W.H.T          | -      |        |                                         |           |           |  |  | 2    | FOR CONSTRUCTION                                                                                                                                                 | CYS  | DXS                        | 12/15 2017 | LINE NO.        | 13-1"-CWR-16016-L01F |              |
| CATEGORY         | -      |        |                                         |           |           |  |  | REV. | DESCRIPTION                                                                                                                                                      | CHKD | APPR                       | DATE       | DWG. NO.        | XG32-13-CWR-16016    | SHEET 2 OF 2 |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 3   |
| 2     | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1         | SFA75A1000021 | 1   |
| 3     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1   |
| 4     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | FKA11A1AJ0015 | 2   |
| 5     | SW FLG 150# RF S-80, CS A105 ASME       | 1         | FKA1111A80015 | 1   |

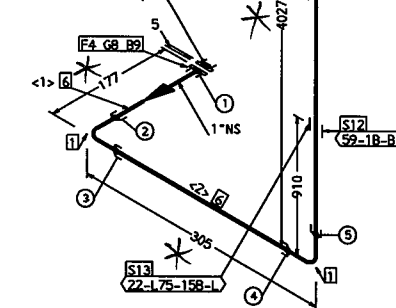
## ERECTION MATERIALS

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 11.2M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1         | PPA1115A80021 | 0.6M  |
| 8        | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1         | VGAB5A1000111 | 1     |
| SUPPORTS |                                                                                                                    |           |               |       |
| 12       | PIPE SUPPORT                                                                                                       |           | 59-1B-B       | 1     |
| 13       | PIPE SUPPORT                                                                                                       |           | 22-L75-15B-L  | 1     |
| 14       | PIPE SUPPORT                                                                                                       |           | 51-1B         | 2     |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 150        | 1         |         | <2>      | 261        | 1         |         |
| <3>      | 3982       | 1         |         | <4>      | 6000       | 1         |         |
| <5>      | 584        | 1         |         | <6>      | 200        | 1         |         |
| <7>      | 500        | 1         |         | <8>      | 97         | 1         |         |

CONT. ON: 13-P-361B/CO



CONT. ON  
LINE: 17076/13-6"-CWR-35028A-D41F  
E 1731050  
N 1146600  
EL +4297

"\*" 依现场实际调整

|                  |            |            |           |                                                                                                                                                       |                   |              |                |
|------------------|------------|------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------|----------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Tenglong Aromatic (Zhangzhou) Co., Ltd. (CTAC)<br>京德工程建设有限公司<br>CTCL Beijing Co., Ltd.<br>82555555 138 00110001<br>FOR 腾龙芳烃原油分离装置检修工程 |                   |              |                |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                       |                   |              |                |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      |                                                                                                                                                       |                   |              |                |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                                                                                                                       |                   |              |                |
| TEST PRESSURE    | 1.8 MPa(g) |            |           |                                                                                                                                                       |                   |              |                |
| TEST FLUID       | HYDRO.     |            |           |                                                                                                                                                       |                   |              |                |
| INSPECTION X-RAY | 5 %        |            |           |                                                                                                                                                       |                   |              |                |
| P.V.H.T          | -          |            |           | 2                                                                                                                                                     | FOR CONSTRUCTION  | CYS          | DXS 12/15 2017 |
| CATEGORY         | -          |            |           | REV.                                                                                                                                                  | DESCRIPTION       | CHKD         | APPR DATE      |
|                  |            |            |           | DWG. NO.                                                                                                                                              | XG32-13-CWR-18022 | SHEET 1 OF 1 |                |

## FABRICATION MATERIALS

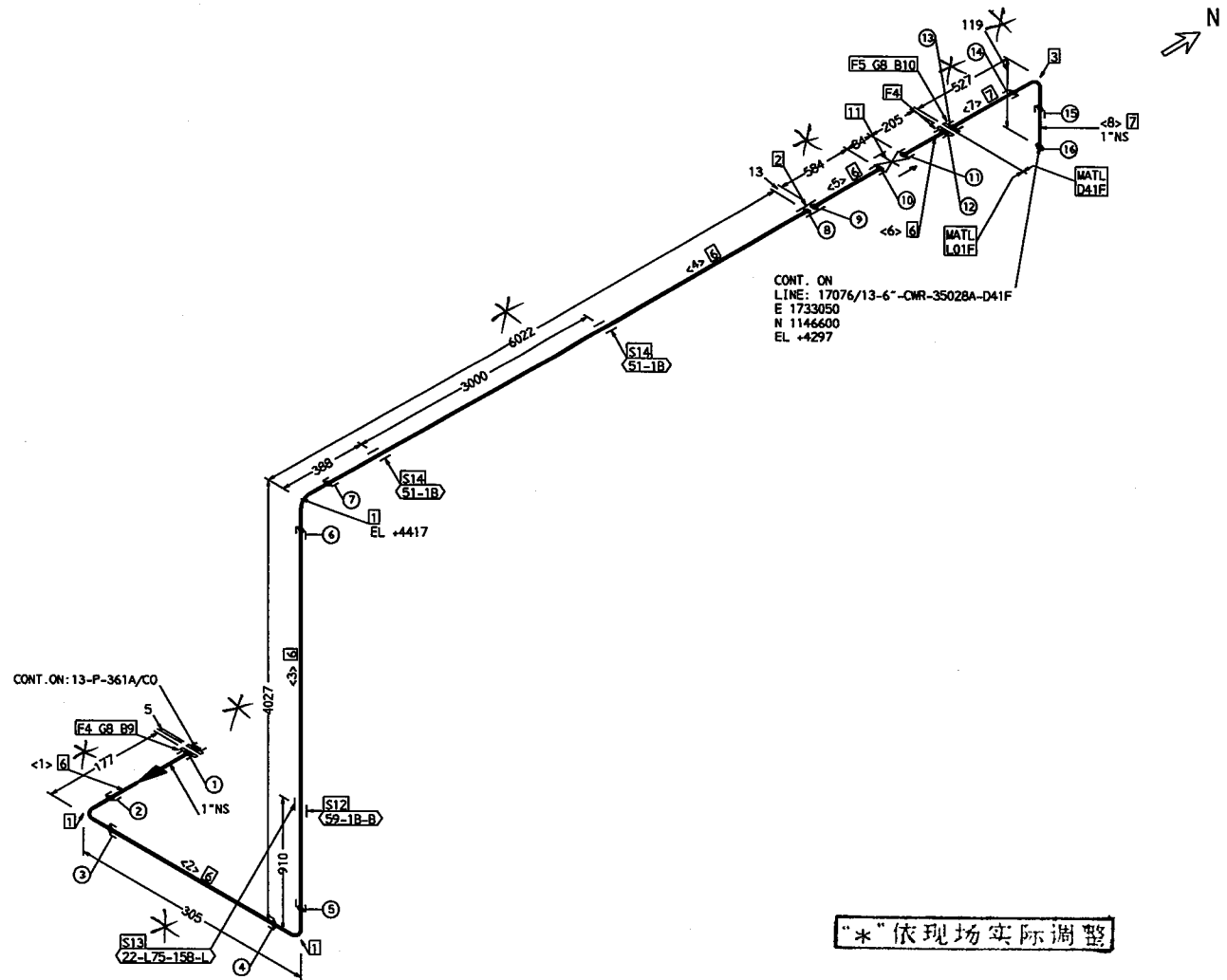
| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 3   |
| 2     | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1         | SFA75A1000021 | 1   |
| 3     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1   |
| 4     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | FKA11A1AJ0015 | 2   |
| 5     | SW FLG 150# RF S-80, CS A105 ASME       | 1         | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 11.2M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1         | PPA1115A80021 | 0.6M  |
| 8        | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1         | VGAB5A1000111 | 1     |
| SUPPORTS |                                                                                                                    |           |               |       |
| 12       | PIPE SUPPORT                                                                                                       |           | 59-1B-B       | 1     |
| 13       | PIPE SUPPORT                                                                                                       |           | 22-L75-15B-L  | 1     |
| 14       | PIPE SUPPORT                                                                                                       |           | 51-1B         | 2     |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 150        | 1         |         | <2>      | 261        | 1         |         |
| <3>      | 3982       | 1         |         | <4>      | 6000       | 1         |         |
| <5>      | 584        | 1         |         | <6>      | 200        | 1         |         |
| <7>      | 500        | 1         |         | <8>      | 97         | 1         |         |



“\*” 依现场实际调整

|                  |            |            |           |                                                             |
|------------------|------------|------------|-----------|-------------------------------------------------------------|
| OPER. TEMP.      | 34 °C      | PAINTING   | REF. DWG. | 腾龙芳烃 (漳州) 有限公司<br>Dragon Aramco (Zhangzhou) Co., Ltd. (ZAC) |
| OPER. PRESS.     | 0.3 MPa(g) | CODE       | PER. SPEC |                                                             |
| DESIGN TEMP.     | 80 °C      | INSULATION | NOTE      | 京福工程技术有限公司<br>CTCI Beijing Co., Ltd.<br>S115 P&P Y&M AUTUMN |
| DESIGN PRESS.    | 1.2 MPa(g) |            |           |                                                             |
| TEST PRESSURE    | 1.8 MPa(g) |            |           | FOR 腾龙芳烃原油分离装置检修工程                                          |
| TEST FLUID       | HYDRO.     |            |           | TITLE PIPING ISOMETRIC DWG                                  |
| INSPECTION X-RAY | 5 %        |            |           | PROJ. NO. 17E3166A UNIT 17076                               |
| P.W.H.T          | -          |            |           | DRAWN WL DATE 12/18/2017 REV. 2                             |
| CATEGORY         | -          |            |           | LINE NO. 13-1"-CWR-18023-L01F SHEET                         |
|                  |            |            |           | DWG. NO. XG32-13-CWR-18023 1 OF 1                           |

## FABRICATION MATERIALS

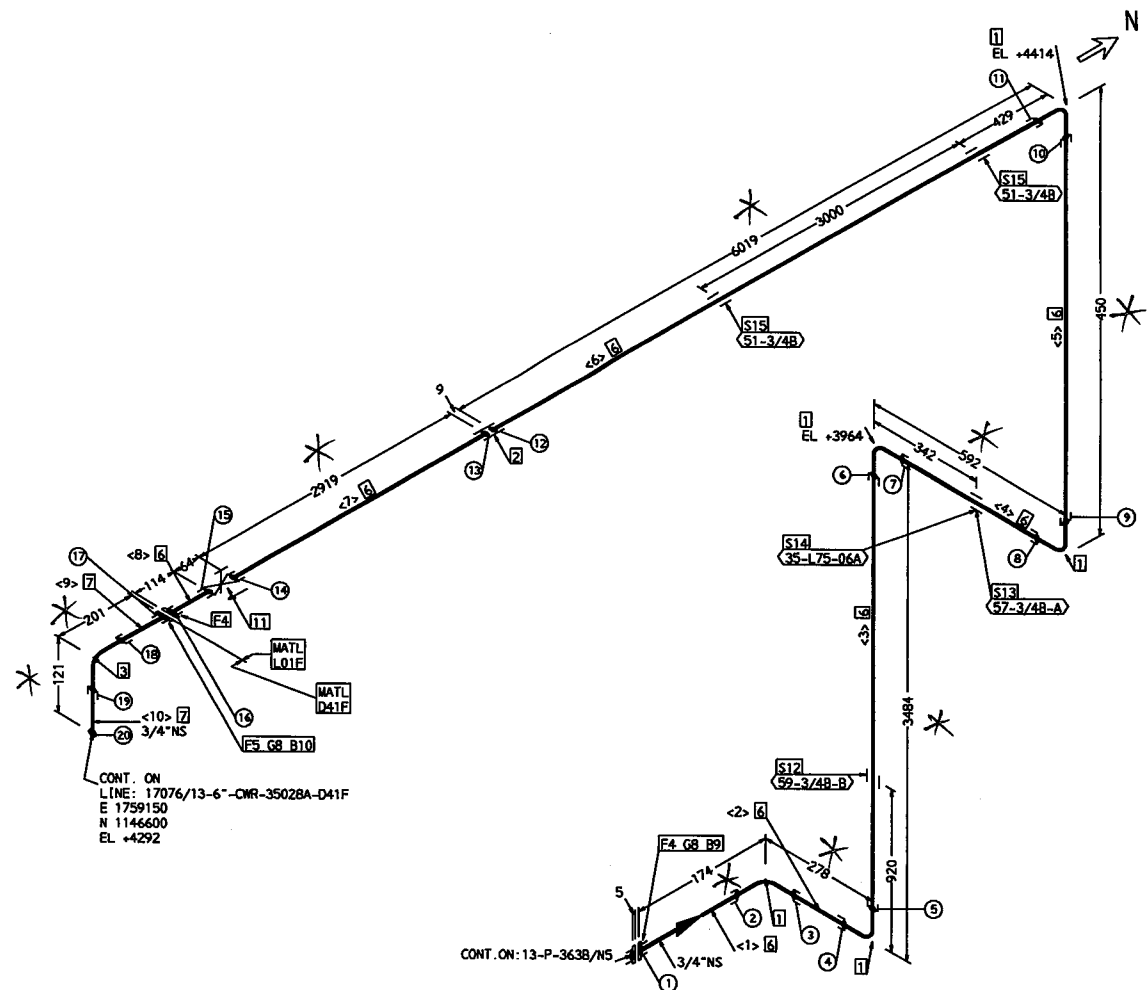
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, SS A182-F304 ASME      | 3/4          | NEA75A1000021 | 5   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 3/4          | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 3/4          | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 3/4          | FKA11A1AJ0015 | 2   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 3/4          | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 3/4          | PPA11A1AJ0022 | 13.9M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 3/4          | PPA1115A80021 | 0.3M  |
| 8        | GASKET, 150# 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 | 3/4          | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 3/4          | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-3/4B-B     | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 57-3/4B-A     | 1     |
| 14       | PIPE SUPPORT                                                                                                       |              | 35-L75-06A    | 1     |
| 15       | PIPE SUPPORT                                                                                                       |              | 51-3/4B       | 2     |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS |
|-------------|--------------------|------|---------|-------------|--------------------|------|---------|
| <1>         | 150                | 3/4  |         | <2>         | 240                | 3/4  |         |
| <3>         | 3445               | 3/4  |         | <4>         | 554                | 3/4  |         |
| <5>         | 411                | 3/4  |         | <6>         | 6000               | 3/4  |         |
| <7>         | 2919               | 3/4  |         | <8>         | 110                | 3/4  |         |
| <9>         | 177                | 3/4  |         | <10>        | 102                | 3/4  |         |



"\*" 依现场实际调整

|                  |            |                |           |                                                                            |
|------------------|------------|----------------|-----------|----------------------------------------------------------------------------|
| OPER. TEMP.      | 34 °C      | PAINTING       | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Dragon Aromatic (Zhangzhou) Co., Ltd. (DMC)                |
| OPER. PRESS.     | 0.3 MPa(g) | CODE PER. SPEC | NOTE      |                                                                            |
| DESIGN TEMP.     | 80 °C      | INSULATION     |           | 京能工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>京能工程技术有限公司                         |
| DESIGN PRESS.    | 1.2 MPa(g) |                |           |                                                                            |
| TEST PRESSURE    | 1.8 MPa(g) |                |           | FOR 腾龙芳烃原油分离装置检修工程                                                         |
| TEST FLUID       | HYDRO.     |                |           | TITLE PIPING ISOMETRIC DWG                                                 |
| INSPECTION X-RAY | 5 %        |                |           | PROJ. NO. 17B3166A UNIT 17076<br>DRAWN WL DATE 12/18/2017 REV. 2           |
| P.W.H.T          | -          |                |           | LINE NO. 13-3/4"-CWR-18026-L01F SHEET<br>DWG. NO. XG32-13-CWR-18026 1 OF 1 |
| CATEGORY         | -          |                |           | 2 FOR CONSTRUCTION CYS DXS 12/15 2017<br>REV. DESCRIPTION CHKO APPR DATE   |

## FABRICATION MATERIALS

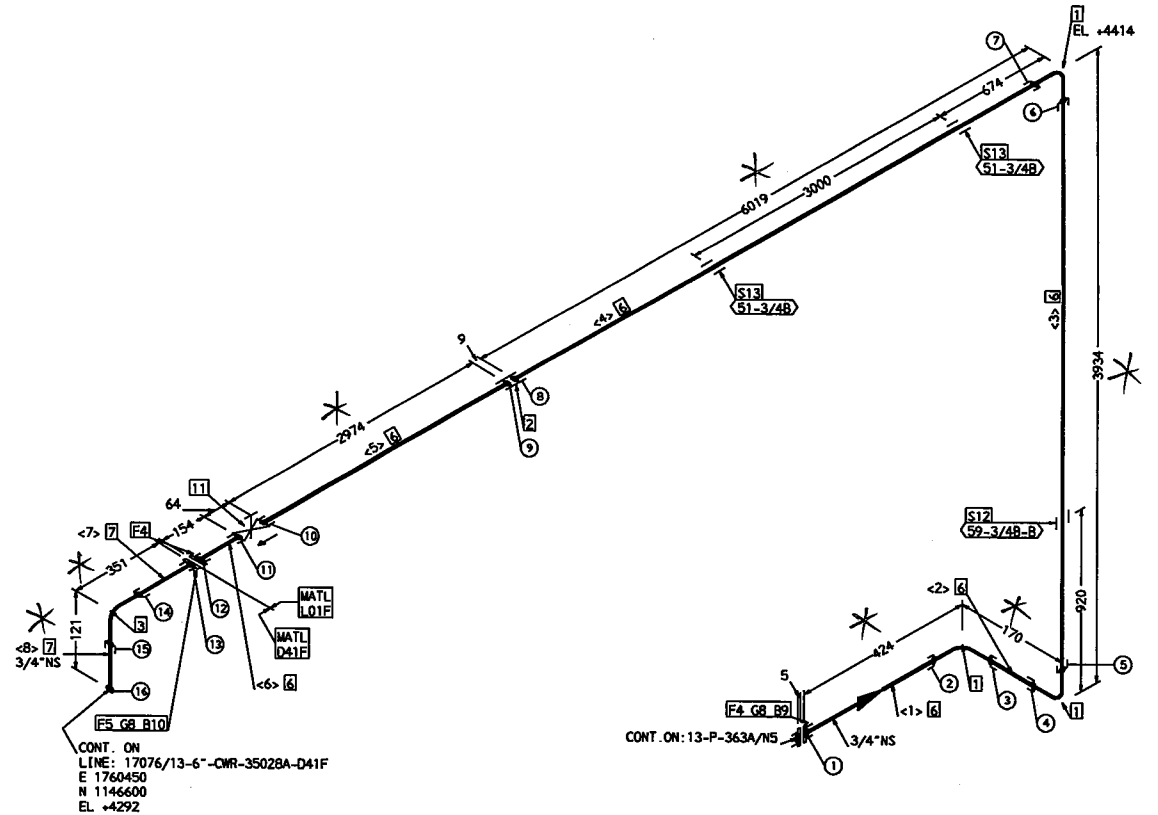
| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 90 ELL 3000# SW, SS A182-F304 ASME      | 3/4       | NEA75A1000021 | 3   |
| 2     | FULL CPLG 3000# SW, SS A182-F304 ASME   | 3/4       | SFA75A1000021 | 1   |
| 3     | 90 ELL 3000# SW, CS A105 ASME           | 3/4       | NEA7511000021 | 1   |
| 4     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 3/4       | FKA11A1AJ0015 | 2   |
| 5     | SW FLG 150# RF S-80, CS A105 ASME       | 3/4       | FKA1111AB0015 | 1   |

## ERECTION MATERIALS

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 3/4       | PPA11A1AJ0022 | 13.6M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 3/4       | PPA1115A80021 | 0.5M  |
| 8        | GASKET, 150# 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 | 3/4       | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 3/4       | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |           |               |       |
| 12       | PIPE SUPPORT                                                                                                       |           | 59-3/4B-B     | 1     |
| 13       | PIPE SUPPORT                                                                                                       |           | 51-3/4B       | 2     |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 400        | 3/4       |         | <2>      | 132        | 3/4       |         |
| <3>      | 3895       | 3/4       |         | <4>      | 6000       | 3/4       |         |
| <5>      | 2974       | 3/4       |         | <6>      | 150        | 3/4       |         |
| <7>      | 327        | 3/4       |         | <8>      | 102        | 3/4       |         |



\*\*依现场实际调整

|                  |        |        |                                         |           |           |  |  |  |                                                                                                                                                               |           |                            |                 |       |      |            |          |                        |              |
|------------------|--------|--------|-----------------------------------------|-----------|-----------|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----------------|-------|------|------------|----------|------------------------|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           | REF. DWG. |  |  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAC)</div> |           |                            |                 |       |      |            |          |                        |              |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                    | PER. SPEC | NOTE      |  |  |  | <div> 京通工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京通工技术有限公司</div>         |           |                            |                 |       |      |            |          |                        |              |
| DESIGN TEMP.     | 80     | °C     |                                         |           |           |  |  |  | FOR 腾龙芳烃原油分离装置检修工程                                                                                                                                            |           |                            |                 |       |      |            |          |                        |              |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                              |           |           |  |  |  |                                                                                                                                                               |           |                            |                 |       |      |            |          |                        |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TPE</div></div> |           |           |  |  |  |                                                                                                                                                               |           | TITLE PIPING ISOMETRIC DWG |                 |       |      |            |          |                        |              |
| TEST FLUID       | HYDRO. |        |                                         |           |           |  |  |  |                                                                                                                                                               | PROJ. NO. | 17E3166A                   | UNIT            | 17076 |      |            |          |                        |              |
| INSPECTION X-RAY | 5      | %      |                                         |           |           |  |  |  |                                                                                                                                                               | DRAWN     | WL                         | DATE 12/18/2017 | REV.  | 2    |            |          |                        |              |
| P.W.H.T          | -      |        |                                         |           |           |  |  |  |                                                                                                                                                               | 2         | FOR CONSTRUCTION           |                 | CYS   | DXS  | 12/15 2017 | LINE NO. | 13-3/4"-CWR-18027-L01F | SHEET 1 OF 1 |
| CATEGORY         | -      |        |                                         |           |           |  |  |  |                                                                                                                                                               | REV.      | DESCRIPTION                |                 |       | CHKD | APPR       | DATE     | DWG. NO.               |              |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整

|                  |        |        |                                          |          |  |  |            |      |                  |      |                                                                                                                                                              |               |                            |                      |                                                                                                                                                                                          |       |       |
|------------------|--------|--------|------------------------------------------|----------|--|--|------------|------|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |          |  |  | REF. DWG.  |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Armetec (Changshou) Co., Ltd. (DAC)</div> |               |                            |                      |                                                                                                                                                                                          |       |       |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER.SPEC |  |  |            |      |                  |      |                                                                                                                                                              |               |                            |                      |                                                                                                                                                                                          |       |       |
| DESIGN TEMP.     | 80     | °C     |                                          |          |  |  | INSULATION |      |                  |      | NOTE                                                                                                                                                         |               |                            |                      | FOR <div> 京通工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>CHINA TONG ENG. ARCHITECTS</div> 腾龙芳烃原油分离装置检修工程 |       |       |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |          |  |  |            |      |                  |      |                                                                                                                                                              |               |                            |                      |                                                                                                                                                                                          |       |       |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |          |  |  |            |      |                  |      |                                                                                                                                                              |               | TITLE PIPING ISOMETRIC DWG |                      |                                                                                                                                                                                          |       |       |
| TEST FLUID       | HYDRO. |        |                                          |          |  |  |            |      |                  |      |                                                                                                                                                              |               | PROJ. NO.                  | 17E3166A             | UNIT                                                                                                                                                                                     | 17076 |       |
| INSPECTION X-RAY | 5      | %      |                                          |          |  |  |            |      |                  |      |                                                                                                                                                              |               | DRAWN                      | WL                   | DATE<br>12/27/2017                                                                                                                                                                       | REV.  | 2     |
| P.W.H.T          | -      |        |                                          |          |  |  |            | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                          | 12/28<br>2017 | LINE NO.                   | 13-1"-CWR-20001-L01F |                                                                                                                                                                                          |       | SHEET |
| CATEGORY         | -      |        |                                          |          |  |  |            | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                         | DATE          | DWG. NO.                   | XG32-13-CWR-20001    |                                                                                                                                                                                          |       |       |
| 1 OF 3           |        |        |                                          |          |  |  |            |      |                  |      |                                                                                                                                                              |               |                            |                      |                                                                                                                                                                                          |       |       |

## FABRICATION MATERIALS

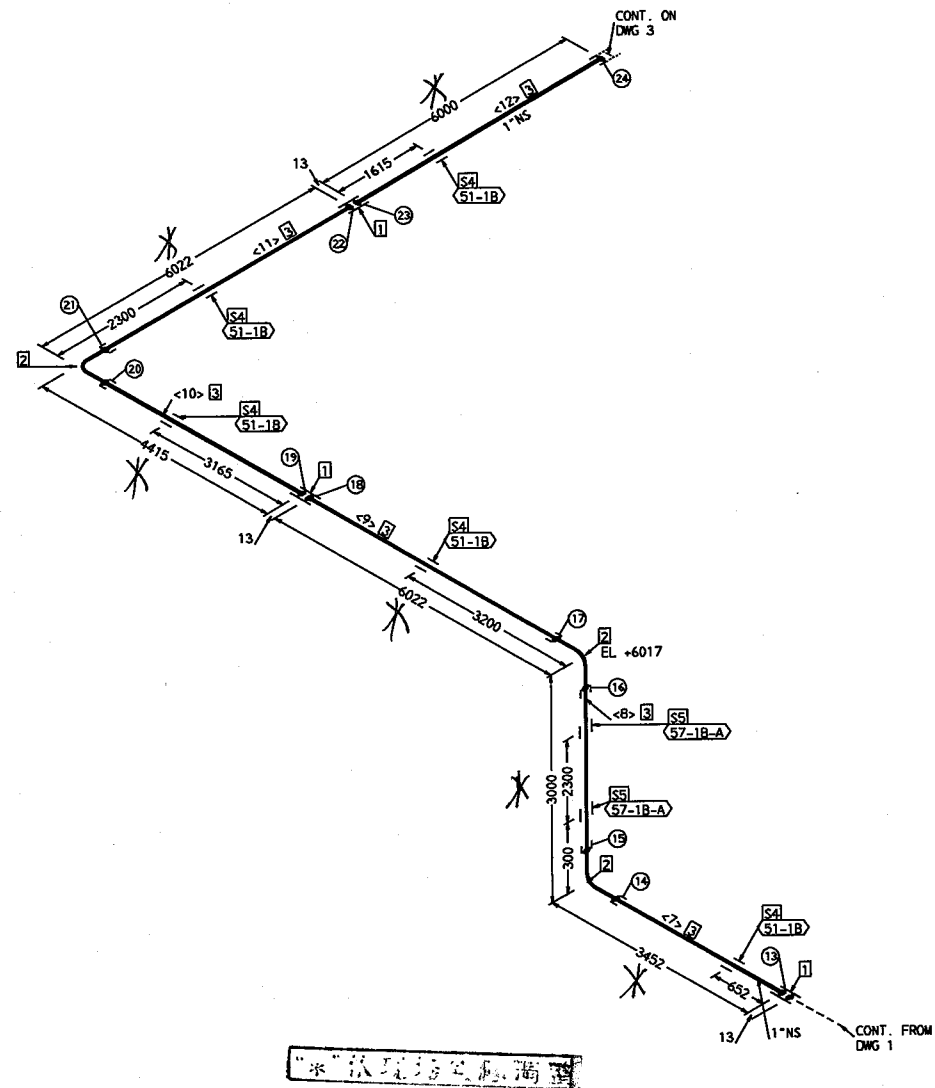
| PT<br>NO | COMPONENT DESCRIPTION                 | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|---------------------------------------|--------------|---------------|-----|
| 1        | FULL CPLG 3000# SW, SS A182-F304 ASME | 1            | SFA75A1000021 | 3   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME    | 1            | NEA75A1000021 | 3   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN) | ITEM CODE    | QTY   |
|----------|-------------------------------------------|--------------|--------------|-------|
| 3        | PIPE, SMLS. PE, S-40S, SS A312-TP304 ASME | 1            | PPA11A1A0022 | 28.8M |
| SUPPORTS |                                           |              |              |       |
| 4        | PIPE SUPPORT                              |              | 51-1B        | 5     |
| 5        | PIPE SUPPORT                              |              | 57-1B-A      | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <7>         | 3430          | 1            |         | <8>         | 2956          | 1            |         |
| <9>         | 6000          | 1            |         | <10>        | 4393          | 1            |         |
| <11>        | 6000          | 1            |         | <12>        | 6000          | 1            |         |



|                  |        |        |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
|------------------|--------|--------|------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| OPER. TEMP.      | 34     | °C     | PAINTING   | REF. DWG. | <div>  <b>腾龙芳烃(漳州)有限公司</b><br/>           Dragon Aromatics (Zhangzhou) Co., Ltd. (DMC)         </div> <div>  <b>京福工程技术有限公司</b><br/>           CTCL Beijing Co., Ltd.<br/>           北京福工程技术有限公司         </div> <div> <b>腾龙芳烃原油分离装置整改修复工程</b> </div> |  |  |  |  |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE       | PER. SPEC |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| DESIGN TEMP.     | 80     | °C     | INSULATION | NOTE      |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| DESIGN PRESS.    | 1.2    | MPa(g) |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| TEST PRESSURE    | 1.8    | MPa(g) |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| TEST FLUID       | HYDRO. |        |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| INSPECTION X-RAY | 5      | %      |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| P.W.H.T          | -      |        |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |
| CATEGORY         | -      |        |            |           |                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |

|      |                  |      |      |            |          |                      |       |        |
|------|------------------|------|------|------------|----------|----------------------|-------|--------|
| 2    | FOR CONSTRUCTION | CYS  | DXS  | 12/28 2017 | LINE NO. | 13-1"-CWR-20001-L01F | SHEET | 2 OF 3 |
| REV. | DESCRIPTION      | CHKD | APPR | DATE       | DWG. NO. | XG32-13-CWR-20001    |       |        |

## FABRICATION MATERIALS

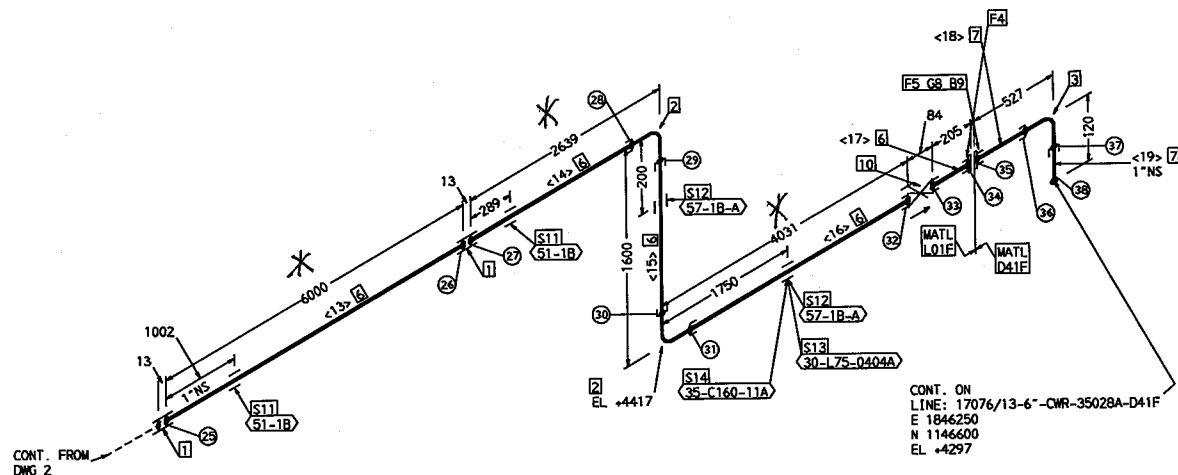
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 2   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 2   |
| 3        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 14.4M |
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 11       | PIPE SUPPORT                                                                                                       |              | S1-1B         | 2     |
| 12       | PIPE SUPPORT                                                                                                       |              | S7-1B-A       | 2     |
| 13       | PIPE SUPPORT                                                                                                       |              | 30-L75-0404A  | 1     |
| 14       | PIPE SUPPORT                                                                                                       |              | 35-C160-11A   | 1     |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS |
|-------------|-----------------------|------|---------|-------------|-----------------------|------|---------|
| <13>        | 6000                  | 1    |         | <14>        | 2617                  | 1    |         |
| <15>        | 1556                  | 1    |         | <16>        | 4009                  | 1    |         |
| <17>        | 200                   | 1    |         | <18>        | 500                   | 1    |         |
| <19>        | 98                    | 1    |         |             |                       |      |         |



"\*" 依现场实际调整

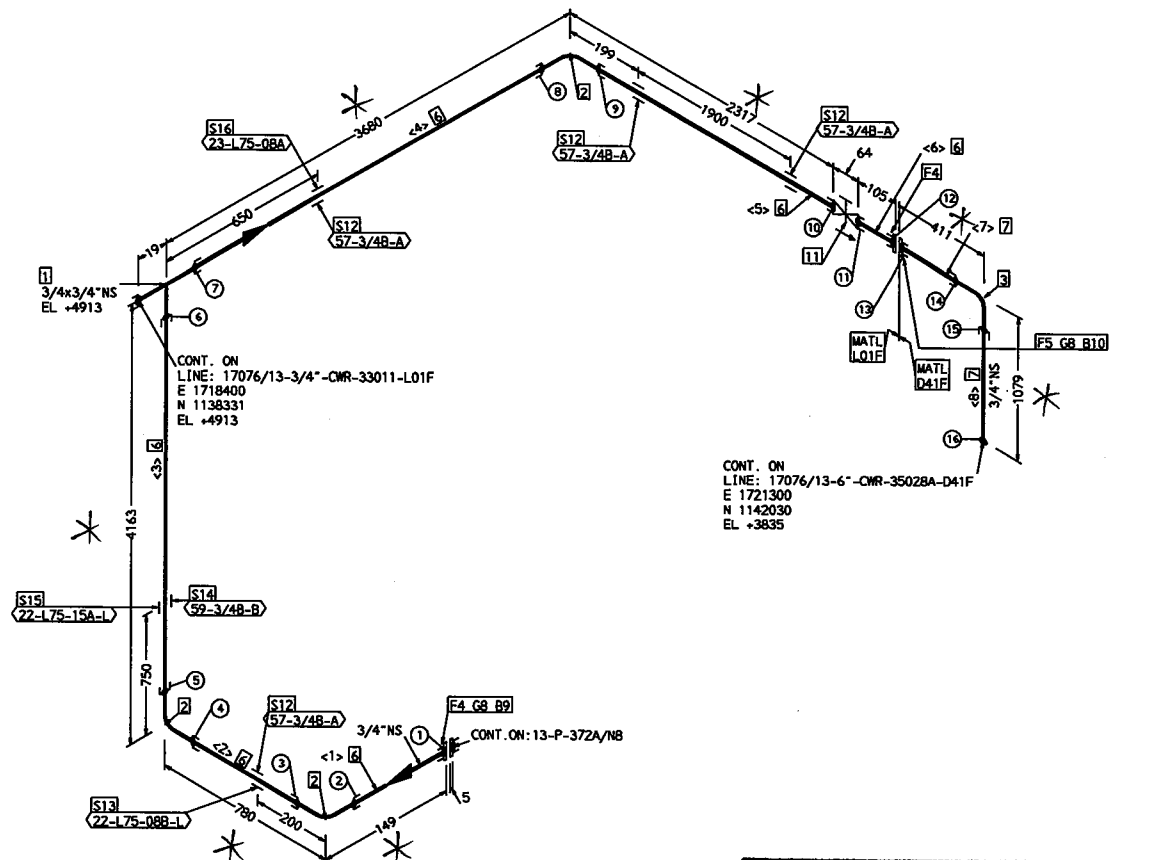
|                  |        |        |                |           |                                                                                                                                                                                                                                                                                                                                             |  |  |  |
|------------------|--------|--------|----------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34     | °C     | PAINTING       | REF. DWG. | <div>  <b>腾龙芳烃(漳州)有限公司</b><br/>           Tenglong Aromatics (Zhangzhou) Co., Ltd. (TAC)         </div> <div> <b>京福工程建设有限公司</b><br/>           CTCL Beijing Co., Ltd.<br/> <small>QUALITY IS OUR BUSINESS</small> </div> <div>FOR 腾龙芳烃原油分离装置检修工程</div> |  |  |  |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE PER. SPEC | NOTE      |                                                                                                                                                                                                                                                                                                                                             |  |  |  |
| DESIGN TEMP.     | 80     | °C     | INSULATION     |           | TITLE PIPING ISOMETRIC DWG                                                                                                                                                                                                                                                                                                                  |  |  |  |
| DESIGN PRESS.    | 1.2    | MPa(g) |                |           | PROJ. NO. 17E3166A UNIT 17076                                                                                                                                                                                                                                                                                                               |  |  |  |
| TEST PRESSURE    | 1.8    | MPa(g) |                |           | DRAWN WL DATE 12/27/2017 REV. 2                                                                                                                                                                                                                                                                                                             |  |  |  |
| TEST FLUID       | HYDRO. |        |                |           | LINE NO. 13-1-CWR-20001-L01F SHEET 3 OF 3                                                                                                                                                                                                                                                                                                   |  |  |  |
| INSPECTION X-RAY | 5      | %      |                |           | DWG. NO. XG32-13-CWR-20001                                                                                                                                                                                                                                                                                                                  |  |  |  |
| P.W.H.T          | -      |        |                |           |                                                                                                                                                                                                                                                                                                                                             |  |  |  |
| CATEGORY         | -      |        |                |           |                                                                                                                                                                                                                                                                                                                                             |  |  |  |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 125           | 3/4           |         | <2>         | 742           | 3/4           |         |
| <3>         | 4125          | 3/4           |         | <4>         | 3642          | 3/4           |         |
| <5>         | 2298          | 3/4           |         | <6>         | 100           | 3/4           |         |
| <7>         | 387           | 3/4           |         | <8>         | 1059          | 3/4           |         |



“\*”依现场实际调整

|                  |        |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                      |            |                            |                        |                                                                                                                                               |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |            |                  |      |  腾龙芳烃（漳州）有限公司<br>Tenglong Aromatics (Zhangzhou) Co., Ltd. (GMD) |            |                            |                        |                                                                                                                                               |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                                 |            |                            |                        |  京福工程勘察设计有限公司<br>CTCI Beijing Co., Ltd.<br>北京市昌平区北环路111号 |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION |                  |      |                                                                                                                                                      |            |                            |                        | FOR                                                                                                                                           |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |            |                  |      |                                                                                                                                                      |            |                            |                        |                                                                                                                                               |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |            |                  |      |                                                                                                                                                      |            | TITLE PIPING ISOMETRIC DWG |                        |                                                                                                                                               |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                      | PROJ. NO.  | 17E3166A                   | UNIT                   | 17076                                                                                                                                         |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |            |                  |      |                                                                                                                                                      | DRAWN      | WL                         | DATE 12/18/2017        | REV. 2                                                                                                                                        |        |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                  | 12/15/2017 | LINE NO.                   | 13-3/4"-CWR-33010-L01F |                                                                                                                                               | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                 | DATE       | DWG. NO.                   | XG32-13-CWR-33010      |                                                                                                                                               | 1 OF 1 |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |[illegible]

**"\*"依现场实际调整**

|                  |        |        |                                          |           |            |  |  |      |                                                                                                                                                              |           |                            |                    |                                                                                                                                            |   |
|------------------|--------|--------|------------------------------------------|-----------|------------|--|--|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           | REF. DWG.  |  |  |      |  腾龙芳烃(漳州)有限公司<br>Beijing Aromatic Chemicals (Zhangzhou) Co., Ltd. (BAC) |           |                            |                    |                                                                                                                                            |   |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |            |  |  |      | NOTE                                                                                                                                                         |           |                            |                    |  京通工程建设有限公司<br>CTCL Beijing Co., Ltd.<br>北京京通工程咨询有限公司 |   |
| DESIGN TEMP.     | 80     | °C     |                                          |           | INSULATION |  |  |      |                                                                                                                                                              |           |                            |                    | FOR                                                                                                                                        |   |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |            |  |  |      | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                             |           |                            |                    |                                                                                                                                            |   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |            |  |  |      |                                                                                                                                                              |           | TITLE PIPING ISOMETRIC DWG |                    |                                                                                                                                            |   |
| TEST FLUID       | HYDRO. |        |                                          |           |            |  |  |      |                                                                                                                                                              | PROJ. NO. | 17E3166A                   | UNIT               | 17076                                                                                                                                      |   |
| INSPECTION X-RAY | 5      | %      |                                          |           |            |  |  |      |                                                                                                                                                              | DRAWN     | WL                         | DATE<br>12/18/2017 | REV.                                                                                                                                       | 2 |
| P.W.H.T          | -      |        |                                          |           |            |  |  | 2    | FOR CONSTRUCTION                                                                                                                                             | CYS       | DKS                        | 12/15/2017         | SHEET                                                                                                                                      |   |
| CATEGORY         | -      |        |                                          |           |            |  |  | REV. | DESCRIPTION                                                                                                                                                  | CHKD      | APPR                       | DATE               | 1 OF 1                                                                                                                                     |   |
|                  |        |        |                                          |           |            |  |  |      |                                                                                                                                                              | DWG. NO.  | XG32-13-CWR-33011          |                    |                                                                                                                                            |   |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                 | N.S. (IN) | ITEM CODE     | QTY   |
|-------|---------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-40, CS A106-B ASME  | 6         | PPA1415A40021 | 18.0M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME      | 6 x 1     | SHA7511000021 | 2     |
| 3     | HALF CPLG 3000# SW, CS A105 ASME      | 6 x 3/4   | SHA7511000021 | 1     |
| 4     | CAP, SMLS, BW, S-40, CS A234-WPB ASME | 6         | NCA1621A40019 | 1     |

## ERECTION MATERIALS

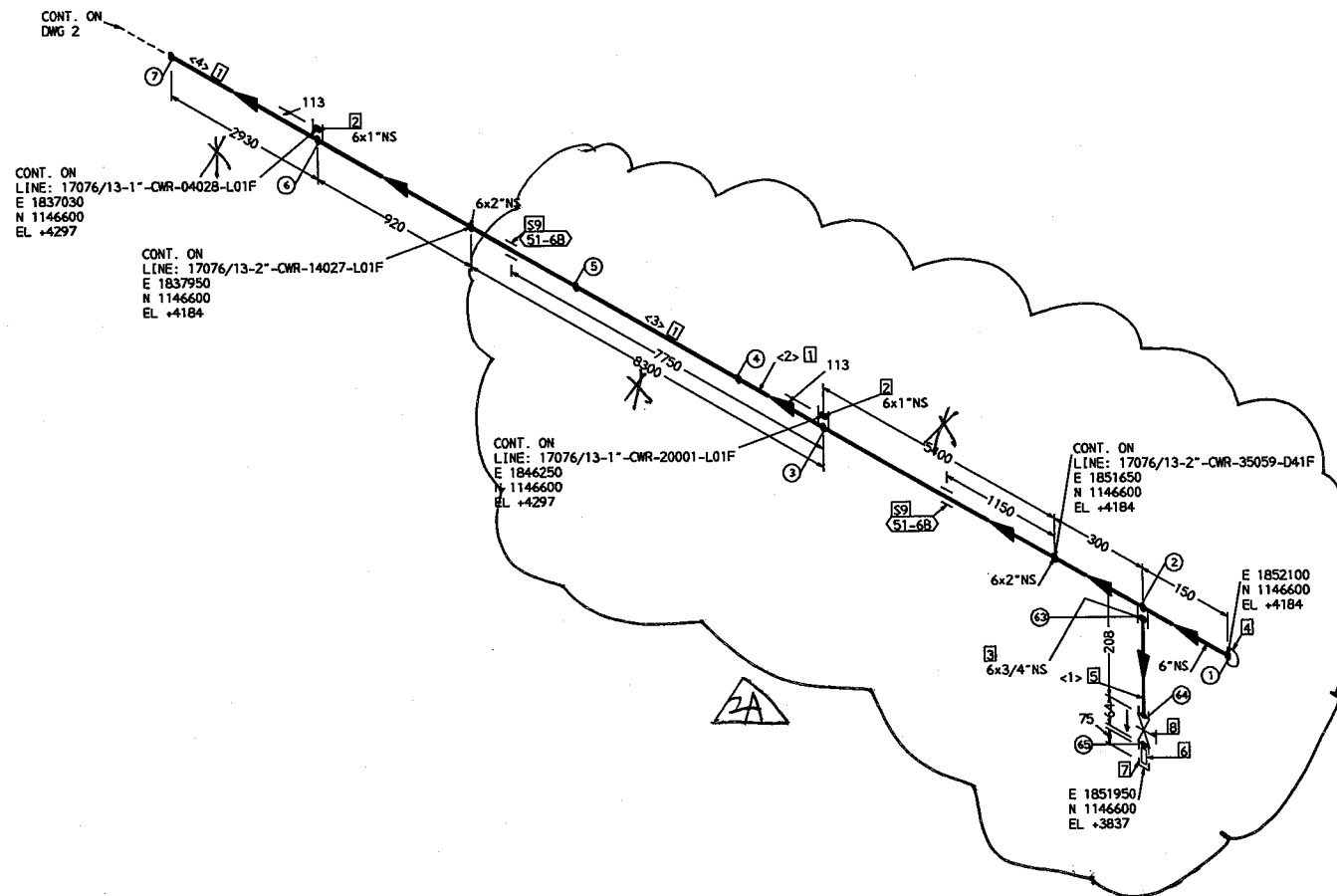
| PT NO | COMPONENT DESCRIPTION                                                                       | N.S. (IN) | ITEM CODE     | QTY  |
|-------|---------------------------------------------------------------------------------------------|-----------|---------------|------|
| 5     | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                        | 3/4       | PPA1115A80021 | 0.1M |
| 6     | PIPE NIPPLE, SMLS, POE/TOE, S-80, CS A106-B L=75MM (3"), ASME                               | 3/4       | PNA1D15A80321 | 1    |
| 7     | CAP, 3000# FNPT, CS A105 ASME                                                               | 3/4       | NCA7211000021 | 1    |
| 8     | GATE VALVE, 800# SW, CS A105 BODY 13CR AND HARD FACED TR API TR #B SOLID WG OS&Y BB API-602 | 3/4       | VGA8512000111 | 1    |

## SUPPORTS

|   |              |       |   |
|---|--------------|-------|---|
| 9 | PIPE SUPPORT | 51-68 | 2 |
|---|--------------|-------|---|

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|------|---------|----------|-----------------|------|---------|
| <1>      | 100             | 3/4  |         | <2>      | 6000            | 6    |         |
| <3>      | 6000            | 6    |         | <4>      | 6000            | 6    |         |



“\*” 依现场实际调整

|                  |        |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                |            |                            |                       |                 |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|-----------|------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------|-----------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  | REF. DWG. |      |                  |      | <div><div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (CTAC)</div><div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>91110101010101010101</div></div> FOR 腾龙芳烃原油分离装置整改修复工程 |            |                            |                       |                 |      |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |           | NOTE |                  |      |                                                                                                                                                                                                                                                                                                                                                                |            |                            |                       |                 |      |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                |            |                            |                       |                 |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                |            |                            |                       |                 |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPS</div><div>TYPE</div></div> |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                |            | TITLE PIPING ISOMETRIC DWG |                       |                 |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                | PROJ. NO.  | 17E3166A                   | UNIT                  | 17076           |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                            | 12/28 2017 | DRAWN                      | WL                    | DATE 12/27/2017 | REV. | 2A     |
| P.W.H.T          | -      |        |                                          |           |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                            | 12/15 2017 | LINE NO.                   | 13-6"-CWR-35028A-D41F |                 |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                           | DATE       | DWG. NO.                   | XG32-13-CWR-35028A    |                 |      | 1 OF 9 |

腾龙芳烃(漳州)有限公司  
Tenglong Aromatics (Zhangzhou) Co., Ltd. (CTCL)

京福工程建设有限公司  
CTCI Beijing Co., Ltd.  
(91110101010101010101)

FOR  
腾龙芳烃原油分离装置整改修复工程

TITLE  
PIPING ISOMETRIC DWG

PROJ. NO. 17E3166A UNIT 17076

DRAWN WL DATE 12/27/2017 REV. 2A

LINE NO. 13-6-CWR-35028A-D41F SHEET

DWG. NO. XG32-13-CWR-35028A 1 OF 9

## FABRICATION MATERIALS

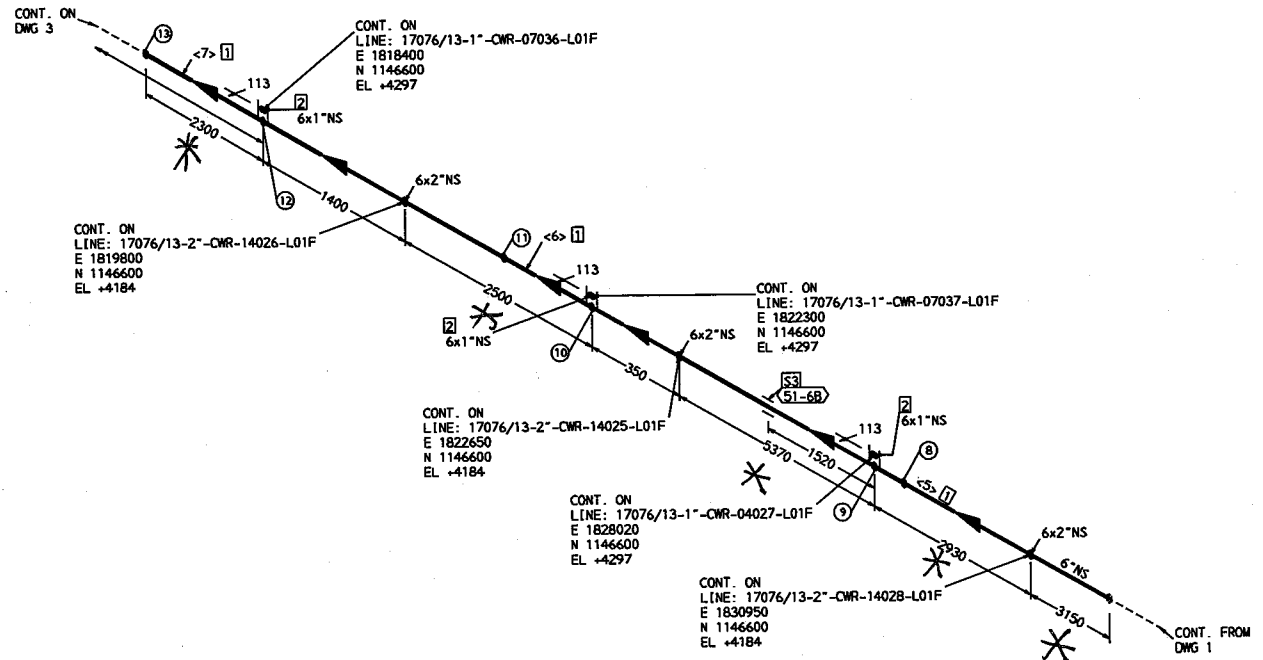
| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS. BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 18.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 3     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 3        | PIPE SUPPORT          |              | 51-6B     | 1   |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S.<br>(IN) | REMARKS |
|-------------|-----------------------|--------------|---------|
| <5>         | 6000                  | 6            |         |
| <7>         | 6000                  | 6            |         |



\* 依现场实际调整

|                     |            |             |           |                                                                                                                                                                 |  |  |  |
|---------------------|------------|-------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.         | 34 °C      | PAINTING    | REF. DWG. | <div> <p>腾龙芳烃(漳州)有限公司<br/>Brigade Armatex (Zhangzhou) Co., Ltd. (CMC)</p> <p>京龍工程建設有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-65887788 FAX 010-65881191</p> </div> |  |  |  |
| OPER. PRESS.        | 0.3 MPa(g) | CODE        | NOTE      |                                                                                                                                                                 |  |  |  |
| DESIGN TEMP.        | 80 °C      | PER. SPEC   |           |                                                                                                                                                                 |  |  |  |
| DESIGN PRESS.       | 1.2 MPa(g) | INSULATION  |           |                                                                                                                                                                 |  |  |  |
| TEST PRESSURE       | 1.8 MPa(g) | NPS<br>TYPE |           |                                                                                                                                                                 |  |  |  |
| TEST FLUID          | HYDRO.     |             |           |                                                                                                                                                                 |  |  |  |
| INSPECTION<br>X-RAY | 5 %        |             |           |                                                                                                                                                                 |  |  |  |
| P.W.H.T             | -          |             |           |                                                                                                                                                                 |  |  |  |
| CATEGORY            | -          |             |           |                                                                                                                                                                 |  |  |  |

 腾龙芳烃(漳州)有限公司  
Brigade Armatex (Zhangzhou) Co., Ltd. (CMC)

 京龍工程建設有限公司  
CTCI Beijing Co., Ltd.  
010-65887788 FAX 010-65881191

FOR 腾龙芳烃凝析油分离装置整改修复工程

TITLE PIPING ISOMETRIC DWG

|           |                       |       |            |
|-----------|-----------------------|-------|------------|
| PROJ. NO. | 17E3166A              | UNIT  | 17076      |
| DRAWN     | WL                    | DATE  | 12/27/2017 |
| LINE NO.  | 13-6"-CWR-35028A-D41F | REV.  | 2A         |
| DWG. NO.  | XG32-13-CWR-35028A    | SHEET | 2 OF 9     |

## FABRICATION MATERIALS

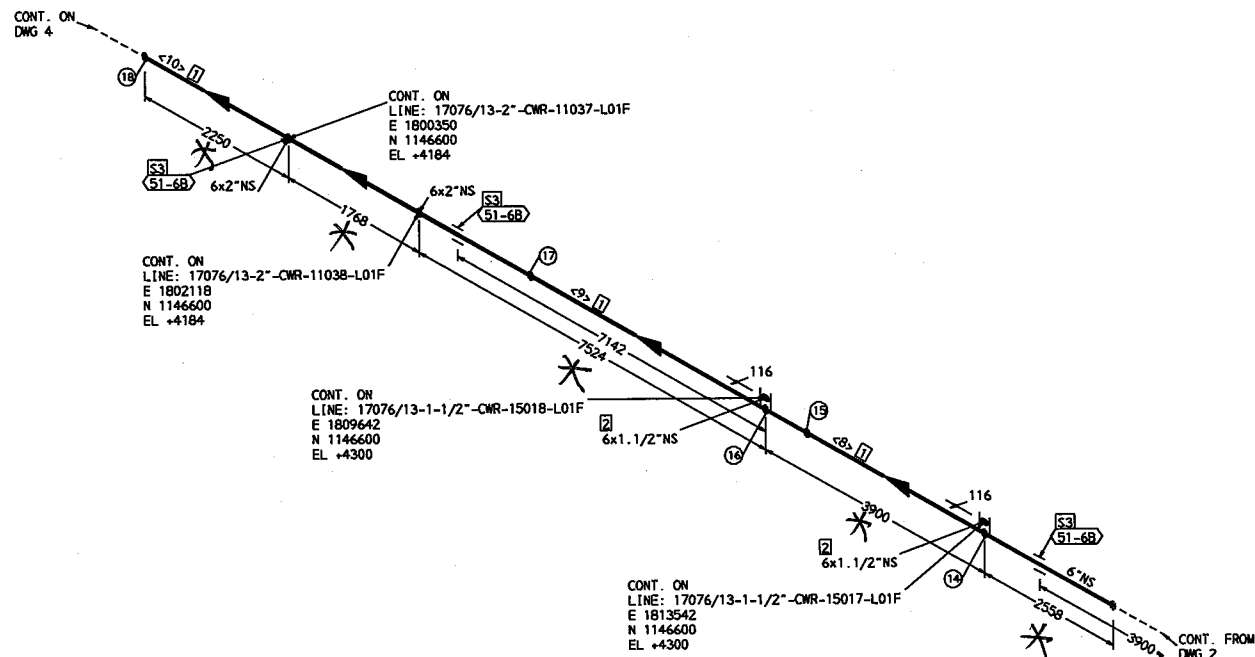
| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS. BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 18.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2    | SHA7511000021 | 2     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 3        | PIPE SUPPORT          | 51-6B        |           | 3   |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S.<br>(IN) | REMARKS |
|-------------|-----------------------|--------------|---------|
| <8>         | 6000                  | 6            |         |
| <10>        | 6000                  | 6            |         |



\* 依现场实际调整

|                     |        |        |             |           |  |  |                            |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      |               |            |                       |       |        |
|---------------------|--------|--------|-------------|-----------|--|--|----------------------------|------|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|-----------------------|-------|--------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |           |  |  | REF. DWG.                  |      |                  |      | <div><div></div><div>腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (SHAC)</div></div> <div><div></div><div>京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京世纪伟业工程技术有限公司</div></div> <div>FOR 腾龙芳烃凝析油分离装置整改修复工程</div> |               |            |                       |       |        |
| OPER. PRESS.        | 0.3    | MPa(g) | CODE        | PER. SPEC |  |  |                            |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      |               |            |                       | NOTE  |        |
| DESIGN TEMP.        | 80     | °C     | INSULATION  |           |  |  | TITLE PIPING ISOMETRIC DWG |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      |               |            |                       |       |        |
| DESIGN PRESS.       | 1.2    | MPa(g) |             |           |  |  |                            |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      |               |            |                       |       |        |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |           |  |  |                            |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      | PROJ. NO.     | 17B3166A   | UNIT                  | 17076 |        |
| TEST FLUID          | HYDRO. |        |             |           |  |  |                            |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                      | DATE          | 12/27/2017 | REV.                  | 2A    |        |
| INSPECTION<br>X-RAY | 5      | %      |             |           |  |  |                            | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                                                  | 12/28<br>2017 | DRAWN      | WL                    |       |        |
| P.W.H.T             | -      |        |             |           |  |  |                            | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                                                  | 12/15<br>2017 | LINE NO.   | 13-6"-CWR-35028A-D41F |       | SHEET  |
| CATEGORY            | -      |        |             |           |  |  |                            | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                                                                 | DATE          | DWG. NO.   | XG32-13-CWR-35028A    |       | 3 OF 9 |

## FABRICATION MATERIALS

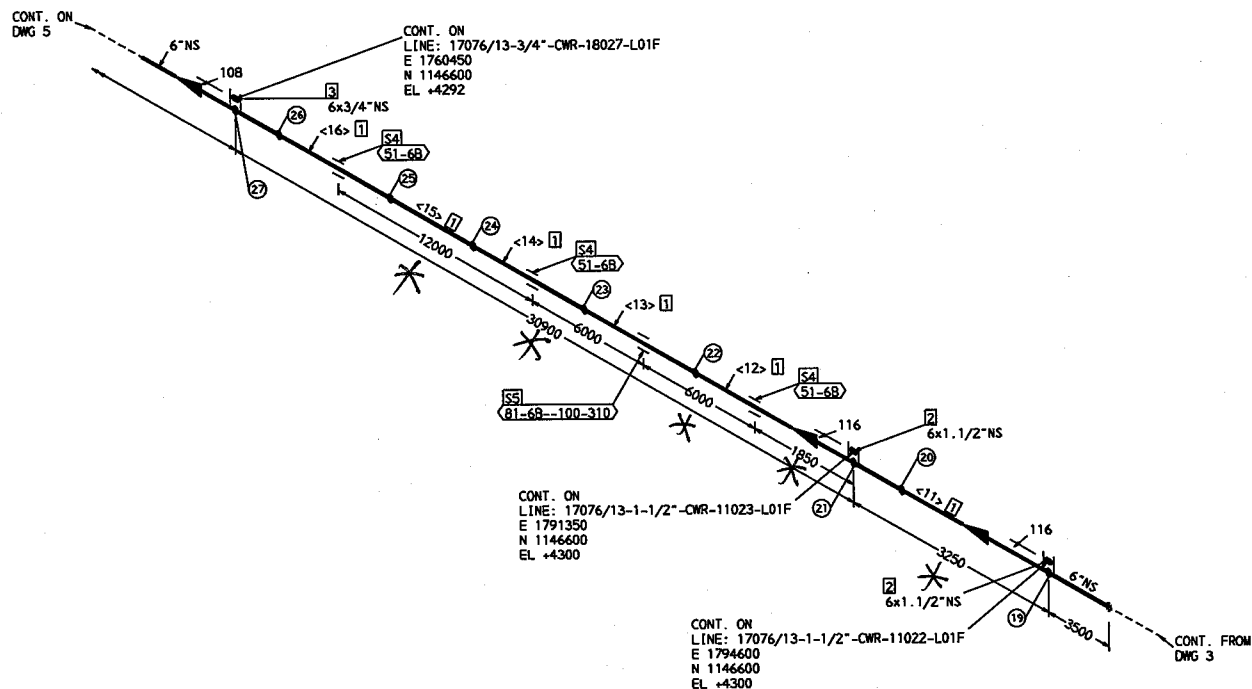
| PT NO | COMPONENT DESCRIPTION                | N.S. (IN) | ITEM CODE     | QTY   |
|-------|--------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6         | PPA1415A40021 | 39.0M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2 | SHA7511000021 | 2     |
| 3     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 3/4   | SHA7511000021 | 1     |

## ERECTION MATERIALS

| PT NO | COMPONENT DESCRIPTION | N.S. (IN) | ITEM CODE       | QTY |
|-------|-----------------------|-----------|-----------------|-----|
| 4     | PIPE SUPPORT          |           | 51-68           | 3   |
| 5     | PIPE SUPPORT          |           | 81-68---100-310 | 1   |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <11>     | 6000       | 6         |         | <12>     | 6000       | 6         |         |
| <13>     | 6000       | 6         |         | <14>     | 6000       | 6         |         |
| <15>     | 6000       | 6         |         | <16>     | 6000       | 6         |         |



“\*” 依现场实际调整

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                       |                            |          |                       |                 |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|-----------------------|-----------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatic Co., Ltd. (Zhangzhou) Co., Ltd. (Zhangzhou)</div> <div> 京福工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>北京福源工程技术有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |                            |          |                       |                 |      |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                                                                                                                                                                                                                                       |                            |          |                       |                 |      |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                       |                            |          |                       |                 |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                       |                            |          |                       |                 |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                       | TITLE PIPING ISOMETRIC DWG |          |                       |                 |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                       | PROJ. NO.                  | 17E3166A | UNIT                  | 17076           |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                   | 12/28 2017                 | DRAWN    | WL                    | DATE 12/27/2017 | REV. | 2A     |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                   | 12/15 2017                 | LINE NO. | 13-6"-CWR-35028A-D41F |                 |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                                  | DATE                       | DWG. NO. | XG32-13-CWR-35028A    |                 |      | 4 OF 9 |

## FABRICATION MATERIALS

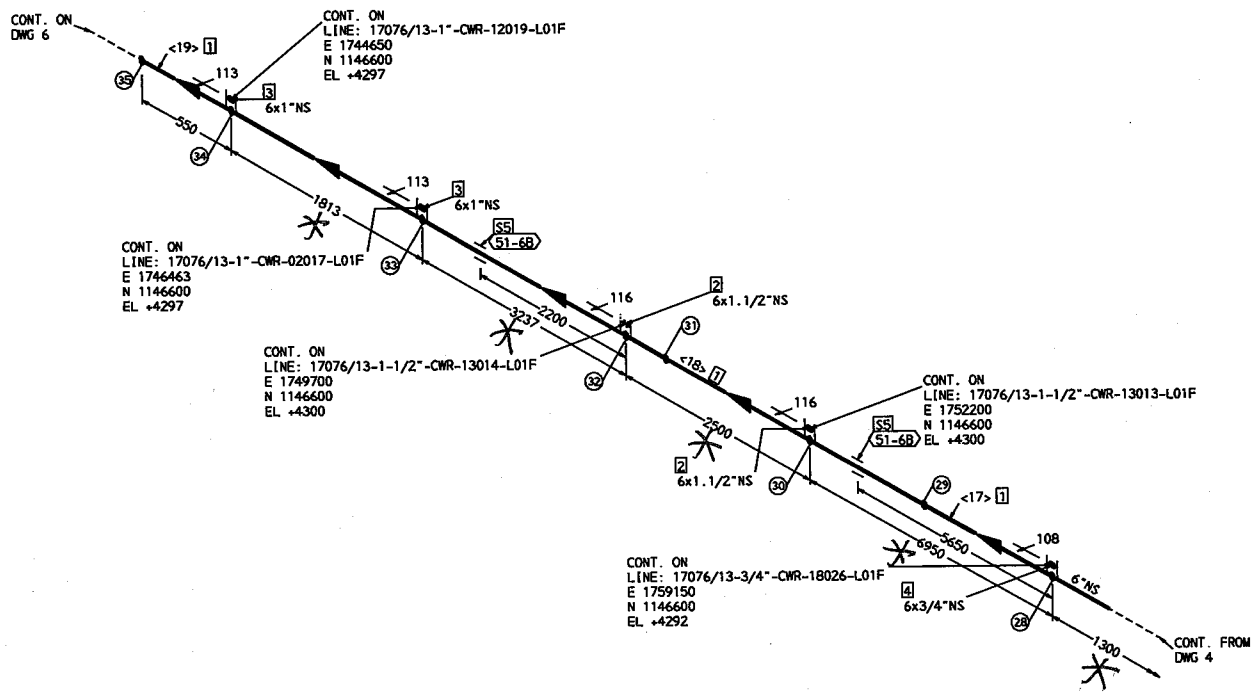
| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 15.1M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2    | SHA7511000021 | 2     |
| 3        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 2     |
| 4        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 3/4      | SHA7511000021 | 1     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 5        | PIPE SUPPORT          |              | 51-68     | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <17>        | 6000          | 6            |         | <18>        | 6000          | 6            |         |
| <19>        | 6000          | 6            |         |             |               |              |         |



\*\* 依现场实际调整

|                     |        |        |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                 |               |           |                       |                    |       |        |
|---------------------|--------|--------|-------------|-----------|--|--|-----------|------|------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|-----------------------|--------------------|-------|--------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |           |  |  | REF. DWG. |      |                  |      | <div><div>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic Co., Ltd. (Zhangzhou) Co., Ltd. (DACS)</div></div> <div><div>京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京京福工程咨询有限公司</div></div> <div>FOR</div> <div>腾龙芳烃原油分离装置整改修复工程</div> |               |           |                       |                    |       |        |
| OPER. PRESS.        | 0.3    | MPa(g) | CODE        | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                 |               |           |                       |                    |       |        |
| DESIGN TEMP.        | 80     | °C     | INSULATION  |           |  |  |           |      |                  |      | TITLE PIPING ISOMETRIC DWG                                                                                                                                                                                                                                                                                                                                                                      |               |           |                       |                    |       |        |
| DESIGN PRESS.       | 1.2    | MPa(g) |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                 |               |           |                       |                    |       |        |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                 |               | PROJ. NO. | 17E3166A              | UNIT               | 17076 |        |
| TEST FLUID          | HYDRO. |        |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                 |               | DRAWN     | WL                    | DATE<br>12/27/2017 | REV.  | 2A     |
| INSPECTION<br>X-RAY | 5      | %      |             |           |  |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                                             | 12/28<br>2017 | LINE NO.  | 13-6"-CWR-35028A-D41F |                    |       | SHEET  |
| P.W.H.T             | -      |        |             |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                                                             | 12/15<br>2017 | DWG. NO.  | XG32-13-CWR-35028A    |                    |       | 5 OF 9 |
| CATEGORY            | -      |        |             |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                                                            | DATE          |           |                       |                    |       |        |

## FABRICATION MATERIALS

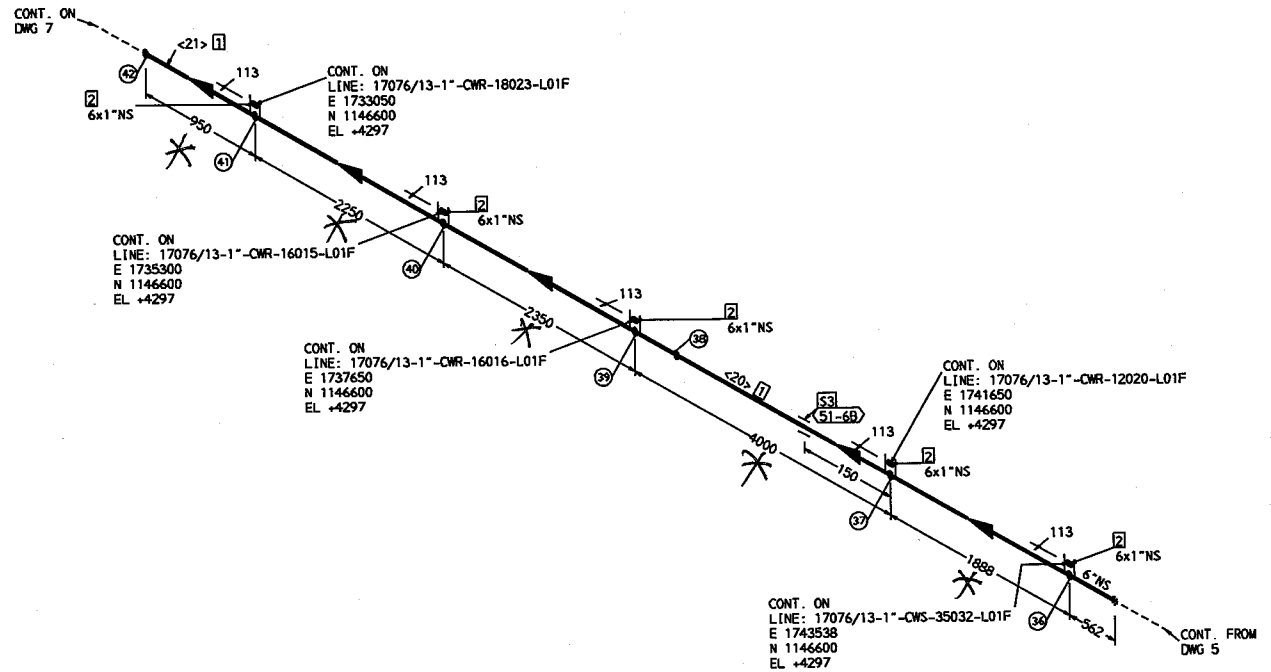
| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 12.0W |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 5     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 3        | PIPE SUPPORT          |              | 51-68     | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <20>        | 6000          | 6            |         | <21>        | 6000          | 6            |         |



\* 依现场实际调整

|                  |        |        |                                          |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          |                            |            |          |                       |                 |      |       |
|------------------|--------|--------|------------------------------------------|-----------|-----------|--|------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|----------|-----------------------|-----------------|------|-------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           | REF. DWG. |  |      |                  | <div> 腾龙芳烃(漳州)有限公司<br/>Tenglong Aromatics (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京福工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>北京福安工程技术有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |                            |            |          |                       |                 |      |       |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          |                            |            |          | NOTE                  |                 |      |       |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          |                            |            |          |                       |                 |      |       |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          |                            |            |          |                       |                 |      |       |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          | TITLE PIPING ISOMETRIC DWG |            |          |                       |                 |      |       |
| TEST FLUID       | HYDRO. |        |                                          |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          | PROJ. NO.                  | 17E3166A   | UNIT     | 17076                 |                 |      |       |
| INSPECTION X-RAY | 5      | %      |                                          |           |           |  | 2A   | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                      | DXS                        | 12/28 2017 | DRAWN    | WL                    | DATE 12/27/2017 | REV. | 2A    |
| P.W.H.T          | -      |        |                                          |           |           |  | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                      | DXS                        | 12/15 2017 | LINE NO. | 13-6"-CWR-35028A-D41F |                 |      | SHEET |
| CATEGORY         | -      |        |                                          |           |           |  | REV. | DESCRIPTION      | CHKD                                                                                                                                                                                                                                                                                                                                                     | APPR                       | DATE       | DWG. NO. | XG32-13-CWR-35028A    |                 |      |       |
| 6 OF 9           |        |        |                                          |           |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                          |                            |            |          |                       |                 |      |       |

## FABRICATION MATERIALS

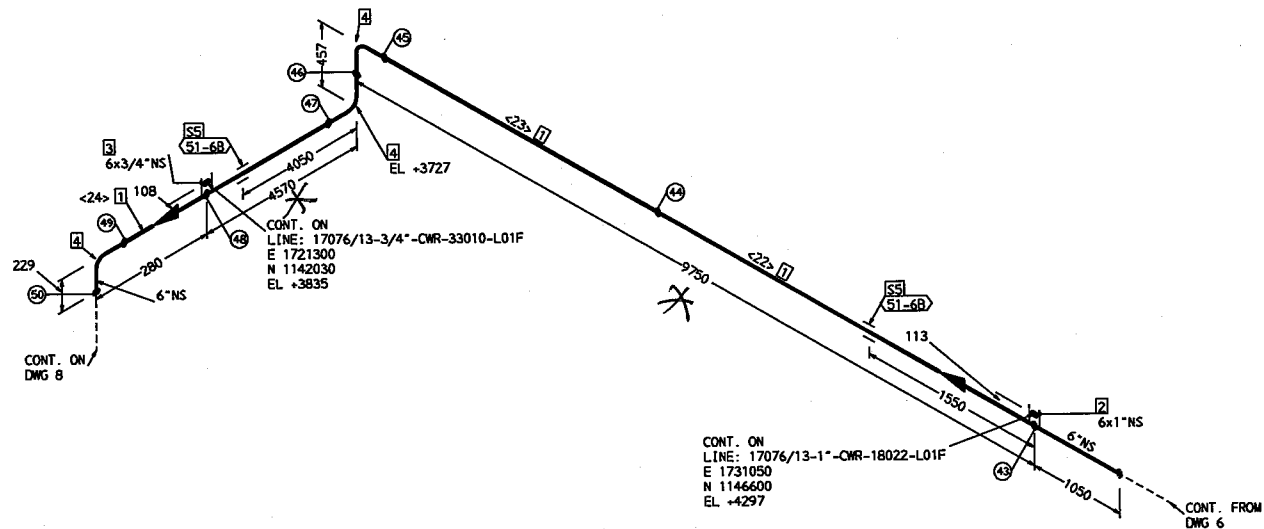
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|-----------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME    | 6            | PPA1415A40021 | 15.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME        | 6 x 1        | SHA7511000021 | 1     |
| 3        | HALF CPLG 3000# SW, CS A105 ASME        | 6 x 3/4      | SHA7511000021 | 1     |
| 4        | 90 ELL SMLS, BW, S-40, CS A234-WPB ASME | 6            | NEA1621A40019 | 3     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 5        | PIPE SUPPORT          |              | 51-68     | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <22>        | 6000          | 6            |         | <23>        | 4571          | 6            |         |
| <24>        | 4392          | 6            |         |             |               |              |         |



“\*”依现场实际调整

|                  |            |                |           |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
|------------------|------------|----------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------|------------|
| OPER. TEMP.      | 34 °C      | PAINTING       | REF. DWG. | <div>  <b>腾龙芳烃(漳州)有限公司</b><br/>           Tenglong Aromatic (Zhangzhou) Co., Ltd. (DMC)         </div> <div> <b>京福工程建设有限公司</b><br/> <b>CTCI Beijing Co., Ltd.</b><br/>           010-64617800/11010111         </div> <div>FOR 腾龙芳烃凝析油分离装置技改修复工程</div> |                       |      |            |
| OPER. PRESS.     | 0.3 MPa(g) | CODE PER. SPEC | NOTE      |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
| DESIGN TEMP.     | 80 °C      | INSULATION     |           |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
| DESIGN PRESS.    | 1.2 MPa(g) |                |           |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
| TEST PRESSURE    | 1.8 MPa(g) | NPS TYPE       |           |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
| TEST FLUID       | HYDRO.     |                |           |                                                                                                                                                                                                                                                                                                                                             |                       |      |            |
| INSPECTION X-RAY | 5 %        |                | 2A        | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                            | CYS                   | DXS  | 12/28 2017 |
| P.W.H.T          | -          |                | 2         | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                            | CYS                   | DXS  | 12/15 2017 |
| CATEGORY         | -          |                | REV.      | DESCRIPTION                                                                                                                                                                                                                                                                                                                                 | CHKD                  | APPR | DATE       |
|                  |            |                |           | DWG. NO.                                                                                                                                                                                                                                                                                                                                    | XG32-13-CWR-35028A    |      |            |
|                  |            |                |           | PROJ. NO.                                                                                                                                                                                                                                                                                                                                   | 17E3166A              | UNIT | 17076      |
|                  |            |                |           | DRAWN                                                                                                                                                                                                                                                                                                                                       | WL                    | DATE | 12/27/2017 |
|                  |            |                |           | LINE NO.                                                                                                                                                                                                                                                                                                                                    | 13-6"-CWR-35028A-D41F |      |            |
|                  |            |                |           | SHEET                                                                                                                                                                                                                                                                                                                                       | 7 OF 9                |      |            |

| ERECTION MATERIALS |

| CUT PIPE LENGTH |

**“\*”依现场实际调整**

|                  |        |        |             |           |  |           |            |  |  |  |                                                                                                                                                    |                            |                       |                    |                                                                          |       |        |  |
|------------------|--------|--------|-------------|-----------|--|-----------|------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------|--------------------|--------------------------------------------------------------------------|-------|--------|--|
| OPER. TEMP.      | 34     | °C     | PAINTING    |           |  | REF. DWG. |            |  |  |  |  腾龙芳烃（漳州）有限公司<br>Dragon Aromatics (Zhangzhou) Co., Ltd. (CHN) |                            |                       |                    |                                                                          |       |        |  |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE        | PER. SPEC |  |           |            |  |  |  | NOTE                                                                                                                                               |                            |                       |                    | 京福工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>CHINA PETROLEUM & CHEMICAL CORP. |       |        |  |
| DESIGN TEMP.     | 80     | °C     |             |           |  |           | INSULATION |  |  |  |                                                                                                                                                    |                            |                       |                    | FOR                                                                      |       |        |  |
| DESIGN PRESS.    | 1.2    | MPa(g) |             |           |  |           |            |  |  |  |                                                                                                                                                    |                            |                       |                    |                                                                          |       |        |  |
| TEST PRESSURE    | 1.8    | MPa(g) | NPS<br>TYPE |           |  |           |            |  |  |  |                                                                                                                                                    | TITLE PIPING ISOMETRIC DWG |                       |                    |                                                                          |       |        |  |
| TEST FLUID       | HYDRO. |        |             |           |  |           |            |  |  |  |                                                                                                                                                    | PROJ. NO.                  | 17E3166A              | UNIT               | 17076                                                                    |       |        |  |
| INSPECTION X-RAY | 5      | %      |             |           |  |           |            |  |  |  |                                                                                                                                                    | DRAWN                      | WL                    | DATE<br>12/27/2017 | REV.                                                                     | 2A    |        |  |
| P.W.H.T          | -      |        |             |           |  |           |            |  |  |  |                                                                                                                                                    | LINE NO.                   | 13-6"-CWR-35028A-D41F |                    |                                                                          | SHEET |        |  |
| CATEGORY         | -      |        |             |           |  |           |            |  |  |  | DWG. NO.                                                                                                                                           | XG32-13-CWR-35028A         |                       |                    |                                                                          |       |        |  |
|                  |        |        |             |           |  |           |            |  |  |  | REV.                                                                                                                                               | DESCRIPTION                |                       | CHKD               | APPR                                                                     | DATE  | 8 OF 9 |  |

| ERECTION MATERIALS || CUT PIPE LENGTH |

This technical drawing illustrates a proposed road layout with the following details:

- Top Left Section:** A vertical segment with a length of 2500 and a horizontal offset of 143. It connects to a horizontal segment labeled "6x6" NS EL -3766" with another 143 offset.
- Top Right Section:** A long segment with a length of 4680, sloping downwards at a 45-degree angle. It terminates at a point with an elevation of "EL -1266".
- Central Section:** A horizontal segment with a width of 400, sloping upwards at a 45-degree angle. It connects to a vertical segment with a length of 400.
- Bottom Section:**
  - A vertical segment labeled "CONT. FROM DWG B" with a length of 1732, sloping upwards at a 6-degree angle. It features a stationing marker "F3 G4 B5" and a point labeled "53".
  - A horizontal segment with a length of 4200, sloping upwards at a 6-degree angle. It includes a stationing marker "28" and a point labeled "54".
  - A vertical segment with a length of 229, sloping upwards at a 6-degree angle. It includes a stationing marker "29" and a point labeled "55".
- Other Annotations:**
  - A point labeled "56" is located near the bottom right.
  - A point labeled "57" is located near the top right.
  - A point labeled "58" is located near the bottom right.
  - A point labeled "59" is located near the bottom right.
  - A point labeled "60" is located near the bottom right.
  - A point labeled "61" is located near the bottom right.
  - A point labeled "62" is located near the bottom right.
  - A point labeled "63" is located near the bottom right.
  - A point labeled "64" is located near the bottom right.
  - A point labeled "65" is located near the bottom right.
  - A point labeled "66" is located near the bottom right.
  - A point labeled "67" is located near the bottom right.
  - A point labeled "68" is located near the bottom right.
  - A point labeled "69" is located near the bottom right.
  - A point labeled "70" is located near the bottom right.
  - A point labeled "71" is located near the bottom right.
  - A point labeled "72" is located near the bottom right.
  - A point labeled "73" is located near the bottom right.
  - A point labeled "74" is located near the bottom right.
  - A point labeled "75" is located near the bottom right.
  - A point labeled "76" is located near the bottom right.
  - A point labeled "77" is located near the bottom right.
  - A point labeled "78" is located near the bottom right.
  - A point labeled "79" is located near the bottom right.
  - A point labeled "80" is located near the bottom right.
  - A point labeled "81" is located near the bottom right.
  - A point labeled "82" is located near the bottom right.
  - A point labeled "83" is located near the bottom right.
  - A point labeled "84" is located near the bottom right.
  - A point labeled "85" is located near the bottom right.
  - A point labeled "86" is located near the bottom right.
  - A point labeled "87" is located near the bottom right.
  - A point labeled "88" is located near the bottom right.
  - A point labeled "89" is located near the bottom right.
  - A point labeled "90" is located near the bottom right.
  - A point labeled "91" is located near the bottom right.
  - A point labeled "92" is located near the bottom right.
  - A point labeled "93" is located near the bottom right.
  - A point labeled "94" is located near the bottom right.
  - A point labeled "95" is located near the bottom right.
  - A point labeled "96" is located near the bottom right.
  - A point labeled "97" is located near the bottom right.
  - A point labeled "98" is located near the bottom right.
  - A point labeled "99" is located near the bottom right.
  - A point labeled "100" is located near the bottom right.

**“\*”依现场实际调整**

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            |                            |                       |                 |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------|-----------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京唐工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>京唐港石化工程(北京)有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |            |                            |                       |                 |       |        |
| OPER. PRESS.     | 0.3    | MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            |                            |                       | NOTE            |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            |                            |                       |                 |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            |                            |                       |                 |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            | TITLE PIPING ISOMETRIC DWG |                       |                 |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                           |            | PROJ. NO.                  | 17B3166A              | UNIT            | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                       | 12/28 2017 | DRAWN                      | WL                    | DATE 12/27/2017 | REV.  | 2A     |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                       | 12/15 2017 | LINE NO.                   | 13-6"-CWR-35028A-D41F |                 |       | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                      | DATE       | DWG. NO.                   | XG32-13-CWR-35028A    |                 |       | 9 OF 9 |

## FABRICATION MATERIALS

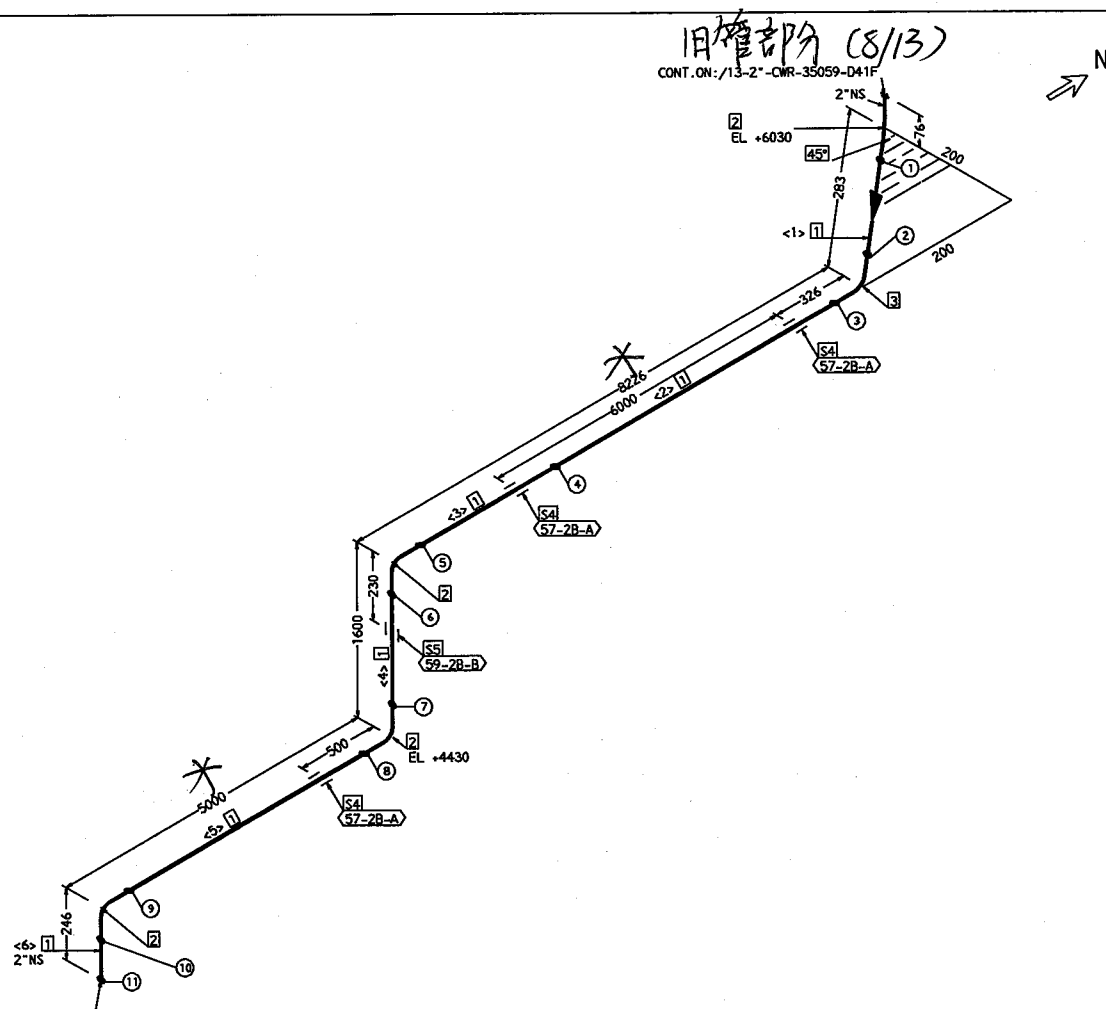
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|-----------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-80, CS A106-B ASME    | 2            | PPA1415A80021 | 14.8M |
| 2        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME | 2            | NEA1621A80019 | 4     |
| 3        | 45 ELL SMLS, BW, S-80, CS A234-WPB ASME | 2            | NFA1621A80019 | 1     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE | QTY |
|----------|-----------------------|--------------|-----------|-----|
| 4        | PIPE SUPPORT          |              | 57-2B-A   | 3   |
| 5        | PIPE SUPPORT          |              | 59-2B-B   | 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>         | 171           | 2            |         | <2>         | 6000          | 2            |         |
| <3>         | 2115          | 2            |         | <4>         | 1448          | 2            |         |
| <5>         | 4847          | 2            |         | <6>         | 170           | 2            |         |



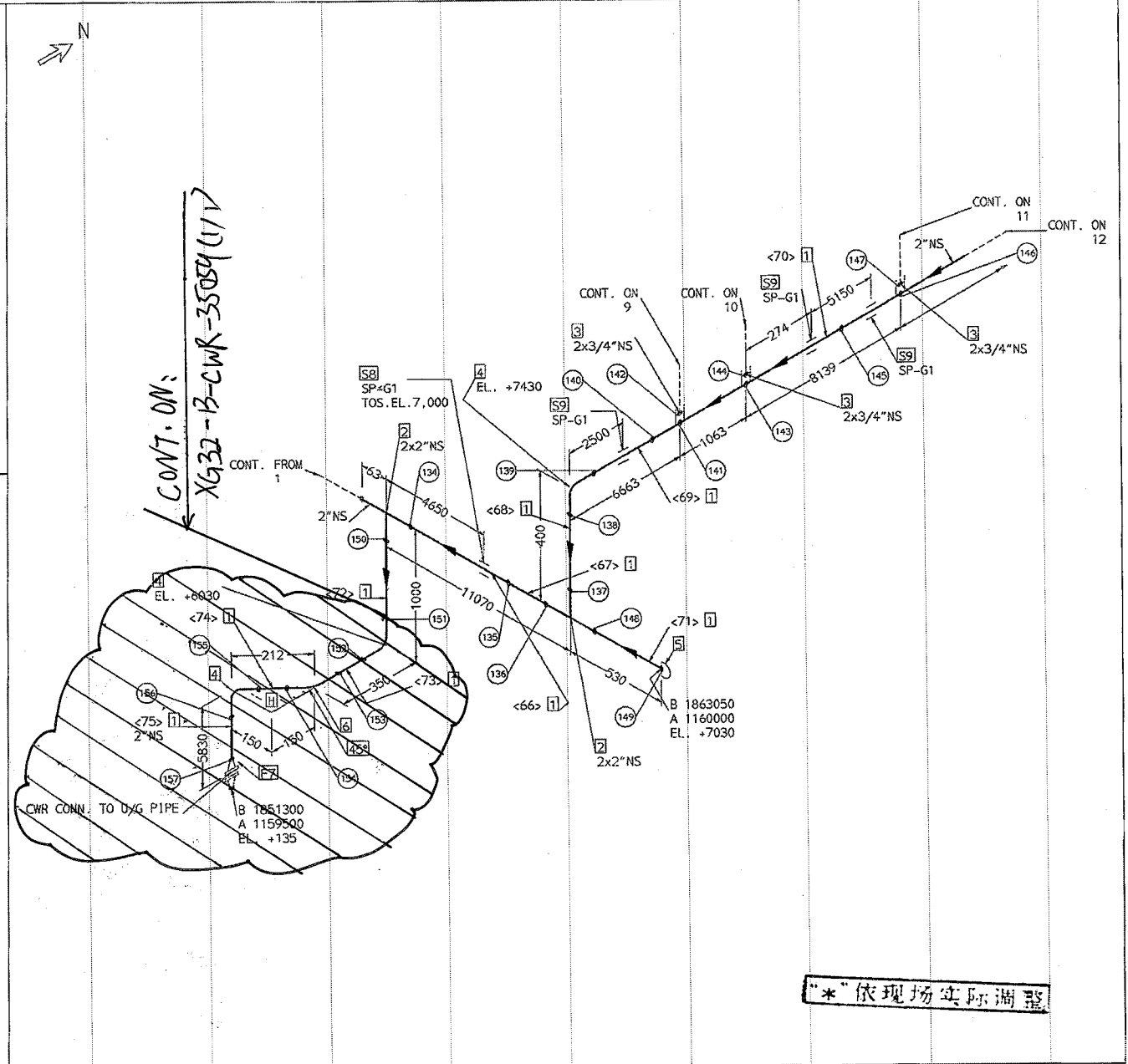
CONT. ON  
LINE: 17076/13-6"-CWR-35028A-D41F  
E 1851650  
N 1146600  
EL +4184

"\*" 依现场实际情况调整

|                  |        |        |                                          |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      |                            |          |                      |            |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|--|------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|----------|----------------------|------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |  |      |                  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Changzhou) Co., Ltd. (DMC)</div> <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>(1515 5688 78, 010110017)</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |      |                            |          |                      |            |      |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      |                            |          | NOTE                 |            |      |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      |                            |          |                      |            |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      |                            |          |                      |            |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      | TITLE PIPING ISOMETRIC DWG |          |                      |            |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      | PROJ. NO.                  | 17E3166A | UNIT                 | 17076      |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                                    |      | DRAWN                      | WL       | DATE                 | 12/27/2017 | REV. | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |           |  | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                                | DXS  | 12/28 2017                 | LINE NO. | 13-2"-CWR-35059-D41F |            |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           |  | REV. | DESCRIPTION      | CHKD                                                                                                                                                                                                                                                                                                                                                               | APPR | DATE                       | DWG. NO. | XG32-13-CWR-35059    |            |      | 1 OF 1 |

| FABRICATION MATERIALS |                                                       |            |                  |       |
|-----------------------|-------------------------------------------------------|------------|------------------|-------|
| PT NO                 | DESCRIPTION & MATERIAL                                | N.S. (INS) | ITEM CODE        | QTY   |
| PIPE                  |                                                       |            |                  |       |
| 1                     | PIPE A106 GR.B SCH80 SMLS BE ASME B36.10M             | 2          | D41F/P-2"-80     | 34.6M |
| FITTINGS              |                                                       |            |                  |       |
| 2                     | TEE A234 GR.WPB SCH80 SMLS BW ASME B16.9              | 2 x 2      | D41F/TB-2"       | 2     |
| 3                     | HALF COUPLING CL3000 SW A105 ASME B16.11              | 2 x 3/4    | D41F/CHS-2"x3/4" | 3     |
| 4                     | 90 DEG. ELBOW LR A234 GR.WPB SCH80 SMLS BW ASME B16.9 | 2          | D41F/EB-2"x90    | 3     |
| 5                     | CAP A234 GR.WPB SCH80 SMLS BW ASME B16.9              | 2          | D41F/CB-2"       | 1     |
| 6                     | 45 DEG. ELBOW LR A234 GR.WPB SCH80 SMLS BW ASME B16.9 | 2          | D41F/EB-2"x45    | 1     |
| FLANGES               |                                                       |            |                  |       |
| 7                     | FLANGE CL150 RF WN A105 SCH80 BORE ASME B16.5         | 2          | D41F/WFR-2"      | 1     |
| ERECTION MATERIALS    |                                                       |            |                  |       |
| PT NO                 | DESCRIPTION & MATERIAL                                | N.S. (INS) | ITEM CODE        | QTY   |
| SUPPORTS              |                                                       |            |                  |       |
| 8                     | SPECIAL SUPPORT (SP-G1 TOS.EL.7,000)                  | 2          | SUP/G1-2"        | 1     |
| 9                     | SPECIAL SUPPORT (SP-G1)                               | 2          | SUP/G1-2"        | 3     |

| CUT PIPE LENGTH |            |            |         |          |            |
|-----------------|------------|------------|---------|----------|------------|
| PIECE NO        | CUT LENGTH | N.S. (INS) | REMARKS | PIECE NO | CUT LENGTH |
| <66>            | 4943       | 2          |         | <67>     | 6000       |
| <68>            | 260        | 2          |         | <69>     | 4724       |
| <70>            | 6000       | 2          |         | <71>     | 466        |
| <72>            | 860        | 2          |         | <73>     | 239        |
| <74>            | 101        | 2          |         | <75>     | 5690       |



“\*”依现场实际调整

|          |            |                      |    |         |          |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                        |                                                                                       |                            |                         |                      |           |      |       |
|----------|------------|----------------------|----|---------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------|-------------------------|----------------------|-----------|------|-------|
| △        |            | FOR CONSTRUCTION     |    |         |          | OPR. PRESS.: 0.3 MPa(G)                                                               | OPR. TEMP.: 42 °C                                                                     | CLASS: D41F                                                                           | DWN.                                                                                  | C.T.LEE                                                                               | 11/15/2011                                                                            | REVISION                                                                              |  富台工程股份有限公司<br>FU-TAI ENGINEERING CO., LTD.<br>腾龙芳烃(漳州)80万吨/年对二甲苯工程<br>CSU/VDU 装置 |                                                                                       |                            |                         |                      |           |      |       |
| △        |            | NOVEMBER,16, 2011    |    |         |          | DES. PRESS.: 1.2 MPa(G)                                                               | DES. TEMP.: 80 °C                                                                     | INSULATION: ---                                                                       | DESN.                                                                                 | C.M.WU                                                                                | 11/15/2011                                                                            |                                                                                       |                                                                                                                                                                        |                                                                                       |                            |                         |                      |           |      |       |
| △        |            |                      |    |         |          | HYDRO TEST: WATER 1.8 MPa(G)                                                          | PMHT: NO                                                                              | TRACING: ---                                                                          | CHK.                                                                                  | Y.C.CHOU                                                                              | 11/15/2011                                                                            |                                                                                       |                                                                                                                                                                        |                                                                                       |                            |                         |                      |           |      |       |
| △        |            |                      |    |         |          | PAINTING: PER SPEC.                                                                   | STEAM DUT: NO                                                                         | RT 10 Z                                                                               | APPR.                                                                                 | A.F.WU                                                                                | 11/15/2011                                                                            |                                                                                       |                                                                                                                                                                        |                                                                                       |                            |                         |                      |           |      |       |
| △        | 11/15/2011 | FOR CONSTRUCTION     |    | C.T.LEE | Y.C.CHOU | A.F.WU                                                                                | WELDED                                                                                | FIELD WELDED                                                                          | SOCKET                                                                                | THREAD                                                                                | COUPLING                                                                              | FIELD CONN.                                                                           | SUPPORT                                                                                                                                                                | STEAM TRACE                                                                           | INSULATION                 | DWG NO.: 143,140A,140B  | CONTRACT: C192502    | LINE NO.: | SHT. | ISSUE |
| REV. NO. | DATE       | REVISION DESCRIPTION | BY | CHK.    | APPR.    |  |  |  |  |  |  |  |                                                                                   |  | DIA. NO.: 1208-035/004-008 | FILE NO.: 13-CMR35059-8 | 13-2"-CWR-35059-D41F | 8 OF 13   | 0    |       |

## FABRICATION MATERIALS

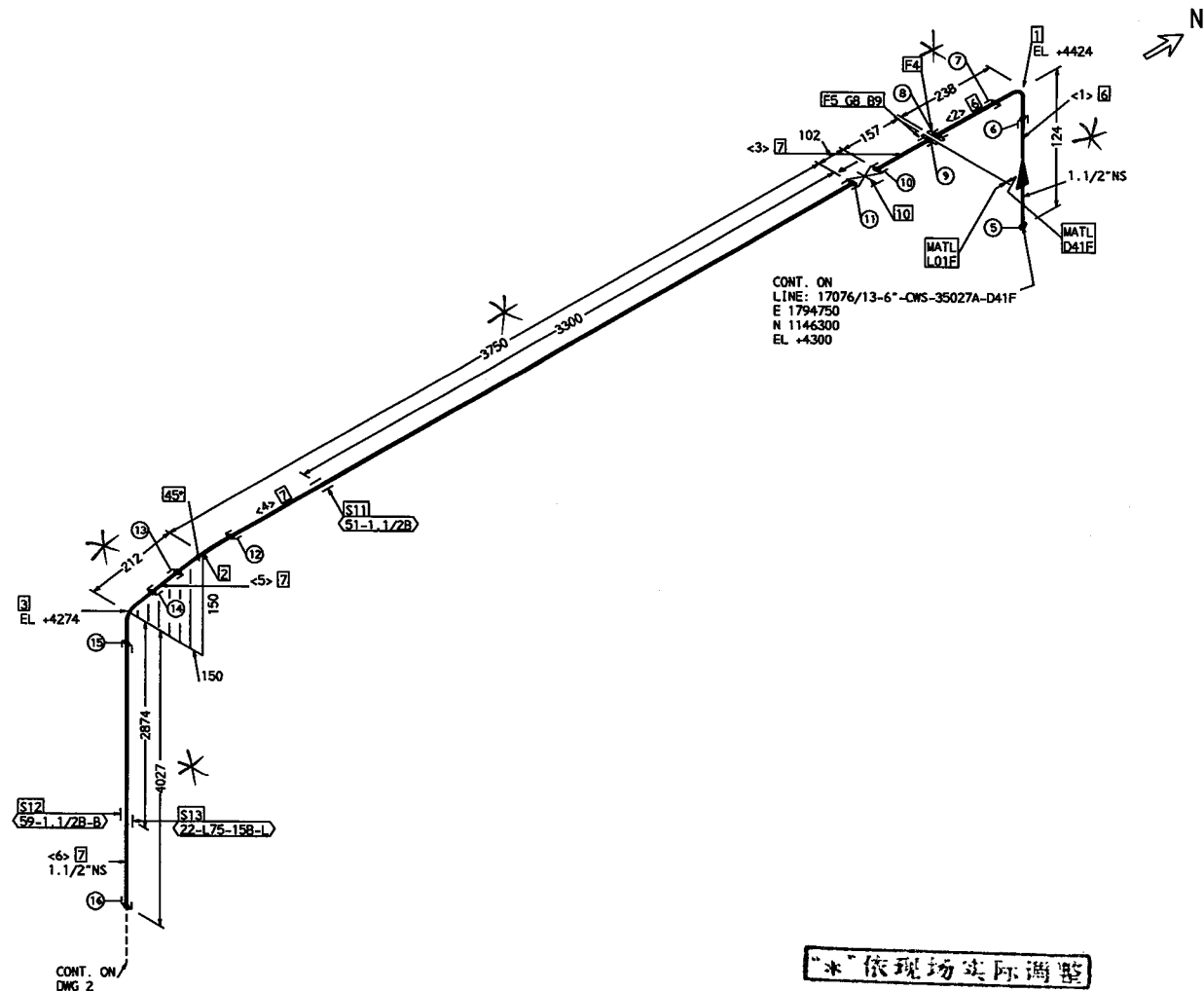
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1.1/2        | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NEA75A1000021 | 1   |
| 3        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NFA75A1000021 | 1   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1.1/2        | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1.1/2        | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.3M |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 8.1M |
| 8        | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 9        | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 11       | PIPE SUPPORT                                                                                                       |              | 51-1.1/2B     | 1    |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-1.1/2B-B   | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 22-L75-15B-L  | 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>         | 92            | 1.1/2        |         | <2>         | 200           | 1.1/2        |         |
| <3>         | 150           | 1.1/2        |         | <4>         | 3718          | 1.1/2        |         |
| <5>         | 160           | 1.1/2        |         | <6>         | 4006          | 1.1/2        |         |



\* 依现场实际调整

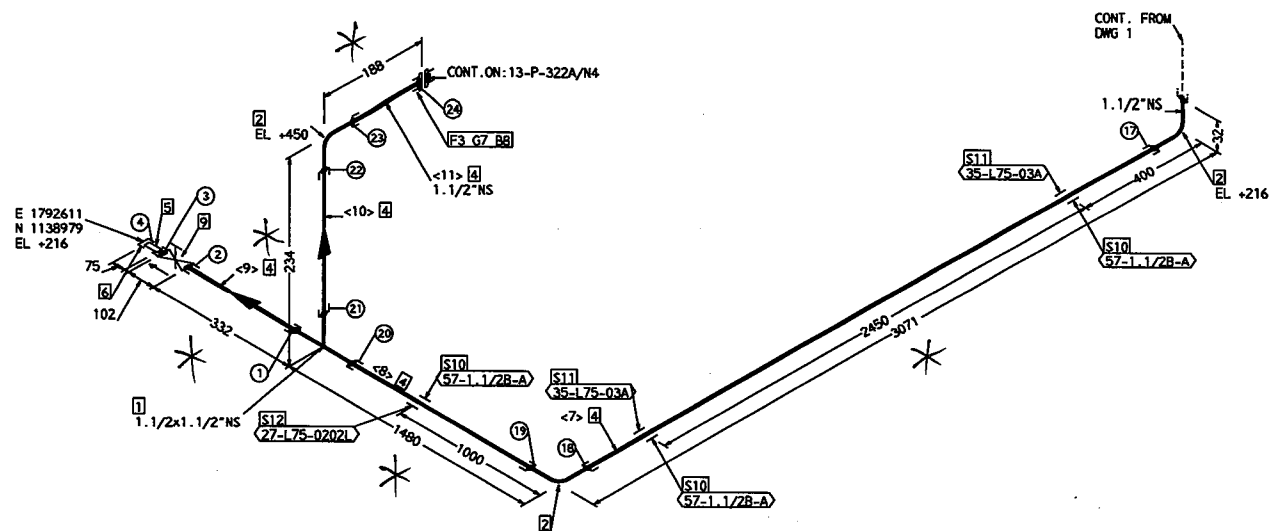
|                  |        |        |                                         |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            |                            |                          |      |            |      |        |
|------------------|--------|--------|-----------------------------------------|-----------|--|--|-----------|------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------|------|------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DMC)</div> <div> 京福工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>京福工程技术有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |            |                            |                          |      |            |      |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                    | PER. SPEC |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            |                            |                          | NOTE |            |      |        |
| DESIGN TEMP.     | 80     | °C     |                                         |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            |                            |                          |      |            |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                              |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            |                            |                          |      |            |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            | TITLE PIPING ISOMETRIC DWG |                          |      |            |      |        |
| TEST FLUID       | HYDRO. |        |                                         |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            | PROJ. NO.                  | 17B3166A                 | UNIT | 17076      |      |        |
| INSPECTION X-RAY | 5      | %      |                                         |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |            | DRAWN                      | WL                       | DATE | 12/18/2017 | REV. | 2      |
| P.W.H.T          | -      |        |                                         |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                                                                                                                                                                                                                 | 12/15/2017 | LINE NO.                   | 13-1-1/2"-CWS-35007-L01F |      |            |      | SHEET  |
| CATEGORY         | -      |        |                                         |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                | DATE       | DWG. NO.                   | XG32-13-CWS-35007        |      |            |      | 1 OF 2 |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整



|                  |        |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                                 |            |                            |                          |                                                                                                                                                       |       |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |            |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Qinglong Petrochemical (Zhou) Co., Ltd. (QAC)</div> |            |                            |                          |                                                                                                                                                       |       |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                                            |            |                            |                          | <div> 京福工程局建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京工程局有限公司</div> |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION |                  |      |                                                                                                                                                                 |            |                            |                          | FOR 腾龙芳烃原油分高装置整改修复工程                                                                                                                                  |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |            |                  |      |                                                                                                                                                                 |            |                            |                          |                                                                                                                                                       |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |            |                  |      |                                                                                                                                                                 |            | TITLE PIPING ISOMETRIC DWG |                          |                                                                                                                                                       |       |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                                 |            | PROJ. NO.                  | 17E3166A                 | UNIT                                                                                                                                                  | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |            |                  |      |                                                                                                                                                                 |            | DRAWN                      | WL                       | DATE 12/18/2017                                                                                                                                       | REV.  | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                             | 12/15/2017 | LINE NO.                   | 13-1-1/2"-CWS-35007-L01F |                                                                                                                                                       |       | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                            | DATE       | DWG. NO.                   | XG32-13-CWS-35007        |                                                                                                                                                       |       | 2 OF 2 |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1.1/2        | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NEA75A1000021 | 1   |
| 3        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1.1/2        | NFA75A1000021 | 1   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1.1/2        | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1.1/2        | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

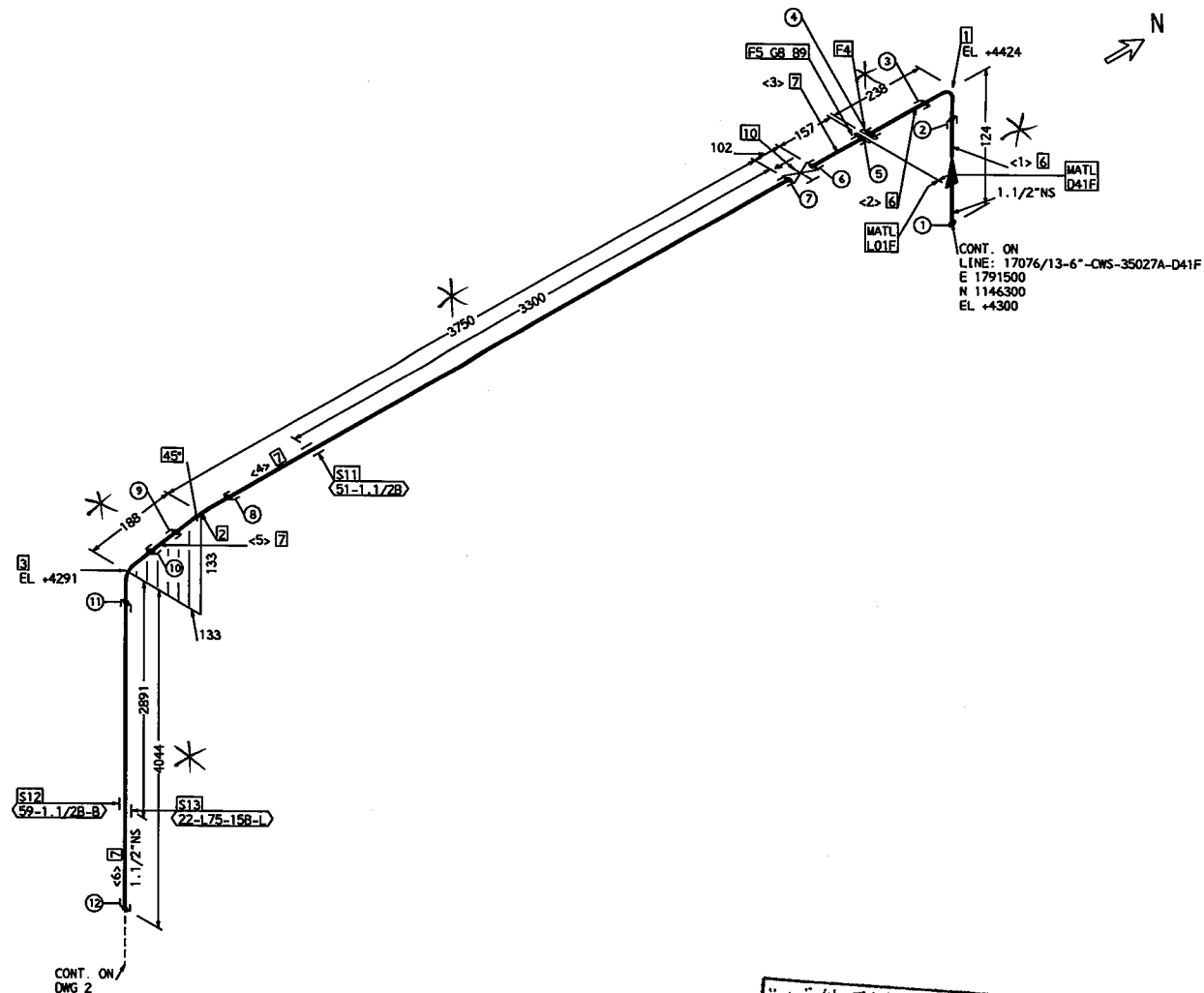
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.3M |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 8.1M |
| 8        | GASKET, 150# 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 | 1.1/2        | GKA1APED300B1 | 1    |
| 9        | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 11 | PIPE SUPPORT | 51-1.1/2B    | 1 |
| 12 | PIPE SUPPORT | 59-1.1/2B-B  | 1 |
| 13 | PIPE SUPPORT | 22-L75-15B-L | 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>         | 92            | 1.1/2        |         | <2>         | 200           | 1.1/2        |         |
| <3>         | 150           | 1.1/2        |         | <4>         | 3718          | 1.1/2        |         |
| <5>         | 136           | 1.1/2        |         | <6>         | 4023          | 1.1/2        |         |



\* 依现场实际调整

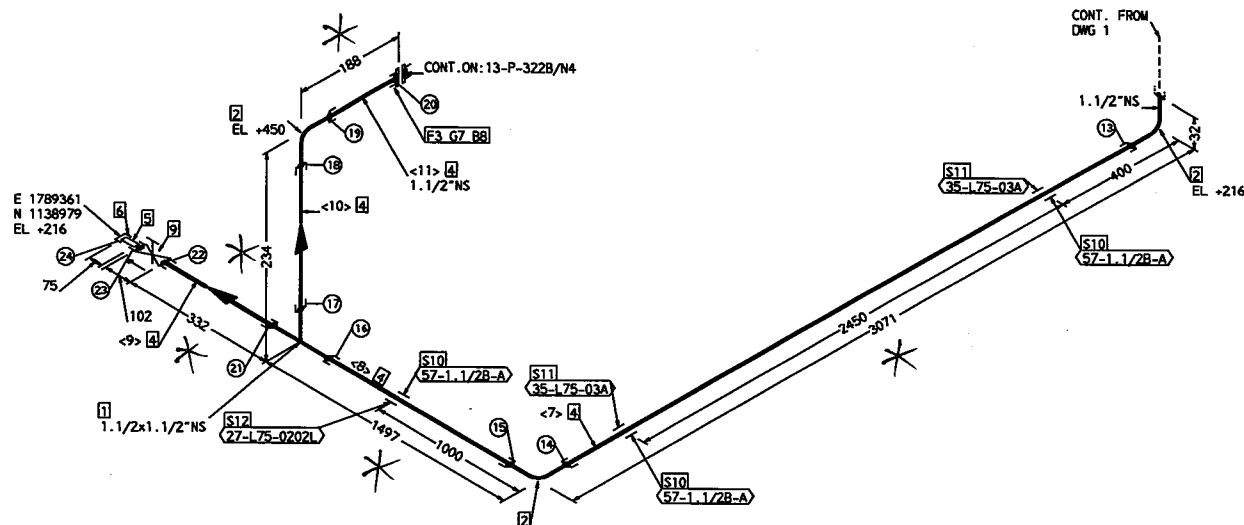
|                  |        |        |                                         |           |  |  |           |            |                  |      |                                                                                                                                                   |                                                                                                                                            |          |                          |       |        |
|------------------|--------|--------|-----------------------------------------|-----------|--|--|-----------|------------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           |  |  | REF. DWG. |            |                  |      |  腾龙芳烃(漳州)有限公司<br>Dragon Armatine (Changzhou) Co., Ltd. (DAC) |                                                                                                                                            |          |                          |       |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                    | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                              |  京福工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>010-65059999 |          |                          |       |        |
| DESIGN TEMP.     | 80     | °C     |                                         |           |  |  |           | INSULATION |                  |      |                                                                                                                                                   | FOR 腾龙芳烃原油分离装置整改修复工程                                                                                                                       |          |                          |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                         |           |  |  |           |            |                  |      |                                                                                                                                                   |                                                                                                                                            |          |                          |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |  |  |           |            |                  |      |                                                                                                                                                   | TITLE PIPING ISOMETRIC DWG                                                                                                                 |          |                          |       |        |
| TEST FLUID       | HYDRO. |        |                                         |           |  |  |           |            |                  |      |                                                                                                                                                   | PROJ. NO.                                                                                                                                  | 17E3166A | UNIT                     | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                         |           |  |  |           |            |                  |      |                                                                                                                                                   | DRAWN                                                                                                                                      | WL       | DATE 12/18/2017          | REV.  | 2      |
| P.W.H.T          | -      |        |                                         |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                               | 12/15/2017                                                                                                                                 | LINE NO. | 13-1-1/2"-CWS-35008-L01F |       | SHEET  |
| CATEGORY         | -      |        |                                         |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                              | DATE                                                                                                                                       | DWG. NO. | XG32-13-CWS-35008        |       | 1 OF 2 |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

“\*”依现场实际调整



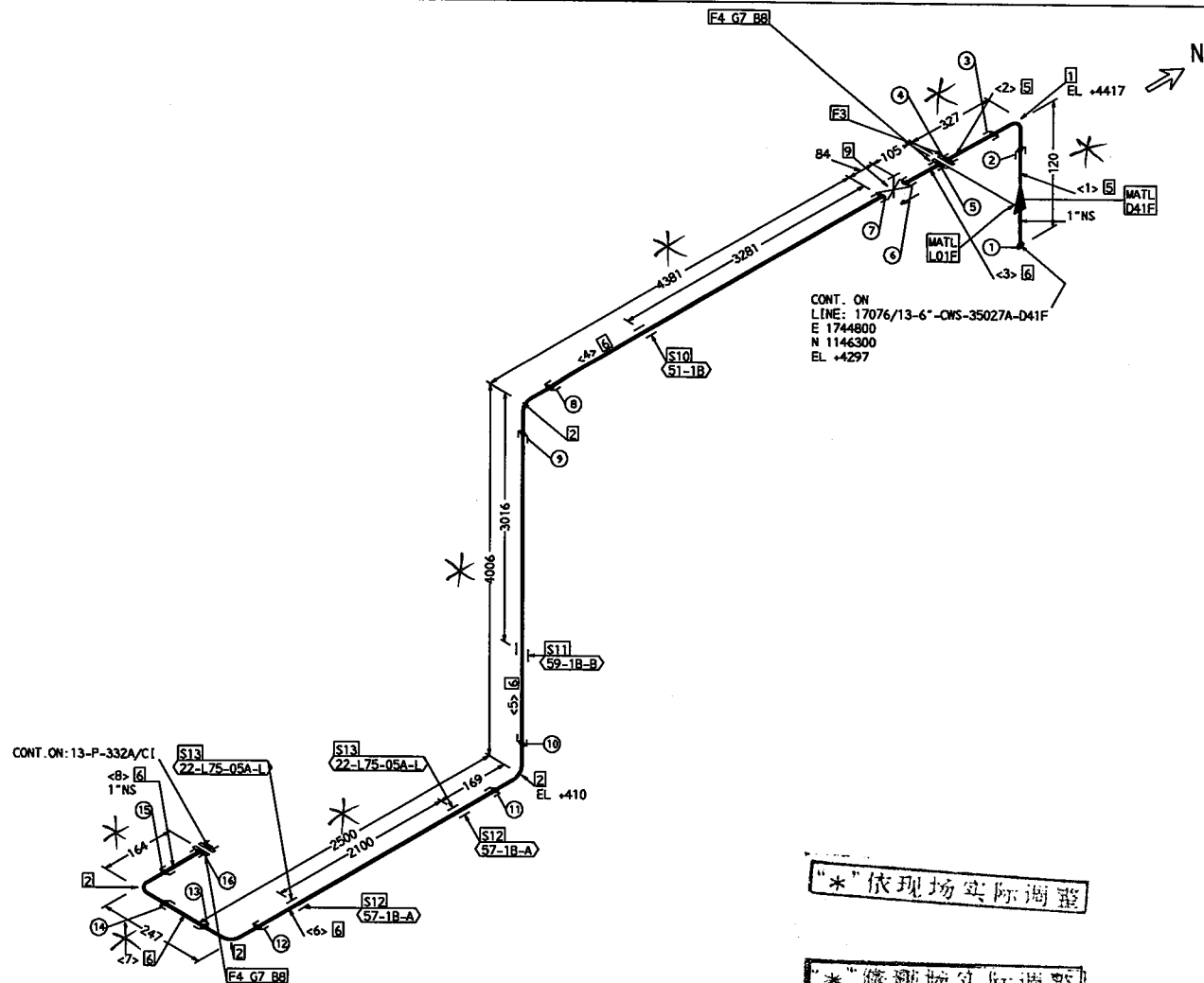
|                  |        |        |                                          |           |  |  |           |                  |      |      |                                                                                                                                                                    |           |                            |                 |        |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------------|------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----------------|--------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |                  |      |      | <div> 腾龙芳烃（漳州）有限公司<br/>Beilong Petrochemical (Zhouzhou) Co., Ltd. (DAC)</div> |           |                            |                 |        |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |                  |      |      |                                                                                                                                                                    |           |                            |                 |        |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION       |      |      |                                                                                                                                                                    | NOTE      |                            |                 |        |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |                  |      |      |                                                                                                                                                                    |           |                            |                 |        |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |                  |      |      |                                                                                                                                                                    |           | TITLE PIPING ISOMETRIC DWG |                 |        |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |                  |      |      |                                                                                                                                                                    | PROJ. NO. | 17B3166A                   | UNIT            | 17076  |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |                  |      |      |                                                                                                                                                                    | DRAWN     | WL                         | DATE 12/18/2017 | REV. 2 |        |
| P.W.H.T          | -      |        |                                          |           |  |  | 2         | FOR CONSTRUCTION | CYS  | DXS  | 12/15 2017                                                                                                                                                         | LINE NO.  | 13-1-1/2"-CWS-3500B-L01F   |                 |        | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  | REV.      | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                               | DWG. NO.  | XG32-13-CWS-3500B          |                 |        | 2 OF 2 |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 98            | 1            |         | <2>         | 300           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 4359          | 1            |         |
| <5>         | 3962          | 1            |         | <6>         | 2456          | 1            |         |
| <7>         | 203           | 1            |         | <8>         | 137           | 1            |         |



“\*”依现场实际调整

“\*”像璣坊实际调整

|                  |        |        |                                          |           |  |  |           |      |                                                                                                                                                             |      |                                                                                                                                                                                |            |           |                     |                      |            |        |   |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|---------------------|----------------------|------------|--------|---|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                                                                                                                                                             |      | <div> 腾龙芳烃（漳州）有限公司<br/>Penglai Petrochemical Engineering (Zhouzhuo) Co., Ltd. (SHC)</div> |            |           |                     |                      |            |        |   |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE | <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京市丰台区左安门内大街111号</div> |      |                                                                                                                                                                                |            |           |                     |                      |            |        |   |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      | FOR                                                                                                                                                         |      |                                                                                                                                                                                |            |           |                     |                      |            |        |   |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                                                                                                                                                             |      |                                                                                                                                                                                |            |           |                     |                      |            |        |   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                                                                                                                                                             |      |                                                                                                                                                                                |            | TITLE     |                     | PIPING ISOMETRIC DWG |            |        |   |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                                                                                                                                                             |      |                                                                                                                                                                                |            | PROJ. NO. | 17E3166A            | UNIT                 | 17076      |        |   |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                                                                                                                                                             |      |                                                                                                                                                                                |            | DRAWN     | WL                  | DATE                 | 12/18/2017 | REV.   | 2 |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION                                                                                                                                            | CYS  | DKS                                                                                                                                                                            | 12/15/2017 | LINE NO.  | 13-1-CWS-35009-L01F |                      |            | SHEET  |   |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION                                                                                                                                                 | CHKD | APPR                                                                                                                                                                           | DATE       | DWG. NO.  | XG32-13-CWS-35009   |                      |            | 1 OF 1 |   |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 4   |
| 3        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |

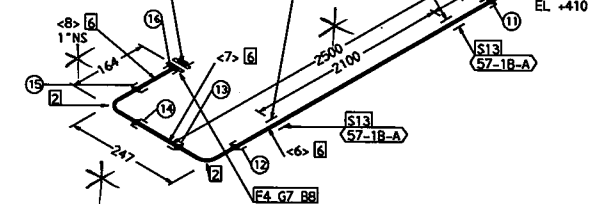
## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 5        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.4M  |
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 11.3M |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 10       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 1     |
| 11       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 12       | PIPE SUPPORT                                                                                                       |              | 22-L75-15B-L  | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 2     |
| 14       | PIPE SUPPORT                                                                                                       |              | 22-L75-05A-L  | 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>         | 98            | 1            |         | <2>         | 300           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 4359          | 1            |         |
| <5>         | 3962          | 1            |         | <6>         | 2456          | 1            |         |
| <7>         | 203           | 1            |         | <8>         | 137           | 1            |         |

CONT. ON: 13-P-332B/C1



## FABRICATION MATERIALS

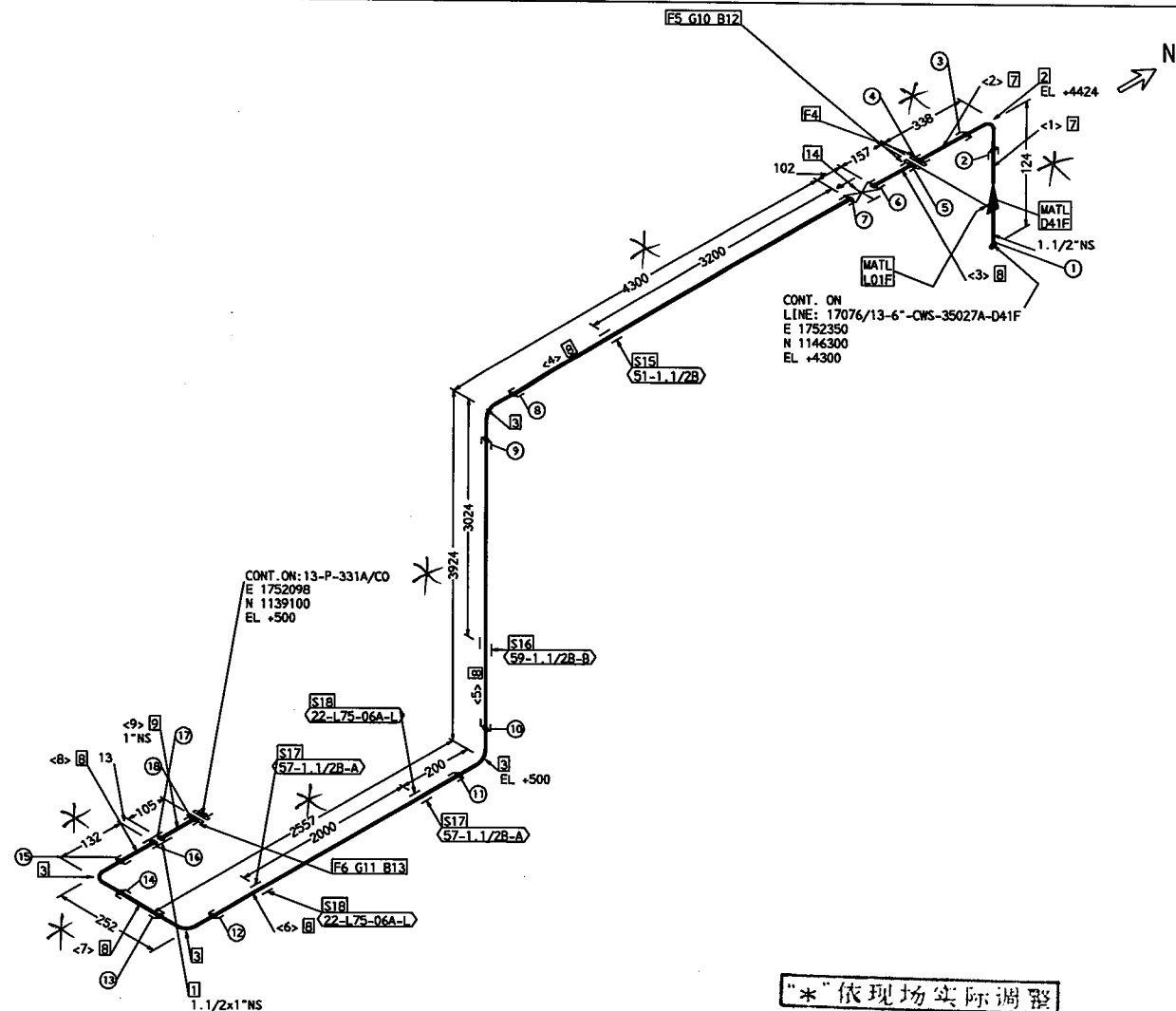
| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-------------------------------------------|--------------|---------------|-----|
| 1        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1    | RBA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, CS A105 ASME             | 1.1/2        | NEA7511000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2        | NEA75A1000021 | 4   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME         | 1.1/2        | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1.1/2        | FKA11A1AJ0015 | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 11.1M |
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 0.1M  |
| 10       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1     |
| 11       | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1     |
| 12       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 13       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 14       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 15       | PIPE SUPPORT                                                                                                       |              | 51-1.1/2B     | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 59-1.1/2B-B   | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 57-1.1/2B-A   | 2     |
| 18       | PIPE SUPPORT                                                                                                       |              | 22-L75-06A-L  | 2     |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S.  | REMARKS | PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S.  | REMARKS |
|-------------|-----------------------|-------|---------|-------------|-----------------------|-------|---------|
| <1>         | 92                    | 1.1/2 |         | <2>         | 300                   | 1.1/2 |         |
| <3>         | 150                   | 1.1/2 |         | <4>         | 4268                  | 1.1/2 |         |
| <5>         | 3860                  | 1.1/2 |         | <6>         | 2494                  | 1.1/2 |         |
| <7>         | 188                   | 1.1/2 |         | <8>         | 100                   | 1.1/2 |         |
| <9>         | 100                   | 1     |         |             |                       |       |         |



|                  |             |               |           |                                                                                                                                                                       |  |  |  |
|------------------|-------------|---------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34 °C       | PAINING       | REF. DWG. | <p>腾龙芳烃(漳州)有限公司<br/>Tenglong Aromatic (Zhangzhou) Co., Ltd. (D&amp;E)</p> <p>CTCL 京福工程技术有限公司<br/>CTCL Beijing Co., Ltd.<br/>北京福工程技术有限公司</p> <p>FOR 腾龙芳烃原油分离装置检修工程</p> |  |  |  |
| OPER. PRESS.     | 0.55 MPa(g) | CODE PER.SPEC | NOTE      |                                                                                                                                                                       |  |  |  |
| DESIGN TEMP.     | 80 °C       | INSULATION    |           | TITLE PIPING ISOMETRIC DWG                                                                                                                                            |  |  |  |
| DESIGN PRESS.    | 1.2 MPa(g)  |               |           | PROJ. NO. 17E3166A UNIT 17076                                                                                                                                         |  |  |  |
| TEST PRESSURE    | 1.8 MPa(g)  |               |           | DRAWN WL DATE 12/18/2017 REV. 2                                                                                                                                       |  |  |  |
| TEST FLUID       | HYDRO.      |               |           | LINE NO. 13-1/2-CWS-35012-L01F SHEET                                                                                                                                  |  |  |  |
| INSPECTION X-RAY | 5 %         |               |           | DWG. NO. XG32-13-CWS-35012                                                                                                                                            |  |  |  |
| P.W.H.T          | -           |               |           | 1 OF 1                                                                                                                                                                |  |  |  |
| CATEGORY         | -           |               |           |                                                                                                                                                                       |  |  |  |

## | FABRICATION MATERIALS |

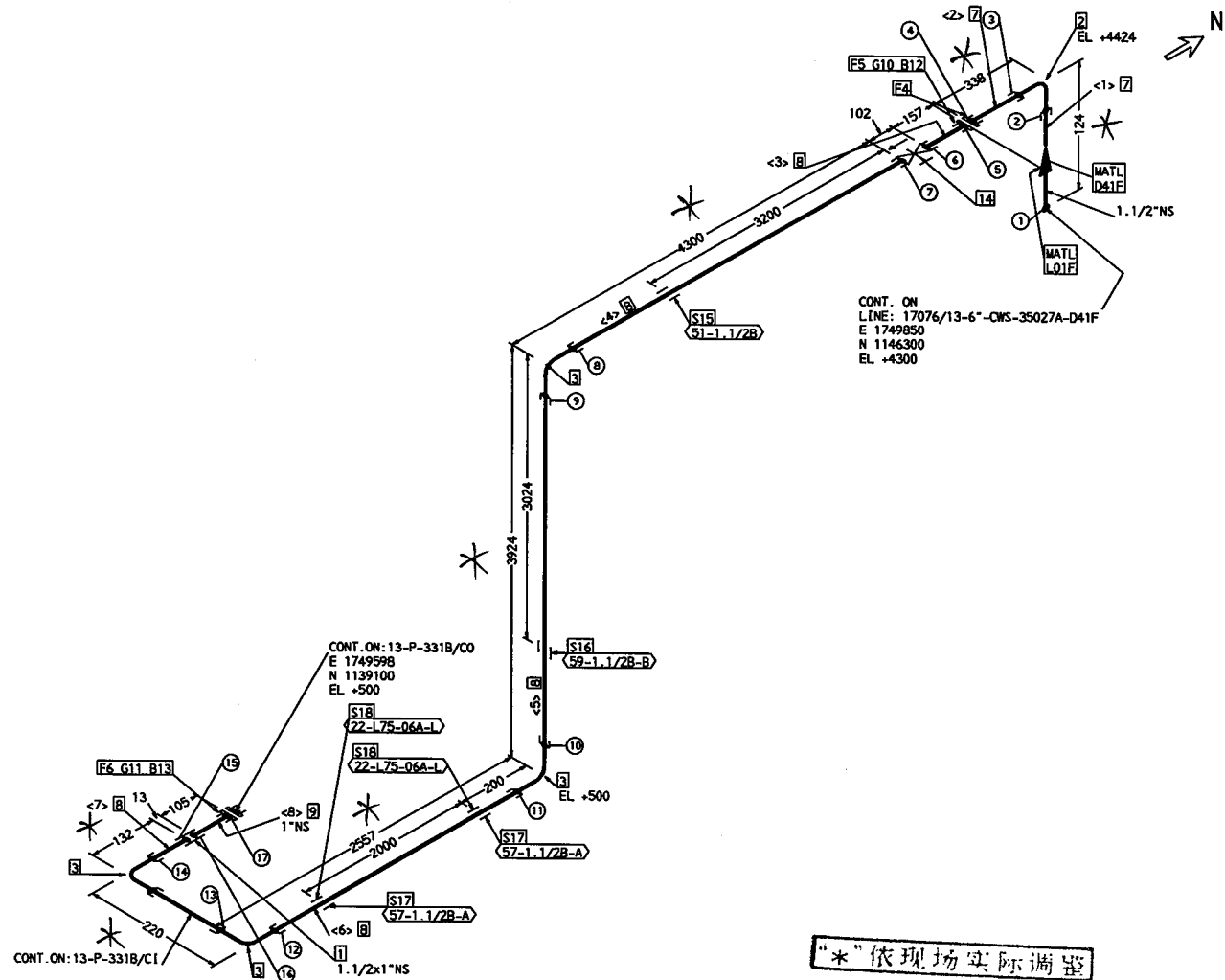
| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-------------------------------------------|--------------|---------------|-----|
| 1        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1    | RBA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, CS A105 ASME             | 1.1/2        | NEA7511000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2        | NEA75A1000021 | 4   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME         | 1.1/2        | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1.1/2        | FKA11A1AJ0015 | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1            | FKA11A1AJ0015 | 1   |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 10.9M |
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 0.1M  |
| 10       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1     |
| 11       | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1     |
| 12       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 13       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 14       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 15       | PIPE SUPPORT                                                                                                       | 51-1.1/2B    |               | 1     |
| 16       | PIPE SUPPORT                                                                                                       | 59-1.1/2B-B  |               | 1     |
| 17       | PIPE SUPPORT                                                                                                       | 57-1.1/2B-A  |               | 2     |
| 18       | PIPE SUPPORT                                                                                                       | 22-L75-06A-L |               | 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>         | 92            | 1.1/2        |         | <2>         | 300           | 1.1/2        |         |
| <3>         | 150           | 1.1/2        |         | <4>         | 4268          | 1.1/2        |         |
| <5>         | 3860          | 1.1/2        |         | <6>         | 2494          | 1.1/2        |         |
| <7>         | 100           | 1.1/2        |         | <8>         | 100           | 1            |         |



|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                          |                            |          |                          |        |              |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--------------------------|--------|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div><div>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</div></div> |                            |          |                          |        |              |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |      |                                                                                                                                                                          |                            |          |                          |        |              |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           |  |  | NOTE      |      |                  |      | <div><div>京建工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-59577888</div><div>FOR</div><div>腾龙芳烃原油分离装置检修工程</div></div>                                                      |                            |          |                          |        |              |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                          |                            |          |                          |        |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                          | TITLE PIPING ISOMETRIC DWG |          |                          |        |              |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                          | PROJ. NO.                  | 17B3166A | UNIT                     | 17076  |              |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                          | DRAWN                      | WL       | DATE 12/18/2017          | REV. 2 |              |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                      | 12/15 2017                 | LINE NO. | 13-1-1/2"-CWS-35013-L01F |        | SHEET 1 OF 1 |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                     | DATE                       | DWG. NO. | XG32-13-CWS-35013        |        |              |

## FABRICATION MATERIALS

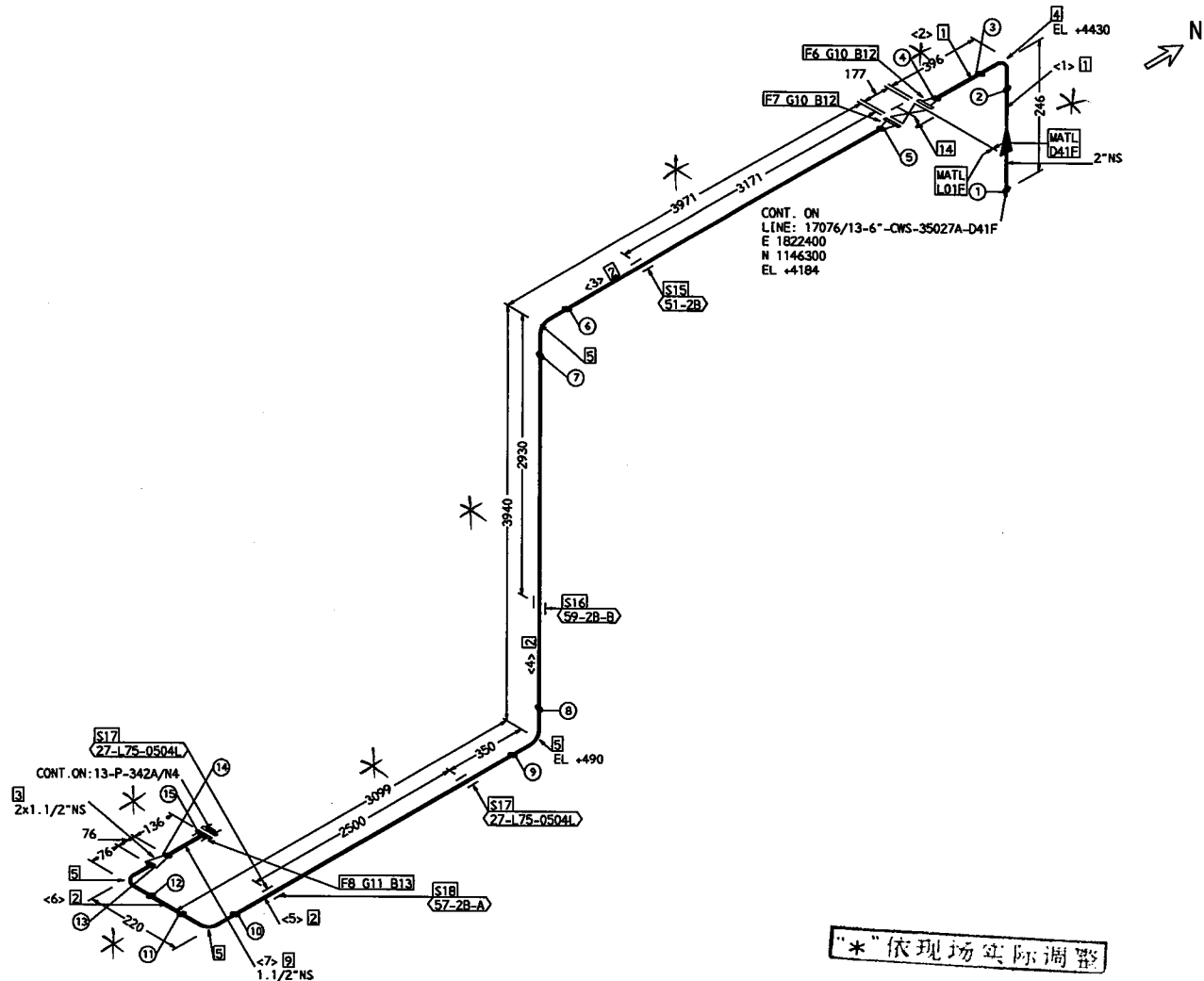
| PT NO | COMPONENT DESCRIPTION                                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-----------------------------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2         | PPA1415A80021 | 0.5M  |
| 2     | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2         | PPA14A1AF0022 | 10.7M |
| 3     | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2 | RCA16B1AFAJ19 | 1     |
| 4     | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2         | NEA1621A80019 | 1     |
| 5     | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2         | NEA16B1AF0019 | 4     |
| 6     | WN FLG 150# RF S-80, CS A105 ASME                         | 2         | FWA1111A80015 | 1     |
| 7     | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2         | FWA11A1AF0015 | 1     |
| 8     | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2     | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2     | PPA11A1AJ0022 | 0.2M |
| 10       | GASKET, 150# 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         | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2     | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM     | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2         | VGA11D10003A5 | 1    |
| SUPPORTS |                                                                                                                    |           |               |      |
| 15       | PIPE SUPPORT                                                                                                       |           | 51-2B         | 1    |
| 16       | PIPE SUPPORT                                                                                                       |           | 59-2B-B       | 1    |
| 17       | PIPE SUPPORT                                                                                                       |           | 27-L75-0504L  | 2    |
| 18       | PIPE SUPPORT                                                                                                       |           | 57-2B-A       | 1    |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 170        | 2         |         | <2>      | 256        | 2         |         |
| <3>      | 3831       | 2         |         | <4>      | 3788       | 2         |         |
| <5>      | 2947       | 2         |         | <6>      | 68         | 2         |         |
| <7>      | 129        | 1.1/2     |         |          |            |           |         |



"\*" 依现场实际调整

|                  |             |            |           |                                                                                                                                                                                                   |  |  |  |
|------------------|-------------|------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34 °C       | PAINTING   | REF. DWG. | <p>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</p> <p>京融工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>CHS REP. FOR AROMATICS</p> <p>FOR 腾龙芳烃原油分离装置检修工程</p>                            |  |  |  |
| OPER. PRESS.     | 0.55 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                                                                   |  |  |  |
| DESIGN TEMP.     | 80 °C       | INSULATION | NOTE      | <p>TITLE PIPING ISOMETRIC DWG</p> <p>PROJ. NO. 17B3166A UNIT 17076</p> <p>DRAWN WL DATE 12/18/2017 REV. 2</p> <p>LINE NO. 13-2"-CWS-35015-L01F SHEET</p> <p>DWG. NO. XG32-13-CWS-35015 1 OF 1</p> |  |  |  |
| DESIGN PRESS.    | 1.2 MPa(g)  |            |           |                                                                                                                                                                                                   |  |  |  |
| TEST PRESSURE    | 1.8 MPa(g)  |            |           | <p>FOR CONSTRUCTION CYS DXS 12/15 2017</p> <p>REV. DESCRIPTION CHKD APPR DATE</p>                                                                                                                 |  |  |  |
| TEST FLUID       | HYDRO.      |            |           |                                                                                                                                                                                                   |  |  |  |
| INSPECTION X-RAY | 5 %         |            |           |                                                                                                                                                                                                   |  |  |  |
| P.W.H.T          | -           |            |           |                                                                                                                                                                                                   |  |  |  |
| CATEGORY         | -           |            |           |                                                                                                                                                                                                   |  |  |  |

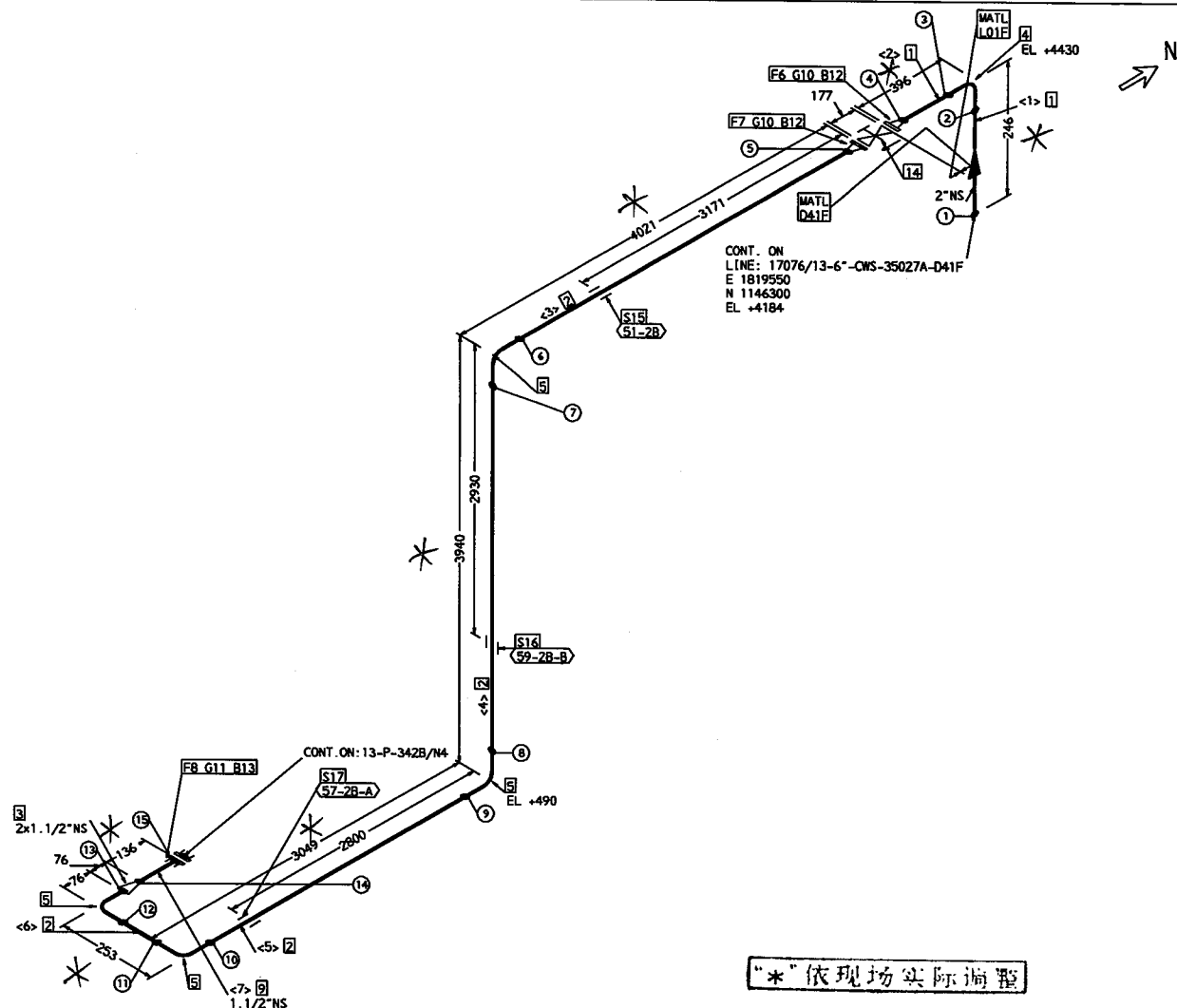
| PT<br>NO | COMPONENT DESCRIPTION                                        | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-80, CS A106-B ASME                         | 2            | PPA1415A80021 | 0.5W  |
| 2        | PIPE, SMLS, BE, S-10S, SS A312-TP304<br>ASME                 | 2            | PPA14A1AF0022 | 10.7W |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S,<br>SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AFAJ19 | 1     |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                      | 2            | NEA1621A80019 | 1     |
| 5        | 90 ELL SMLS, BW, S-10S, SS A403-WP304<br>ASME                | 2            | NEA16B1AF0019 | 4     |
| 6        | WN FLG 150# RF S-80, CS A105 ASME                            | 2            | FWA1111A80015 | 1     |
| 7        | WN FLG 150# RF S-10S, SS A182-F304 ASME                      | 2            | FWA11A1AF0015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                      | 1.1/2        | FKA11A1AJ0015 | 1     |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                                    | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304<br>ASME                                                                             | 1.1/2        | PPA11A1AJO022 | 0.2M |
| 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 | 2            | GKA1APE0300B1 | 2    |
| 11       | 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC ,<br>COARSE, STUD AS A193-B7 W/ NUTS A194-2H<br>ISO                                 | 16 MM        | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC ,<br>COARSE, STUD AS A193-B7 W/ NUTS A194-2H<br>ISO                                 | 12 MM        | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CFB BODY SS<br>304 TR API TR #2 FLEX WG OS&Y BB API-600<br>ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |
| SUPPORTS |                                                                                                                          |              |               |      |
| 15       | PIPE SUPPORT                                                                                                             |              | 51-28         | 1    |
| 16       | PIPE SUPPORT                                                                                                             |              | 59-28-B       | 1    |
| 17       | PIPE SUPPORT                                                                                                             |              | 57-28-A       | 1    |

## | CUT PIPE LENGTH |

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 170        | 2         |         | <2>      | 256        | 2         |         |
| <3>      | 3881       | 2         |         | <4>      | 3788       | 2         |         |
| <5>      | 2897       | 2         |         | <6>      | 100        | 2         |         |
| <7>      | 129        | 1.1/2     |         |          |            |           |         |



|                  |        |        |                                          |           |  |  |            |      |                  |      |                                                                                                                                                       |            |                            |                     |                                                                                                                                                    |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|------------|------|------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG.  |      |                  |      |  腾龙芳烃(漳州)有限公司<br>Qilong Petrochemical (Qingdao) Co., Ltd. (QACS) |            |                            |                     |                                                                                                                                                    |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |            |      |                  |      | NOTE                                                                                                                                                  |            |                            |                     |  京福工程勘察有限公司<br>CTCI Beijing Co., Ltd.<br>设计/勘察/工程/管理/施工/监理/检测 |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  | INSULATION |      |                  |      |                                                                                                                                                       |            |                            |                     | FOR                                                                                                                                                |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |            |      |                  |      |                                                                                                                                                       |            |                            |                     |                                                                                                                                                    |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |            |      |                  |      |                                                                                                                                                       |            | TITLE PIPING ISOMETRIC DWG |                     |                                                                                                                                                    |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |            |      |                  |      |                                                                                                                                                       | PROJ. NO.  | 17B3166A                   | UNIT                | 17076                                                                                                                                              |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |            |      |                  |      |                                                                                                                                                       | DRAWN      | WL                         | DATE 12/18/2017     | REV. 2                                                                                                                                             |        |
| P.W.H.T          | -      |        |                                          |           |  |  |            | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                   | 12/15/2017 | LINE NO.                   | 13-2-CWS-35016-L01F |                                                                                                                                                    | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |            | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                  | DATE       | DWG. NO.                   | XG32-13-CWS-35016   |                                                                                                                                                    | 1 OF 1 |

## FABRICATION MATERIALS

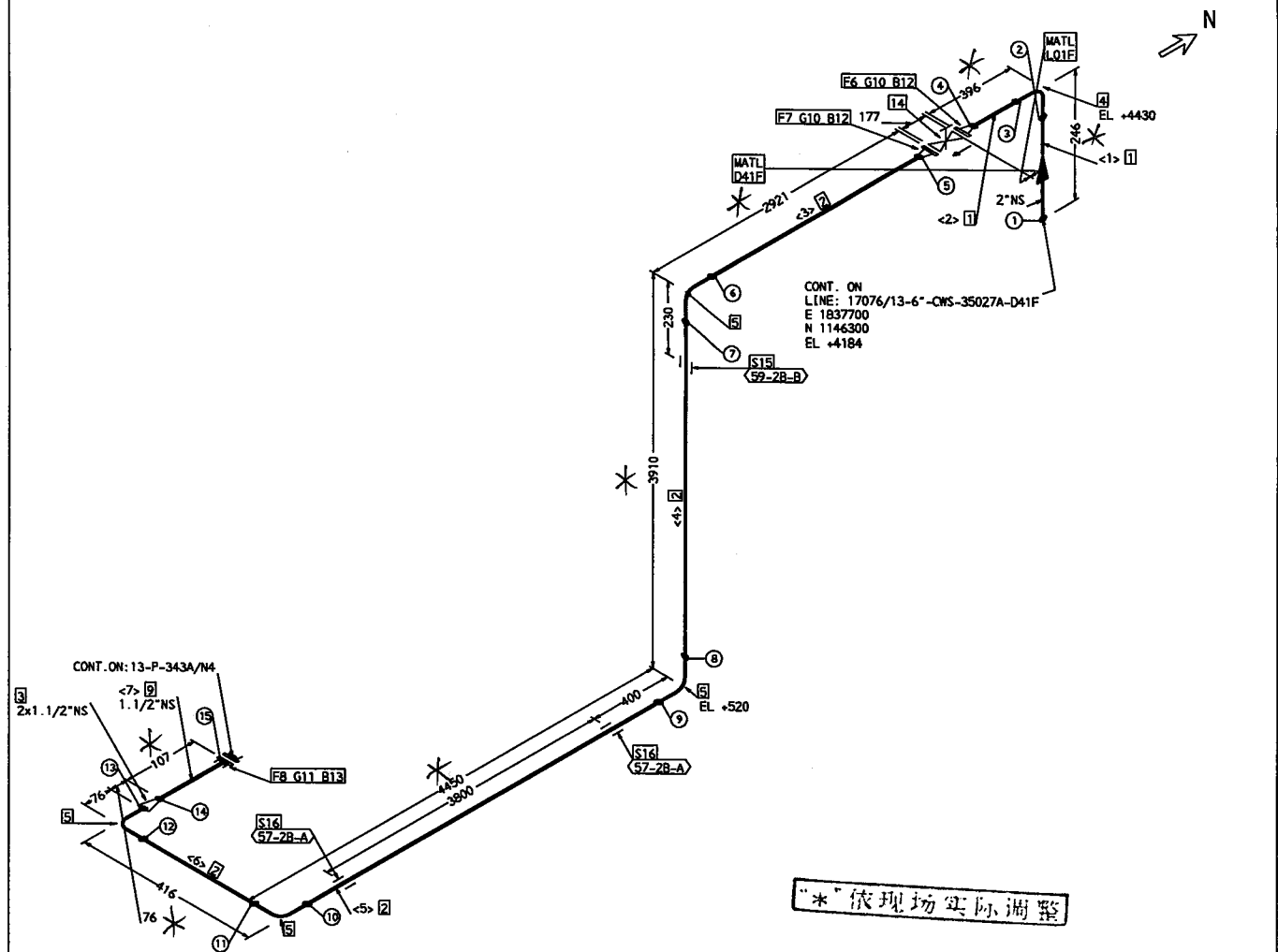
| PT<br>NO | COMPONENT DESCRIPTION                                     | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|-----------------------------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2            | PPA1415A80021 | 0.5M  |
| 2        | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 11.1M |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AFAJ19 | 1     |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 5        | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 6        | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 7        | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.1M |
| 10       | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CFB BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 15       | PIPE SUPPORT                                                                                                       |              | 59-2B-B       | 1    |
| 16       | PIPE SUPPORT                                                                                                       |              | 57-2B-A       | 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>         | 170           | 2            |         | <2>         | 256           | 2            |         |
| <3>         | 2781          | 2            |         | <4>         | 3758          | 2            |         |
| <5>         | 4298          | 2            |         | <6>         | 263           | 2            |         |
| <7>         | 100           | 1.1/2        |         |             |               |              |         |



|                  |             |                |           |                                                               |                      |              |            |
|------------------|-------------|----------------|-----------|---------------------------------------------------------------|----------------------|--------------|------------|
| OPER. TEMP.      | 34 °C       | PAINING        | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Dragon Aramco (Zhouzhou) Co., Ltd. (CNC)      |                      |              |            |
| OPER. PRESS.     | 0.55 MPa(g) | CODE PER. SPEC | NOTE      |                                                               |                      |              |            |
| DESIGN TEMP.     | 80 °C       | INSULATION     |           | 京能工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>ENGINEERING AUTHORITY |                      |              |            |
| DESIGN PRESS.    | 1.2 MPa(g)  |                |           |                                                               |                      |              |            |
| TEST PRESSURE    | 1.8 MPa(g)  |                |           | TITLE PIPING ISOMETRIC DWG                                    |                      |              |            |
| TEST FLUID       | HYDRO.      |                |           | PROJ. NO.                                                     | 17E3166A             | UNIT         | 17076      |
| INSPECTION X-RAY | 5 %         |                |           | DRAWN                                                         | WL                   | DATE         | 12/18/2017 |
| P.W.H.T          | -           |                |           | LINE NO.                                                      | 13-2"-CWS-35017-L01F | REV.         | 2          |
| CATEGORY         | -           |                |           | DWG. NO.                                                      | XG32-13-CWS-35017    | SHEET 1 OF 1 |            |

## FABRICATION MATERIALS

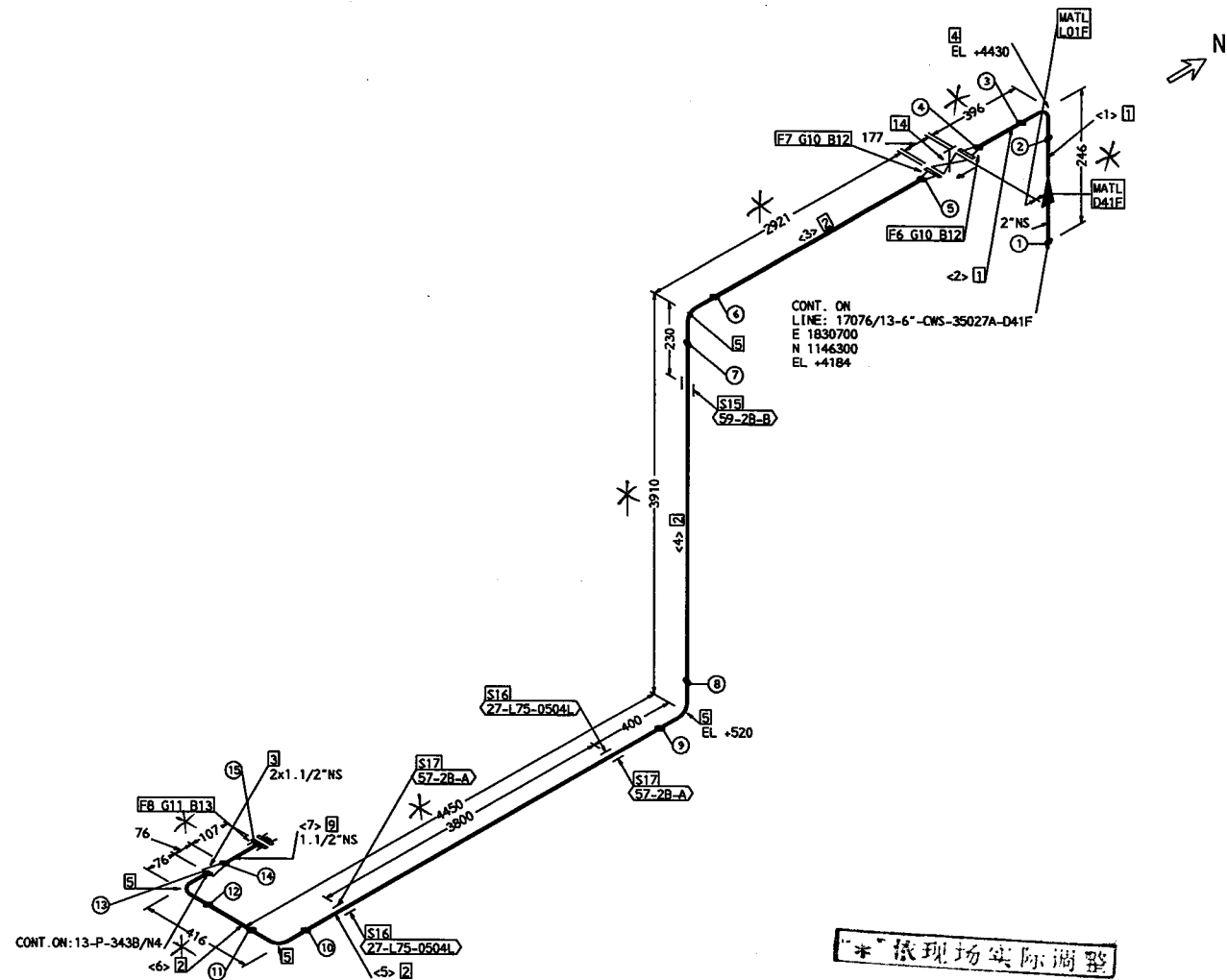
| PT<br>NO | COMPONENT DESCRIPTION                                     | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|-----------------------------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-80, CS A106-B ASME                      | 2            | PPA1415A80021 | 0.5M  |
| 2        | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 11.1M |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AFAJ19 | 1     |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 5        | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 6        | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 7        | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.1M |
| 10       | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 15       | PIPE SUPPORT                                                                                                       |              | 59-2B-B       | 1    |
| 16       | PIPE SUPPORT                                                                                                       |              | 27-L75-0504L  | 2    |
| 17       | PIPE SUPPORT                                                                                                       |              | 57-2B-A       | 2    |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S.  | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS |
|-------------|--------------------|-------|---------|-------------|--------------------|------|---------|
| <1>         | 170                | 2     |         | <2>         | 256                | 2    |         |
| <3>         | 2781               | 2     |         | <4>         | 3758               | 2    |         |
| <5>         | 4298               | 2     |         | <6>         | 263                | 2    |         |
| <7>         | 100                | 1.1/2 |         |             |                    |      |         |



\* 依现场实际调整

|                  |        |        |            |           |           |  |  |  |                                                                                                                                                                |  |          |      |            |          |  |                      |  |        |  |
|------------------|--------|--------|------------|-----------|-----------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|------|------------|----------|--|----------------------|--|--------|--|
| OPER. TEMP.      | 34     | °C     | PAINTING   |           | REF. DWG. |  |  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DMC)</div> |  |          |      |            |          |  |                      |  |        |  |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE       | PER. SPEC |           |  |  |  |                                                                                                                                                                |  |          |      | NOTE       |          |  |                      |  |        |  |
| DESIGN TEMP.     | 80     | °C     |            |           |           |  |  |  |                                                                                                                                                                |  |          |      |            |          |  |                      |  |        |  |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION |           | FOR       |  |  |  | 京龍工程建設有限公司<br>CTCL Beijing Co., Ltd.<br>010-66997888 010-66997889                                                                                              |  |          |      |            |          |  |                      |  |        |  |
| TEST PRESSURE    | 1.8    | MPa(g) | INSULATION |           |           |  |  |  |                                                                                                                                                                |  |          |      |            |          |  |                      |  |        |  |
| TEST FLUID       | HYDRO. |        |            |           |           |  |  |  | TITLE PIPING ISOMETRIC DWG                                                                                                                                     |  |          |      |            |          |  |                      |  |        |  |
| INSPECTION X-RAY | 5      | %      |            |           |           |  |  |  | PROJ. NO.                                                                                                                                                      |  | 17E3166A | UNIT |            | 17076    |  |                      |  |        |  |
| P.W.H.T          | -      |        |            |           | 2         |  |  |  | FOR CONSTRUCTION                                                                                                                                               |  | CYS      | DXS  | 12/15 2017 | LINE NO. |  | 13-2"-CWS-35018-L01F |  | SHEET  |  |
| CATEGORY         | -      |        |            |           | REV.      |  |  |  | DESCRIPTION                                                                                                                                                    |  | CHKD     | APPR | DATE       | DWG. NO. |  | XG32-13-CWS-35018    |  | 1 OF 1 |  |

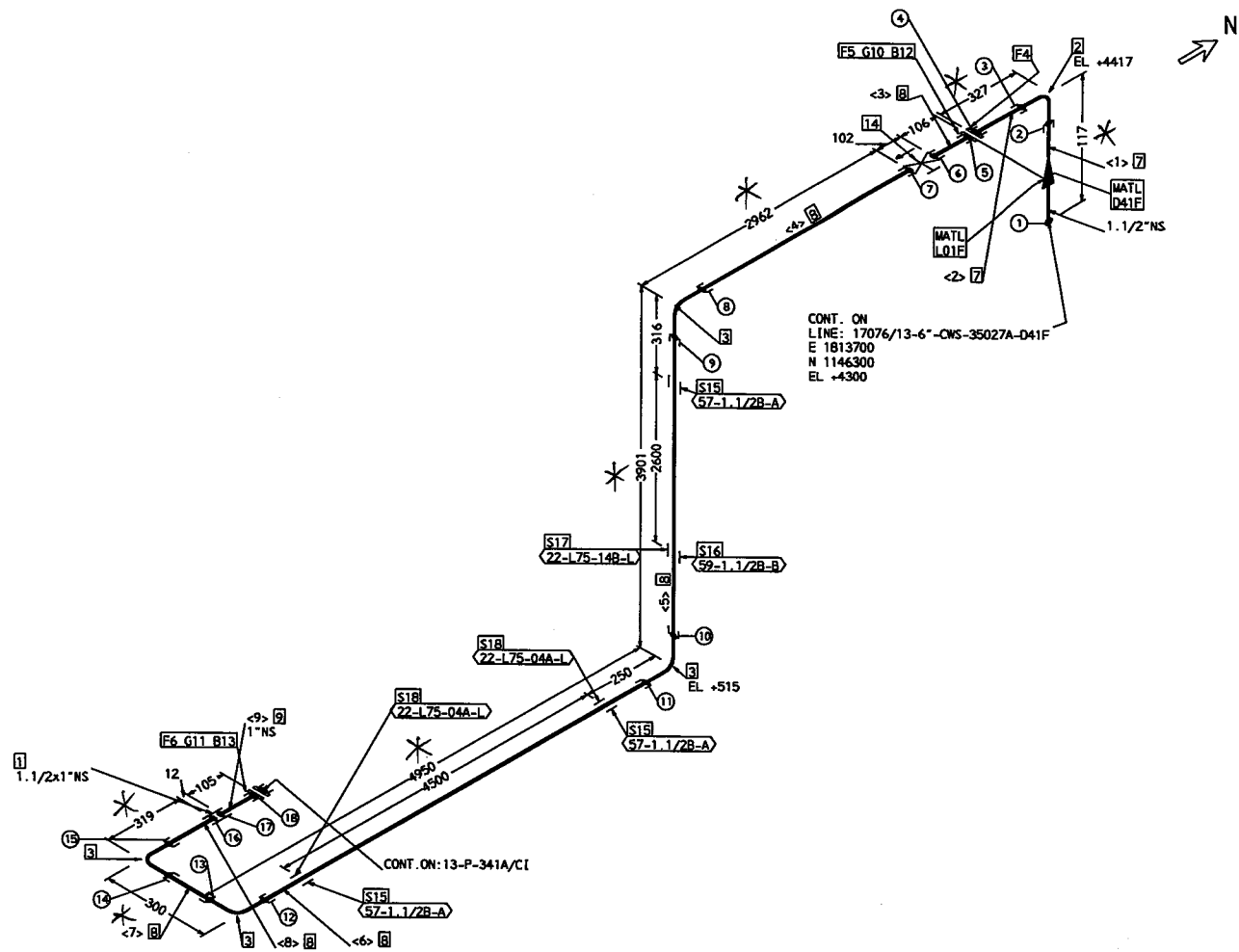
| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|-------------------------------------------|--------------|---------------|------|
| ---      | -----                                     | ----         | -----         | ---- |
| 1        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1    | RBA75A1000021 | 1    |
| 2        | 90 ELL 3000# SW, CS A105 ASME             | 1.1/2        | NEA7511000021 | 1    |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2        | NEA75A1000021 | 4    |
| 4        | SW FLG 150# RF S-80, CS A105 ASME         | 1.1/2        | FKA1111A80015 | 1    |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1.1/2        | FKA11A1AJ0015 | 1    |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1            | FKA11A1AJ0015 | 1    |

## | ERECTION MATERIALS |

| PT NO    | COMPONENT DESCRIPTION                                                                                              | N. S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|---------------|---------------|-------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2         | PPA1115AB0021 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2         | PPA11A1AJ0022 | 12.3M |
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1             | PPA11A1AJ0022 | 0.1M  |
| 10       | GASKET, 150# 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 | 1.1/2         | GKA1APE0300B1 | 1     |
| 11       | GASKET, 150# 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 | 1             | GKA1APE0300B1 | 1     |
| 12       | 70 MM BOLT LENGTH, BOLT & NUT METRIC , COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                 | 12 MM         | GMA04310000E1 | 4     |
| 13       | 65 MM BOLT LENGTH, BOLT & NUT METRIC , COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                 | 12 MM         | GMA04310000E1 | 4     |
| 14       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2         | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |               |               |       |
| 15       | PIPE SUPPORT                                                                                                       |               | 57-1.1/2B-A   | 3     |
| 16       | PIPE SUPPORT                                                                                                       |               | 59-1.1/2B-B   | 1     |
| 17       | PIPE SUPPORT                                                                                                       |               | 22-L75-14B-L  | 1     |
| 18       | PIPE SUPPORT                                                                                                       |               | 22-L75-04A-L  | 2     |

## | CUT PIPE LENGTH |

| PIECE | CUT    | N. S. | REMARKS | PIECE | CUT    | N. S. | REMARKS |
|-------|--------|-------|---------|-------|--------|-------|---------|
| NO    | LENGTH | (IN)  |         | NO    | LENGTH | (IN)  |         |
| <1>   | 85     | 1.1/2 |         | <2>   | 289    | 1.1/2 |         |
| <3>   | 100    | 1.1/2 |         | <4>   | 2930   | 1.1/2 |         |
| <5>   | 3838   | 1.1/2 |         | <6>   | 4886   | 1.1/2 |         |
| <7>   | 236    | 1.1/2 |         | <8>   | 287    | 1.1/2 |         |
| <9>   | 100    | 1     |         |       |        |       |         |



**“\*”依现场实际调整**

|                     |        |        |             |           |  |  |  |           |            |                  |      |      |                                                                                                                                                     |                            |                          |                    |       |                                                                                                                                                      |  |        |
|---------------------|--------|--------|-------------|-----------|--|--|--|-----------|------------|------------------|------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|--------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |           |  |  |  | REF. DWG. |            |                  |      |      |  腾龙芳烃（漳州）有限公司<br>Tenglong Aromatic (Zhangzhou) Co., Ltd. (QMC) |                            |                          |                    |       |                                                                                                                                                      |  |        |
| OPER. PRESS.        | 0.55   | MPa(g) | CODE        | PER. SPEC |  |  |  |           |            |                  |      |      | NOTE                                                                                                                                                |                            |                          |                    |       |  京福工程勘察设计有限公司<br>CTCI Beijing Co., Ltd.<br>设计资质证书编号: A[川]000191 |  |        |
| DESIGN TEMP.        | 80     | °C     |             |           |  |  |  |           | INSULATION |                  |      |      |                                                                                                                                                     |                            |                          |                    |       | FOR<br>腾龙芳烃减压油分离装置整改修复工程                                                                                                                             |  |        |
| DESIGN PRESS.       | 1.2    | MPa(g) |             |           |  |  |  |           |            |                  |      |      |                                                                                                                                                     |                            |                          |                    |       |                                                                                                                                                      |  |        |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |           |  |  |  |           |            |                  |      |      |                                                                                                                                                     | TITLE PIPING ISOMETRIC DWG |                          |                    |       |                                                                                                                                                      |  |        |
| TEST FLUID          | HYDRO. |        |             |           |  |  |  |           |            |                  |      |      |                                                                                                                                                     | PROJ. NO.                  | 17E3166A                 | UNIT               | 17076 |                                                                                                                                                      |  |        |
| INSPECTION<br>X-RAY | 5      | %      |             |           |  |  |  |           |            |                  |      |      |                                                                                                                                                     | DRAWN                      | WL                       | DATE<br>12/18/2017 | REV.  | 2                                                                                                                                                    |  |        |
| P.W.H.T             | -      |        |             |           |  |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DKS  | 12/15<br>2017                                                                                                                                       | LINE NO.                   | 13-1-1/2"-CWS-35020-L01F |                    |       |                                                                                                                                                      |  | SHEET  |
| CATEGORY            | -      |        |             |           |  |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                | DWG. NO.                   | XG32-13-CWS-35020        |                    |       |                                                                                                                                                      |  | 1 OF 1 |

## FABRICATION MATERIALS

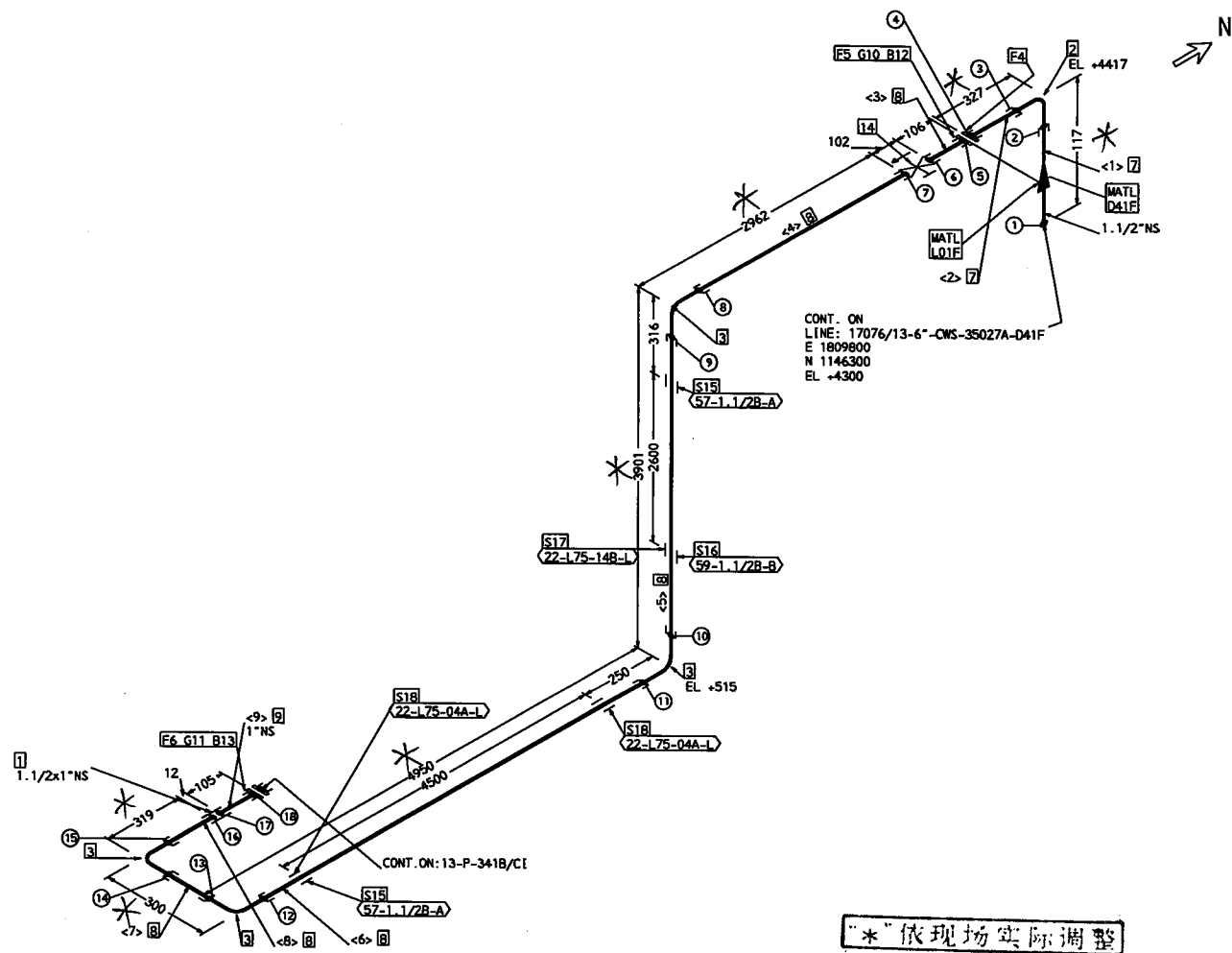
| PT<br>NO | COMPONENT DESCRIPTION                     | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-------------------------------------------|--------------|---------------|-----|
| 1        | CON REDU CPLG 3000# SW, SS A182-F304 ASME | 1.1/2 x 1    | RBA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, CS A105 ASME             | 1.1/2        | NEA7511000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME        | 1.1/2        | NEA75A1000021 | 4   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME         | 1.1/2        | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1.1/2        | FKA11A1AJ0015 | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME   | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1.1/2        | PPA1115A80021 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 12.3M |
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 0.1M  |
| 10       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1     |
| 11       | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1     |
| 12       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 13       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 14       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1.1/2        | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 15       | PIPE SUPPORT                                                                                                       |              | 57-1.1/2B-A   | 2     |
| 16       | PIPE SUPPORT                                                                                                       |              | 59-1.1/2B-B   | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 22-L75-14B-L  | 1     |
| 18       | PIPE SUPPORT                                                                                                       |              | 22-L75-04A-L  | 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>         | 85            | 1.1/2        |         | <2>         | 289           | 1.1/2        |         |
| <3>         | 100           | 1.1/2        |         | <4>         | 2930          | 1.1/2        |         |
| <5>         | 3838          | 1.1/2        |         | <6>         | 4886          | 1.1/2        |         |
| <7>         | 236           | 1.1/2        |         | <8>         | 287           | 1.1/2        |         |
| <9>         | 100           | 1            |         |             |               |              |         |



|                  |        |        |            |           |                                                                    |
|------------------|--------|--------|------------|-----------|--------------------------------------------------------------------|
| OPER. TEMP.      | 34     | °C     | PAINTING   | REF. DWG. | <b>腾龙芳烃(漳州)有限公司</b><br>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAC) |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE       | PER. SPEC |                                                                    |
| DESIGN TEMP.     | 80     | °C     | INSULATION | NOTE      | <b>CTCL</b> 京龍工程建設有限公司<br>CTCL Beijing Co., Ltd.<br>ENGINEERING    |
| DESIGN PRESS.    | 1.2    | MPa(g) |            |           | 騰龍芳烃原油分高裝置檢修工程                                                     |
| TEST PRESSURE    | 1.8    | MPa(g) |            |           | TITLE PIPING ISOMETRIC DWG                                         |
| TEST FLUID       | HYDRO. |        |            |           | PROJ. NO. 17E3166A UNIT 17076                                      |
| INSPECTION X-RAY | 5      | %      |            |           | DRAWN WL DATE 12/18/2017 REV. 2                                    |
| P.W.H.T          | -      |        |            |           | LINE NO. 13-1-1/2"-CWS-35021-L01F SHEET                            |
| CATEGORY         | -      |        |            |           | REV. DESCRIPTION CHKD APPR DATE DWG. NO. XG32-13-CWS-35021 1 OF 1  |

## FABRICATION MATERIALS

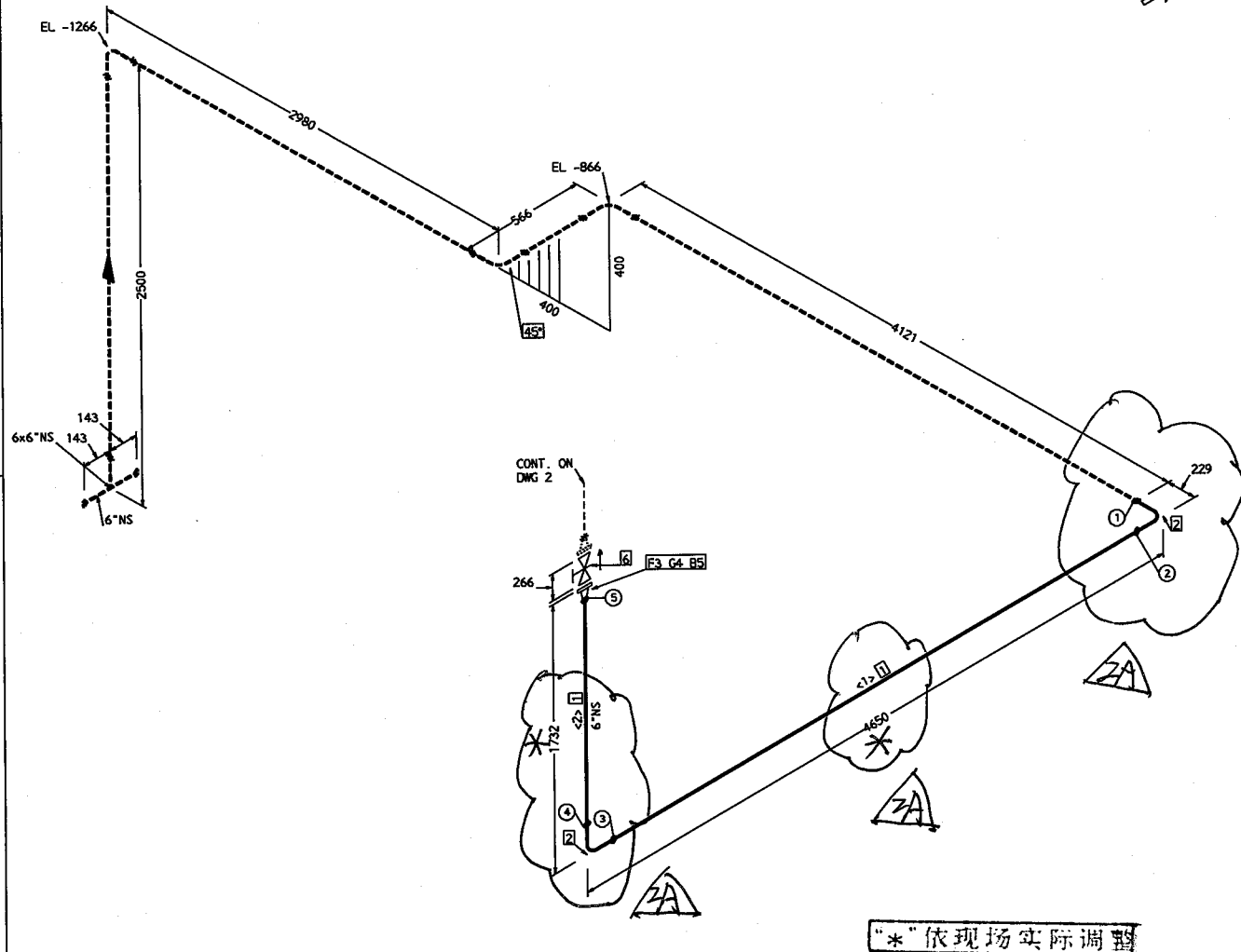
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|-----------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME    | 6            | PPA1415A40021 | 5.7M |
| 2        | 90 ELL SMLS, BW, S-40, CS A234-WPB ASME | 6            | NEA1621A40019 | 2    |
| 3        | WN FLG 150# RF S-40, CS A105 ASME       | 6            | FWA1111A40015 | 1    |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                     | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-------------------------------------------------------------------------------------------|--------------|---------------|-----|
| 4        | GASKET, 150# RF, 1.5MM RING TYPE COMP. SHEET NON-ASB. (G121) ASME                         | 6            | GKA1ANW010012 | 1   |
| 5        | 105 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO        | 20 MM        | GMA04310000E1 | 8   |
| 6        | GATE VALVE, 150# RF CS A216-WCB BODY 13CR TR API TR #1 FLEX WG OS&Y BB API-600 ASME-B16.5 | 6            | VGA11210003A5 | 1   |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH<br>(IN) | N.S. | REMARKS |
|-------------|-----------------------|------|---------|-------------|-----------------------|------|---------|
| <1>         | 4192                  | 6    |         | <2>         | 1414                  | 6    |         |



|                     |        |        |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |                            |          |                       |      |                    |      |         |
|---------------------|--------|--------|-------------|-----------|--|--|-----------|------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|-----------------------|------|--------------------|------|---------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京龍工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>地址: 北京市朝阳区安立路100号<br/>FOR 腾龙芳烃原油分离装置整改修复工程</div> |                            |          |                       |      |                    |      |         |
| OPER. PRESS.        | 0.55   | MPa(g) | CODE        | PER. SPEC |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |                            |          |                       | NOTE |                    |      |         |
| DESIGN TEMP.        | 80     | °C     | INSULATION  |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |                            |          |                       |      |                    |      |         |
| DESIGN PRESS.       | 1.2    | MPa(g) |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     |                            |          |                       |      |                    |      |         |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     | TITLE PIPING ISOMETRIC DWG |          |                       |      |                    |      |         |
| TEST FLUID          | HYDRO. |        |             |           |  |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                     | PROJ. NO.                  | 17E3166A |                       | UNIT | 17076              |      |         |
| INSPECTION<br>X-RAY | 5      | %      |             |           |  |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                 | 12/28<br>2017              | DRAWN    | WL                    |      | DATE<br>12/27/2017 | REV. | 2A      |
| P.W.H.T             | -      |        |             |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                 | 12/15<br>2017              | LINE NO. | 13-6"-CWS-35027A-D41F |      |                    |      | SHEET   |
| CATEGORY            | -      |        |             |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                | DATE                       | DWG. NO. | XG32-13-CWS-35027A    |      |                    |      | 1 OF 10 |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|-----------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME    | 6            | PPA1415A40021 | 6.4M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME        | 6 x 1        | SHA7511000021 | 1    |
| 3        | HALF CPLG 3000# SW, CS A105 ASME        | 6 x 3/4      | SHA7511000021 | 1    |
| 4        | 90 ELL SMLS, BW, S-40, CS A234-WPB ASME | 6            | NEA1621A40019 | 2    |
| 5        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1    |
| 6        | WN FLG 150# RF S-40, CS A105 ASME       | 6            | FWA1111A40015 | 1    |

## 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 | 0.3M |
| 8        | PIPE NIPPLE, SMLS, POE/TOE, S-80, CS A106-B L=75MM (3"), ASME                               | 1            | PNA1D15A80321 | 1    |
| 9        | CAP, 3000# FNPT, CS A105 ASME                                                               | 1            | NCA7211000021 | 1    |
| 10       | GASKET, 150# RF, 1.5MM RING TYPE COMP. SHEET NON-ASB. (G121) ASME                           | 6            | GKA1ANW010012 | 1    |
| 11       | 105 MM BOLT LENGTH, BOLT & NUT METRIC COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO           | 20 MM        | GMA04310000E1 | 8    |
| 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    |

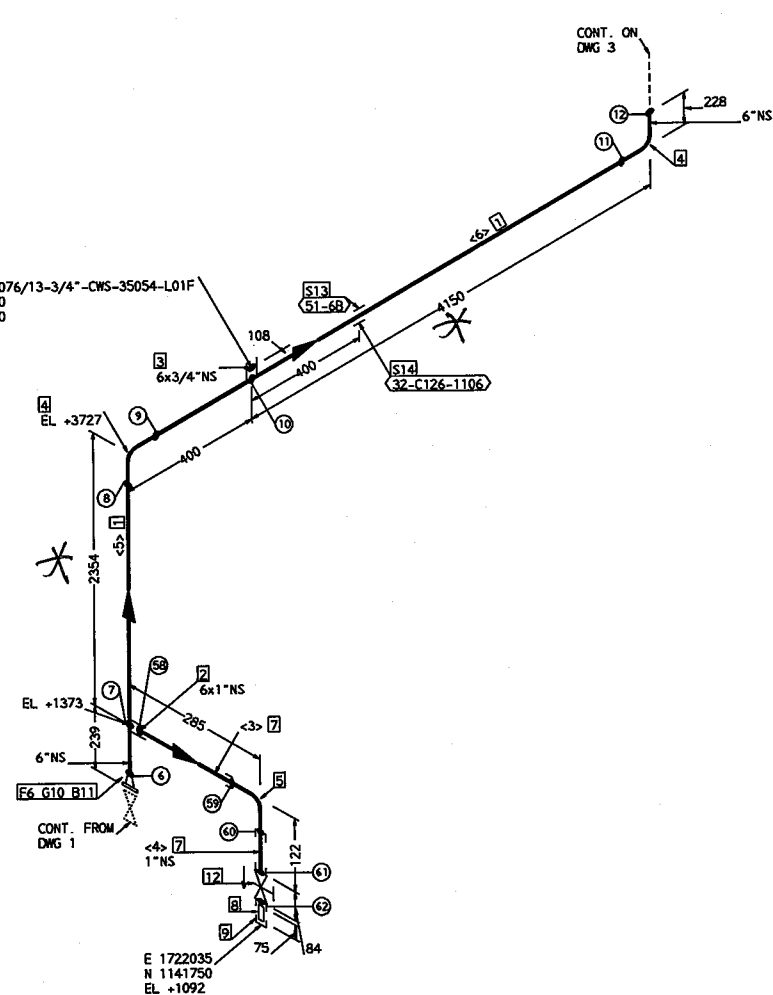
## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 13 | PIPE SUPPORT | 51-68        | 1 |
| 14 | PIPE SUPPORT | 32-C126-1106 | 1 |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS |
|-------------|--------------------|------|---------|-------------|--------------------|------|---------|
| <3>         | 150                | 1    |         | <4>         | 100                | 1    |         |
| <5>         | 2275               | 6    |         | <6>         | 4092               | 6    |         |

CONT. ON  
LINE: 17076/13-3/4"-CWS-35054-L01F  
E 1721750  
N 1142150  
EL +3835

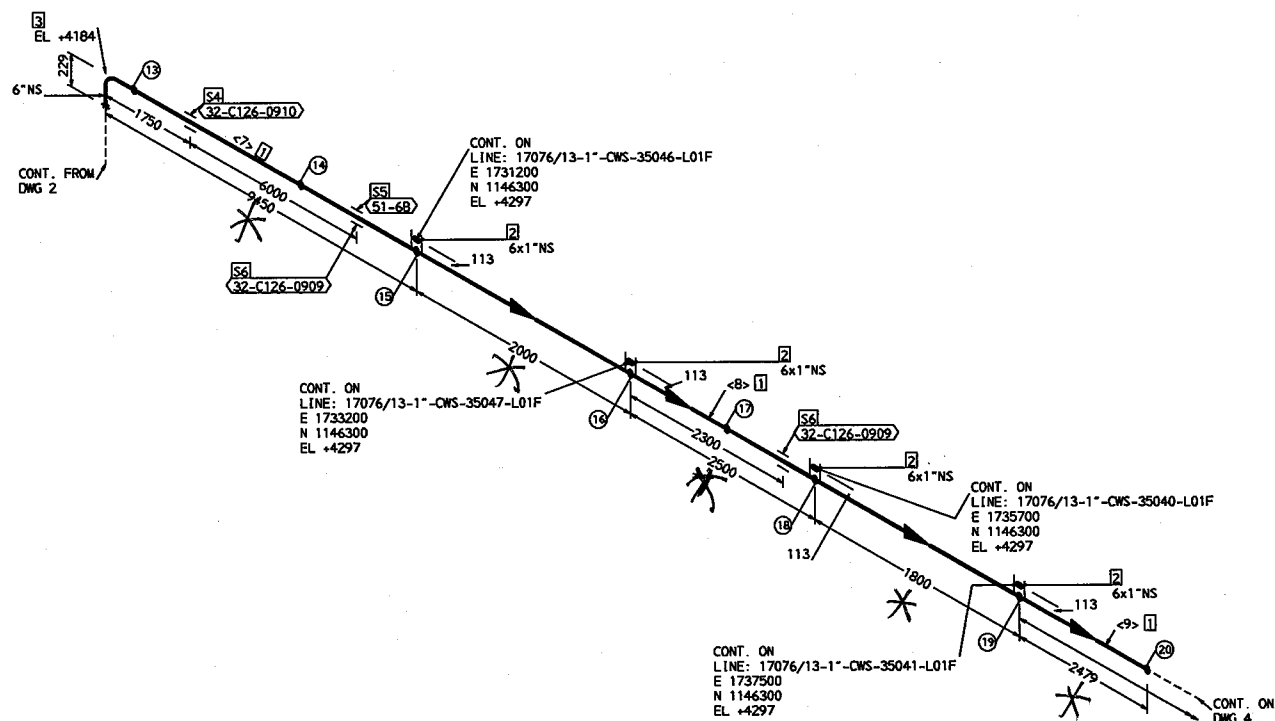


“\*”依现场实际调整

|                  |        |        |                                         |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      |                            |            |          |                       |                 |      |         |
|------------------|--------|--------|-----------------------------------------|-----------|-----------|--|--|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|----------|-----------------------|-----------------|------|---------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           | REF. DWG. |  |  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京隆工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>北京隆安工程技术有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |      |                            |            |          |                       |                 |      |         |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                    | PER. SPEC | NOTE      |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      |                            |            |          |                       |                 |      |         |
| DESIGN TEMP.     | 80     | °C     |                                         |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      |                            |            |          |                       |                 |      |         |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                              |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      |                            |            |          |                       |                 |      |         |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      | TITLE PIPING ISOMETRIC DWG |            |          |                       |                 |      |         |
| TEST FLUID       | HYDRO. |        |                                         |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                        |      | PROJ. NO.                  | 17E3166A   | UNIT     | 17076                 |                 |      |         |
| INSPECTION X-RAY | 5      | %      |                                         |           |           |  |  | 2A   | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                                       | CYS  | DXS                        | 12/28 2017 | DRAWN    | WL                    | DATE 12/27/2017 | REV. | 2A      |
| P.W.H.T          | -      |        |                                         |           |           |  |  | 2    | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                                       | CYS  | DXS                        | 12/15 2017 | LINE NO. | 13-6"-CWS-35027A-D41F |                 |      | SHEET   |
| CATEGORY         | -      |        |                                         |           |           |  |  | REV. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                            | CHKD | APPR                       | DATE       | DWG. NO. | XG32-13-CWS-35027A    |                 |      | 2 OF 10 |

| ERECTION MATERIALS || 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <7>         | 6000          | 6            |         | <8>         | 6000          | 6            |         |
| <9>         | 6000          | 6            |         |             |               |              |         |



**“\*”依现场实际调整**

|                  |        |        |                                          |           |  |  |           |            |                  |      |      |            |                                                                                                                                                                |                            |                 |       |         |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------|------------------|------|------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|-------|---------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |            |                  |      |      |            | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</div> |                            |                 |       |         |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |            |                  |      |      |            |                                                                                                                                                                |                            |                 |       | NOTE    |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION |                  |      |      |            |                                                                                                                                                                | FOR<br>腾龙芳烃催化剂分离装置整改修复工程   |                 |       |         |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |            |                  |      |      |            |                                                                                                                                                                |                            |                 |       |         |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |            |                  |      |      |            |                                                                                                                                                                | TITLE PIPING ISOMETRIC DWG |                 |       |         |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |            |                  |      |      |            | PROJ. NO.                                                                                                                                                      | 17E3166A                   | UNIT            | 17076 |         |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           | 2A         | FOR CONSTRUCTION | CYS  | DXS  | 12/28/2017 | DRAWN                                                                                                                                                          | WL                         | DATE 12/27/2017 | REV.  | 2A      |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DXS  | 12/15/2017 | LINE NO.                                                                                                                                                       | 13-6'-CWS-35027A-D41F      |                 |       | SHEET   |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR | DATE       | DWG. NO.                                                                                                                                                       | XG32-13-CWS-35027A         |                 |       | 3 OF 10 |

## FABRICATION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 12.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2    | SHA7511000021 | 1     |
| 3        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 4     |

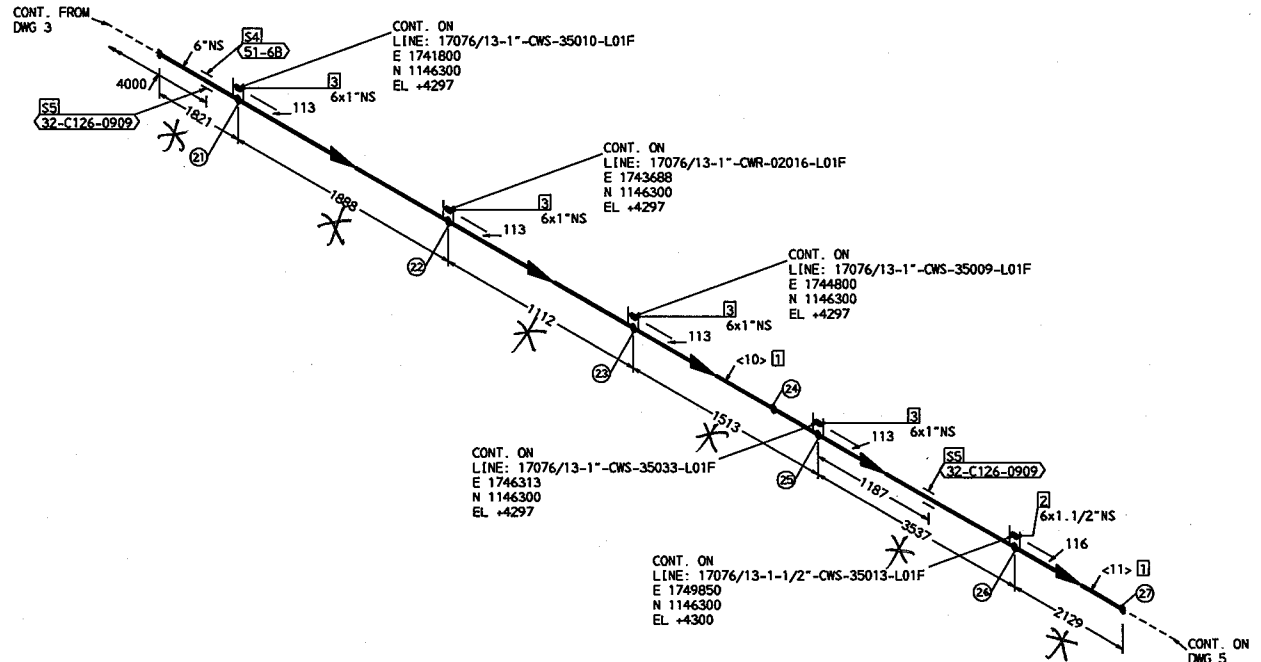
## ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE    | QTY |
|----------|-----------------------|--------------|--------------|-----|
| 4        | PIPE SUPPORT          |              | 51-68        | 1   |
| 5        | PIPE SUPPORT          |              | 32-C126-0909 | 2   |

## SUPPORTS

## 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <10>        | 6000          | 6            |         | <11>        | 6000          | 6            |         |



“\*”依现场实际调整

|                  |             |            |           |  |  |  |  |
|------------------|-------------|------------|-----------|--|--|--|--|
| OPER. TEMP.      | 34 °C       | PAINTING   | REF. DWG. |  |  |  |  |
| OPER. PRESS.     | 0.55 MPa(g) | CODE       | PER. SPEC |  |  |  |  |
| DESIGN TEMP.     | 80 °C       | INSULATION | NOTE      |  |  |  |  |
| DESIGN PRESS.    | 1.2 MPa(g)  |            |           |  |  |  |  |
| TEST PRESSURE    | 1.8 MPa(g)  |            |           |  |  |  |  |
| TEST FLUID       | HYDRO.      |            |           |  |  |  |  |
| INSPECTION X-RAY | 5 %         |            |           |  |  |  |  |
| P.W.H.T          | -           |            |           |  |  |  |  |
| CATEGORY         | -           |            |           |  |  |  |  |

腾龙芳烃(漳州)有限公司  
Tenglong Aromatic (Zhangzhou) Co., Ltd. (QAC)

京海工程建设有限公司  
CTCL Beijing Co., Ltd.  
北京恒泰伟业工程技术有限公司

FOR 腾龙芳烃原油分离装置整改修复工程

TITLE PIPING ISOMETRIC DWG

PROJ. NO. 17E3166A UNIT 17076

DRAWN WL DATE 12/27/2017 REV. 2A

LINE NO. 13-6-CWS-35027A-D41F SHEET

DWG. NO. XG32-13-CWS-35027A 4 OF 10

## FABRICATION MATERIALS

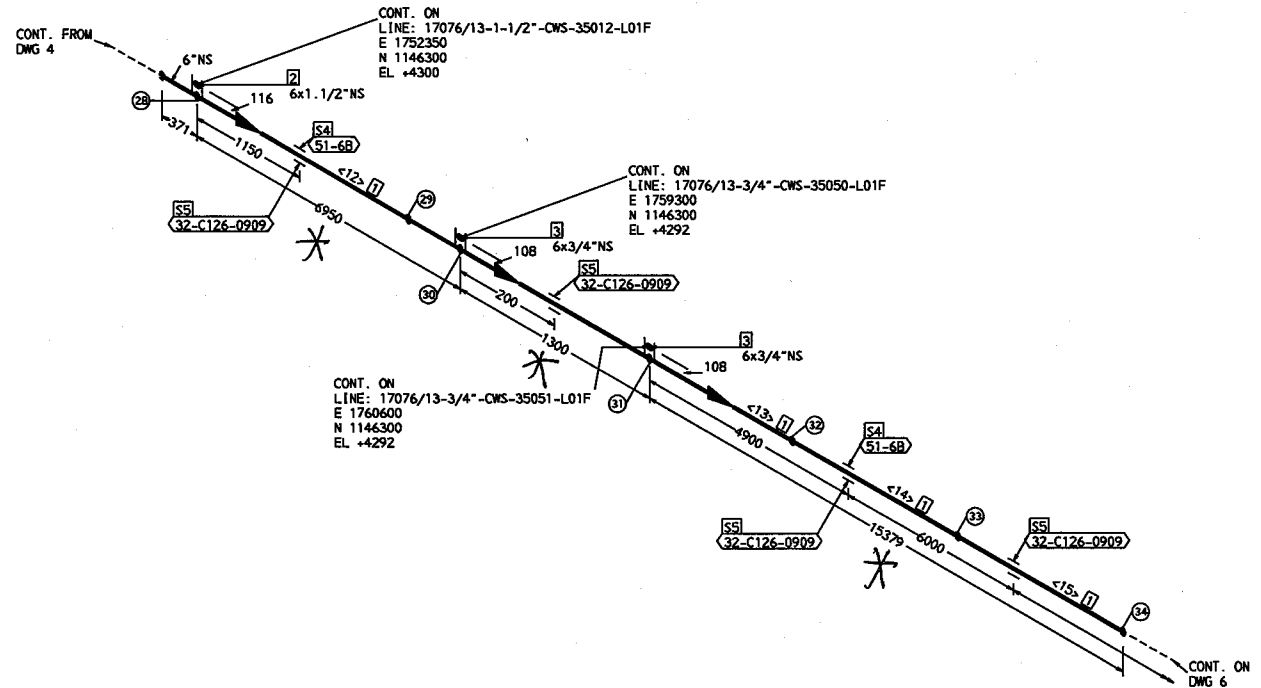
| PT NO | COMPONENT DESCRIPTION                | N.S. (IN) | ITEM CODE     | QTY   |
|-------|--------------------------------------|-----------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6         | PPA1415A40021 | 24.0M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2 | SHA7511000021 | 1     |
| 3     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 3/4   | SHA7511000021 | 2     |

## ERECTION MATERIALS

| PT NO | COMPONENT DESCRIPTION | N.S. (IN) | ITEM CODE    | QTY |
|-------|-----------------------|-----------|--------------|-----|
| 4     | PIPE SUPPORT          |           | 51-68        | 2   |
| 5     | PIPE SUPPORT          |           | 32-C126-0909 | 4   |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. (IN) | REMARKS |
|----------|-----------------|-----------|---------|----------|-----------------|-----------|---------|
| <12>     | 6000            | 6         |         | <13>     | 6000            | 6         |         |
| <14>     | 6000            | 6         |         | <15>     | 6000            | 6         |         |



\* 依现场实际情况

|                     |        |        |             |           |           |  |  |      |                                                                                                                                                               |      |                            |               |          |                       |                    |      |         |
|---------------------|--------|--------|-------------|-----------|-----------|--|--|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|---------------|----------|-----------------------|--------------------|------|---------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |           | REF. DWG. |  |  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAC)</div> |      |                            |               |          |                       |                    |      |         |
| OPER. PRESS.        | 0.55   | MPa(g) | CODE        | PER. SPEC | NOTE      |  |  |      | <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京世纪泰尔工程集团有限公司</div>     |      |                            |               |          |                       |                    |      |         |
| DESIGN TEMP.        | 80     | °C     |             |           |           |  |  |      | FOR 腾龙芳烃原油分离装置整改修复工程                                                                                                                                          |      |                            |               |          |                       |                    |      |         |
| DESIGN PRESS.       | 1.2    | MPa(g) | INSULATION  |           |           |  |  |      |                                                                                                                                                               |      |                            |               |          |                       |                    |      |         |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |           |           |  |  |      |                                                                                                                                                               |      | TITLE PIPING ISOMETRIC DWG |               |          |                       |                    |      |         |
| TEST FLUID          | HYDRO. |        |             |           |           |  |  |      |                                                                                                                                                               |      | PROJ. NO.                  | 17E3166A      | UNIT     | 17076                 |                    |      |         |
| INSPECTION<br>X-RAY | 5      | %      |             |           |           |  |  | 2A   | FOR CONSTRUCTION                                                                                                                                              | CYS  | DXS                        | 12/28<br>2017 | DRAWN    | WL                    | DATE<br>12/27/2017 | REV. | 2A      |
| P.W.H.T             | -      |        |             |           |           |  |  | 2    | FOR CONSTRUCTION                                                                                                                                              | CYS  | DXS                        | 12/15<br>2017 | LINE NO. | 13-6"-CWS-35027A-D41F |                    |      | SHEET   |
| CATEGORY            | -      |        |             |           |           |  |  | REV. | DESCRIPTION                                                                                                                                                   | CHKO | APPR                       | DATE          | DWG. NO. | XG32-13-CWS-35027A    |                    |      | 5 OF 10 |

## FABRICATION MATERIALS

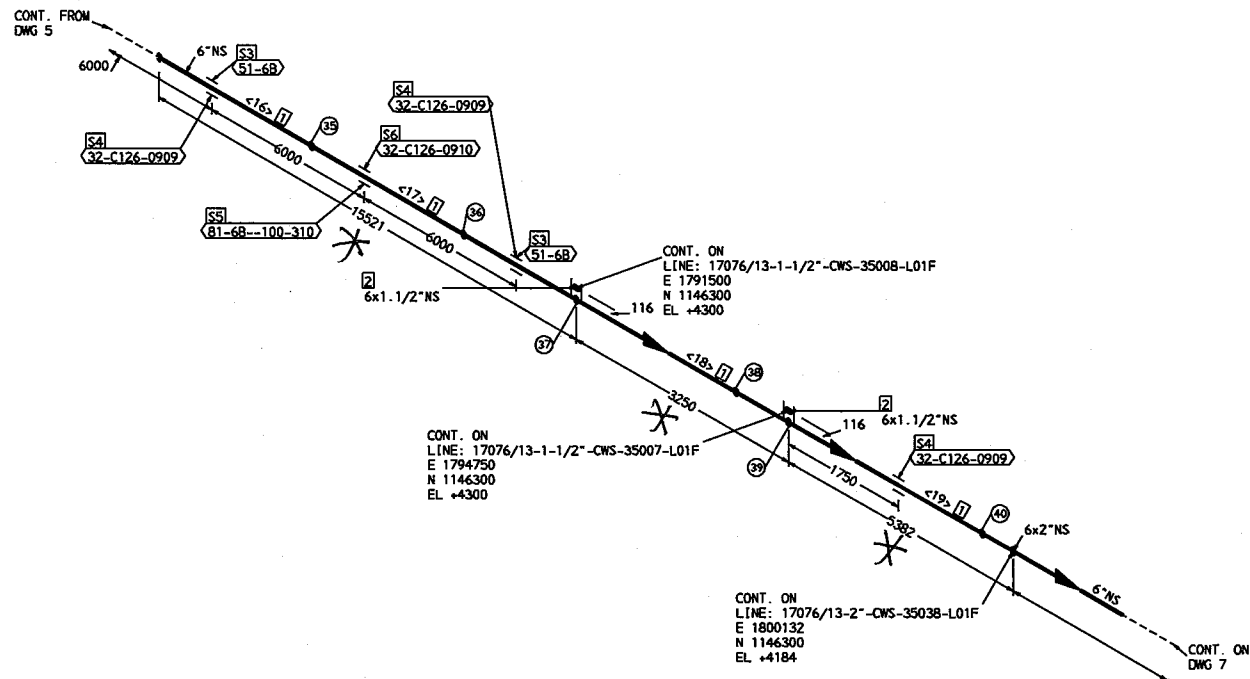
| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS. BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 26.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2    | SHA7511000021 | 2     |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE      | QTY |
|----------|-----------------------|--------------|----------------|-----|
| SUPPORTS |                       |              |                |     |
| 3        | PIPE SUPPORT          |              | 51-68          | 2   |
| 4        | PIPE SUPPORT          |              | 32-C126-0909   | 3   |
| 5        | PIPE SUPPORT          |              | 81-68--100-310 | 1   |
| 6        | PIPE SUPPORT          |              | 32-C126-0910   | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <16>        | 6000          | 6            |         | <17>        | 6000          | 6            |         |
| <18>        | 6000          | 6            |         | <19>        | 6000          | 6            |         |



“\*” 依现场实际调整

|                  |             |                                          |           |  |  |                    |                  |      |      |                                                                                                                                                                                                                                                                                                                    |          |                       |                 |                            |         |
|------------------|-------------|------------------------------------------|-----------|--|--|--------------------|------------------|------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|-----------------|----------------------------|---------|
| OPER. TEMP.      | 34 °C       | PAINTING                                 |           |  |  | REF. DWG.          |                  |      |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armatex (Zhangzhou) Co., Ltd. (OAC)</div> <div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京世纪伟业国际工程</div> |          |                       |                 |                            |         |
| OPER. PRESS.     | 0.55 MPa(g) | CODE                                     | PER. SPEC |  |  |                    |                  |      |      |                                                                                                                                                                                                                                                                                                                    |          |                       |                 | NOTE                       |         |
| DESIGN TEMP.     | 80 °C       |                                          |           |  |  |                    |                  |      |      |                                                                                                                                                                                                                                                                                                                    |          |                       |                 |                            |         |
| DESIGN PRESS.    | 1.2 MPa(g)  | INSULATION                               |           |  |  | FOR 腾龙芳烃原油分离装置检修工程 |                  |      |      |                                                                                                                                                                                                                                                                                                                    |          |                       |                 |                            |         |
| TEST PRESSURE    | 1.8 MPa(g)  | <div><div>SPS</div><div>TYPE</div></div> |           |  |  |                    |                  |      |      |                                                                                                                                                                                                                                                                                                                    |          |                       |                 | TITLE PIPING ISOMETRIC DWG |         |
| TEST FLUID       | HYDRO.      |                                          |           |  |  |                    |                  |      |      | PROJ. NO.                                                                                                                                                                                                                                                                                                          | 17E3166A | UNIT                  | 17076           |                            |         |
| INSPECTION X-RAY | 5 %         |                                          |           |  |  | 2A                 | FOR CONSTRUCTION | CYS  | DXS  | 12/28/2017                                                                                                                                                                                                                                                                                                         | DRAWN    | WL                    | DATE 12/27/2017 | REV.                       | 2A      |
| P.W.H.T          | -           |                                          |           |  |  | 2                  | FOR CONSTRUCTION | CYS  | DXS  | 12/15/2017                                                                                                                                                                                                                                                                                                         | LINE NO. | 13-6"-CWS-35027A-D41F |                 |                            | SHEET   |
| CATEGORY         | -           |                                          |           |  |  | REV.               | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                                                                                                                                                                               | DWG. NO. | XG32-13-CWS-35027A    |                 |                            | 6 OF 10 |

## FABRICATION MATERIALS

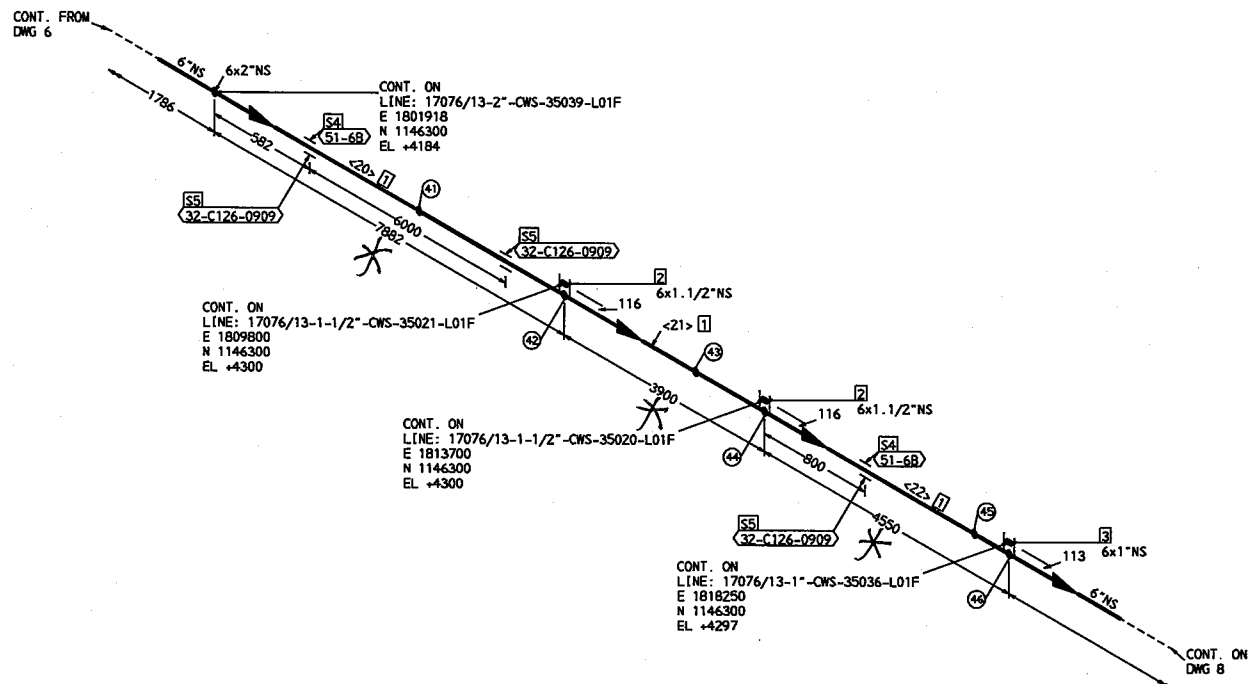
| PT NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|-------|--------------------------------------|--------------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 17.7M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1.1/2    | SHA7511000021 | 2     |
| 3     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 1     |

## ERECTION MATERIALS

| PT NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE    | QTY |
|-------|-----------------------|--------------|--------------|-----|
| 4     | PIPE SUPPORT          |              | 51-68        | 2   |
| 5     | PIPE SUPPORT          |              | 32-C126-0909 | 3   |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|------|---------|----------|-----------------|------|---------|
| <20>     | 6000            | 6    |         | <21>     | 6000            | 6    |         |
| <22>     | 6000            | 6    |         |          |                 |      |         |



\* 依现场实际调整

|                  |             |             |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            |                            |                       |                 |       |               |
|------------------|-------------|-------------|-----------|--|--|-----------|--|------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|----------------------------|-----------------------|-----------------|-------|---------------|
| OPER. TEMP.      | 34 °C       | PAINTING    |           |  |  | REF. DWG. |  |      |                  | <div><div> 腾龙芳烃 (漳州) 有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DMC)</div><div> 京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京工程技术有限公司</div></div> <div>FOR 腾龙芳烃原油分离装置检修工程</div> |      |            |                            |                       |                 |       |               |
| OPER. PRESS.     | 0.55 MPa(g) | CODE        | PER. SPEC |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            |                            |                       |                 | NOTE  |               |
| DESIGN TEMP.     | 80 °C       |             |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            |                            |                       |                 |       |               |
| DESIGN PRESS.    | 1.2 MPa(g)  | INSULATION  |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            |                            |                       |                 |       |               |
| TEST PRESSURE    | 1.8 MPa(g)  | NPS<br>TYPE |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            | TITLE PIPING ISOMETRIC DWG |                       |                 |       |               |
| TEST FLUID       | HYDRO.      |             |           |  |  |           |  |      |                  |                                                                                                                                                                                                                                                                                                                                                               |      |            | PROJ. NO.                  | 17E3166A              | UNIT            | 17076 |               |
| INSPECTION X-RAY | 5 %         |             |           |  |  |           |  | 2A   | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                           | DXS  | 12/28 2017 | DRAWN                      | WL                    | DATE 12/27/2017 | REV.  | 2A            |
| P.W.H.T          | -           |             |           |  |  |           |  | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                                                                                                                                                                                                                           | DXS  | 12/15 2017 | LINE NO.                   | 13-6"-CWS-35027A-D41F |                 |       | SHEET 7 OF 10 |
| CATEGORY         | -           |             |           |  |  |           |  | REV. | DESCRIPTION      | CHKD                                                                                                                                                                                                                                                                                                                                                          | APPR | DATE       | DWG. NO.                   | XG32-13-CWS-35027A    |                 |       |               |

## FABRICATION MATERIALS

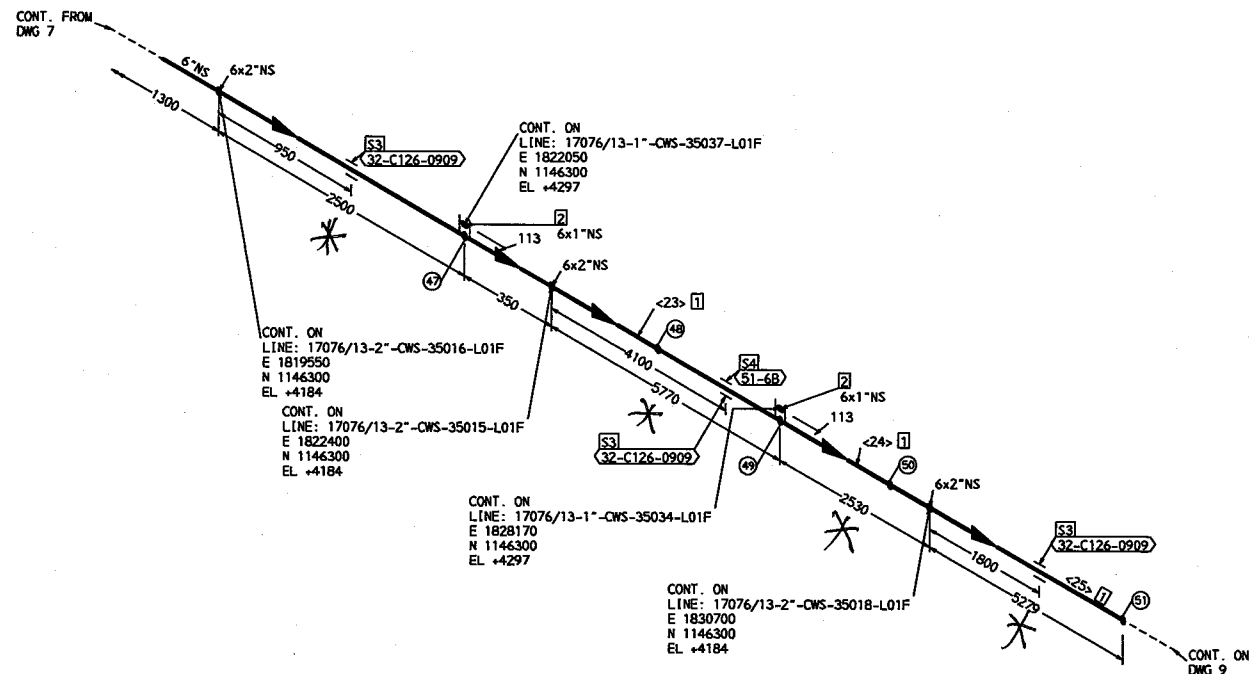
| PT NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY   |
|-------|--------------------------------------|--------------|---------------|-------|
| 1     | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 16.5M |
| 2     | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 2     |

## ERECTION MATERIALS

| PT NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE    | QTY |
|-------|-----------------------|--------------|--------------|-----|
| 3     | PIPE SUPPORT          |              | 32-C126-0909 | 3   |
| 4     | PIPE SUPPORT          |              | 51-6B        | 1   |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. (IN) | REMARKS |
|----------|-----------------|-----------|---------|
| <23>     | 6000            | 6         |         |
| <25>     | 6000            | 6         |         |



“\*” 依现场实际测量

|                  |        |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                           |                                                                                                                                                                   |          |                       |                 |      |    |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|-----------------|------|----|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div><div>腾龙芳烃（漳州）有限公司<br/>Dragon Aromatics (Changzhou) Co., Ltd. (DABC)</div></div> |                                                                                                                                                                   |          |                       |                 |      |    |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                                           | <div><div>京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京京福工程咨询有限公司</div></div> |          |                       |                 |      |    |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                           | FOR                                                                                                                                                               |          |                       |                 |      |    |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |      | 腾龙芳烃原油分高装置检修工程                                                                                                                                                            |                                                                                                                                                                   |          |                       |                 |      |    |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |           |  |  |           |      |                  |      |                                                                                                                                                                           | TITLE PIPING ISOMETRIC DWG                                                                                                                                        |          |                       |                 |      |    |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                           | PROJ. NO.                                                                                                                                                         | 17E3166A | UNIT                  | 17076           |      |    |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           | 2A   | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                       | 12/28 2017                                                                                                                                                        | DRAWN    | WL                    | DATE 12/27/2017 | REV. | 2A |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                       | 12/15 2017                                                                                                                                                        | LINE NO. | 13-6"-CWS-35027A-D41F | SHEET           |      |    |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                      | DATE                                                                                                                                                              | DWG. NO. | XG32-13-CWS-35027A    | 8 OF 10         |      |    |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------|--------------|---------------|------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME | 6            | PPA1415A40021 | 6.0M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME     | 6 x 1        | SHA7511000021 | 1    |

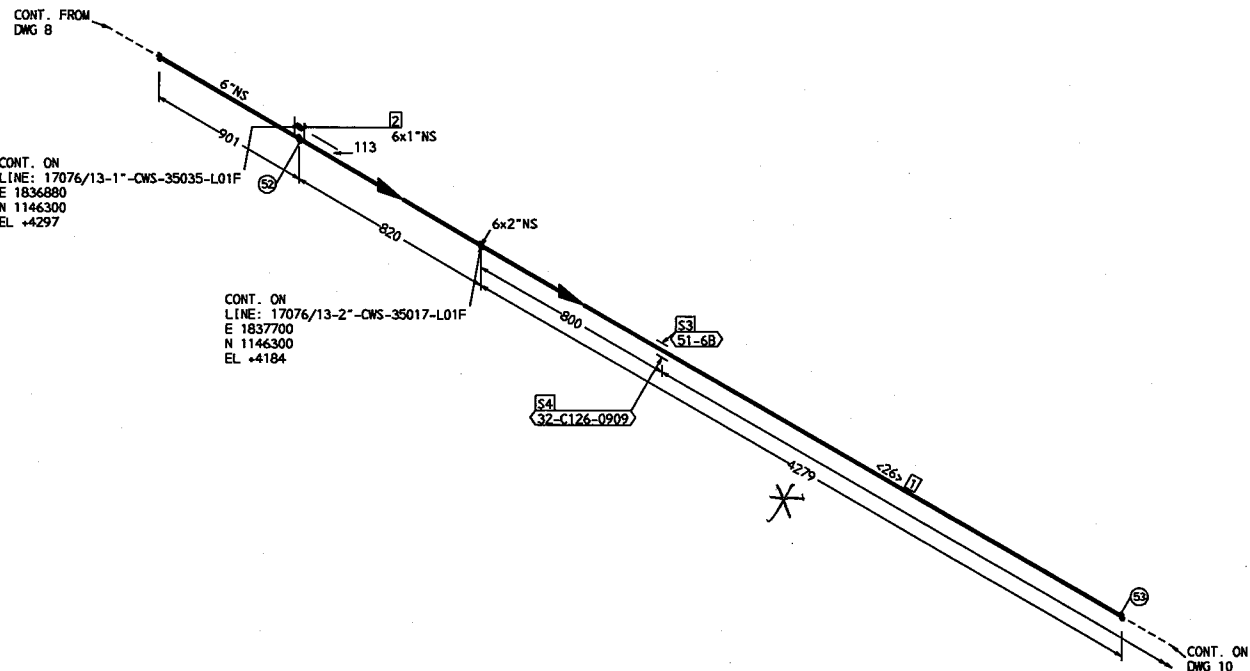
## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION | N.S.<br>(IN) | ITEM CODE    | QTY |
|----------|-----------------------|--------------|--------------|-----|
| 3        | PIPE SUPPORT          |              | 51-68        | 1   |
| 4        | PIPE SUPPORT          |              | 32-C126-0909 | 1   |

## SUPPORTS

## 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <26>        | 6000          | 6            |         |             |               |              |         |



“\*” 依现场实际情况

|                  |        |        |                                          |  |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                    |                            |                       |                 |      |         |
|------------------|--------|--------|------------------------------------------|--|--|--|-----------|------------------|------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------|-----------------|------|---------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |  |  |  | REF. DWG. |                  |      |      | <div><div>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (CMC)</div></div> <div><div>京能工程建设有限公司<br/>CTCI Beijing Co., Ltd.</div><div>设计单位: 京能工程技术有限公司</div></div> <div>FOR<br/>腾龙芳烃原油分分离装置检修工程</div> |                            |                       |                 |      |         |
| OPER. PRESS.     | 0.55   | MPa(g) | PER. SPEC                                |  |  |  | NOTE      |                  |      |      |                                                                                                                                                                                                                                                                                                    |                            |                       |                 |      |         |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |  |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                    |                            |                       |                 |      |         |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |  |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                    |                            |                       |                 |      |         |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |  |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                    | TITLE PIPING ISOMETRIC DWG |                       |                 |      |         |
| TEST FLUID       | HYDRO. |        |                                          |  |  |  |           |                  |      |      | PROJ. NO.                                                                                                                                                                                                                                                                                          | 17E3166A                   | UNIT                  | 17076           |      |         |
| INSPECTION X-RAY | 5      | %      |                                          |  |  |  | 2A        | FOR CONSTRUCTION | CYS  | DKS  | 12/28 2017                                                                                                                                                                                                                                                                                         | DRAWN                      | WL                    | DATE 12/27/2017 | REV. | 2A      |
| P.W.H.T          | -      |        |                                          |  |  |  | 2         | FOR CONSTRUCTION | CYS  | DKS  | 12/15 2017                                                                                                                                                                                                                                                                                         | LINE NO.                   | 13-6"-CWS-35027A-D41F |                 |      | SHEET   |
| CATEGORY         | -      |        |                                          |  |  |  | REV.      | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                                                                                                                                                               | DWG. NO.                   | XG32-13-CWS-35027A    |                 |      | 9 OF 10 |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                 | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|---------------------------------------|--------------|---------------|-------|
| 1        | PIPE, SMLS, BE, S-40, CS A106-B ASME  | 6            | PPA1415A40021 | 10.2M |
| 2        | HALF CPLG 3000# SW, CS A105 ASME      | 6 x 1        | SHA7511000021 | 1     |
| 3        | HALF CPLG 3000# SW, CS A105 ASME      | 6 x 3/4      | SHA7511000021 | 1     |
| 4        | CAP, SMLS, BW, S-40, CS A234-WPB ASME | 6            | NCA1621A40019 | 1     |

## ERECTION MATERIALS

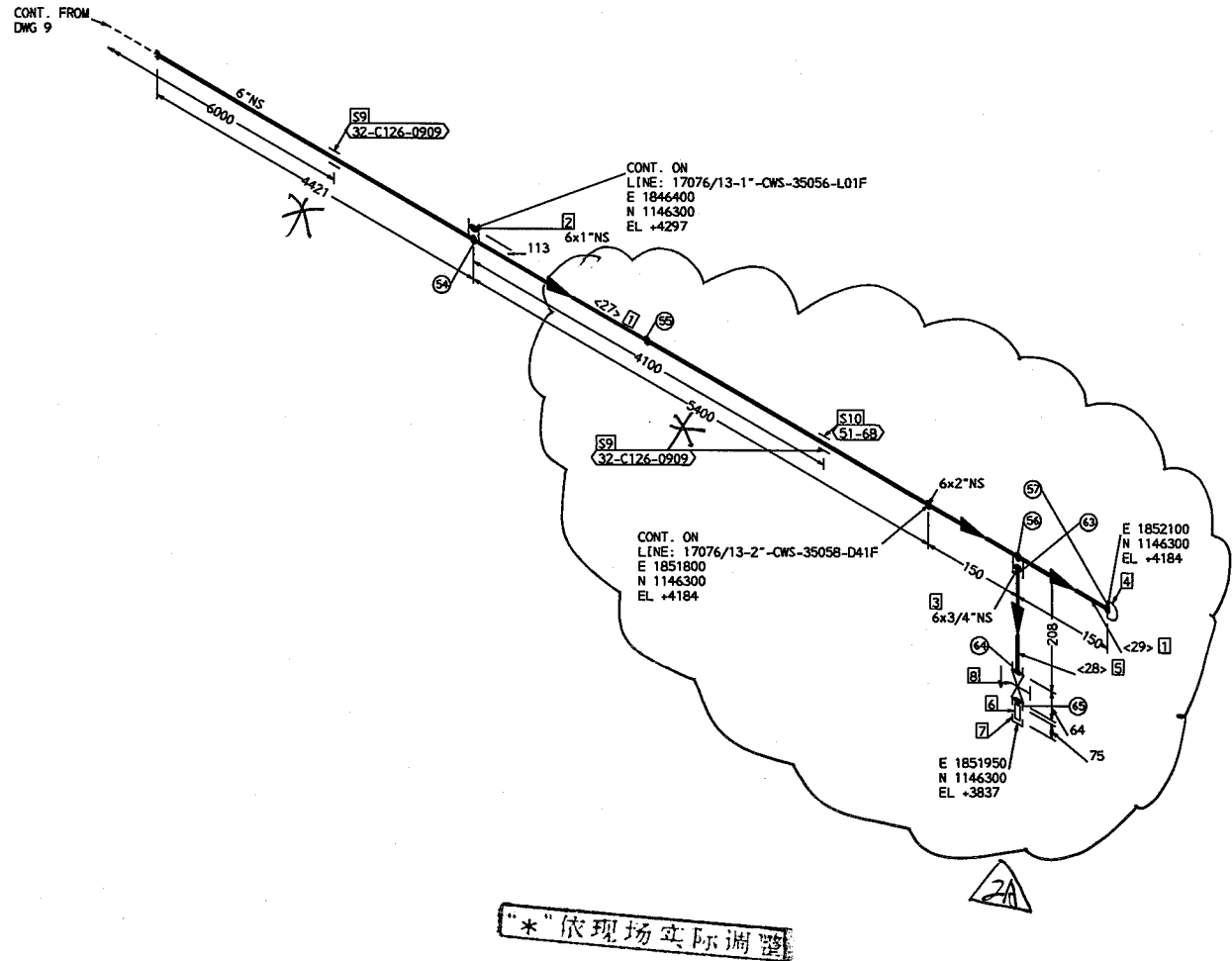
| PT<br>NO | COMPONENT DESCRIPTION                                                                       | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------|--------------|---------------|------|
| 5        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                        | 3/4          | PPA1115A80021 | 0.1M |
| 6        | PIPE NIPPLE, SMLS, POE/TOE, S-80, CS A106-B L=75MM (3"), ASME                               | 3/4          | PNA1015A80321 | 1    |
| 7        | CAP, 3000# FNPT, CS A105 ASME                                                               | 3/4          | NCA7211000021 | 1    |
| 8        | GATE VALVE, 800# SW, CS A105 BODY 13CR AND HARD FACED TR API TR #8 SOLID WG OS&Y BB API-602 | 3/4          | VG8512000111  | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 9  | PIPE SUPPORT | 32-C126-0909 | 2 |
| 10 | PIPE SUPPORT | 51-6B        | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <27>        | 6000          | 6            |         | <28>        | 100           | 3/4          |         |
| <29>        | 4121          | 6            |         |             |               |              |         |



|                  |        |        |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      |                            |            |          |                       |                 |      |         |
|------------------|--------|--------|------------------------------------------|-----------|-----------|--|--|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|----------|-----------------------|-----------------|------|---------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           | REF. DWG. |  |  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Aerospace (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京南工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京中石油工程技术有限公司</div> FOR 腾龙芳烃原油分离装置整改修复工程 |      |                            |            |          |                       |                 |      |         |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      |                            |            | NOTE     |                       |                 |      |         |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      |                            |            |          |                       |                 |      |         |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      |                            |            |          |                       |                 |      |         |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      | TITLE PIPING ISOMETRIC DWG |            |          |                       |                 |      |         |
| TEST FLUID       | HYDRO. |        |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                              |      | PROJ. NO.                  | 17E3166A   | UNIT     | 17076                 |                 |      |         |
| INSPECTION X-RAY | 5      | %      |                                          |           |           |  |  | 2A   | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                             | CYS  | DXS                        | 12/28 2017 | DRAWN    | WL                    | DATE 12/27/2017 | REV. | 2A      |
| P.W.H.T          | -      |        |                                          |           |           |  |  | 2    | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                             | CYS  | DXS                        | 12/15 2017 | LINE NO. | 13-6"-CWS-35027A-D41F |                 |      | SHEET   |
| CATEGORY         | -      |        |                                          |           |           |  |  | REV. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                  | CHKD | APPR                       | DATE       | DWG. NO. | XG32-13-CWS-35027A    |                 |      | 100F 10 |

## FABRICATION MATERIALS

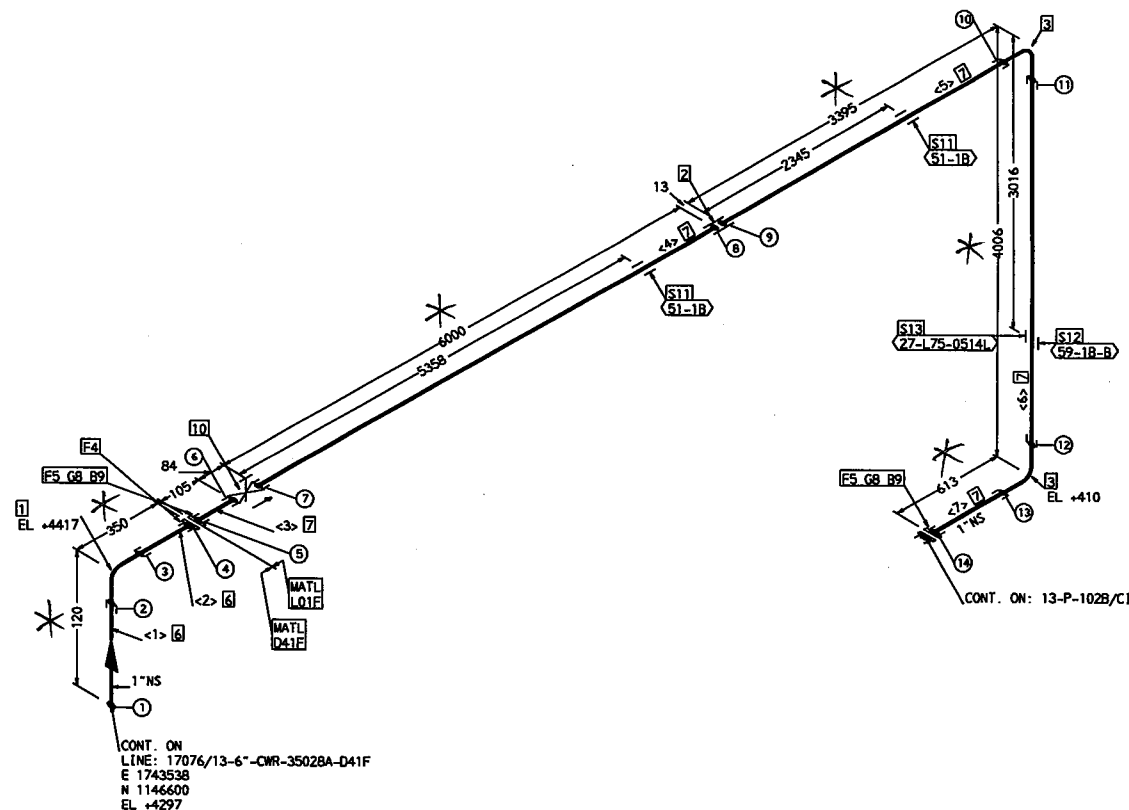
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 2   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA111A1A0015 | 2   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.5M  |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1A0022  | 14.1M |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| 11       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 2     |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0514L  | 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>         | 98            | 1            |         | <2>         | 324           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 6000          | 1            |         |
| <5>         | 3373          | 1            |         | <6>         | 3962          | 1            |         |
| <7>         | 586           | 1            |         |             |               |              |         |



"\*" 依现场实际调整

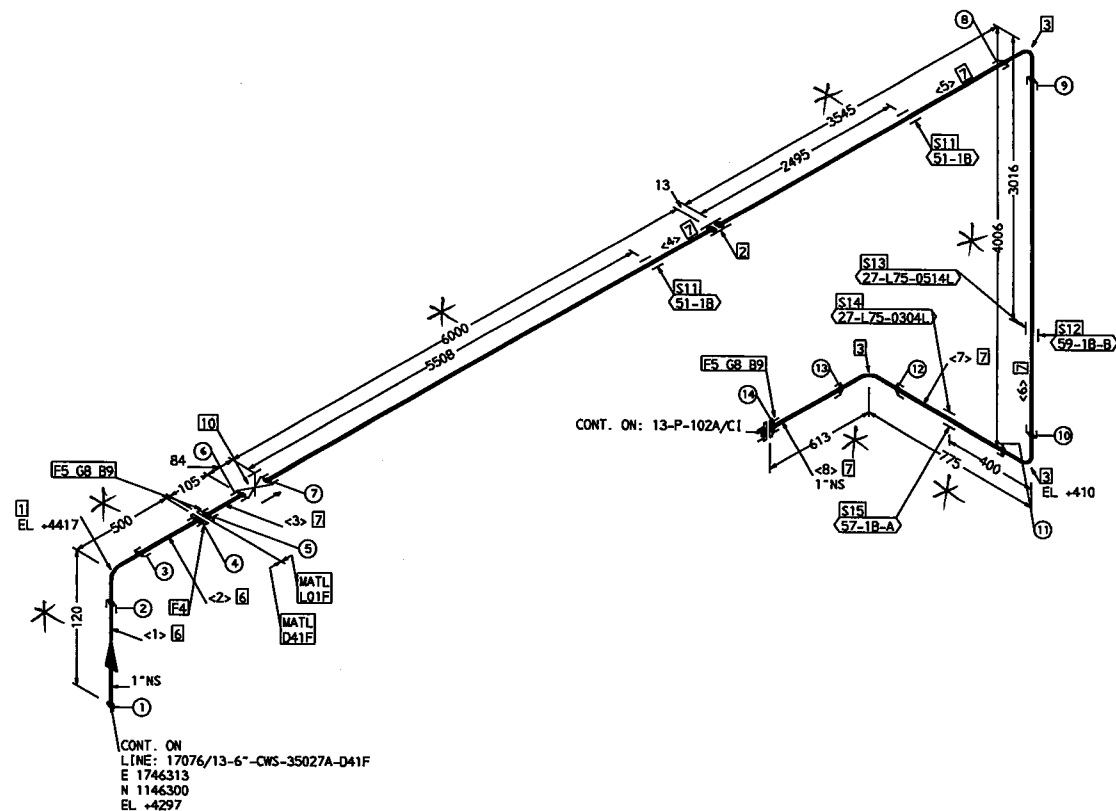
|                  |        |                                                                           |                            |           |           |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
|------------------|--------|---------------------------------------------------------------------------|----------------------------|-----------|-----------|-------------------------------------------------------------------|---------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34     | °C                                                                        | PAINTING                   |           | REF. DWG. |                                                                   |                                 |  | <div> 腾龙芳烃 (漳州) 有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAG)</div> |  |  |  |
| OPER. PRESS.     | 0.55   | MPa(g)                                                                    | CODE                       | PER. SPEC |           |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
| DESIGN TEMP.     | 80     | °C                                                                        | INSULATION                 |           | FOR       |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
| DESIGN PRESS.    | 1.2    | MPa(g)                                                                    |                            |           |           |                                                                   |                                 |  | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                                |  |  |  |
| TEST PRESSURE    | 1.8    | MPa(g)                                                                    | TITLE PIPING ISOMETRIC DWG |           |           |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
| TEST FLUID       | HYDRO. | PROJ. NO. 17E3166A UNIT 17076                                             |                            |           |           |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
| INSPECTION X-RAY | 5      |                                                                           |                            |           |           | %                                                                 | DRAWN WL DATE 12/18/2017 REV. 2 |  |                                                                                                                                                                 |  |  |  |
| P.W.H.T          | -      | 2 FOR CONSTRUCTION CYS DXS 12/15 2017 LINE NO. 13-1"-CWS-35032-L01F SHEET |                            |           |           |                                                                   |                                 |  |                                                                                                                                                                 |  |  |  |
| CATEGORY         | -      |                                                                           |                            |           |           | REV. DESCRIPTION CHKD APPR DATE DWG. NO. XG32-13-CWS-35032 1 OF 1 |                                 |  |                                                                                                                                                                 |  |  |  |

| ERECTION MATERIALS |

## SUPPORTS

| CUT PIPE LENGTH |

| PIECE NO | CUT LENGTH | N. S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N. S. (IN) | REMARKS |
|----------|------------|------------|---------|----------|------------|------------|---------|
| <1>      | 98         | 1          |         | <2>      | 474        | 1          |         |
| <3>      | 100        | 1          |         | <4>      | 6000       | 1          |         |
| <5>      | 3523       | 1          |         | <6>      | 3962       | 1          |         |
| <7>      | 731        | 1          |         | <8>      | 586        | 1          |         |



“\*”依现场实际调整

|                  |        |        |                                          |  |  |  |           |      |                  |      |                                                                                                                                                                      |            |           |                      |                                                                                                                                                                  |                      |        |   |
|------------------|--------|--------|------------------------------------------|--|--|--|-----------|------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------|---|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |  |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Beiguan Petrochemical (Zhangzhou) Co., Ltd. (0443)</div> |            |           |                      |                                                                                                                                                                  |                      |        |   |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     |  |  |  |           |      |                  |      | NOTE                                                                                                                                                                 |            |           |                      | <div> 京福工程建設有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京市朝阳区东直门内大街111号1111室</div> |                      |        |   |
| DESIGN TEMP.     | 80     | °C     | PER. SPEC                                |  |  |  |           |      |                  |      | FOR                                                                                                                                                                  |            |           |                      |                                                                                                                                                                  |                      |        |   |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |  |  |  |           |      |                  |      | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                                     |            |           |                      |                                                                                                                                                                  |                      |        |   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |  |  |  |           |      |                  |      |                                                                                                                                                                      |            |           | TITLE                |                                                                                                                                                                  | PIPING ISOMETRIC DWG |        |   |
| TEST FLUID       | HYDRO. |        |                                          |  |  |  |           |      |                  |      |                                                                                                                                                                      |            | PROJ. NO. | 17B3166A             | UNIT                                                                                                                                                             | 17076                |        |   |
| INSPECTION X-RAY | 5      | %      |                                          |  |  |  |           |      |                  |      |                                                                                                                                                                      |            | DRAWN     | WL                   | DATE                                                                                                                                                             | 12/18/2017           | REV.   | 2 |
| P.W.H.T          | -      |        |                                          |  |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                  | 12/15/2017 | LINE NO.  | 13-1'-CWS-35033-L01F |                                                                                                                                                                  |                      | SHEET  |   |
| CATEGORY         | -      |        |                                          |  |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                 | DATE       | DWG. NO.  | XG32-13-CWS-35033    |                                                                                                                                                                  |                      | 1 OF 1 |   |

## FABRICATION MATERIALS

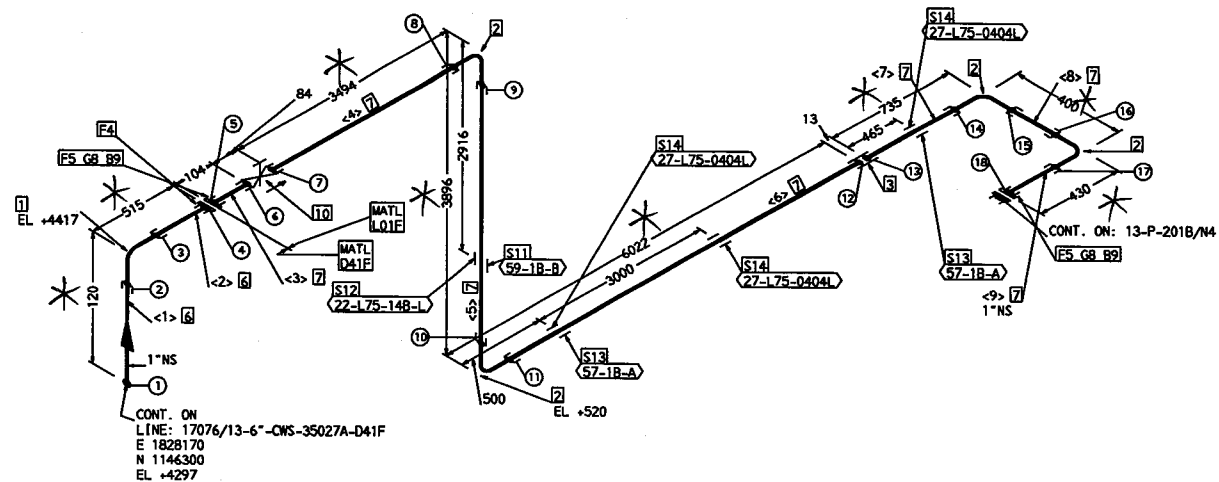
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 4   |
| 3        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA111A1A0015 | 2   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SWLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 7        | PIPE, SWLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA111A1A0022 | 14.9M |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 11       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 12       | PIPE SUPPORT                                                                                                       |              | 22-L75-14B-L  | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 2     |
| 14       | PIPE SUPPORT                                                                                                       |              | 27-L75-0404L  | 3     |

## 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>         | 98            | 1            |         | <2>         | 488           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 3472          | 1            |         |
| <5>         | 3852          | 1            |         | <6>         | 6000          | 1            |         |
| <7>         | 713           | 1            |         | <8>         | 356           | 1            |         |
| <9>         | 403           | 1            |         |             |               |              |         |



“\*”依现场实际调整

|                  |             |            |           |                                                                      |                      |              |            |
|------------------|-------------|------------|-----------|----------------------------------------------------------------------|----------------------|--------------|------------|
| OPER. TEMP.      | 34 °C       | PAINING    | REF. DWG. | <p>腾龙芳烃(漳州)有限公司<br/>Dragon Arrection (Changzhou) Co., Ltd. (DAD)</p> |                      |              |            |
| OPER. PRESS.     | 0.55 MPa(g) | CODE       | PER. SPEC |                                                                      |                      |              |            |
| DESIGN TEMP.     | 80 °C       | INSULATION | NOTE      | <p>京通工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-65051818</p>        |                      |              |            |
| DESIGN PRESS.    | 1.2 MPa(g)  |            |           |                                                                      |                      |              |            |
| TEST PRESSURE    | 1.8 MPa(g)  |            |           | FOR 腾龙芳烃原油分离装置整改修复工程                                                 |                      |              |            |
| TEST FLUID       | HYDRO.      |            |           | TITLE PIPING ISOMETRIC DWG                                           |                      |              |            |
| INSPECTION X-RAY | 5 %         |            |           | PROJ. NO.                                                            | 17B3166A             | UNIT         | 17076      |
| P.W.H.T          | -           |            |           | DRAWN                                                                | WL                   | DATE         | 12/18/2017 |
| CATEGORY         | -           |            |           | LINE NO.                                                             | 13-1"-CWS-35034-L01F | REV.         | 2          |
|                  |             |            |           | DWG. NO.                                                             | XG32-13-CWS-35034    | SHEET 1 OF 1 |            |

## FABRICATION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 1   |
| 4        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1            | NFA75A1000021 | 1   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

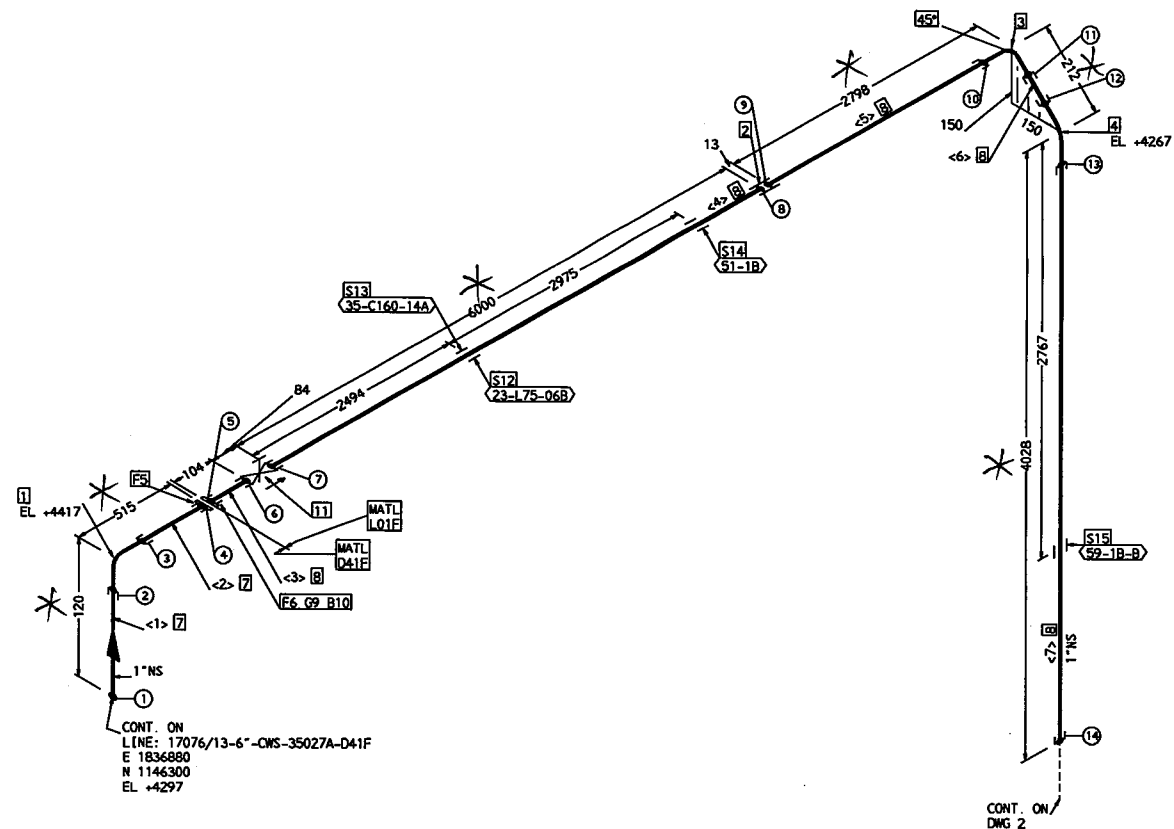
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 7        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 13.1M |
| 9        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1     |
| 10       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 11       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |

## SUPPORTS

|    |              |  |             |   |
|----|--------------|--|-------------|---|
| 12 | PIPE SUPPORT |  | 23-L75-06B  | 1 |
| 13 | PIPE SUPPORT |  | 35-C160-14A | 1 |
| 14 | PIPE SUPPORT |  | 51-1B       | 1 |
| 15 | PIPE SUPPORT |  | 59-1B-B     | 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>         | 98            | 1            |         | <2>         | 488           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 6000          | 1            |         |
| <5>         | 2776          | 1            |         | <6>         | 176           | 1            |         |
| <7>         | 4014          | 1            |         |             |               |              |         |



“\*”依现场实际调整

|                  |        |        |                                          |  |  |  |           |                  |      |      |                                                                                                                                                   |                            |                     |                 |        |              |
|------------------|--------|--------|------------------------------------------|--|--|--|-----------|------------------|------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|-----------------|--------|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |  |  |  | REF. DWG. |                  |      |      |  腾龙芳烃(漳州)有限公司<br>Dragon Aromatic (Changzhou) Co., Ltd. (DAC) |                            |                     |                 |        |              |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     |  |  |  | NOTE      |                  |      |      |  京建工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>010-60421800        |                            |                     |                 |        |              |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |  |  |  |           |                  |      |      | FOR 腾龙芳烃原油分高装置整改修复工程                                                                                                                              |                            |                     |                 |        |              |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |  |  |  |           |                  |      |      |                                                                                                                                                   |                            |                     |                 |        |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TYPE</div></div> |  |  |  |           |                  |      |      |                                                                                                                                                   | TITLE PIPING ISOMETRIC DWG |                     |                 |        |              |
| TEST FLUID       | HYDRO. |        |                                          |  |  |  |           |                  |      |      |                                                                                                                                                   | PROJ. NO.                  | 17E3166A            | UNIT            | 17076  |              |
| INSPECTION X-RAY | 5      | %      |                                          |  |  |  |           |                  |      |      |                                                                                                                                                   | DRAWN                      | WL                  | DATE 12/18/2017 | REV. 2 |              |
| P.W.H.T          | -      |        |                                          |  |  |  | 2         | FOR CONSTRUCTION | CYS  | DXS  | 12/15 2017                                                                                                                                        | LINE NO.                   | 13-1-CWS-35035-L01F |                 |        | SHEET 1 OF 2 |
| CATEGORY         | -      |        |                                          |  |  |  | REV.      | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                              | DWG. NO.                   | XG32-13-CWS-35035   |                 |        |              |

## FABRICATION MATERIALS

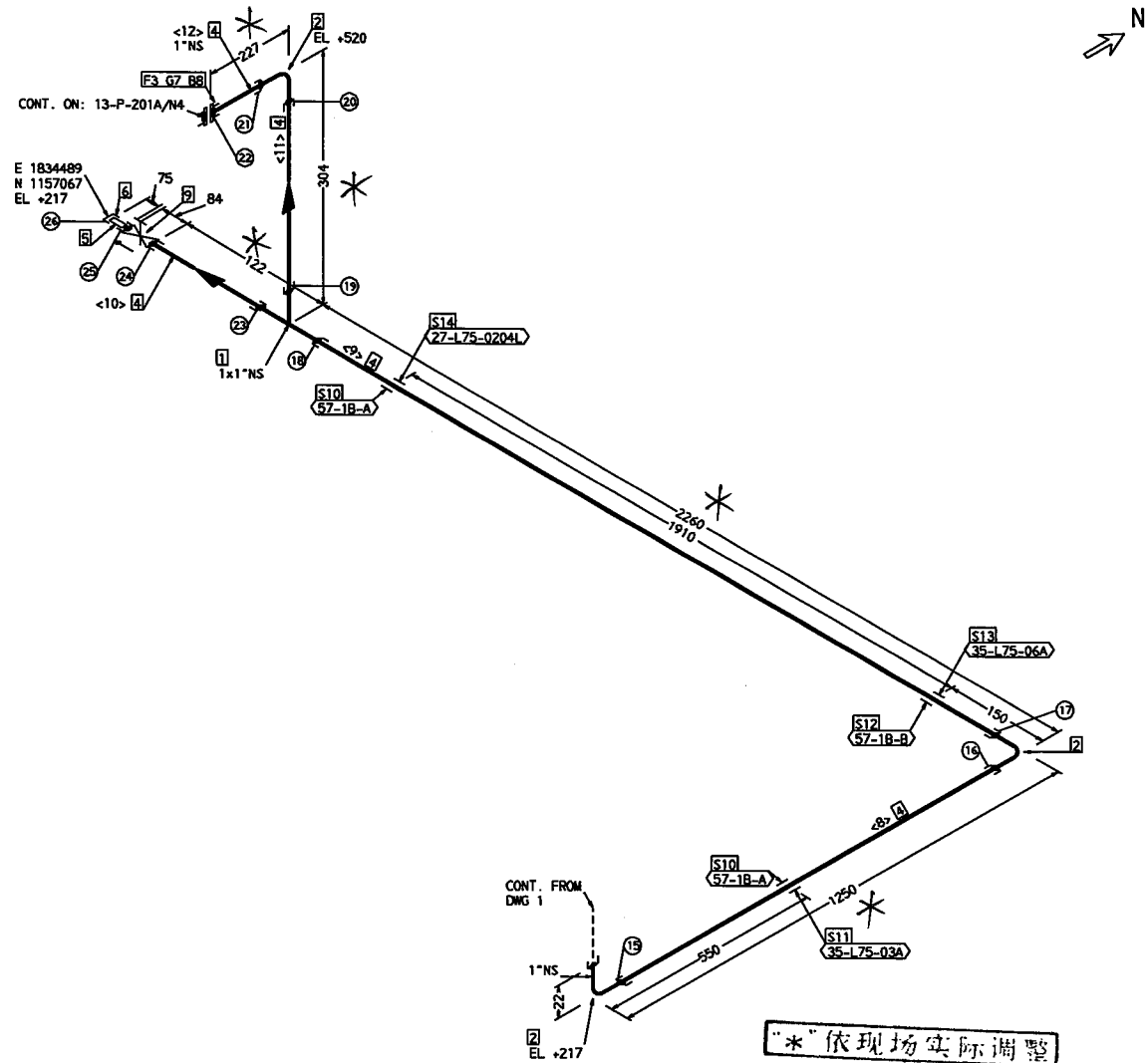
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1A0015  | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                               | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1            | PPA11A1A0022  | 4.0M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                  | 1            | PNA1DA1A0322  | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                  | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                   | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                 | 1            | VG85A1000111  | 1    |
| SUPPORTS |                                                                                                                     |              |               |      |
| 10       | PIPE SUPPORT                                                                                                        |              | 57-18-A       | 2    |
| 11       | PIPE SUPPORT                                                                                                        |              | 35-L75-03A    | 1    |
| 12       | PIPE SUPPORT                                                                                                        |              | 57-18-B       | 1    |
| 13       | PIPE SUPPORT                                                                                                        |              | 35-L75-06A    | 1    |
| 14       | PIPE SUPPORT                                                                                                        |              | 27-L75-0204L  | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <8>         | 1206          | 1            |         | <9>         | 2216          | 1            |         |
| <10>        | 100           | 1            |         | <11>        | 259           | 1            |         |
| <12>        | 200           | 1            |         |             |               |              |         |



|                  |        |        |                                                                                                                        |                            |                                                                              |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
|------------------|--------|--------|------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------|--|-------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34     | °C     | PAINTING                                                                                                               |                            | REF. DWG.                                                                    |  |                                                                   |  | <div> 腾龙芳烃 (漳州) 有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAGC)</div> |  |  |  |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                                                                                                   | PER. SPEC                  |                                                                              |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
| DESIGN TEMP.     | 80     | °C     | INSULATION                                                                                                             |                            | FOR<br>京龍工程建設有限公司<br>CTCL Beijing Co., Ltd.<br>010-64697888 FAX 010-64697887 |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                                                                                                        |                            |                                                                              |  |                                                                   |  | 騰龍芳烃蒸馏油分离装置整改修复工程                                                                                                                                                 |  |  |  |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> <div><div></div><div></div><div></div><div></div><div></div><div></div></div> | TITLE PIPING ISOMETRIC DWG |                                                                              |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
| TEST FLUID       | HYDRO. |        | PROJ. NO. 17E3166A UNIT 17076                                                                                          |                            |                                                                              |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
| INSPECTION X-RAY | 5      | %      |                                                                                                                        |                            |                                                                              |  | DRAWN WL DATE 12/18/2017 REV. 2                                   |  |                                                                                                                                                                   |  |  |  |
| P.W.H.T          | -      |        | 2 FOR CONSTRUCTION CYS DXS 12/15 2017 LINE NO. 13-1"-CWS-35035-L01F SHEET                                              |                            |                                                                              |  |                                                                   |  |                                                                                                                                                                   |  |  |  |
| CATEGORY         | -      |        |                                                                                                                        |                            |                                                                              |  | REV. DESCRIPTION CHKD APPR DATE DWG. NO. XG32-13-CWS-35035 2 OF 2 |  |                                                                                                                                                                   |  |  |  |

## FABRICATION MATERIALS

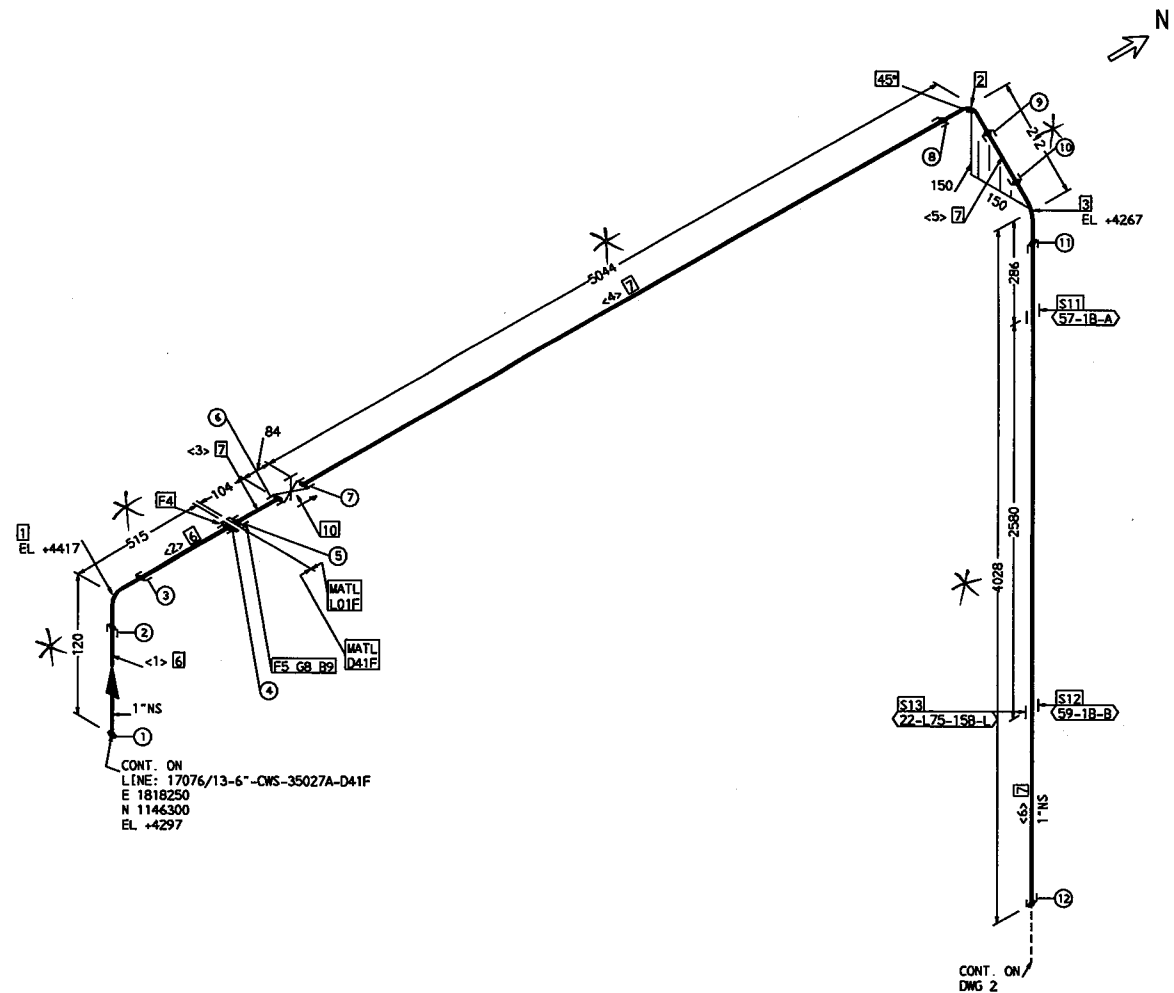
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 1   |
| 3        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1            | NFA75A1000021 | 1   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 9.4M |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 11       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 1    |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 22-L75-15B-L  | 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>         | 98            | 1            |         | <2>         | 488           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 5022          | 1            |         |
| <5>         | 176           | 1            |         | <6>         | 4014          | 1            |         |



\* 依现场实际调整

|                  |        |        |                                          |           |                                                                         |  |  |      |                                                                                                                                                               |      |                            |            |                 |                      |   |              |
|------------------|--------|--------|------------------------------------------|-----------|-------------------------------------------------------------------------|--|--|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|-----------------|----------------------|---|--------------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           | REF. DWG.                                                               |  |  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAG)</div> |      |                            |            |                 |                      |   |              |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |                                                                         |  |  |      |                                                                                                                                                               |      |                            |            | NOTE            |                      |   |              |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           | FOR<br>京建工程建设有限公司<br>CTCEI Beijing Co., Ltd.<br>010-65997888 4011100111 |  |  |      |                                                                                                                                                               |      |                            |            |                 |                      |   |              |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |                                                                         |  |  |      |                                                                                                                                                               |      |                            |            |                 |                      |   |              |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TIPS</div></div> |           |                                                                         |  |  |      |                                                                                                                                                               |      | TITLE PIPING ISOMETRIC DWG |            |                 |                      |   |              |
| TEST FLUID       | HYDRO. |        |                                          |           |                                                                         |  |  |      |                                                                                                                                                               |      | PROJ. NO.                  | 17E3166A   | UNIT            | 17076                |   |              |
| INSPECTION X-RAY | 5      | %      |                                          |           |                                                                         |  |  |      |                                                                                                                                                               |      | DRAWN                      | WL         | DATE 12/18/2017 | REV.                 | 2 |              |
| P.W.H.T          | -      |        |                                          |           |                                                                         |  |  | 2    | FOR CONSTRUCTION                                                                                                                                              | CYS  | DXS                        | 12/15 2017 | LINE NO.        | 13-1"-CWS-35036-L01F |   | SHEET 1 OF 2 |
| CATEGORY         | -      |        |                                          |           |                                                                         |  |  | REV. | DESCRIPTION                                                                                                                                                   | CHKD | APPR                       | DATE       | DWG. NO.        | XG32-13-CWS-35036    |   |              |

## FABRICATION MATERIALS

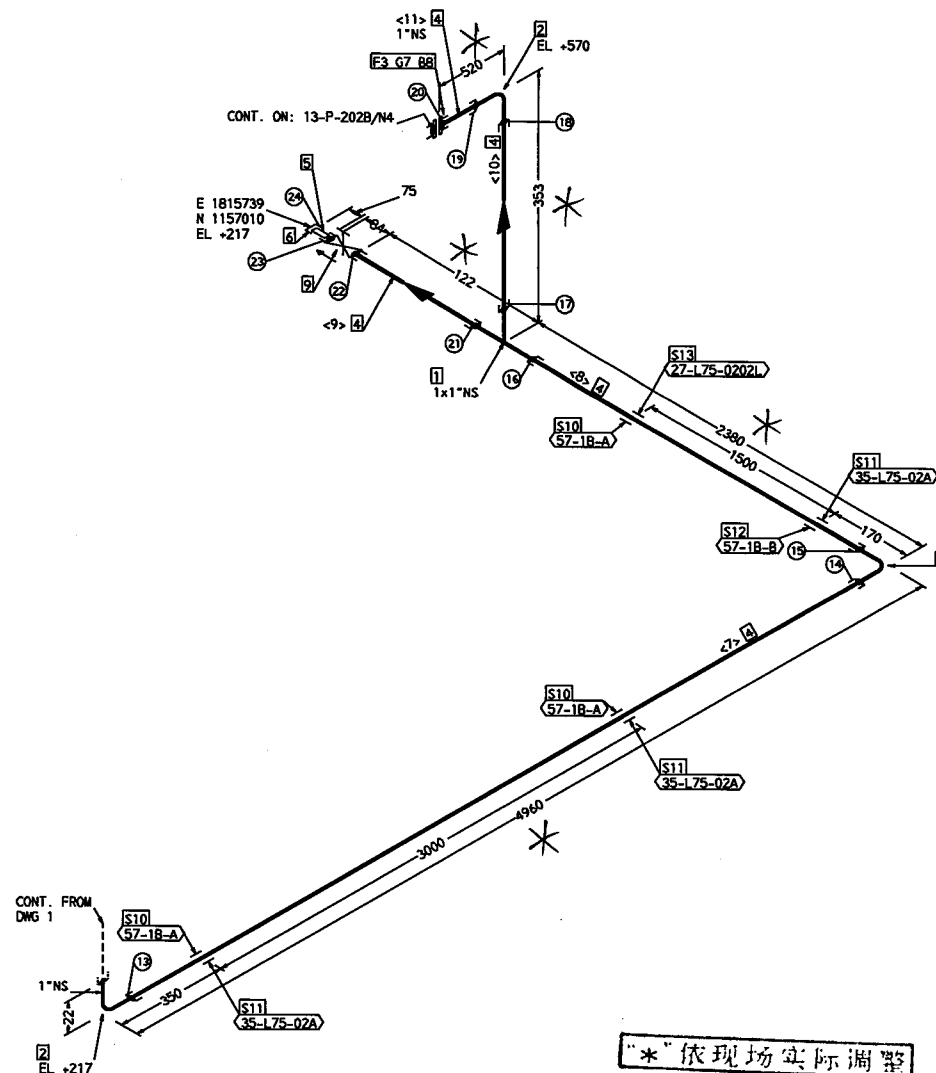
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 8.2M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 10       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 3    |
| 11       | PIPE SUPPORT                                                                                                       |              | 35-L75-02A    | 3    |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-1B-B       | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0202L  | 1    |

## CUT PIPE LENGTH

| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS |
|-------------|--------------------|------|---------|-------------|--------------------|------|---------|
| <7>         | 4916               | 1    |         | <8>         | 2335               | 1    |         |
| <9>         | 100                | 1    |         | <10>        | 309                | 1    |         |
| <11>        | 493                | 1    |         |             |                    |      |         |



|                  |        |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      |            |          |                      |            |        |   |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|----------|----------------------|------------|--------|---|
| OPER. TEMP.      | 34     | °C     | PAINING                                  |           |  |  | REF. DWG. |      |                  |  | <div><div>腾龙芳烃 (漳州) 有限公司<br/>Dragon Armetec (Changzhou) Co., Ltd. (DAC)</div></div> <div><div>京瑞工程技术有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京瑞泰工程技术有限公司</div></div> <div>FOR</div> <div>腾龙芳烃原油分离装置整改修复工程</div> |      |            |          |                      |            |        |   |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      |            |          |                      |            |        |   |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      |            |          |                      |            |        |   |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      |            |          |                      |            |        |   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      | TITLE      |          | PIPING ISOMETRIC DWG |            |        |   |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      | PROJ. NO.  | 17B3166A | UNIT                 | 17076      |        |   |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                                                       |      | DRAWN      | WL       | DATE                 | 12/18/2017 | REV.   | 2 |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION |  | CYS                                                                                                                                                                                                                                                                                                                                                                                   | DXS  | 12/15 2017 | LINE NO. | 13-1"-CWS-35036-L01F |            | SHEET  |   |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      |  | CHKD                                                                                                                                                                                                                                                                                                                                                                                  | APPR | DATE       | DWG. NO. | XG32-13-CWS-35036    |            | 2 OF 2 |   |

## FABRICATION MATERIALS

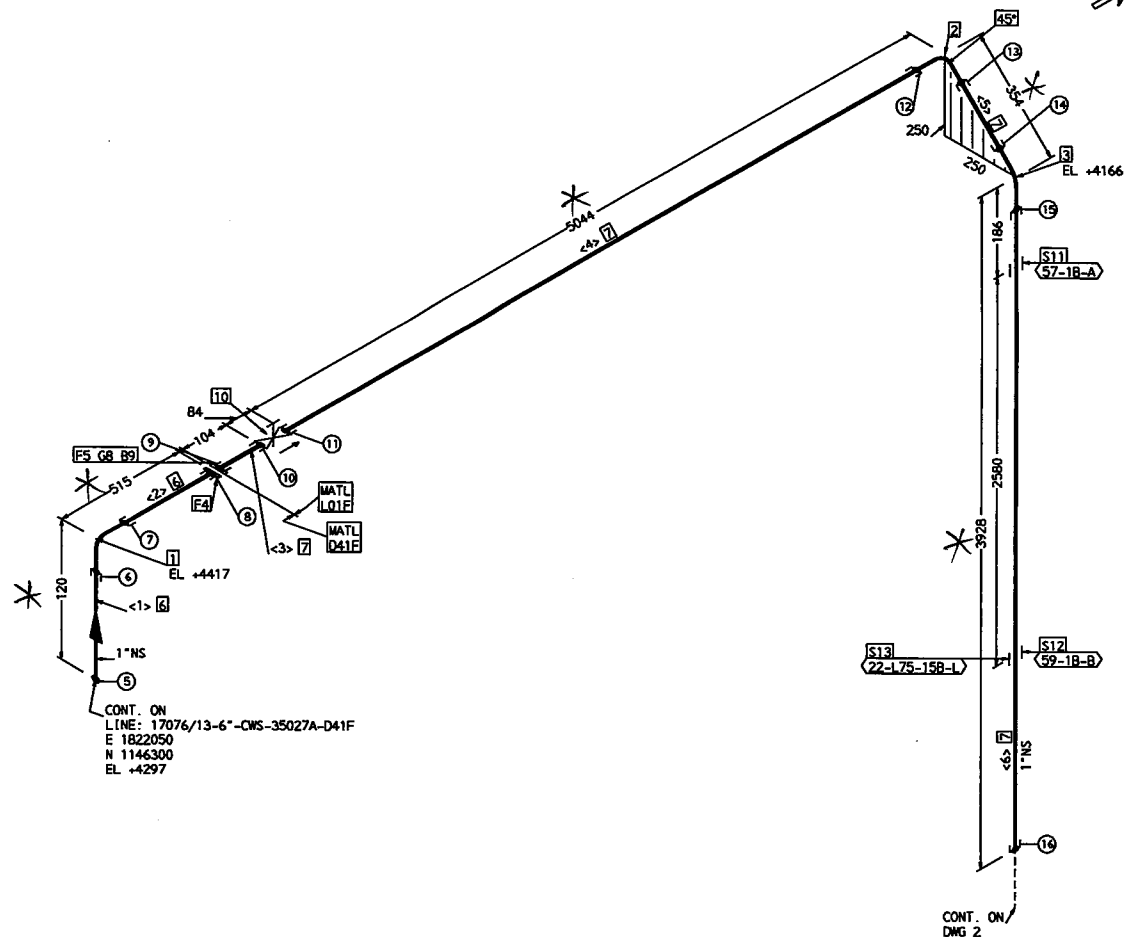
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 1   |
| 3        | 45 ELL 3000# SW, SS A182-F304 ASME      | 1            | NFA75A1000021 | 1   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.6M |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 9.4M |
| 8        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1    |
| 11       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 1    |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 22-L75-15B-L  | 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>         | 98            | 1            |         | <2>         | 488           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 5022          | 1            |         |
| <5>         | 317           | 1            |         | <6>         | 3914          | 1            |         |



|                  |        |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        |                            |          |                      |            |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|-----------|------|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|----------------------|------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Changzhou) Co., Ltd. (BAC)</div> <div> 京建工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>010-64666666 010-64666667</div> FOR 腾龙芳烃原油分离装置检修工程 |                            |          |                      |            |      |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        |                            |          |                      | NOTE       |      |        |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        |                            |          |                      |            |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        |                            |          |                      |            |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        | TITLE PIPING ISOMETRIC DWG |          |                      |            |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        | PROJ. NO.                  | 17E3166A | UNIT                 | 17076      |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                        | DRAWN                      | WL       | DATE                 | 12/18/2017 | REV. | 2      |
| P.W.H.T          | -      |        |                                          |           |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                                                                                                                                                                                                    | 12/15 2017                 | LINE NO. | 13-1"-CWS-35037-L01F |            |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                   | DATE                       | DWG. NO. | XG32-13-CWS-35037    |            |      | 1 OF 2 |

## FABRICATION MATERIALS

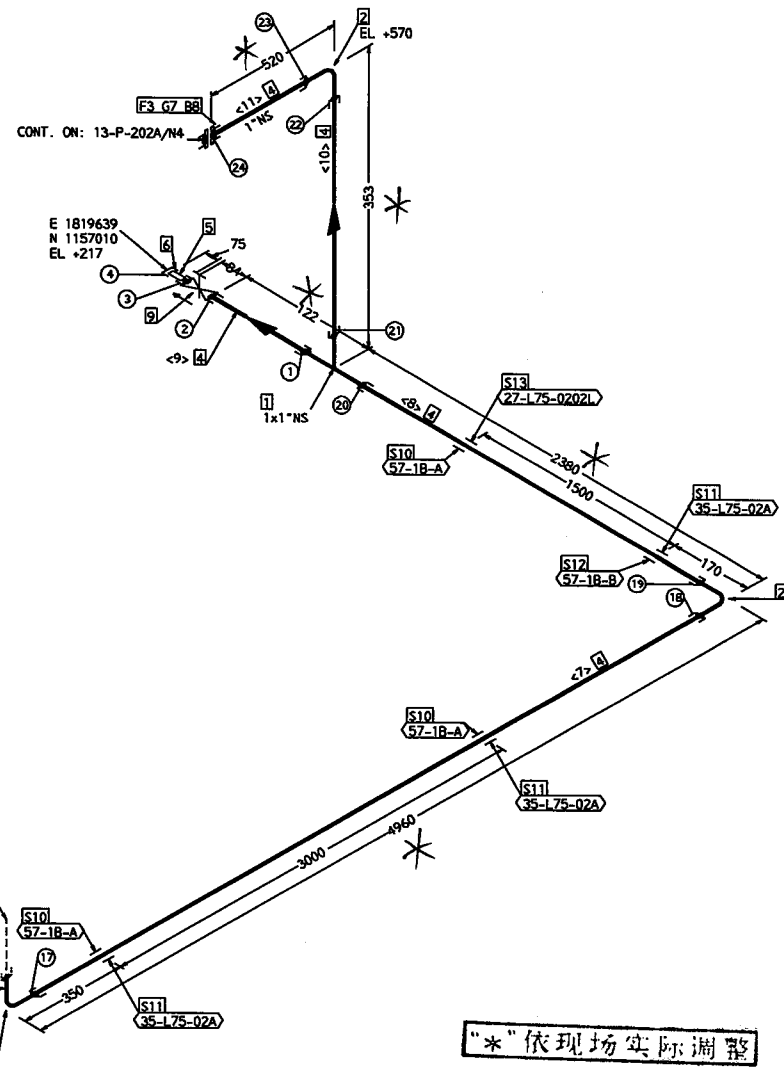
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL. 3000# SW, SS A182-F304 ASME     | 1            | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                               | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|---------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                           | 1            | PPA11A1AJ0022 | 8.2M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                  | 1            | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                  | 1            | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                   | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                 | 1            | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                     |              |               |      |
| 10       | PIPE SUPPORT                                                                                                        |              | 57-1B-A       | 3    |
| 11       | PIPE SUPPORT                                                                                                        |              | 35-L75-02A    | 3    |
| 12       | PIPE SUPPORT                                                                                                        |              | 57-1B-B       | 1    |
| 13       | PIPE SUPPORT                                                                                                        |              | 27-L75-0202L  | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <7>         | 4916          | 1            |         | <8>         | 2336          | 1            |         |
| <9>         | 100           | 1            |         | <10>        | 309           | 1            |         |
| <11>        | 493           | 1            |         |             |               |              |         |



|                  |        |        |                                          |           |  |                         |  |      |                  |                                                                                                                                                                  |           |               |                    |                      |                            |        |
|------------------|--------|--------|------------------------------------------|-----------|--|-------------------------|--|------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|--------------------|----------------------|----------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  | REF. DWG.               |  |      |                  | <div> 腾龙芳烃(漳州)有限公司<br/>Tenglong Aromatics (Zhangzhou) Co., Ltd. (DAG)</div> |           |               |                    |                      |                            |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |                         |  |      |                  |                                                                                                                                                                  |           |               |                    | NOTE                 |                            |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |                         |  |      |                  |                                                                                                                                                                  |           |               |                    |                      |                            |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  | FOR<br>腾龙芳烃原油分离装置整改修复工程 |  |      |                  |                                                                                                                                                                  |           |               |                    |                      |                            |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |                         |  |      |                  |                                                                                                                                                                  |           |               |                    |                      | TITLE PIPING ISOMETRIC DWG |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |                         |  |      |                  |                                                                                                                                                                  | PROJ. NO. | 17E3166A      | UNIT               | 17076                |                            |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |                         |  |      |                  |                                                                                                                                                                  | DRAWN     | WL            | DATE<br>12/18/2017 | REV.                 | 2                          |        |
| P.W.H.T          | -      |        |                                          |           |  |                         |  | 2    | FOR CONSTRUCTION | CYS                                                                                                                                                              | DXS       | 12/15<br>2017 | LINE NO.           | 13-1"-CWS-35037-L01F |                            | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |                         |  | REV. | DESCRIPTION      | CHKD                                                                                                                                                             | APPR      | DATE          | DWG. NO.           | XG32-13-CWS-35037    |                            | 2 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 | 0.4M  |
| 2        | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 10.9M |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AJA19  | 1     |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 5        | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 6        | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 7        | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## | ERECTION MATERIALS |

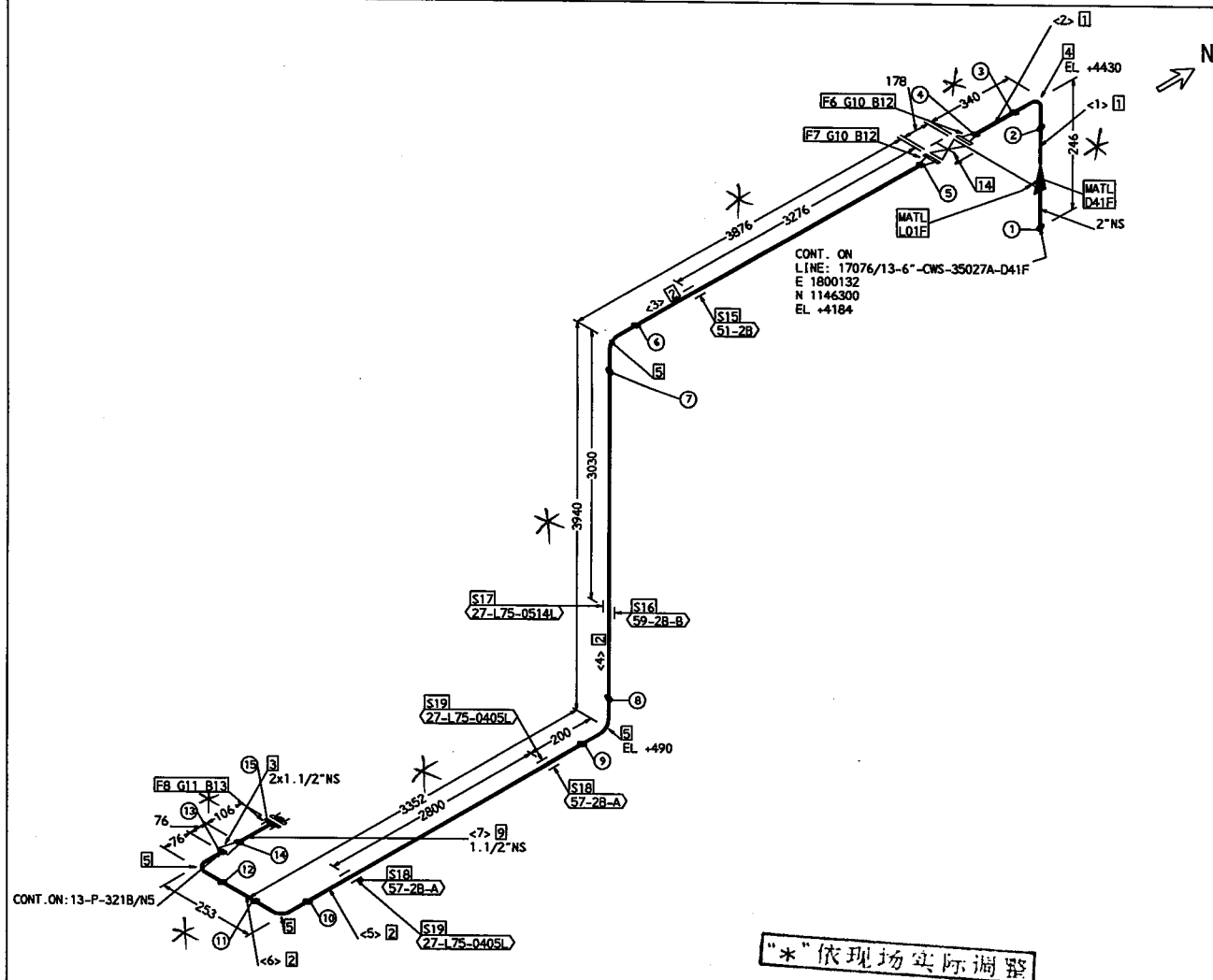
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.1M |
| 10       | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 16 MM        | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CF8 BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 15 | PIPE SUPPORT | 51-2B        | 1 |
| 16 | PIPE SUPPORT | 59-2B-B      | 1 |
| 17 | PIPE SUPPORT | 27-L75-0514L | 1 |
| 18 | PIPE SUPPORT | 57-2B-A      | 2 |
| 19 | PIPE SUPPORT | 27-L75-0405L | 2 |

## | CUT PIPE LENGTH |

| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S.  | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS |
|-------------|--------------------|-------|---------|-------------|--------------------|------|---------|
| <1>         | 170                | 2     |         | <2>         | 200                | 2    |         |
| <3>         | 3737               | 2     |         | <4>         | 3788               | 2    |         |
| <5>         | 3199               | 2     |         | <6>         | 100                | 2    |         |
| <7>         | 100                | 1.1/2 |         |             |                    |      |         |



|                                       |        |        |                                          |           |            |  |  |  |  |                                                                                                                                                               |  |           |                            |      |                                                                                                                                                       |
|---------------------------------------|--------|--------|------------------------------------------|-----------|------------|--|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|----------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPER. TEMP.                           | 34     | °C     | PAINTING                                 |           | REF. DWG.  |  |  |  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Zhangzhou) Co., Ltd. (DAG)</div> |  |           |                            |      |                                                                                                                                                       |
| OPER. PRESS.                          | 0.55   | MPa(g) | CODE                                     | PER. SPEC |            |  |  |  |  | NOTE                                                                                                                                                          |  |           |                            |      | <div> 京龍工程建設有限公司<br/>CTCL Beijing Co., Ltd.<br/>2016年9月28日</div> |
| DESIGN TEMP.                          | 80     | °C     |                                          |           | INSULATION |  |  |  |  |                                                                                                                                                               |  |           |                            |      | FOR                                                                                                                                                   |
| DESIGN PRESS.                         | 1.2    | MPa(g) |                                          |           |            |  |  |  |  | 腾龙芳烃原油分离装置检修修复工程                                                                                                                                              |  |           |                            |      |                                                                                                                                                       |
| TEST PRESSURE                         | 1.8    | MPa(g) | <div><div>WPS</div><div>TYPE</div></div> |           |            |  |  |  |  |                                                                                                                                                               |  |           | TITLE PIPING ISOMETRIC DWG |      |                                                                                                                                                       |
| TEST FLUID                            | HYDRO. |        |                                          |           |            |  |  |  |  |                                                                                                                                                               |  | PROJ. NO. | 17E3166A                   | UNIT | 17076                                                                                                                                                 |
| INSPECTION X-RAY                      | 5      | %      |                                          |           |            |  |  |  |  |                                                                                                                                                               |  | DRAWN     | WL                         | DATE | 12/18/2017                                                                                                                                            |
| P.W.H.T                               | -      |        |                                          |           |            |  |  |  |  |                                                                                                                                                               |  | LINE NO.  | 13-2"-CWS-35038-L01F       |      |                                                                                                                                                       |
| CATEGORY                              | -      |        |                                          |           |            |  |  |  |  |                                                                                                                                                               |  | DWG. NO.  | XG32-13-CWS-35038          |      |                                                                                                                                                       |
| 2 FOR CONSTRUCTION CYS DXS 12/15 2017 |        |        |                                          |           |            |  |  |  |  | SHEET                                                                                                                                                         |  |           |                            |      |                                                                                                                                                       |
| REV. DESCRIPTION CHKD APPR DATE       |        |        |                                          |           |            |  |  |  |  | 1 OF 1                                                                                                                                                        |  |           |                            |      |                                                                                                                                                       |

## 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 | 0.4M  |
| 2        | PIPE, SMLS, BE, S-10S, SS A312-TP304 ASME                 | 2            | PPA14A1AF0022 | 13.2M |
| 3        | CONC REDUCER SMLS, BW, S-10S, X S-40S, SS A403-WP304 ASME | 2 x 1.1/2    | RCA16B1AJ0019 | 1     |
| 4        | 90 ELL SMLS, BW, S-80, CS A234-WPB ASME                   | 2            | NEA1621A80019 | 1     |
| 5        | 90 ELL SMLS, BW, S-10S, SS A403-WP304 ASME                | 2            | NEA16B1AF0019 | 4     |
| 6        | WN FLG 150# RF S-80, CS A105 ASME                         | 2            | FWA1111A80015 | 1     |
| 7        | WN FLG 150# RF S-10S, SS A182-F304 ASME                   | 2            | FWA11A1AF0015 | 1     |
| 8        | SW FLG 150# RF S-40S, SS A182-F304 ASME                   | 1.1/2        | FKA11A1AJ0015 | 1     |

## ERECTION MATERIALS

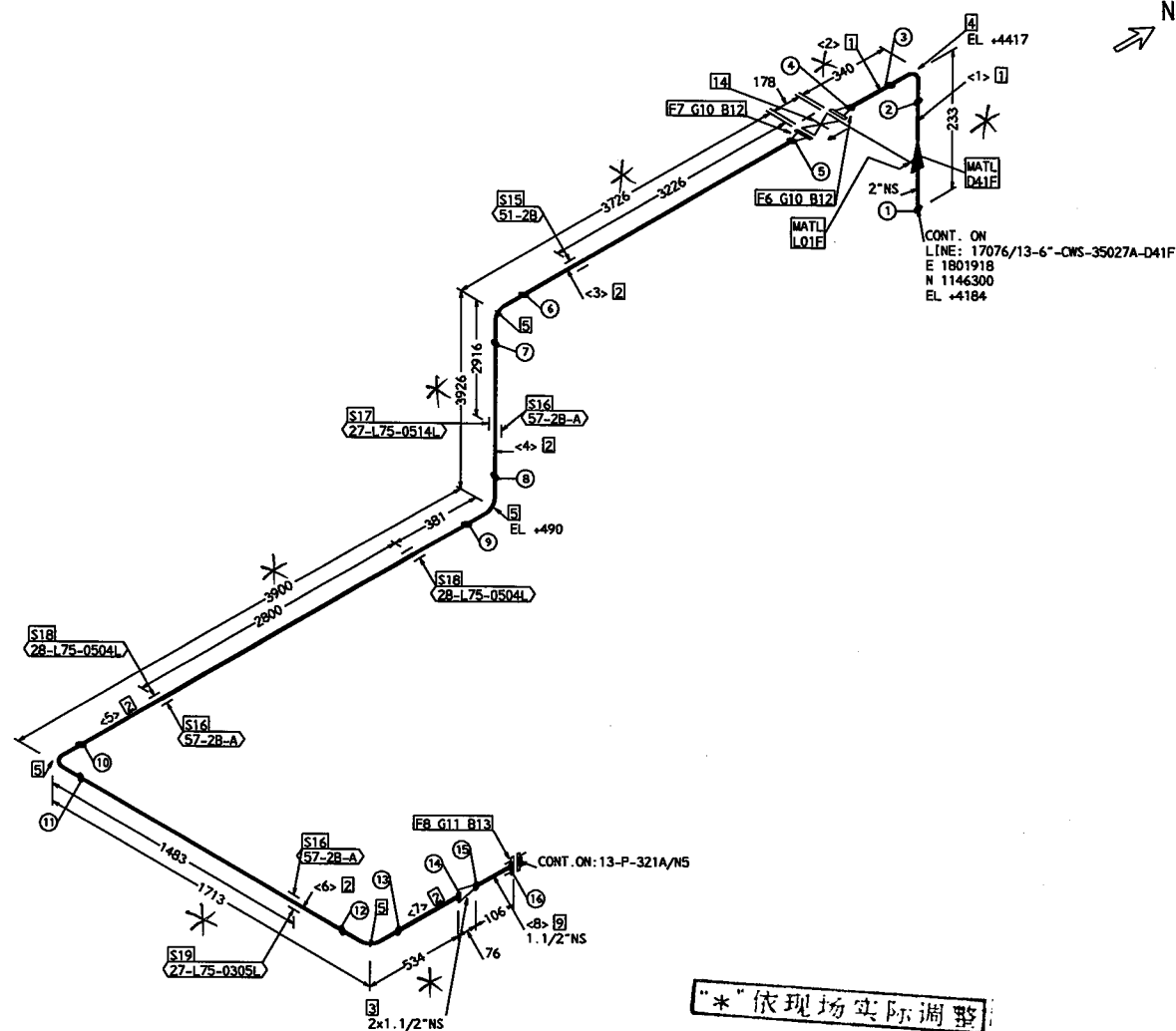
| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 9        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1.1/2        | PPA11A1AJ0022 | 0.1M |
| 10       | GASKET, 150# 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            | GKA1APE0300B1 | 2    |
| 11       | GASKET, 150# 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 | 1.1/2        | GKA1APE0300B1 | 1    |
| 12       | 85 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H [S0]                                 | 16 MM        | GMA04310000E1 | 8    |
| 13       | 70 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H [S0]                                 | 12 MM        | GMA04310000E1 | 4    |
| 14       | GATE VALVE, 150# RF SS A351-CFB BODY SS 304 TR API TR #2 FLEX WG OS&Y BB API-600 ASME-B16.5                        | 2            | VGA11D10003A5 | 1    |

## SUPPORTS

|    |              |              |   |
|----|--------------|--------------|---|
| 15 | PIPE SUPPORT | 51-2B        | 1 |
| 16 | PIPE SUPPORT | 57-2B-A      | 3 |
| 17 | PIPE SUPPORT | 27-L75-0514L | 1 |
| 18 | PIPE SUPPORT | 28-L75-0504L | 2 |
| 19 | PIPE SUPPORT | 27-L75-0305L | 1 |

## CUT PIPE LENGTH

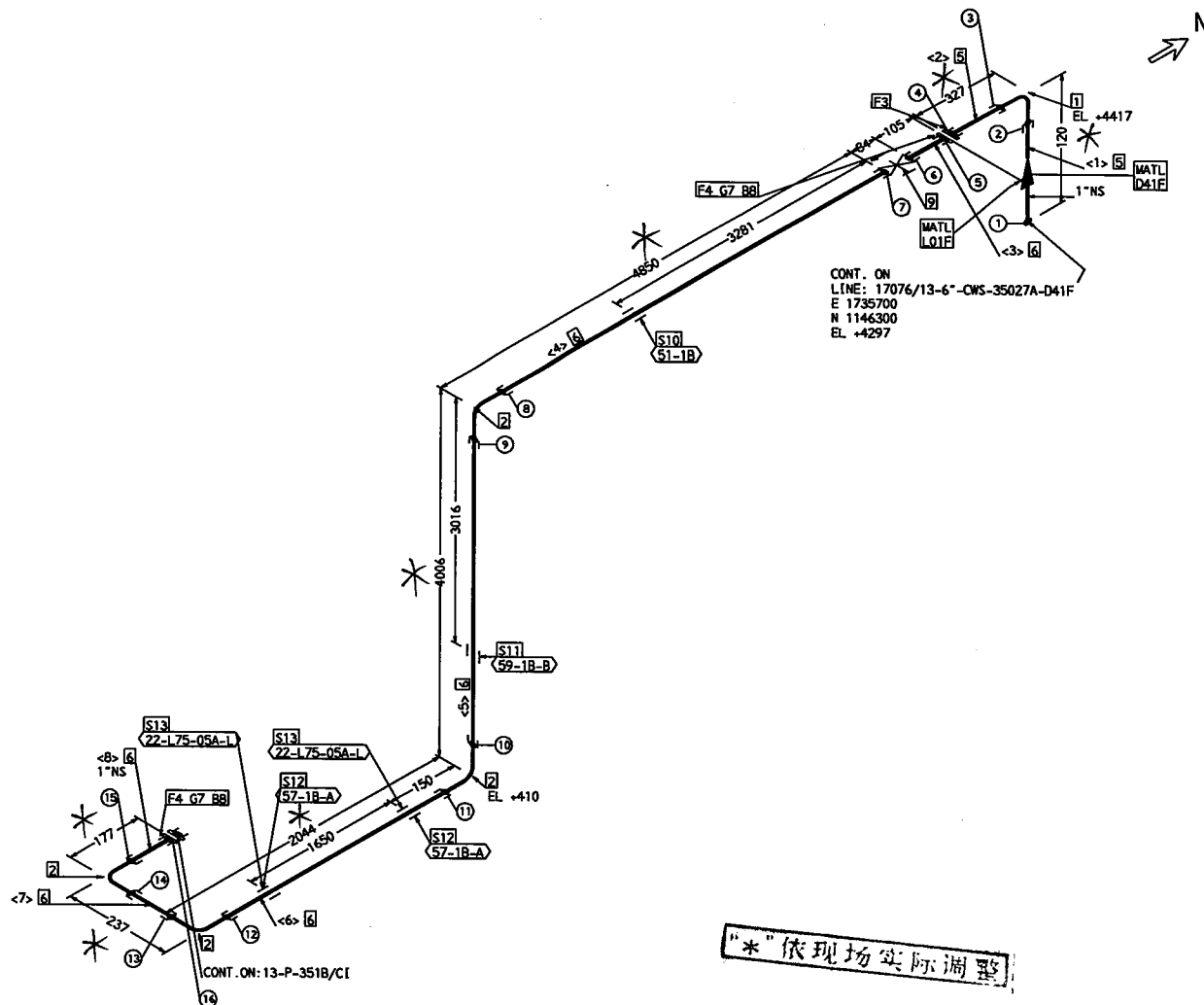
| PIECE<br>NO | CUT<br>LENGTH (IN) | N.S. | REMARKS | PIECE<br>NO | CUT<br>LENGTH (IN) | N.S.  | REMARKS |
|-------------|--------------------|------|---------|-------------|--------------------|-------|---------|
| <1>         | 156                | 2    |         | <2>         | 200                | 2     |         |
| <3>         | 3587               | 2    |         | <4>         | 3774               | 2     |         |
| <5>         | 3748               | 2    |         | <6>         | 1560               | 2     |         |
| <7>         | 458                | 2    |         | <8>         | 100                | 1.1/2 |         |



|                  |             |            |           |                                                                   |             |          |                            |
|------------------|-------------|------------|-----------|-------------------------------------------------------------------|-------------|----------|----------------------------|
| OPER. TEMP.      | 34 °C       | PAINTING   | REF. DWG. | 腾龙芳烃(漳州)有限公司<br>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)      |             |          |                            |
| OPER. PRESS.     | 0.55 MPa(g) | PER. SPEC  | NOTE      |                                                                   |             |          |                            |
| DESIGN TEMP.     | 80 °C       | INSULATION |           | 京隆工程技术有限公司<br>CTCL Beijing Co., Ltd.<br>010-64499788/010-64499789 |             |          |                            |
| DESIGN PRESS.    | 1.2 MPa(g)  |            |           |                                                                   |             |          |                            |
| TEST PRESSURE    | 1.8 MPa(g)  |            |           | FOR 腾龙芳烃原油分离装置检修工程                                                |             |          |                            |
| TEST FLUID       | HYDRO.      |            |           | TITLE PIPING ISOMETRIC DWG                                        |             |          |                            |
| INSPECTION X-RAY | 5 %         |            |           | PROJ. NO.                                                         | 17B3166A    | UNIT     | 17076                      |
| P.W.H.T          | -           |            |           | DRAWN                                                             | WL          | DATE     | 12/18/2017                 |
| CATEGORY         | -           |            |           | REV.                                                              | 2           | LINE NO. | 13-2"-CWS-35039-L01F       |
|                  |             |            |           | REV.                                                              | DESCRIPTION | CHKD     | APPR                       |
|                  |             |            |           |                                                                   |             | DATE     | DWG. NO. XG32-13-CWS-35039 |

| ERECTION MATERIALS || 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>         | 98            | 1             |         | <2>         | 300           | 1             |         |
| <3>         | 100           | 1             |         | <4>         | 4827          | 1             |         |
| <5>         | 3962          | 1             |         | <6>         | 2000          | 1             |         |
| <7>         | 193           | 1             |         | <8>         | 150           | 1             |         |



**"\*"依现场实际调整**

|                  |        |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                   |            |           |                     |                                                                                                                                             |            |      |   |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|------|---|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |            |                  |      |  腾龙芳烃（漳州）有限公司<br>Beiguo Aromatic (Zhangzhou) Co., Ltd. (GAC) |            |           |                     |                                                                                                                                             |            |      |   |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                              |            |           |                     |  京福工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>北京中石油工程技术有限公司 |            |      |   |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | INSULATION |                  |      |                                                                                                                                                   |            |           |                     | FOR                                                                                                                                         |            |      |   |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |  |  |           |            |                  |      |                                                                                                                                                   |            |           |                     |                                                                                                                                             |            |      |   |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |            |                  |      |                                                                                                                                                   |            |           | TITLE               | PIPING ISOMETRIC DWG                                                                                                                        |            |      |   |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                   |            | PROJ. NO. | 17E3166A            | UNIT                                                                                                                                        | 17076      |      |   |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |            |                  |      |                                                                                                                                                   |            | DRAWN     | WL                  | DATE                                                                                                                                        | 12/18/2017 | REV. | 2 |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                               | 12/15 2017 | LINE NO.  | 13-1-CWS-35040-L01F |                                                                                                                                             |            |      |   |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                              | DATE       | DWG. NO.  | XG32-13-CWS-35040   |                                                                                                                                             |            |      |   |
| SHEET 1 OF 1     |        |        |                                          |           |  |  |           |            |                  |      |                                                                                                                                                   |            |           |                     |                                                                                                                                             |            |      |   |

## | FABRICATION MATERIALS |

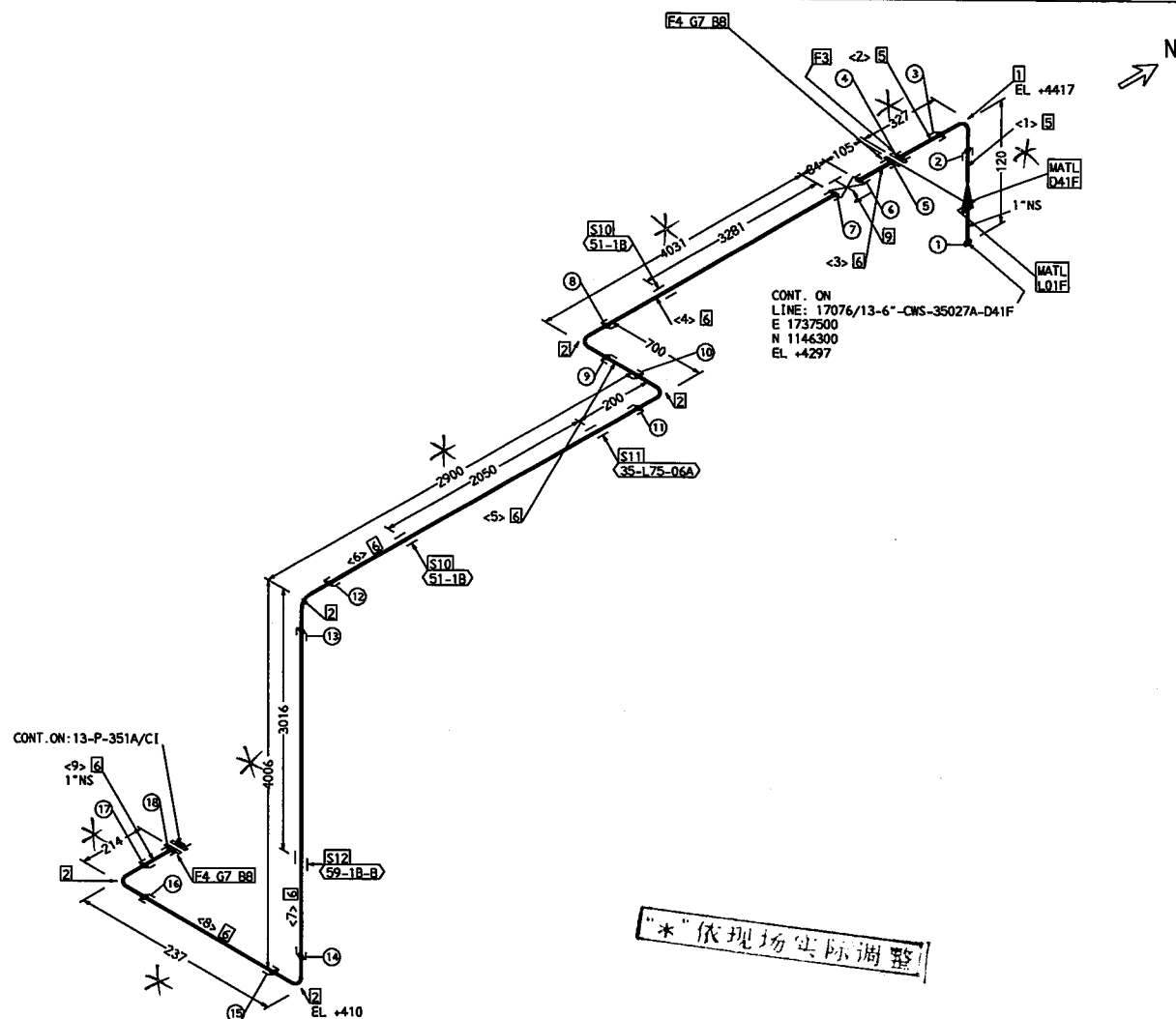
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 5   |
| 3        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 4        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |

## | ERECTION MATERIALS |

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 5        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 1            | PPA1115A80021 | 0.4M  |
| 6        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 12.0M |
| 7        | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 10       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 2     |
| 11       | PIPE SUPPORT                                                                                                       |              | 35-L75-06A    | 1     |
| 12       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 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>         | 98            | 1            |         | <2>         | 300           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 4009          | 1            |         |
| <5>         | 656           | 1            |         | <6>         | 2856          | 1            |         |
| <7>         | 3962          | 1            |         | <8>         | 193           | 1            |         |
| <9>         | 187           | 1            |         |             |               |              |         |



|                  |        |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                              |                                                                                                                                                                       |                            |                 |                     |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|---------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armatex (Zhangzhou) Co., Ltd. (D4C)</div> |                                                                                                                                                                       |                            |                 |                     |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           | NOTE |                  |  |                                                                                                                                                              | <div> 京建工程建设有限公司<br/>CTCI Building Co., Ltd.<br/>010-56897755 010-56897756</div> |                            |                 |                     |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |  |                                                                                                                                                              |                                                                                                                                                                       |                            |                 |                     |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |  | FOR 腾龙芳烃原油分离装置检修工程                                                                                                                                           |                                                                                                                                                                       |                            |                 |                     |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPa</div><div>TiPE</div></div> |           |  |  |           |      |                  |  |                                                                                                                                                              |                                                                                                                                                                       | TITLE PIPING ISOMETRIC DWG |                 |                     |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                              | PROJ. NO.                                                                                                                                                             | 17E3166A                   | UNIT            | 17076               |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |  |                                                                                                                                                              | DRAWN                                                                                                                                                                 | WL                         | DATE 12/18/2017 | REV. 2              |        |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION |  | CYS                                                                                                                                                          | DXS                                                                                                                                                                   | 12/15 2017                 | LINE NO.        | 13-1-CWS-35041-L01F | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      |  | CHKD                                                                                                                                                         | APPR                                                                                                                                                                  | DATE                       | DWG. NO.        | XG32-13-CWS-35041   | 1 OF 1 |

## FABRICATION MATERIALS

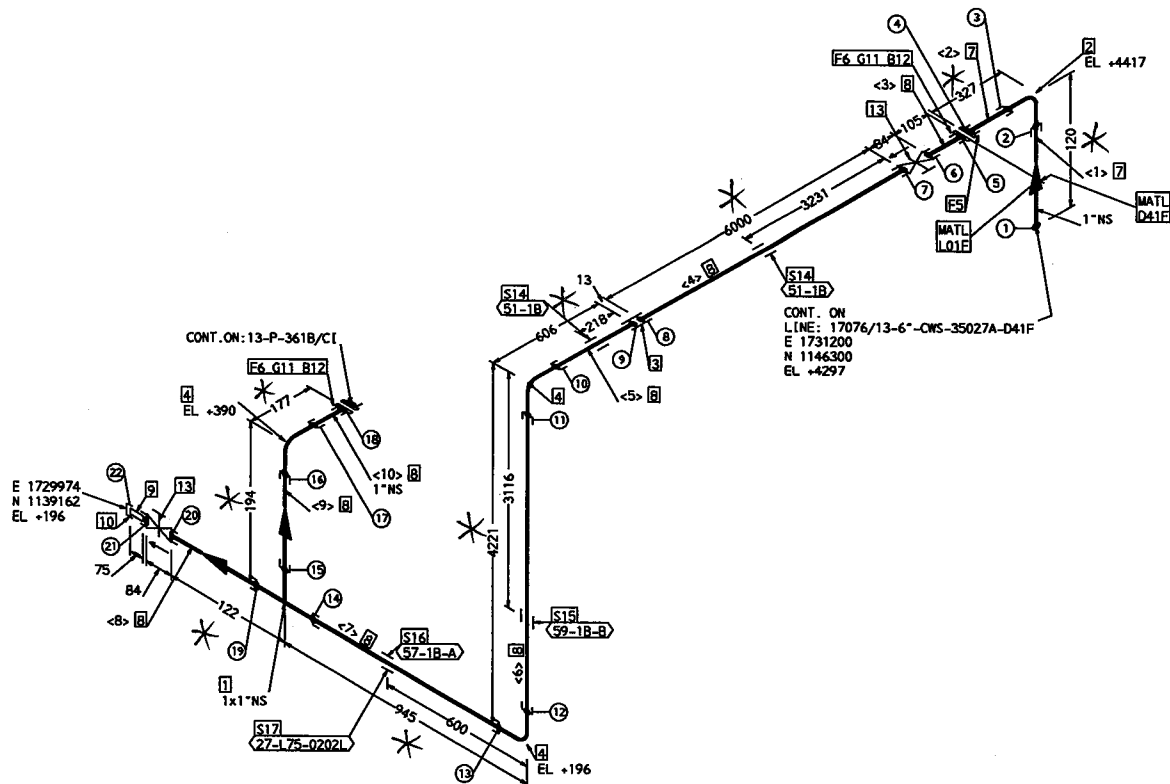
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021 | 1   |
| 3        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021 | 1   |
| 4        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021 | 3   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015 | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA11A1AJ0015 | 2   |

## 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 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 12.2M |
| 9        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1            | PNA1DA1AJ0322 | 1     |
| 10       | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1            | NCA72A1000021 | 1     |
| 11       | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 12       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 13       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 2     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 14       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 2     |
| 15       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 27-L75-0202L  | 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>         | 98            | 1            |         | <2>         | 300           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 6000          | 1            |         |
| <5>         | 584           | 1            |         | <6>         | 4177          | 1            |         |
| <7>         | 901           | 1            |         | <8>         | 100           | 1            |         |
| <9>         | 150           | 1            |         | <10>        | 150           | 1            |         |



"\*" 依现场实际调整

|                  |        |        |                                          |          |  |  |           |      |                  |      |                                                                                                                                                               |                                                                                                                                                                      |                            |                      |       |        |
|------------------|--------|--------|------------------------------------------|----------|--|--|-----------|------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |          |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aromatic (Changzhou) Co., Ltd. (DAG)</div> |                                                                                                                                                                      |                            |                      |       |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER.SPEC |  |  |           | NOTE |                  |      |                                                                                                                                                               | <div> 京福工程技术有限公司<br/>CTCL Beijing Co., Ltd.<br/>010-64699999 010-64699999</div> |                            |                      |       |        |
| DESIGN TEMP.     | 80     | °C     |                                          |          |  |  |           |      |                  |      |                                                                                                                                                               |                                                                                                                                                                      |                            |                      |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |          |  |  | FOR       |      |                  |      | 腾龙芳烃原油分离装置检修工程                                                                                                                                                |                                                                                                                                                                      |                            |                      |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |          |  |  |           |      |                  |      |                                                                                                                                                               |                                                                                                                                                                      | TITLE PIPING ISOMETRIC DWG |                      |       |        |
| TEST FLUID       | HYDRO. |        |                                          |          |  |  |           |      |                  |      |                                                                                                                                                               | PROJ. NO.                                                                                                                                                            | 17B3166A                   | UNIT                 | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                          |          |  |  |           |      |                  |      |                                                                                                                                                               | DRAWN                                                                                                                                                                | WL                         | DATE 12/18/2017      | REV.  | 2      |
| P.V.H.T          | -      |        |                                          |          |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                           | 12/15 2017                                                                                                                                                           | LINE NO.                   | 13-1*-CWS-35046-L01F |       | SHEET  |
| CATEGORY         | -      |        |                                          |          |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                          | DATE                                                                                                                                                                 | DWG. NO.                   | XG32-13-CWS-35046    |       | 1 OF 1 |

N



## FABRICATION MATERIALS

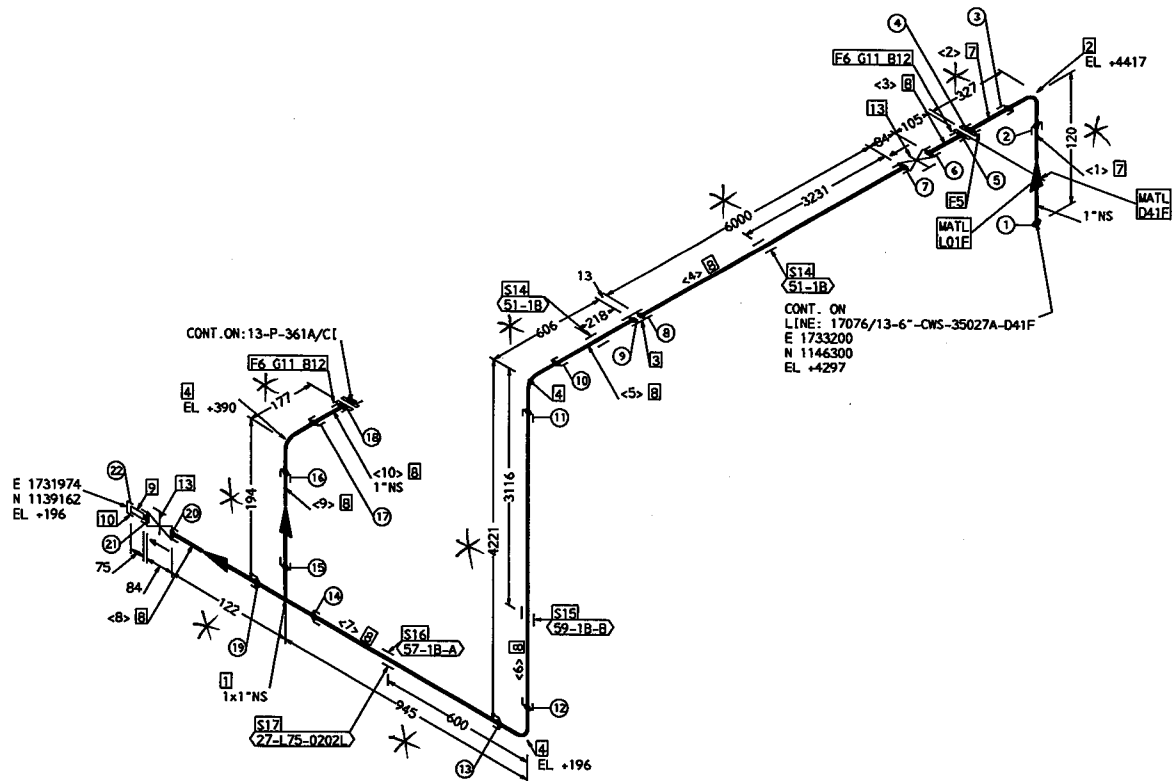
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE      | QTY |
|----------|-----------------------------------------|--------------|----------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 1 x 1        | STA75A1000021  | 1   |
| 2        | 90 ELL 3000# SW, CS A105 ASME           | 1            | NEA7511000021  | 1   |
| 3        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1            | SFA75A1000021  | 1   |
| 4        | 90 ELL 3000# SW, SS A182-F304 ASME      | 1            | NEA75A1000021  | 3   |
| 5        | SW FLG 150# RF S-80, CS A105 ASME       | 1            | FKA1111A80015  | 1   |
| 6        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1            | FKA111A1AJ0015 | 2   |

## 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 | 0.4M  |
| 8        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1            | PPA11A1AJ0022 | 12.2M |
| 9        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 1            | PHA1DA1AJ0322 | 1     |
| 10       | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 1            | NCA7ZA1000021 | 1     |
| 11       | GASKET, 150# 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 | 1            | GKA1APE0300B1 | 2     |
| 12       | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 8     |
| 13       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1            | VGA85A1000111 | 2     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 14       | PIPE SUPPORT                                                                                                       |              | 51-1B         | 2     |
| 15       | PIPE SUPPORT                                                                                                       |              | 59-1B-B       | 1     |
| 16       | PIPE SUPPORT                                                                                                       |              | 57-1B-A       | 1     |
| 17       | PIPE SUPPORT                                                                                                       |              | 27-L75-0202L  | 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>         | 98            | 1            |         | <2>         | 300           | 1            |         |
| <3>         | 100           | 1            |         | <4>         | 6000          | 1            |         |
| <5>         | 584           | 1            |         | <6>         | 4177          | 1            |         |
| <7>         | 901           | 1            |         | <8>         | 100           | 1            |         |
| <9>         | 150           | 1            |         | <10>        | 150           | 1            |         |



“\*”依现场实际调整

|                  |             |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                        |            |                               |        |
|------------------|-------------|------------------------------------------|-----------|--|--|-----------|------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------|--------|
| OPER. TEMP.      | 34 °C       | PAINTING                                 |           |  |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Dragon Armatex (Changshou) Co., Ltd. (DACS)</div>                          |            |                               |        |
| OPER. PRESS.     | 0.55 MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |      |                                                                                                                                                                                        |            |                               |        |
| DESIGN TEMP.     | 80 °C       | INSULATION                               |           |  |  | NOTE      |      |                  |      | <div> 京建工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京建工程技术有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |            |                               |        |
| DESIGN PRESS.    | 1.2 MPa(g)  |                                          |           |  |  |           |      |                  |      |                                                                                                                                                                                        |            |                               |        |
| TEST PRESSURE    | 1.8 MPa(g)  | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |      | TITLE PIPING ISOMETRIC DWG                                                                                                                                                             |            |                               |        |
| TEST FLUID       | HYDRO.      |                                          |           |  |  |           |      |                  |      | PROJ. NO.                                                                                                                                                                              | 17B3166A   | UNIT                          | 17076  |
| INSPECTION X-RAY | 5 %         |                                          |           |  |  |           |      |                  |      | DRAWN                                                                                                                                                                                  | WL         | DATE 12/18/2017               | REV. 2 |
| P.W.H.T          | -           |                                          |           |  |  |           | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                                                    | 12/15/2017 | LINE NO. 13-1"-CWS-35047-L01F | SHEET  |
| CATEGORY         | -           |                                          |           |  |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                   | DATE       | DWG. NO. XG32-13-CWS-35047    | 1 OF 1 |

## FABRICATION MATERIALS

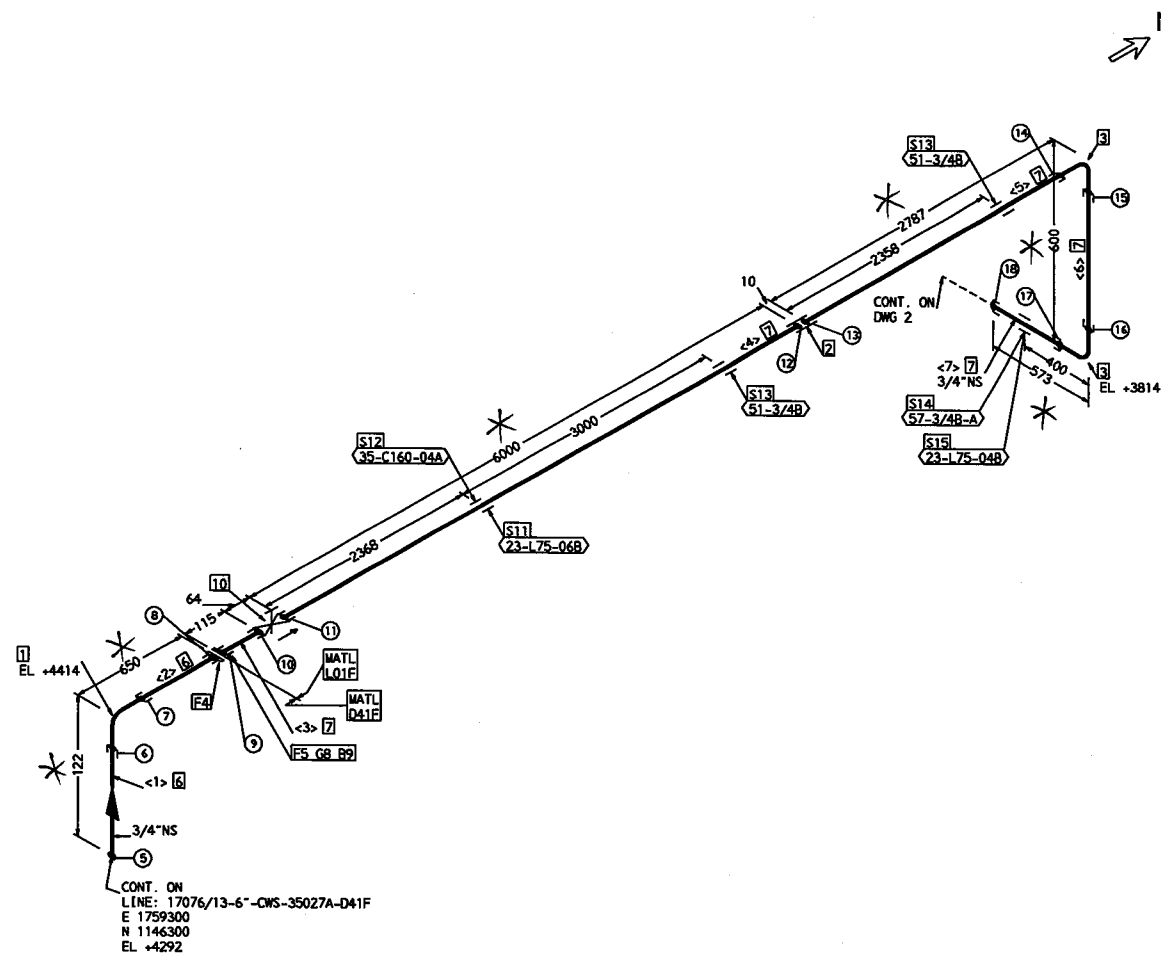
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | 90 ELL 3000# SW, CS A105 ASME           | 3/4          | NEA7511000021 | 1   |
| 2        | FULL CPLG 3000# SW, SS A182-F304 ASME   | 3/4          | SFA75A1000021 | 1   |
| 3        | 90 ELL 3000# SW, SS A182-F304 ASME      | 3/4          | NEA75A1000021 | 2   |
| 4        | SW FLG 150# RF S-80, CS A105 ASME       | 3/4          | FKA1111A80015 | 1   |
| 5        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 3/4          | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY   |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------|
| 6        | PIPE, SMLS, PE, S-80, CS A106-B ASME                                                                               | 3/4          | PPA1115A80021 | 0.8M  |
| 7        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 3/4          | PPA11A1AJ0022 | 10.0M |
| 8        | GASKET, 150# 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 | 3/4          | GKA1APE0300B1 | 1     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 3/4          | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |              |               |       |
| 11       | PIPE SUPPORT                                                                                                       |              | 23-L75-06B    | 1     |
| 12       | PIPE SUPPORT                                                                                                       |              | 35-C160-04A   | 1     |
| 13       | PIPE SUPPORT                                                                                                       |              | 51-3/4B       | 2     |
| 14       | PIPE SUPPORT                                                                                                       |              | 57-3/4B-A     | 1     |
| 15       | PIPE SUPPORT                                                                                                       |              | 23-L75-04B    | 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>         | 103           | 3/4          |         | <2>         | 627           | 3/4          |         |
| <3>         | 110           | 3/4          |         | <4>         | 6000          | 3/4          |         |
| <5>         | 2768          | 3/4          |         | <6>         | 562           | 3/4          |         |
| <7>         | 554           | 3/4          |         |             |               |              |         |



“\*” 依现场实际调整

|                  |             |                |           |                                                                                                                                                                                                          |  |  |  |
|------------------|-------------|----------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OPER. TEMP.      | 34 °C       | PAINTING       | REF. DWG. | <p>腾龙芳烃(漳州)有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</p> <p>京融工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>京融工程技术有限公司<br/>Jingrong Engineering Technology Co., Ltd.</p> <p>FOR 腾龙芳烃原油分离装置检修工程</p> |  |  |  |
| OPER. PRESS.     | 0.55 MPa(g) | CODE PER. SPEC | NOTE      |                                                                                                                                                                                                          |  |  |  |
| DESIGN TEMP.     | 80 °C       | INSULATION     |           | TITLE PIPING ISOMETRIC DWG                                                                                                                                                                               |  |  |  |
| DESIGN PRESS.    | 1.2 MPa(g)  |                |           | PROJ. NO. 17B3166A UNIT 17076                                                                                                                                                                            |  |  |  |
| TEST PRESSURE    | 1.8 MPa(g)  |                |           | DRAWN WL DATE 12/18/2017 REV. 2                                                                                                                                                                          |  |  |  |
| TEST FLUID       | HYDRO.      |                |           | LINE NO. 13-3/4"-CWS-35050-L01F SHEET                                                                                                                                                                    |  |  |  |
| INSPECTION X-RAY | 5 %         |                |           | DWG. NO. XG32-13-CWS-35050 1 OF 2                                                                                                                                                                        |  |  |  |
| P.W.H.T          | -           |                |           |                                                                                                                                                                                                          |  |  |  |
| CATEGORY         | -           |                |           |                                                                                                                                                                                                          |  |  |  |

## FABRICATION MATERIALS

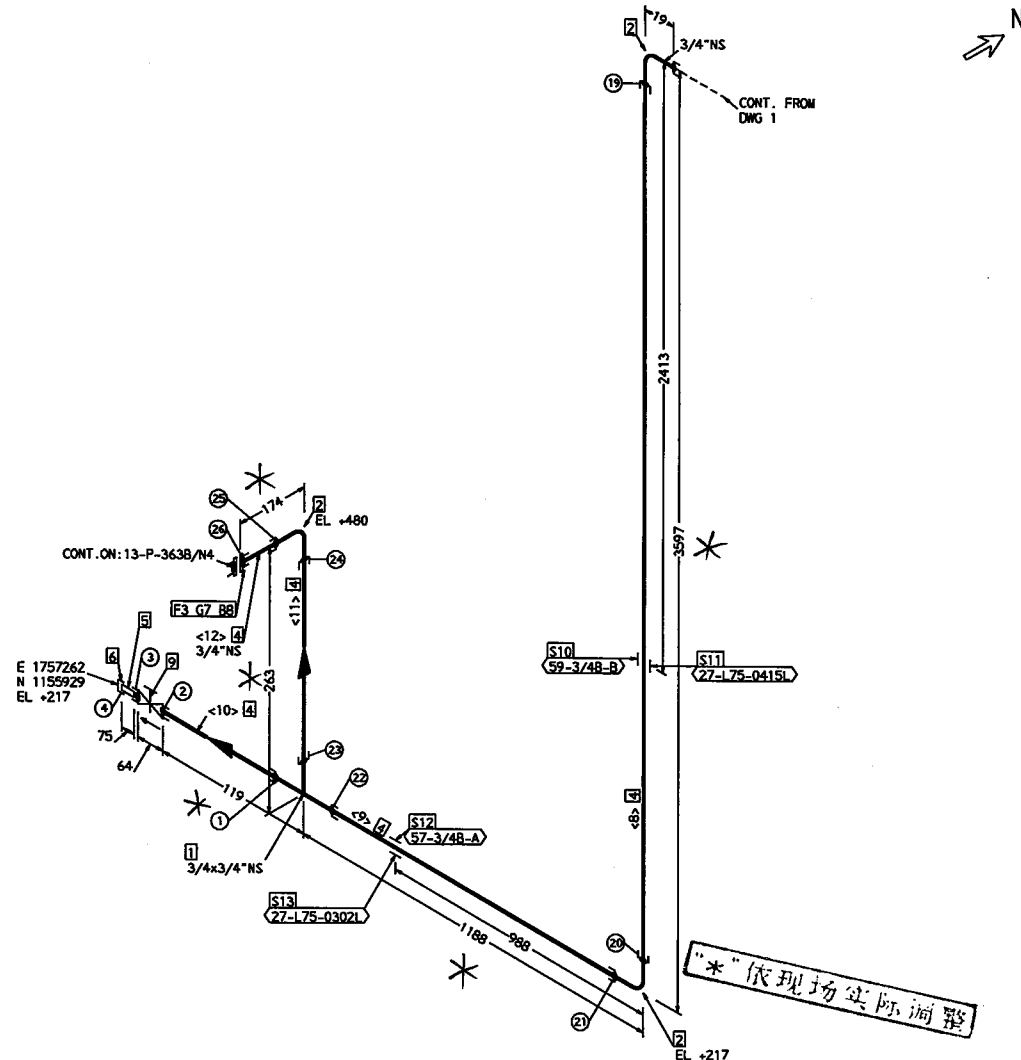
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 3/4 x 3/4    | STA75A1000021 | 1   |
| 2        | 90 ELL. 3000# SW, SS A182-F304 ASME     | 3/4          | NEA75A1000021 | 3   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 3/4          | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 3/4          | PPA11A1AJ0022 | 5.2M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 3/4          | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 3/4          | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 3/4          | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 3/4          | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 10       | PIPE SUPPORT                                                                                                       |              | 59-3/4B-B     | 1    |
| 11       | PIPE SUPPORT                                                                                                       |              | 27-L75-0415L  | 1    |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-3/4B-A     | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0302L  | 1    |

## CUT PIPE LENGTH

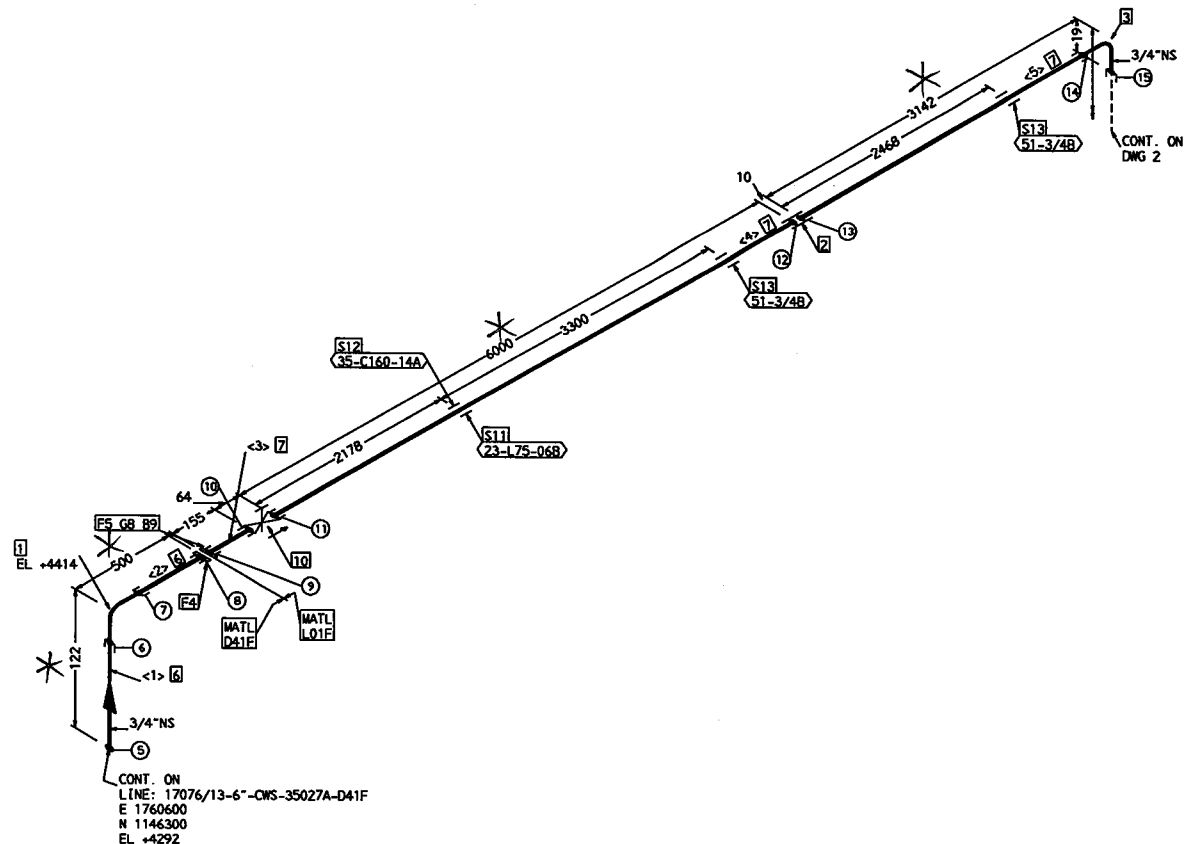
| PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS | PIECE<br>NO | CUT<br>LENGTH | N.S.<br>(IN) | REMARKS |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <8>         | 3559          | 3/4          |         | <9>         | 1150          | 3/4          |         |
| <10>        | 100           | 3/4          |         | <11>        | 225           | 3/4          |         |
| <12>        | 150           | 3/4          |         |             |               |              |         |



|                  |        |        |                                         |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             |                            |                        |                 |       |        |
|------------------|--------|--------|-----------------------------------------|-----------|--|--|-----------|------------------|------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------|-----------------|-------|--------|
| OPER. TEMP.      | 34     | °C     | PAINING                                 |           |  |  | REF. DWG. |                  |      |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Armetec (Zhangzhou) Co., Ltd. (DAC)</div> <div> 京建工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-6462 78 80/1111</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |                            |                        |                 |       |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                    | PER. SPEC |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             |                            |                        |                 | NOTE  |        |
| DESIGN TEMP.     | 80     | °C     | INSULATION                              |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             |                            |                        |                 |       |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                         |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             |                            |                        |                 |       |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYP</div></div> |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             | TITLE PIPING ISOMETRIC DWG |                        |                 |       |        |
| TEST FLUID       | HYDRO. |        |                                         |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             | PROJ. NO.                  | 17E3166A               | UNIT            | 17076 |        |
| INSPECTION X-RAY | 5      | %      |                                         |           |  |  |           |                  |      |      |                                                                                                                                                                                                                                                                                                                                                             | DRAWN                      | WL                     | DATE 12/18/2017 | REV.  | 2      |
| P.W.H.T          | -      |        |                                         |           |  |  | 2         | FOR CONSTRUCTION | CYS  | DXS  | 12/15 2017                                                                                                                                                                                                                                                                                                                                                  | LINE NO.                   | 13-3/4"-CWS-35050-L01F |                 |       | SHEET  |
| CATEGORY         | -      |        |                                         |           |  |  | REV.      | DESCRIPTION      | CHKD | APPR | DATE                                                                                                                                                                                                                                                                                                                                                        | DWG. NO.                   | XG32-13-CWS-35050      |                 |       | 2 OF 2 |

| ERECTION MATERIALS || 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>         | 103           | 3/4           |         | <2>         | 477           | 3/4           |         |
| <3>         | 150           | 3/4           |         | <4>         | 6000          | 3/4           |         |
| <5>         | 3123          | 3/4           |         |             |               |               |         |



**"\*"依现场实际调整**

|                  |        |        |                                          |           |  |  |           |     |      |                  |      |                                                                                                                                                                     |            |           |                        |                                                                                                                                                          |            |                      |        |  |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|-----|------|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|--------|--|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |     |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Qinglong Petrochemical (Zhouzhou) Co., Ltd. (QAC)</div> |            |           |                        |                                                                                                                                                          |            |                      |        |  |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |     |      |                  |      | NOTE                                                                                                                                                                |            |           |                        | <div> 京通工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京市通州区亦庄经济开发区</div> |            |                      |        |  |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           | FOR |      |                  |      |                                                                                                                                                                     |            |           |                        | 腾龙芳烃原油分离装置整改修复工程                                                                                                                                         |            |                      |        |  |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |     |      |                  |      |                                                                                                                                                                     |            |           |                        |                                                                                                                                                          |            |                      |        |  |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |     |      |                  |      |                                                                                                                                                                     |            |           | TITLE                  |                                                                                                                                                          |            | PIPING ISOMETRIC DWG |        |  |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |     |      |                  |      |                                                                                                                                                                     |            | PROJ. NO. | 17B3166A               | UNIT                                                                                                                                                     | 17076      |                      |        |  |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |     |      |                  |      |                                                                                                                                                                     |            | DRAWN     | WL                     | DATE                                                                                                                                                     | 12/18/2017 | REV.                 | 2      |  |
| P.W.H.T          | -      |        |                                          |           |  |  |           |     | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                                 | 12/15 2017 | LINE NO.  | 13-3/4"-CWS-35051-L01F |                                                                                                                                                          |            |                      | SHEET  |  |
| CATEGORY         | -      |        |                                          |           |  |  |           |     | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                | DATE       | DWG. NO.  | XG32-13-CWS-35051      |                                                                                                                                                          |            |                      | 1 OF 2 |  |

## FABRICATION MATERIALS

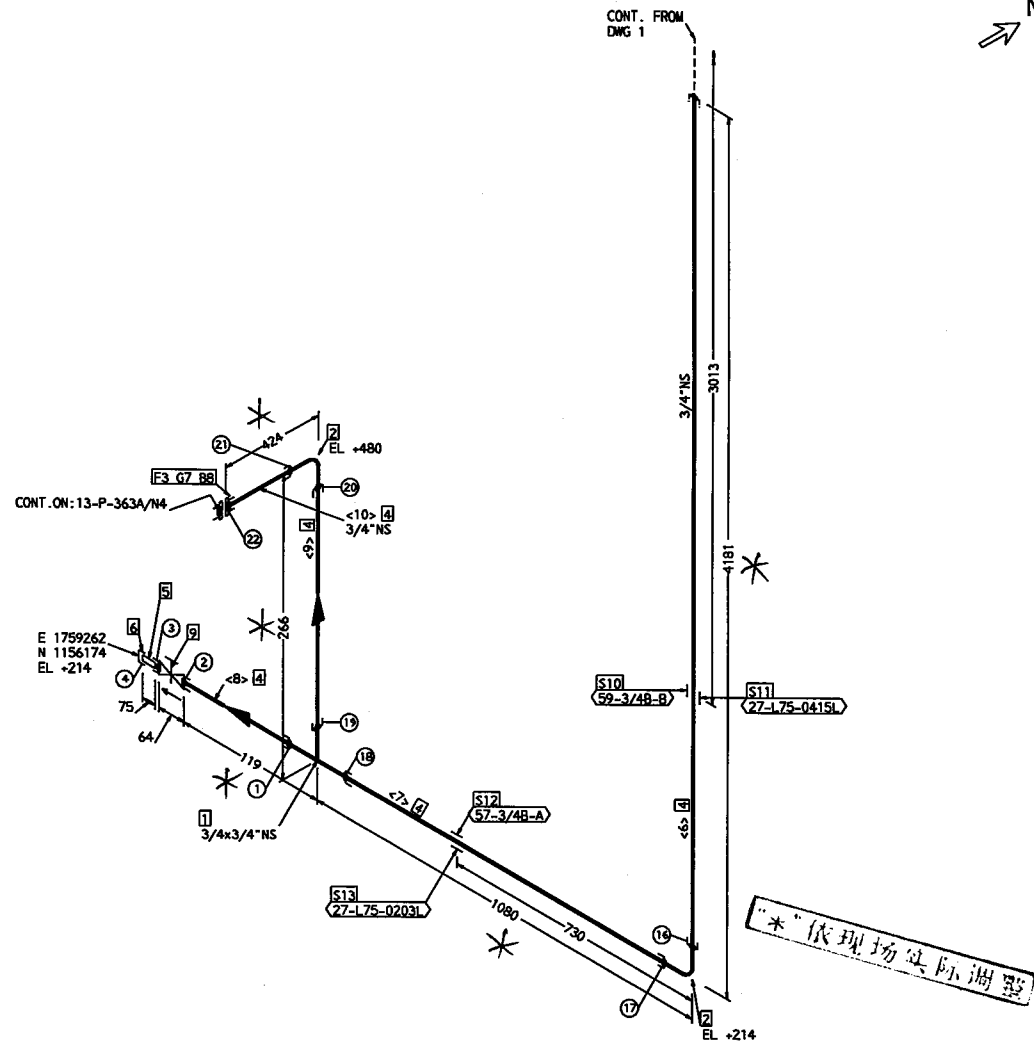
| PT<br>NO | COMPONENT DESCRIPTION                   | N.S.<br>(IN) | ITEM CODE     | QTY |
|----------|-----------------------------------------|--------------|---------------|-----|
| 1        | TEE, 3000# SW, SS A182-F304 ASME        | 3/4 x 3/4    | STA75A1000021 | 1   |
| 2        | 90 ELL 3000# SW, SS A182-F304 ASME      | 3/4          | NEA75A1000021 | 2   |
| 3        | SW FLG 150# RF S-40S, SS A182-F304 ASME | 3/4          | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

| PT<br>NO | COMPONENT DESCRIPTION                                                                                              | N.S.<br>(IN) | ITEM CODE     | QTY  |
|----------|--------------------------------------------------------------------------------------------------------------------|--------------|---------------|------|
| 4        | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 3/4          | PPA11A1AJ0022 | 6.0M |
| 5        | PIPE NIPPLE, SMLS, POE/TOE, S-40S, SS A312-TP304 L=75MM (3"), ASME                                                 | 3/4          | PNA1DA1AJ0322 | 1    |
| 6        | CAP, 3000# FNPT, SS A182-F304 ASME                                                                                 | 3/4          | NCA72A1000021 | 1    |
| 7        | GASKET, 150# 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 | 3/4          | GKA1APE0300B1 | 1    |
| 8        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM        | GMA04310000E1 | 4    |
| 9        | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 3/4          | VGA85A1000111 | 1    |
| SUPPORTS |                                                                                                                    |              |               |      |
| 10       | PIPE SUPPORT                                                                                                       |              | 59-3/4B-B     | 1    |
| 11       | PIPE SUPPORT                                                                                                       |              | 27-L75-0415L  | 1    |
| 12       | PIPE SUPPORT                                                                                                       |              | 57-3/4B-A     | 1    |
| 13       | PIPE SUPPORT                                                                                                       |              | 27-L75-0203L  | 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 |
|-------------|---------------|--------------|---------|-------------|---------------|--------------|---------|
| <6>         | 4162          | 3/4          |         | <7>         | 1042          | 3/4          |         |
| <8>         | 100           | 3/4          |         | <9>         | 228           | 3/4          |         |
| <10>        | 400           | 3/4          |         |             |               |              |         |



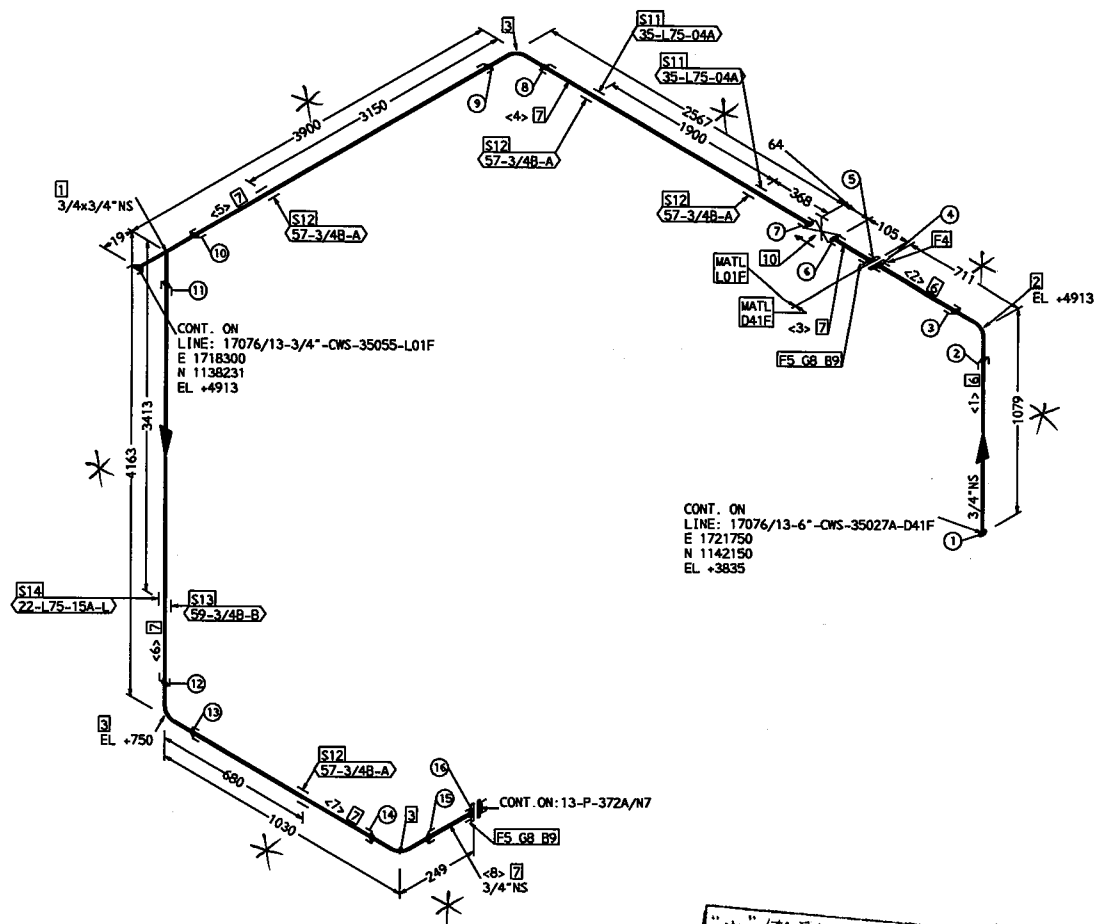
|                     |        |        |             |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      |                            |               |                                 |        |       |
|---------------------|--------|--------|-------------|--|--|--|-----------|------|------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------|---------------------------------|--------|-------|
| OPER. TEMP.         | 34     | °C     | PAINTING    |  |  |  | REF. DWG. |      |                  |  | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Aviation (Changzhou) Co., Ltd. (CTCI)</div> <div> 京龍工程建設有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京工程建設有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |                            |               |                                 |        |       |
| OPER. PRESS.        | 0.55   | MPa(g) | CODE        |  |  |  | NOTE      |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      |                            |               |                                 |        |       |
| DESIGN TEMP.        | 80     | °C     | PER. SPEC   |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      |                            |               |                                 |        |       |
| DESIGN PRESS.       | 1.2    | MPa(g) | INSULATION  |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      |                            |               |                                 |        |       |
| TEST PRESSURE       | 1.8    | MPa(g) | NPS<br>TYPE |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      | TITLE PIPING ISOMETRIC DWG |               |                                 |        |       |
| TEST FLUID          | HYDRO. |        |             |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      | PROJ. NO.                  | 17E3166A      | UNIT                            | 17076  |       |
| INSPECTION<br>X-RAY | 5      | %      |             |  |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                      | DRAWN                      | WL            | DATE<br>12/18/2017              | REV.   | 2     |
| P.W.H.T             | -      |        |             |  |  |  |           | 2    | FOR CONSTRUCTION |  | CYS                                                                                                                                                                                                                                                                                                                                                  | DKS                        | 12/15<br>2017 | LINE NO. 13-3/4"-CWS-35051-L01F |        | SHEET |
| CATEGORY            | -      |        |             |  |  |  |           | REV. | DESCRIPTION      |  | CHKD                                                                                                                                                                                                                                                                                                                                                 | APPR                       | DATE          | DWG. NO. XG32-13-CWS-35051      | 2 OF 2 |       |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 1060          | 3/4           |         | <2>         | 688           | 3/4           |         |
| <3>         | 100           | 3/4           |         | <4>         | 2548          | 3/4           |         |
| <5>         | 3862          | 3/4           |         | <6>         | 4125          | 3/4           |         |
| <7>         | 992           | 3/4           |         | <8>         | 225           | 3/4           |         |



“\*”依现场实际调查

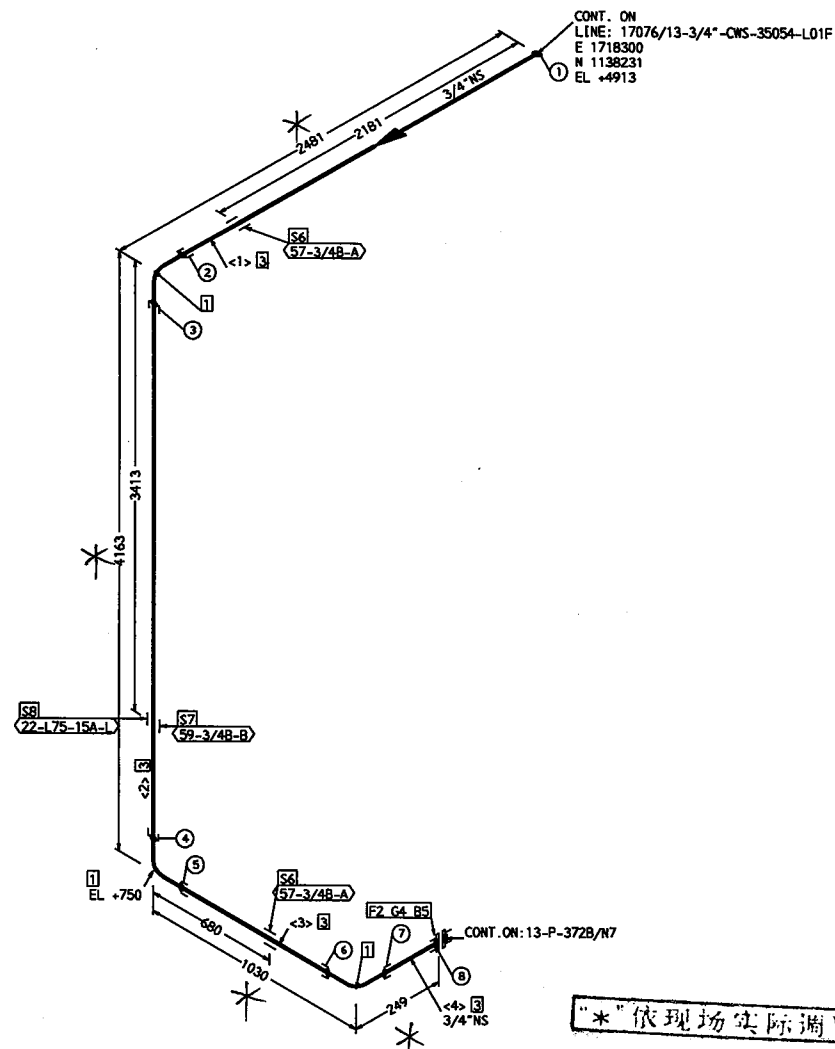
|                  |        |        |                                         |           |  |  |            |      |                  |      |                                                                                                                                                             |               |                            |                        |                                                                                                                                                                     |  |
|------------------|--------|--------|-----------------------------------------|-----------|--|--|------------|------|------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| OPER. TEMP.      | 34     | °C     | PAINTING                                |           |  |  | REF. DWG.  |      |                  |      | <div> 腾龙芳烃（漳州）有限公司<br/>Brong Aronthe (Changzhou) Co., Ltd. (CZC)</div> |               |                            |                        |                                                                                                                                                                     |  |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                    | PER. SPEC |  |  |            |      |                  |      | NOTE                                                                                                                                                        |               |                            |                        | <div> 京隆工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-64667766/13911011011</div> |  |
| DESIGN TEMP.     | 80     | °C     |                                         |           |  |  | INSULATION |      |                  |      |                                                                                                                                                             |               |                            |                        | FOR                                                                                                                                                                 |  |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                         |           |  |  |            |      |                  |      |                                                                                                                                                             |               |                            |                        |                                                                                                                                                                     |  |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>SPS</div><div>TYP</div></div> |           |  |  |            |      |                  |      |                                                                                                                                                             |               | TITLE PIPING ISOMETRIC DWG |                        |                                                                                                                                                                     |  |
| TEST FLUID       | HYDRO. |        |                                         |           |  |  |            |      |                  |      |                                                                                                                                                             | PROJ. NO.     | 17B3166A                   | UNIT                   | 17076                                                                                                                                                               |  |
| INSPECTION X-RAY | 5      | %      |                                         |           |  |  |            |      |                  |      |                                                                                                                                                             | DRAWN         | WL                         | DATE<br>12/18/2017     | REV.   2                                                                                                                                                            |  |
| P.W.H.T          | -      |        |                                         |           |  |  |            | 2    | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                         | 12/15<br>2017 | LINE NO.                   | 13-3/4"-CWS-35054-L01F | SHEET                                                                                                                                                               |  |
| CATEGORY         | -      |        |                                         |           |  |  |            | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                        | DATE          | DWG. NO.                   | YG32-13-CWS-35054      | 1 OF 1                                                                                                                                                              |  |

| ERECTION MATERIALS |

## SUPPORTS

| 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>         | 2462          | 3/4          |         | <2>         | 4125          | 3/4          |         |
| <3>         | 992           | 3/4          |         | <4>         | 225           | 3/4          |         |



**"\*"依现场实际调整**

|                  |        |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      |            |          |                        |            |      |        |
|------------------|--------|--------|------------------------------------------|-----------|--|--|-----------|------|------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|----------|------------------------|------------|------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  |  | REF. DWG. |      |                  |  | <div> 腾龙芳烃（漳州）有限公司<br/>Tenglong Aromatics (Zhangzhou) Co., Ltd. (CTAC)</div> <div> 京福工程建设有限公司<br/>CTCL Beijing Co., Ltd.<br/>北京福源工程建設有限公司</div> <div>FOR 腾龙芳烃原油分离装置整改修复工程</div> |      |            |          |                        |            |      |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      |            |          | NOTE                   |            |      |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      |            |          |                        |            |      |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      |            |          |                        |            |      |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      |            | TITLE    | PIPING ISOMETRIC DWG   |            |      |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      | PROJ. NO.  | 17B3166A | UNIT                   | 17076      |      |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |  |           |      |                  |  |                                                                                                                                                                                                                                                                                                                                                           |      | DRAWN      | WL       | DATE                   | 12/18/2017 | REV. | 2      |
| P.W.H.T          | -      |        |                                          |           |  |  |           | 2    | FOR CONSTRUCTION |  | CYS                                                                                                                                                                                                                                                                                                                                                       | DXS  | 12/15 2017 | LINE NO. | 13-3/4"-CWS-35055-L01F |            |      | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |  |           | REV. | DESCRIPTION      |  | CHKD                                                                                                                                                                                                                                                                                                                                                      | APPR | DATE       | DWG. NO. | XG32-13-CWS-35055      |            |      | 1 OF 1 |

## FABRICATION MATERIALS

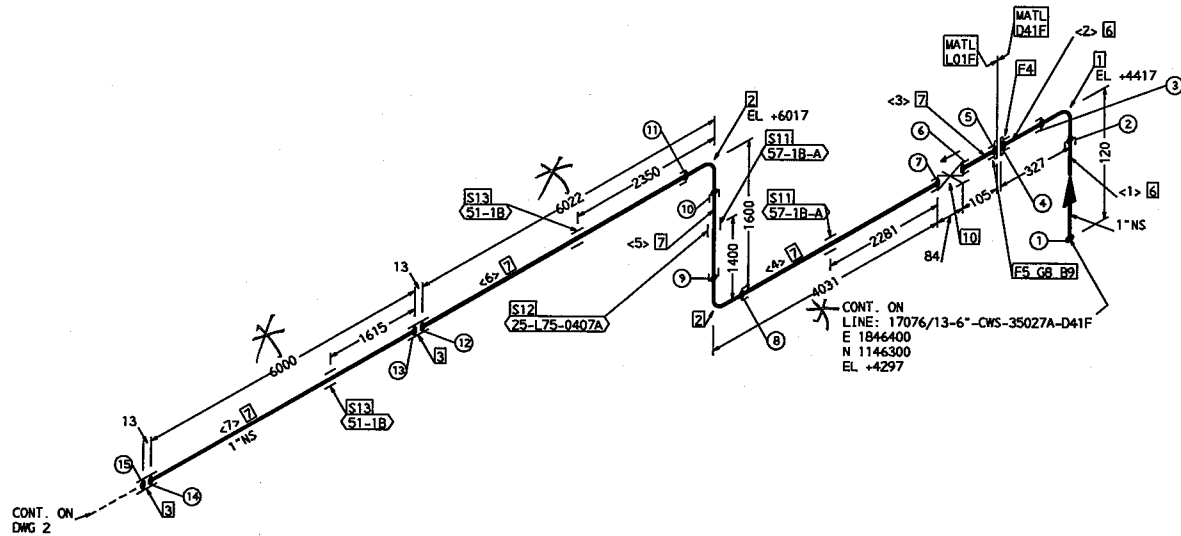
| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | 90 ELL 3000# SW, CS A105 ASME           | 1         | NEA7511000021 | 1   |
| 2     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 2   |
| 3     | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1         | SFA75A1000021 | 2   |
| 4     | SW FLG 150# RF S-80, CS A105 ASME       | 1         | PKA1111A80015 | 1   |
| 5     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | PKA11A1AJ0015 | 1   |

## 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, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 17.7M |
| 8        | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 1     |
| 9        | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H [SO]                                 | 12 MM     | GMA04310000E1 | 4     |
| 10       | GATE VALVE, 800# SW, SS A182-F304 BODY SS 304 TR API TR #2 SOLID WG OS&Y BB API-602                                | 1         | VGA85A1000111 | 1     |
| SUPPORTS |                                                                                                                    |           |               |       |
| 11       | PIPE SUPPORT                                                                                                       |           | 57-1B-A       | 2     |
| 12       | PIPE SUPPORT                                                                                                       |           | 25-L75-0407A  | 1     |
| 13       | PIPE SUPPORT                                                                                                       |           | 51-1B         | 2     |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <1>      | 98         | 1         |         | <2>      | 300        | 1         |         |
| <3>      | 100        | 1         |         | <4>      | 4009       | 1         |         |
| <5>      | 1556       | 1         |         | <6>      | 6000       | 1         |         |
| <7>      | 6000       | 1         |         |          |            |           |         |



"\*" 依现场实际调整

|                  |             |            |           |                                                                                                                                                                                              |                            |
|------------------|-------------|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| OPER. TEMP.      | 34 °C       | PAINTING   | REF. DWG. | <div> <p>腾龙芳烃 (漳州) 有限公司<br/>Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)</p> <p>京能工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>010-64627888 FAX 010-64627811</p> <p>FOR 腾龙芳烃煤油分离装置检修工程</p> </div> | TITLE PIPING ISOMETRIC DWG |
| OPER. PRESS.     | 0.55 MPa(g) | CODE       | PER. SPEC |                                                                                                                                                                                              |                            |
| DESIGN TEMP.     | 80 °C       | INSULATION | NOTE      |                                                                                                                                                                                              |                            |
| DESIGN PRESS.    | 1.2 MPa(g)  |            |           |                                                                                                                                                                                              |                            |
| TEST PRESSURE    | 1.8 MPa(g)  | NPS TYPE   |           |                                                                                                                                                                                              |                            |
| TEST FLUID       | HYDRO.      |            |           |                                                                                                                                                                                              |                            |
| INSPECTION X-RAY | 5 %         |            |           |                                                                                                                                                                                              |                            |
| P.W.H.T          | -           |            |           |                                                                                                                                                                                              |                            |
| CATEGORY         | -           |            |           |                                                                                                                                                                                              |                            |

腾龙芳烃 (漳州) 有限公司  
Dragon Aromatics (Zhangzhou) Co., Ltd. (DAC)

京能工程建设有限公司  
CTCI Beijing Co., Ltd.  
010-64627888 FAX 010-64627811

FOR 腾龙芳烃煤油分离装置检修工程

PROJECT NO. 17E3166A UNIT 17076

DRAWN WL DATE 12/27/2017 REV. 2

LINE NO. 13-1"-CWS-35056-L01F SHEET 1 OF 3

DWG. NO. XG32-13-CWS-35056

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                 | N.S. (IN) | ITEM CODE     | QTY |
|-------|---------------------------------------|-----------|---------------|-----|
| 1     | FULL CPLG 3000# SW, SS A182-F304 ASME | 1         | SFA75A1000021 | 2   |
| 2     | 90 ELL 3000# SW, SS A182-F304 ASME    | 1         | NEA75A1000021 | 3   |

## ERECTION MATERIALS

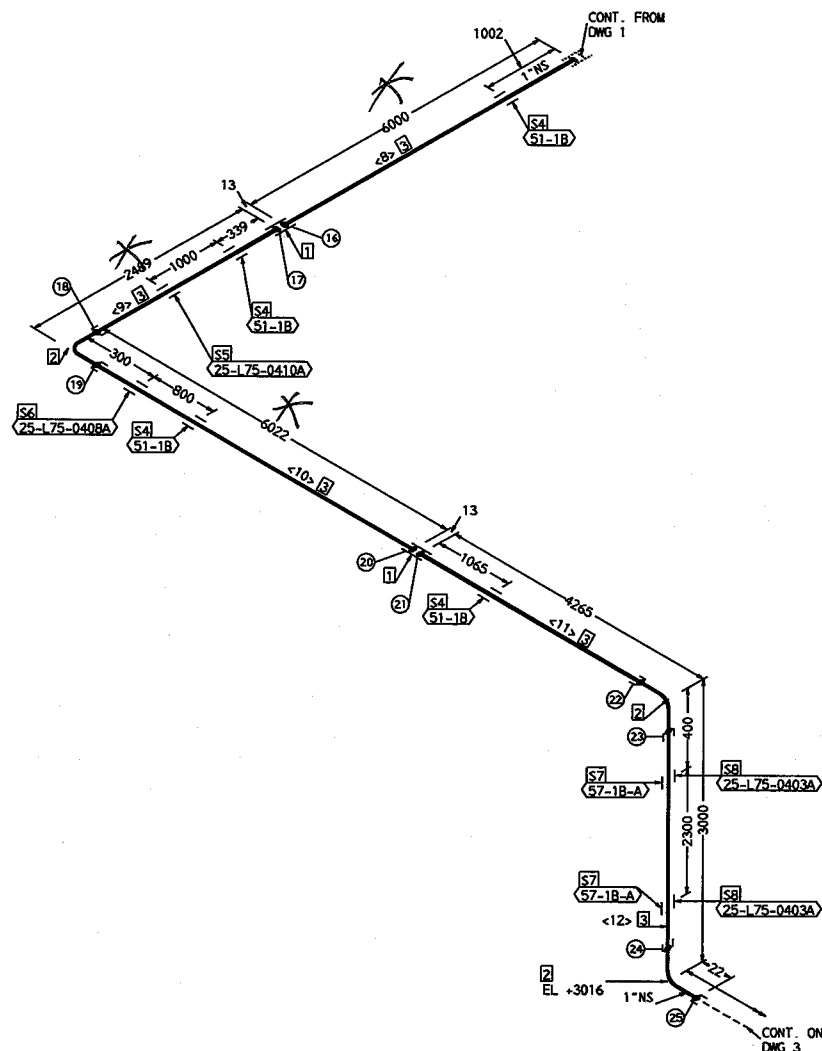
| PT NO | COMPONENT DESCRIPTION                     | N.S. (IN) | ITEM CODE     | QTY   |
|-------|-------------------------------------------|-----------|---------------|-------|
| 3     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME | 1         | PPA11A1AJ0022 | 21.7M |

## SUPPORTS

|   |              |              |   |
|---|--------------|--------------|---|
| 4 | PIPE SUPPORT | 51-1B        | 4 |
| 5 | PIPE SUPPORT | 25-L75-0410A | 1 |
| 6 | PIPE SUPPORT | 25-L75-0408A | 1 |
| 7 | PIPE SUPPORT | 57-1B-A      | 2 |
| 8 | PIPE SUPPORT | 25-L75-0403A | 2 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS | PIECE NO | CUT LENGTH | N.S. (IN) | REMARKS |
|----------|------------|-----------|---------|----------|------------|-----------|---------|
| <8>      | 6000       | 1         |         | <9>      | 2467       | 1         |         |
| <10>     | 6000       | 1         |         | <11>     | 4243       | 1         |         |
| <12>     | 2956       | 1         |         |          |            |           |         |



\* 依现场实际调整

|                  |        |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           |                            |                 |        |        |
|------------------|--------|--------|------------------------------------------|-----------|--|-----------|------|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|----------------------------|-----------------|--------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           |  | REF. DWG. |      |                  |      | <div> 腾龙芳烃(漳州)有限公司<br/>Dragon Acoustic (Changzhou) Co., Ltd. (DMC)</div> <div> 京瑞工程技术有限公司<br/>CTCI Beijing Co., Ltd.<br/>SINCE 1985, TR. AUTUMN</div> FOR 腾龙芳烃原油分离装置整改修复工程 |            |           |                            |                 |        |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           |                            | NOTE            |        |        |
| DESIGN TEMP.     | 80     | °C     |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           |                            |                 |        |        |
| DESIGN PRESS.    | 1.2    | MPa(g) | INSULATION                               |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           |                            |                 |        |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>NPS</div><div>TYPE</div></div> |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           | TITLE PIPING ISOMETRIC DWG |                 |        |        |
| TEST FLUID       | HYDRO. |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            | PROJ. NO. | 17E3166A                   | UNIT            | 17076  |        |
| INSPECTION X-RAY | 5      | %      |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            | DRAWN     | WL                         | DATE 12/27/2017 | REV. 2 |        |
| P.W.H.T          | -      |        |                                          |           |  |           | 2    | FOR CONSTRUCTION | CYS  | DKS                                                                                                                                                                                                                                                                                                                                                  | 12/28 2017 | LINE NO.  | 13-1"-CWS-35056-L01F       |                 |        | SHEET  |
| CATEGORY         | -      |        |                                          |           |  |           | REV. | DESCRIPTION      | CHKD | APPR                                                                                                                                                                                                                                                                                                                                                 | DATE       | DWG. NO.  | XG32-13-CWS-35056          |                 |        |        |
|                  |        |        |                                          |           |  |           |      |                  |      |                                                                                                                                                                                                                                                                                                                                                      |            |           |                            |                 |        | 2 OF 3 |

## FABRICATION MATERIALS

| PT NO | COMPONENT DESCRIPTION                   | N.S. (IN) | ITEM CODE     | QTY |
|-------|-----------------------------------------|-----------|---------------|-----|
| 1     | FULL CPLG 3000# SW, SS A182-F304 ASME   | 1         | SFA75A1000021 | 3   |
| 2     | 90 ELL 3000# SW, SS A182-F304 ASME      | 1         | NEA75A1000021 | 3   |
| 3     | SW FLG 150# RF S-40S, SS A182-F304 ASME | 1         | FKA11A1AJ0015 | 1   |

## ERECTION MATERIALS

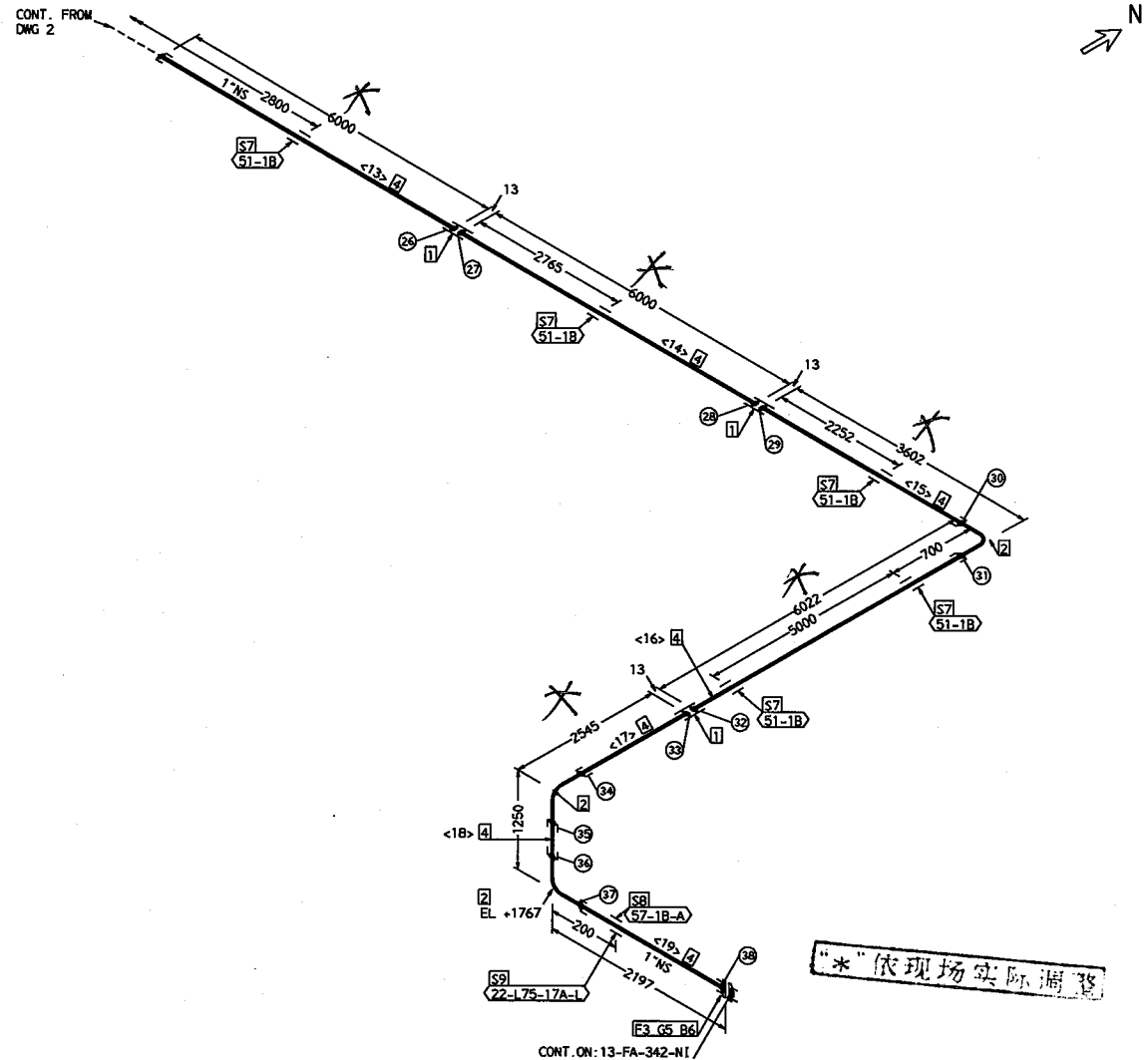
| PT NO | COMPONENT DESCRIPTION                                                                                              | N.S. (IN) | ITEM CODE     | QTY   |
|-------|--------------------------------------------------------------------------------------------------------------------|-----------|---------------|-------|
| 4     | PIPE, SMLS, PE, S-40S, SS A312-TP304 ASME                                                                          | 1         | PPA11A1AJ0022 | 27.5M |
| 5     | GASKET, 150# 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 | 1         | GKA1APE0300B1 | 1     |
| 6     | 65 MM BOLT LENGTH, BOLT & NUT METRIC, COARSE, STUD AS A193-B7 W/ NUTS A194-2H ISO                                  | 12 MM     | GMA04310000E1 | 4     |

## SUPPORTS

|   |              |              |   |
|---|--------------|--------------|---|
| 7 | PIPE SUPPORT | 51-1B        | 5 |
| 8 | PIPE SUPPORT | S7-1B-A      | 1 |
| 9 | PIPE SUPPORT | 22-L75-17A-L | 1 |

## CUT PIPE LENGTH

| PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS | PIECE NO | CUT LENGTH (IN) | N.S. | REMARKS |
|----------|-----------------|------|---------|----------|-----------------|------|---------|
| <13>     | 6000            | 1    |         | <14>     | 6000            | 1    |         |
| <15>     | 3580            | 1    |         | <16>     | 6000            | 1    |         |
| <17>     | 2523            | 1    |         | <18>     | 1206            | 1    |         |
| <19>     | 2170            | 1    |         |          |                 |      |         |



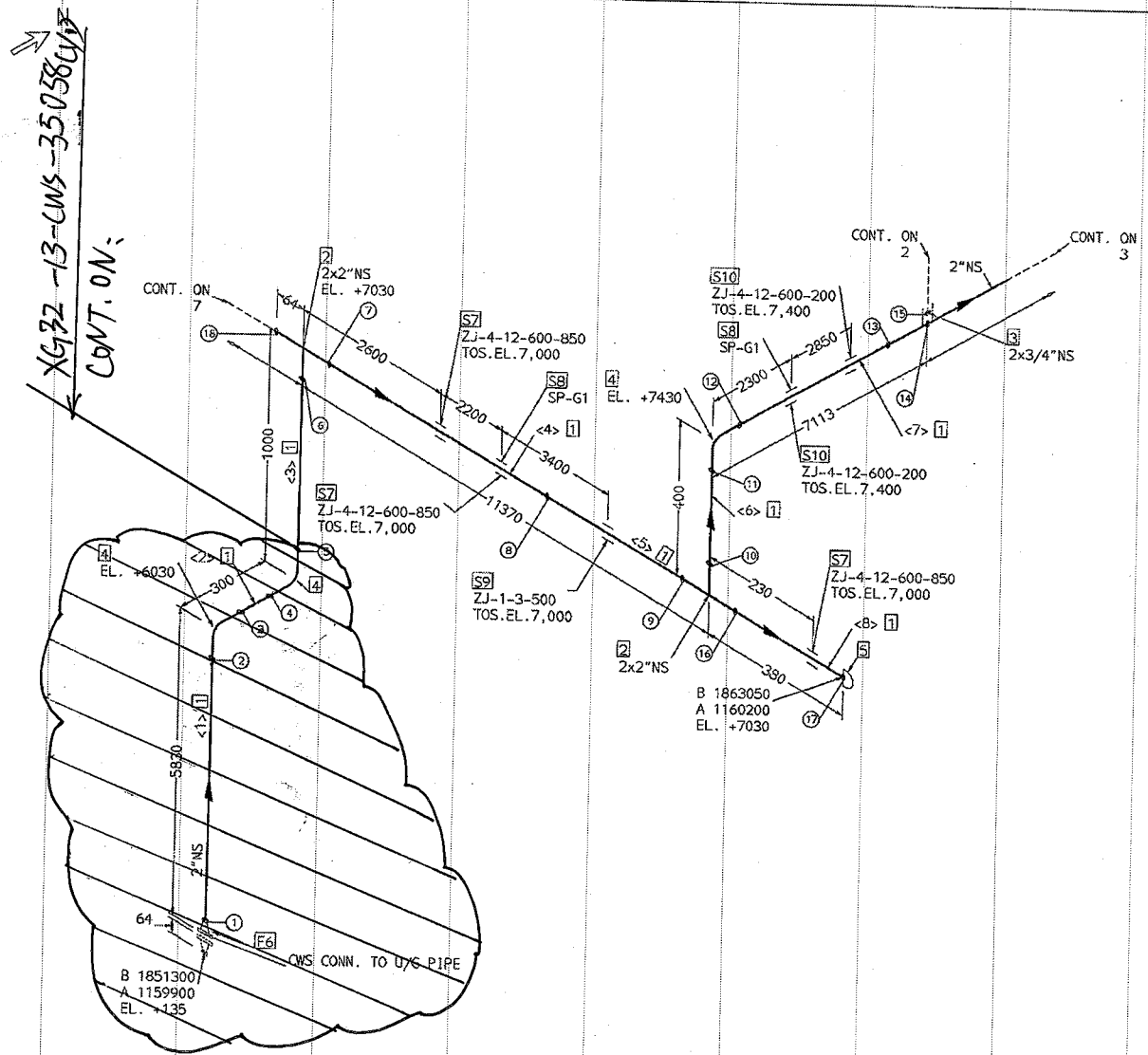
|                  |        |        |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      |                            |            |          |                      |      |   |        |
|------------------|--------|--------|------------------------------------------|-----------|-----------|--|--|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|------------|----------|----------------------|------|---|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                                 |           | REF. DWG. |  |  |      | <div><div>腾龙芳烃（漳州）有限公司<br/>Dragon Armonition (Zhangzhou) Co., Ltd. (DAC)</div></div> <div><div>京福工程建设有限公司<br/>CTCI Beijing Co., Ltd.<br/>北京世纪泰和工程技术有限公司</div></div> <div>FOR</div> <div>腾龙芳烃原油分离装置整改修复工程</div> |      |                            |            |          |                      |      |   |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                                     | PER. SPEC |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      |                            |            | NOTE     |                      |      |   |        |
| DESIGN TEMP.     | 80     | °C     | INSULATION                               |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      |                            |            |          |                      |      |   |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      |                            |            |          |                      |      |   |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div><div>MPS</div><div>TIFE</div></div> |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      | TITLE PIPING ISOMETRIC DWG |            |          |                      |      |   |        |
| TEST FLUID       | HYDRO. |        |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      | PROJ. NO.                  | 17B3166A   | UNIT     | 17076                |      |   |        |
| INSPECT[ON X-RAY | 5      | %      |                                          |           |           |  |  |      |                                                                                                                                                                                                                                                                                                                                                                                          |      | DRAWN                      | WL         | DATE     | 12/27/2017           | REV. | 2 |        |
| P.W.H.T          | -      |        |                                          |           |           |  |  | 2    | FOR CONSTRUCTION                                                                                                                                                                                                                                                                                                                                                                         | CYS  | DXS                        | 12/28 2017 | LINE NO. | 13-1"-CWS-35056-L01F |      |   | SHEET  |
| CATEGORY         | -      |        |                                          |           |           |  |  | REV. | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                              | CHKD | APPR                       | DATE       | DWG. NO. | XG32-13-CWS-35056    |      |   | 3 OF 3 |

| ERECTION MATERIALS || CUT PIPE LENGTH |

“\*”依现场实际调整

|                  |        |        |                         |           |  |  |           |            |                  |      |                                                                                                                                                          |            |                            |                      |                                                                                                                                              |        |
|------------------|--------|--------|-------------------------|-----------|--|--|-----------|------------|------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------|
| OPER. TEMP.      | 34     | °C     | PAINTING                |           |  |  | REF. DWG. |            |                  |      |  腾龙芳烃(漳州)有限公司<br>Qinglong Petrochemical (Zhangzhou) Co., Ltd. (CHN) |            |                            |                      |                                                                                                                                              |        |
| OPER. PRESS.     | 0.55   | MPa(g) | CODE                    | PER. SPEC |  |  |           |            |                  |      | NOTE                                                                                                                                                     |            |                            |                      |  京港工程建设有限公司<br>CTCI Beijing Co., Ltd.<br>北京世纪伟业工程技术有限公司 |        |
| DESIGN TEMP.     | 80     | °C     |                         |           |  |  |           | INSULATION |                  |      |                                                                                                                                                          |            |                            |                      | FOR                                                                                                                                          |        |
| DESIGN PRESS.    | 1.2    | MPa(g) |                         |           |  |  |           |            |                  |      |                                                                                                                                                          |            |                            |                      |                                                                                                                                              |        |
| TEST PRESSURE    | 1.8    | MPa(g) | <div>MPa<br/>TYPE</div> |           |  |  |           |            |                  |      |                                                                                                                                                          |            | TITLE PIPING ISOMETRIC DWG |                      |                                                                                                                                              |        |
| TEST FLUID       | HYDRO. |        |                         |           |  |  |           |            |                  |      |                                                                                                                                                          | PROJ. NO.  | 17E3166A                   | UNIT                 | 17076                                                                                                                                        |        |
| INSPECTION X-RAY | 5      | %      |                         |           |  |  |           |            |                  |      |                                                                                                                                                          | DRAWN      | WL                         | DATE<br>12/27/2017   | REV.                                                                                                                                         | 2      |
| P.W.H.T          | -      |        |                         |           |  |  |           | 2          | FOR CONSTRUCTION | CYS  | DXS                                                                                                                                                      | 12/28/2017 | LINE NO.                   | 13-2"-CWS-35058-D41F |                                                                                                                                              | SHEET  |
| CATEGORY         | -      |        |                         |           |  |  |           | REV.       | DESCRIPTION      | CHKD | APPR                                                                                                                                                     | DATE       | DWG. NO.                   | XG32-13-CWS-35058    |                                                                                                                                              | 1 OF 1 |

| FABRICATION MATERIALS |                                                          |               |               |                  |               |               |
|-----------------------|----------------------------------------------------------|---------------|---------------|------------------|---------------|---------------|
| PT<br>NO              | DESCRIPTION & MATERIAL                                   |               | N.S.<br>(INS) | ITEM CODE        | QTY           |               |
| PIPE                  |                                                          |               |               |                  |               |               |
| 1                     | PIPE A106 GR.B SCH80 SMLS BE ASME<br>B36.10M             |               | 2             | D41F/P-2"-80     | 26.2M         |               |
| FITTINGS              |                                                          |               |               |                  |               |               |
| 2                     | TEE A234 GR.WPB SCH80 SMLS BW ASME<br>B16.9              |               | 2 x 2         | D41F/TB-2"       | 2             |               |
| 3                     | HALF COUPLING CL3000 SW A105 ASME<br>B16.11              |               | 2 x 3/4       | D41F/CHS-2"x3/4" | 1             |               |
| 4                     | 90 DEG. ELBOW LR A234 GR.WPB SCH80 SMLS<br>BW ASME B16.9 |               | 2             | D41F/EB-2"x90    | 3             |               |
| 5                     | CAP A234 GR.WPB SCH80 SMLS BW ASME<br>B16.9              |               | 2             | D41F/CD-2"       | 1             |               |
| FLANGES               |                                                          |               |               |                  |               |               |
| 6                     | FLANGE CL150 RF WN A105 SCH80 BORE ASME<br>B16.5         |               | 2             | D41F/WFR-2"      | 1             |               |
| ERECTION MATERIALS    |                                                          |               |               |                  |               |               |
| PT<br>NO              | DESCRIPTION & MATERIAL                                   |               | N.S.<br>(INS) | ITEM CODE        | QTY           |               |
| SUPPORTS              |                                                          |               |               |                  |               |               |
| 7                     | PIPE SUPPORT (ZJ-4-12-600-850<br>TOS.EL.7,000)           |               | 2             | SUP/ZJ-4-12-2"   | 3             |               |
| 8                     | SPECIAL SUPPORT (SP-G1)                                  |               | 2             | SUP/G1-2"        | 2             |               |
| 9                     | PIPE SUPPORT (ZJ-1-3-500<br>TOS.EL.7,000)                |               | 2             | SUP/ZJ-1-3-2"    | 1             |               |
| 10                    | PIPE SUPPORT (ZJ-4-12-600-200<br>TOS.EL.7,400)           |               | 2             | SUP/ZJ-4-12-2"   | 2             |               |
| CUT PIPE LENGTH       |                                                          |               |               |                  |               |               |
| PIECE<br>NO           | CUT<br>LENGTH                                            | N.S.<br>(INS) | REMARKS       | PIECE<br>NO      | CUT<br>LENGTH | N.S.<br>(INS) |
| <1>                   | 5690                                                     | 2             |               | <2>              | 148           | 2             |
| <3>                   | 860                                                      | 2             |               | <4>              | 6000          | 2             |
| <5>                   | 5243                                                     | 2             |               | <6>              | 260           | 2             |
| <7>                   | 6000                                                     | 2             |               | <8>              | 316           | 2             |



“\*” 依现场实际调整

| FOR CONSTRUCTION |            |                  |             | FOR CONSTRUCTION |          |        |                                                                                   |              |        |        |          |             |         |
|------------------|------------|------------------|-------------|------------------|----------|--------|-----------------------------------------------------------------------------------|--------------|--------|--------|----------|-------------|---------|
| NO.              | DATE       | REVISION         | DESCRIPTION | BY               | CHK.     | APPR.  | WELDED                                                                            | FIELD WELDED | SOCKET | THREAD | COUPLING | FIELD CONN. | SUPPORT |
| 1                | 11/15/2011 | FOR CONSTRUCTION |             | C.T.LEE          | Y.C.CHOU | A.F.WU |                                                                                   |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | UPR. PRESS.: 0.55 MPa(G) DPR. TEMP.: 34 °C CLASS: D41F DWN. C.T.LEE 11/15/2011    |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | DES. PRESS.: 1.2 MPa(G) DES. TEMP.: 80 °C INSULATION: --- DESN. C.M.WU 11/15/2011 |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | HYDRO TEST: WATER 1.8 MPa(G) PVHT: NO TRACING: --- CHK. Y.C.CHOU 11/15/2011       |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | PAINTING: PER SPEC. STEAM OUT: NO RT: 0 APPR. A.F.WU 11/15/2011                   |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | DWG NO.: 143,140A,140B CONTRACT: C192502 LINE NO.: 13-2"-CNS-35058-041F           |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | DIA. NO.: 1208-035/004-008 FILE NO.: 13-CWS35058-1                                |              |        |        |          |             |         |
|                  |            |                  |             |                  |          |        | SHT. 1 OF 14                                                                      |              |        |        |          |             |         |

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