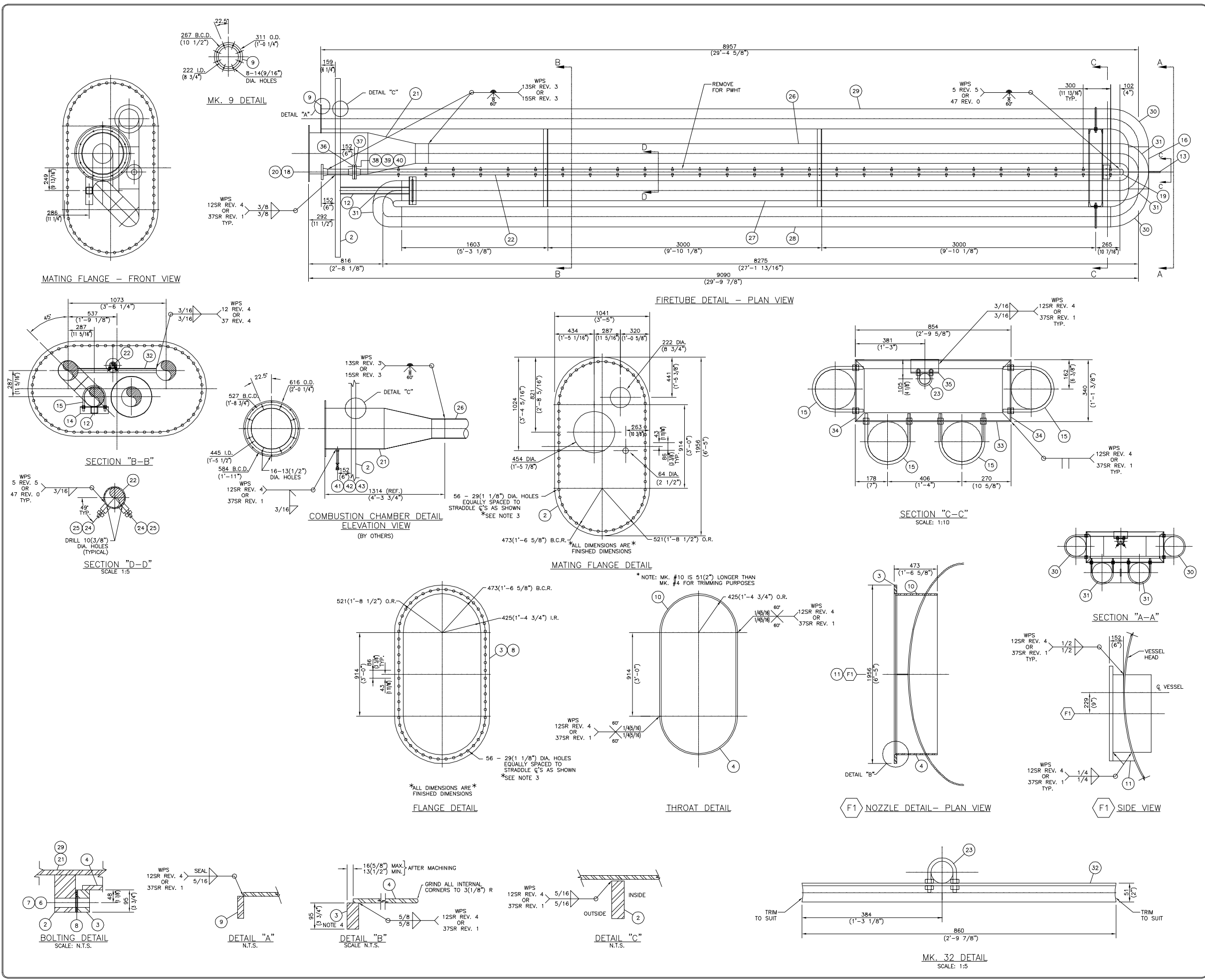
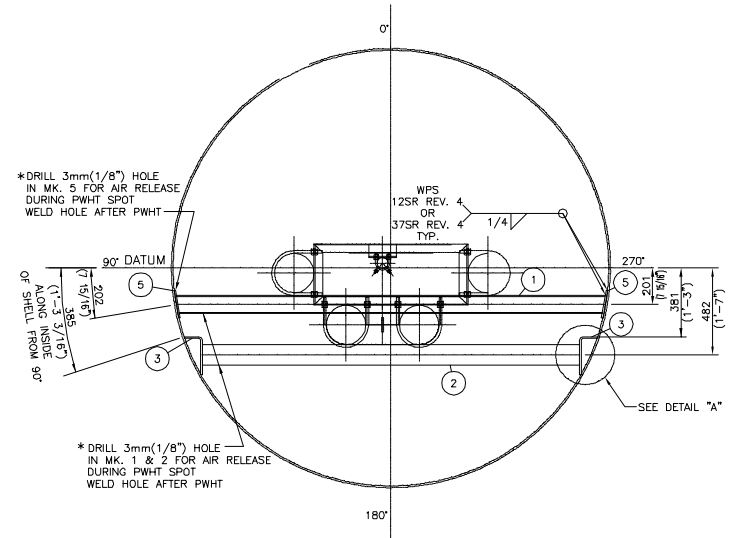




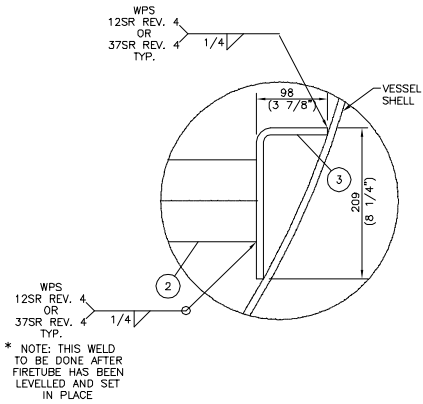
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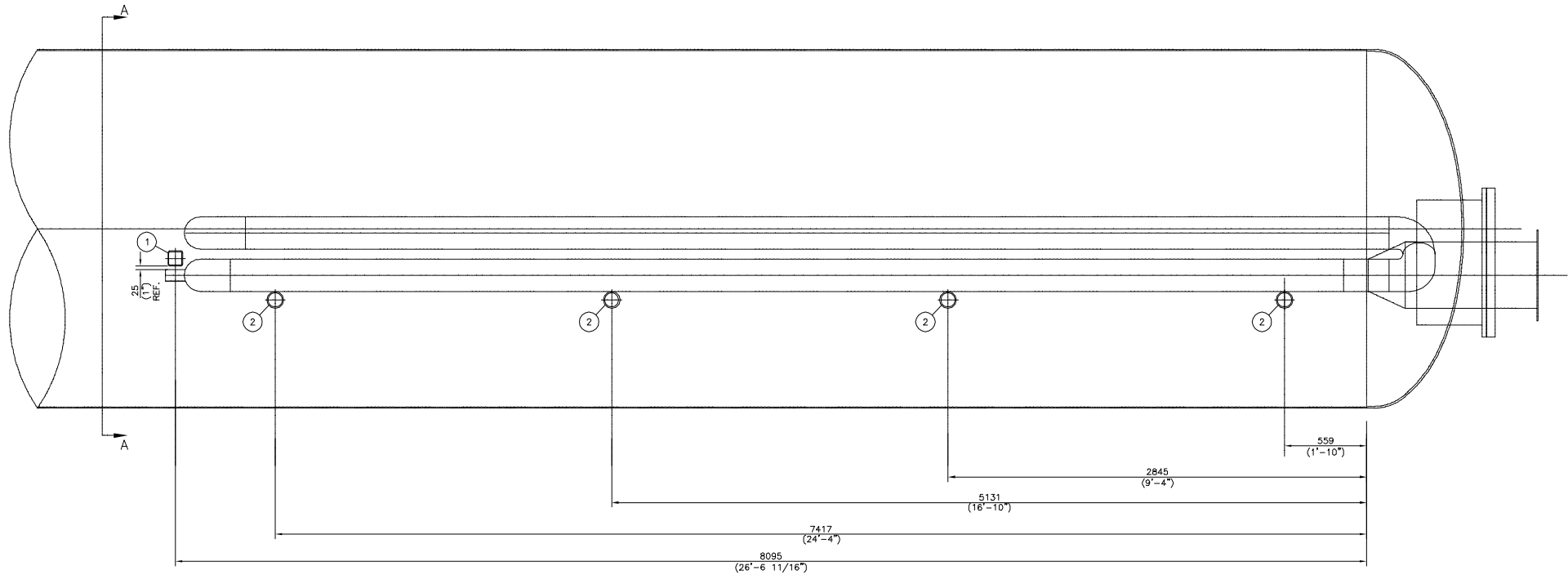
| MATERIAL LIST                                                                                                                                                                                                                                     |              |                                               |                  |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------|------------------|----------|
| MK                                                                                                                                                                                                                                                | QTY          | DESCRIPTION                                   | MATERIAL         | WT       |
| 1                                                                                                                                                                                                                                                 |              |                                               |                  |          |
| 2                                                                                                                                                                                                                                                 | 1            | PLATE 2 1/4" THK. x 3'-5" x 6'-5" LG.         | (*) SA-516-70N   | 1586     |
| 3                                                                                                                                                                                                                                                 | 1            | PLATE 1 1/8" THK. x 3'-5" x 6'-5" LG.         | (*) SA-516-70N   | 226      |
| 4                                                                                                                                                                                                                                                 | 1            | PLATE 5/8" x 1'-6" x 7'-3 5/8" LG.            | (*) SA-516-70N   | 280      |
| 5                                                                                                                                                                                                                                                 |              |                                               |                  |          |
| 6                                                                                                                                                                                                                                                 | 56           | STUD 1" DIA. x 7" LG.                         | SA-193-B7M       | 50       |
| 7                                                                                                                                                                                                                                                 | 112          | HEX NUT 1" NOM.                               | SA-194-2HM       | 25       |
| 8                                                                                                                                                                                                                                                 | 1            | GASKET 1/8" THK. x 3'-5" x 6'-5" LG.          | GARLOC           | 2        |
| 9                                                                                                                                                                                                                                                 | 1            | PLATE 3/8" x 8 3/4" I.D. x 1'-0 1/4" O.D.     | G40.21-44W       | 8        |
| 10                                                                                                                                                                                                                                                | 1            | PLATE 5/8" x 1'-6" x 7'-5 5/8" LG.            | (*) SA-516-70N   | 286      |
| 11                                                                                                                                                                                                                                                | 1            | PLATE 1/2" x 3 3/4" x 10 9/16" LG.            | (*) SA-516-70N   | 6        |
| 12                                                                                                                                                                                                                                                | 1            | HSS 3" x 3" x 1/4" x 2'-5 9/16" LG.           | (*) SA-36        | 22       |
| 13                                                                                                                                                                                                                                                | 1            | PLATE 1/2" THK. x 3" x 5" LG.                 | (*) SA-516-70N   | 2        |
| 14                                                                                                                                                                                                                                                | 1            | ANGLE 3" x 3" x 1/4" x 1'-0" LG.              | G40.21-44W       | 9        |
| 15                                                                                                                                                                                                                                                | 5            | U-BOLT 5/8" x 8" NPS C/W 2 NUTS               | C.S.             | 14       |
| 16                                                                                                                                                                                                                                                | 1            | PIPE 8" SCH 40 x 1'-6 1/4" LG. SMLS BBE       | SA-106-B         | 43       |
| 17                                                                                                                                                                                                                                                |              |                                               |                  |          |
| 18                                                                                                                                                                                                                                                | 1            | FLANGE 2" CLASS 300 RFWN x SCH 160 BORE       | SA-105N          | 8        |
| 19                                                                                                                                                                                                                                                | 1            | PIPE CAP 2" SCH 10S "WELDED"                  | SA403-WP304 S.S. | 4        |
| 20                                                                                                                                                                                                                                                | 1            | PIPE 2" SCH 160 x 9" LG. SMLS BBE             | SA-106-B         | 5        |
| 21                                                                                                                                                                                                                                                | 1            | COMBUSTION CHAMBER DETAILS                    | (*) BY OTHERS    | -        |
| 22                                                                                                                                                                                                                                                | 1            | PIPE 2" SCH 10S x 27'-3 7/8" LG. "WELDED" BBE | SA312-TP304 S.S. | 71       |
| 23                                                                                                                                                                                                                                                | 3            | U-BOLT 3/8" x 2 NPS C/W 2 NUTS                | C.S.             | 3        |
| 24                                                                                                                                                                                                                                                | 54           | V-JETS 1/4" NPT MODEL H1/4U4030               | 303 S.S.         | 5        |
| 25                                                                                                                                                                                                                                                | 54           | HALF CPLG. 1/4" 3000# SCR'D                   | SA182-F316L S.S. | 5        |
| 26                                                                                                                                                                                                                                                | 1            | PIPE 8" SCH 40 x 24'-10 1/8" LG. SMLS BBE     | SA-106-B         | 711      |
| 27                                                                                                                                                                                                                                                | 1            | PIPE 8" SCH 40 x 25'-9 3/4" LG. SMLS BBE      | SA-106-B         | 738      |
| 28                                                                                                                                                                                                                                                | 1            | PIPE 8" SCH 40 x 25'-5 3/4" LG. SMLS BBE      | SA-106-B         | 728      |
| 29                                                                                                                                                                                                                                                | 1            | PIPE 8" SCH 40 x 28'-4 3/8" LG. SMLS BBE      | SA-106-B         | 811      |
| 30                                                                                                                                                                                                                                                | 2            | ELBOW 8" SCH 40 x 90° L.R.                    | SA-234-WPB       | 74       |
| 31                                                                                                                                                                                                                                                | 4            | ELBOW 8" SCH 40 x 90° S.R.                    | SA-234-WPB       | 34       |
| 32                                                                                                                                                                                                                                                | 2            | ANGLE 2" x 2" x 1/4" x 2'-9 7/8" LG.          | (*) SA-36        | 18       |
| 33                                                                                                                                                                                                                                                | 2            | CHANNEL C6 x 8.2# x 2'-9 5/8" LG.             | G40.21-44W       | 46       |
| 34                                                                                                                                                                                                                                                | 2            | CHANNEL C8 x 8.2# x 1'-1 3/8" LG.             | G40.21-44W       | 18       |
| 35                                                                                                                                                                                                                                                | 1            | ANGLE 3" x 3" x 1/4" x 6" LG.                 | G40.21-44W       | 2        |
| 36                                                                                                                                                                                                                                                | 1            | FLANGE 2" CLASS 150 RFWN x SCH 10S BORE       | SA-105N          | 6        |
| 37                                                                                                                                                                                                                                                | 1            | FLANGE 2" CLASS 150 RFWN x SCH 10S BORE       | SA-182-F304 S.S. | 6        |
| 38                                                                                                                                                                                                                                                | 1            | GASKET 2" CLASS 150 x 1/8" THK.               | 316 S.S. GRAPHOL | 1        |
| 39                                                                                                                                                                                                                                                | 4            | STUD 5/8" DIA. x 3" LG.                       | SA-193-B7M       | 1        |
| 40                                                                                                                                                                                                                                                | 8            | HEX NUT 5/8" NOM.                             | SA-194-2HM       | 1        |
| 41                                                                                                                                                                                                                                                | 1            | HALF COUPLING 1/2" CLASS 3000 F.S. SCR'D      | SA-105           | 1        |
| 42                                                                                                                                                                                                                                                | 1            | NIPPLE 1/2" SCH XS x 6" LG. SMLS TBE          | SA-106-B         | 1        |
| 43                                                                                                                                                                                                                                                | 1            | HEX PLUG 1/2" CLASS 3000 F.S. THR'D           | SA-105           | 1        |
| SUBTOTAL                                                                                                                                                                                                                                          |              |                                               |                  | 5856     |
| x 1.06                                                                                                                                                                                                                                            |              |                                               |                  |          |
| TOTAL (lbs.)                                                                                                                                                                                                                                      |              |                                               |                  | 6207     |
| NOTES:                                                                                                                                                                                                                                            |              |                                               |                  |          |
| 1. RADIOGRAPHY 10% ON FIRETUBE SEAMS, 100% ON FIRETUBE THROAT LONG SEAMS                                                                                                                                                                          |              |                                               |                  |          |
| 2. ALL DIMENSIONS ARE IN METRIC & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.                                                                                                                   |              |                                               |                  |          |
| 3. MATCH DRILL MK #2 AND 3.                                                                                                                                                                                                                       |              |                                               |                  |          |
| 4. MACHINE FACE OF MK. #2 & MK. #3                                                                                                                                                                                                                |              |                                               |                  |          |
| MK #3 MIN. CALC. THK. = 0.857                                                                                                                                                                                                                     |              |                                               |                  |          |
| MK #2 MIN. CALC. THK. (INCLUDING C.A.) = 2.052"                                                                                                                                                                                                   |              |                                               |                  |          |
| 5. SEE DWG. NO. V-11699-C106 FOR STACK DETAILS.                                                                                                                                                                                                   |              |                                               |                  |          |
| 6. SEE DWG. NO. V-11699-0107 FOR FIRETUBE SUPPORTS.                                                                                                                                                                                               |              |                                               |                  |          |
| 7. AN ADDITIONAL 51(2") WAS ADDED TO THE LENGTH OF MK.11 FOR TRIMMING PURPOSES.                                                                                                                                                                   |              |                                               |                  |          |
| 8. TRIM CORNERS TO 13(1/2") RADIUS.                                                                                                                                                                                                               |              |                                               |                  |          |
| 9. FIRETUBE MEETS ASME CODE, 2001, ADDENDA JULY 1ST, 2003.                                                                                                                                                                                        |              |                                               |                  |          |
| 10. ITEMS IDENTIFIED WITH A (*) ARE ATTACHED TO THE PRESSURE ENVELOPE & REQUIRE A HEAT NUMBER TO BE HARD STAMPED & RECORDED BY Q.C..                                                                                                              |              |                                               |                  |          |
| REVISIONS                                                                                                                                                                                                                                         |              |                                               |                  |          |
| NO                                                                                                                                                                                                                                                | DATE (d/m/y) | ISSUED FOR CONSTRUCTION                       | BY               | APPD     |
|                                                                                                                                                                                                                                                   |              |                                               |                  |          |
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| UNIVERSAL INDUSTRIES                                                                                                                                                                                                                              |              |                                               |                  |          |
| Ph: (780) 875-6161 Fax: (780) 875-6169                                                                                                                                                                                                            |              |                                               |                  |          |
| CLIENT                                                                                                                                                                                                                                            |              |                                               |                  |          |
| DEER CREEK ENERGY LTD.                                                                                                                                                                                                                            |              |                                               |                  |          |
| C/O BOWER DAMBERGER ROLSETH ENGINEERING LTD.                                                                                                                                                                                                      |              |                                               |                  |          |
| JOSLYN PHASE 2, SAGD FACILITY                                                                                                                                                                                                                     |              |                                               |                  |          |
| DWG TITLE                                                                                                                                                                                                                                         |              |                                               |                  |          |
| RECYCLE TREATER TR-805                                                                                                                                                                                                                            |              |                                               |                  |          |
| 2438mm(8'-0") O.D. x 10668mm(35'-0") S/S                                                                                                                                                                                                          |              |                                               |                  |          |
| FIRETUBE ASSEMBLY 8" DIA. FORCED AIR (4 PASS)                                                                                                                                                                                                     |              |                                               |                  |          |
| SCALE                                                                                                                                                                                                                                             | DWN BY       | DWG. NO.                                      | SHEET NO.        | REV. NO. |
| 1:20                                                                                                                                                                                                                                              | E. WILSON    | V-11699-D105                                  | 1 of 1           |          |
| DATE (d/m/y)                                                                                                                                                                                                                                      | CHKD         | APPD                                          |                  |          |
| 29/01/05                                                                                                                                                                                                                                          |              |                                               |                  |          |
| DWG/K11699/10511699                                                                                                                                                                                                                               |              |                                               |                  |          |



SECTION "A-A"



DETAIL "A"  
SCALE: 1:5



ELEVATION

MATERIAL LIST

| MK | QTY | DESCRIPTION                              | MATERIAL       | WT  |
|----|-----|------------------------------------------|----------------|-----|
| 1  | 1   | HSS 4" x 4" x 1/4" x 7'-9 3/4" LG.       | G40.21-44W     | 95  |
| 2  | 4   | PIPE 4" SCH XS x 6'-10 3/8" LG. SMLS PBE | SA-106-B       | 411 |
| 3  | 8   | PLATE 3/8" THK. x 6" x 11 1/2" LG.       | (*) SA-36      | 59  |
| 4  |     |                                          |                |     |
| 5  | 2   | REPAD: PLATE 3/8" THK. x 6" DIA.         | (*) SA-516-70N | 13  |
| 6  |     |                                          |                |     |
| 7  |     |                                          |                |     |
| 8  |     |                                          |                |     |
| 9  |     |                                          |                |     |
| 10 |     |                                          |                |     |
| 11 |     |                                          |                |     |
| 12 |     |                                          |                |     |
| 13 |     |                                          |                |     |
| 14 |     |                                          |                |     |
| 15 |     |                                          |                |     |
| 16 |     |                                          |                |     |
| 17 |     |                                          |                |     |
| 18 |     |                                          |                |     |
| 19 |     |                                          |                |     |
| 20 |     |                                          |                |     |
| 21 |     |                                          |                |     |
| 22 |     |                                          |                |     |
| 23 |     |                                          |                |     |
| 24 |     |                                          |                |     |
| 25 |     |                                          |                |     |
| 26 |     |                                          |                |     |
| 27 |     |                                          |                |     |
| 28 |     |                                          |                |     |
| 29 |     |                                          |                |     |
| 30 |     |                                          |                |     |
| 31 |     |                                          |                |     |
| 32 |     |                                          |                |     |
| 33 |     |                                          |                |     |
| 34 |     |                                          |                |     |
| 35 |     |                                          |                |     |
| 36 |     |                                          |                |     |
| 37 |     |                                          |                |     |
| 38 |     |                                          | SUBTOTAL       | 578 |
| 39 |     |                                          | x 1.06         |     |
| 40 |     |                                          | TOTAL (lbs.)   | 612 |

NOTES:  
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.  
2. ITEMS IDENTIFIED WITH A (\*) ARE ATTACHED TO THE PRESSURE ENVELOPE & REQUIRE A HEAT NUMBER TO BE HARD STAMPED & RECORDED BY Q.C..

|    |              |                         |     |      |
|----|--------------|-------------------------|-----|------|
| △  |              |                         |     |      |
| △  |              |                         |     |      |
| △  |              |                         |     |      |
| △  |              |                         |     |      |
| △  |              |                         |     |      |
| △  | 11/02/05     | ISSUED FOR CONSTRUCTION | EEW |      |
| NO | DATE (d/m/y) | REVISIONS               | BY  | APPD |
|    |              | REVISIONS               |     |      |

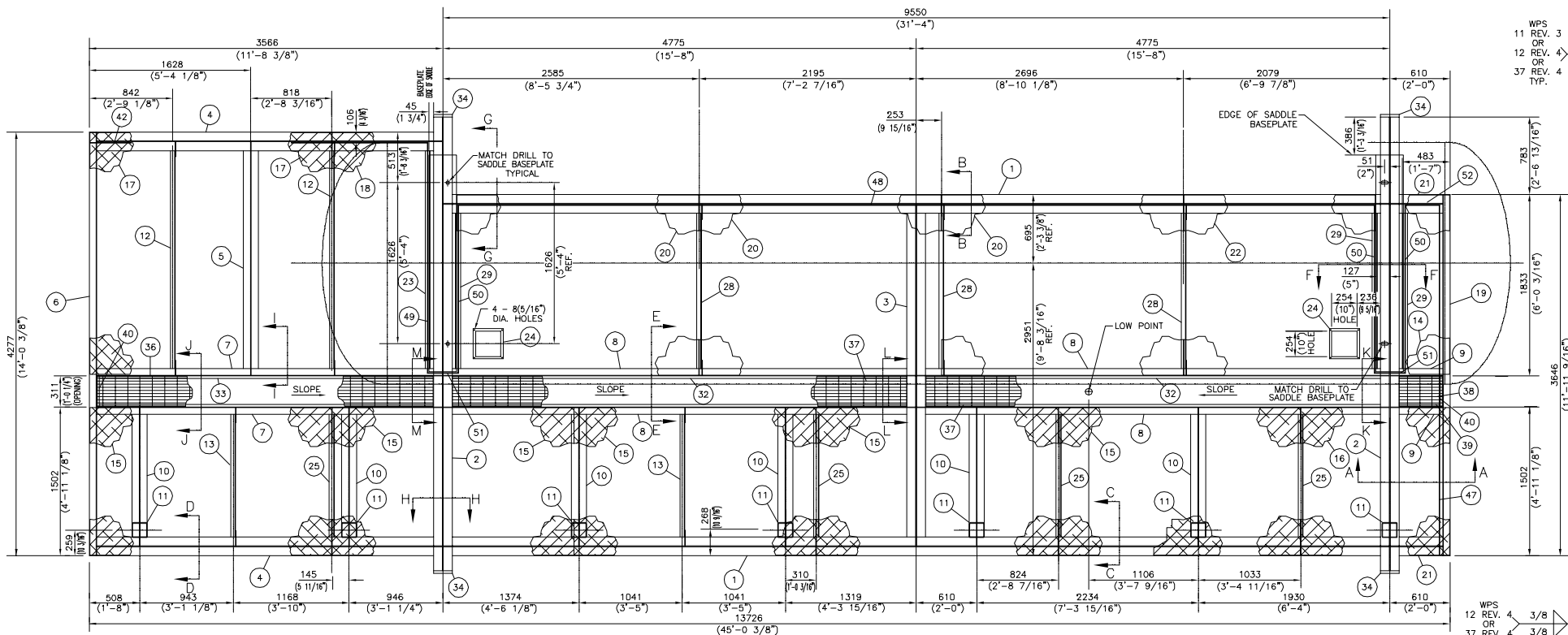
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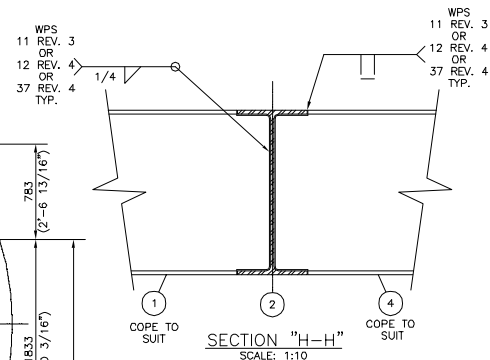
CLIENT  
DEER CREEK ENERGY LTD.  
C/O BOWER DAMBERGER ROLSETH ENGINEERING LTD.  
JOSLYN PHASE 2, SAGD FACILITY

DWG TITLE  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
FIRETUBE SUPPORT DETAIL

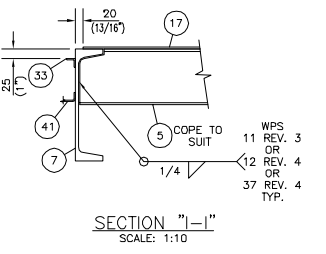
|                          |                     |                         |                     |               |
|--------------------------|---------------------|-------------------------|---------------------|---------------|
| SCALE<br>1:20            | DWN BY<br>E. WILSON | DWG NO.<br>V-11699-D107 | SHEET NO.<br>1 of 1 | REV. NO.<br>△ |
| DATE (d/m/y)<br>08/02/05 | CHKD<br>APPD        |                         |                     |               |



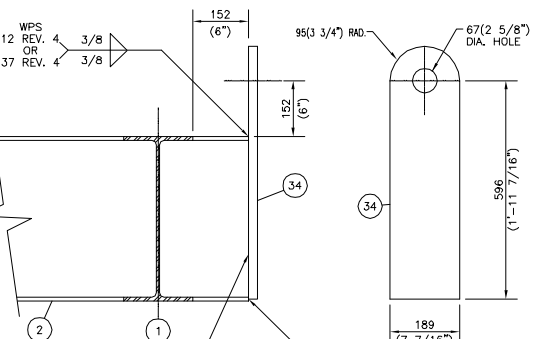
PLAN VIEW



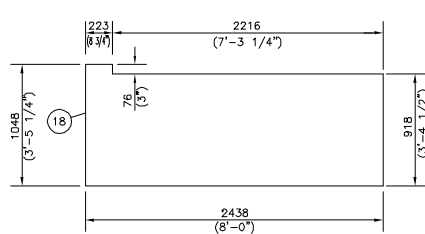
SECTION "H-H"



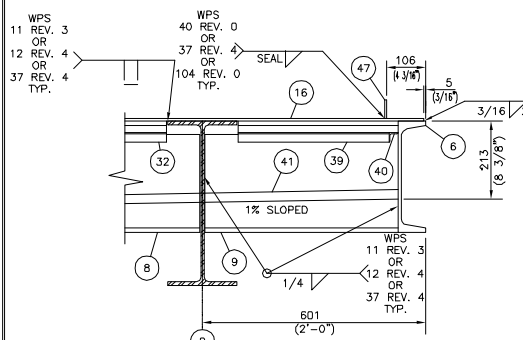
SECTION "I-I"



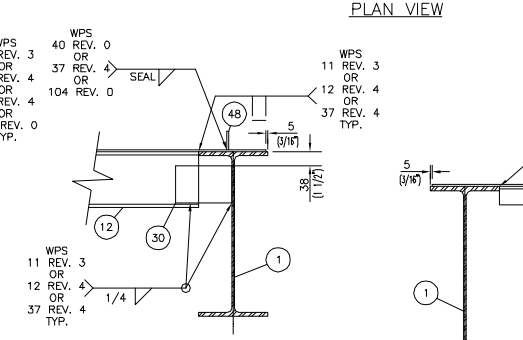
SECTION "G-G"



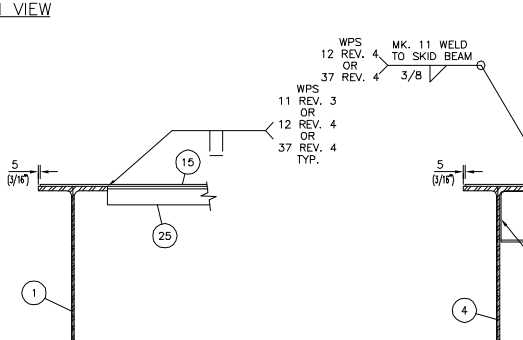
MK. 18 DETAIL



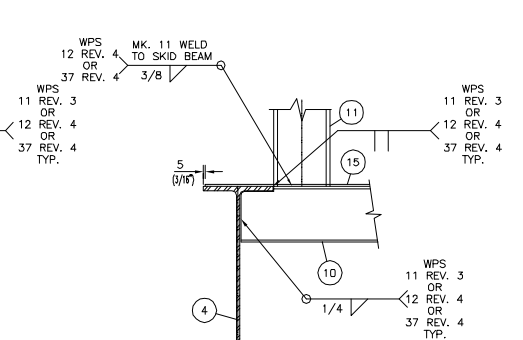
SECTION "A-A"



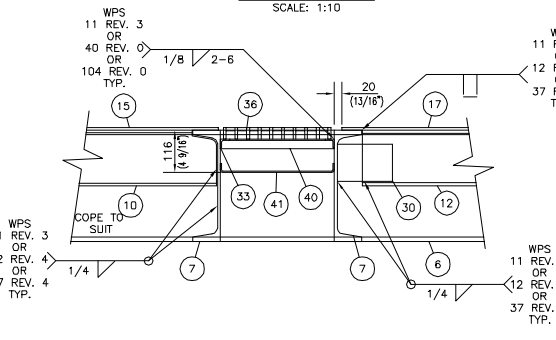
SECTION "B-B"



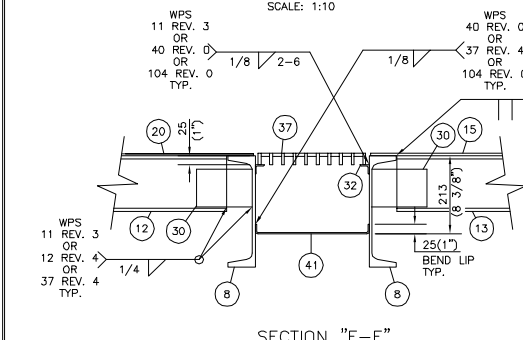
SECTION "C-C"



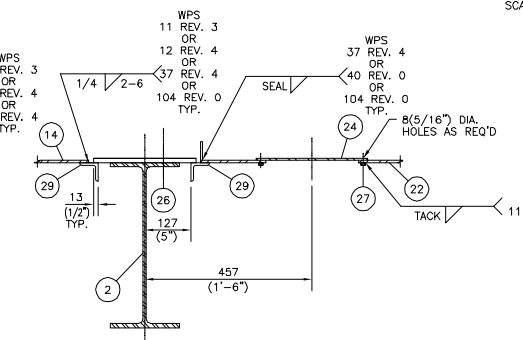
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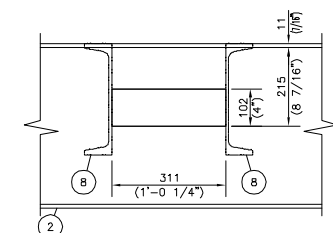
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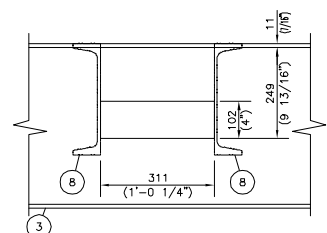
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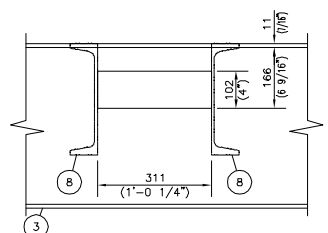
SECTION "F-F"



MK. 2 TROUGH CUTOUT AT SECTION "K-K"



MK. 3 TROUGH CUTOUT AT SECTION "L-L"



MK. 2 TROUGH CUTOUT AT SECTION "M-M"

- NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
  2. SANDBLAST TO SSPC-SP6 AND APPLY 2 TO 3 MILS. DFT. OF PRIMER AND ONE TOP COAT OF F34 WARM GREY ENAMEL TO COMPLETE SKID.
  3. APPLY 51(2") OF FIRE RESISTANT SPRAY-ON POLYURETHANE INSULATION TO THE UNDERSIDE OF ENTIRE SKID.
  4. STITCH WELD UNDERSIDE OF CHECKER PLATE TO SKID MEMBERS.

MATERIAL LIST

| MK           | QTY | DESCRIPTION                                                             | MATERIAL              | WT    |
|--------------|-----|-------------------------------------------------------------------------|-----------------------|-------|
| 1            | 2   | BEAM W18 x 41# x 31'-3 11/16" LG.                                       | G40.21-44W            | 2567  |
| 2            | 2   | BEAM W18 x 41# x 15'-0 3/8" LG.                                         | G40.21-44W            | 1233  |
| 3            | 1   | BEAM W18 x 41# x 11'-3 13/16" LG.                                       | G40.21-44W            | 464   |
| 4            | 2   | BEAM W18 x 41# x 11'-5 5/16" LG.                                        | G40.21-44W            | 938   |
| 5            | 1   | BEAM W6 x 15# x 7'-8 13/16" LG.                                         | G40.21-44W            | 116   |
| 6            | 1   | CHANNEL C12 x 20.7# x 14'-0 3/8" LG.                                    | G40.21-44W            | 290   |
| 7            | 2   | CHANNEL C12 x 20.7# x 11'-5 5/16" LG.                                   | G40.21-44W            | 474   |
| 8            | 4   | CHANNEL C12 x 20.7# x 15'-7 11/16" LG.                                  | G40.21-44W            | 1295  |
| 9            | 2   | CHANNEL C12 x 20.7# x 1'-8 15/16" LG.                                   | G40.21-44W            | 72    |
| 10           | 6   | BEAM W6 x 15# x 4'-7" LG.                                               | G40.21-44W            | 413   |
| 11           | 7   | HSS 6" x 6" x 3/8" x 9'-4 5/16" LG.                                     | G40.21-44W            | 1801  |
| 12           | 2   | CHANNEL C6 x 8.2# x 7'-2 11/16" LG. (CLIP ON BOTH ENDS)                 | G40.21-44W            | 118   |
| 13           | 2   | CHANNEL C6 x 8.2# x 4'-0 3/4" LG. (CLIP ON BOTH ENDS)                   | G40.21-44W            | 67    |
| 14           | 1   | PLATE 3/16" x 1'-5 13/16" x 5'-11 3/16" LG.                             | G40.21-44W            | 67    |
| 15           | 5   | CHECKER PLATE 1/4" x 8'-0" x 4'-10 3/4" LG.                             | G40.21-44W            | 2000  |
| 16           | 1   | CHECKER PLATE 1/4" x 4'-11 1/16" x 4'-10 3/4" LG.                       | G40.21-44W            | 246   |
| 17           | 1   | CHECKER PLATE 1/4" x 8'-0" x 8'-0" LG.                                  | G40.21-44W            | 653   |
| 18           | 1   | CHECKER PLATE 1/4" x 3'-5 1/4" x 8'-0" LG.                              | G40.21-44W            | 281   |
| 19           | 1   | CHANNEL C12 x 20.7# x 11'-11 9/16" LG.                                  | G40.21-44W            | 248   |
| 20           | 3   | PLATE 3/16" x 8'-0" x 5'-11 13/16" LG.                                  | G40.21-44W            | 1100  |
| 21           | 2   | BEAM W18 x 41# x 1'-8 15/16" LG.                                        | G40.21-44W            | 143   |
| 22           | 1   | PLATE 3/16" x 6'-4" x 5'-11 13/16" LG.                                  | G40.21-44W            | 291   |
| 23           | 1   | ANGLE 2" x 2" x 1/4" x 7'-2 11/16" LG.                                  | G40.21-44W            | 23    |
| 24           | 2   | PLATE 11 ga. x 1'-0" x 1'-0" LG.                                        | A-569                 | 10    |
| 25           | 4   | ANGLE 2" x 2" x 1/4" x 4'-0 3/4" LG.                                    | G40.21-44W            | 52    |
| 26           | 4   | BOLT 1" DIA. x 2 1/2" LG. C/W HEX NUT & WASHER                          | A-325                 | 5     |
| 27           | 8   | BOLT 1/4" DIA. x 1" LG. C/W NUT                                         | Gr.5                  | 2     |
| 28           | 3   | CHANNEL C6 x 8.2# x 5'-1 13/16" LG. (CLIP ON BOTH ENDS)                 | G40.21-44W            | 127   |
| 29           | 3   | ANGLE 2" x 2" x 1/4" x 5'-1 13/16" LG.                                  | G40.21-44W            | 49    |
| 30           | 14  | CLIP: FLATBAR 1/4" x 4" x 6" LG.                                        | G40.21-44W            | 24    |
| 31           |     |                                                                         |                       |       |
| 32           | 4   | ANGLE 1" x 1" x 1/8" x 15'-0 9/16" LG.                                  | G40.21-44W            | 48    |
| 33           | 2   | ANGLE 1" x 1" x 3/16" x 11'-0 11/16" LG.                                | G40.21-44W            | 18    |
| 34           | 4   | PLATE 1" THK. x 7 7/16" x 2'-3 3/16" LG.                                | SA-516-70             | 233   |
| 35           |     |                                                                         |                       |       |
| 36           | 1   | GRATING 1'-0" WIDE x 11'-1 7/16" LG.; TYPE 19-4 C/W 1 1/4" x 3/16" BARS | GALVANIZED G40.21-44W | 99    |
| 37           | 2   | GRATING 1'-0" WIDE x 15'-0 5/16" LG.; TYPE 19-4 C/W 1 1/4" x 3/16" BARS | GALVANIZED G40.21-44W | 266   |
| 38           | 1   | GRATING 1'-0" WIDE x 11'-5 1/8" LG.; TYPE 19-4 C/W 1 1/4" x 3/16" BARS  | GALVANIZED G40.21-44W | 13    |
| 39           | 2   | ANGLE 1" x 1" x 3/16" x 1'-4 3/8" LG.                                   | G40.21-44W            | 2     |
| 40           | 2   | ANGLE 1" x 1" x 3/16" x 1'-0 1/4" LG.                                   | G40.21-44W            | 2     |
| 41           | 1   | PLATE 10 ga x 1'-2" x 44'-6 11/16" LG.                                  | A-569                 | 292   |
| 42           | 1   | FLATBAR 3/16" x 2" x 11'-2 3/16" LG.                                    | G40.21-44W            | 14    |
| 43           |     |                                                                         |                       |       |
| 44           |     |                                                                         |                       |       |
| 45           |     |                                                                         |                       |       |
| 46           |     |                                                                         |                       |       |
| 47           | 1   | FLATBAR 3/16" x 2" x 11'-7 3/16" LG.                                    | G40.21-44W            | 15    |
| 48           | 1   | FLATBAR 3/16" x 2" x 30'-3 5/8" LG.                                     | G40.21-44W            | 39    |
| 49           | 1   | FLATBAR 3/16" x 2" x 7'-7 1/2" LG.                                      | G40.21-44W            | 10    |
| 50           | 3   | FLATBAR 3/16" x 2" x 5'-6 7/8" LG.                                      | G40.21-44W            | 21    |
| 51           | 2   | FLATBAR 3/16" x 2" x 1'-0" LG.                                          | G40.21-44W            | 3     |
| 52           | 1   | FLATBAR 3/16" x 2" x 1'-2 7/16" LG.                                     | G40.21-44W            | 2     |
| SUBTOTAL     |     |                                                                         |                       | 16246 |
| TOTAL (lbs.) |     |                                                                         |                       | 17221 |

|           |                         |           |         |
|-----------|-------------------------|-----------|---------|
| 03/03/05  | ISSUED FOR CONSTRUCTION | EEW       |         |
| NO        | DATE (d/m/y)            | REVISIONS | BY APPD |
| REVISIONS |                         |           |         |

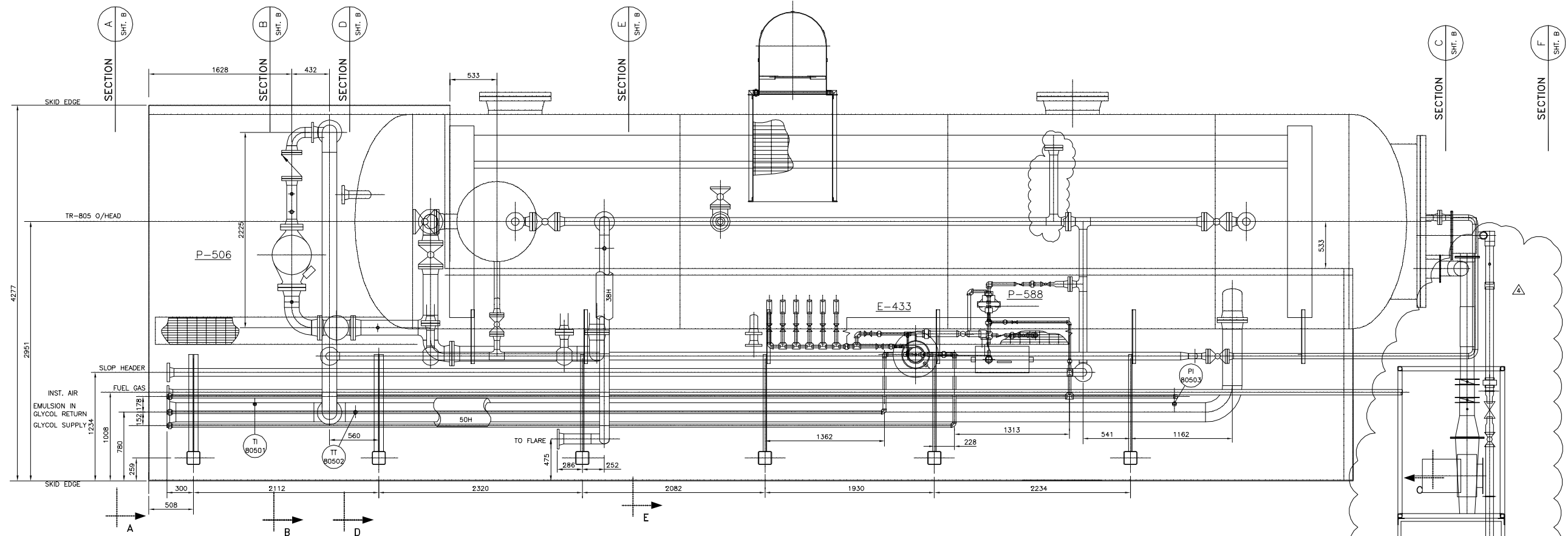
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LSD 14-28-95-12 W4M

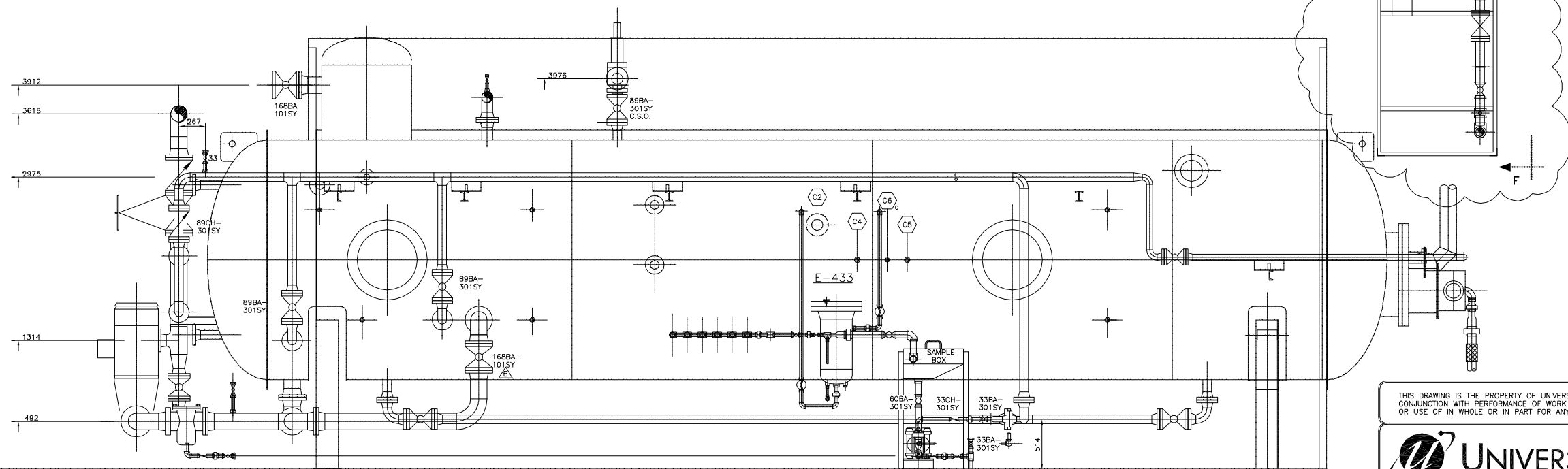
DWG TITLE: RECYCLE TREATER TR-805  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
SKID PLAN VIEW AND DETAILS

|                |                   |                      |                  |            |
|----------------|-------------------|----------------------|------------------|------------|
| SCALE: 1:30    | DWN BY: E. WILSON | DWG NO: V-11699-D108 | SHEET NO: 1 OF 1 | REV. NO: 0 |
| DATE: 10/02/05 | CHKD: APPD        |                      |                  |            |



PLAN VIEW

PSV  
80504  
3L4  
SET @ 345 kPa



ELEVATION VIEW

DATUM  
T.O. SKID

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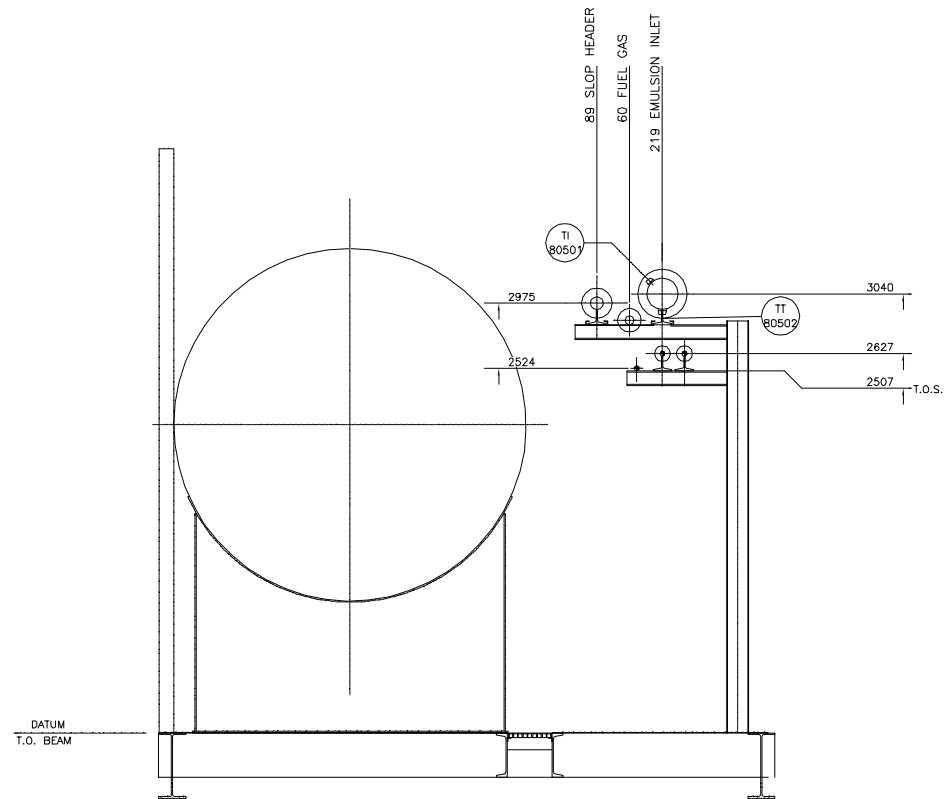
CLIENT  
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JOSLYN PHASE 2, SAGD FACILITY  
LSD 14-28-95-12 W4M

DWG TITLE  
RECYCLE TREATER TR-805  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
PIPING LAYOUT - PLAN & ELEVATION VIEW

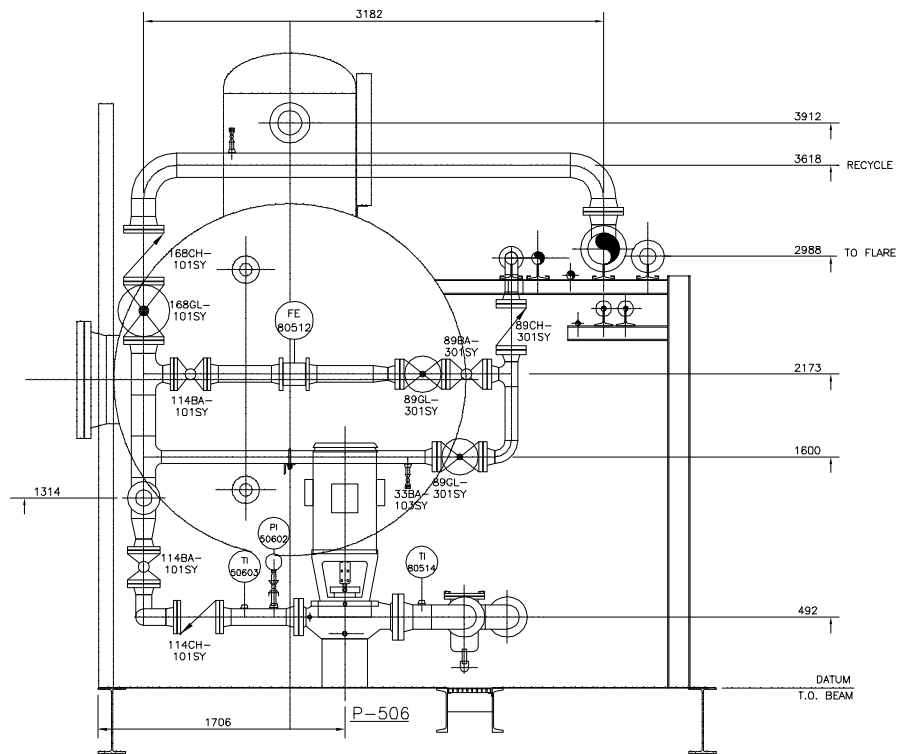
|           |                                                  |     |      |
|-----------|--------------------------------------------------|-----|------|
| 27/05/05  | ADDED BLOWER AND FUEL GAS SKID                   | EEW |      |
| 13/04/05  | UPDATE PAINT & COATING SPEC.                     | EEW | LU   |
| 08/04/05  | FOR APPROVAL BLOWER SKID LOCATION                | EEW | LU   |
| 18/03/05  | REVISED AS PER PIPING SPOOLS                     | EEW | LU   |
| 03/03/05  | ISSUED FOR CONSTRUCTION                          | EEW | LU   |
| 18/02/05  | ADDED N10, N11; CHANGED AS PER CUSTOMER COMMENTS | EEW | LU   |
| 25/01/05  | ISSUED FOR CUSTOMER APPROVAL                     | EEW | LU   |
| NO        | DATE (d/m/y)                                     | BY  | APPD |
| REVISIONS |                                                  |     |      |

|              |          |        |           |         |              |           |          |
|--------------|----------|--------|-----------|---------|--------------|-----------|----------|
| SCALE        | 1:25     | DWN BY | E. WILSON | DWG NO. |              | SHEET NO. | REV. NO. |
| DATE (d/m/y) | 24/12/04 | CHKD   | APPD      |         | V-11699-D111 | A OF -    | 4        |

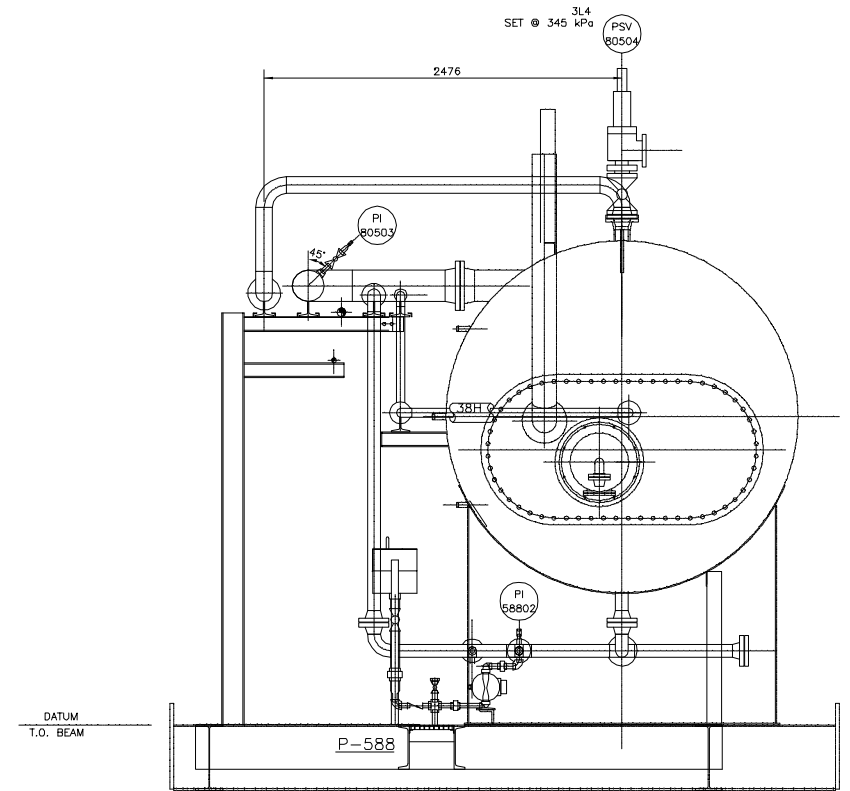
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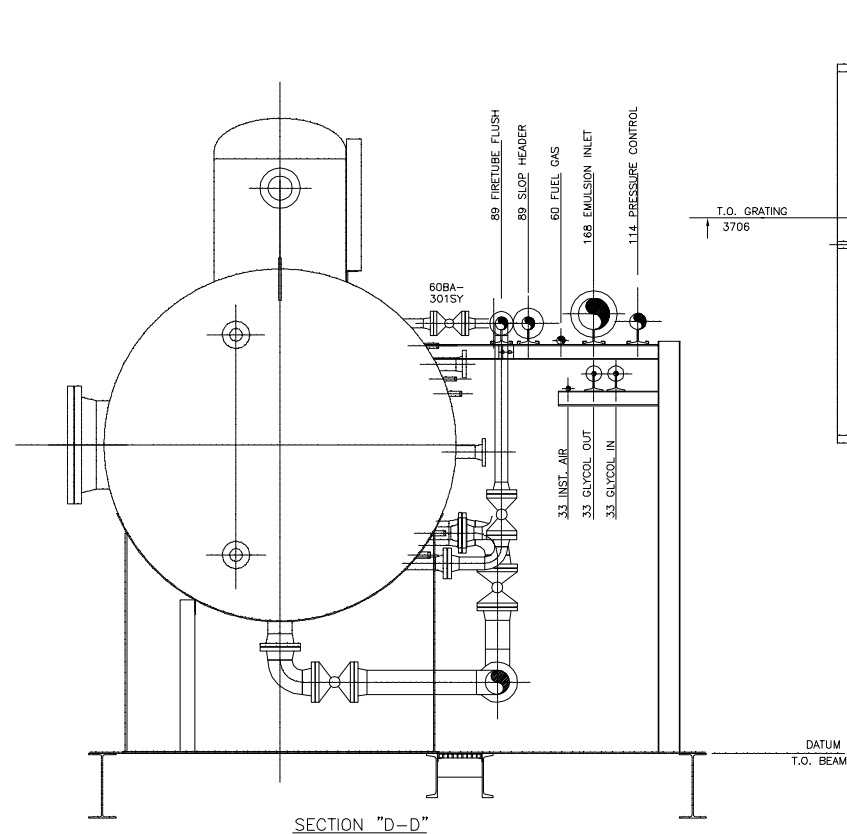
SECTION "A-A"



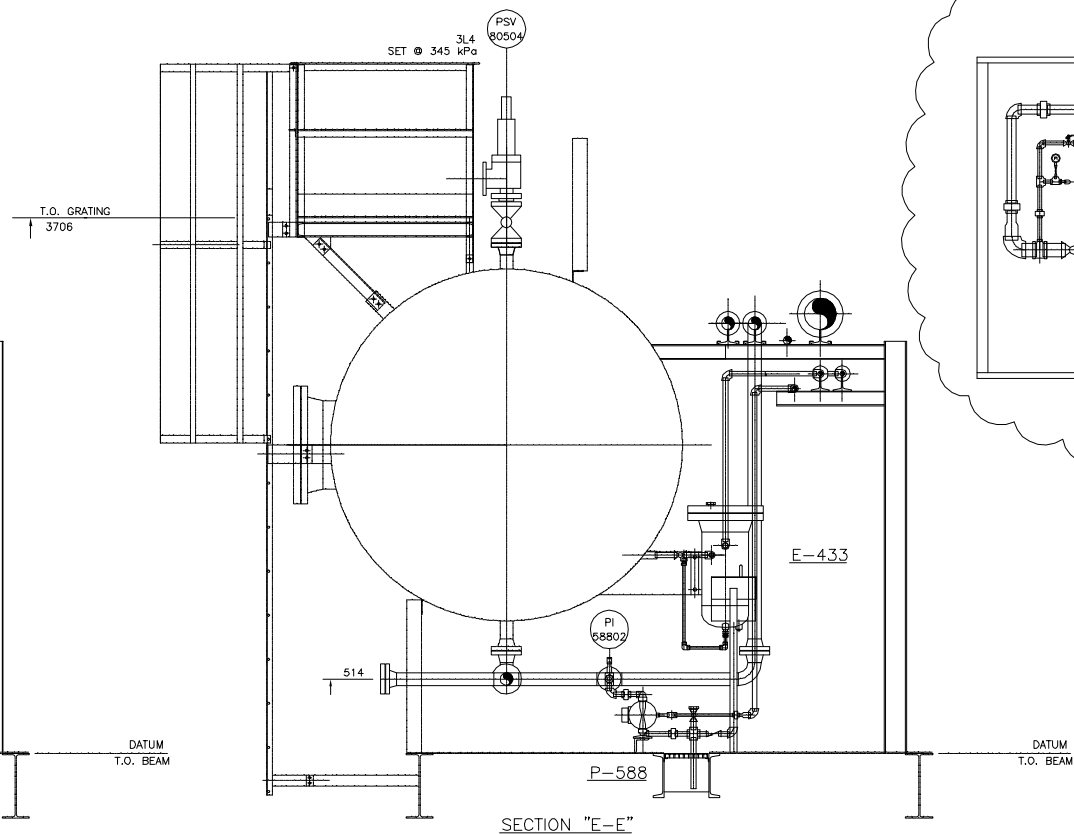
SECTION "B-B"



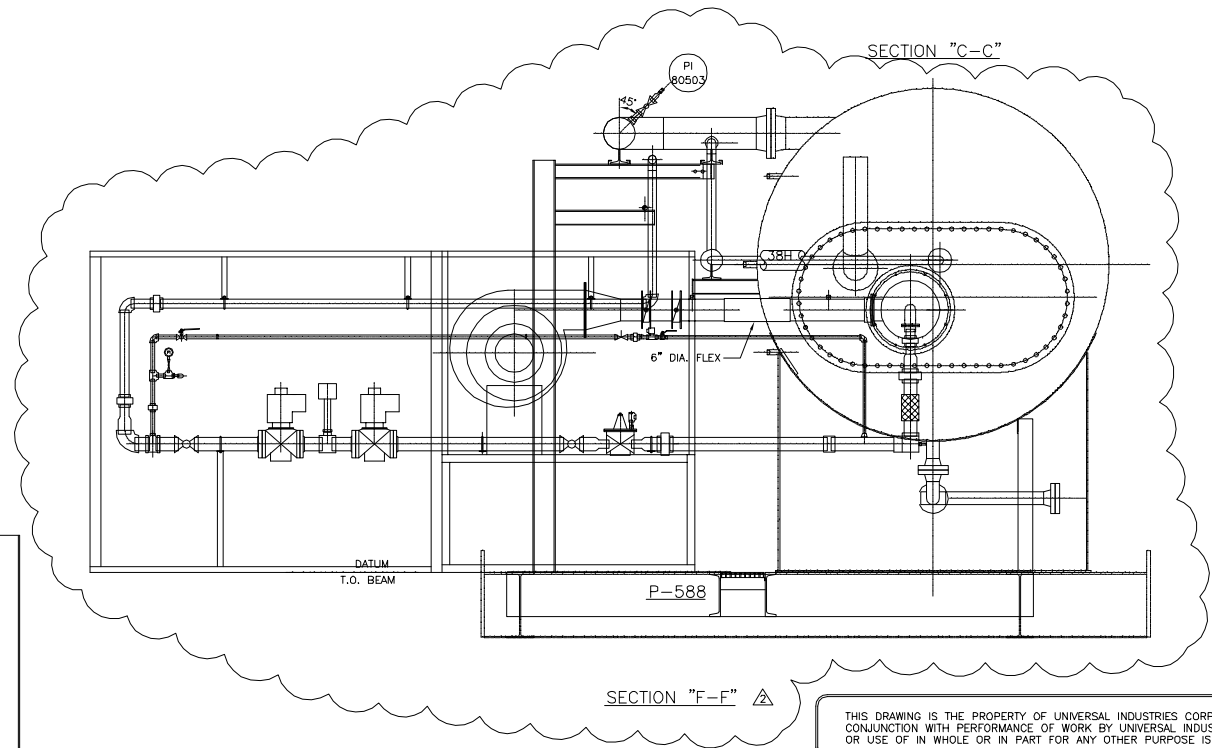
SECTION "C-C"



SECTION "D-D"



SECTION "E-E"



SECTION "F-F"

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CLIENT: DEER CREEK ENERGY LTD.  
C/O BOWER DAMBERGER ROLSETH ENGINEERING LTD.  
JOSLYN PHASE 2, SAGD FACILITY  
LSD 14-28-95-12 W4M

DWG TITLE: RECYCLE TREATER TR-805  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
PIPING LAYOUT - SECTIONS

| NO | DATE (d/m/y) | REVISIONS                                         | BY  | APPD |
|----|--------------|---------------------------------------------------|-----|------|
| 1  | 27/05/05     | ADDED VIEW "F-F", BLOWER SKID                     | EEW |      |
| 2  | 18/03/05     | REVISED AS PER PIPING SPOOLS                      | EEW | LU   |
| 3  | 03/03/05     | ISSUED FOR CONSTRUCTION                           | EEW | LU   |
| 4  | 18/02/05     | ADDED N10 & N11, CHANGED AS PER CUSTOMER COMMENTS | EEW | LU   |
| 5  | 25/01/05     | ISSUED FOR CUSTOMER APPROVAL                      | EEW | LU   |

|                        |                   |                       |                   |             |
|------------------------|-------------------|-----------------------|-------------------|-------------|
| SCALE: 1:25            | DWN BY: E. WILSON | DWG NO.: V-11699-D111 | SHEET NO.: B OF - | REV. NO.: 2 |
| DATE (d/m/y): 24/12/04 | CHKD: APPD:       |                       |                   |             |

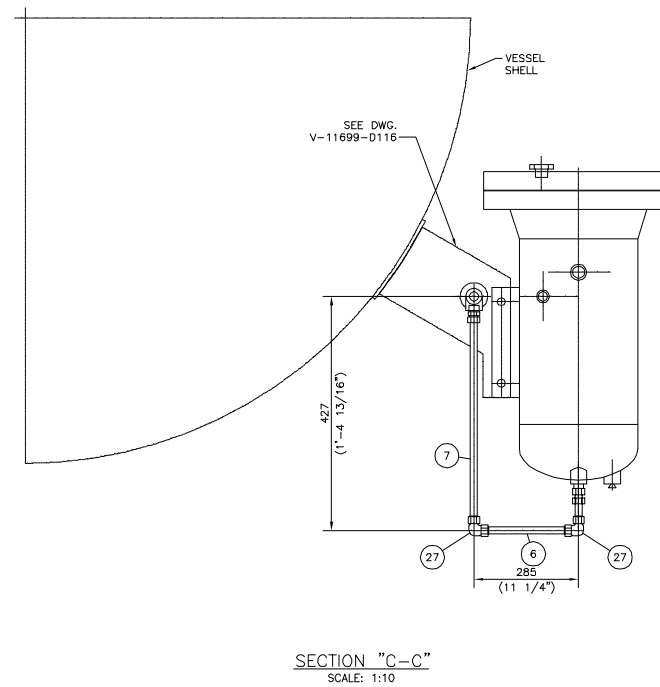
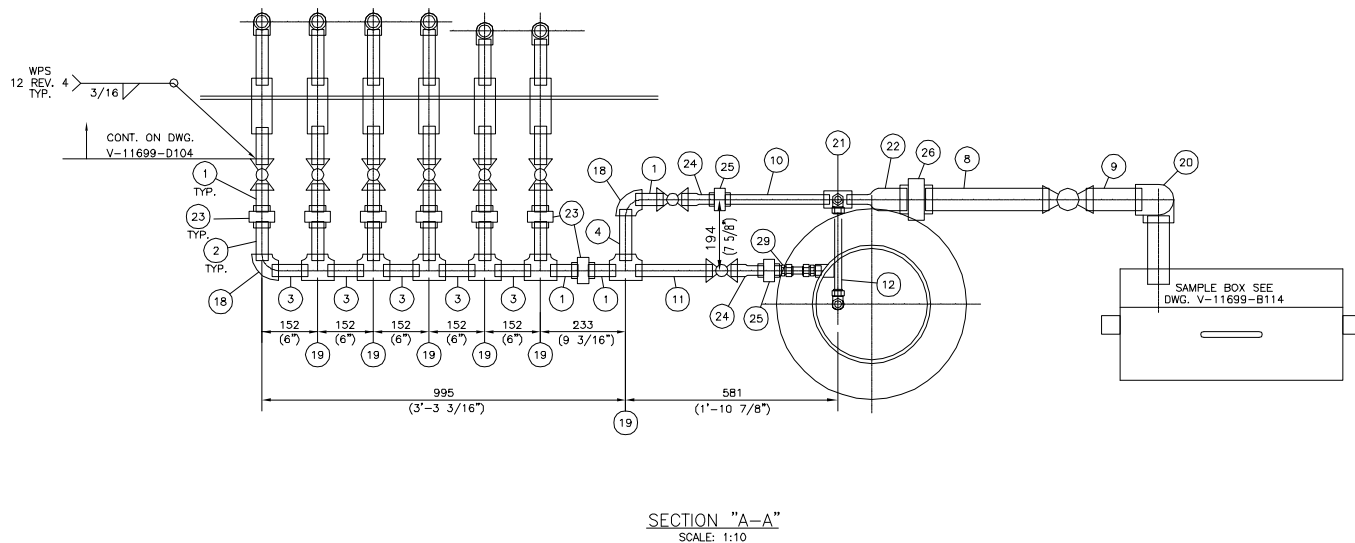
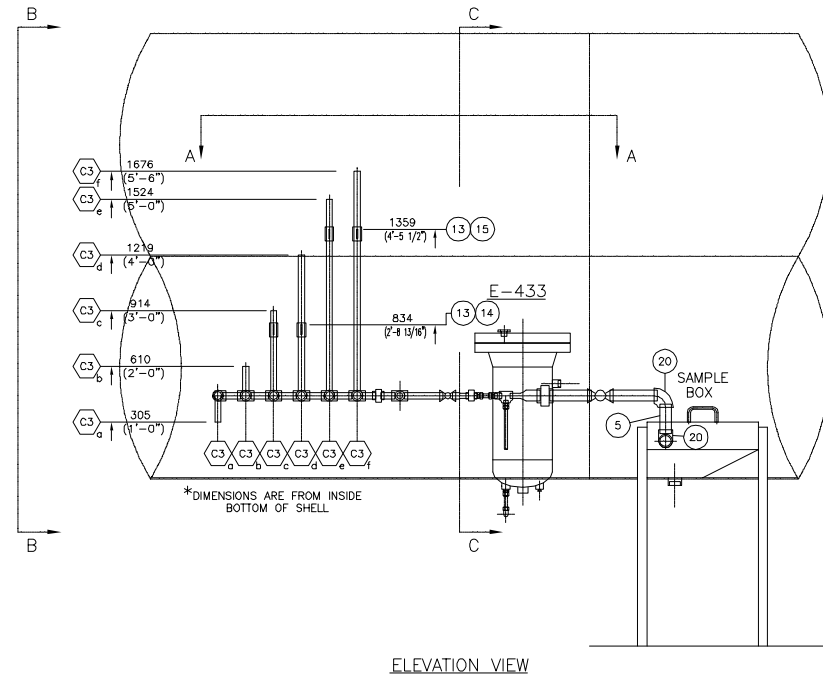
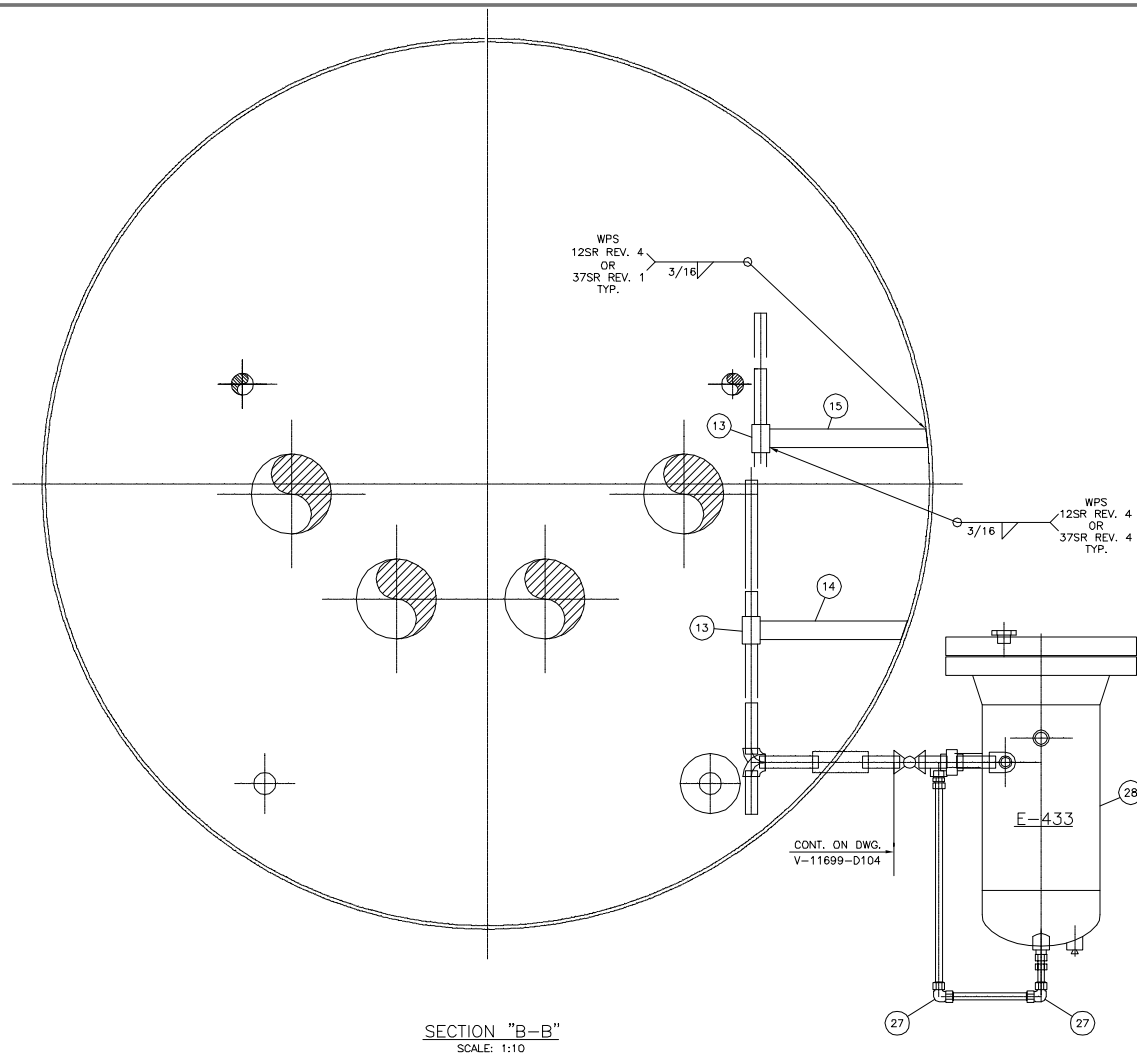


| PROCESS INSTRUMENTATION |     |       |          |                                                                                                                |          |             |
|-------------------------|-----|-------|----------|----------------------------------------------------------------------------------------------------------------|----------|-------------|
| MK                      | QTY | SIZE  | RATING   | DESCRIPTION                                                                                                    | MATERIAL | TAG         |
| LIQUID CONTROL VALVE    |     |       |          |                                                                                                                |          |             |
| 1                       | 1   | 4"    | CL. 150  | FISHER 1051-V500 CONTROL VALVE C/W SIZE 40 ACTUATOR, NACE                                                      |          | LCV-80511   |
| 2                       | 1   |       |          | FISHER DCV-6020AC C/W AUTO CALIBRATE, 4-20 mA OUTPUT+ HART-NO DIAGNOSTIC                                       |          | LY-80511    |
| 3                       | 1   | 4"    | CL. 150  | FISHER 1051-V200 CONTROL VALVE C/W SIZE 40 ACTUATOR, NACE                                                      |          | PCV-80540   |
| 4                       | 1   |       |          | FISHER DCV-6020AC C/W AUTO CALIBRATE, 4-20 mA OUTPUT+ HART-NO DIAGNOSTIC                                       |          | LY-80540    |
| GAUGES                  |     |       |          |                                                                                                                |          |             |
| 5                       | 1   | 1/2"  | -        | WIKA 4" DIA. WET C/W 316 S.S., BOURDON TUBE & SILICON FILLED DIAPHRAGM SEAL, 0-60 PSIG                         |          | PI-50602    |
| 6                       | 1   | 1/2"  | -        | WIKA 4" DIA. WET C/W 316 S.S., BOURDON TUBE & SILICON FILLED DIAPHRAGM SEAL, 0-60 PSIG                         |          | PI-58802    |
| 7                       | 1   | 1/2"  | -        | WIKA 4" DIA. WET C/W 316 S.S., BOURDON TUBE & SILICON FILLED DIAPHRAGM SEAL, 0-60 PSIG                         |          | PI-80503    |
| 8                       | 1   | 1/2"  | -        | WIKA 4" DIA. WET C/W 316 S.S., BOURDON TUBE & SILICON FILLED DIAPHRAGM SEAL, 0-60 PSIG                         |          | PI-80515    |
| 9                       | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 3" STEM & 3/4" S.S. T-WELL                                                   |          | TI/TW-50603 |
| 10                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 6" STEM & 3/4" S.S. T-WELL                                                   |          | TI/TW-80501 |
| 11                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80505 |
| 12                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 3" STEM & 3/4" S.S. T-WELL                                                   |          | TI/TW-80510 |
| 13                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 3" STEM & 3/4" S.S. T-WELL                                                   |          | TI/TW-80514 |
| 14                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80529 |
| 15                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80530 |
| 16                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80531 |
| 17                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80532 |
| 18                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80533 |
| 19                      | 1   | -     | -        | TREND 0-200°C C/W 5" FACE, 1/2" x 12" STEM & 3/4" S.S. T-WELL                                                  |          | TI/TW-80534 |
| METERS                  |     |       |          |                                                                                                                |          |             |
| 20                      | 1   | 4"    | -        | WAFER STYLE McCROMETER V-CONE FLOW METER VH-04Q15N3 C/W CENTERING RING KIT                                     |          | FE-80512    |
| 21                      | 1   | 4"    | -        | WAFER STYLE McCROMETER V-CONE FLOW METER VH-04Q15N3 C/W CENTERING RING KIT                                     |          | FE-80528    |
| 22                      | 1   | -     | -        | (DETAILS REQUIRED FROM OWNER)                                                                                  |          | FE-80535    |
| REGULATORS              |     |       |          |                                                                                                                |          |             |
| 23                      | 1   | -     | -        | FISHER 67 CFR REGULATOR C/W STD. TRIM AND PRESSURE INDICATOR                                                   |          | PCV-80511   |
| 24                      | 1   | -     | -        | FISHER 67 CFR REGULATOR C/W STD. TRIM AND PRESSURE INDICATOR                                                   |          | PCV-80540b  |
| 25                      | 1   | -     | -        | MASTER PNEUMATIC FILTER/REGULATOR CFDR1004G C/W 1/2" GAUGE                                                     |          | PCV-58802   |
| TRANSMITTERS            |     |       |          |                                                                                                                |          |             |
| 26                      | 1   | -     | -        | ROSEMOUNT 3051CD2A02A1AS2M5B4C6 DIFFERENTIAL PRESSURE TRANSMITTER C/W TWO 1199DDB15AFFW72DAA1G DIAPHRAGM SEALS |          | dPT-80508   |
| 27                      | 1   | -     | -        | ROSEMOUNT 3051CD2A02A1AS2M5B4C6 DIFFERENTIAL PRESSURE TRANSMITTER C/W TWO 1199DDB15AFFW72DAA1G DIAPHRAGM SEALS |          | dPT-80511   |
| 28                      | 1   | -     | -        | ROSEMOUNT 3051CD2A02A1AS5C6 DIFFERENTIAL PRESSURE TRANSMITTER C/W 5 VALVE MANIFOLD MODEL 0305RC52B11B4         |          | FT-80512    |
| 29                      | 1   | -     | -        | ROSEMOUNT 3051CD2A02A1AS5C6 DIFFERENTIAL PRESSURE TRANSMITTER C/W 5 VALVE MANIFOLD MODEL 0305RC52B11B4         |          | FT-80528    |
| 30                      | 1   | -     | -        | ROSEMOUNT 2088G2S2ZA1S1M5B4C6 PRESSURE TRANSMITTER C/W 1199WDC15AFFW72DAA1G REMOTE DIAPHRAGM SEAL              |          | PIT-80540   |
| 31                      | 1   | -     | -        | ROSEMOUNT 3144PD1A1M5B4K6 TEMPERATURE INDICATING TRANSMITTER 4-20 Ma                                           |          | TT-80502    |
| 32                      | 1   | -     | -        | ROSEMOUNT RTD MODEL 0068R21C30A060T28E6 C/W S.S. THERMOWELL                                                    |          | TE/TW-80502 |
| 33                      | 1   | -     | -        | ROSEMOUNT 3144PD1A1M5B4K6 TEMPERATURE INDICATING TRANSMITTER 4-20 Ma                                           |          | TT-80506    |
| 34                      | 1   | -     | -        | ROSEMOUNT RTD MODEL 0068R21C30A120T28E6 C/W S.S. THERMOWELL                                                    |          | TE-80506    |
| RELIEF VALVE            |     |       |          |                                                                                                                |          |             |
| 35                      | 1   | 3"x4" | CL. 150  | RELIEF VALVE, FARRIS 3"-150x4"-150 MODEL 26LB10L-12/00 NACE 1 TRIM, SET AT 345 kPag                            |          | PSV-80504   |
| PUMPS                   |     |       |          |                                                                                                                |          |             |
| 36                      | 1   | 1"x1" | -        | WARREN RUPP SANDPIPER 2 DBL DIAPHRAGMS PUMP S1FB1AGTANS000                                                     |          | P-588       |
| 37                      | 1   | 4"x6" | -        | UNION 4x6x8 VLK API-610 VERTICAL INLINE CENTRIFUGAL PUMP                                                       |          | P-506       |
| BURNER INSTRUMENTATION  |     |       |          |                                                                                                                |          |             |
| 38                      | 1   | 2"    | -        | MURPHY 2" NPT ELECTRIC LEVEL SWITCH MODEL # L1200-SSSF C/W SS FLOAT                                            |          | LSL-80507   |
| 39                      | 1   | 3"    | -        | PRESSURE REGULATOR                                                                                             |          | PRV-80517   |
| 40                      | 1   | 3"    | -        | SOLENOID VALVE                                                                                                 |          | SAV-80506   |
| 41                      | 1   | 3"    | -        | SHUT-OFF VALVE                                                                                                 |          | SDV-80519   |
| 42                      | 1   | 2"    | -        | RATIO VALVE 10315                                                                                              |          | PCV-80537   |
| 43                      | 1   | 3"    | -        | ALOR ADJ. VALVE 30212                                                                                          |          | -           |
| 44                      | 1   | 1/2"  | -        | ADJ. PILOT COCK 102627                                                                                         |          | -           |
| 45                      | 2   | 1/2"  | -        | SOLENOID VALVE                                                                                                 |          | SAV-80526   |
| 46                      | 1   | 1/2"  | -        | PRESSURE INDICATOR                                                                                             |          | PI-80525    |
| 47                      | 1   | 3/4"  | -        | PRESSURE REGULATOR                                                                                             |          | PRV-80524   |
| 48                      | 1   | -     | -        | BLOWER SMJ 101023 20 HP                                                                                        |          | K-603       |
| 49                      | 1   | -     | -        | AIR FLOW SW. JD2                                                                                               |          | PSL-80539   |
| 50                      | 1   | -     | -        | 124BV-B 500915                                                                                                 |          | -           |
| 51                      | 1   | -     | -        | 124BV-AB 500998                                                                                                |          | TCV-80538   |
| 52                      | 1   | -     | -        | MOD. MOTOR M9484E 4003 4-20mA 82176                                                                            |          | -           |
| 53                      | 1   | -     | -        | BURNER IJ8                                                                                                     |          | -           |
| 54                      | 2   | 3"    | CL. 2000 | BALL VALVE RP SCR'D, NACE                                                                                      | C.S.     | NUTRON      |
| 55                      | 8   | 1/2"  | CL. 800  | NEEDLE VALVE SCR'D                                                                                             | -        | -           |
| 56                      | 1   | 1/2"  | -        | PRESSURE INDICATOR                                                                                             |          | PI-80520    |
| 57                      | 1   | 1/2"  | -        | PRESSURE INDICATOR                                                                                             |          | PI-80516    |
| 58                      | 1   | 1/2"  | -        | PRESSURE INDICATOR                                                                                             |          | PI-80521    |
| 59                      | 1   | 1/2"  | -        | HIGH PRESSURE SWITCH                                                                                           |          | PSH-80536   |
| 60                      | 1   | 1/2"  | -        | LOW PRESSURE SWITCH                                                                                            |          | PSL-80536   |

| MK  | QTY | SIZE | RATING   | DESCRIPTION                                                 | MATERIAL | BRAND              |
|-----|-----|------|----------|-------------------------------------------------------------|----------|--------------------|
| 70  | 4   | 6"   | CL. 150  | BALL VALVE RP RF HT4/PEEK SEATS, 316 S.S. BALL & STEM, NACE | -        | KUKA               |
| 71  | 8   | 4"   | CL. 150  | BALL VALVE RP RF HT4/PEEK SEATS, 316 S.S. BALL & STEM, NACE | -        | KUKA               |
| 72  | 1   | 4"   | CL. 150  | BALL VALVE RF C.S.O., NACE                                  | -        | KUKA               |
| 73  | 10  | 3"   | CL. 300  | BALL VALVE RP RF HT4/PEEK SEATS, 316 S.S. BALL & STEM, NACE | -        | KUKA               |
| 74  | 1   | 3"   | CL. 150  | BALL VALVE RF C.S.O, NACE                                   | -        | KUKA               |
| 75  | 1   | 2"   | CL. 300  | BALL VALVE RP RF HT4/PEEK SEATS, 316 S.S. BALL & STEM, NACE | -        | KUKA               |
| 76  | -   | 2"   | CL. 2000 | BALL VALVE RP SCR'D, NACE                                   | C.S.     | NUTRON             |
| 77  | 1   | 2"   | CL. 2000 | BALL VALVE RP SCR'D, SPRING LOADED, NACE                    | C.S.     | NUTRON             |
| 78  | 11  | 1"   | CL. 2000 | BALL VALVE RP SW x SCR'D, NACE                              | C.S.     | NUTRON             |
| 79  | 8   | 1"   | CL. 2000 | BALL VALVE RP SCR'D, NACE                                   | C.S.     | NUTRON             |
| 80  | 1   | 3/4" | CL. 2000 | BALL VALVE RP SCR'D, NACE                                   | C.S.     | NUTRON             |
| 81  |     |      |          |                                                             |          |                    |
| 82  | 1   | 6"   | CL. 150  | GLOBE VALVE RF, BOLTED BONNET, SWIVEL PLUG                  | -        | NAVCO              |
| 83  | 2   | 3"   | CL. 300  | GLOBE VALVE RF, BOLTED BONNET, SWIVEL PLUG                  | -        | NAVCO              |
| 84  | 1   | 4"   | CL. 150  | GLOBE VALVE RF, BOLTED BONNET, SWIVEL PLUG                  | -        | NAVCO              |
| 85  | 1   | 1"   | CL. 800  | GLOBE VALVE SW, OS & Y, BOLTED BONNET                       | -        | NAVCO              |
| 86  | 1   | 1"   | CL. 800  | GLOBE VALVE SCR'D, OS & Y, BOLTED BONNET                    | -        | NAVCO              |
| 87  | 1   | 1"   | CL. 800  | GATE VALVE SW, OS & Y, BOLTED BONNET                        | -        | NAVCO              |
| 88  |     |      |          |                                                             |          |                    |
| 89  |     |      |          |                                                             |          |                    |
| 90  | 2   | 6"   | CL. 150  | SWING CHECK VALVE RF, BOLTED TRIM, RENEWABLE SEAT, NACE     | -        | NAVCO/<br>WHEATLEY |
| 91  | 4   | 4"   | CL. 150  | SWING CHECK VALVE RF, BOLTED TRIM, RENEWABLE SEAT, NACE     | -        | NAVCO/<br>WHEATLEY |
| 92  | 1   | 3"   | CL. 300  | SWING CHECK VALVE RF, BOLTED TRIM, RENEWABLE SEAT, NACE     | -        | NAVCO/<br>WHEATLEY |
| 93  | 5   | 1"   | CL. 800  | SWING CHECK VALVE SCR'D, LIFTING CHECK, NACE                | -        | NAVCO/<br>WHEATLEY |
| 94  |     |      |          |                                                             |          |                    |
| 95  | 2   | 1/2" | CL. 800  | NEEDLE VALVE SCR'D                                          | -        | -                  |
| 96  |     |      |          |                                                             |          |                    |
| 97  |     |      |          |                                                             |          |                    |
| 98  | 1   | 6"   | CL. 150  | FLANGED BASKET TYPE STRAINER MODEL: SERIES B150F STYLE 1    | C.S.     | IFC                |
| 99  |     |      |          |                                                             |          |                    |
| 100 |     |      |          |                                                             |          |                    |
| 101 |     |      |          |                                                             |          |                    |
| 102 |     |      |          |                                                             |          |                    |
| 103 |     |      |          |                                                             |          |                    |

|                                                                                                                                                                                                                                                   | 31/03/05            | UPDATED INSTRUMENTS LIST |                         | EEW  |                     |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|-------------------------|------|---------------------|---------------|
|                                                                                                                                                                                                                                                   | 28/03/05            | REVISIONS AS SHOWN       |                         | EEW  | LU                  |               |
|                                                                                                                                                                                                                                                   | 18/03/05            | ISSUED FOR CONSTRUCTION  |                         | EEW  | LU                  |               |
| NO                                                                                                                                                                                                                                                | DATE (d/m/y)        | REVISIONS                | BY                      | APPD |                     |               |
| REVISIONS                                                                                                                                                                                                                                         |                     |                          |                         |      |                     |               |
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| <div><div></div><div>UNIVERSAL INDUSTRIES</div><div>Ph: (780) 875-6161      Fax: (780) 875-6169</div></div>                                                  |                     |                          |                         |      |                     |               |
| CLIENT<br>DEER CREEK ENERGY LTD.<br>JOSLYN PHASE 2, SAGD BATTERY                                                                                                                                                                                  |                     |                          |                         |      |                     |               |
| DWG TITLE<br>RECYCLE TREATER TR-805<br>PROCESS AND INSTRUMENTATION DIAGRAM<br>PROCESS INSTRUMENTATION LIST                                                                                                                                        |                     |                          |                         |      |                     |               |
| SCALE<br>N.T.S.                                                                                                                                                                                                                                   | DWN BY<br>E. WILSON |                          | DWG NO.<br>V-11699-D113 |      | SHEET NO.<br>2 of 2 | REV. NO.<br>2 |
| DATE (d/m/y)<br>16/03/05                                                                                                                                                                                                                          | CHKD                | APPD                     |                         |      |                     |               |

\\DWG\\H11699\\11311699SHT2



## MATERIAL LIST

| MK | QTY | DESCRIPTION                                             | MATERIAL                  | WT  |
|----|-----|---------------------------------------------------------|---------------------------|-----|
| 1  | 9   | NIPPLE 1" SCH XS x 3" LG. SMLS TBE                      | SA-106-B                  | 5   |
| 2  | 6   | PIPE 1" SCH XS x 4 3/16" LG. SMLS TBE                   | SA-106-B                  | 1   |
| 3  | 5   | PIPE 1" SCH XS x 3 7/8" LG. SMLS TBE                    | SA-106-B                  | 4   |
| 4  | 1   | PIPE 1" SCH XS x 5 1/2" LG. SMLS TBE                    | SA-106-B                  | 1   |
| 5  | 1   | PIPE 2" SCH XS x 6 7/16" LG. SMLS TBE                   | SA-106-B                  | 3   |
| 6  | 1   | TUBING 3/4" x 0.065" WALL x 10 1/16" LG.                |                           | 1   |
| 7  | 1   | TUBING 3/4" x 0.065" WALL x 1'-10 3/4" LG.              |                           | 1   |
| 8  | 1   | PIPE 2" SCH XS x 1'-1 5/16" LG. SMLS TBE                | SA-106-B                  | 6   |
| 9  | 1   | NIPPLE 2" SCH XS x 6" LG. SMLS TBE                      | SA-106-B                  | 3   |
| 10 | 1   | PIPE 3/4" SCH XS x 11 3/16" LG. SMLS TBE                | SA-106-B                  | 1   |
| 11 | 1   | PIPE 1" SCH XS x 8 1/4" LG. SMLS TBE                    | SA-106-B                  | 2   |
| 12 |     |                                                         |                           |     |
| 13 | 4   | PIPE 1 1/2" SCH XS x 3" LG. SMLS PBE                    | SA-106-B                  | 4   |
| 14 | 2   | FLATBAR 1/4" THK. x 2" x 1'-3 7/8" LG. (*)              | SA-36                     | 5   |
| 15 | 2   | FLATBAR 1/4" THK. x 2" x 1'-5 1/16" LG. (*)             | SA-36                     | 5   |
| 16 |     |                                                         |                           |     |
| 17 |     |                                                         |                           |     |
| 18 | 2   | ELBOW 1" CLASS 3000 F.S. SCR'D x 90'                    | SA-105                    | 5   |
| 19 | 6   | TEE 1" CLASS 3000 F.S. SCR'D                            | SA-105                    | 18  |
| 20 | 2   | ELBOW 2" CLASS 3000 F.S. SCR'D x 90'                    | SA-105                    | 11  |
| 21 | 1   | TEE 3/4" CLASS 3000 F.S. SCR'D                          | SA-105                    | 2   |
| 22 | 1   | SWAGE 2" x 3/4" SCH XS TBE                              | SA-234-WPB                | 2   |
| 23 | 7   | UNION 1" CLASS 3000 F.S. SCR'D                          | SA-105                    | 12  |
| 24 | 2   | SWAGE 1" x 3/4" SCH XS TBE                              | SA-234-WPB                | 2   |
| 25 | 2   | UNION 3/4" CLASS 3000 F.S. SCR'D                        | SA-105                    | 2   |
| 26 | 1   | UNION 2" CLASS 3000 F.S. SCR'D                          | SA-105                    | 5   |
| 27 | 2   | UNION ELBOW 3/4" x 90' TUBING (PARKER 12EE12)           | S.S.                      | 1   |
| 28 | 1   | SAMPLE COOLER                                           | REF. DWG. EDS-6036(11699) | 496 |
| 29 | 1   | MALE CONNECTOR 3/4" NPT x 3/4" TUBING (PARKER 12MSC12N) | S.S.                      | 1   |
| 30 |     |                                                         |                           |     |
| 31 |     |                                                         |                           |     |
| 32 |     |                                                         |                           |     |
| 33 |     |                                                         |                           |     |
| 34 |     |                                                         |                           |     |
| 35 |     |                                                         |                           |     |
| 36 |     |                                                         |                           |     |
| 37 |     |                                                         |                           |     |
| 38 |     |                                                         |                           |     |
| 39 |     |                                                         |                           |     |
| 40 |     |                                                         |                           |     |

NOTES:  
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.  
2. ITEMS IDENTIFIED WITH A (\*) ARE ATTACHED TO THE PRESSURE ENVELOPE & REQUIRE A HEAT NUMBER TO BE HARD STAMPED & RECORDED BY Q.C..

SUBTOTAL x 1.06  
TOTAL (lbs.) 635

|          |              |                         |           |     |      |
|----------|--------------|-------------------------|-----------|-----|------|
| NO       | DATE (d/m/y) | ISSUED FOR CONSTRUCTION | REVISIONS | BY  | APPD |
| 02/03/05 |              |                         |           | EEW |      |

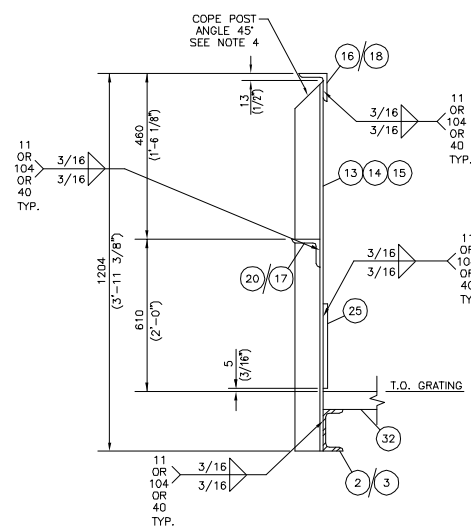
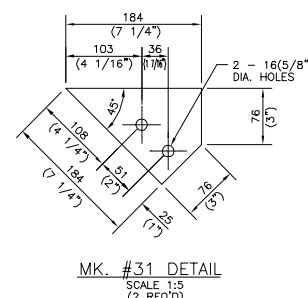
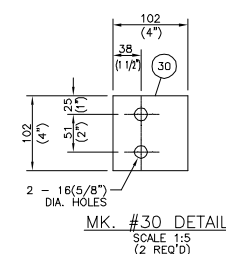
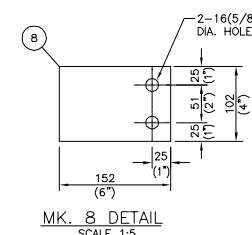
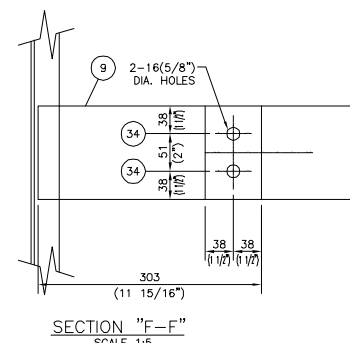
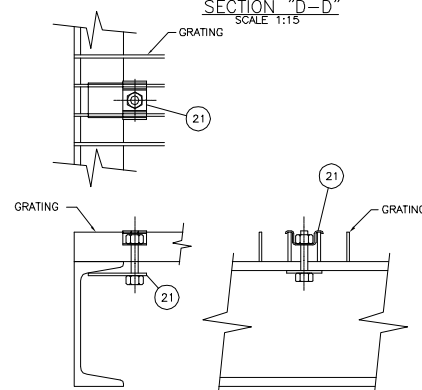
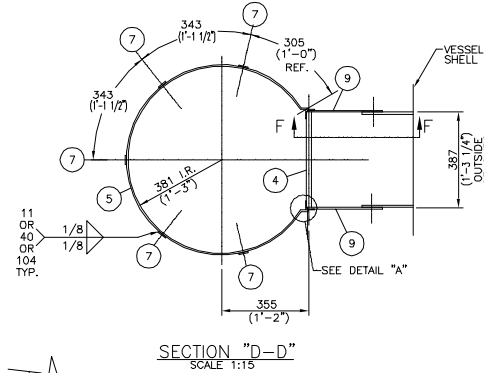
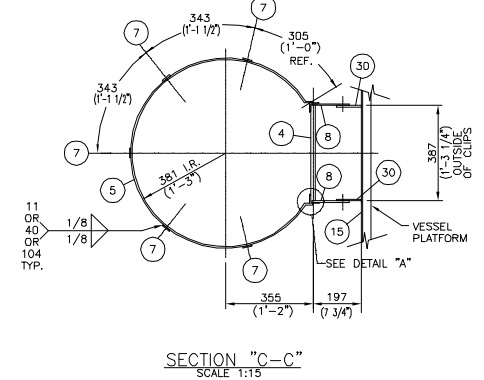
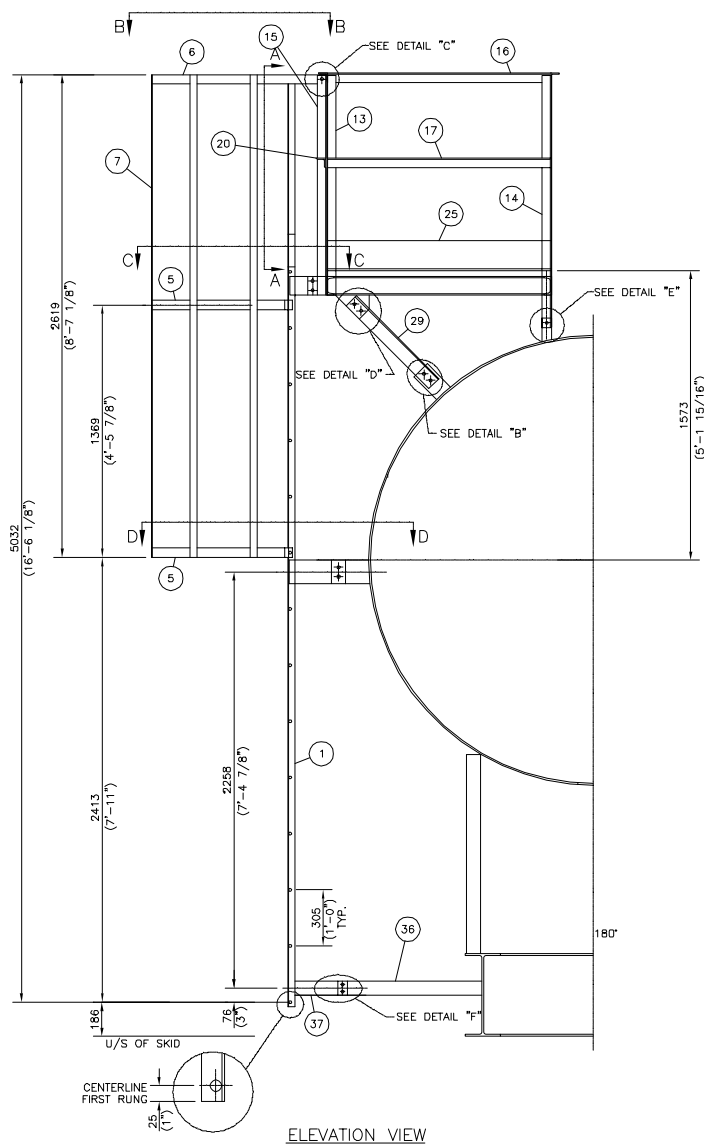
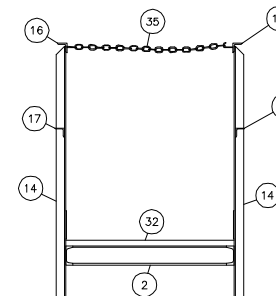
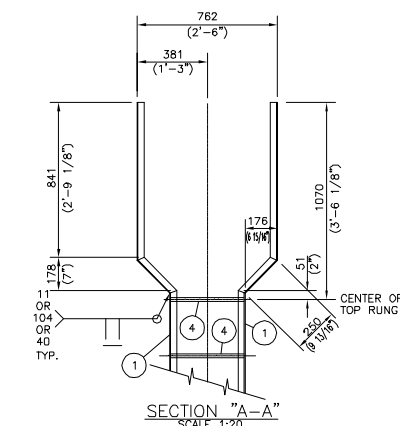
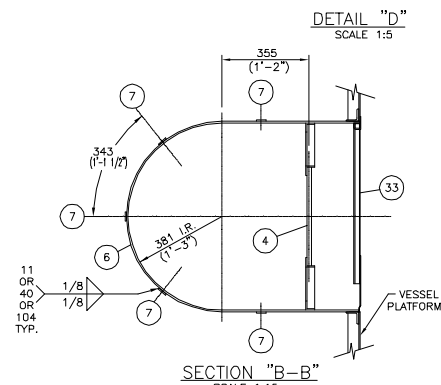
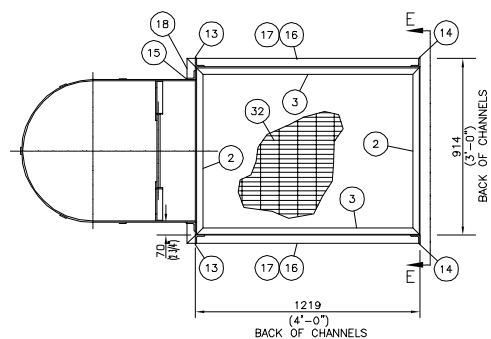
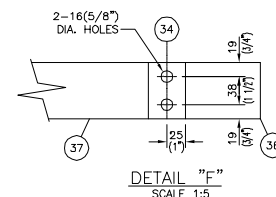
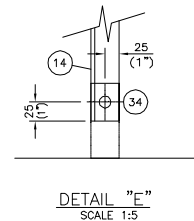
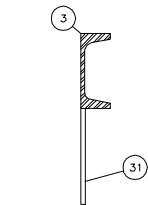
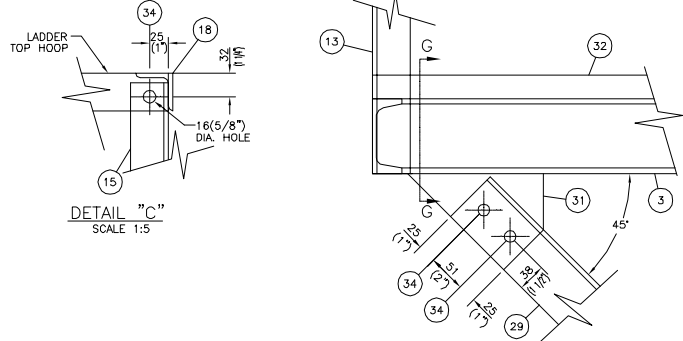
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CLIENT  
DEER CREEK ENERGY LTD.  
C/O BOWER DAMBERGER ROLSETH ENGINEERING LTD.  
JOSLYN PHASE 2, SAGD FACILITY

DWG TITLE  
RECYCLE TREATER TR-805  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
SAMPLE SYSTEM

|                          |                     |                         |                     |               |
|--------------------------|---------------------|-------------------------|---------------------|---------------|
| SCALE<br>1:20            | DWN BY<br>E. WILSON | DWG NO.<br>V-11699-D122 | SHEET NO.<br>1 OF 1 | REV. NO.<br>0 |
| DATE (d/m/y)<br>23/02/05 | CHKD<br>APPD        |                         |                     |               |



| MATERIAL LIST |     |                                                                |                              |     |
|---------------|-----|----------------------------------------------------------------|------------------------------|-----|
| MK            | QTY | DESCRIPTION                                                    | MATERIAL                     | WT  |
| 1             | 2   | ANGLE 1 1/2" x 1 1/2" x 3/16" x 16'-10 1/8" LG.                | G40.21-44W                   | 61  |
| 2             | 2   | CHANNEL C4 x 5.4# x 3'-0" LG.                                  | G40.21-44W                   | 42  |
| 3             | 2   | CHANNEL C4 x 5.4# x 4'-0" LG.                                  | G40.21-44W                   | 33  |
| 4             | 14  | ROUND BAR 5/8" DIA. x 1'-3 3/4" LG.                            | G40.21-44W                   | 32  |
| 5             | 2   | FLATBAR 1/4" THK. x 2" x 6'-8" LG. (STOCK HOOP)                | G40.21-44W                   | 23  |
| 6             | 1   | FLATBAR 1/4" THK. x 2" x 7'-10 3/4" LG.                        | G40.21-44W                   | 13  |
| 7             | 5   | FLATBAR 3/16" THK. x 1 1/2" x 8'-7 1/8" LG.                    | G40.21-44W                   | 55  |
| 8             | 2   | FLATBAR 1/4" THK. x 4" x 6" LG.                                | G40.21-44W                   | 5   |
| 9             | 2   | PLATE 1/4" THK. x 5" x 1'-0" LG.                               | G40.21-44W                   | 9   |
| 10            |     |                                                                |                              |     |
| 11            |     |                                                                |                              |     |
| 12            |     |                                                                |                              |     |
| 13            | 2   | ANGLE 2" x 2" x 1/4" x 3'-10 7/8" LG.                          | G40.21-44W                   | 25  |
| 14            | 2   | ANGLE 2" x 2" x 1/4" x 4'-5 13/16" LG.                         | G40.21-44W                   | 29  |
| 15            | 2   | ANGLE 2" x 2" x 1/4" x 3'-10 7/8" LG.                          | G40.21-44W                   | 25  |
| 16            | 2   | ANGLE 2" x 2" x 1/4" x 4'-1 3/4" LG.                           | G40.21-44W                   | 26  |
| 17            | 2   | ANGLE 2" x 2" x 1/4" x 3'-11 1/2" LG.                          | G40.21-44W                   | 25  |
| 18            | 2   | ANGLE 2" x 2" x 1/4" x 4 1/2" LG.                              | G40.21-44W                   | 2   |
| 19            |     |                                                                |                              |     |
| 20            | 2   | ANGLE 2" x 2" x 1/4" x 4 1/4" LG.                              | G40.21-44W                   | 2   |
| 21            | 4   | FISHER & LUDLOW GRATING SADDLE CLIPS C/W BOTTOM PLATE          | C.S.<br>GALVANIZED           | 1   |
| 22            |     |                                                                |                              |     |
| 23            |     |                                                                |                              |     |
| 24            |     |                                                                |                              |     |
| 25            | 2   | FLATBAR 3/16" THK. x 6" x 4'-0" LG.                            | G40.21-44W                   | 31  |
| 26            |     |                                                                |                              |     |
| 27            |     |                                                                |                              |     |
| 28            |     |                                                                |                              |     |
| 29            | 2   | ANGLE 3" x 3" x 1/4" x 2'-1 1/16" LG.                          | G40.21-44W                   | 20  |
| 30            | 2   | FLATBAR 1/4" THK. x 4" x 4" LG.                                | G40.21-44W                   | 2   |
| 31            | 2   | PLATE 1/4" THK. x 5 1/8" x 7 1/4" LG.                          | G40.21-44W                   | 5   |
| 32            | 1   | GRATING 3'-0" x 4'-0" LG; TYPE 19-4<br>C/W 1 1/4" x 3/16" BARS | GALV. SERRATED<br>G40.21-44W | 106 |
| 33            | 1   | PLATFORM SAFETY GATE                                           | REF. DWG.<br>V-11699-A126    | 13  |
| 34            | 24  | BOLT 1/2" DIA. x 1 1/2" LG. C/W HEX NUT & WASHER               | A-325                        | 4   |
| 35            | 1   | PROOF CHAIN 3/16" THK. x 3'-0" LG. TOTAL                       | C.S.                         | 4   |
| 36            | 2   | FLATBAR 1/4" THK. x 3" x 2'-6 13/16" LG.                       | G40.21-44W                   | 13  |
| 37            | 2   | FLATBAR 1/4" THK. x 3" x 11 1/4" LG.                           | G40.21-44W                   | 5   |
| 38            |     |                                                                |                              |     |
| 39            |     |                                                                |                              |     |
| 40            |     |                                                                |                              |     |

**NOTES:**

1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
2. SANDBLAST TO SSPC-SP6 AND APPLY ONE COAT ALKYD 1.5 - 2 MILS DFT
3. TWO COATS OF ENAMEL BLACK (5B) 1.5-3MILS DFT.
4. HANGRAILS, MIDDLE RAIL SUPPORTS & KICK PLATES ONE COAT SAFETY YELLOW (Y-18)
5. GRIND EDGES SMOOTH.
6. MK'S 16 & 18 TO BE MITRED 45° ONE END ONLY.

|           |              |                         |     |      |
|-----------|--------------|-------------------------|-----|------|
| △         |              |                         |     |      |
| △         |              |                         |     |      |
| △         |              |                         |     |      |
| △         |              |                         |     |      |
| △         |              |                         |     |      |
| △         | 01/03/05     | ISSUED FOR CONSTRUCTION | EEW |      |
| NO        | DATE (d/m/y) | REVISIONS               | BY  | APPD |
| REVISIONS |              |                         |     |      |

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CLIENT  
DEER CREEK ENERGY LTD.  
C/O BOWER DAMBERGER ROLSETH ENGINEERING LTD.  
JOSLYN PHASE 2, SAGD FACILITY

DWG TITLE

RECYCLE TREATER TR-805  
2438mm(8'-0") O.D. x 10668mm(35'-0") S/S  
LADDER AND ACCESS PLATFORM DETAILS

|                          |                     |      |                             |                         |                                                                                                       |
|--------------------------|---------------------|------|-----------------------------|-------------------------|-------------------------------------------------------------------------------------------------------|
| SCALE<br>1:20            | DWN BY<br>E. WILSON |      | DWG NO.<br><br>V-11699-D124 | SHEET NO.<br><br>1 OF 1 | REV. NO.<br><br> |
| DATE (d/m/y)<br>16/02/05 | CHKD                | APPD |                             |                         |                                                                                                       |

## GENERAL NOTES

## DESIGN

DESIGN CODE - ASME SECTION VIII, DIVISION 1 20.01 ADDENDA JULY 1st, 2003

DESIGN PRESSURE OR MAWP (HOT & CORRODED) 2500 kPag (363 psig) DESIGN TEMPERATURE 185°C (365°F)

MAWP (HOT & CORRODED) LIMITED BY -

RADIOGRAPHY (TOP HEAD TO SHELL) UW-12(d) NONE JOINT EFFICIENCY 0.85

RADIOGRAPHY (BOTTOM HEAD TO SHELL) UW-12(d) NONE JOINT EFFICIENCY 0.85

POST WELD HEAT TREATMENT NONE ADDITIONAL CODES NONE

CORROSION ALLOWANCE 1.6 mm(1/16")

HYDRO-TEST PRESSURE 3759 kPag (545 psig)

SERVICE WATER CAPACITY 0.051m<sup>3</sup> (1.81 ft<sup>3</sup>)

WEIGHT:dry 238 kg (525 lbs) operating design

OVERALL LENGTH N/A OVERALL HEIGHT 933mm (3'-0 3/4")

MINIMUM DESIGN METAL TEMPERATURE -29°C (-20°F) @ MAWP

## REGISTRATION

REGISTERED IN \_\_\_\_\_ SASKATCHEWAN/ALBERTA \_\_\_\_\_  
CRN NUMBER \_\_\_\_\_ P1006.23 \_\_\_\_\_  
MFR SERIAL NUMBER \_\_\_\_\_ 05-03-64 \_\_\_\_\_  
REFERENCE CRN NO. \_\_\_\_\_  
FOR REGISTERING \_\_\_\_\_

## PAINTING AND INSULATION

INTERNAL FINISH NONE

EXTERNAL FINISH SANDBLAST TO SSPC-SP6 AND APPLY 1 COAT PRIMER  
AND ONE FINISH COAT WARM GREY.

INSULATION NONE

## MATERIAL SPECIFICATIONS

SHELL MATERIAL SA-106-B SMLS

HEADS  
1. MATERIAL SA-105 TYPE RFWN CLASS 300  
2. MATERIAL SA-234-WPB TYPE PIPE CAP  
3. MATERIAL \_\_\_\_\_ TYPE \_\_\_\_\_

FLANGE N/A PIPE SA-106-B

WELD FITTINGS SA-234-WPB TUBES 316 S.S.

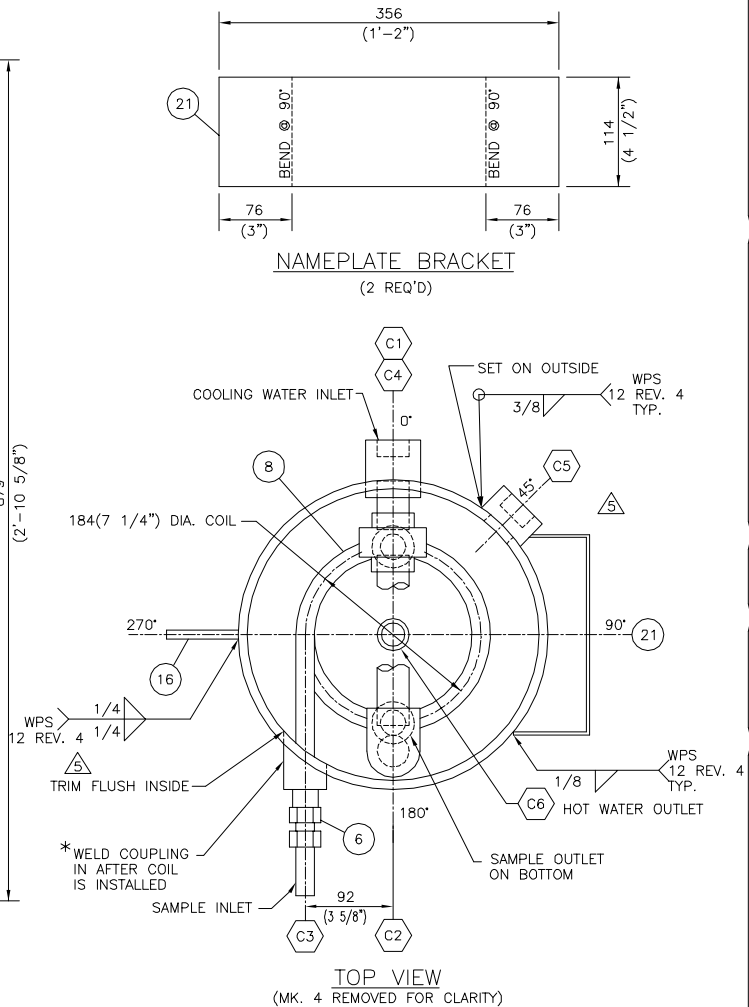
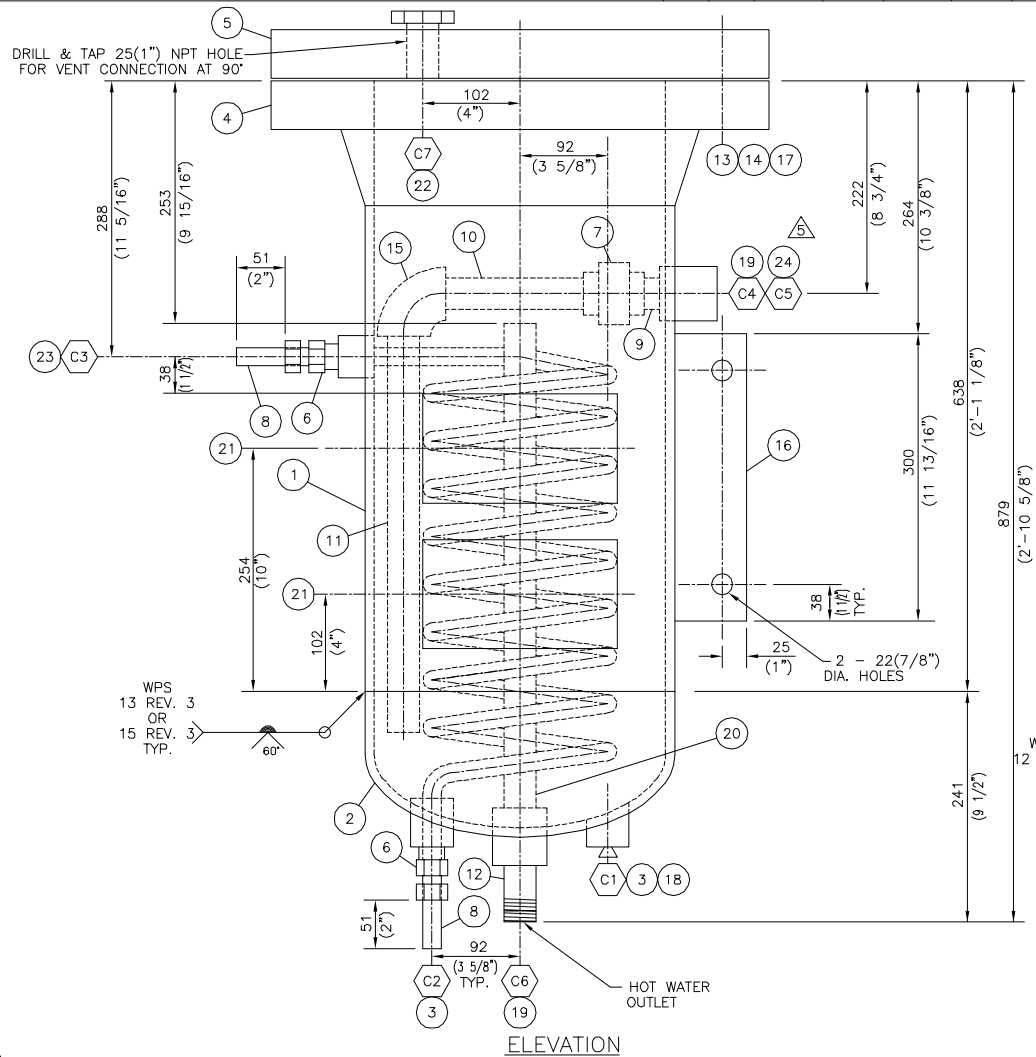
NONPRESSURE SA-36 OR EQUIV. COUPLING SA-105

WELDOLET N/A THREAOLET N/A

STUD BOLTS SA-193-B7 HEX NUTS SA-194-2H

GASKETS 316 S.S. GRAPHOIL

## NOZZLE SCHEDULE

[illegible]

## MATERIAL LIST

| QTY. | DESCRIPTION                                             | MATERIAL          | WT  |
|------|---------------------------------------------------------|-------------------|-----|
| 1    | PIPE 12" SCH STD x 1'-8" LG. SMLS BBE                   | SA-106-B          | 83  |
| 2    | PIPE CAP 12" SCH STD                                    | SA-234-WPB        | 30  |
| 3    | FULL COUPLING 3/4" CL. 6000 F.S. SCR'D                  | SA-105            | 1   |
| 4    | FLANGE 12" CLASS 300 RFWN x SCH STD BORE                | SA-105            | 142 |
| 5    | BLIND FLANGE 12" CLASS 300 RF                           | SA-105            | 184 |
| 6    | TUBE X MALE PIPE, MALE CONNECTOR(SWAGelok SS-1210-1-12) | 316 S.S.          | 1   |
| 7    | UNION 1" CL. 3000 F.S. SCR'D                            | SA-105            | 3   |
| 8    | TUBING 3/4" x 0.065" WALL THICKNESS x 20'-0" LG.        | 316 S.S.          | 5   |
| 9    | NIPPLE 1" SCH 80 x 2" LG. SMLS TBE                      | SA-106-B          | 1   |
| 10   | PIPE 1" SCH 80 x 7" LG. SMLS TBE                        | SA-106-B          | 1   |
| 11   | PIPE 1" SCH 80 x 1'-5" LG. SMLS TOE                     | SA-106-B          | 3   |
| 12   | NIPPLE 1" SCH 80 x 3" LG. SMLS TBE                      | SA-106-B          | 1   |
| 13   | GASKET 12" CLASS 300 RF x 1/8" THK.                     | 316 S.S. GRAPHOIL | 1   |
| 14   | STUDS 1 1/8" DIA. x 6 1/2" LG.                          | SA-193-B7M        | 12  |
| 15   | ELBOW 1" CL. 3000 F.S. SCR'D                            | SA-105            | 2   |
| 16   | PLATE 3/8" THK. x 3" x 11 13/16" LG. (*)                | SA-36             | 4   |
| 17   | HEX NUTS 1 1/8" NOM.                                    | SA-194-2HM        | 10  |
| 18   | HEX PLUG 3/4" CL. 3000 F.S. THR'D                       | SA-105            | 1   |
| 19   | FULL COUPLING 1" CL. 6000 F.S. SCR'D                    | SA-105            | 1   |
| 20   | PIPE 1" SCH 80 x 1'-8 1/2" LG. SMLS TOE                 | SA-106-B          | 3   |
| 21   | FLATBAR 1/8" THK. x 4 1/2" x 1'-2" LG. (*)              | SA-36             | 4   |
| 22   | HEX PLUG 1" CL. 3000 F.S. THR'D                         | SA-105            | 1   |
| 23   | LONG COUPLING 3/4" CL. 6000 F.S. SCR'D x 3" LG.         | SA-105            | 1   |
| 24   | HALF COUPLING 1" CL. 6000 F.S. SCR'D                    | SA-105            | 1   |

|                                                                                                                                     |          |         |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|---------|
| NOTE:                                                                                                                               | SUBTOTAL | 496     |
| 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.       | x 1.06   |         |
| 2. THIS IS A "UM" VESSEL.                                                                                                           | TOTAL    | 526 lbs |
| 3. ITEMS IDENTIFIED WITH A (*) ARE ATTACHED TO THE PRESSURE ENVELOPE & REQUIRE A HEAT NUMBER TO BE HARD STAMPED & RECORDED BY Q.C.. |          |         |
| 4. SEE REVISION "5" FOR REGISTERED DESIGN.                                                                                          |          |         |

## COIL DATA

DESIGN CODE: ASME B31.3  
DESIGN PRESSURE: 16666 kPa (2417 psi)  
DESIGN TEMPERATURE: 185°C (365°F)  
HYDROTEST PRESSURE: 25000 kPa (3626 psi)  
SERVICE: HEAVY HYDROCARBON  
CAPACITY: 0.002 m<sup>3</sup> (0.067 ft<sup>3</sup>)  
SERIAL NO.: 05-03-64  
CRN NO. OH0260.23

|    |              |                                                                |     |      |
|----|--------------|----------------------------------------------------------------|-----|------|
| 7  | 04/03/05     | UPDATED DRAWING                                                | EEW |      |
| 6  | 27/09/04     | VESSEL DESIGN REVIEWED & FOUND TO MEET JULY 1st, 2003 ADDENDA  | EEW | JK   |
| 5  | 07/10/02     | CHANGED C5 TO HALF COUPLING, TRIM C3 FLUSH INSIDE              | EEW | JK   |
| 4  | 18/07/02     | VESSEL DESIGN REVIEWED & FOUND TO MEET JULY 1st, 2001 EDITION  | GLB | JK   |
| 3  | 28/05/02     | AS-BUILT; IMPACT TESTING NOTE ADDED.                           | GLB | JK   |
| 2  | 27/11/01     | VESSEL DESIGN REVIEWED & FOUND TO MEET JULY 31st, 2000 ADDENDA | JMA | JK   |
| 1  | 05/07/00     | REVISED SIZE OF C5                                             | JMA | JK   |
| 0  | 15/06/00     | ISSUED FOR CONSTRUCTION                                        | JMA | JK   |
| NO | DATE (d/m/y) | REVISIONS                                                      | BY  | APPD |

## REVISIONS

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|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| CLIENT | DEER CREEK ENERGY LTD.<br>C/O BOWER DAMBERGER ROLSETH ENGINEERING<br>JOSLYN PHASE 2, SAGD FACILITY |
|--------|----------------------------------------------------------------------------------------------------|

DWG TITLE

SAMPLE COOLER E-433  
305mm(1'-0") NOM. x 638mm(2'-1 1/8") S/F.O.F.  
GENERAL ARRANGEMENT

|                          |                       |      |                     |                     |                                                                                                   |
|--------------------------|-----------------------|------|---------------------|---------------------|---------------------------------------------------------------------------------------------------|
| SCALE<br>1:5             | DWN BY<br>J. ACKERMAN |      | DWG NO.<br>EDS-6036 | SHEET NO.<br>1 OF 1 | REV. NO.<br> |
| DATE (d/m/y)<br>16/05/00 | CHKD                  | APPD | S.O. NO.<br>11699   |                     |                                                                                                   |