

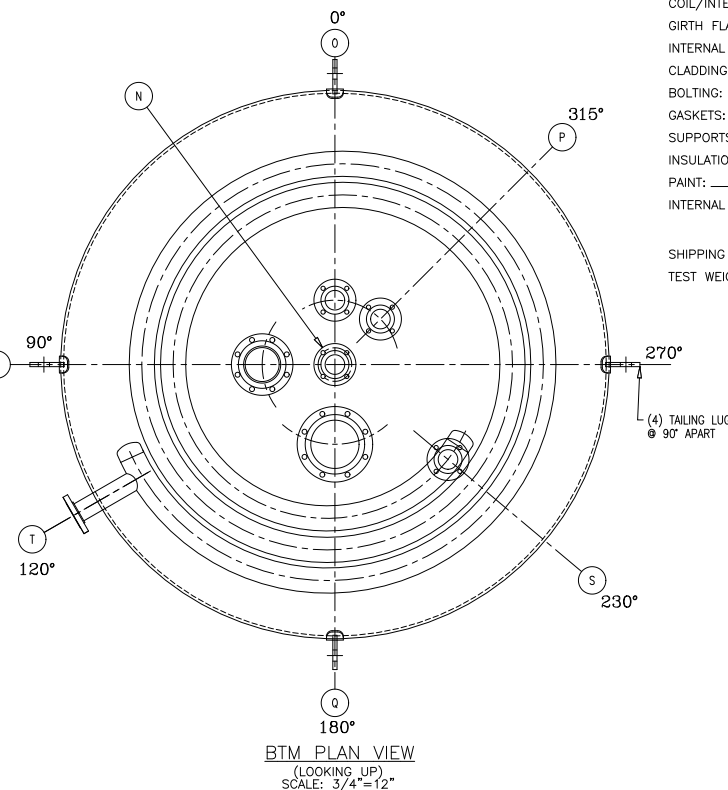
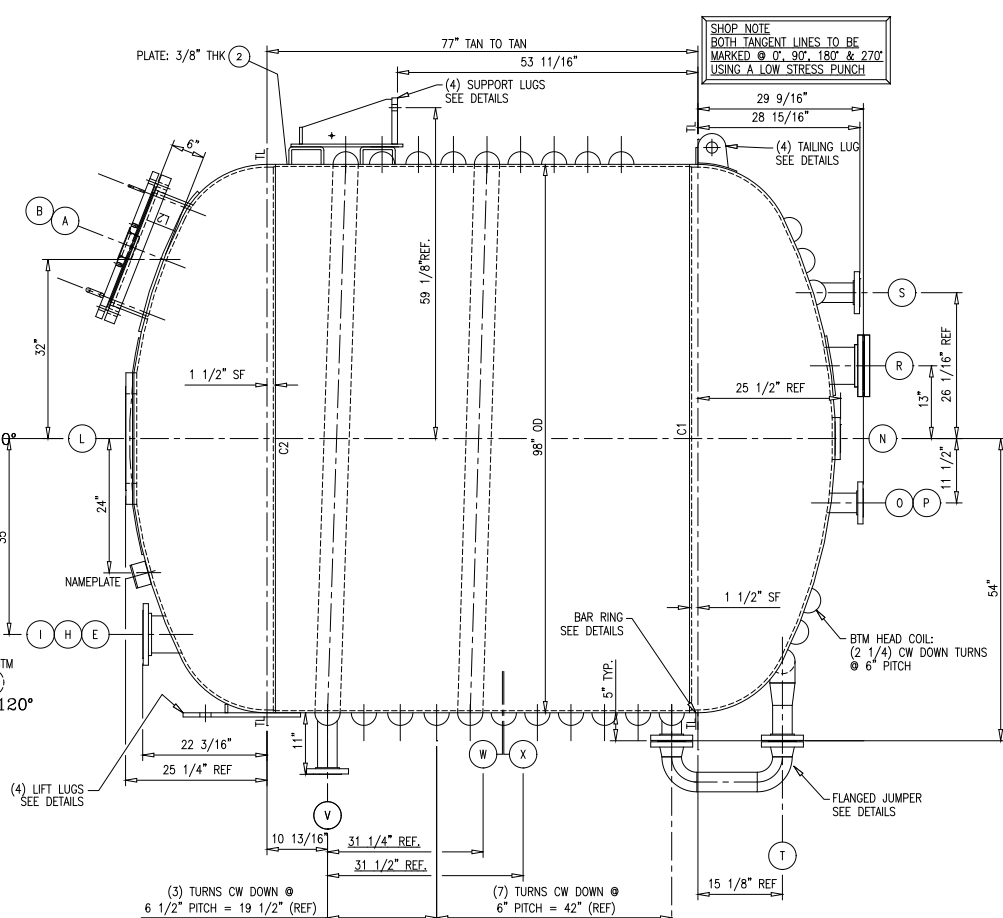
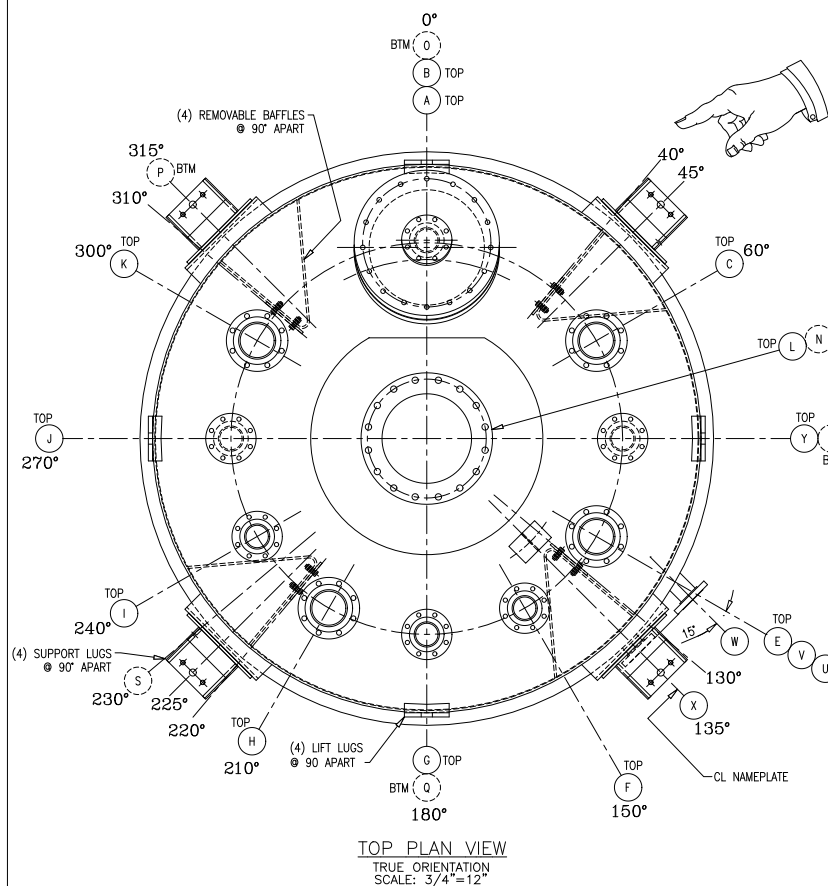
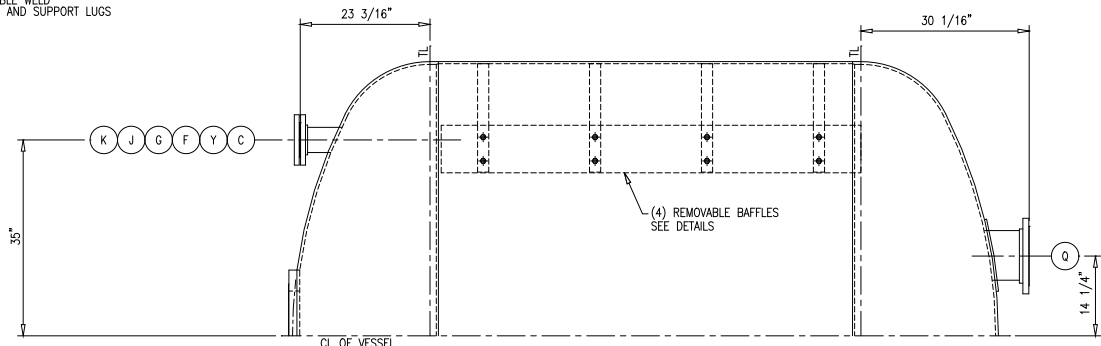
ADDITIONAL CUSTOMER SPECIFIC NOTES:

1. SAW ELECTRODES USED FOR PRESSURE-RETAINING WELDS SHALL BE OF LOW HYDROGEN TYPE 2.
3. MMAW TO BE USED ONLY IN SPRAY TRANSFER RANGE
3. GMAW-C SHALL NOT BE USED ON PIPES LESS THAN OR EQUAL TO 3"
4. APPLICATION SPECIFICATION PER PIPE:
- VESV1002 (VESSEL/S&T EXCHANGER FABRICATION SPECIFICATION)
  - VESV1100 (VESSEL: NAMEPLATE BRACKET)
  - VESV1115 (VESSEL: VERTICAL TYPE "B" SUPPORT LUG BASE PLATE w/ CAP OR TOP RING AND GUSSET SUPPORT)
5. THE FOLLOWING WELDS SHALL BE PT TESTED:
- ALL JACKET WELDS
  - ALL TEMPORARY ATTACHMENT
  - ALL ALLOY 20 WELDS w/ THE EXCEPTION OF GIRTH SEAMS
  - ROOT AND CAP OF ALLOY 20 NOZZLES
  - INACCESSIBLE WELD
  - LIFT LUGS AND SUPPORT LUGS
- 23 3/16"

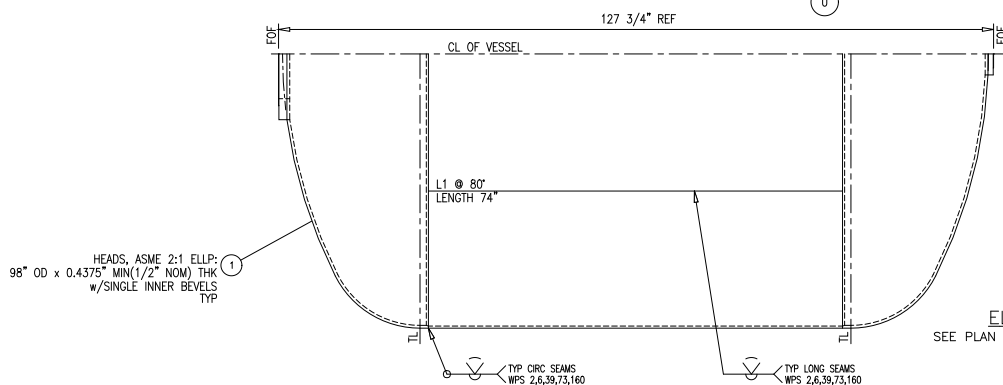
- |                        |                         |
|------------------------|-------------------------|
| # 5 GTAW S.S. TO S.S.  | # 2 SMAW A-20 TO A-20C  |
| # 8 SMAW S.S. TO S.S.  | # 6 SMAW A-20 TO A-20C  |
| # 36 FCAW S.S. TO S.S. | # 39 GTAW A-20 TO A-20C |
| # 98 GMAW S.S. TO S.S. | # 73 GMAW A-20 TO A-20C |
|                        | # 160 SAW A-20 TO A-20  |

- |   |     |      |              |
|---|-----|------|--------------|
| # | 7   | SMAW | A-20 TO S.S. |
| # | 40  | GTAW | A-20 TO S.S. |
| # | 41  | FCAW | A-20 TO S.S. |
| # | 67  | GMAW | A-20 TO S.S. |
| # | 75  | GMAW | A-20 TO S.S. |
| # | 91  | GTAW | A-20 TO S.S. |
| # | 148 | SAW  | A-20 TO S.S. |

- F. ALL BUTT WELDS TO BE FULL PENETRATION UNLESS OTHERWISE SPECIFIED
- G. TOLERANCES:  
PER WTC STANDARD & CUSTOMER STANDARD (WHEN APPLICABLE)
- H. NAMEPLATE BRACKET IS SA-240 304 "T" SHAPE, 4 1/4" HIGH  
x 6 1/2" LONG ON 2 1/2" STAND-OFF (WELDED TO VESSEL).
- J. ALL OPENINGS/UN-BLUNDED NOZZLES TO BE COVERED  
WITH PLASTIC AND/OR WOOD COVERS PRIOR TO SHIPMENT.



**AS-BUILT PRINT**  
**WARD TANK AND**  
**HEAT EXCHANGER CORP**  
By: VIET LE  
Date: 8/29/2011



ELEVATION VIEW  
SEE PLAN VIEW FOR TRUE ORIENTATION  
SCALE: 3/4"=12"

| NDE DOCUMENTATION TABLE             |                                     |                                  |                     |           | DESIGN TABLE |                                     |               |                                      |          |                            |                                     |               |                         |          |                                     |                                     |  |          |  |              |  |
|-------------------------------------|-------------------------------------|----------------------------------|---------------------|-----------|--------------|-------------------------------------|---------------|--------------------------------------|----------|----------------------------|-------------------------------------|---------------|-------------------------|----------|-------------------------------------|-------------------------------------|--|----------|--|--------------|--|
| REQUIRED<br>w/ REPORTS              |                                     | REQUIREMENT DESCRIPTION          | COMMENTS            | INSPECTOR | DATE         | CODE:                               |               | ASME SECTION VIII DIV.1 2010 STAMPED |          |                            |                                     |               |                         |          |                                     |                                     |  |          |  |              |  |
| YES                                 | NO                                  |                                  |                     |           |              | SHELL                               |               |                                      |          | JACKET                     |                                     |               |                         |          |                                     |                                     |  |          |  |              |  |
| <input checked="" type="checkbox"/> |                                     | LIQUID PENETRANT TEST            | SEE NOTE 5          |           |              | DESIGN PRESS.<br>(PSI)              | MAWP<br>(PSI) | MAWP LIMITER                         | TEMP. °F | C.A.                       | DESIGN PRESS.<br>(PSI)              | MAWP<br>(PSI) | MAWP LIMITER            | TEMP. °F | C.A.                                |                                     |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | MAGNETIC PARTICLE TEST           |                     |           |              | FV/85                               | FV/85         | DESIGN                               | 212      | 1/16"                      | FV/150                              | FV/150        | DESIGN                  | 350      | 1/16"                               |                                     |  |          |  |              |  |
| <input checked="" type="checkbox"/> |                                     | BUBBLE LEAK TEST                 | 10 PSI AIR/SOAP JKT |           |              | SPECIFIC GRAVITY: 1.0               |               |                                      |          | SPECIFIC GRAVITY: 1.0      |                                     |               |                         |          |                                     |                                     |  |          |  |              |  |
| <input checked="" type="checkbox"/> |                                     | BUBBLE LEAK TEST REPAIRS         |                     |           |              | RADIOGRAPHIC REQUIREMENTS w/REPORTS |               |                                      |          |                            | RADIOGRAPHIC REQUIREMENTS w/REPORTS |               |                         |          |                                     |                                     |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | BUBBLE LEAK TEST DOUBLER         |                     |           |              | FULL                                | LETHAL        | SPOT                                 | SPECIAL  | NONE                       | FULL                                | LETHAL        | SPOT                    | SPECIAL  | NONE                                |                                     |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | FERRIDOLY TEST                   |                     |           |              | <input checked="" type="checkbox"/> |               |                                      |          |                            |                                     |               |                         |          | <input checked="" type="checkbox"/> |                                     |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | POSITIVE MATERIAL IDENTIFICATION |                     |           |              | OTHER RADIOGRAPHY:                  |               |                                      |          |                            | OTHER RADIOGRAPHY:                  |               |                         |          |                                     |                                     |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | BASELINE THICKNESS MEASUREMENT   |                     |           |              | INNER VESSEL JOINT EFFICIENCY       |               |                                      |          | INNER VESSEL STRESS RELIEF |                                     |               | JACKET JOINT EFFICIENCY |          |                                     | JACKET STRESS RELIEF                |  |          |  |              |  |
|                                     | <input checked="" type="checkbox"/> | HELIUM LEAK TEST                 |                     |           |              | HEAD                                | SHELL         | ---                                  |          |                            | HEAD                                | SHELL         | ---                     |          |                                     |                                     |  |          |  |              |  |
|                                     |                                     |                                  |                     |           |              | 100%                                | 100%          |                                      |          |                            | 70%                                 | 70%           |                         |          |                                     |                                     |  |          |  |              |  |
|                                     |                                     |                                  |                     |           |              |                                     |               |                                      |          |                            | HYDROSTATIC TEST                    |               |                         |          |                                     | PRESSURE                            |  | DURATION |  | CHART RECORD |  |
| YES                                 | NO                                  | CHAMBER                          |                     |           |              |                                     |               |                                      |          |                            | PSI                                 |               | MINUTES                 |          | YES                                 | NO                                  |  |          |  |              |  |
| <input checked="" type="checkbox"/> |                                     | SHELL                            |                     |           |              |                                     |               |                                      |          |                            | 111                                 |               | 60                      |          |                                     | <input checked="" type="checkbox"/> |  |          |  |              |  |
| <input type="checkbox"/>            |                                     | JACKET                           |                     |           |              |                                     |               |                                      |          |                            | 210                                 |               | 60                      |          |                                     | <input checked="" type="checkbox"/> |  |          |  |              |  |

|                     |                                         |
|---------------------|-----------------------------------------|
| TYPE OF HEADS:      |                                         |
| SHELL SIDE:         | ASME 2:1 ELLP                           |
| JACKET:             | WELD CAP                                |
| SHELL MATERIALS:    |                                         |
| SHELL:              | SB-463 N08020                           |
| JACKET:             | SA-240 304/304L                         |
| HEAD MATERIALS:     |                                         |
| SHELL:              | SB-463 N08020                           |
| JACKET:             | SA-312 TP304/304L                       |
| COIL/INTERNAL PIPE: | ---                                     |
| GIRTH FLANGES:      | ---                                     |
| INTERNAL PLATE:     | SB-463 N08020                           |
| CLADDING SPEC.:     | SB-463 N08020                           |
| BOLTING:            | SA-193 B7 / SA-194 2H                   |
| GASKETS:            | 1/8" THK TFE ENVELOPE w/GRAPHITE FILLER |
| SUPPORTS:           | SA-240 304/304L                         |
| INSULATION:         | NONE                                    |
| PAINT:              | NONE                                    |
| INTERNAL FINISH:    | WELDS TO BE GROUND SMOOTH               |

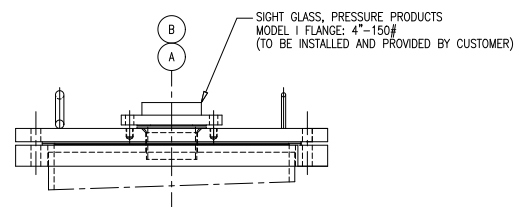
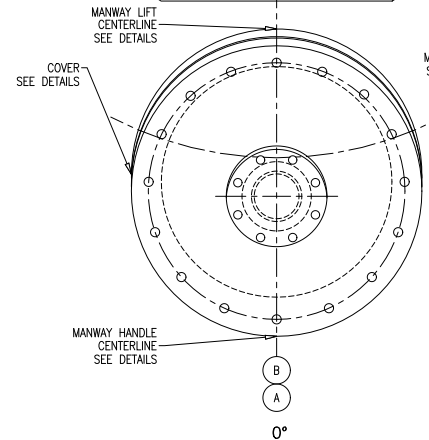
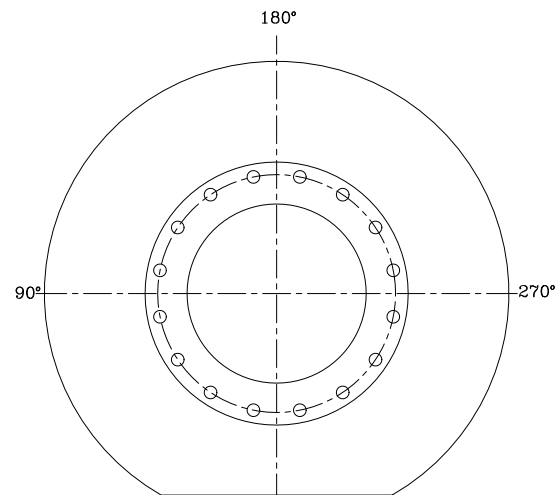
SHIPPING WEIGHT: 7,800 LBS  
TEST WEIGHT: 37,100 LBS

|                                                                                                                                                                                                                                       |  |                                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|
|  4397                                                                                                                                            |  |  |  |
| <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">U</div> </div> |  | FABRICATED & CERTIFIED BY<br>WARD TANK & HEAT EXCHANGER CORP., CHARLOTTE, N.C.        |  |
| <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">W</div> </div> |  |                                                                                       |  |
| <div style="border: 1px solid black; padding: 5px; text-align: center;">RT-1-S</div>                                                                                                                                                  |  |                                                                                       |  |
| TEST PRESS.                                                                                                                                                                                                                           |  | SHELL MAWP: FV/85 PSI @ 212 °F                                                        |  |
| MGR. S. N.                                                                                                                                                                                                                            |  | JKT./TUBE SIDE MAWP: FV/150 PSI @ 350 °F                                              |  |
| CUSTOMER                                                                                                                                                                                                                              |  | MDMT: -20 °F @ FV/85 PSI                                                              |  |
| P.O. NO.                                                                                                                                                                                                                              |  | JKT./TUBE SIDE MDMT: -20 °F @ FV/150 PSI                                              |  |
| NOMENCLATURE                                                                                                                                                                                                                          |  | SHELL: 111 PSJ./T. TUBE: 210 PSJ.                                                     |  |
| EQUIP. NO.                                                                                                                                                                                                                            |  | WC-7880 YR. BUILT: 2011                                                               |  |
| MAEWPP: SS 15PSI @ 212° F/JKT 15PSI @ 350° F                                                                                                                                                                                          |  | HYDROLYSIS KETTLE NO. 1                                                               |  |

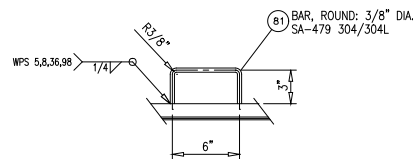
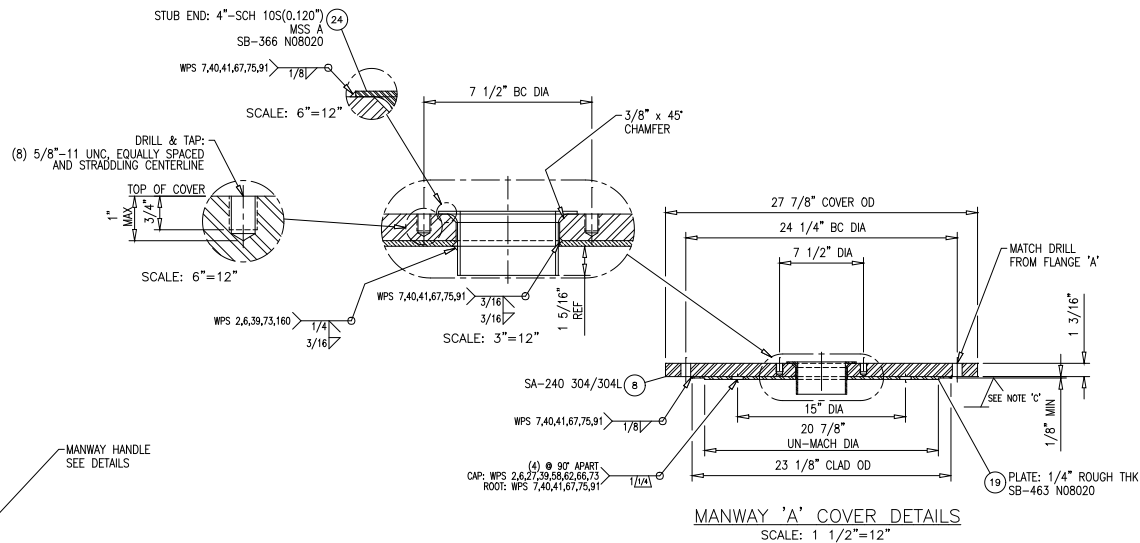
NAMEPLATE STAMPING DETAIL

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |                                                                                                      |                                         |            |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|--------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 8/29/2011              | AS-BUILT                                                                                             |                                         |            | QVL          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2/23/2011              | REVISED PER CUSTOMERS COMMENTS/RELEASED FOR FABRICATION                                              |                                         |            | QVL          |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/17/11                | FOR CUSTOMER APPROVAL                                                                                |                                         |            | QVL          |
| REV NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | DATE                   | DESCRIPTION                                                                                          |                                         |            | BY           |
| <p>THIS DRAWING IS THE PROPERTY OF WARD TANK AND HEAT EXCHANGER CORP ("WARD") AND THE BELOW NAMED CUSTOMER. THIS DRAWING IS ONLY TO BE USED IN REFERENCE TO WORK PROPOSED OR CONTRACTED BY EITHER WARD OR THE BELOW NAMED CUSTOMER AND ITS AFFILIATES AND/OR ON BEHALF OF WARD OR THE BELOW NAMED CUSTOMER AND ITS AFFILIATES. IT MUST NOT BE REPRODUCED OR SUBMITTED TO OUTSIDE PARTIES WITHOUT THE WRITTEN PERMISSION FROM WARD OR FROM THE BELOW NAMED CUSTOMER.</p> |                        |                                                                                                      |                                         |            |              |
|                                                                                                                                                                                                                                                                                                                                                                                    |                        | <p><b>WARD TANK AND<br/>HEAT EXCHANGER CORP</b><br/>6670 E. HARRIS BLVD.<br/>CHARLOTTE, NC 28215</p> |                                         |            |              |
| CUSTOMER                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SOLUTIA<br>TRENTON, MI |                                                                                                      | PURCHASE ORDER NUMBER<br><br>4503941010 |            |              |
| TITLE<br><br>HYDROLYSIS KETTLE No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |                                                                                                      |                                         |            |              |
| EQUIPMENT NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | SCALE<br>AS NOTED                                                                                    |                                         | NO REQ'D 1 |              |
| APPROVED BY                                                                                                                                                                                                                                                                                                                                                                                                                                                             | DATE                   | DRAWING NUMBER                                                                                       |                                         | REV. NO. 1 |              |
| DRAWN BY                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SMS                    | DATE 1/6/2011                                                                                        | 2011-WC-7880                            |            | SHEET 1 OF 3 |

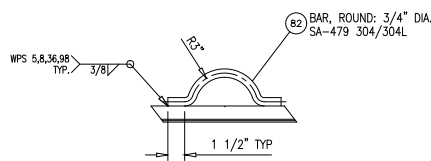




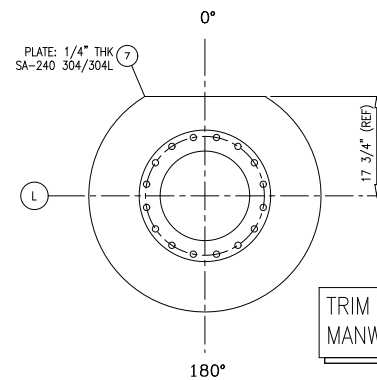
MANWAY 'A' SIGHT GLASS ASSEMBLY  
SCALE: 1 1/2"=12"



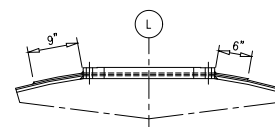
MANWAY HANDLE DETAIL  
SCALE: 1 1/2"=12"



MANWAY LIFT DETAIL  
SCALE: 1 1/2"=12"



TRIM REPAD 'L' TO CLEAR  
MANWAY 'A' REPAD



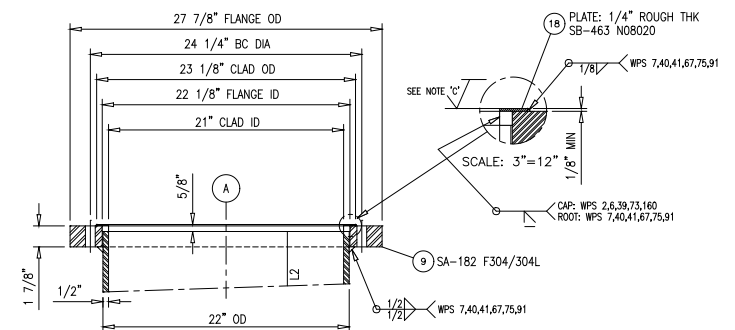
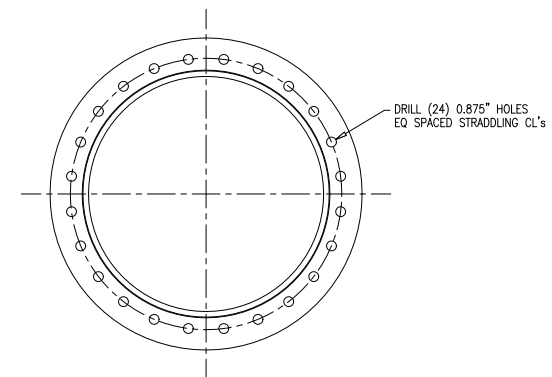
NOZ 'L' REPAD DETAILS  
SCALE: 3/4"=12"

### CERTIFIED/SHOP PRINT

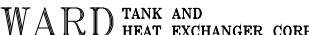
WARD TANK AND  
HEAT EXCHANGER CORP

By: VIET LE  
Date: 3/7/2011

WTC REQUESTS THAT DRAWINGS BE RETURNED  
(ONLY IF REQUIRED) IN HARD COPY FORM ONLY.  
MODIFIED DRAWINGS MUST BE RETURNED IMMEDIATELY  
TO WTC FOR FABRICATION UPDATE.



MANWAY 'A' FLANGE DETAILS  
SCALE: 1 1/2"=12"

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                      |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2/23/2011 | REVISED PER CUSTOMERS COMMENTS/RELEASED FOR FABRICATION                                                                              | VQL          |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1/17/11   | FOR CUSTOMER APPROVAL                                                                                                                | VQL          |
| REV NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DATE      | DESCRIPTION                                                                                                                          | BY           |
| THIS DRAWING IS THE PROPERTY OF WARD TANK AND HEAT EXCHANGER CORP ("WARD") AND THE BELOW NAMED CUSTOMER. THIS DRAWING IS ONLY TO BE USED IN REFERENCE TO WORK PROPOSED OR CONTRACTED BY EITHER WARD OR THE BELOW NAMED CUSTOMER AND ITS AFFILIATES AND/OR ON BEHALF OF WARD OR THE BELOW NAMED CUSTOMER AND ITS AFFILIATES. IT MUST NOT BE REPRODUCED OR SUBMITTED TO OUTSIDE PARTIES WITHOUT THE WRITTEN PERMISSION FROM WARD OR FROM THE BELOW NAMED CUSTOMER. |           |                                                                                                                                      |              |
|                                                                                                                                                                                                                                                                                                                                                                             |           | <br>6670 E. HARRIS BLVD.<br>CHARLOTTE, NC 28215 |              |
| CUSTOMER                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | PURCHASE ORDER NUMBER                                                                                                                |              |
| SOLUTIA<br>TRENTON, MI                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | 4503941010                                                                                                                           |              |
| TITLE                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                      |              |
| HYDROLYSIS KETTLE No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                      |              |
| EQUIPMENT NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | SCALE                                                                                                                                | NO. REV'D    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | AS NOTED                                                                                                                             | 1            |
| APPROVED BY                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DATE      | DRAWING NUMBER                                                                                                                       | REV. NO.     |
| DRAWN BY                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SMS       | DATE                                                                                                                                 | 1/6/2011     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | 2011-WC-7880                                                                                                                         |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                      | SHEET 3 OF 3 |