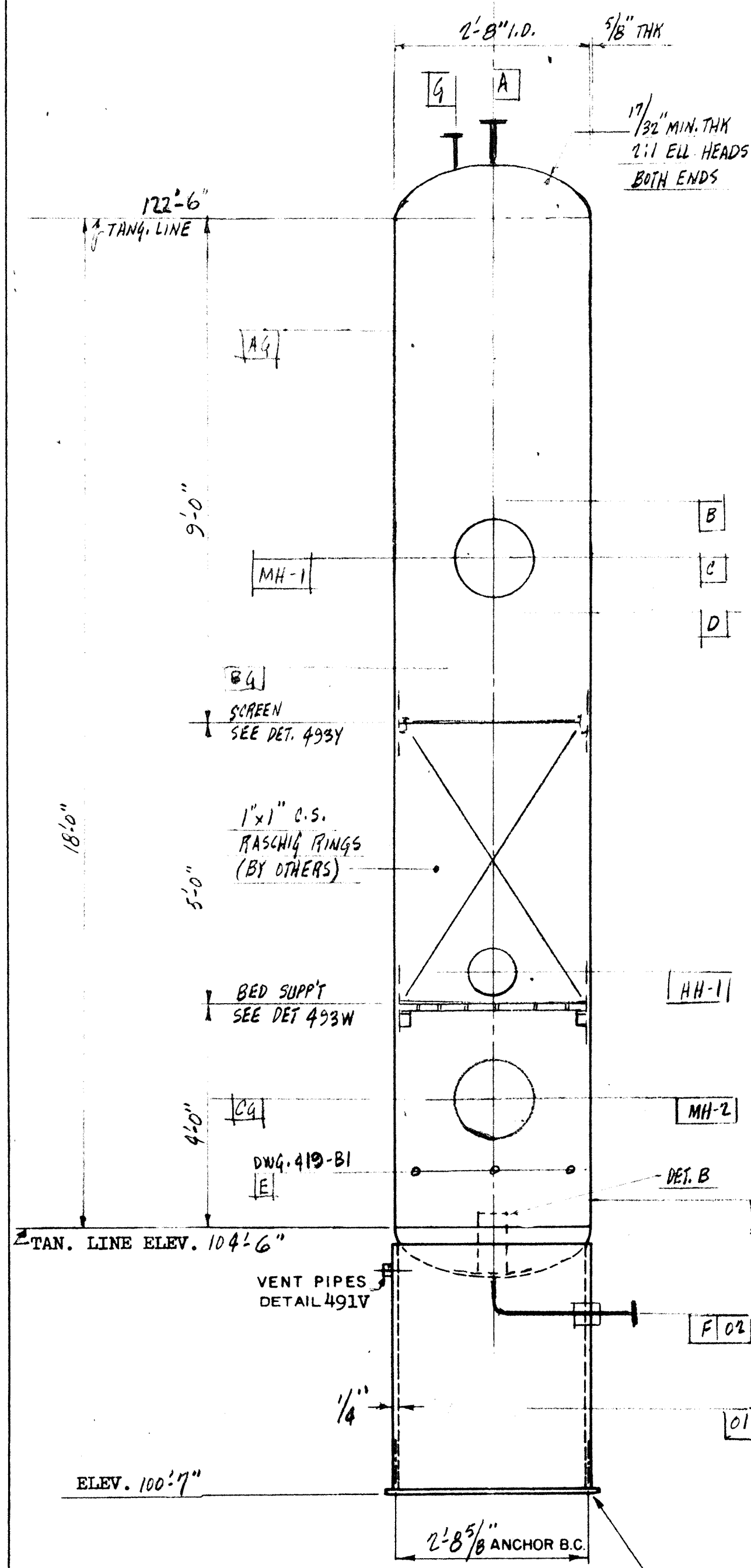
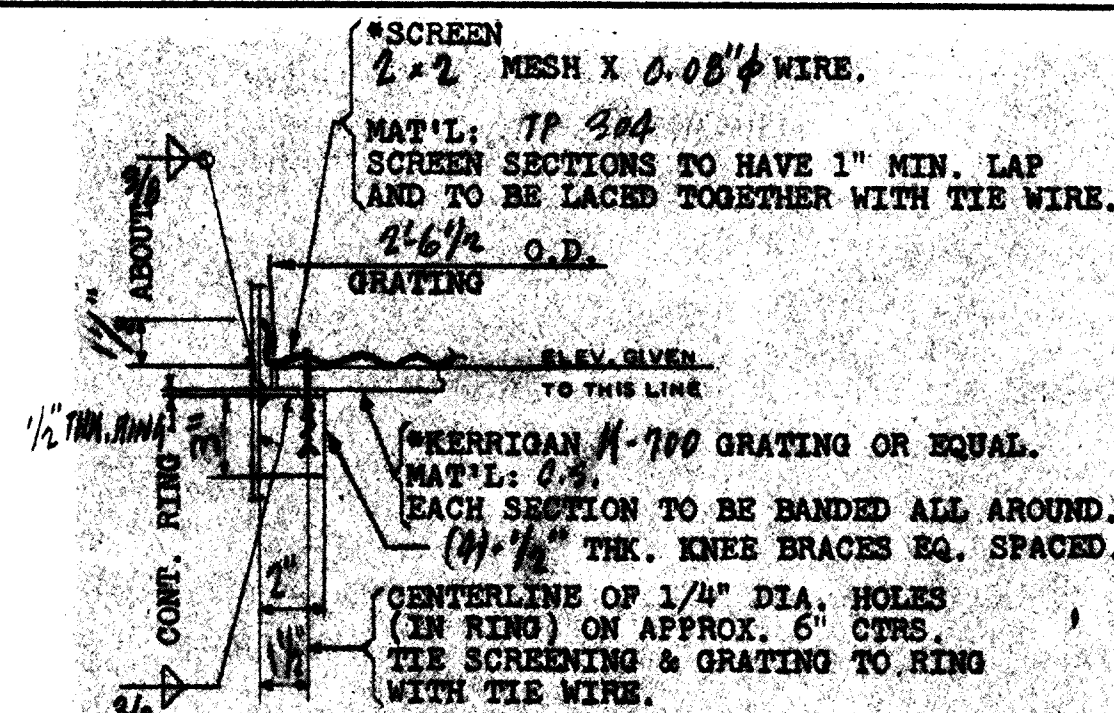


## PLAN

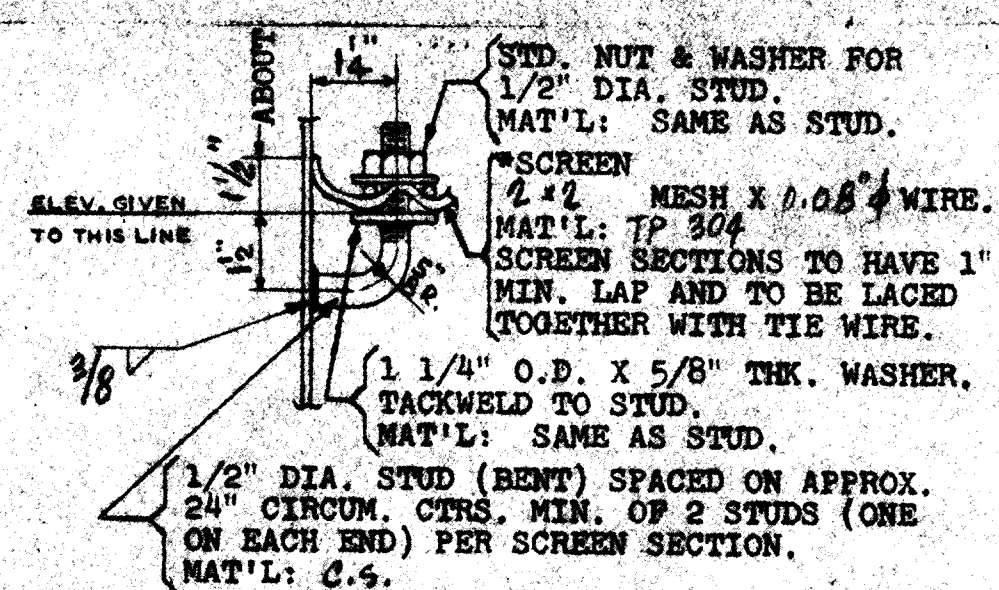


(SEE SKIRT DETAILS 491C, Q, R)



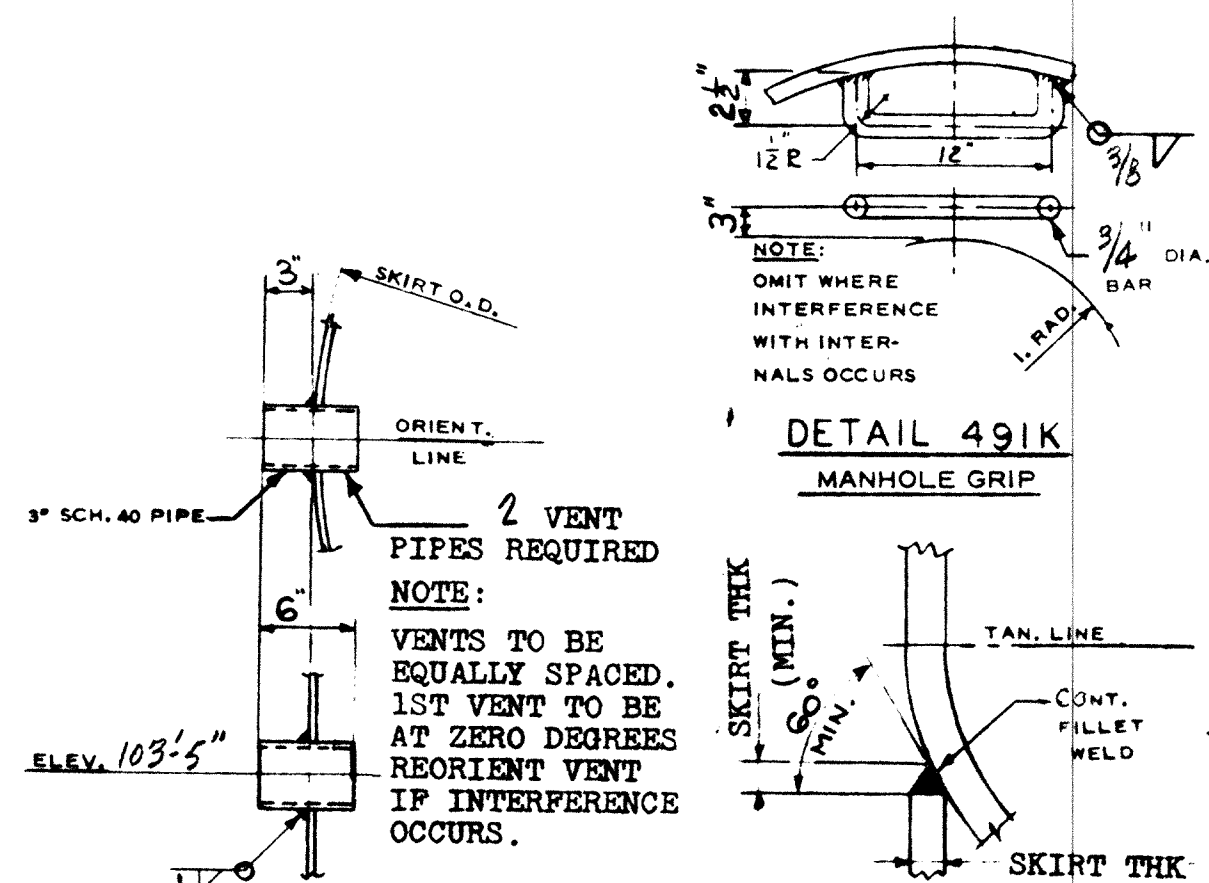
\*SCREEN & GRATING SHALL BE SHOP FABRICATED IN SECTIONS SUITABLE FOR PASSING THRU VESSEL MANHOLE. SCREEN & GRATING SHALL BE SHOP ASSEMBLED & CHECKED FOR FIT PRIOR TO SHIPPING "KNOCKED-DOWN". TIE WIRE - .04" DIA. MAT'L: SAME AS SCREEN. VESSEL VENDOR TO FURNISH SUFFICIENT QUAN. OF TIE WIRE FOR FIELD USE.

DETAIL 493W  
BED SUPPORT

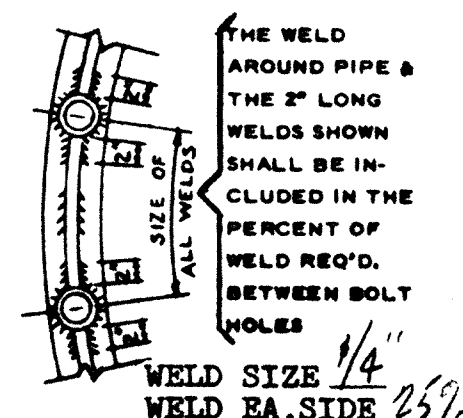


\*SCREEN SHALL BE SHOP FABRICATED IN SECTIONS  
SUITABLE FOR PASSING THRU VESSEL MANHOLE.  
SCREEN SHALL BE SHOP ASSEMBLED & CHECKED  
FOR FIT PRIOR TO SHIPPING "KNOCKED-DOWN."  
TIE WIRE - 0.04"DIA. MAT'L: SAME AS SCREEN.  
VESSEL VENDOR TO FURNISH SUFFICIENT QUAN. OF  
TIE WIRE FOR FIELD USE.

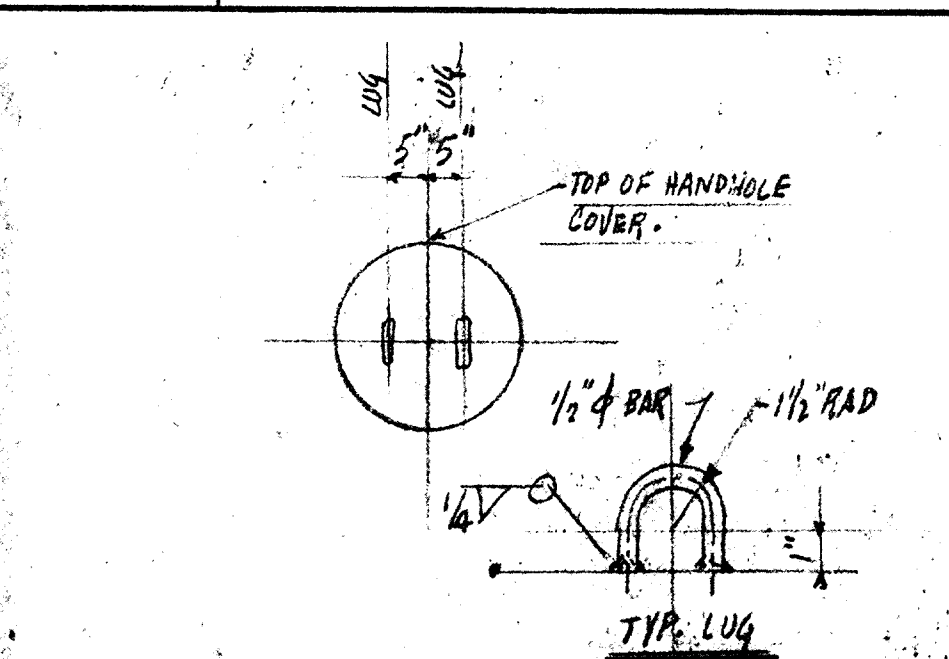
DETAIL 493Y  
HOLDOWN SCREEN



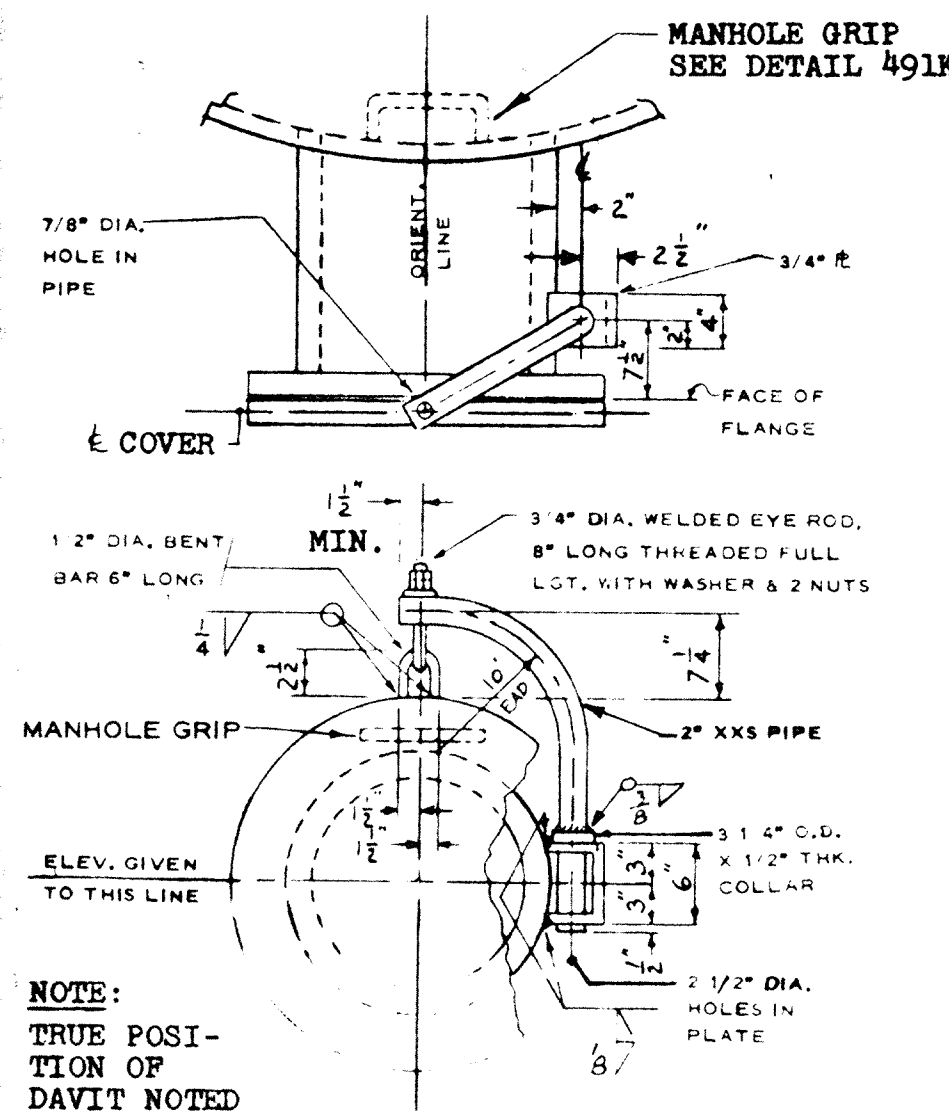
DETAIL 49IV  
VENT PIPES



DETAIL 491 R  
SKIRT TO BASE WELD

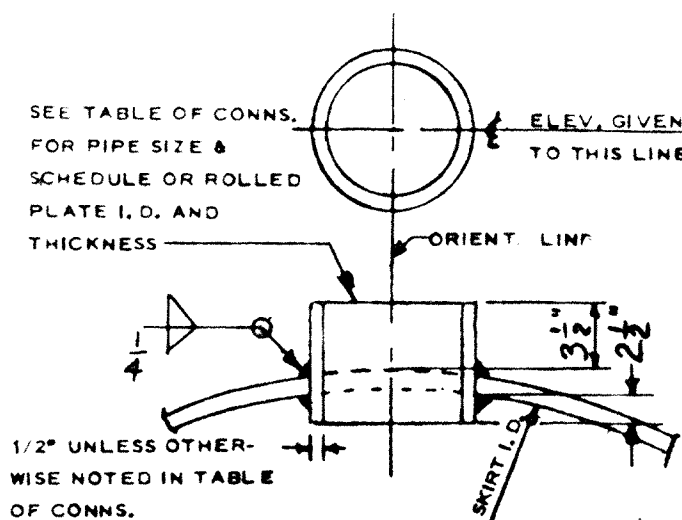


① DETAIL C  
LIFTING LUGS FOR HH-71

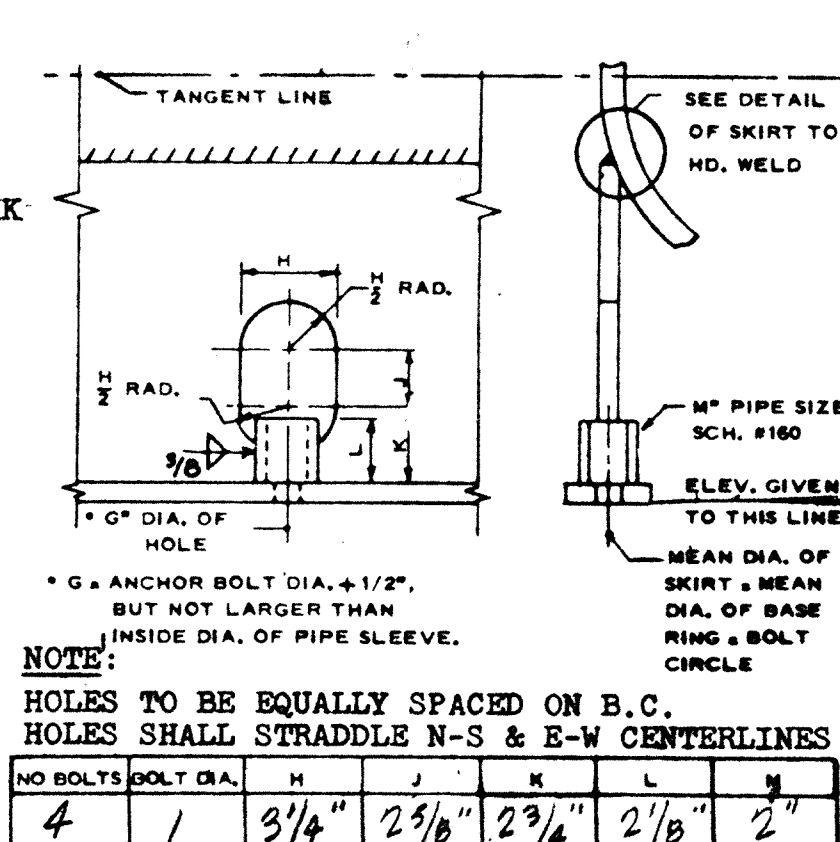


NOTE:  
TRUE POSI-  
TION OF  
DAVIT NOTED  
IN TABLE OF  
CONNECTIONS:

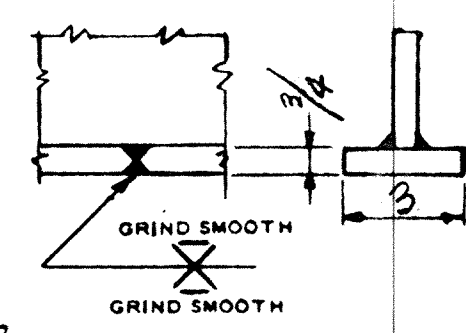
DETAIL 49IM  
DAVIT FOR SIDE MANHOLE



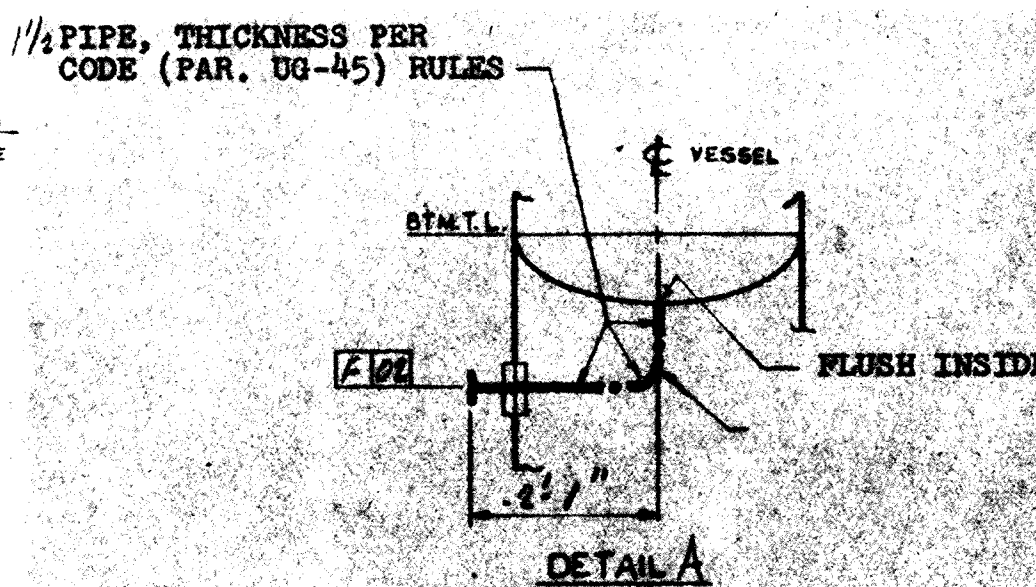
DETAIL 491E  
SKIRT SLEEVE & OR ACCESS OPENING



DETAIL 49IX  
SKIRT TO HD. WELD



DETAIL 491Q  
BASE RING



DETAIL A

TABLE OF CONNECTIONS

1. CONNECTIONS, MANHOLES, CLIPS, ETC. SHOWN IN MAIN ELEVATION ARE  
DIAGRAMMATIC ONLY, FOR TRUE CIRCUMFERENTIAL LOCATION AND  
ELEVATION SEE ORIENT AND ELEVATION GIVEN BELOW.

2. UNLESS OTHERWISE NOTED, THE DIMENSIONS FROM FACE OF FLANGE TO INSIDE  
OF VESSEL SHALL BE:

|        |                                                   |
|--------|---------------------------------------------------|
| 8 1/2" | IN. FOR 1 TO 3 IN. NOZZLES                        |
| 10"    | IN. FOR 4 TO 12 IN. NOZZLES                       |
| —      | IN. FOR 14 TO 20 IN. NOZZLES                      |
| 10"    | IN. FOR MANHOLES                                  |
| 1 1/2" | IN. FROM END OF ALL COUPLINGS TO INSIDE OF VESSEL |

| SAMPLE | SIZE  | RATING | FACING | SERVICE           | ORIENT   | ELEV.        | NOTES ON PIPING |
|--------|-------|--------|--------|-------------------|----------|--------------|-----------------|
| A      | 2     | 300    | RF     | HC OUT            | —        | 128'-10 1/2" | 16 1/2"         |
| B      | 1     | 300    | RF     | INTERFACIAL DRAIN | 225°     | 117'-6"      |                 |
| C      | 1     | 300    | RF     | INTERFACIAL DRAIN | 225°     | 116'-6"      |                 |
| D      | 1     | 300    | RF     | INTERFACIAL DRAIN | 225°     | 115'-6"      |                 |
| E      | 2     | 300    | RF     | HC IN             | 270°     | 103'-6"      | 11 1/4"         |
| F      | 1 1/2 | 300    | RF     | CAUSTIC IN ADJUT  | 180°     | 103'-9"      | 9 1/4"          |
| G      | 1     | 300    | RF     | VENT              | SEE PLAN | 123'-6 1/4"  | 6 1/4"          |
| H      | 1     | 300    | RF     | STEAMOUT          | 315°     | 105'-0"      |                 |
| AG     | 1     | 300    | RF     | LG                | 315°     | 120'-6"      |                 |
| BG     | 1     | 300    | RF     | LG                | 315°     | 118'-6"      |                 |
| CG     | 1     | 300    | RF     | LG                | 120°     | 107'-0"      |                 |
| DG     | 1     | 300    | RF     | LG                | 120°     | 105'-0"      |                 |
| MH-1   | 16    | 300    | RF     | MANHOLE           | 0°       | 116'-6"      | 27 1/2"         |
| MH-2   | 16    | 300    | RF     | MANHOLE           | 0°       | 107'-0"      | 27 1/2"         |
| MH-1   | 10    | 300    | RF     | MANHOLE           | 0°       | 110'-0"      | 27 1/2"         |
| C1     | 15"   |        |        | ASSIGN. COND.     | 0°       | 102'-3"      | 8 1/4"          |
| C2     | 8"    | SLH 40 |        | SKINFT SLEEVE     | 180°     | 103'-3"      | 8 1/4"          |

DETAIL B

WELD, THICKNESS PER  
CODE (PAR. UG-45) RULES

DETAIL A

[illegible]

|                              |      |        | BY OTHERS   |                  |
|------------------------------|------|--------|-------------|------------------|
|                              |      |        |             |                  |
|                              |      |        |             |                  |
|                              |      |        |             |                  |
|                              |      |        |             |                  |
|                              |      |        |             |                  |
|                              |      |        |             |                  |
|                              |      |        |             |                  |
| ELEV                         | TYPE | DETAIL | ORIENTATION | NOTES OR REMARKS |
| VESSEL EXTERNAL CLIP SUMMARY |      |        |             |                  |

|                       |         |
|-----------------------|---------|
| ② VESSEL CLIP SUMMARY | 419-A1  |
| ② VESSEL CLIP DETAILS | 497-B1  |
| INTE RNAL PIPING      | 449-B1  |
| PURCHASING SPEC       | E40-1F4 |

| MATERIAL SPECIFICATIONS & CODE |                                                | DESIGN DATA                        |                                          |
|--------------------------------|------------------------------------------------|------------------------------------|------------------------------------------|
| CONSTRUCTION COOF              | <i>ASME</i> UNFURRED PRESS VESSEL CODE         | WORKING PRESSURE                   | <i>300</i> PSI                           |
| SECTION                        | <i>VIII</i> 1959 EDITION <i>PLUS ADDENDA</i>   | DESIGN PRESSURE                    | <i>TOP 330</i> PSI<br><i>BTM 339</i> PSI |
| MATERIAL SPECIFICATION:        |                                                | WORKING TEMPERATURE                | <i>100</i> F                             |
| SHELL                          | <i>A285 GR. C, F80</i>                         | DESIGN METAL TEMPERATURE           | <i>100</i> F                             |
| HEADS                          | <i>A285 GR. C, F80</i>                         | CORROSION ALLOWANCE                | <i>1/8</i> IN                            |
| SKIRT                          | <i>A285 GR. C OR D, A7 OH, 35% MAX C</i>       | STRESS RELIEVING REQUIRED          | <i>NO</i>                                |
| SKIRT BASE RING                | <i>A285 GR. C OR D, A7 OH, 35% MAX C</i>       | RADIOGRAPHING REQUIRED             | <i>SPOT / CODE</i>                       |
| EXTERNAL CLIPS                 | <i>A181 GR. 1</i>                              | LONG JOINT EFFICIENCY              | <i>185</i> %                             |
| FORGED NOZZLE                  | <i>A181 GR. 1, A285 GR. C, F80</i>             | HEAD EFFICIENCY                    | <i>100</i> %                             |
| BUILT-UP NOZZLE FLG.           | <i>A181 GR. 1, A285 GR. C, F80</i>             | ALLOW. STRESS (AT DSGN METAL TEMP) | <i>13750</i> PSI                         |
| BUILT-UP NOZZLE NECK           | <i>A285 GR. C, F80, SMLS A53 OR A105 GR. B</i> | SHOP HYDRO TEST PRESSURE           | <i>669</i> PSI                           |
| BLIND FLANGES                  | <i>A181 GR. 1, A285 GR. C, F80</i>             | HAMMER TEST PRESSURE               | <i>NONE</i> PSI                          |
| COUPLINGS                      | <i>A181 GR. 1, SAE 1020</i>                    | FIELD HYDROSTATIC TEST PRESSURE    | <i>NONE</i> PSI                          |
| INTERNAL PLATES, CLIPS         | <i>A285 GR. C OR D, A7 OH, 35% MAX C</i>       | AT BOTTOM KNUCKLE RADIUS           | <i>NONE</i> PSI                          |
| INTERNAL PIPING                | <i>SMLS A53</i>                                | ERECTION WEIGHT                    | <i>0 7,100</i> LB                        |
| PRESSURE BOLTING               | <i>GRP B</i>                                   | OPERATING WEIGHT                   | <i>16,300</i> LB                         |
| NON-PRESSURE BOLTING           | <i>GRP A</i>                                   | WEIGHT FULL OF WATER               | <i>15,800</i> LB                         |
| GSKT FOR NH AND BLIND          | <i>TYPES 40F</i>                               | PAINTING REQUIRED                  | <i>ONE SHOP COAT OF</i>                  |
| FLANGED CONNECTIONS            |                                                | <i>RUST INHIBITIVE PRIMER</i>      |                                          |
| NON-PRESSURE GSKT              | <i>TYPE 1AA</i>                                |                                    |                                          |
| INSULATION                     |                                                |                                    |                                          |
| FIREPROOFING                   |                                                |                                    |                                          |
|                                |                                                | ⊙ EXCLUDES                         | <i>1250</i> LB, FOR <i>R-RING</i>        |

SPECIFIC NOTES

(ALL NOTES LISTED HEREUNDER SHALL APPLY ONLY IF CALLED FOR BY NUMBER ELSEWHERE ON THIS DRAWING.)

- |                                                                                                         |                                                       |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| [1] SUPPLY PLUG FOR COUPLING                                                                            | [2] SUPPLY BLIND FLANGE BOLTS & GASKET                |
| [3] DRILL & TAP BLIND FLANGE FOR 3/4" NPT                                                               | [4] SEE DWG. <b>419-B</b>                             |
| [5] SUPPLY DAVIT, SEE DETAIL 491N                                                                       | [6] SUPPLY MANHOLE GRIP, SEE DETAIL 491K              |
| [7] USE PAD TYPE CONNECTION                                                                             | [8] SEE DETAIL 491E                                   |
| [9] SEE PLAN                                                                                            | [10] WITH INTERNAL PIPE NIPPLE SEE DETAIL             |
| [11] WITH INTERNAL PIPING                                                                               | [12] ATTACH INTERMEDIATE HEAD PER CODE FIG. UW-13 (F) |
| [13] DAVIT ON RIGHT SIDE FACING MANHOLE                                                                 | [14] MAINTAIN CENTER TO CENTER DISTANCE               |
| [15] DAVIT ON LEFT SIDE FACING MANHOLE                                                                  | [16] WITH INTERNAL HOOD BAFFLE, SEE DETAIL 491A       |
| [17] SUPPLY HINGE, SEE DETAIL 491Y                                                                      | [18] CONNECTION IS LOCATED IN CENTER OF TOP HEAD      |
| [19] HINGE ON RIGHT SIDE FACING MANHOLE                                                                 | [20] CONNECTION IS LOCATED IN CENTER OF BOTTOM HEAD   |
| [21] HINGE ON LEFT SIDE FACING MANHOLE                                                                  | [22] WITH ANTI-SWIRL BAFFLE, SEE DETAIL 491B          |
| [23] ELEVATION GIVEN IS TO FACE OF FLANGE                                                               | [24] SEE SECTION A-A                                  |
| [25] CONN. IS LOCATED IN CENTER OF HEAD                                                                 | [26] <b>PROVIDE LIFTING LUGS-DET C.</b>               |
| [27] SUPPLY BLIND FLANGE, BOLTS & GASKET, DAVIT (DETAIL 491M) & GRIP (DETAIL 491P)                      |                                                       |
| [28] NOZZLE SIZE LISTED IS MINIMUM I.D. OF UNLINED OR LINED NECK                                        |                                                       |
| [29] SADDLE CLIPS ARE REQ'D AT THIS SADDLE SUPPLY, SEE DETAIL 491L                                      |                                                       |
| [31] INSULATION SUPPORTS ARE FURNISHED BY VESSEL VENDOR, SEE                                            |                                                       |
| [32] SKIRT TO BE FIREPROOFED ON OUTSIDE AND INSIDE, FIREPROOFING SUPPORTS ARE BY VESSEL FABRICATOR, SEE |                                                       |
| [33] USE THIS INFORMATION FOR QUOTATION PURPOSES ONLY.                                                  |                                                       |
| [34] <b>CONNECTION IS LOCATED IN CENTER OF BOTTOM HEAD &amp; PIPED OUT THRU SKIRT, SEE DET. A</b>       |                                                       |

## GENERAL NOTES

(ALL NOTES LISTED HEREUNDER APPLY TO THIS VESSEL)

- A. ALL MATERIAL SHOWN ON THIS DWG. IS TO BE FURNISHED BY THE VESSEL VENDOR UNLESS OTHERWISE NOTED.
- B. SUBSTITUTION OF MATERIALS WILL NOT BE ALLOWED WITHOUT M.W. KELLOGG COMPANY'S PRIOR APPROVAL. THIS APPROVAL CAN ONLY BE OBTAINED AT THE TIME VESSEL VENDOR SUBMITS HIS QUOTATION.
- C. FOR ALL UNIFIED MANHOLES, THE INSIDE DIAMETER SHALL BE EQUAL TO THE SIZE SPECIFIED IN TABLE OF CONNECTIONS.

|                                                                                                                      |                                                                   |                                      |                                                                                                            |        |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------|--------|
| X CHECKED FOR<br>DESIGN DATA<br>MATERIAL<br>SPECIFICATIONS,<br>AND ORDERING<br>OF MATERIAL<br>ONLY, DATED<br>1-12-62 | <div>DESCRIPTIVE<br/>NORTH<br/>0°<br/>270°<br/>90°<br/>180°</div> |                                      | NUMBER OF VESSELS REQUIRED <u>ONE</u>                                                                      |        |
|                                                                                                                      | SCALE: —                                                          |                                      | THE M. W. KELLOGG CO.<br>ADMINISTRATION BUILDING 151 COMMERCIAL AVENUE<br>BOSTON, MASSACHUSETTS<br>1-12-62 |        |
|                                                                                                                      | DRAWN: <u>MT</u>                                                  | EXPANSION OF THE LA. T. & M. COMPANY |                                                                                                            |        |
|                                                                                                                      | CHECKED: <u>P.M.</u>                                              |                                      |                                                                                                            |        |
|                                                                                                                      | APPROVED: <u>LT</u>                                               | PROPANE LPG CAUSTIC WASH TOWER       |                                                                                                            |        |
|                                                                                                                      | DATED: 1-12-62                                                    |                                      |                                                                                                            |        |
|                                                                                                                      | ISSUED FOR<br>FABRICATION<br>1-12-62                              | 409E                                 | 5369-X90-100                                                                                               | 419-D1 |
|                                                                                                                      | ISSUED FOR<br>CONSTRUCTION                                        |                                      |                                                                                                            |        |