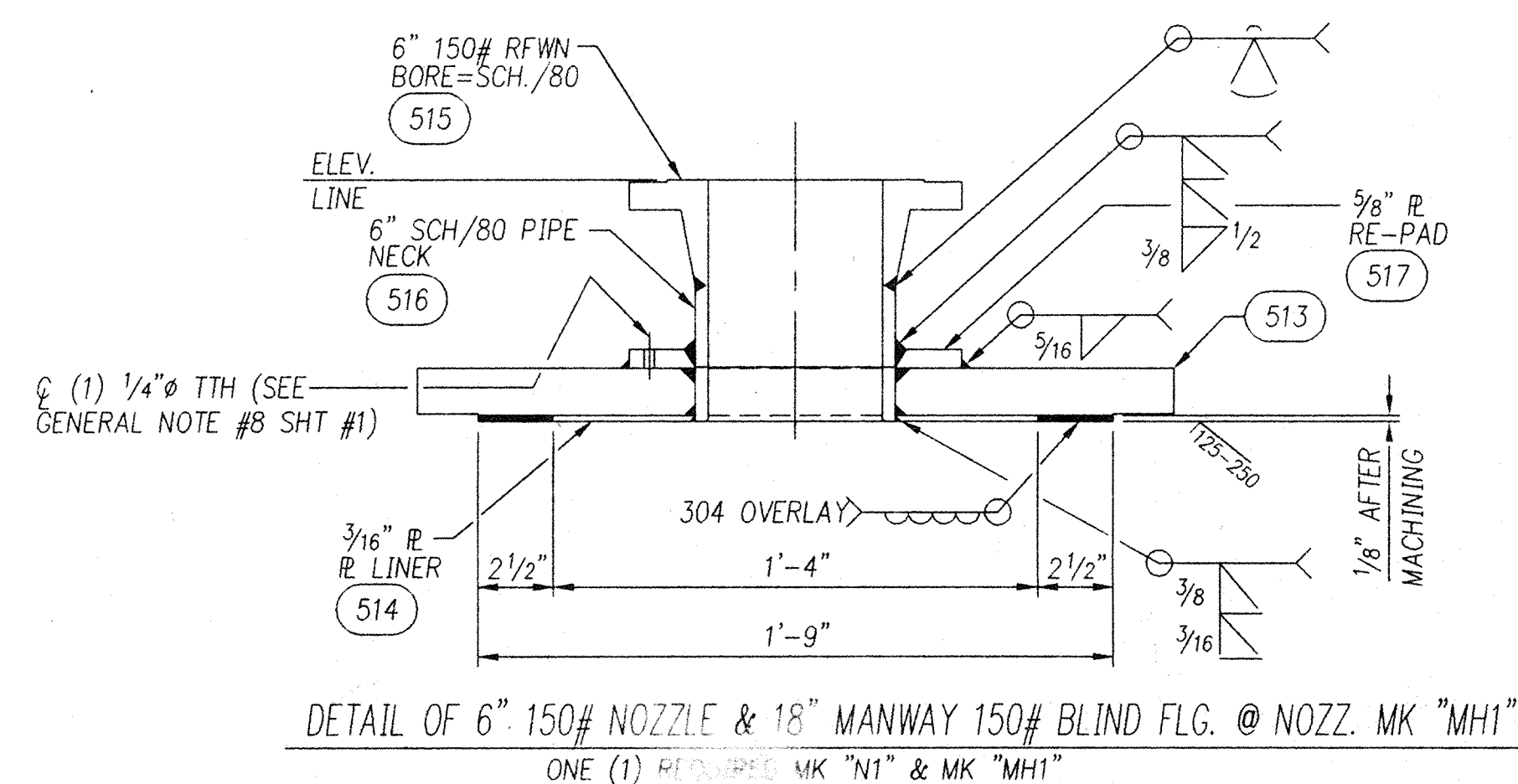
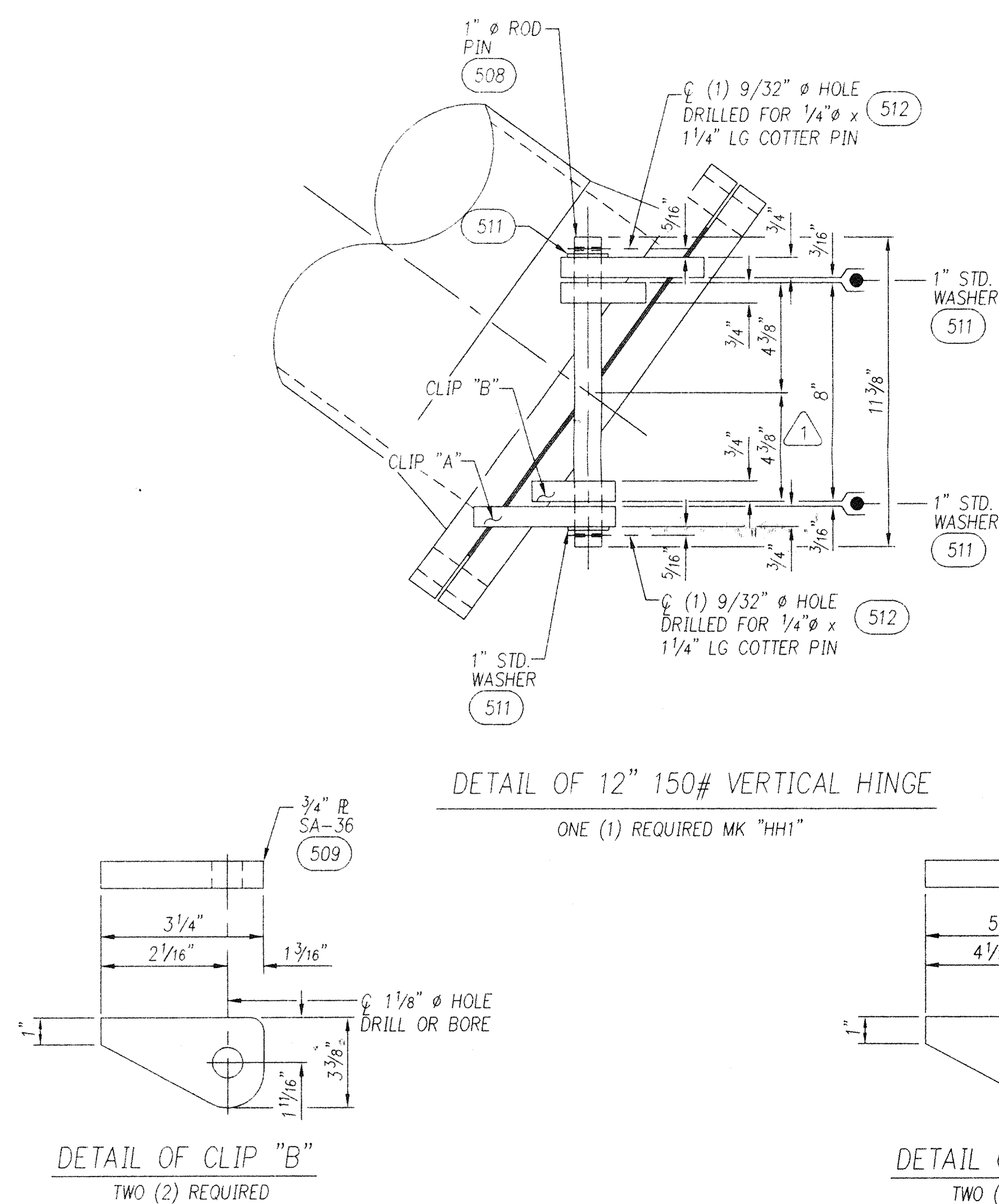
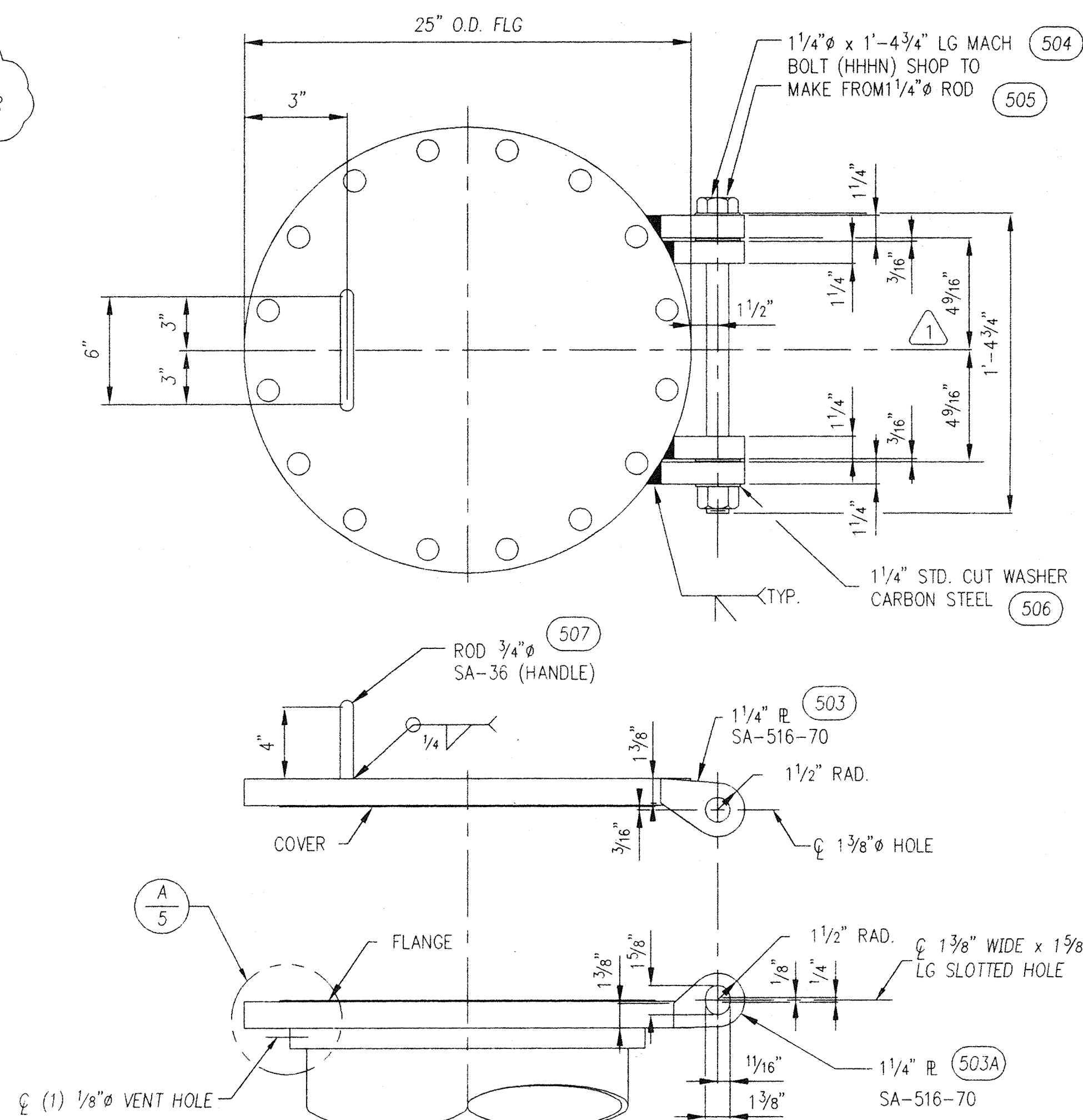
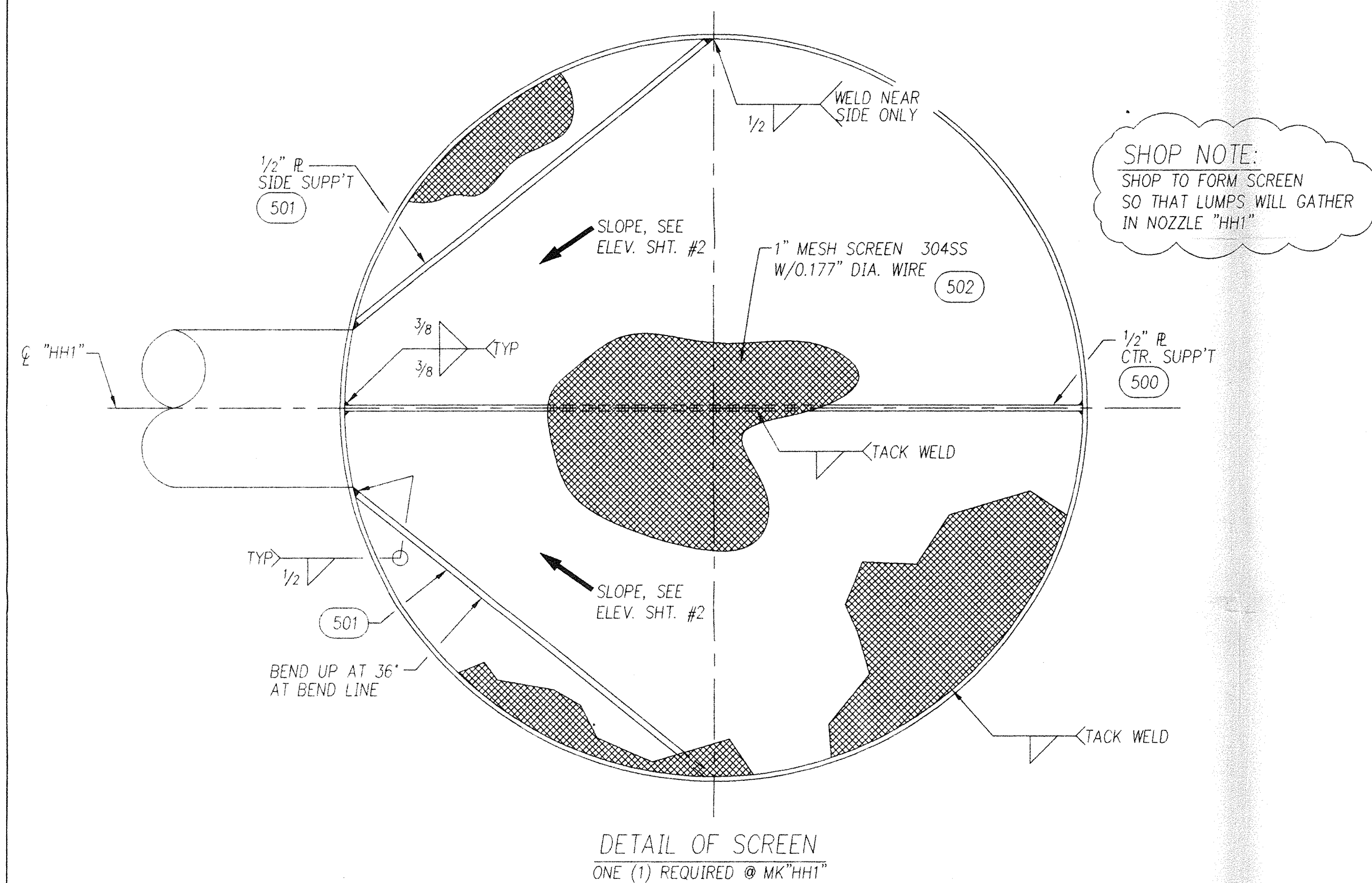
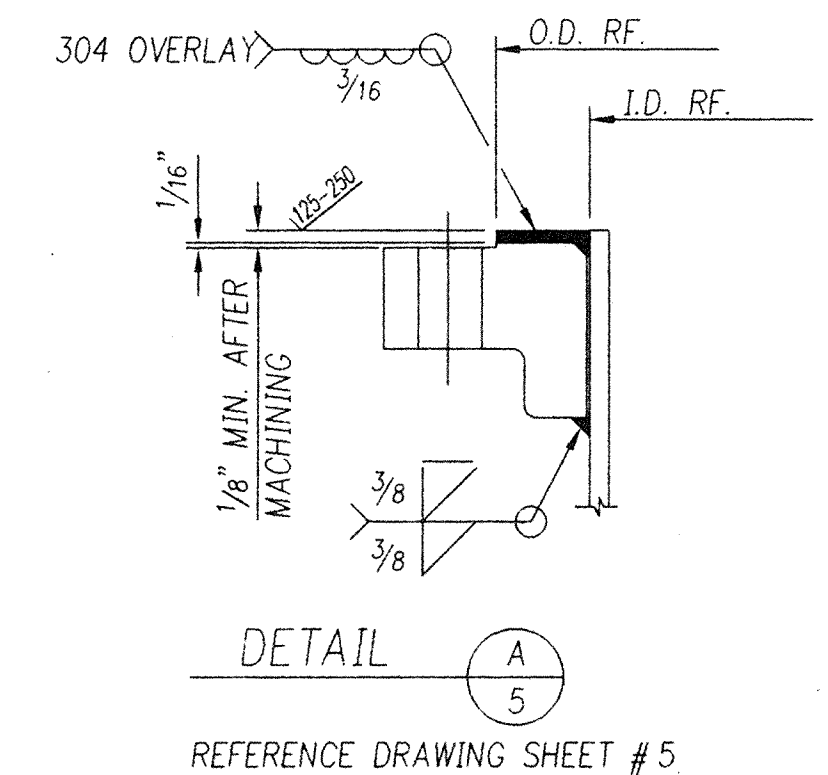




BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MATERIAL	REMARKS
500	1	1/2" R x 3" x 80"	SA-240-304	
501	2	1/2" R x 3" x 48"	SA-240-304	
502	1	1" MESH SCREEN 0.177" DIA. WIRE x 76" DIA.	SA-240-304	TRIM TO FIT
503	2	1 1/4" R x 3" x 4 3/4"	SA-36	
503A	2	1 1/4" R x 3" x 5 1/2"	SA-36	
504	1	1 1/4"ø x 16 3/4" LG MACH BOLT x 15"	SA-36	
		(HHHN) SHOP TO MAKE FROM 1 1/4"ø ROD		
505	1	1 1/4" ø HVY. HEX. NUT	SA-194-2H	
506	2	1 1/4"ø STD. CUT WASHER	C.S.	
507	1	3/4" ø ROD x 14" LG	SA-36	
508	1	1" ø ROD x 12"	SA-36	PIN (GALV.)
509	2	3/4" R x 3 1/4" x 3 3/8"	SA-36	CLIP "A"
510	2	3/4" R x 3 3/8" x 5 1/4"	SA-36	CLIP "B"
511	4	1" STD. CUT WASHER	C.S.	WASHER (GALV.)
512	2	1/4" ø x 1 1/4" LG COTTER PIN	S.S.	
513	1	18" 150# FF BLIND FLANGE	SA-105	"N1"
514	1	3/16" R x 16" DIA.	SA-240-304	"MH1" LINER
515	1	6" 150# RFWN BORE=SCH./80	SA-182-F304	"N1"
516	1	6" SCH./80 PIPE x 5" LG	SA-312-TP304	"N1"
517	1	5/8" R x 6 5/8" ID x 11" OD	SA-240-304	"N1" RE-PAD



CERTIFIED FOR FABRICATION
BY: RMS *RMS* DATE: 6/28/95

**ACCEPTANCE
FOR ENGINEERING USE**

THIS DOCUMENT IS:

ACCEPTED _____ (AC) ☒

ACCEPTED WITH COMMENTS (AC-C) _____

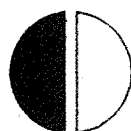
NOT REVIEWED-ACCEPTED (NR) _____

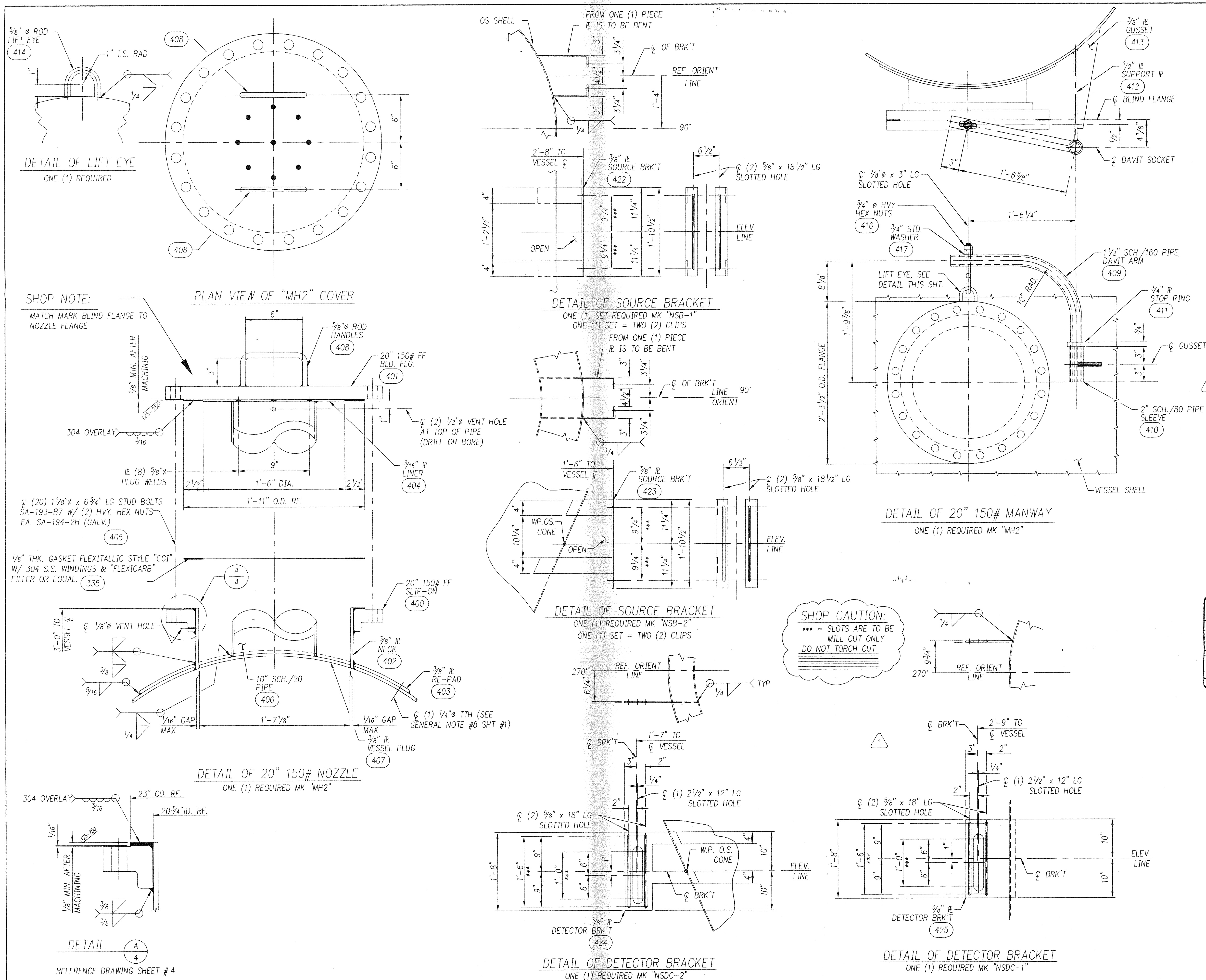
NOT ACCEPTED (NAC) _____

ACCEPTANCE DOES NOT RELIEVE VENDOR
FROM FURNISHING MATERIAL IN
CONFORMANCE WITH ORDER. REFER TO
VD-1 FOR FULL DEFINITION OF
ACCEPTANCE CONDITIONS

DIVISION 11 SIGNED W. E. [Signature]
DATE 11/1/79

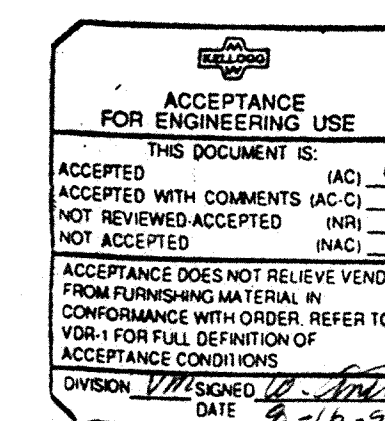
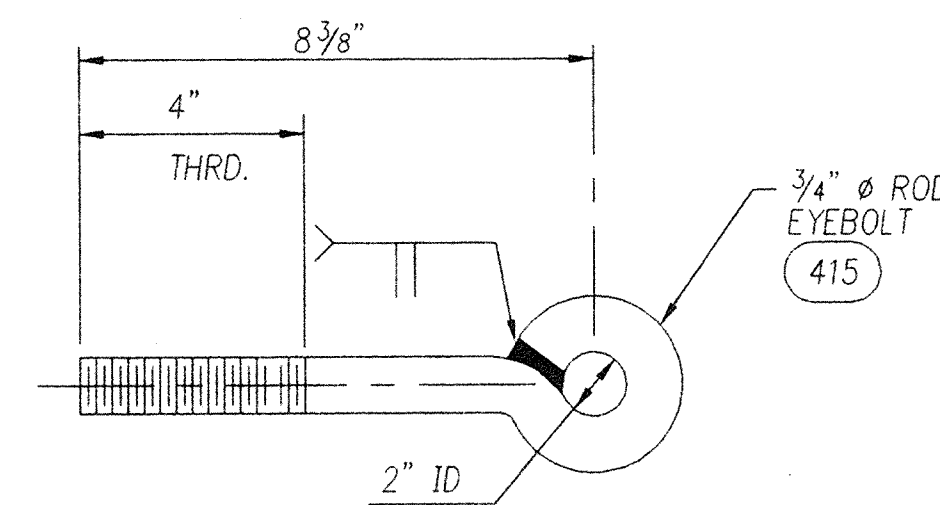
2	REV. P.O. No. [IN TITLE BLOCK]	BW	RMS	8/12/95
1	REV. TITLE BLOCK & AS NOTED	BW	RMS	8/2/95
0	A. F. C.	BL	RS	6/28/95
A	FOR CUSTOMER'S APPROVAL	BL	JAL	5/19/95
NO.	REVISIONS	MADE BY	CHK'D BY	DATE

 OFFENHAUSER COMPANY HOUSTON TEXAS	PRINT RECORD		
	DATE	FOR	NO.
CUSTOMER: M.W. KELLOGG / PSPC			
PURCHASE ORDER NO.: 6014-02D1-D413-01			
PROJECT NO.: GPH-1			
LOCATION: PASADENA, TEXAS			
DESCRIPTION: WTT # 95001997 60" I.D. x 11'-6 1/2" SEAM TO FLG. FACE SEED POWDER SERVICE DRUM MANWAY DAVIT & MISC DETAILS	SHOP ORDER NO.: 5753		
	DRAWING NO.: 95-5753L		
	SCALE: NONE QUANTITY: AS-NOTED SHEET REV.		
ITEM NO.: PS-2000-220000 - 95-5039	DRAWN BY: BL CHK'D BY: JAL DATE: 5/17/95 5 OF 5 2		



BILL OF MATERIALS

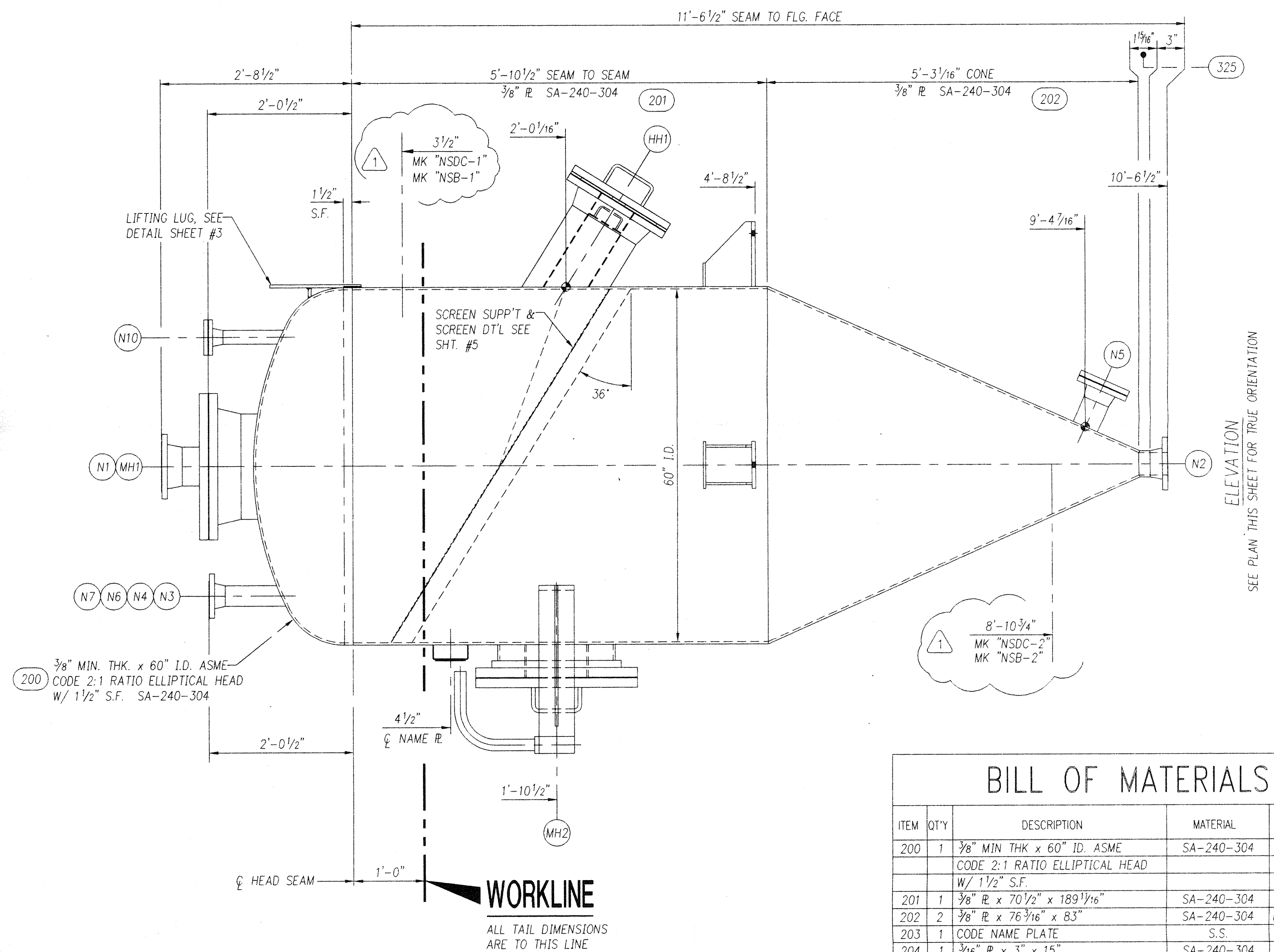
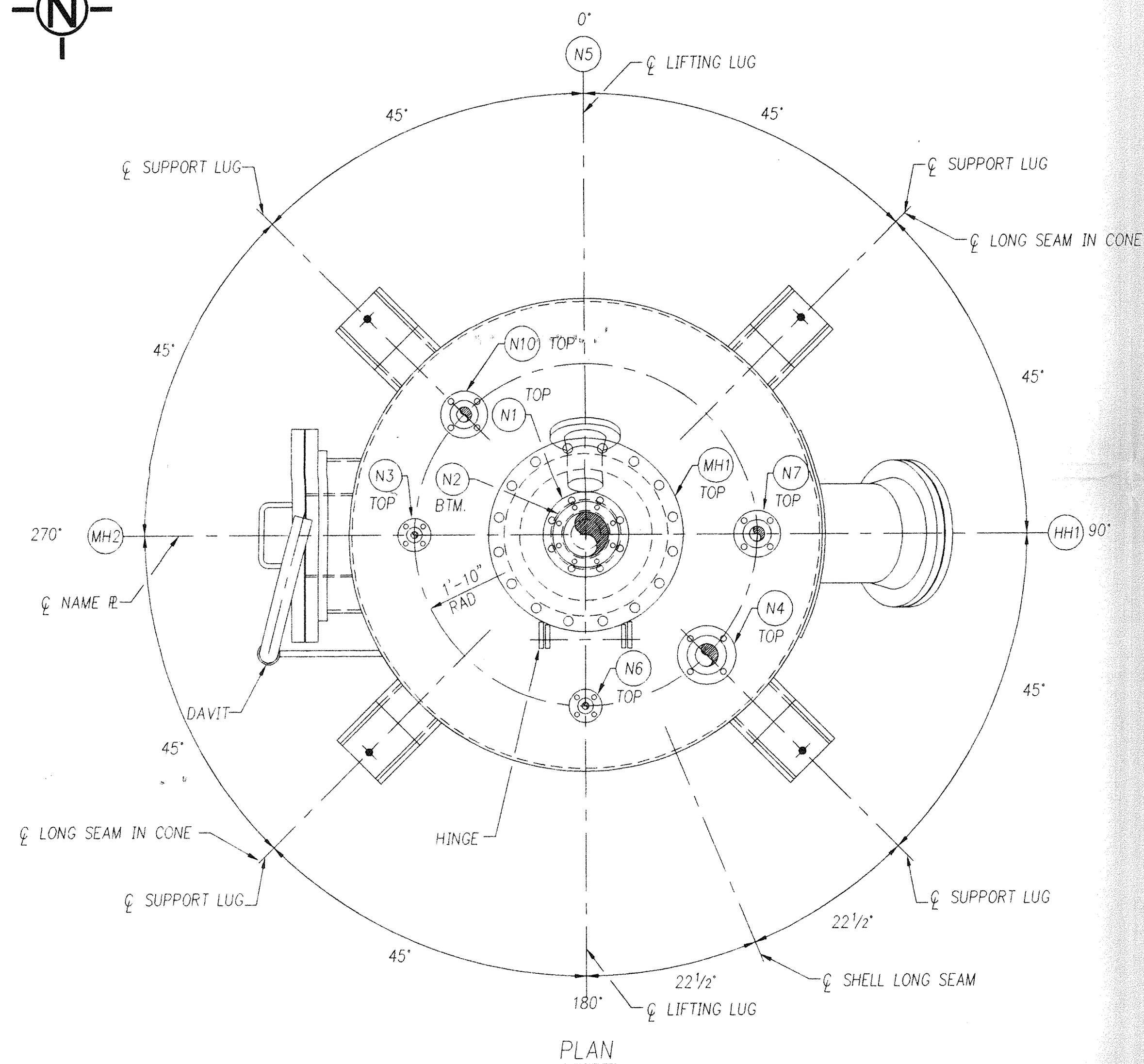
ITEM	QTY	DESCRIPTION	MATERIAL	REMARKS
400	1	20" 150# FF SOF	SA-105	"MH2"
401	1	20" 150# FF BLIND	SA-105	"MH2"
402	1	3/8" R x 9" x 62"	SA-240-304	"MH2"
403	1	3/8" R x 20" I.D. x 34" O.D.	SA-240-304	"MH2" RE-PAD
404	1	3/16" R x 18" DIA.	SA-240-304	"MH2" LINER
405	20	1 1/8" Ø x 6 3/4" LG STUD BOLTS	SA-193-B7	GENERAL NOTE #12
		W/ (2) HVY HEX NUTS EA.	SA-194-2H	GENERAL NOTE #12
406	1	10" SCH./20 PIPE x 6 1/2" LG	SA-240-304	
407	1	3/8" R x 21 1/8" x 21 1/8"	SA-36	DROP FROM SHELL
408	2	3/8" Ø ROD x 12 1/2" LG	SA-36	HANDLES
409	1	1 1/2" SCH./160 PIPE x 39"	SA-106-B	DAVIT ARM
410	1	2" SCH./80 PIPE x 6" LG	SA-106-B	SLEEVE
411	1	3/4" R x 1 1/2" I.D. x 3" O.D.	SA-36	STOP RING
412	1	1/2" R x 6" x 15 9/16"	SA-240-304	SUPPORT R
413	1	3/8" R x 4" x 18 3/4"	SA-240-304	GUSSET R
414	1	3/8" Ø ROD x 6 1/8"	SA-36	LIFT EYE
415	1	3/4" Ø ROD x 15 1/4"	SA-36	EYEBOLT (GALV.)
416	2	3/4" Ø HVY HEX NUTS	SA-194-2H	GALV.
417	1	3/4" STD CUT WASHER	C.S.	WASHER (GALV.)
418	1	4" 150# RF BLIND	SA-182-F304	"NS"
419	8	3/8" Ø x 4" LG STUD BOLTS	SA-193-B7	(GALV.)
		W/ (2) HVY HEX NUTS EA.	SA-194-2H	(GALV.)
420	1	2" 150# RF BLIND	SA-182-F304	"N10"
421	4	3/8" Ø x 3 1/2" LG STUD BOLTS	SA-193-B7	(GALV.)
		W/ (2) HVY HEX NUTS EA.	SA-194-2H	(GALV.)
422	2	3/8" R x 14" x 23" (B.T.S.)	SA-240-304	"NSB-1"
423	2	3/8" R x 19" x 23" (B.T.S.)	SA-240-304	"NSB-2"
424	1	3/8" R x 19" x 20" (CUT AS SHOWN)	SA-240-304	"NSDC-2"
425	1	3/8" R x 8" x 20" (CUT AS SHOWN)	SA-240-304	"NSDC-1"



CERTIFIED FOR FABRICATION

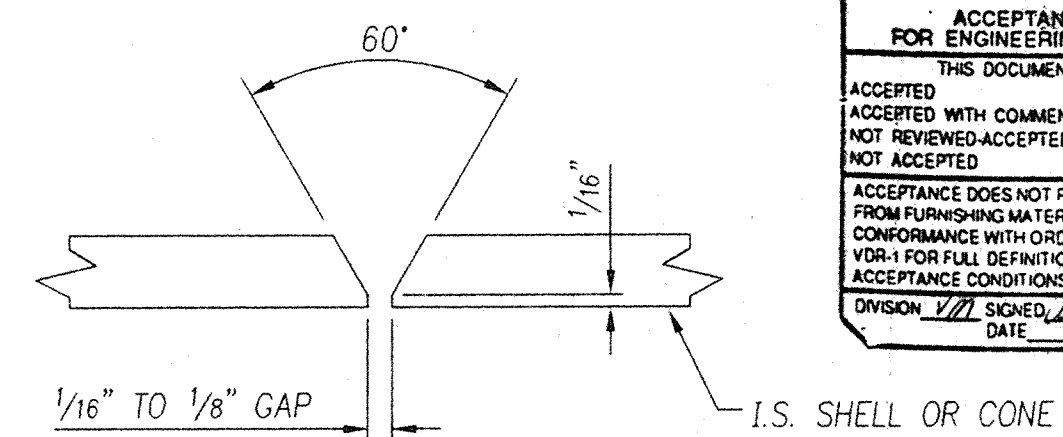
BY: RMS DATE: 6/28/95

NO.	REVISIONS	MADE BY	CHK'D BY	DATE
2	REV. P.O. No. IN TITLE BLOCK	BW	RMS	8/12/95
1	REV. TITLE BLOCK & ADDED CLIPS AS NOTED	BW	RMS	8/2/95
0	A. F. C.	BL	RS	6/28/95
A	FOR CUSTOMER'S APPROVAL	BL	JAL	12/19/94
PRINT RECORD				
CUSTOMER: M.W. KELLOGG / PSPC		DATE	FOR	NO.
PURCHASE ORDER NO.: 6014-02D1-D413-01				
PROJECT NO.: GPH-1				
LOCATION: PASADENA, TEXAS				
DESCRIPTION: WTT #95001997 60" I.D. x 11'-6 1/2" SEAM TO FLG. FACE SEED POWDER SERVICE DRUM MANWAY & DAVIT DETAILS		SHOP ORDER NO.: 5753		
ITEM NO.: PS-2001-220000 - 95-5039		DRAWING NO.: 95-5753L		
SCALE: NONE		QUANTITY: AS-NOTED	SHEET	REV.
DRAWN BY: BL		CHK'D BY: JAL	4 OF 5	2
		DATE: 5/17/95		



ITEM	QTY	DESCRIPTION	MATERIAL	REMARKS
200	1	3/8" MIN THK x 60" ID. ASME CODE 2:1 RATIO ELLIPTICAL HEAD W/ 1 1/2" S.F.	SA-240-304	
201	1	3/8" R x 70 1/2" x 189 1/16"	SA-240-304	
202	2	3/8" R x 76 3/16" x 83"	SA-240-304	MAKE IN (2) GORES
203	1	CODE NAME PLATE	S.S.	
204	1	3/16" R x 3" x 15"	SA-240-304	
205	1	3/16" R x 7 1/2" x 15"	SA-240-304	

	OFFENHAUSER COMPANY HOUSTON TEXAS		PRINT RECORD		
			DATE	FOR	NO.
CUSTOMER: M.W. KELLOGG / PSPC					
PURCHASE ORDER NO.: 6014-02D1-D413-01					
PROJECT NO.: GPH-1					
LOCATION: PASADENA, TEXAS					
DESCRIPTION : WTT #95001997 60" I.D. x 11'-6 1/2" SEAM TO FLG. FACE SEED POWDER SERVICE DRUM PLAN, ELEVATION, & DETAILS			SHOP ORDER NO.: 5753		
ITEM NO.: PS-2001-220000 - 95-5039			DRAWING NO.: 95-5753L		
SCALE: NONE		QUANTITY: AS-NOTED	SHEET	REV.	
DRAWN BY: BL	CHK'D BY: JAL	DATE: 12/13/94	<u>2</u>	OF <u>5</u>	<u>2</u>



TYPICAL GIRTH SEAM DETAIL

BY: RMS RMS DATE: 6/28/95

Code name plate stamping form with fields for Vessel, MWP, Temp, and other specifications.

CODE NAME PLATE STAMPING

Customer name plate stamping form with fields for M.A.W. Press, MFR Serial No, and other details.

CUSTOMER NAME PLATE STAMPING

ALL LETTERING ON CUSTOMER NAME PLATE SHALL BE A MIN. OF 5/32" HIGH
NOTE: KELLOGG TO SUPPLY CLIENTS NAME PL

Table with 2 columns: CATEGORY, WPS NUMBERS. Rows include PRESSURE ENVELOPE, ATTACHMENTS, and SUPPORTS.

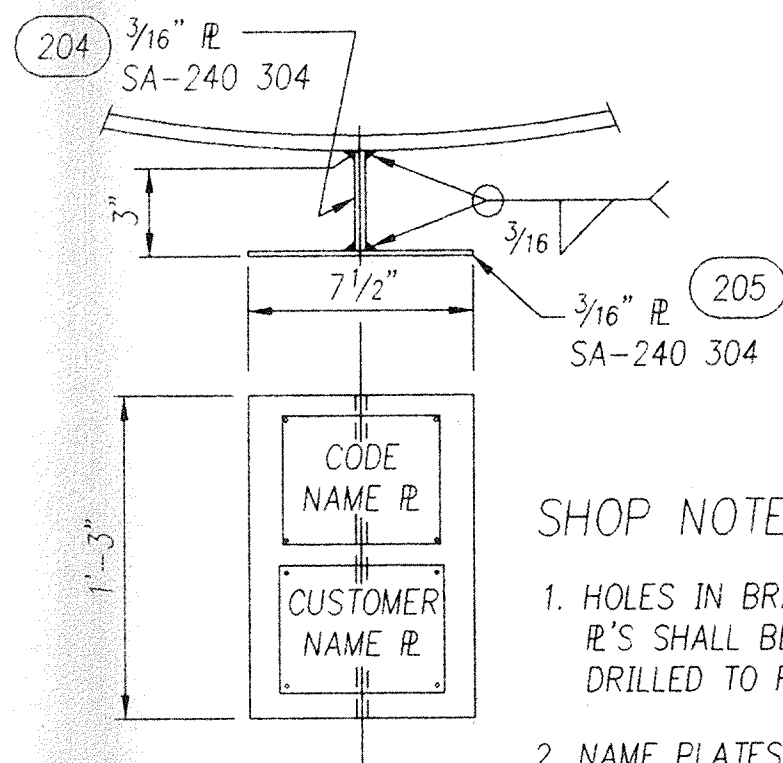
WELDING PROCEDURES

Large table with columns for NOZZLE SCHEDULE, including NO, SIZE, RATING, SCHEDULE, NECK MT'L, TYPE, and SERVICE.

NOZZLE SCHEDULE

MATERIAL SPECIFICATION

- M1. SHELL : SA-240-304
- M2. HEADS : SA-240-304
- M3. CLADDING : N/A
- M4. FLANGES : SA-182-F304, SA-105 W/304 OVERLAY
- M5. PIPE NOZZLE NECKS : SA-312-TP304
- M6. REINFORCING PADS : SA-240-304
- M7. PRESSURE BOLTING : SA-193-B7 GALV. NUTS : SA-194-2H GALV. (SEE GEN. NOTE #12)
- M8. GASKETS : FLEXITAC W/304 SS WINDINGS & FLEXICARB
- M9. INTERNALS : 304 S.S.
- M10. BASE PLATE : N/A
- M11. SUPPORT LUGS : SA-240-304
- M12. STIFFENER RINGS : SA-240-304
- M13. PAINT PER : SEE GENERAL NOTE #3
- M14. TRAYS : N/A
- M15. TRAYS SUPPORT : N/A
- M16. INTERNAL BOLTING : N/A



DETAIL OF NAME PLATE BRACKET

SHOP NOTES:

- 1. HOLES IN BRACKET & NAME PL'S SHALL BE 3/16" DRILLED TO FIT NAME PL
- 2. NAME PLATES SHALL BE ATTACHED TO BRACKET WITH STAINLESS STEEL RIVETS

DESIGN DATA

- D1. CONSTRUCTION TO BE IN ACCORDANCE WITH THE ASME CODE SECTION VIII DIV 1 1992 EDITION INCLUDING LATEST MANDATORY ADDENDA
- D2. CUSTOMER SPECIFICATION : SEE GENERAL NOTE #2 THIS SHEET
- D3. DESIGN CONDITIONS : VESSEL @ TEMP. INTERNAL : 199 PSIG @ 176 °F
- D4. OPERATING CONDITIONS : *** PSIG @ 122 °F (*** = MAX 114, NORMAL 1.4)
- D5. ALLOWABLE STRESS : 18,040 PSI @ 176 °F
- D6. CORROSION ALLOWANCE : SHELL / HEADS : .0000"
- D7. RADIOGRAPHY : FULL (RT-1)
- D8. HEAT TREATMENT : NO
- D9. LONG JOINT EFFICIENCY : SHELL : 100% HEADS : 100%
- D10. M.A.W. @ DESIGN TEMPERATURE : 203 PSIG LIMITED BY : BTM. HD.
- D11. MAP NEW & COLD : 213 PSIG LIMITED BY : BTM. HD.
- D12. HYDROSTATIC TEST PRESSURE : 319 PSIG CHART REQUIRED : YES
- D13. INSPECTION BY : COMMERCIAL UNION & CLIENT
- D14. WIND DESIGN : 90 MPH IMP. FACTOR : 1.11
- D15. SEISMIC DESIGN : ASCE / ANSI A58.1 ZONE : 0
- D16. VESSEL WEIGHTS : FABRICATED : 5,137 LBS. OPERATING : 8,996 LBS. TEST : 15,806 LBS.
- D17. INSULATION THICKNESS : NO

NDE NOTES

- 1. AUSTENITIC ALLOY (NORMALLY NON-MAGNETIC) SHALL BE CONFIRMED BY A MAGNETIC CHECK. ANY MATERIALS SHOWING POSITIVE MAGNETIC RESULTS SHALL BE CHECKED BY SUITABLE ANALYTICAL METHODS TO ASSURE COMPLIANCE WITH MATERIAL SPECIFICATIONS.

WELDING INFORMATION

FOR ADDITIONAL WELDING INFORMATION, SEE PHILLIPS QUALITY CONTROL PROCEDURE QCP-95-1A, REVISION 11, DATED AUG 30, 1988.

- 1. THE FOLLOWING WELDING DOCUMENTATION REQUIRED FOR CUSTOMER'S APPROVAL BEFORE START OF FABRICATION:
 - a) WELDING PROCEDURE SPECIFICATIONS
 - b) PROCEDURE QUALIFICATION RECORDS
 - c) WELD MAP IS REQ'D
- 2. WELDING PROCEDURES NOT REVIEWED AND UPDATED WITHIN THE LAST FIVE (5) YEARS WILL NOT BE ACCEPTED.

GENERAL NOTES

- 1. FLANGE BOLT HOLES TO STRADDLE CENTERLINES PARALLEL TO VESSEL CENTERLINES UNLESS OTHERWISE NOTED.
- 2. CUSTOMER SPECIFICATIONS:
 - PHILLIPS ENGINEERING STANDARD 20.02-1 REV. NO 20 DATED 12-90,
 - 20.01-1 REV. NO 5 DATED 2-88, QCP-95-1A REV 11 DATED AUG.30 1988,
 - M.W. KELLOGG TECHNICAL STANDARD E40-1F-6014 DATED MAR 1993
 - M.W. KELLOGG GENERAL WELDING REQUIREMENT 4-7TS-6014 DATED MAR 1993.
- 3. CARBON STEEL FLANGES & BLIND FLG. "ONLY" TO BE SANDBLASTED PER SP-10 NEAR WHITE-METAL W/ ANCHOR PROFILE OF 2.0 TO 2.5 MILS. APPLY TWO (2) COATS OF AMINE ADDUCT CURED EPOXY (F3) EA. COAT SHALL HAVE A D.F.T OF 5.0. TO 6.0 MILS TOTAL D.F.T. OF 10.0 TO 12.0 MILS (COLOR IVORY FIRST COAT & LIGHT GRAY SECOND COAT)
- 4. PRESSURE VESSEL DIMENSIONAL TOLERANCES SHALL BE IN ACCORDANCE WITH PHILLIPS ENGINEERING STANDARD 20.02-2 PAGE 1 OF 1 REVISION NO. 4 DATED 6-79.
- 5. THE PURCHASER REQUIRES SHOP INSPECTION OF THE VESSEL. OFFENHAUSER SHALL NOTIFY THE PURCHASER AT LEAST FIVE (5) DAYS BEFORE STARTING FABRICATION, AND FIVE (5) DAYS BEFORE FINAL HYDROSTATIC TEST. HYDRO TEST PRESSURE SHALL BE HELD FOR AT LEAST ONE (1) HOUR. VESSEL SHALL BE CLEANED AND FREE OF ALL WELDING SLAG AND FLUX, WELD ROD STUBS, LOOSE SCALE, DIRT, AND DEBRIS BEFORE HYDRO.
- 6. PIPING COMPONENTS (NOZZLES, ETC.) SHALL BE FROM ACCEPTABLE MANUFACTURERS AS LISTED IN QC PROCEDURE QCP-00-0 AND IDENTIFIED WITH LOGOS AND MARKINGS PER ASTM/MSS SP-25 REQUIREMENTS.
- 7. ALL PIPE AND PLATE COMPONENTS, INCLUDING VESSEL LIFTING LUGS, SHALL BE MARKED AND DOCUMENTED BY CERTIFIED MILL TEST REPORTS (MTR'S).
- 8. NOZZLE REINFORCING PAD(S) SHALL BE TESTED AT 15 PSIG WITH DRY AIR AND CHECKED FOR LEAKS. TEST HOLES IN REINFORCING PADS SHALL BE PLUGGED WITH HEAVY GREASE AFTER TEST. WELDS IN SEGMENTED TWO PIECE CONSTRUCTION REINFORCEMENT PADS SHALL BE IN THE VESSEL'S CIRCUMFERENTIAL DIRECTION.
- 9. FLANGED OPENINGS SHALL BE PROTECTED AND MADE WATERPROOF WITH PLASTIC FLANGE COVERS OR FULL SIZE .134" (10 USS GAGE) MIN. THK. STEEL COVERS AND 1/8" THK. RUBBER GASKET BETWEEN THE FLANGE FACE AND COVER. WHEN STEEL FLANGE COVERS ARE FURN. THEY SHALL BE SECURED WITH APPROPRIATELY SIZED MACHINE BOLTS AS FOLLOWS: FOR FLANGES 4 TO 28 BOLT HOLES, A BOLT SHALL BE PLACED IN AT LEAST EVERY OTHER HOLE, WITH A MIN. OF 4 BOLTS FOR FLANGES HAVING MORE THAN 28 BOLT HOLES, BOLTS SHALL BE PLACED IN AT LEAST EVERY FOURTH BOLT HOLE.
- 10. FOR BLINDED CONNECTION ONLY: THREE (3) GASKETS REQUIRED: ONE (1) FOR TEST SHIPPED IN PLACE, TWO (2) GASKETS TO BE BOXED AND SHIPPED WITH VESSEL. MARK BOX AS FOLLOWS: P.O. # 6014-02D1-D613-02 ITEM # 95-5039
- 11. VESSEL SHALL BE FREE OF DEBRIS, DIRT, AND FOREIGN MATTER, AND TO BE THOROUGHLY CLEANED INSIDE AND OUT BEFORE SHIPMENT.
- 12. ALL MACHINED AND THREADED SURFACES EXCEPT WELD BEVELS SHALL BE COATED WITH ONE OF THE FOLLOWING RUST PREVENTIVES OR AN EQUAL APPROVED BY THE PURCHASER: E.F. HOUGHTON Co. RUST-VETO No. 342 EXXON CHEMICAL Co. RUST-BAN No. 326
- 13. THE INTERPASS TEMPERATURE FOR AUSTENITIC STAINLESS STEEL SHALL NOT BE GREATER THAN 350°F.
- 14. VIRBO-ETCH NORTH & EAST ORIENTATION ON THE OUTSIDE OF THE VESSEL APPROX. 6" BELOW TOP T.L. & 6" ABOVE B.M. SEAM THE VIRBO-ETCH STENCIL TO BE CIRCLED W/ WHITE PAINT

CERTIFIED FOR FABRICATION

BY: RMS DATE: 6/28/95

Acceptance for engineering use stamp with checkboxes for ACCEPTED, NOT REVIEWED, and NOT ACCEPTED.

Table with 4 columns: NO., REVISIONS, MADE BY, DATE. Rows include DELETED POLISH NOTES, REV. P.O. No., REV. TITLE BLOCK & AS NOTED, and FOR CUSTOMER'S APPROVAL.

OFFENHAUSER COMPANY HOUSTON TEXAS

PRINT RECORD

Form containing CUSTOMER, PURCHASE ORDER NO., PROJECT NO., LOCATION, DESCRIPTION, SHOP ORDER NO., DRAWING NO., SCALE, QUANTITY, SHEET, and DRAWN BY/CHK'D BY/DATE.

WELD TYPES

