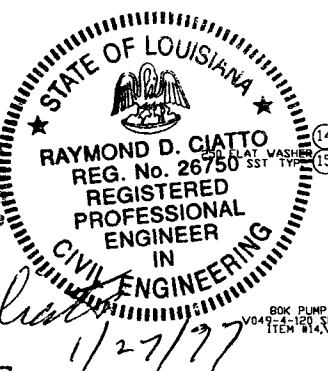
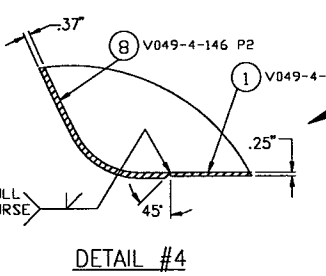
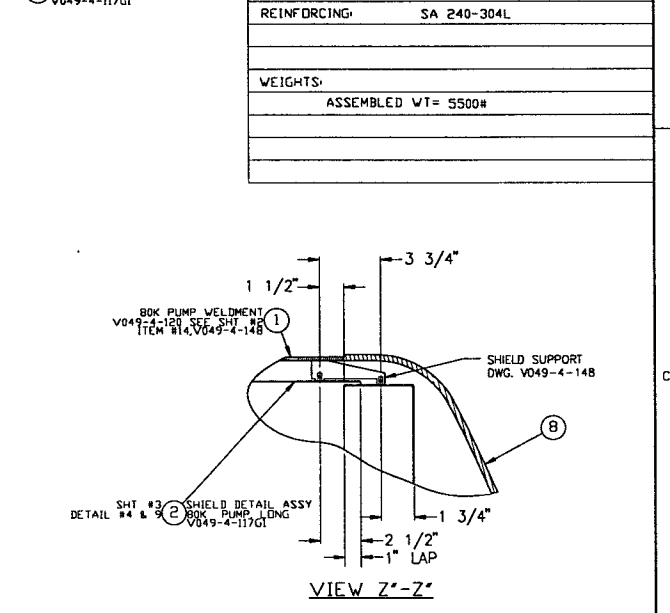
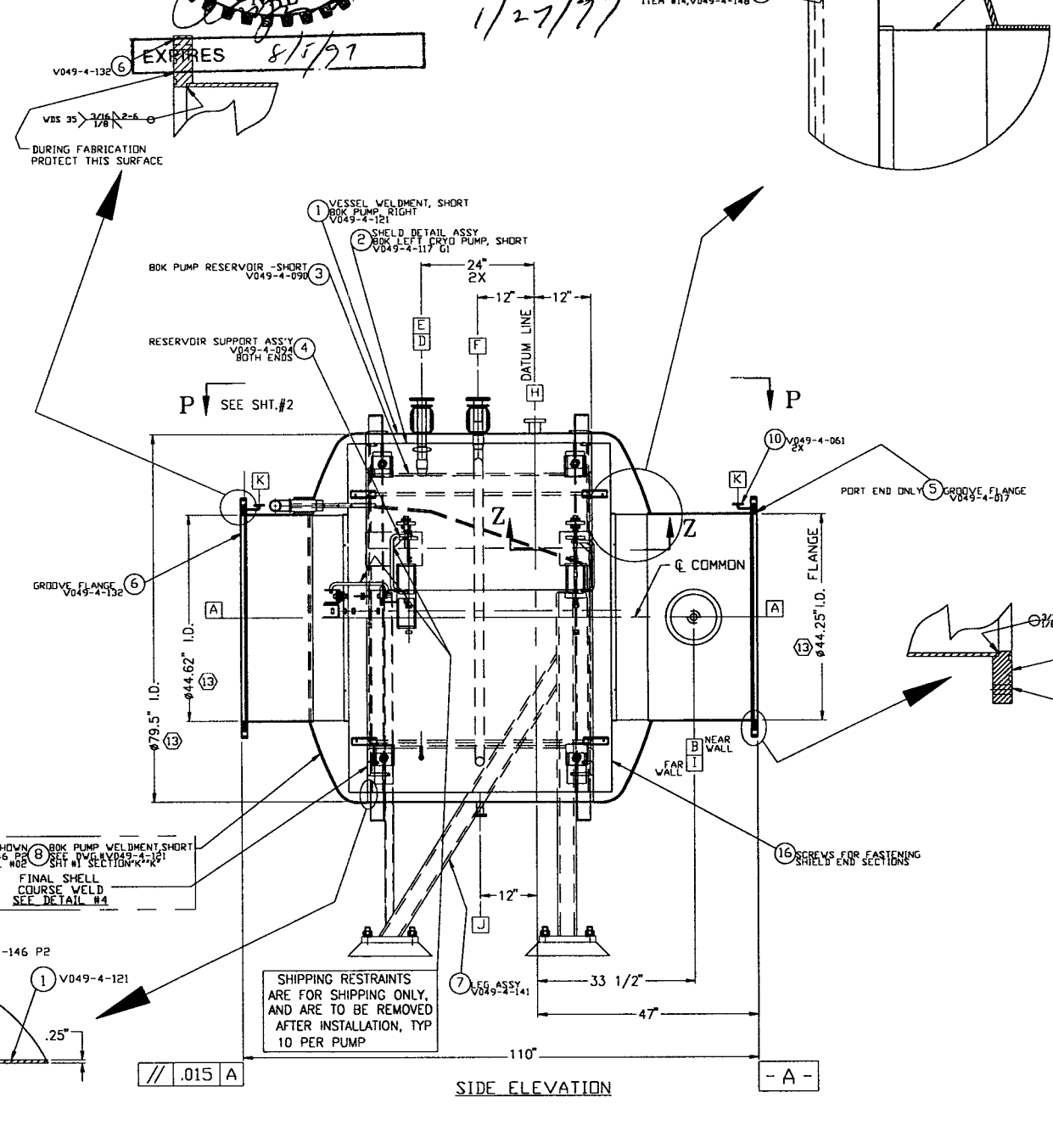
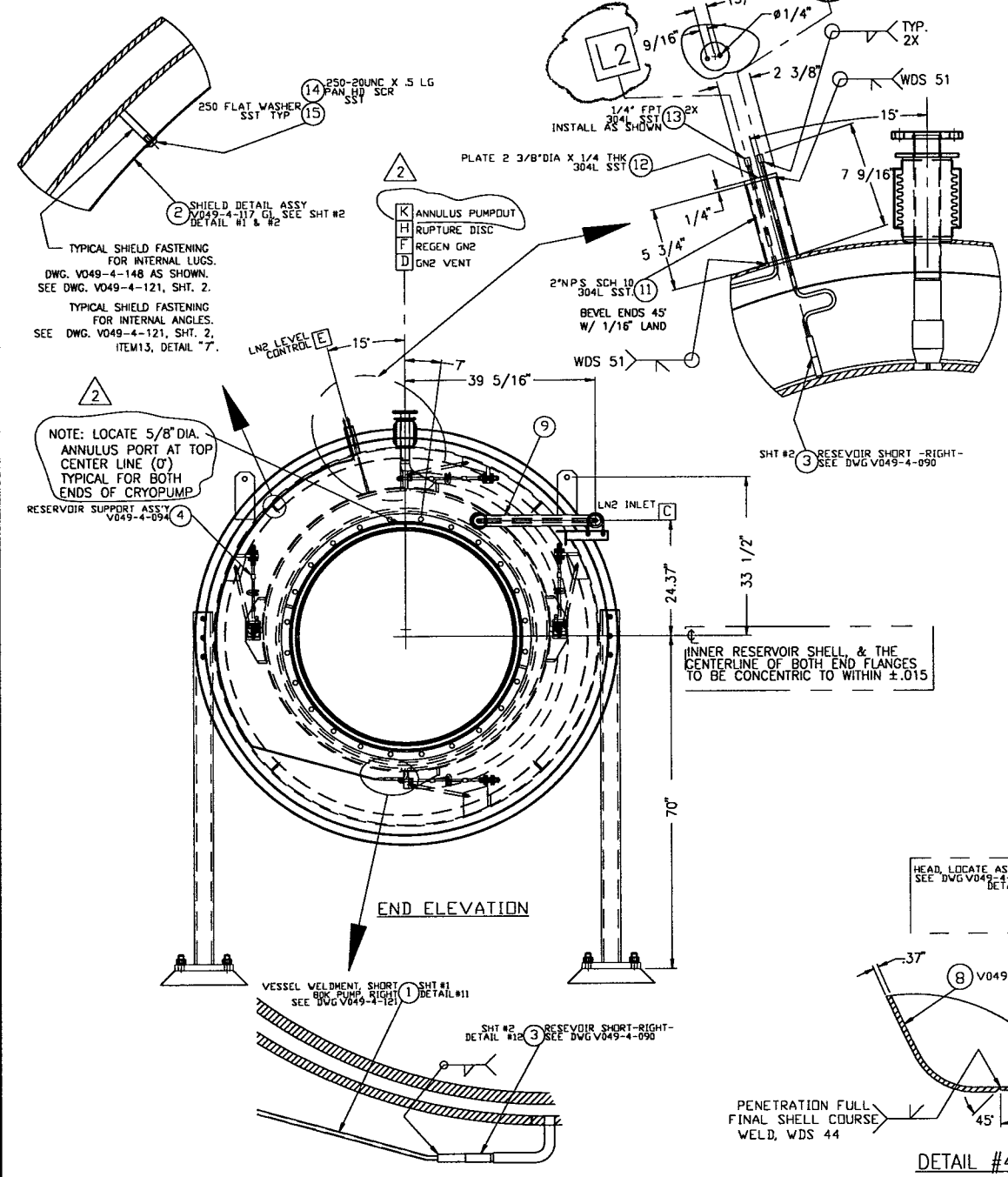


MARK	QTY	SIZE	RATING	TYPE	DESCRIPTION
A	2	44.63" I.D.		SEE NOTE #1 & #2	LASER BEAM / ACCESS
B	1	10" OD TUBE		1 1/2" OD. CONFLAT W/BLIND FLANGE	PUMPOUT PORT
C	1	1 1/2" X 2"		VAC. JACKET W/ BAYONET BLIND	LN2 INLET
D	1	1 1/2" PIPE		1 1/2" ASA FLG. 5" OD.	GN2 VENT
	1	1 1/2" PIPE		1 1/2" ASA FLG. 5" OD.	REGEN GN2
I	1	1 1/2" OD. TUBE		2 3/4" OD. CONFLAT W/BLIND FLANGE	VACUUM GAUGE PAIR
J	1	1 1/2" OD. TUBE		2 3/4" OD. CONFLAT W/BLIND FLANGE	PURGE AIR
H	1	2 1/2" OD. TUBE		4 1/2" OD. CONFLAT W/BLIND FLANGE	RUPTURE DISC.
K	2	3/4" OD TUBE		2 3/4" OD. CONFLAT	FLANGE ANNULUS PUMPOUT PORT

MARK	QTY.	SIZE	TYPE	DESCRIPTION
L1	1	1/4"	FPT	LN <sub>2</sub> LEVEL CONTROL
L2	1	1/4"	FPT	LN <sub>2</sub> LEVEL CONTROL



DESIGN DATA	
CORROSION ALLOWANCE:	0
POSTWELD HEAT TREATMENT:	MBS
FIREPROOFING:	N/A
RADIOGRAPHING:	NONE
MATERIALS	
HEADS:	SA 240-304L
SHELL:	SA 240-304, 304L
FLANGES:	SA 182 GRADE F, 304L
PIPE NECKS:	SA 312-304L, SA 240-304L
REINFORCING:	SA 240-304L
WEIGHTS:	
ASSEMBLED WT:	5500#



- ALL NOZZLE NUMBERS TO BE METAL STAMPED ON SHELL OR PENTLEG
- 10'S ARE TO BE ALIGNED ALONG THEIR COMMON CENTER LINE
- LEAK TEST & METHOD PER PSI SPEC V049-2-014, BY PSI
- CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED, AS NOTED ON BOM
- FLANGE BOLT HOLES TO STRADDLE NATURAL CENTERLINES OF VESSEL UNLESS NOTED
- CLEAN PER SPEC V049-2-015
- ALL NOZZLES TO BE CONTOURED TO INSIDE DIAMETER OF SHELL OR TO CURVATURE OF HEAD, UNLESS OTHERWISE NOTED
- DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL GRINDING TO INTERNAL VACUUM BOUNDARY SURFACES IS NOT ALLOWED
- DIMENSIONS SHOWN IN PARENTHESES ARE IN MILLIMETERS
- HEADS ARE ASME F&D
- CHAMBER FABRICATION TO BE IN ACCORDANCE WITH SPEC V049-2-096
- FOR FLANGE DETAILS SEE DWG V049-4-017 & V049-4-132
- THESE FLANGES EACH INCLUDE AN ANNULAR CHANNEL BETWEEN O-RINGS, MANIFOLD TO A SINGLE PUMPOUT PORT ON EACH CHAMBER.
- WDS NO'S REFER TO WELD DATA SPEC V049-2-084

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SYMBOL	CHARACTERISTIC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
□	FLATNESS	FRACTIONAL ± .3
○	CYLINDRICITY	ANGULAR MAXIMUM ± 30° BEND ± 2°
∥	PARALLELISM	TWO PLACE DECIMAL ± .03
⊥	PERPENDICULARITY	THREE PLACE DECIMAL ± .015
∠	ANGULARITY	FINISHED SURFACE RMS 6.3
⊕	TRUE POSITION	BREAK CORNERS IN DWT REMOVE ALL BURRS
○	CONCENTRICITY	DO NOT SCALE THIS DRAWING

REV	DESCRIPTION	ISSUE DESCRIPTION
2	REVISED FOR FABRICATION AS NOTED	
1	ISSUED FOR FABRICATION/ FDR UPDATE - MAJOR REVISIONS	
0	ISSUED FOR FDR	

DWG NO	DESCRIPTION	DWG NO	DESCRIPTION
V049-4-141	SUPPORT LEG ASSY	V049-4-117 G1	SHIELD ASSY
V049-4-094	RESERVOIR SUPPORTS	V049-4-121	VESSEL WELDMENT
V049-4-090	BOK PUMP RESERVOIR		

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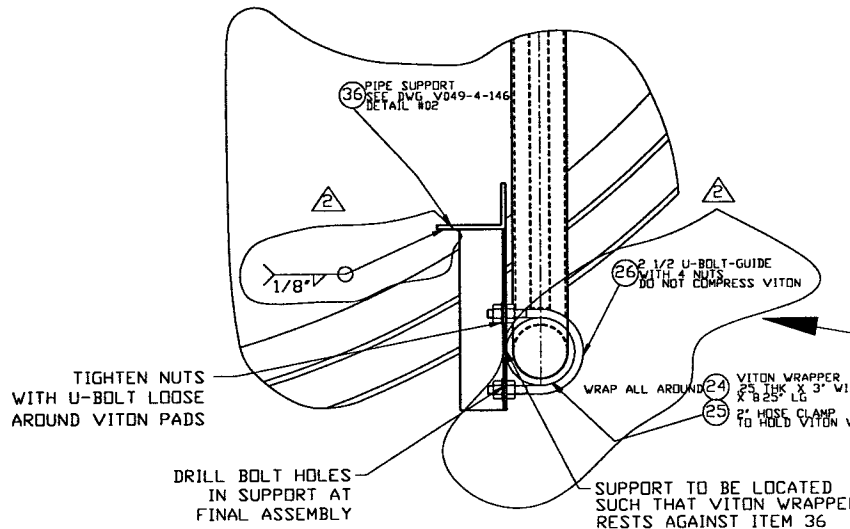
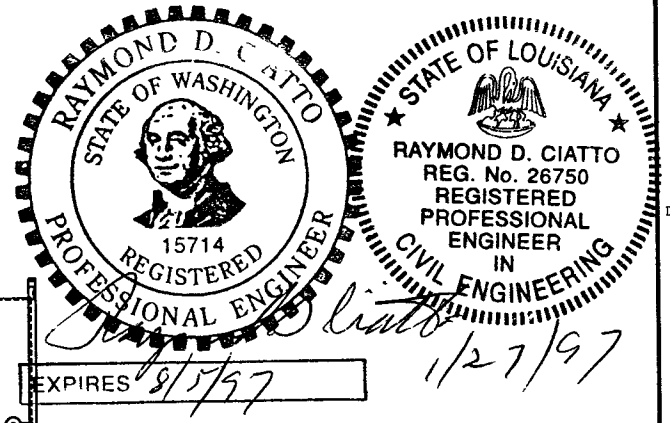
BOK PUMP GENERAL ARRG--SHORT-RIGHT

LIGO VACUUM EQUIPMENT

CAD FILE 49400551 SIZE D DWG NO V049-4-005 REV 2

SCALE NONE SHEET 1 OF 2

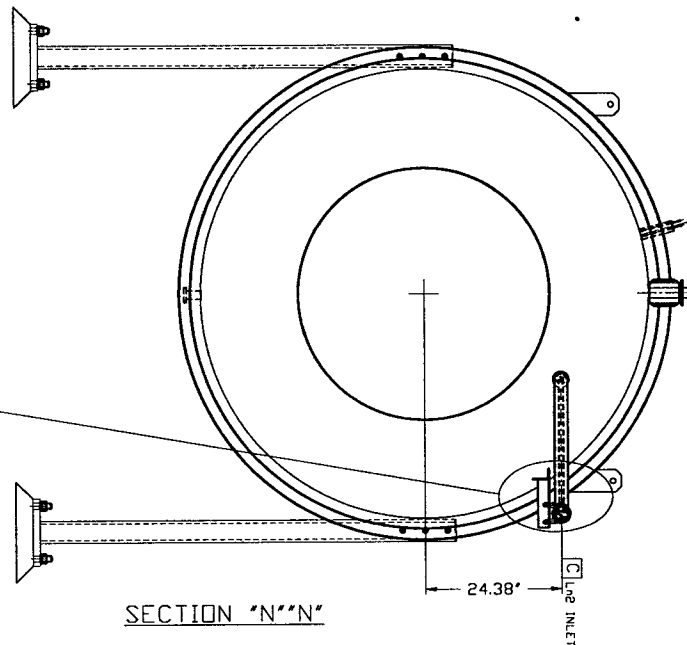
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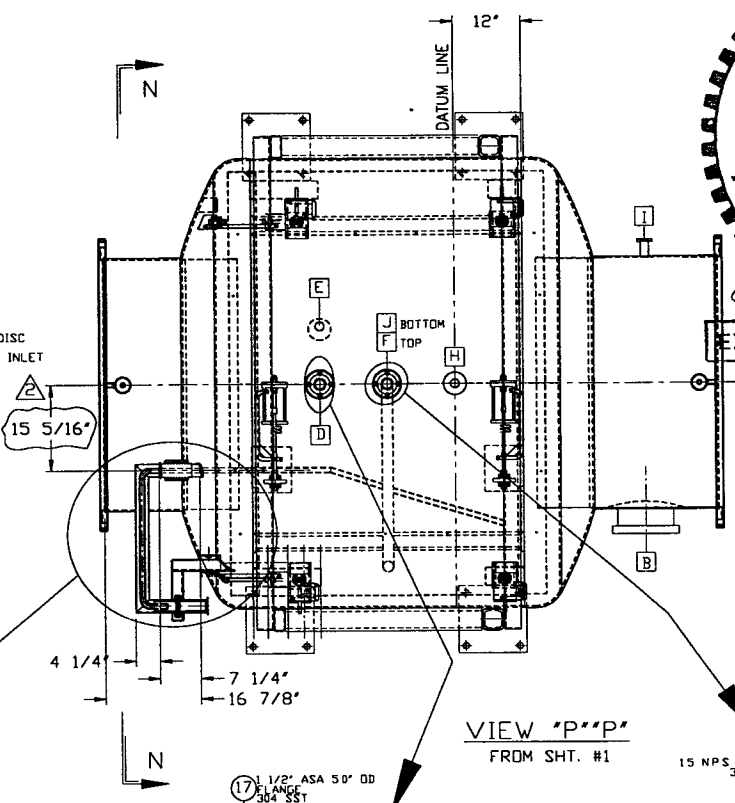
TIGHTEN NUTS WITH U-BOLT LOOSE AROUND VITON PADS

DRILL BOLT HOLES IN SUPPORT AT FINAL ASSEMBLY

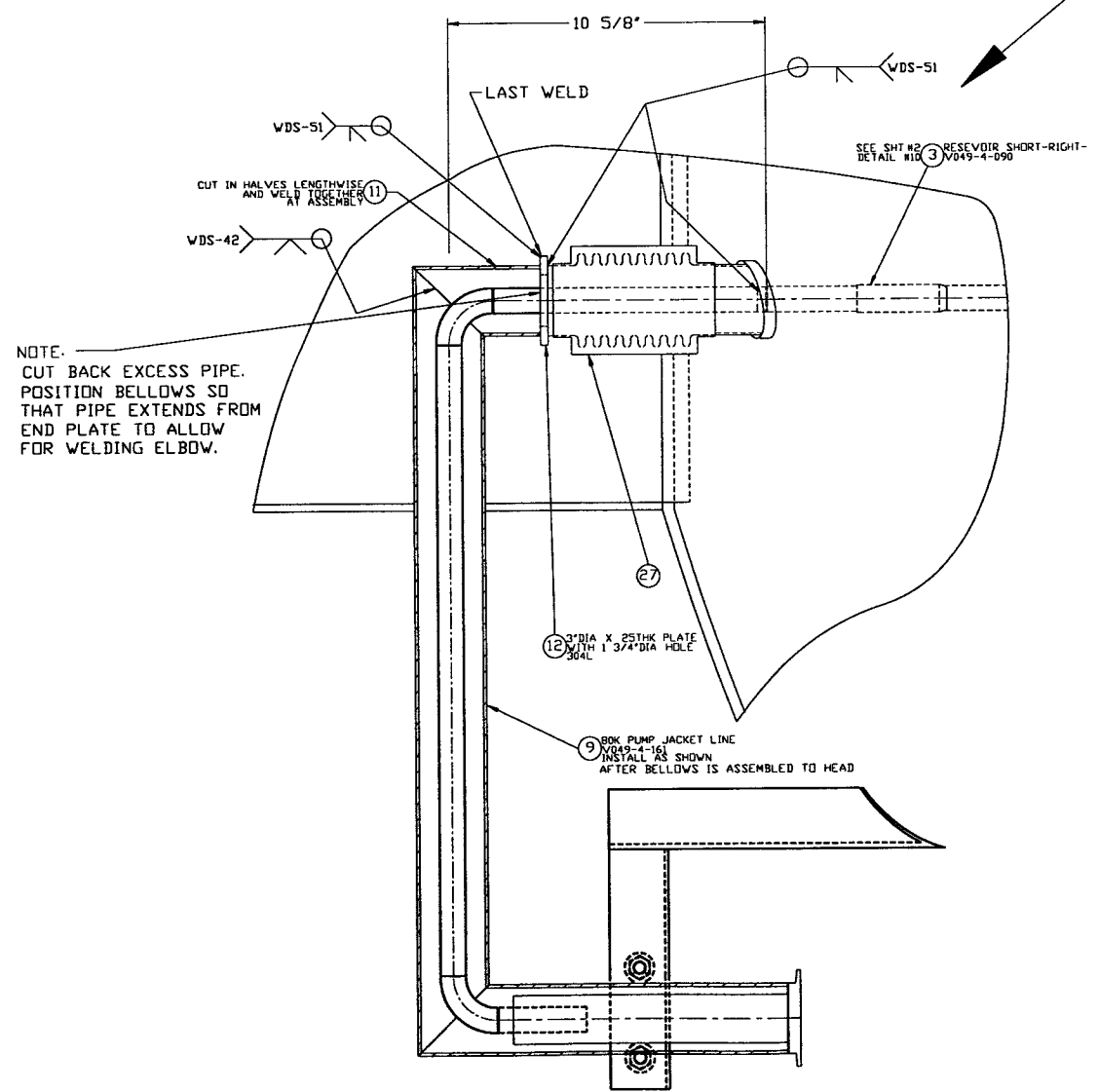
SUPPORT TO BE LOCATED SUCH THAT VITON WRAPPER RESTS AGAINST ITEM 36



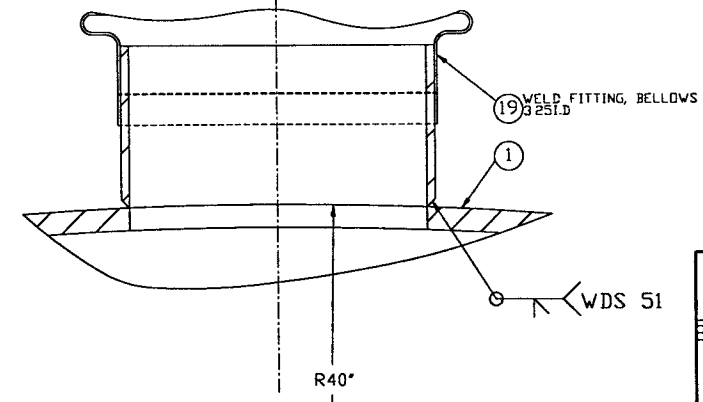
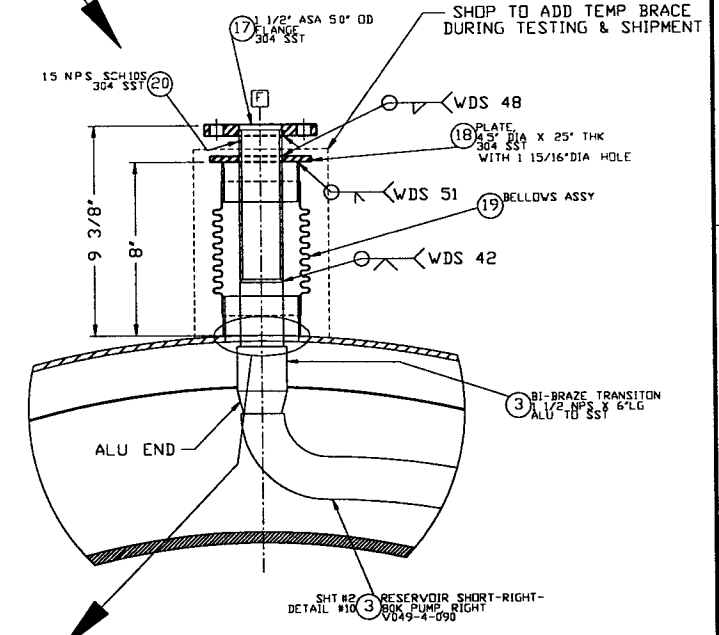
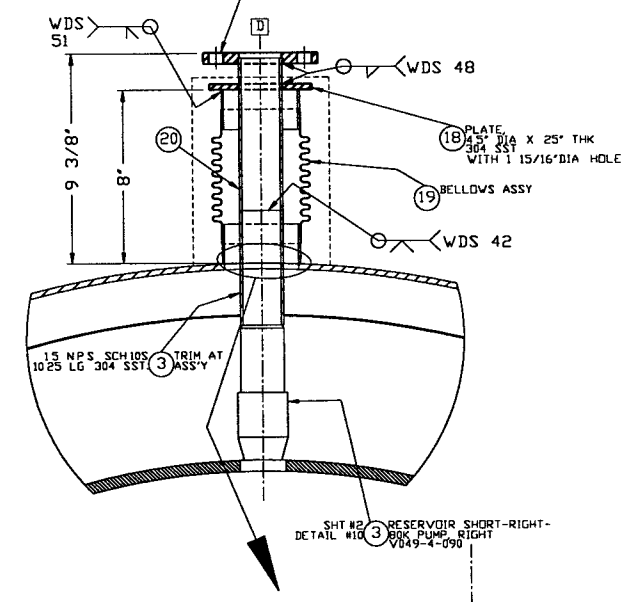
SECTION "N-N"



VIEW "P-P" FROM SHT. #1



NOTE. CUT BACK EXCESS PIPE. POSITION BELLOWS SO THAT PIPE EXTENDS FROM END PLATE TO ALLOW FOR WELDING ELBOW.



SEE SHEET 1 FOR REVISIONS

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BOK PUMP GENERAL ARR'G-SHORT-RIGHT			
LIGD VACUUM EQUIPMENT			
CAD FILE 494005S2	SIZE D	DWG. NO. V049-4-005	REV 2
SCALE NONE	SHEET 2 OF 2		