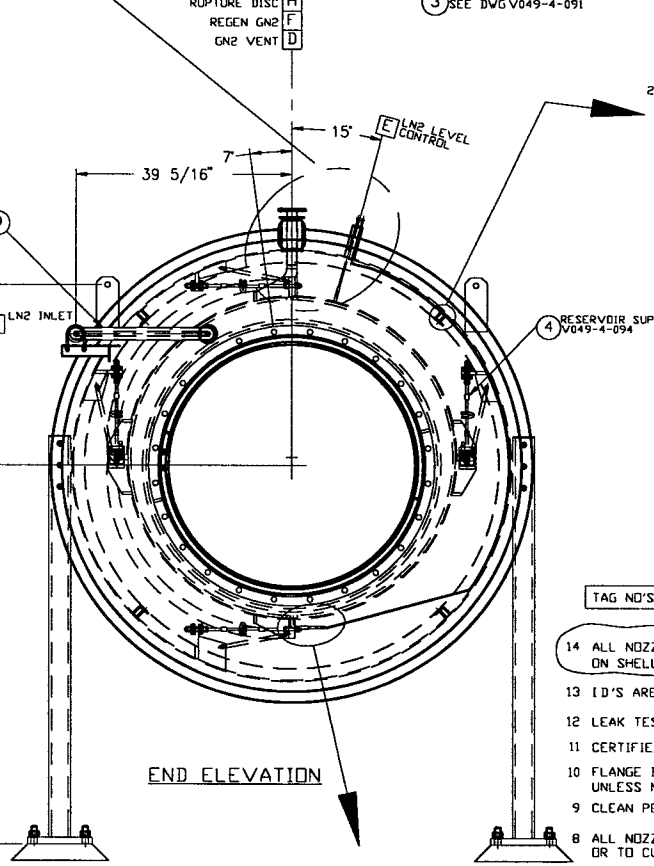
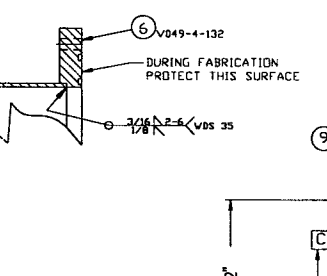
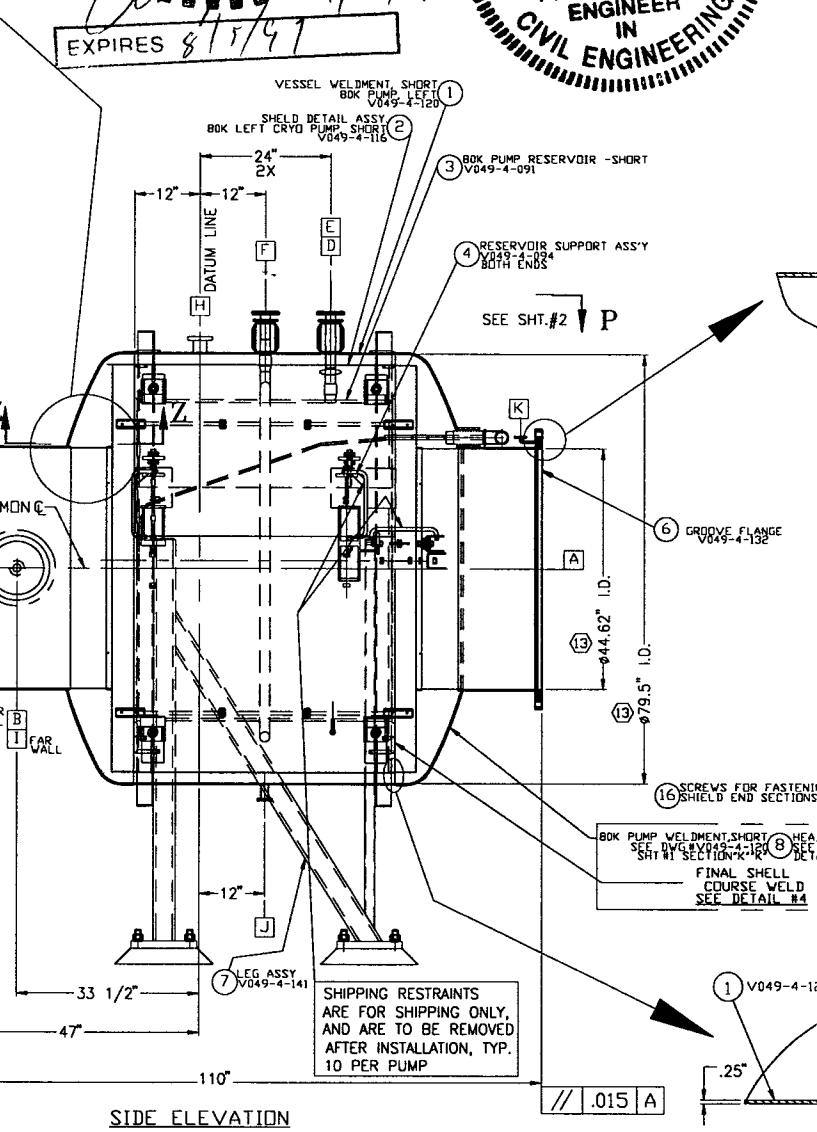
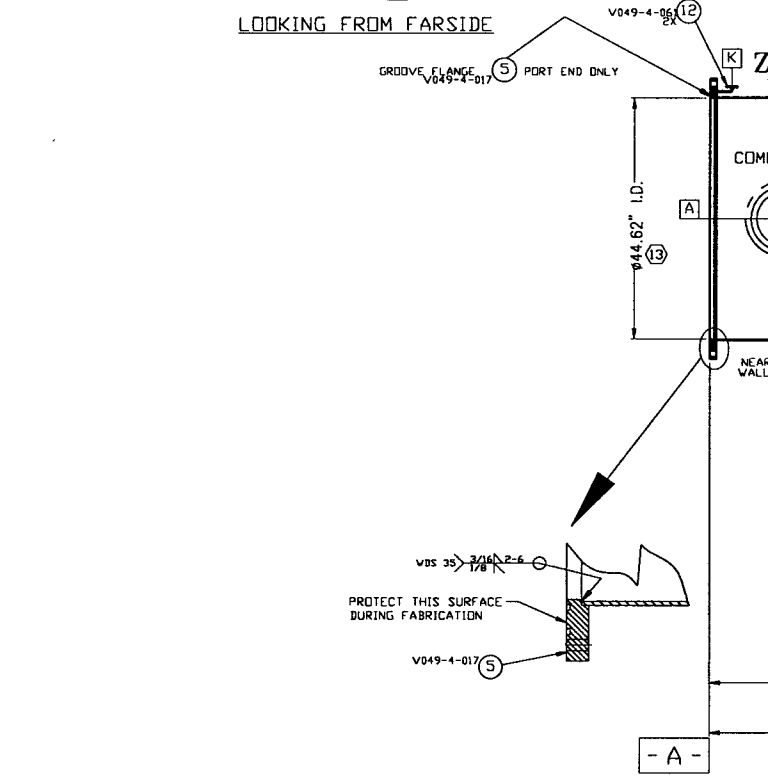
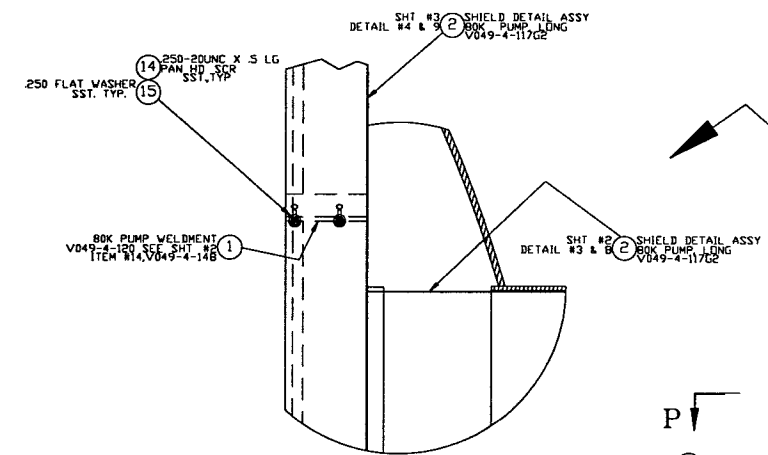
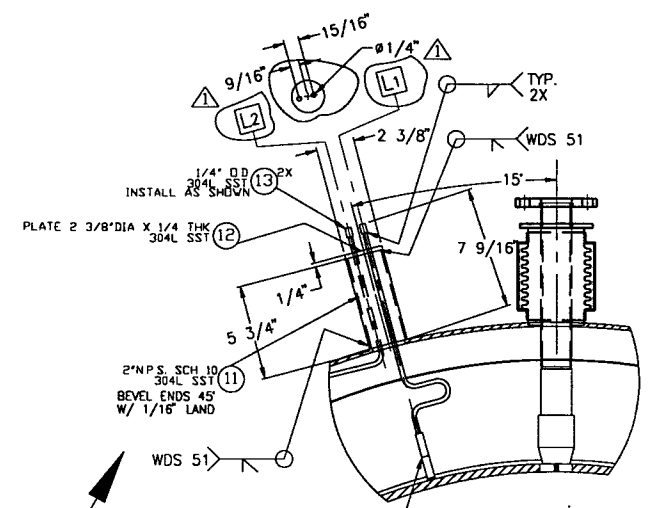
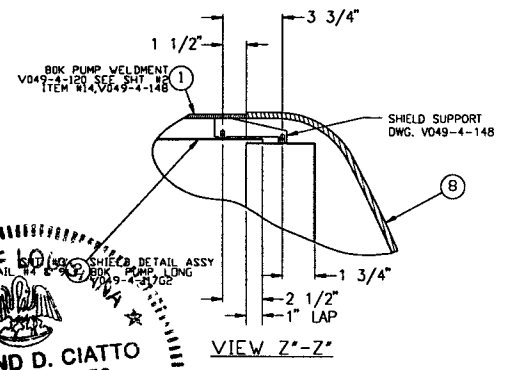
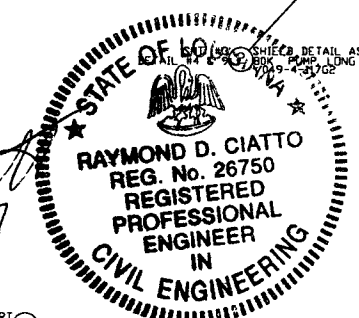
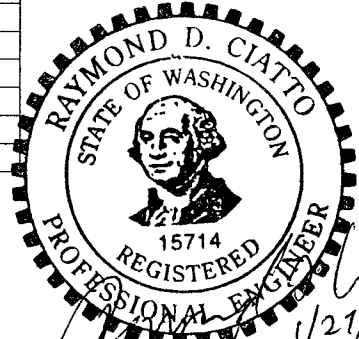


NOZZLE SCHEDULE					
MARK	QTY	SIZE	RATING	TYPE	DESCRIPTION
A	2	44.63" I.D.		SEE NOTE #1 & #2	LASER BEAM / ACCESS
B	1	10" OD TUBE		1 1/2" OD CONFLAT W/BLIND FLANGE	PUMPOUT PORT
C	1	1 1/2" X 2"		VAC. JACKET W/ BAYONET BLIND	LN2 INLET
	1	1 1/2" PIPE		1 1/2" ASA FLG 5" OD.	GN2 VENT
				PANT LEG	
F	1	1 1/2" 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	LN2 LEVEL CONTROL
L2	1	1/4"	FPT	LN2 LEVEL CONTROL



DESIGN DATA	
CORROSION ALLOWANCE	0
POSTWELD HEAT TREATMENT	MBS
FIREPROOFING	NA
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
BOLTS & NUTS	SA 193-B7
WEIGHTS	
ASSEMBLED WT	= 5500#

- TYPICAL SHIELD FASTENING FOR INTERNAL LUGS DWG V049-4-148 AS SHOWN SEE DWG V049-4-121, SHT. 2
- TYPICAL SHIELD FASTENING FOR INTERNAL ANGLES SEE DWG V049-4-121, SHT. 2, ITEM 13, DETAIL #7
- TAG NO'S WCP3, WCP6, WCP7, LCP3
- ALL NOZZLE NUMBERS TO BE METAL STAMPED ON SHELL OR PENTLEG
 - ID'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
 - 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
 - THESE FLANGES EACH INCLUDE AN ANNULAR CHANNEL BETWEEN O-RINGS, MANIPULATED TO A SINGLE PUMPOUT PORT ON EACH CHAMBER
 - WDS NO'S REFER TO WELD DATA SPEC V049-2-084

SYMBOL	CHARACTERISTIC	UNLESS OTHERWISE SPECIFIED
\square	FLATNESS	DIMENSIONS ARE IN INCHES
\circ	CYLINDRICITY	TOLERANCES: FRACTIONAL: $\pm .1$ ANGULAR: MAX 20° - 30° BEND 22° TWO PLACE DECIMAL: $\pm .03$ THREE PLACE DECIMAL: $\pm .015$ FINISHED SURFACE RMS 6.3 BREAK CORNERS IN RELIEF REMOVE ALL BURRS
\parallel	PARALLELISM	
\perp	PERPENDICULARITY	
\angle	ANGULARITY	
\oplus	TRUE POSITION	
\circ	CONCENTRICITY	

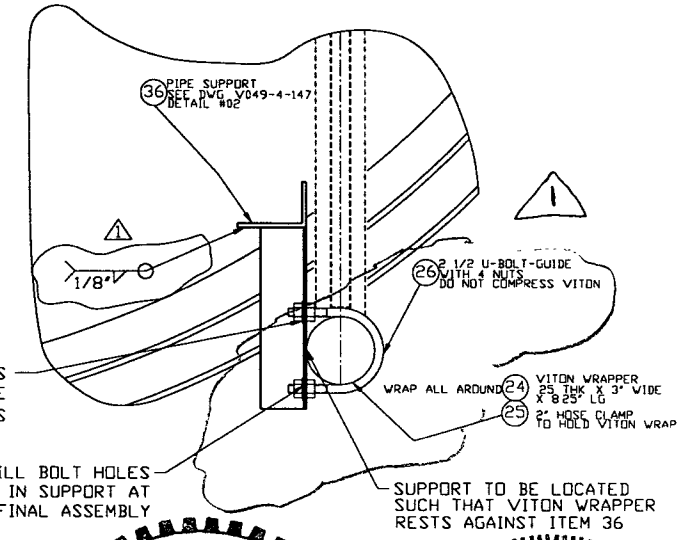
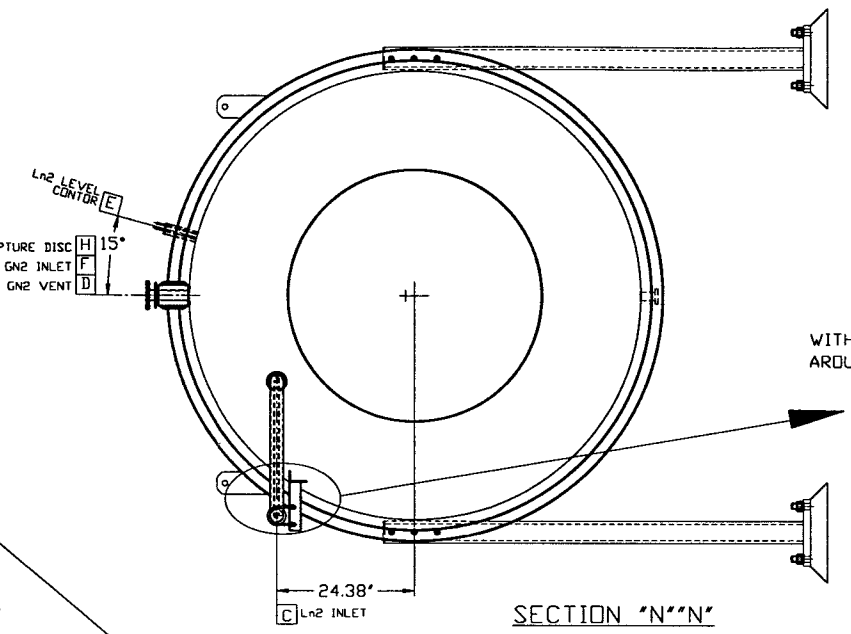
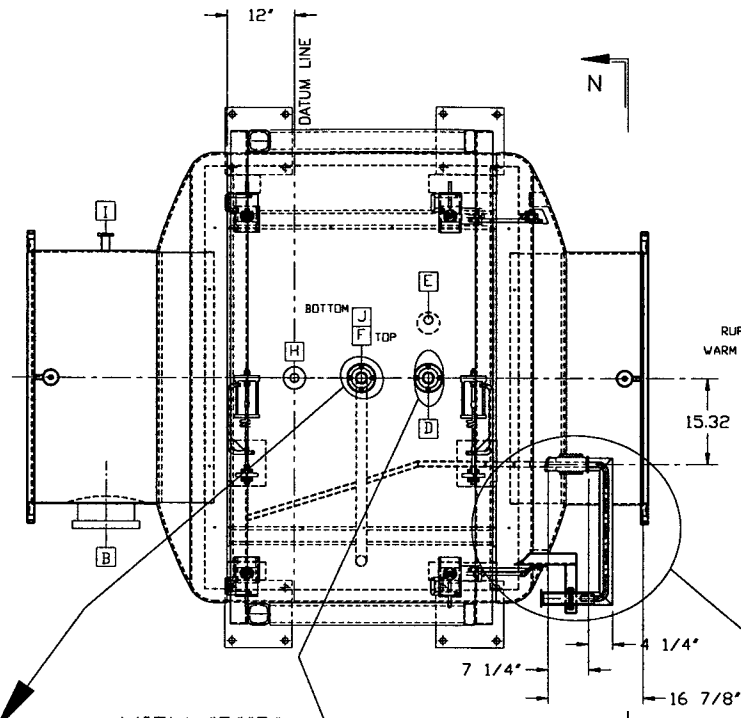
DWG NO	DESCRIPTION	DWG NO	DESCRIPTION
V049-4-141	SUPPORT LEG ASSY.		
V049-4-117 G2	SHIELD ASSY		
V049-4-094	RESERVOIR SUPPORTS		
V049-4-120	VESSEL WELDMENT		
V049-4-091	BOK PUMP RESERVOIR		

REV	DESCRIPTION	DATE
1	ISSUED FOR FABRICATION	1/15/97
0	ISSUED FOR FABRICATION	1/2/97

DWG NO	DESCRIPTION	SCALE
V049-4-007 <td>LIGO VACUUM EQUIPMENT <td>NONE</td> </td>	LIGO VACUUM EQUIPMENT <td>NONE</td>	NONE

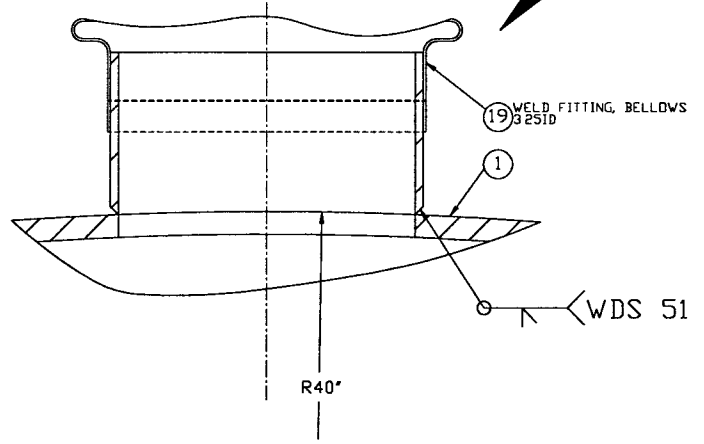
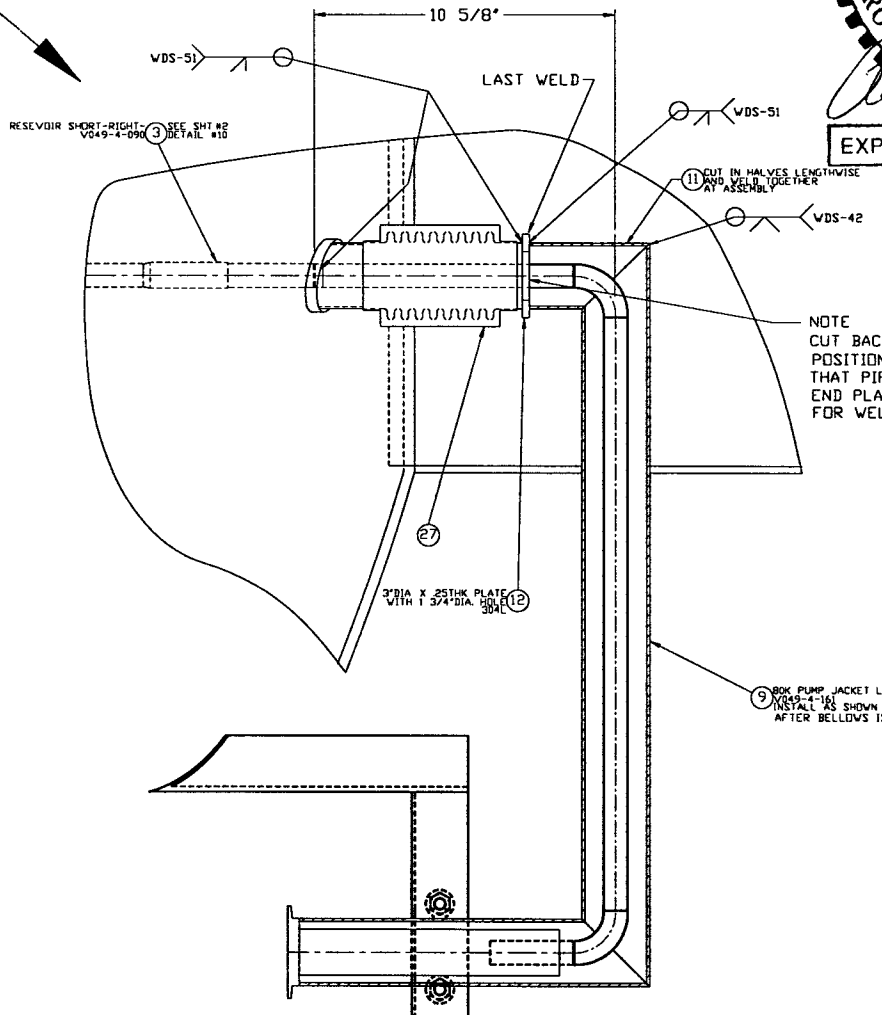
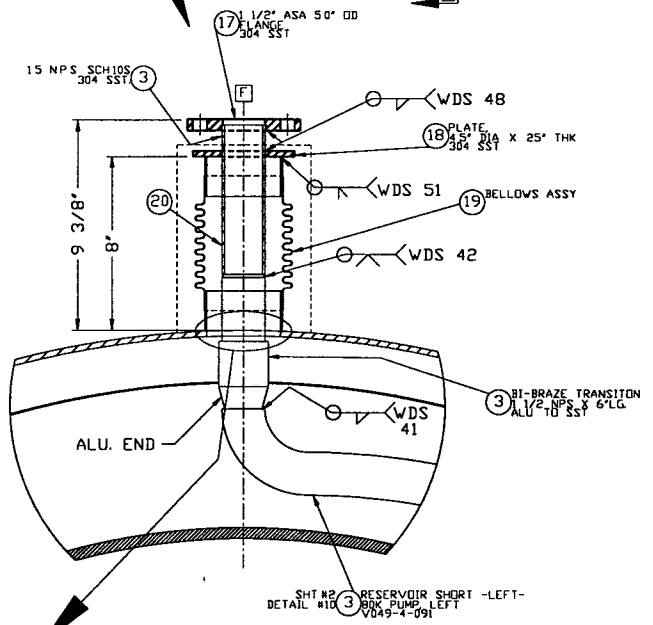
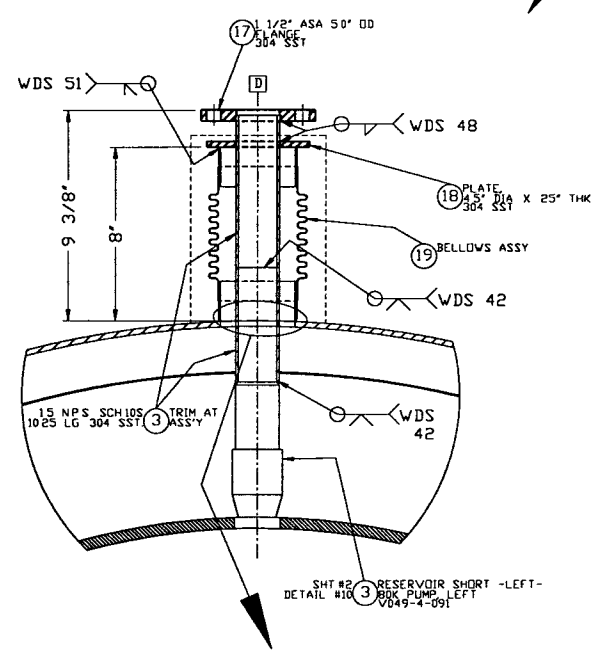
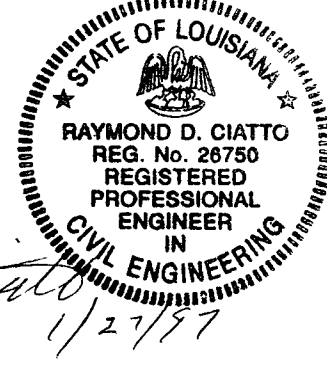
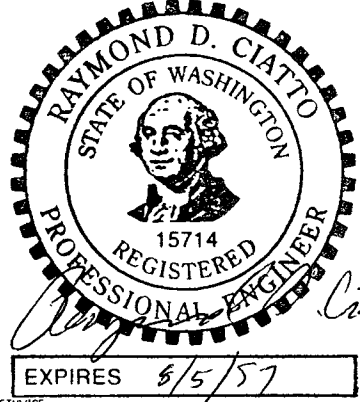
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494007S1	D	V049-4-007	1

0970350-01-V



VIEW "P""P"
FROM SHT. #1

SECTION "N""N"



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

9 BOK PUMP JACKET LINE
INSTALL AS SHOWN
AFTER BELLOWS IS ASSEMBLED TO HEAD

SEE SHEET 1 FOR REVISIONS

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
80K PUMP GENERAL ARR'G-SHORT-LEFT			
LIGO VACUUM EQUIPMENT			
CAD FILE 494007S2	SIZE D	DWG. NO. V049-4-007	REV 1
SCALE NONE	SHEET 2 OF 2		