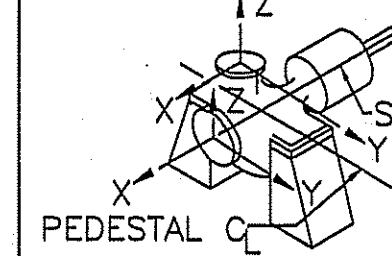
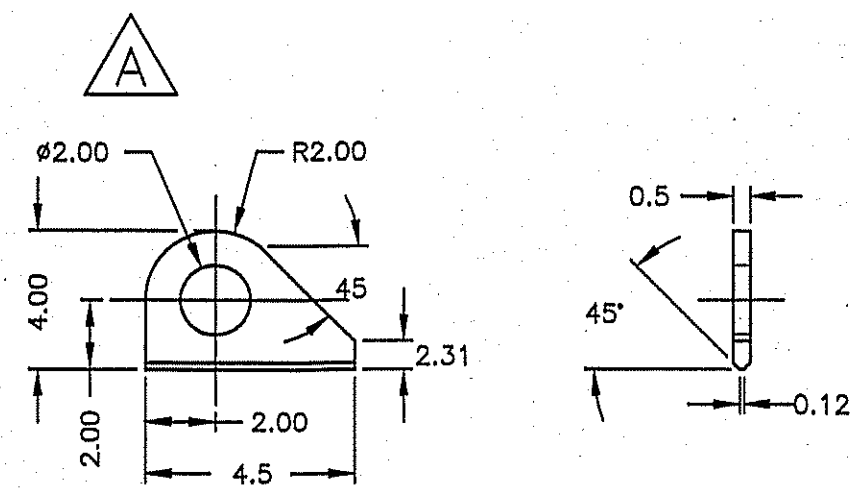


FORCES & MOMENTS					
API 610 FORCES & MOMENTS					
F=FORCE IN (LB & N)					
M=MOMENTS IN (FT-LB & Nm)					
R=RESULTANT					
	U.S. UNITS		S.I. UNITS		
	SUCT.	DISCH.	SUCT.	DISCH.	
FX	400	240	1780	1070	
FY	320	200	1420	890	
FZ	260	300	1160	1330	
FR	570	430	2560	1930	
MX	980	700	1330	950	
MY	500	350	680	470	
MZ	740	530	1000	720	
MR	1330	950	1800	1280	

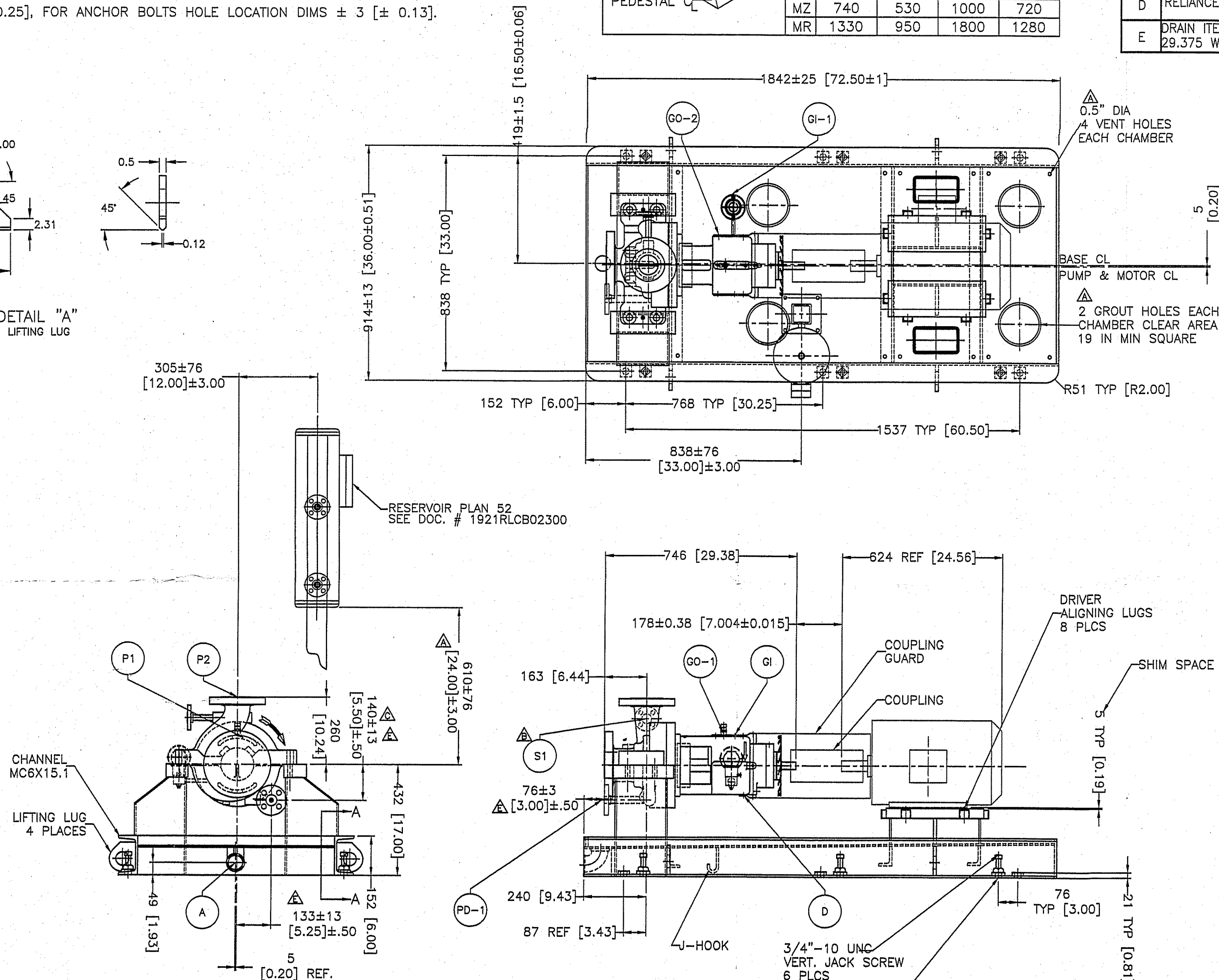


REVISIONS				
REV.	DESCRIPTION	ECO No	DATE	BY
	ORIGINAL RELEASE		05/04/05	
A	ADDED LIFTING LUG DETAIL, DRIVER NUMBER, PROJECT, LOCATION, TAG NUMBER, 4 VENT HOLES & 2 GROUT HOLE EACH CHAMBER.		6/8/05	M.A.
B	ADDED ITEM # S1		6/14/05	M.A.
C	ADDED 8.86 TO DRAIN		7/29/05	M.A.
D	RELIANCE MOTOR WAS CI 1, DIV 2, GP BCD, T2		8/30/05	M.A.
E	DRAIN ITEM PD-1 LOCATION WAS 8.86 & 5.95, CPLG WAS #103 29.375 WAS 30.48 AS BUILT		10/27/05	M.A.

- NOTE :
- TAGGING INFORMATION RECEIVED LESS THAN 30 DAYS PRIOR SHIPMENT WILL BE SUBJECT TO HANDLING CHARGES.
 - ITEMS WILL NOT BE TAGGED UNLESS CUSTOMER TAG NUMBERS ARE SHOWN.
 - REFERENCE DIMENSION ARE SHOWN FOR NON-CONSTRUCTION PURPOSES ONLY.
 - UNSPECIFIED TOLERANCES ± 6 [± 0.25], FOR ANCHOR BOLTS HOLE LOCATION DIMS ± 3 [± 0.13].



DETAIL "A"
LIFTING LUG



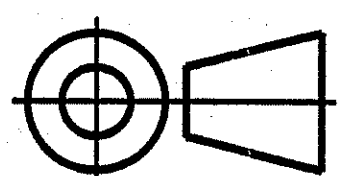
* CUSTOMER CONNECTION POINT

ITEM	SIZE	DESCRIPTION	CONNECTION
P2 (1)	-	PUMP DISCHARGE, 3" RF FLANGE CL-300.	SHIPPING COVER
P1 (1)	-	PUMP SUCTION, 4" RF FLANGE CL-300.	SHIPPING COVER
GI (1)	0.5 NPT	LUBRICATION INLET	PIPED BY CUSTOMER
GI-1 (1)	0.25 NPT	CONSTANT LEVEL OILER	PIPED BY FLOWERVE
GO-1 (1)	0.5 NPT	BEARING HOUSING BREATHER	PIPED BY FLOWERVE
PD-1 (1)	0.75 S.W.	DRAIN, PUMP CASE W/75-CL.300 R.F. FLANGE	SHIPPING COVER
GO-2 (1)	0.25 NPT	OVERFLOW	PLUGGED
A (1)	2 NPT	BASE DRAIN 2" NPT ELBOW COUPLING	OPEN
D (1)	0.5 NPT	DRAIN, BEARING	PLUGGED
S1 (1)	0.5 SW	SEAL RECIRCUL. CONN (PLAN 11) R.F. FLG 300#	PIPED BY FLOWERVE

TOLERANCES UNLESS OTHERWISE SPECIFIED	
(IN)	MM
.X $\pm .5$.X ± 13
.XX $\pm .25$.XX ± 8
.XXX $\pm .125$.XXX ± 3
.XXXX $\pm .0625$	

ALL CUSTOMER CONNECTIONS LOCATIONS DIMENSIONS HAVE A TOLERANCE OF ± 50.8 (2.00) EXCEPT FOR THE PUMP SUCTION AND DISCHARGE NOZZLES WHICH HAVE A TOLERANCE OF ± 6.4 (.25)

3rd Angle Projection



APPROVAL NOTE TO CUSTOMER	
1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWERVE CORPORATION AND RETURNED	
2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.	
3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.	
PROPRIETARY NOTE	
THIS MATERIAL IS THE PROPERTY OF FLOWERVE INTERNATIONAL INC. AND IS FURNISHED ONLY FOR THE PURPOSE INDICATED. ANY AND ALL CONFIDENTIAL, PROPRIETARY, PATENT AND OTHER RIGHTS IN THE SUBJECT MATTER BEING RETAINED INCLUDING ANY EXCLUSIVE RIGHTS OF USE AND/OR MANUFACTURE AND/OR FOR SALE POSSESSION OF THIS MATERIAL DOES NOT CONVEY ANY PERMISSION TO REPRODUCE THIS MATERIAL, IN WHOLE OR IN PART, OR MANUFACTURE THE SUBJECT MATTER SHOWN THEREIN, OR USE THE CONFIDENTIAL OR PROPRIETARY INFORMATION THEREON, SUCH PERMISSION TO BE GRANTED ONLY BY SPECIFIC AUTHORIZATION IN WRITING SIGNED BY AN OFFICER OR OTHER AUTHORIZED AGENT OF FLOWERVE CO. DIVISIONS OR SUBSIDIARIES.	

STATUS OF APPROVAL	
ORDER No.	RLCB02299
DRAWN BY	M. ARMENDARIZ
CHECKED BY	GARY THOMAS
APPROVED BY	GARY THOMAS
DATE	05/04/05
DATE	7/29/05
DATE	7/29/05

CUSTOMER INFORMATION	
MFG: RELIANCE CI 1, DIV 2, GP BCD, T3	HP: 15
ENCL/FRAME: 254T	PHASE: 3
HZ: 60	VOLTS: 460
MECHANICAL SEAL	
MFG: FLOWERVE	TYPE & SIZE: BXHH/BXH
2375	
COUPLING	
MFG: THOMAS	TYPE & SIZE: 71
150	
GUARD: ALUMINUM	
CUSTOMER INFORMATION	
CUSTOMER: LINDE BOC PROCESS PLANTS LLC	HYDTEST PR: 900 bar
P.O. NUMBER: PQ7053748	FLOW: 200 GPM
END USER: GIANT INDUSTRIES, INC.	HEAD: 141 Ft
PROJECT: ULSD HYDROTREATER	BHP: 10
LOCATION: YORKTOWN, VA	EFFICIENCY: 60.3
SERVICE: FLARE KO DRUM LIQUID PUMP	RPM: 3540
TAG: G-546 A	FLUID: DIESEL FUEL
BLANK2: -	TEMP: 115 °F (NORMAL)
BLANK3: -	S.G.: 0.838
OPERATING CONDITIONS	



Pump Division
Vernon Operation

#106013

DWG TITLE

GENERAL ARRANGEMENT
3 HPX 7A Extra Heavy API 9

SIZE
A3

DRAWING NO.
300RLCB02299

REV.
E

SCALE 1/22

UNITS

SHEET NO.

1 OF 1/P