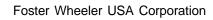


Contract N.:	1310087902
Client:	Valero Refining Company - Texas
Location:	Texas City, Texas
Project:	Valero Refinery Reconfiguration (TCRR)

Piping Material Specification Spec. No.: 10087902-SP-50-03 Class: AM1A									
Client Ref.	Rev. No.	Issue Date	Page						
VALERO	1	03 Jun 02	1						
Compared with:	0	28 Feb 02							

Appr. by: I	L.SMITH		Issued for : E Issued by: T.WILLIAN		by:T.WILLIAMSON
Service: DRY CHLORINE. (FOR BRANCH CON		TTACHMENT			
Gaskets : SPIRAL WOUND MONEL/GRAPHITE	Rating/Facing : CL150 RF	Corrosion 0.030" (0.75MM)	Facing Finish : ASME B16.5 Block Valve Trim : Weld Quality Insp API TRIM No. 9 (MONEL TRIM)		Stress Relief : NO
Materials : MONEL PIPING & V. NOTES 1 THRU 14)		 ERAL	Temp/Press Limits : 175 PSIG AT 100F ; 175	5 PSIG AT 150F (See Note 3)
Item Name Unique/Client* Code	Range from to				Det
NEEDLE VALVE 517NQ0001	1/2" 1-1/2"				NED
		Codes : . Body constr. : Rating : 4 Ends : Trim constr. : Trim Mat'l : . Bolt Mat'l : Gasket Mat'l : Packing : Note :	S.W. NEEDLE TYPE, O.S. & Y. API TRIM N.9 (MONEL TRIN PER API STANDARD 602. PER API STANDARD 602. GRAPHITE PACKING .		

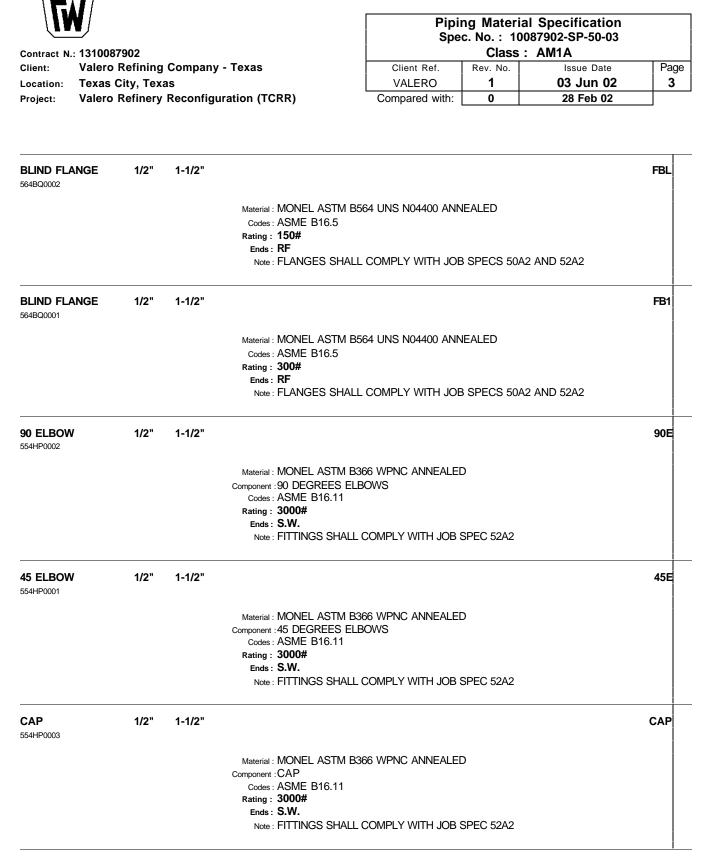




	Piping Material Specification Spec. No.: 10087902-SP-50-03							
Contract N.: 1310087902		Class :	AM1A					
Client: Valero Refining Company - Texas	Client Ref.	Rev. No.	Issue Date	Page				
Location: Texas City, Texas	VALERO	1	03 Jun 02	2				
Project: Valero Refinery Reconfiguration (TCRR)	Compared with:	0	28 Feb 02					

BALL VALVE 517BA0001	1/2"	1-1/2"		BAL
			Body Mat'l : MONEL ASTM B564 UNS N04400	
			Codes : ASME B16.34 / API 607	
			Body constr. : REDUCED BORE, SHORT PATTERN	
			Rating : 150# Ends : RF	
			Face finish : ASME B16.5	
			Trim constr. : FLOATING BALL, FIRESAFE DESIGN, ANTISTATIC DEVICE, ANTI-BLOW	
			OUT STEM	
			Trim Mat'l : MONEL 400 BALL, RTFE SEATS,	
			Bolt Mat'l : PER API STANDARD 602.	
			Gasket Mat'l : FLAT RING GRAPHOIL	
			Packing: GRAPHITE PACKING.	
			Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9	
			Operator : LEVER	
PIPE A/G 544SG0001	1/2"	1-1/2"	SCH. 40S	PIF
			Material : MONEL ASTM B165 ANNEALED	
			Manufact. : SMLS	
			Codes : ASME B36.10	
			Note : PIPE SHALL COMPLY WITH JOB SPEC 52A2	
			Ends : P.E.	
FLANGE	1/2"	1-1/2"	SCH. 40S	FLG
564NQ0002				
			Material : MONEL ASTM B564 UNS N04400 ANNEALED	
			Codes : ASME B16.5 Rating : 150#	
			Ends: RF	
			Note : FLANGES SHALL COMPLY WITH JOB SPECS 50A2 AND 52A2	
FLANGE	1/2"	1-1/2"	SCH. 40S	FL1
64NQ0001	112	. 1/2		
			Type : S.W.	
			Material : MONEL ASTM B564 UNS N04400 ANNEALED	
			Codes: ASME B16.5	
			Rating : 150# Ends : RF	
			Note : FLANGES SHALL COMPLY WITH JOB SPECS 50A2 AND 52A2	

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..\QRP\D320G4P1.QRP Rev. 0 printed on 03 Jun 2002 16:06 As of: 6/3/02 Compare with: 2/28/02

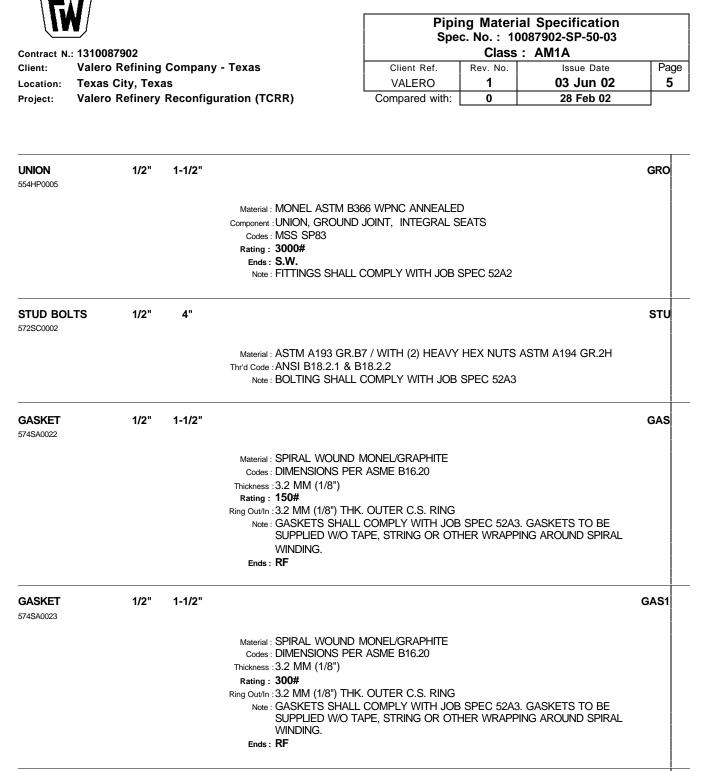


Contract N.: 1310087902		Piping Material Specification Spec. No. : 10087902-SP-50-03 Class : AM1A							
Client: Valero Refining Company - Texas	Client Ref.	Rev. No.							
Location: Texas City, Texas	VALERO	1	03 Jun 02	4					
Project: Valero Refinery Reconfiguration (TCRR)	Compared with:	0	28 Feb 02						

TEE 554HP0006	1/2"	1-1/2"		TEE
			Material : MONEL ASTM B366 WPNC ANNEALED Component : TEE Codes : ASME B16.11	
			Rating : 3000# Ends : S.W. Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2	
RED.TEE 554FP0001	1/2"	1-1/2"		TER
			Material : MONEL ASTM B366 WPNC ANNEALED Component : REDUCER TEE Codes : ASME B16.11 Ends : S.W.	
			Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2 Rating : 3000#	
CONC.SWAGE 554SO0001	1/2"	1-1/2"	SCH. 40S	CSA
			Material : MONEL ASTM B165 SMLS ANNEALED Component : CONCENTRIC SWAGE Codes : MANUFACTURED TO ASTM B366	
			Manufact. : SMLS Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2 Ends : P.E.	
ECC.SWAGE 554SO0002	1/2"	1-1/2"	SCH. 40S	ESA
			Material : MONEL ASTM B165 SMLS ANNEALED Component : ECCENTRIC SWAGE Codes : MANUFACTURED TO ASTM B366	
			Manufact : SMLS Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2 Ends : P.E.	
FULL CPLG. 554HP0004	1/2"	1-1/2"		CPL
			Material : MONEL ASTM B366 WPNC ANNEALED Component : FULL COUPLING Codes : ASME B16.11	
			Rating : 3000# Ends : S.W. Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2	

* Client codes only, not including sizes

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General Notes:

1.) Use Extended Body Gate Valves, Threaded Outlet, For Branches Not In Process Flow (Such As Vent, Drain, PI, Orifice Taps, Etc. Connections). Piping Downstream, If Any, Shall Usually Be In Accord With The Applicable Instrument Piping Material Specification. If No Piping, Insert A Plug In The Threaded Outlet. Other Valves, Such As SW x T Should Only Be Used When Spaced Restrictions Are Encountered.

2.) Check Valves When Installed In The Horizontal Position Shall Be Bonnet Cover Up & Those Install In The Vertical Position Shall Be Flow Up Only.

* Client codes only, not including sizes

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Contract N	.: 1310087902
Client:	Valero Refining Company - Texas
Location:	Texas City, Texas
Project:	Valero Refinery Reconfiguration (TCRR)

Piping Material Specification Spec. No. : 10087902-SP-50-03 Class : AM1A									
Client Ref.	Rev. No.	Issue Date	Page						
VALERO	1	03 Jun 02	6						
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3.) Typical Hydrotest Limiting Factor Is 1.5 x ASME Class Rating Cold Working Pressure Exception To This Include: * 1.1 x CWP For Closed Valves (Test Against Seat. This Method Is Not Preferred.)

* Check Manufactures Data For Ball Valves.

4.) All Fabrication Shall Comply With 52A1.

5.) Pipe Supports And Spring Hangers Shall Comply With 59A2 And 59A3 Respectively.

6.) 'BEP' Nipples Shall Be Cut From Pipe.

7.) The Crotch Thickness Of The Branch Outlet Of Buttweld Tees Shall Be No Less Than 150% Of The Nominal Wall Thickness Of The Tee. The Crotch Radius Of The Branch Outlet Of Buttweld Tees Shall Be No Less Than 12.5% Of The Branch Outlet OD.

- 8.) Use Union Or Coupling To Join Pipe. Flanged Joint To Be Used Only Where Indicated On EFD'S.
- 9.) Couplings Shall Not Be Used For Branch Connections Use Inline Only.
- 10.) Flanges Shall Not Be Insulated.
- 11.) Temperature Instrument Connection Shall Be NPS 1-1/2" Flanged.
- 12.) Pressure Instrument Connection Shall Be NPS 3/4" Socket-weld.

13.) Branch Connections Should Follow The Guidlines Of Job Spec 52B2 And The Attachment Unless Specifically Overriden By The Pipe Stress Engineer.

14.) Remove Temporary Strainers After Flushing.

END OF DOCUMENT

* Client codes only, not including sizes



Contract #:

Location: Project:

Client:

1310087902

Texas City, Texas

Valero Refining Company - Texas

Valero Refining Reconfiguration (TCRR)

Foster Wheeler USA Corporation

Piping Material Specification Spec. No.: 10087902-SP-50-03

Class: AM1A

Client Ref.	Rev. No.	Issue Date	Page
VALERO	1	03-Jun-02	1
Compared with:			

ATTACHMENT "A"

							RE	INFOR	CEMEN	ІТ СНА	RT									
APP	LICABLE	TO PI	PE SPI	ECIFIC	ATION	(S) : Al	M1A													
MAT	ERIAL (S	S) :												P/SE			C.A. :	NONE		
	IGN LIM	IT (S) :	175 PS	SIG AT	100 F															
NOM. SIZE	NOM. THICK.	1/2	3/4	1	1 1/2	2	NOMI 3	NAL SI	ZE OF	BRANC 8	CH CON 10	INECTI 12	ON (IN 14	CHES)	18	20	24			
1/2	40S	Т					-		-											
3/4	40S	RT	Т																	
1	40S	RT	RT	Т				NOTE	:	FOR	FABRI	CATIO	N DETA	AILS AN	ID CAL	CULAT	ED WA	LL		
1 1/2	40S	RT RT RT T SEE ENGINEERING STANDARD 52B2																		
2																				
3																				
4																				
6										1										
8																				
10												1								
12																				
14																				
16																				
18																				
20																				
24																				

LEGEND :

T = TEE

RT = REDUCING TEE

RE = TEE AND REDUCER OR REDUCING INSERT

SK = SOCKOLET, SW ELBOLET OR LATROLET

TH = THREDOLET, THD ELBOLET OR LATROLET

W = WELDOLET, BW ELBOLET OR LATROLET

LW = LONG WELD NECK FLANGE

TB = TEE AND BUSHING

CA = CALCULATE

F1 = STUB IN WITH 3/8" FILLET WELD

P2 = STUB IN WITH 2" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE)

P3 = STUB IN WITH 3" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE)

P4 = STUB IN WITH 4" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE)

P5 = STUB IN WITH 5" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE)

P6 = STUB IN WITH 6" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE) P7 = STUB IN WITH 7" WIDE PAD (PAD TO BE SAME THICKNESS AS RUN SIZE)

NOTE : ANY SITUATION NOT COVERED BY THE ABOVE CHART SHOULD BE BROUGHT TO THE ATTENTION

OF THE ASSIGNED PIPING ENGINEER.