



Foster Wheeler USA Corporation

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 : LF1U			
Client Ref.	Rev. No.	Issue Date	Page
VALERO	1	03 Jun 02	1
Compared with:	0	28 Feb 02	

Appr. by: L.SMITH

Issued for : E  
Issued by: T.WILLIAMSON

Checked by: T.WILLIAMSON

**Service:**  
FIRE WATER (UNDERGROUND PIPING),  
(FOR BRANCH CONNECTIONS SEE ATTACHMENT "A" )

<b>Gaskets :</b> SPIRAL WOUND GRAPHITE / S.S.304	<b>Rating/Facing :</b> CL150 RF	<b>Corrosion :</b> 0.063" (1.5MM)	<b>Facing Finish :</b> ASME B16.5	<b>Block Valve Trim :</b> API TRIM No. 8	<b>Weld Quality Insp :</b> PER JOB SPEC -52A1	<b>Stress Relief :</b> NO
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<b>Materials :</b> CARBON STEEL PIPING & VALVES (SEE GENERAL NOTES 1 THRU 8)	<b>Temp/Press Limits :</b> 150 PSIG AT -20F TO 150F .
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Item Name	Range	Det	Rev
Unique/Client* Code	from to		
<u>GATE-PIV</u> <u>518GAAAAC</u>	<u>4"</u> <u>18"</u>	<b>GAPI1</b>	[*]
Body Mat'l : DUCTILE IRON ASTM A395 Codes : MSS SP-70 Body constr. : BOLTED BONNET <b>Rating : 150#</b> <b>Ends : FF</b> Trim constr. : RESILIENT WEDGE, NON-RISING STEM, O.S. & Y. Trim Mat'l : BRONZE TRIM Bolt Mat'l : BODY BOLTING AND GLAND BOLTING PER MANUFACTURER'S STANDARD Gasket Mat'l : PER MANUFACTURER'S STANDARD. Packing : GRAPHITE PACKING . Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9 Operator : W/INDICATOR POST. (4'-0" - DISTANCE FROM GRADE TO CENTER LINE OF VALVE.)			[*] [*] [*] [*] [*] [*] [*] [*] [*] [*] [*]

\* Client codes only, not including sizes



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<u>GATE-PIV</u>	<u>4"</u>	<u>18"</u>	<u>GAPI2</u>	[*]
<u>518GAAAAD</u>				
Body Mat'l : DUCTILE IRON ASTM A395				[*]
Codes : MSS SP-70				[*]
Body constr. : BOLTED BONNET				[*]
Rating : 150#				[*]
Ends : FF				[*]
Trim constr. : RESILIENT WEDGE, NON-RISING STEM, O.S. & Y.				[*]
Trim Mat'l : BRONZE TRIM				[*]
Bolt Mat'l : BODY BOLTING AND GLAND BOLTING PER MANUFACTURER'S STANDARD				[*]
Gasket Mat'l : PER MANUFACTURER'S STANDARD.				[*]
Packing : GRAPHITE PACKING .				[*]
Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9				[*]
Operator : W/INDICATOR POST. (4'-6" - DISTANCE FROM GRADE TO CENTER LINE OF VALVE.)				[*]

<u>GATE-PIV</u>	<u>4"</u>	<u>18"</u>	<u>GAPI3</u>	[*]
<u>518GAAAEE</u>				
Body Mat'l : DUCTILE IRON ASTM A395				[*]
Codes : MSS SP-70				[*]
Body constr. : BOLTED BONNET				[*]
Rating : 150#				[*]
Ends : FF				[*]
Trim constr. : RESILIENT WEDGE, NON-RISING STEM, O.S. & Y.				[*]
Trim Mat'l : BRONZE TRIM				[*]
Bolt Mat'l : BODY BOLTING AND GLAND BOLTING PER MANUFACTURER'S STANDARD				[*]
Gasket Mat'l : PER MANUFACTURER'S STANDARD.				[*]
Packing : GRAPHITE PACKING .				[*]
Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9				[*]
Operator : W/INDICATOR POST. (5'-6" - DISTANCE FROM GRADE TO CENTER LINE OF VALVE.)				[*]

<u>GATE VALVE</u>	<u>4"</u>	<u>18"</u>	<u>GAT</u>	[*]
<u>518GA0006</u>				
Body Mat'l : DUCTILE IRON ASTM A395				[*]
Codes : MSS SP-70				[*]
Body constr. : BOLTED BONNET				[*]
Rating : 150#				[*]
Ends : FF				[*]
Trim constr. : RESILIENT WEDGE, NON-RISING STEM, O.S. & Y.				[*]
Trim Mat'l : BRONZE TRIM				[*]
Bolt Mat'l : BODY BOLTING AND GLAND BOLTING PER MANUFACTURER'S STANDARD				[*]
Gasket Mat'l : PER MANUFACTURER'S STANDARD.				[*]
Packing : GRAPHITE PACKING .				[*]
Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9				[*]
Operator : 2" SQ. OPERATING AWWA NUT(CLOCK WISE TO CLOSE), W/ OPERATING WRENCH 5 FT. LONG.				[*]

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Continue....



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**BALL VALVE**      1/2"      2"      **BAL**  
 512BD0003

Body Mat'l : ASTM A105 OR ASTM A216 GR.WCB.  
 Codes : ASME B16.34 / API 607  
 Body constr. : FULL BORE  
**Rating : 600#**  
**Ends : S.W.**  
 Trim constr. : FLOATING BALL, FIRESAFE DESIGN, ANTISTATIC DEVICE, ANTI-BLOW  
 OUT STEM  
 Trim Mat'l : CARBON STEEL CR-PLATED BALL & SS STEM, PTFE SEATS AND SEALS,  
 PTFE STEM SEALS.  
 Packing : GRAPHITE PACKING .  
 Note : GENERAL NOTES FOR VALVES: SEE JOB SPEC 59B9  
 Operator : LEVER

**PIPE U/G**      1/2"      2"      **SCH. XS**      **PIUFW**  
 581WG0003

Material : KILLED C.S. ASTM A106 GR.B  
 Manufact. : SMLS  
 Coating : EXT.COATED & WRAPPED PER JOB.SPEC. 83A4  
 Codes : ASME B36.10  
 Note : PIPE SHALL COMPLY WITH JOB SPEC 52A2  
**Ends : P.E.**

**PIPE U/G**      4"      24"      **SCH. STD**      **PIUFW**  
 581WG0002

Material : KILLED C.S. ASTM A106 GR.B  
 Manufact. : SMLS  
 Coating : EXT.COATED & WRAPPED PER JOB.SPEC. 83A4  
 Codes : ASME B36.10  
 Note : PIPE SHALL COMPLY WITH JOB SPEC 52A2  
**Ends : B.E.**

**NIPPLES**      1/2"      2"      **SCH. 160**      **NIP**  
 551NC0001

Material : C.S. ASTM A106 GR.B  
 Codes : ASME B36.10  
 Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2  
**Ends : T.O.E.**

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<b>FLANGE</b> <i>581PB0001</i>	<b>4"</b>	<b>24"</b>	<b>SCH. STD</b>	<b>FLG</b> [*]
Type : W.N. Material : ASTM A105 Codes : ASME B16.5 Rating : <b>150#</b> Ends : <b>FF</b> Note : FLANGES SHALL COMPLY WITH JOB SPECS 50A2 AND 52A2				[*]

<b>FLANGE W.N.</b> <i>581PB0006</i>	<b>3"</b>	<b>24"</b>	<b>SCH. STD</b>	<b>FWN</b> [*]
Type : W.N. Material : ASTM A105 Codes : ASME B16.5 Rating : <b>150#</b> Ends : <b>RF</b> Note : FLANGES SHALL COMPLY WITH JOB SPECS 50A2 AND 52A2				[*] [*] [*] [*] [*] [*]

<b>BLIND FLANGE</b> <i>581DB0004</i>	<b>4"</b>	<b>24"</b>		<b>FBL</b> [*]
Material : ASTM A105 Codes : ASME B16.5 Rating : <b>150#</b> Ends : <b>FF</b> Note : FLANGES SHALL COMPLY WITH JOB SPECS 50A2 AND 52A2				[*]

<b>90 ELBOW</b> <i>551HBAAAB</i>	<b>1/2"</b>	<b>2"</b>		<b>90E</b>
Material : C.S. ASTM A105 Component : 90 DEGREES ELBOWS Codes : ASME B16.11 Rating : <b>3000#</b> Ends : <b>S.W.</b> Note : FITTING SHALL COMPLY WITH JOB SPEC 52A2 AND EXT.COATED & WRAPPED PER JOB SPEC. 83A4.				

<b>90 ELBOW</b> <i>581GF0003</i>	<b>4"</b>	<b>24"</b>	<b>SCH. STD</b>	<b>90E</b>
Material : C.S. ASTM A234 WPB Coating : EXT.COATED & WRAPPED PER JOB.SPEC. 83A4 Component : 90 DEGREES LONG RADIUS Codes : ASME B16.9 Manufact. : SMLS Ends : <b>B.W.</b> Note : FITTINGS SHALL COMPLY WITH JOB SPEC 52A2				

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- 2.) Where Pipe Schedule Is Shown, It Is Adequate For The Full Flange Rating. Where "CALC" Is Shown, The Pressure Limit May Be Lower Than Flange Rating. See The Project Line List And Applicable Piping Drawing For Details.
  - 3.) 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.
  - 4.) In Sizes Above NPS 24", Flanges In Accord With ASME B16.47 Series B (API-605) Preferred. Where Required To Match Equipment Or Wafer Style Valves, Flanges Per ASME B16.47 SERIES A (MSS-SP44) May Be Used.
  - 5.) Branch Connections Should Follow The Guidelines Of Job Spec 52B2 And The Attachment Unless Specifically Overridden By The Pipe Stress Engineer.
  - 6.) CORR-A-SEAL / GRAPHONICS Gaskets Shall Be Used For Flat Face Flanges.
  - 7.) Concentric & Eccentric Reducers Are Limited To 2 Nominal Diameter Size Reductions Without Piping Engineer Approval.
  - 8.) Remove Temporary Strainers After Flushing.
  - 9.) Items "FWN", "STS", And "GAS" To Be Used At Risers With RF Flanges.
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END OF DOCUMENT

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