



CONTRACTOR SUBMITTAL FORM

Project Name: Navajo Gallup Water Supply Project Reach 26.3	<input checked="" type="checkbox"/> M (Materials)	Submittal No. M032
SMA Project No: 6921307	<input type="checkbox"/> T (Testing)	
Date: 08-09-2019	<input type="checkbox"/> A (Administrative)	
Contractor: Navajo Engineering and Construction Authority	No. of Copies: 1	

Supplier: Core & Main	Manufacturer: ANVIL International
Specification No.: 33 11 13-2.1C	Drawing No.: DT-8, DT-9, DT-10
Bid Item No(s): 21, 22, 33, 34, 39, 40	
Submittal Checklist No(s): M354	
Product Description: Sizes 4", 2", 1", 3/4", and 1/2" - Fittings include Tee, 45° Elbow, 90° Elbow, Cap, Reducer, Nipples.	
Are there any deviations from the Contract Documents? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Explain:	
Contractor's certification that product meets requirements of Contract Documents: <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Certified with variations as noted on shop drawings and/or attached sheets.	
Signed:  Quentin Benally, NECA	Date: 08-09-2019

Engineer's Comments: <input type="checkbox"/> No Exception Taken <input checked="" type="checkbox"/> Approved as Corrected <input type="checkbox"/> Exceptions as Noted <input type="checkbox"/> Submittal Rejected <input type="checkbox"/> Revise and Resubmit to Engineer <input type="checkbox"/> Contractor to Submit Specified Information <i>- Contractor responsible to supply correct sizes & types of fittings</i>	Review is limited to check for compliance with design concept. No changes from provisions of Contract Documents are intended and Contractor remains responsible for compliance with revisions therein. The Contractor is solely responsible for quantities; correctness of dimensions; verification of physical interrelation of elements of the work as required by the drawings and specifications and by field determination; fabrication procedures, construction methods, techniques and sequences. This review does not relieve the Contractor from these responsibilities. Non-conformities and errors detected have been noted but such markings, or lack thereof, shall not relieve the Contractor from compliance with all requirements of the contract drawings and specifications.
Signed: 	Date: 8/20/19



January 2008

B U I L D I N G C O N N E C T I O N S T H A T L A S T



Steel Pipe Nipples & Malleable Fittings



Anvil's Unmatched Piping Products for Every Industry

Anvil provides the most comprehensive line of innovative, durable, and reliable pipe connections, support systems, and customer service.

For more than 150 years, Anvil has provided integrated, reliable piping solutions for a variety of applications. With the most complete line of piping products, expert design services, and a responsive customer service team, Anvil's total package is unmatched throughout the industry. Our professionals will work with you to develop innovative solutions that meet your demands and exceed your expectations.

From HVAC, plumbing and mechanical to fire protection, mining, oil and gas, and gas utilities, Anvil covers all markets. Our extensive product line includes grooved couplings, fittings, and valves; cast and malleable pipe fittings; forged steel fittings and unions; steel pipe nipples and couplings; pipe hangers and supports; strut and channel; oil country fittings; and valves. Our exceptional market-specific expertise ensures you always get the best solution for your unique application.

In addition to Anvil's extensive line of domestically manufactured products, Anvil also offers a full line of Globally manufactured malleable iron fittings and steel pipe nipples. These products are manufactured within ISO 9001:2000 facilities where Anvil's quality control engineers oversee the entire process. Anvil is committed to providing the finest quality pipe fittings available, which we believe only a true manufacturer can provide. Engineered drawings of fittings and nipples along with detailed inspection procedures, leave no questions regarding Anvil's commitment to quality imported products.

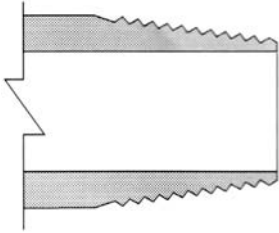
With 150 years of manufacturing expertise, Anvil is in a unique position to set the highest quality standard for both domestic and import products. Anvil's specifications for SPF malleable fittings and pipe nipples are higher than typical ANSI specification. The SPF malleable fittings are UL Listed and FM Approved.

Standard Welded

Anvil International is the only manufacturer where you can combine your import and U.S. Manufactured product requirements.

STANDARDS & SPECIFICATIONS

SPF Imported Steel Pipe Nipples (Standard Welded)

Dimensional:	ASTM A733	<p>Standard End Finish Tapered Pipe Thread (NPT)</p> 	
Material:	ASTM A53 Type F or Type E		
Galvanizing:	Hot Dip Galvanizing*		
Threading:**	ASME B 1.20.1		

*Galvanized nipples are manufactured from pipe coated on the inside and outside by hot dip process.

**British Standard threading per BS 21 available upon request.

- Ends are cut square to the central axis. All burrs on the inside are removed. The ends of the pipe nipples are chamfered on the outside at an angle of 35° +/- 10° to the central axis.
- Pipe nipples are threaded on both ends with standard NPT tapered threads. Threads are right hand on both ends.

Also available:

- Ready Cut Pipe, Standard - Schd. 40 (black and galvanized)
Pipe Size: 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
Pipe Length: 8", 24", 30", 48", 60", 72"
- "66" Packs, Standard - Schd. 40 (black and galvanized)
Nipple Size: 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
- Single Run Nipple Packs (black and galvanized)
Pipe Size: 1/2", 3/4", 1, 1 1/4", 1 1/2", 2"


Pipe Size	Pipe O.D.	Length Close	Pipe Nipple Lengths (Black and galvanized)															
(in.)	(in.)	(in.)																
1/8	.405	3/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
1/4	.540	7/8	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
3/8	.675	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
1/2	.840	1 1/8	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
3/4	1.050	1 3/8	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
1	1.315	1 1/2		2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
1 1/4	1.660	1 5/8		2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
1 1/2	1.900	1 3/4		2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
2	2.375	2			2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
2 1/2	2.875	2 1/2				3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
3	3.500	2 5/8				3	3 1/2	4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
4	4.500	2 7/8						4	4 1/2	5	5 1/2	6	7	8	9	10	11	12
6	6.625	3 1/8						4	4 1/2	5	5 1/2	6	7	8	9	10	11	12

SPF MALLEABLE IRON FITTINGS

Class 150 (Standard)

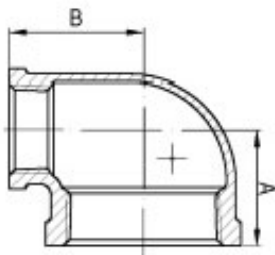
STANDARDS & SPECIFICATIONS

Import Malleable Iron Screwed Fittings (Class 150)

Dimensional:	Fittings:	ASME B16.3	
	Unions:	ASME B 16.39	
	Bushings/Plugs:	ASME B 16.14	
Material:	ASTM A-197		
Galvanizing:	ASTM A-153	(Hot Dip Galvanizing)	
Threading:*	ASME B 1.20.1		
Pressure Rating:	Fittings:	ASME B 16.3	
	Unions:	ASME B 16.39	
	Bushings/Plugs:	ASME B 16.14	
Pressure Testing:	All malleable iron fittings are tested for through wall porosity using an air under water process.		
Agency Approvals:	All malleable iron fittings and unions are UL Listed and FM Approved.		

*British Standard threading per BS 21 available upon request.


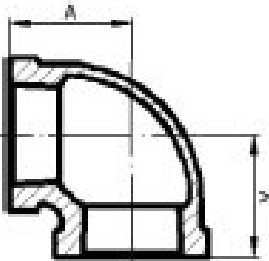
90° REDUCING ELBOW





Size	A	B	Weight
in	in	in	lbs
1/4 x 1/8	0.74	0.76	0.08
3/8 x 1/8	0.81	0.85	0.11
3/8 x 1/4	0.88	0.90	0.13
1/2 x 1/4	0.97	0.98	0.16
1/2 x 3/8	1.04	1.03	0.19
3/4 x 3/8	1.12	1.13	0.26
3/4 x 1/2	1.20	1.22	0.29
1 x 1/2	1.26	1.36	0.42
1 x 3/4	1.37	1.45	0.47
1 1/4 x 1/2	1.34	1.53	0.54
1 1/4 x 3/4	1.45	1.62	0.62
1 1/4 x 1	1.58	1.67	0.73
1 1/2 x 3/4	1.52	1.75	0.74
1 1/2 x 1	1.65	1.80	0.88
1 1/2 x 1 1/4	1.82	1.88	1.03
2 x 3/4	1.60	1.97	1.04
2 x 1	1.73	2.02	1.28
2 x 1 1/4	1.90	2.10	1.36
2 x 1 1/2	2.02	2.16	1.51
2 1/2 x 1 1/2	2.16	2.51	2.20
2 1/2 x 2	2.39	2.60	2.55
3 x 2	2.52	2.89	3.35
3 x 2 1/2	2.83	2.99	4.12
4 x 3	3.30	3.60	6.65

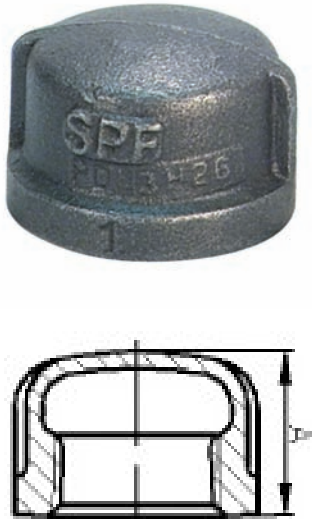
SPF MALLEABLE IRON FITTINGS

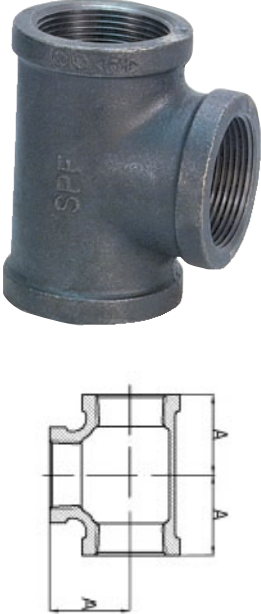
Class 150 (Standard)

90° ELBOW	Size	A	Weight
	<i>in</i>	<i>in</i>	<i>lbs</i>
 	1/8	0.69	0.06
	1/4	0.81	0.10
	3/8	0.95	0.15
	1/2	1.12	0.22
	3/4	1.31	0.36
	1	1.50	0.57
	1 1/4	1.75	0.87
	1 1/2	1.94	1.16
	2	2.25	1.81
	2 1/2	2.70	3.23
	3	3.08	4.82
	4	3.79	8.41
	6	5.13	19.96

45° ELBOW	Size	A	Weight
	<i>in</i>	<i>in</i>	<i>lbs</i>
 	1/8	0.63	0.06
	1/4	0.73	0.11
	3/8	0.80	0.14
	1/2	0.88	0.20
	3/4	0.98	0.32
	1	1.12	0.50
	1 1/4	1.29	0.76
	1 1/2	1.43	1.00
	2	1.68	1.61
	2 1/2	1.95	2.77
	3	2.17	4.03
	4	2.61	6.92
	6	3.46	16.31


Class 150 (Standard)

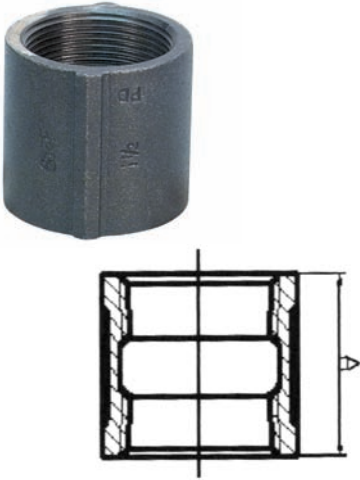
CAP	Size	A	Weight
	<i>in</i>	<i>in</i>	<i>lbs</i>
	1/8	0.53	0.03
	1/4	0.63	0.05
	3/8	0.74	0.07
	1/2	0.87	0.11
	3/4	0.97	0.18
	1	1.16	0.30
	1 1/4	1.28	0.44
	1 1/2	1.33	0.55
	2	1.45	0.85
	2 1/2	1.70	1.49
	3	1.80	2.20
	3 1/2	1.90	3.02
	4	2.08	3.79
	6	2.55	8.77

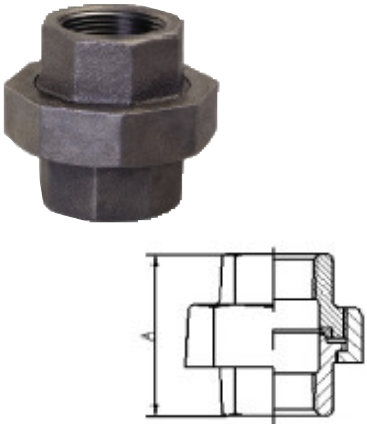
TEE	Size	A	Weight
	<i>in</i>	<i>in</i>	<i>lbs</i>
	1/8	0.69	0.09
	1/4	0.81	0.14
	3/8	0.95	0.21
	1/2	1.12	0.31
	3/4	1.31	0.50
	1	1.50	0.79
	1 1/4	1.75	1.19
	1 1/2	1.94	1.57
	2	2.25	2.43
	2 1/2	2.70	4.33
	3	3.08	6.37
	4	3.79	11.03

SPF MALLEABLE IRON FITTINGS

Class 150 (Standard)

FLOOR FLANGE	Size	Dia. Flange	Dia. of Bolt Circle	Dia. of Bolt Holes	Weight
	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>	<i>lbs</i>
	¾	3.37	2.36	.28	0.49
	1	3.78	2.80	.28	0.63
	1 ¼	4.19	3.17	.28	0.87
	1 ½	4.59	3.50	.31	1.10
	2	5.18	4.01	.31	1.57

COUPLING	Size	A	Weight
	<i>in</i>	<i>in</i>	<i>lbs</i>
	⅛	0.96	0.05
	¼	1.06	0.08
	⅜	1.16	0.12
	½	1.34	0.17
	¾	1.52	0.27
	1	1.67	0.43
	1 ¼	1.93	0.65
	1 ½	2.15	0.86
	2	2.53	1.35
	2 ½	2.88	2.33
	3	3.18	3.36
	4	3.69	5.59

UNIONS (BRASS SEAT)	Size	A (<i>in</i>)		Weight (<i>lbs</i>)	
	<i>in</i>	SPF/Anvil	Tupy	SPF/Anvil	Tupy
	⅛	1.26	—	0.16	—
	¼	1.46	1.65	0.23	0.23
	⅜	1.61	1.77	0.33	0.29
	½	1.73	1.89	0.41	0.43
	¾	1.95	2.05	0.60	0.64
	1	2.07	2.28	0.89	0.80
	1 ¼	2.26	2.56	1.25	1.40
	1 ½	2.42	2.76	1.76	1.69
	2	2.75	3.07	2.44	2.66
	2 ½	3.23	3.35	3.52	3.87
	3	3.50	3.74	4.34	5.81