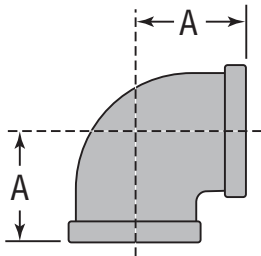




FIG. 3201
90° Elbow



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3201 - 90° ELBOW			
Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
In. (mm)	PSI (kPa)	In. (mm)	Lbs. (kg)
1	500	1.50	0.62
20	3450	38.10	0.28
1¼	500	1.75	0.90
32	3450	44.45	0.41
1½	500	1.94	1.20
40	3450	49.276	0.54
2	500	2.25	1.85
50	3450	57.15	0.84

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

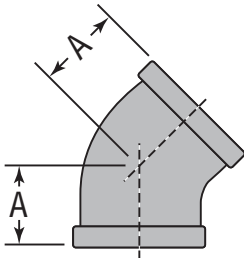
Dimensions: ASME B16.3
Material: ASTM A536 Grade 65-45-12
Finish: Black
Threads: NPT per ASME B1.20.1
Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			



FIG. 3202
45° Elbow



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3202 - 45° ELBOW			
Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1	500	1.12	0.46
25	3450	28.44	0.21
1¼	500	1.29	0.73
32	3450	32.76	0.33
1½	500	1.43	0.92
40	3450	36.32	0.42
2	500	1.68	1.50
50	3450	42.67	0.68

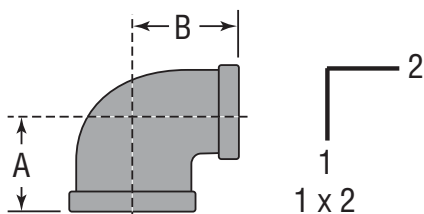
▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3
Material: ASTM A536 Grade 65-45-12
Finish: Black
Threads: NPT per ASME B1.20.1
Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

FIG. 3201R**Reducing 90° Elbow**

For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3201R - REDUCING 90° ELBOW

Nominal Size	Max. Working Pressure [▲]	Dimensions		Approx. Wt. Each
1 x 2		A	B	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	Lbs. (kg)
1 x ½ 25 x 15	500 3450	1.26 32.00	1.36 34.54	0.44 0.20
1 x ¾ 25 x 20	500 3450	1.37 34.79	1.45 36.83	0.52 0.24
1¼ x ½ 32 x 15	500 34550	1.34 34.03	1.53 38.86	0.64 0.29
1¼ x ¾ 32 x 20	500 3450	1.45 36.83	1.62 41.14	0.72 0.33
1¼ x 1 32 x 25	500 3450	1.58 40.13	1.67 42.41	0.75 0.34
1½ x 1 40 x 25	500 3450	1.65 41.91	1.80 45.72	0.92 0.42
1½ x 1¼ 40 x 32	500 3450	1.82 46.22	1.88 47.75	1.08 0.49
2 x ½ 50 x 15	500 3450	1.49 37.84	1.88 47.75	1.08 0.49
2 x ¾ 50 x 20	500 3450	1.60 40.64	1.97 50.03	1.24 0.56
2 x 1 50 x 25	500 3450	1.73 43.94	2.02 51.30	1.40 0.64
2 x 1¼ 50 x 32	500 3450	1.90 48.26	2.10 53.34	1.52 0.70
2 x 1½ 50 x 40	500 3450	2.02 51.30	2.16 54.86	1.65 0.75

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

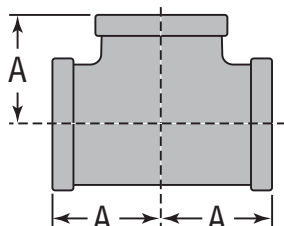
NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION**APPROVAL STAMP**

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

FIG. 3205

Straight Tee



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3205 - STRAIGHT TEE

Nominal Size	Maximum Working Pressure [▲]	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1	500	1.50	0.85
25	3450	38.10	0.39
1¼	500	1.75	1.22
32	3450	44.45	0.55
1½	500	1.94	1.55
40	3450	49.27	0.70
2	500	2.25	2.45
50	3450	57.15	1.11

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

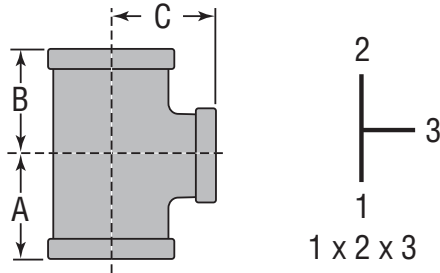
PROJECT INFORMATION

APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

FIG. 3205R

Reducing Tee



UL LISTED FM APPROVED
For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3205R - REDUCING TEE

Nominal Size	Max. Working Pressure▲	Dimensions			Approx. Wt. Each
1 x 2 x 3		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1 x 1/2 x 1 25 x 15 x 25	500 3450	1.50 38.10	1.36 34.54	1.50 38.10	0.64 0.29
1 x 3/4 x 1 25 x 20 x 25	500 3450	1.50 38.10	1.45 36.83	1.50 38.10	0.73 0.33
1 x 1 x 1/2 25 x 25 x 15	500 3450	1.26 32.00	1.26 32.00	1.36 34.54	0.71 0.32
1 x 1 x 3/4 25 x 25 x 20	500 3450	1.37 34.80	1.37 34.80	1.45 36.83	0.76 0.34
1 x 1 x 1 1/4* 25 x 25 x 32	500 3450	1.67 42.41	1.67 42.41	1.58 40.13	0.98 0.44
1 x 1 x 1 1/2* 25 x 25 x 40	500 3450	1.80 45.72	1.80 45.72	1.65 41.91	1.16 0.53
1 1/4 x 1 x 1/2* 32 x 25 x 15	500 3450	1.34 34.04	1.26 32.00	1.53 38.86	0.82 0.37
1 1/4 x 1 x 3/4 32 x 25 x 20	500 3450	1.45 36.83	1.37 34.80	1.62 41.15	0.90 0.41
1 1/4 x 1 x 1 32 x 25 x 25	500 3450	1.58 40.13	1.50 38.10	1.67 42.42	1.00 0.45
1 1/4 x 1 x 1 1/4 32 x 25 x 32	500 3450	1.75 44.45	1.67 42.42	1.75 44.45	1.08 0.49
1 1/4 x 1 x 1 1/2 32 x 25 x 40	500 3450	1.88 47.75	1.80 45.72	1.82 46.22	1.42 0.64
1 1/4 x 1 1/4 x 1/2 32 x 32 x 15	500 3450	1.34 34.04	1.34 34.04	1.53 38.86	0.86 0.39

▲ Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

* Part supplied as "Bull Head Tee".

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

FIGURE 3205R - REDUCING TEE

Nominal Size	Max. Working Pressure▲	Dimensions			Approx. Wt. Each
1 x 2 x 3		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1 1/4 x 1 1/4 x 3/4 32 x 32 x 20	500 3450	1.45 36.83	1.45 36.83	1.62 41.15	0.92 0.42
1 1/4 x 1 1/4 x 1 32 x 32 x 25	500 3450	1.58 40.13	1.58 40.13	1.67 42.42	0.95 0.43
1 1/4 x 1 1/4 x 1 1/2* 32 x 32 x 40	500 3450	1.88 47.75	1.88 47.75	1.82 46.22	1.45 0.66

PROJECT INFORMATION

APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

FIG. 3205R

Reducing Tee

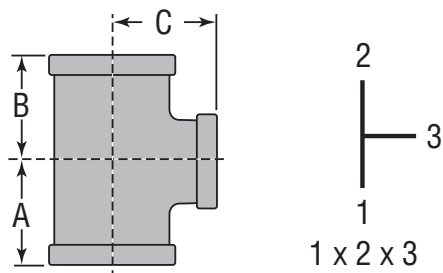


FIGURE 3205R - REDUCING TEE					
Nominal Size	Max. Working Pressure▲	Dimensions			Approx. Wt. Each
1 x 2 x 3		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1¼ x 1¼ x 2*	500 3450	2.10 53.34	2.10 53.34	1.90 48.26	1.75 0.79
1½ x 1 x ½	500 3450	1.41 35.81	1.34 34.04	1.66 42.16	0.95 0.43
1½ x 1 x ¾	500 3450	1.52 38.61	1.37 34.80	1.75 44.45	1.14 0.52
1½ x 1 x 1	500 3450	1.65 41.91	1.50 38.10	1.80 45.72	1.17 0.53
1½ x 1 x 1¼	500 3450	1.82 46.23	1.67 42.42	1.88 47.75	1.34 0.61
1½ x 1 x 1½	500 3450	1.94 49.28	1.80 45.72	1.94 49.28	1.45 0.66
1½ x 1¼ x ½	500 3450	1.41 35.81	1.34 34.04	1.66 42.16	1.05 0.48
1½ x 1¼ x ¾	500 3450	1.52 38.61	1.45 36.83	1.75 44.45	1.15 0.5
1½ x 1¼ x 1	500 3450	1.65 41.91	1.58 40.13	1.80 45.72	1.25 0.57
1½ x 1¼ x 2*	500 3450	2.16 54.86	2.10 53.34	2.02 51.30	1.90 0.86
1½ x 1½ x ½	500 3450	1.41 35.81	1.41 35.81	1.16 29.46	1.15 0.52
1½ x 1½ x ¾	500 3450	1.52 38.61	1.52 38.61	1.75 44.45	1.24 0.56
1½ x 1½ x 1	500 3450	1.65 41.91	1.65 41.91	1.80 45.72	1.30 0.59
1½ x 1½ x 1¼	500 3450	1.82 46.23	1.82 46.23	1.88 47.75	1.48 0.67

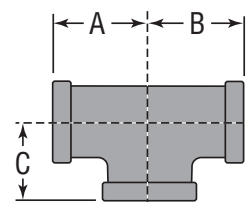
FIGURE 3205R - REDUCING TEE					
Nominal Size	Max. Working Pressure▲	Dimensions			Approx. Wt. Each
1 x 2 x 3		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1½ x 1½ x 2*	500 3450	2.16 54.86	2.16 54.86	2.02 51.30	1.98 0.90
2 x 1 x 2	500 3450	2.25 57.15	2.02 51.31	2.25 57.15	2.15 0.98
2 x 1¼ x 2	500 3450	2.25 57.15	2.10 53.34	2.25 57.15	2.30 1.04
2 x 1½ x ½	500 3450	1.49 37.85	1.41 35.81	1.88 47.75	1.50 0.68
2 x 1½ x ¾	500 3450	1.60 40.64	1.52 38.61	1.97 50.04	1.62 0.73
2 x 1½ x 1	500 3450	1.73 43.94	1.65 41.91	2.02 51.31	1.64 0.74
2 x 1½ x 1¼	500 3450	1.90 48.26	1.82 46.23	2.10 53.34	1.80 0.82
2 x 1½ x 1½	500 3450	2.02 51.31	1.94 49.28	2.16 54.86	2.00 0.91
2 x 1½ x 2	500 3450	2.25 57.15	2.16 54.86	2.25 57.15	2.35 1.07
2 x 2 x ½	500 3450	1.49 37.85	1.49 37.85	1.88 47.75	1.60 0.73
2 x 2 x ¾	500 3450	1.60 40.64	1.60 40.64	1.97 50.04	1.68 0.76
2 x 2 x 1	500 3450	1.73 43.94	1.73 43.94	2.02 51.31	1.85 0.84
2 x 2 x 1¼	500 3450	1.90 48.26	1.90 48.26	2.10 53.34	2.04 0.93
2 x 2 x 1½	500 3450	2.02 51.31	2.02 51.31	2.16 54.86	2.18 0.99

▲ Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

* Part supplied as "Bull Head Tee".

BULL HEAD TEE**Ductile Iron****Submittal Sheet****BULL HEAD TEE**

Nominal Size	Anvil Item Number	Universal Number	Max. Working Pressure	Dimensions			Approx. Wt. Each
				A	B	C	
In. (mm)			PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1 x 1 x 1 1/4 25 x 25 x 32	840004238	DT334	500 3450	1.67 42.41	1.67 42.41	1.58 40.13	0.98 0.44
1 x 1 x 1 1/2 25 x 25 x 40	840004246	DT335	500 3450	1.80 45.72	1.80 45.72	1.65 41.91	1.16 0.53
1 1/4 x 1 x 1 1/2 32 x 25 x 40	840004295	DT435	500 3450	1.88 47.75	1.80 45.72	1.82 46.22	1.42 0.64
1 1/4 x 1 1/4 x 1 1/2 32 x 32 x 40	840004337	DT445	500 3450	1.88 47.75	1.88 47.75	1.82 46.22	1.45 0.66
1 1/4 x 1 1/4 x 2 32 x 32 x 50	840004345	DT446	500 3450	2.10 53.34	2.10 53.34	1.90 48.26	1.75 0.79
1 1/2 x 1 1/4 x 2 40 x 32 x 50	840004436	DT546	500 3450	2.16 54.86	2.10 53.34	2.02 51.30	1.90 0.86
1 1/2 x 1 1/2 x 2 40 x 40 x 50	840004485	DT556	500 3450	2.16 54.86	2.16 54.86	2.02 51.30	1.98 0.90

**MATERIAL SPECIFICATIONS**

Ductile iron threaded fittings are UL & ULC Listed & Factory Mutual Approved for 500 psi service. Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3 Class 150. Threads are NPT per ANSI/ASME B1.20.1.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened three turns beyond hand tight, but no more than four turns.

**APPROVED**

For Listing/Approval Details and Limitations visit our Web Site www.anvilintl.com or contact an Anvil®/AnvilStar™ Sales Representative.

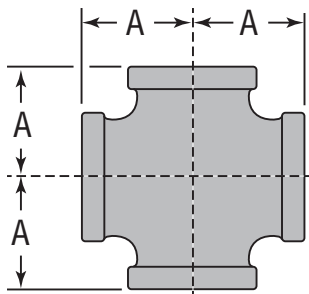
PROJECT INFORMATION:**APPROVAL STAMP:**

Project:	
Date:	Phone:
Architect / Engineer:	
Contractor:	
Address:	
Notes 1:	
Notes 2:	

APPROVAL STAMP:

FIG. 3207

Cross



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3207 - CROSS

Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1	500	1.50	0.98
25	3450	38.10	0.44
1¼	500	1.75	1.50
32	3450	44.45	0.68
1½	500	1.94	1.90
40	3450	49.27	0.86
2	500	2.25	2.95
50	3450	57.15	1.34

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION

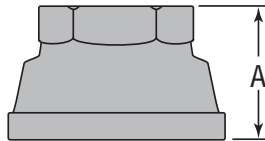
APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



FIG. 3221R

Reducing Coupling



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3221R - REDUCING COUPLING

Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 x 1/2	500	1.69	0.39
25 x 15	3450	42.92	0.18
1 x 3/4	500	1.69	0.53
25 x 20	3450	42.92	0.24

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

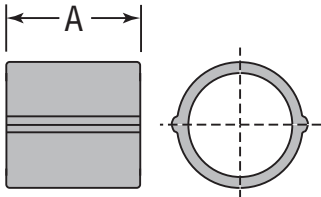
PROJECT INFORMATION

APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



FIG. 3221
Coupling



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3221 - COUPLING			
Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
In. (mm)	PSI (kPa)	In. (mm)	Lbs. (kg)
1	500	1.67	0.40
25	3450	42.42	0.18
1¼	500	1.93	0.57
32	3450	49.02	0.26
1½	500	2.15	0.75
40	3450	54.61	0.34
2	500	2.53	1.15
50	3450	64.26	0.52

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3
Material: ASTM A536 Grade 65-45-12
Finish: Black
Threads: NPT per ASME B1.20.1
Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

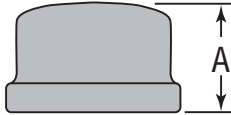
NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			



FIG. 3224

Cap



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3224 - CAP			
Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1	500	1.16	0.32
25	3450	29.46	0.15
1¼	500	1.28	0.43
32	3450	32.51	0.20
1½	500	1.33	0.60
40	3450	33.78	0.27
2	500	1.45	0.91
50	3450	36.83	0.41

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3
 Material: ASTM A536 Grade 65-45-12
 Finish: Black
 Threads: NPT per ASME B1.20.1
 Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

FIG. 3283

Bushings

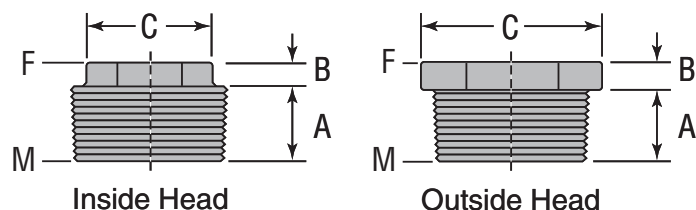


FIGURE 3283 - BUSHINGS

Nominal Size Male (M) x Female (F)	Max. Working Pressure▲	Dimensions			Style	Approx. Wt. Each
In. (mm)	PSI (kPa)	A In. (mm)	B In. (mm)	C In. (mm)		Lbs. (kg)
1 x 1/2 25 x 15	500 3450	0.75 19.05	0.25 6.35	1.42 36.06	Outside	0.22 0.10
1 x 3/4 25 x 20	500 3450	0.75 19.05	0.25 6.35	1.42 36.06	Outside	0.17 0.08
1 1/4 x 1 32 x 25	500 3450	0.80 20.32	0.28 7.11	1.76 44.70	Outside	0.28 0.13
1 1/2 x 1 40 x 25	500 3450	0.83 21.08	0.31 7.874	2.00 50.80	Outside	0.45 0.20
1 1/2 x 1 1/4 40 x 32	500 3450	0.83 21.08	0.31 7.874	2.00 50.80	Outside	0.30 0.14
2 x 1 50 x 25	500 3450	0.88 22.35	0.41 10.414	1.95 49.53	Inside	0.67 0.30
2 x 1 1/4 50 x 32	500 3450	0.88 22.35	0.34 8.636	2.48 62.99	Outside	0.73 0.33
2 x 1 1/2 50 x 40	500 3450	0.88 22.35	0.34 8.636	2.48 62.99	Outside	0.61 0.28

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.14

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION

APPROVAL STAMP

Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 20, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

☐

UPS

☐

Courier

☒

Email

Copies	No.	Description
1 PDF	211313F02	(Submittal No.'s:)
		(Cannon #211313-015) - (Paric #15051-0349) - (WES #607)
		➤ Wet Pipe Sprinkler System Product Data

***Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel
Kpatel@cannondesign.com

☒

***Reviewed**

☒

***No Exceptions Taken -**

☒

***Amend and Resubmit**

☒

***Make Corrections As Noted,
No Resubmittal Required**

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: wtashop@wmtao.com

From: Mike Whitworth

Date: December 20, 2016

Re: Webster University ISB

WES No: 607

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – (213113-015) 211313 Wet Pipe Sprinkler System	1	12/20/16

•Signature: Mike Whitworth

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University I

LOCATION: St. Louis Missouri

CLIENT PROJ. NO.: N/A

WES PROJ. NO.: 607

SPECIFICATION 211313
SECTION: Wet Pipe Sprinkler System

SUBMITTAL ITEM: See Below -

CONTRACTOR: J.F. Ahern Co.
CTR. SUBMITTAL #: 21 1313-015
SUBMITTAL DATE: November 29, 2016
DATE RECEIVED: December 07, 2016
RECEIVED VIA: E-Mail
RECEIVED FROM: WTA
DATE RETURNED: DECEMBER 20, 2016
RETURNED VIA: E-MAIL
RETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NO EXCEPTION TAKEN

MAKE CORRECTIONS NOTED, NO RESUBMITTAL:

AMEND AND RESUBMIT

REJECTED, SEE REMARKS:

REVIEWED ONLY

NEC	MCN	AAR	REJ	REV	ITEM	REMARKS
Pages numbers have been added to cut sheets for referencing						
X					Page 001 Schedule 10 Pipe Various Manufacturers	
X					Page 002 Schedule 40 Pipe Various Manufacturers	
X					Pages 003 – 004 Test and Drain Valve AGF Manufacture ring Model – 1011A	
X					Pages 005 – 006 Backflow Preventer Zurn Industries Model – 350A	
X					Pages 007 – 008 Standard Duty Loop Hanger Caddy Model – 115 Series	

X				Pages 009 – 010 Universal Beam Clamp Caddy Model – 300 Series	
X				Pages 011 – 016 Carbon Steel Anchor Screw Hilti Model – 3.3.5 KWIK HUS- EZ (KH-EZ1)	
X				Page 017 Riser Clamp PHD Manufacturing Model – Fig. 550-551-553	
X				Page 018 Universal Restraining Strap Afcon Model - 162	
X				Pages 019 – 027 Sleeve Expansion Anchors Powers Fasteners Model – Lok-Bolt Hex Head and Rod Hanger	
X				Pages 028 – 031 Strut Channel Gregory Strut Products Model – G712OS, G712A, G5820S, G582A and G1320OS	
X				Page 032 Surge Restraint 115 Caddy Model – SR6	
X				Page 033 Screw Anchor/Hanger ITW Model – Sammy X-Press	
		X		Pages 034 – 039 Quick Response Dry Pendent Sprinkler Viking Model - SIN Not Specified	1. SIN numbers listed in submittal (VK172, VK176, VK180 on pages 037/038) is not listed on the FP drawings in the Sprinkler schedule.
X				Pages 040 -043 Microfast Quick Response Upright Sprinkler Viking Model – SIN VK300	
		X		Pages 044 -049 Microfast Quick Response Pendent Sprinkler Viking Model – SIN VK302	1. SIN number listed in submittal (VK302 on pages 047/048) is not listed on the FP drawings in the Sprinkler schedule.

X				Pages 050 – 055 Microfast Quick Response Horizontal Sidewall Sprinkler Viking Model – SIN VK305	
X				Pages 056 – 059 Microfast Quick Response Upright Sprinkler Viking Model – SIN VK350	
		X		Pages 060 – 065 Microfast Quick Response Pendent Sprinkler Viking Model – SIN VK352 (K8.0)	1. SIN number listed in submittal (VK352 on pages 063/064) is not listed on the FP drawings in the Sprinkler schedule.
		X		Pages 066 – 071 Microfast Quick Response Pendent Sprinkler Viking Model – SIN VK352 (K8.0)	1. SIN number listed in submittal (VK352 on pages 069/070) is not listed on the FP drawings in the Sprinkler schedule.
X				Pages 072 – 077 Mirage Standard and QR Concealed Pendent Sprinkler Viking Model – SIN VK462	
X				Page 078 Spare Sprinkler Head Cabinet FPPI Model – Not indicated	
X				Page 079 – 089-091 Spare Sprinkler Head Cabinet TYCO Model – Not Indicated	
X				Pages 080 – 088 Sprinkler Escutcheons Viking Model -	
X				Pages 092 – 094 Sprinkler Guards Viking Model – D-1	
X				Pages 095 – 100 Standard / QR Extended Coverage Upright Sprinkler Viking Model – SIN VK532	
X				Pages 101 – 106 Standard / QR Extended Coverage Pendent Sprinkler Viking Model – SIN VK534	

X				Pages 107 – 112 Mirage QR Extended Coverage Concealed Pendent Sprinkler Viking Model – SIN VK634	
		X		Pages 113 – 120 Concealed Dry Pendant Sprinkler Reliable Model – G5-56 Dry (SIN RA5114)	1. Manufacturer and model/SIN number listed in submittal is not listed on the FP drawings in the Sprinkler schedule. 2. Color/finish of cover plate to be submitted to the Architect for review and approval.
X				Pages 121 - 124 Flexible Coupling Victaulic Model – Style 75	
X				Pages 125 - 128 Reducing Coupling Victaulic Model – Style 750	
X				Pages 129 – 131 FireLock Fittings Victaulic Model – Fire lock	
X				Pages 132 – 134 FireLock Rigid Coupling Victaulic Model – Style 005H	
X				Pages 135 – 136 Fire lock Flange Adapter Victaulic Model – Style 744	
X				Pages 137 – 144 Mechanical T Bolted Branch Outlets Victaulic Model – Styles 920 and 920N	
X				Pages 145 – 149 Firelock Rigid Coupling Victaulic Model – Style 009N	
X				Pages 150 – 151 Threaded Mechanical Branch Tee Anvil Model – Fig. MT-30	
X				Pages 152 – 153 Grooved Welded Steel Pipe Outlets Vandewater International Inc. Model - Various	
X				Pages 154 – 155 Welded Steel Pipe Outlets Vandewater International Inc. Model - Various	

X					Page 156 DI Threaded Fitting – 90 Elbow Anvil Model – Fig 3201	
X					Page 157 DI Threaded Fitting – 45 Elbow Anvil Model – Fig 3202	
X					Page 158 DI Threaded Fitting – Reducing 90 Elbow Anvil Model – Fig 3201R	
X					Page 159 DI Threaded Fitting – Straight T Anvil Model – Fig 3205	
X					Pages 160 - 161 DI Threaded Fitting – Reducing T Anvil Model – Fig 3205R	
X					Page 162 DI Threaded Fitting Anvil Model – Bull Head T	
X					Page 163 DI Threaded Fitting Cross Anvil Model - 3207	
X					Page 164 DI Threaded Fitting Anvil Model – 3221R	
X					Page 165 DI Threaded Fitting Anvil Anvil Model - 3121	
X					Page 166 DI Threaded Fitting Cap Anvil Model - 3224	
X					Page 167-168 DI Threaded Fitting Bushing Anvil Model - 3283	

				X	Pages 169 – 183 Flexible Sprinkler Hose Victaulic Model – Series AH2 Bracket AB1, AB7 and AB7 Adjustable	1. This product is not listed in the construction documents for use on this project. Contractor has elected to incorporate into the delegated design.
X					Pages 184 – 185 Water Flow Detector System Sensor Model – WFD Series	
X					Pages 186 – 192 Supervisory Switch Potter Electrical Model – PCVS Series	
	X				Pages 193 – 194 Electric Bell Potter Electric Model – Not Indicated	1. Specified to be 10 inch diameter. Refer to specification section 211313, part 2.6, B4 and B-7.
X					Page 195 Service Gauge Ashcroft Model – 35W1005PH02LXUL300	
X					Pages 196 – 199 Intumescent Sealant STI Model - Series LCI	
X					Page 200 Fire Pump Suction and Discharge Gauges Alenco Series AG-1000L	
X					Page 201 Suction and Discharge Gauge Assembly A-C Fire Pump systems Model – Not Indicated	
	X				Pages 202 – 203 Fire Pump Test Header Potter Roemer Model – 5864-x-x-6-D- NST	1. Assembly to be mounted vertically, in space available.
Note: Fire protection drawings list sprinkler Viking model Mirage, SIN VK464 (31 total) and Viking model Dry, Sin VK194, (24 total) in the Sprinkler Schedule. These two sprinkler heads are not included in this submittal.						

REVIEWED BY: Michael R. Whitworth DATE: December 20, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICALITY	

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings
☐ Samples
 (_____ copies)
☐ LEED Submittal
☐ Other
- ☐ Certification /
 Qualifications
☐ Record Documents
☐ Product Data
- ☐ Coordination Drawing
☐ Calculations
☐ Schedules
☐ O&M Manuals

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0349

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 11/29/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Wet Pipe Sprinkler System Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		211313-015	1		11/29/2016	Wet Pipe Sprinkler System Product Data	Submitted

NOTES:

CC:

Signed: _____
Devin Gates