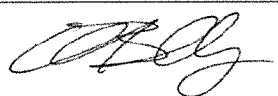
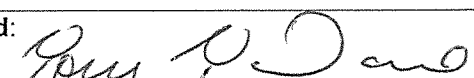


# CONTRACTOR SUBMITTAL FORM

<b>Project Name:</b> Navajo Gallup Water Supply Project Reach 26.3	<input checked="" type="checkbox"/> <b>M</b> (Materials)	<b>Submittal No.</b>  M002
<b>SMA Project No:</b> 6921307	<input type="checkbox"/> <b>T</b> (Testing)	
<b>Date:</b> 06/27/2019	<input type="checkbox"/> <b>A</b> (Administrative)	
<b>Contractor:</b> Navajo Engineering and Construction Authority	<b>No. of Copies:</b> 1	

<b>Supplier:</b> Core & Main	<b>Manufacturer:</b> Star Pipe
<b>Specification No.:</b> 33 11 13 – B. 3. a-d. and f 2)a)	<b>Drawing No.:</b> C-29-32, DT-10, 11, 16, 23-25
<b>Bid Item No(s):</b> 9, 11, 13, 33, 34, 39, 42	
<b>Submittal Checklist No(s):</b> M207	
<b>Product Description:</b> 4", 6", 10" Mechanical Joint Fittings with Asphaltic Seal (Bituminous) Coating	
<b>Are there any deviations from the Contract Documents?</b> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <b>Explain:</b>	
<b>Contractor's certification that product meets requirements of Contract Documents:</b> <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Certified with variations as noted on shop drawings and/or attached sheets.	
<b>Signed:</b>  Quentin Benally	<b>Date:</b> 06/27/2019

<b>Engineer's Comments:</b> <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  -4", 6", 10" MJ short sleeves are approved. Contractor to submit remaining MJ fittings not included in this submittal.	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.
<b>Signed:</b> 	<b>Date:</b> 7/3/19



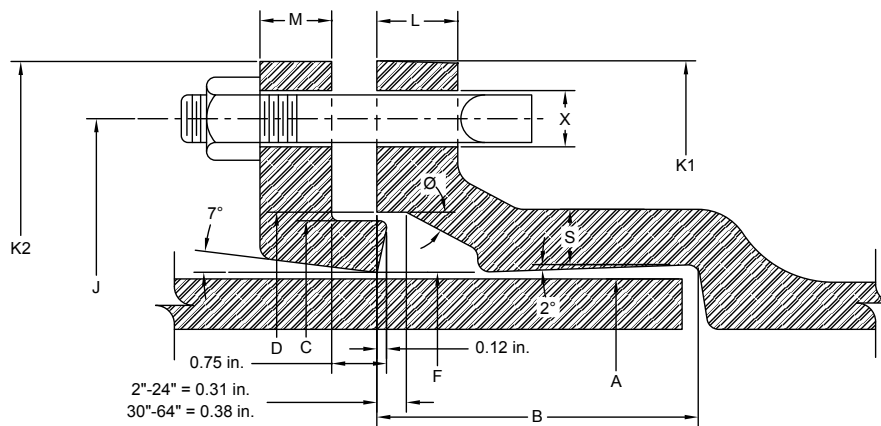
## Compact MJ Fittings

ANSI/AWWA C153/A21.53

## 2" - 64" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

## GENERAL SPECIFICATIONS

MATERIAL:	Ductile Iron per ASTM A536
PRESSURE:	350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
TESTING:	In accordance with ANSI/AWWA C153/A21.53 and UL requirements
LAYING LENGTH:	In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
DEFLECTION:	2"- 4"=8°   6"=7°   8"-12"=5°   14"-16"=3 ½°   18"-24"=3°   30"-48"=2°
WEIGHTS:	Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
FLANGES:	Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
CEMENT LINING:	In accordance with ANSI/AWWA C104/A21.4 -- size 2" - 3" single thickness and sizes 4" - 64" double thickness
COATING:	Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
GASKETS:	SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 16)
T-BOLTS/NUTS:	Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see pg. 18)
APPROVALS:	3" - 12" UL/ULC Listed   3" and greater are UL/NSF-61   3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
DIMENSIONS:	All dimensions are in inches unless noted otherwise.



## MECHANICAL JOINT DIMENSIONS

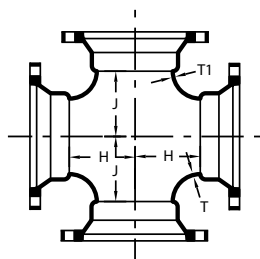
NOM. SIZE	A DIA.	B	C DIA.	D DIA.	F DIA.	J DIA.	K1 DIA.	K2 DIA.	L	M	S	Ø	X DIA.	BOLTS	
														SIZE	NO.
2	2.50	2.50	3.39	3.50	2.61	4.75	6.19	6.25	0.58	0.62	0.36	28°	¾	½ x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	28°	¾	½ x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	28°	7/8	¾ x 3 ½	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	28°	7/8	¾ x 3 ½	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	28°	7/8	¾ x 3 ½	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	28°	7/8	¾ x 3 ½	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	28°	7/8	¾ x 3 ½	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	1.25	0.55	28°	7/8	¾ x 4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	1.31	0.58	28°	7/8	¾ x 4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	28°	7/8	¾ x 4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	28°	7/8	¾ x 4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	28°	7/8	¾ x 4 ½	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	20°	1 ½	1 x 5 ½	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	20°	1 ½	1 x 5 ½	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	20°	1 ¾	1 ¼ x 6	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	20°	1 ¾	1 ¼ x 6	32
54	{Fittings & Dimensions Available On Request }														
60															
64															





# Compact MJ Fittings

ANSI/AWWA C153/A21.53



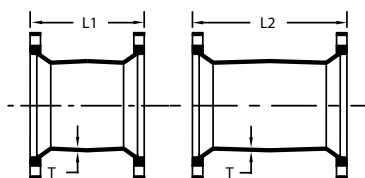
## MJ CROSSES

NOM. SIZE	T	T1	H	J	WT (LBS.)
3 x 3	0.33	0.33	3.00	3.00	35
4 x 3	0.34	0.33	3.50	4.00	38
4 x 4	0.34	0.34	4.00	4.00	40
6 x 4	0.36	0.34	4.00	5.00	57
6 x 6	0.36	0.36	5.00	5.00	80
8 x 4	0.38	0.34	4.00	6.00	68
8 x 6	0.38	0.36	5.00	6.00	74
8 x 8	0.38	0.38	6.00	6.00	105
10 x 4	0.40	0.34	4.00	7.00	112
10 x 6	0.40	0.36	5.00	7.00	119
10 x 8	0.40	0.38	6.50	7.00	124
10 x 10	0.40	0.40	7.00	7.00	145
12 x 4	0.42	0.34	4.00	8.50	119
12 x 6	0.42	0.36	5.00	8.50	126
12 x 8	0.42	0.38	6.00	8.50	149
12 x 10	0.42	0.40	7.50	8.50	179
12 x 12	0.42	0.42	8.50	8.50	200
14 x 6	0.47	0.36	6.50	10.50	200
14 x 8	0.47	0.38	7.50	10.50	228
14 x 10	0.47	0.40	8.50	10.50	255
14 x 12	0.47	0.42	9.50	10.50	269
14 x 14	0.47	0.47	10.50	10.50	335
16 x 6	0.50	0.36	6.50	11.50	240
16 x 8	0.50	0.38	7.50	11.50	260
16 x 10	0.50	0.40	8.50	11.50	317
16 x 12	0.50	0.42	9.50	11.50	320
16 x 16	0.50	0.50	11.50	11.50	385
18 x 12	0.54	0.42	9.50	12.50	348
18 x 18	0.54	0.54	12.50	12.50	478
20 x 8	0.57	0.38	8.00	14.00	379
20 x 12	0.57	0.42	10.00	14.00	413
20 x 18	0.57	0.54	13.00	14.00	554
20 x 20	0.57	0.57	14.00	14.00	590
24 x 6	0.61	0.36	7.00	16.00	481
24 x 8	0.61	0.38	8.00	16.00	500
24 x 12	0.61	0.42	10.00	16.00	529
24 x 16	0.61	0.50	12.00	16.00	576
24 x 18	0.61	0.54	13.00	16.00	868
24 x 20	0.61	0.57	14.00	16.00	757
24 x 24	0.61	0.61	16.00	16.00	881
30 x 12	0.66	0.42	10.00	20.00	882
30 x 24	0.66	0.61	16.00	20.00	1246
30 x 30	0.66	0.66	22.00	22.00	1691
36 x 24	0.74	0.61	16.00	23.50	1785

(Con't)➔

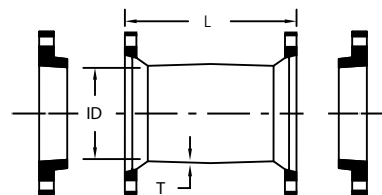
## MJ CROSSES (Con't)

NOM. SIZE	T	T1	H	J	WT (LBS.)
36 x 36	0.74	0.74	26.00	26.00	2811
42 x 24	0.82	0.61	20.00	27.50	2668
42 x 30	0.82	0.66	22.00	29.50	2950
42 x 36	0.82	0.74	30.00	30.00	3607
42 x 42	0.82	0.82	30.00	30.00	3725
48 x 24	0.90	0.61	23.00	32.00	3670
48 x 30	0.90	0.66	23.00	32.00	4505
48 x 36	0.90	0.74	33.50	32.25	4700
48 x 48	0.90	0.90	33.50	33.50	5827



## MJ SLEEVES

NOM. SIZE	T	SHORT SLEEVES		LONG SLEEVES	
		L1	WT (LBS.)	L2	WT (LBS.)
2	0.30	7.50	8	12.00	13
3	0.33	7.50	12	12.00	17
4	0.34	7.50	15	12.00	22
6	0.36	7.50	23	12.00	29
8	0.38	7.50	31	12.00	45
10	0.40	7.50	45	12.00	61
12	0.42	7.50	57	12.00	79
14	0.47	9.50	94	15.00	128
16	0.50	9.50	118	15.00	159
18	0.54	9.00	145	15.00	200
20	0.57	9.00	173	15.00	236
24	0.61	9.00	226	15.00	306
30	0.66	15.00	472	24.00	634
36	0.74	15.00	673	24.00	889
42	0.82	15.00	887	24.00	1120
48	0.90	15.00	1067	24.00	1414



## MJ DUAL PURPOSE SLEEVES W/ OVERSIZE GLANDS

NOM. SIZE	PIPE SIZE	T	L	(I.D.)	WT (LBS.)
4	4.80 - 5.00	0.34	12.00	5.10	20
6	6.90 - 7.10	0.36	12.00	7.20	36
8	9.05 - 9.30	0.38	12.00	9.40	46
10	11.10 - 11.40	0.40	12.00	11.50	62
12	13.20 - 13.50	0.42	12.00	13.60	76
16	17.40 - 17.80	0.50	15.00	17.94	172