

R/m 1/6/88

Carter

CONTRACTOR'S SUBMITTAL TRANSMITTAL
 LANTRDIV NORFOLK 4-4355/3 (Rev. 11-80)

CONTRACT NO: N62470-85-C-5142
 TRANSMITTAL NO: 10
 DATE: 12-11-87

FROM CONTRACTOR: WESTMINSTER COMPANY
 P.O. Box 1167, Jacksonville, N.C. 28540
 TO: J.N. Pease & Associates
 P.O. Box 18725, Charlotte, N.C. 28205

PROJECT TITLE AND LOCATION:
 Bachelor Enlisted Quarters P-721
 M.C.B.
 Camp Lejeune, N.C. 28542

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

Contractor Approved OICC Approval Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
 A-Approved
 D-Disapproved
 AN-Approved as noted
 RA-Receipt acknowledged.
 C-Comments
 R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO.	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES	REVIEWER'S INITIALS CODE AND DATE
III	02713	EXTERIOR WATER DISTRIBUTION SYSTEM			
	1.3.1-abcd	Manufacturer's Data	4	A	Jpc 12/3/87
	1.3.2-abcde	Manufacturer's Certificates of Conformance	4	A	Jpc 12/3/87

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC

CONTRACTOR REPRESENTATIVE (Signature)

DATE RECEIVED BY REVIEWER: DEC. 17, 1987
 FROM (Reviewer): J.N. PEASE ASSOC.
 TO: ROICC, LANTRDIV 05, CONTR

Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.
 Submittals are forwarded to LANTRDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on ONE COPY of the transmittal form.

REVIEWER'S COMMENTS

MINOR CORRECTIONS WERE MADE BY THE REVIEWER. THE CONTRACTOR IS REQUESTED TO UPDATE HIS COPIES OF THIS SUBMITTAL, ACKNOWLEDGE CORRECTIONS BELOW AND FORWARD THIS SUBMITTAL TO THE ROICC.
 CORRECTIONS ACKNOWLEDGED

SIGNATURE: _____ DATE: _____
 COPIES TO: ROICC (2), LANTRDIV (1), A-E (1)
 DATE: JAN 4, 1988
 SIGNATURE: [Signature]

1119

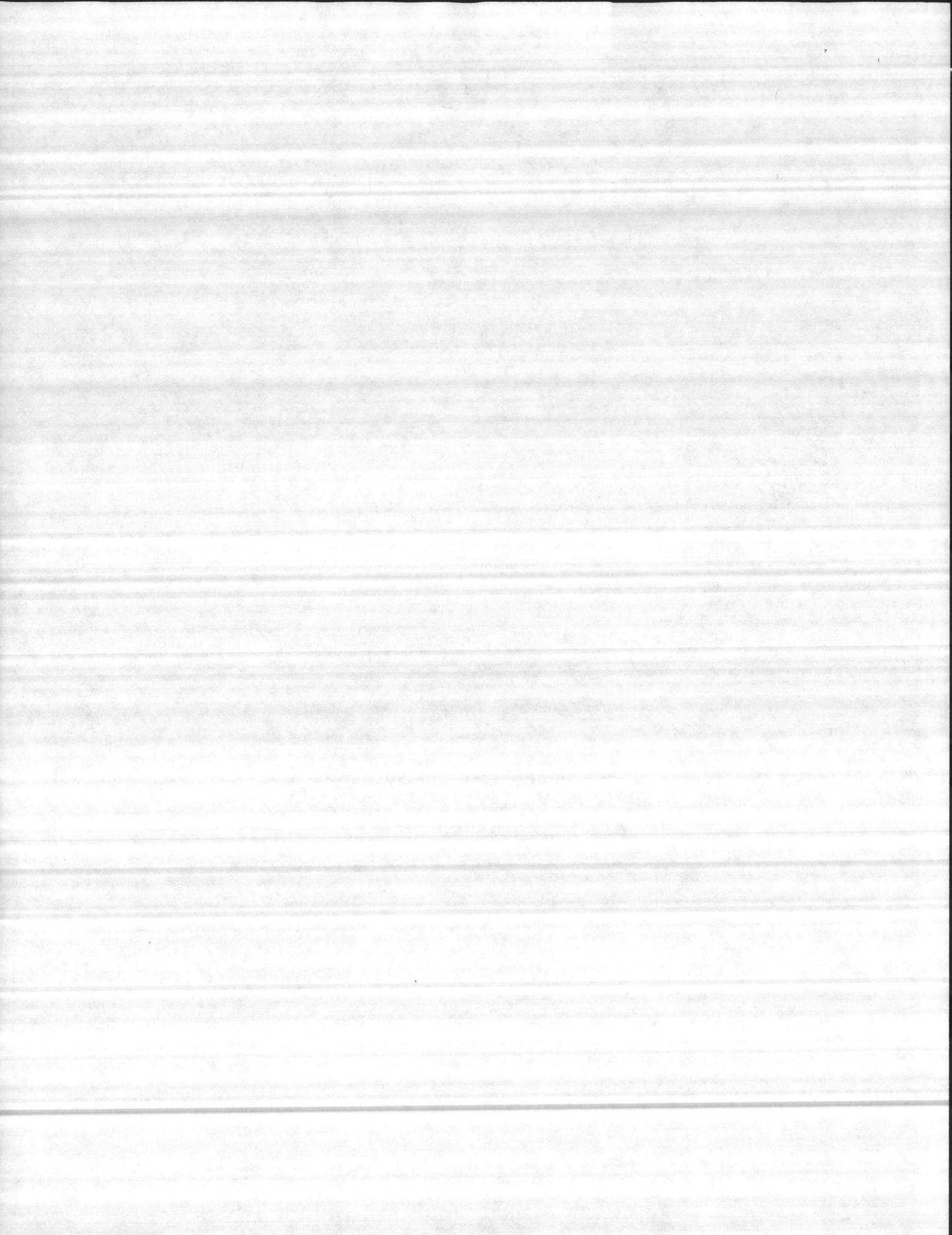
**WEYERHAEUSER
WESTMINSTER COMPANY**
EASTERN REGION
P.O. BOX 1167
JACKSONVILLE, NORTH CAROLINA 28540

To

P-721

SUBMITTAL TRANSMITTAL NO. 10

BACHELOR ENLISTED QUARTERS
MCB, CAMP LEJEUNE, NORTH CAROLINA
CONTRACT NO. N62470-85-C-5142



JACOBS BUILDERS, INC.

GENERAL CONTRACTORS

P. O. Box 1399

JACKSONVILLE, N. C. 28541-1399

Telephone (919) 353-8303

SUBMITTAL:

N62470-85-C-5142

P-627

Exterior Water Systems

Section: 02713

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a. Drinking Fountain (catalogue cuts)-Section 02713	
b. Valve Submittals 3" and larger	"
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d. Valve Boxes (catalogue cuts)	"
e. Fittinf (MJ) Submittals	"
f. Valve Submittals (smaller than 3")	"
g. PVC Pipe Submittals 3/4"	"
h. PVC Pipe Submittals 4" and larger	"
i. Ductile Iron Pipe Submittal	" not used
j. Solvent Cement Certifications	"

"It is hereby certified that the (material) (equipment) shown and marked in this submittal, shop drawings, catalog cut(s), etc., and approved/proposed to be incorporated into Contract Number 85-C-5142, is in compliance with the contract drawings and specifications, and can be installed in the allocated space, and is approved for use submitted for Government approval.

Authorized Reviewer

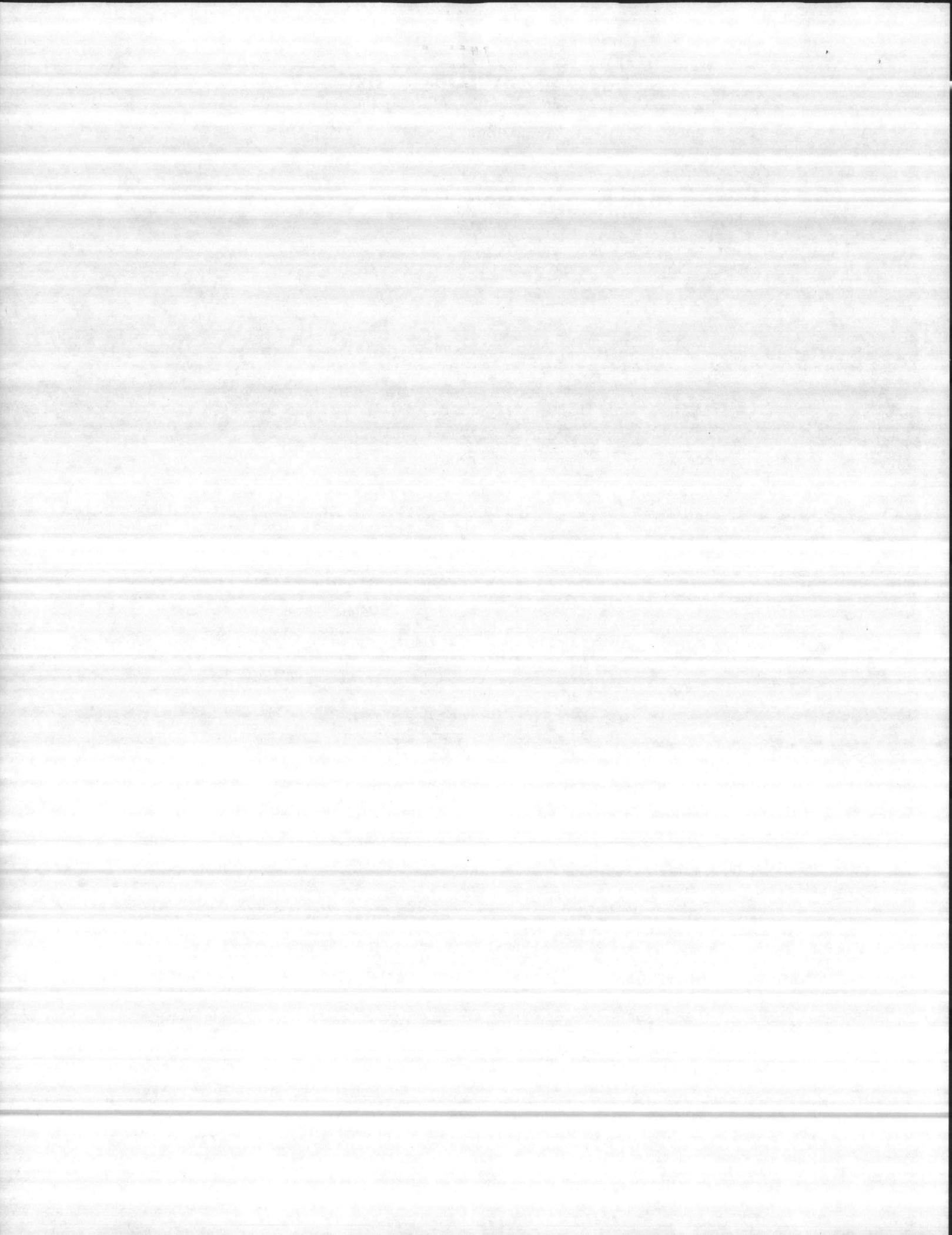
Carrie Henderson

Date 12-3-87

Signature CQC Rep

Joseph G. Reagan

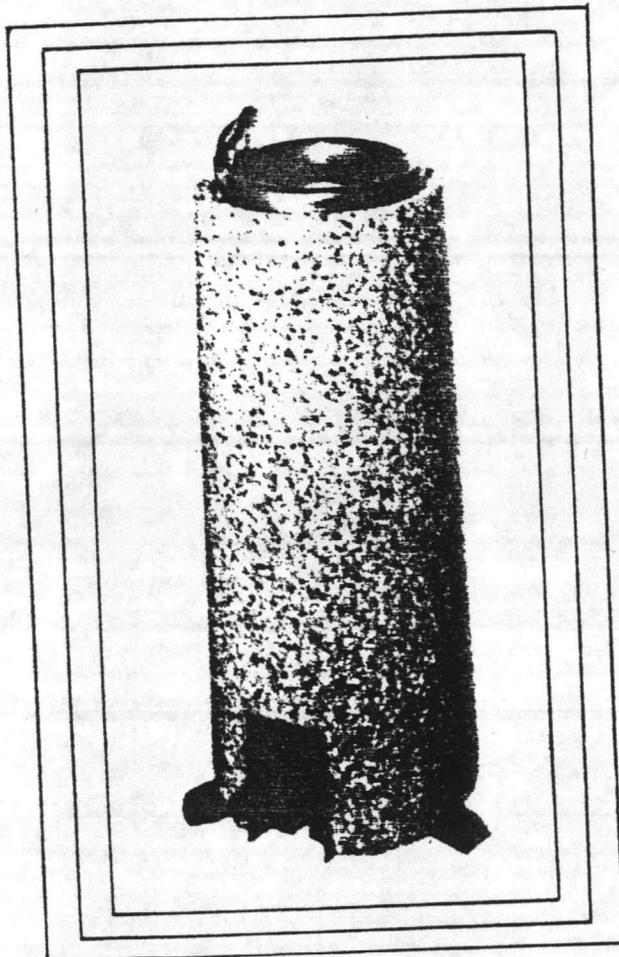
Date 12-3-87



IMPROVED



MURDOCK PE-40 TAPEREX



- SHOWN: MODEL PE-40 IS ANTI-FREEZING
- NON-ANTI-FREEZING MODELS PE-1, PE-2
- AVAILABLE: MODEL PE-2 WITH JUG FILLER
- AESTHETIC - RUGGED
- VANDAL-RESISTANT
- EASILY INSTALLED
- MINIMUM MAINTENANCE
- MAXIMUM SERVICE

ANTI-FREEZING
DRINKING
FOUNTAIN —
REINFORCED
CAST CONCRETE
WITH EXPOSED
AGGREGATE
PEBBLE FINISH

Beautify park and recreational areas with the rich, natural colors of crushed aggregate over reinforced concrete base.

Self-closing pedal control prevents water waste. Automatic stream control. Anti-freezing in any weather.

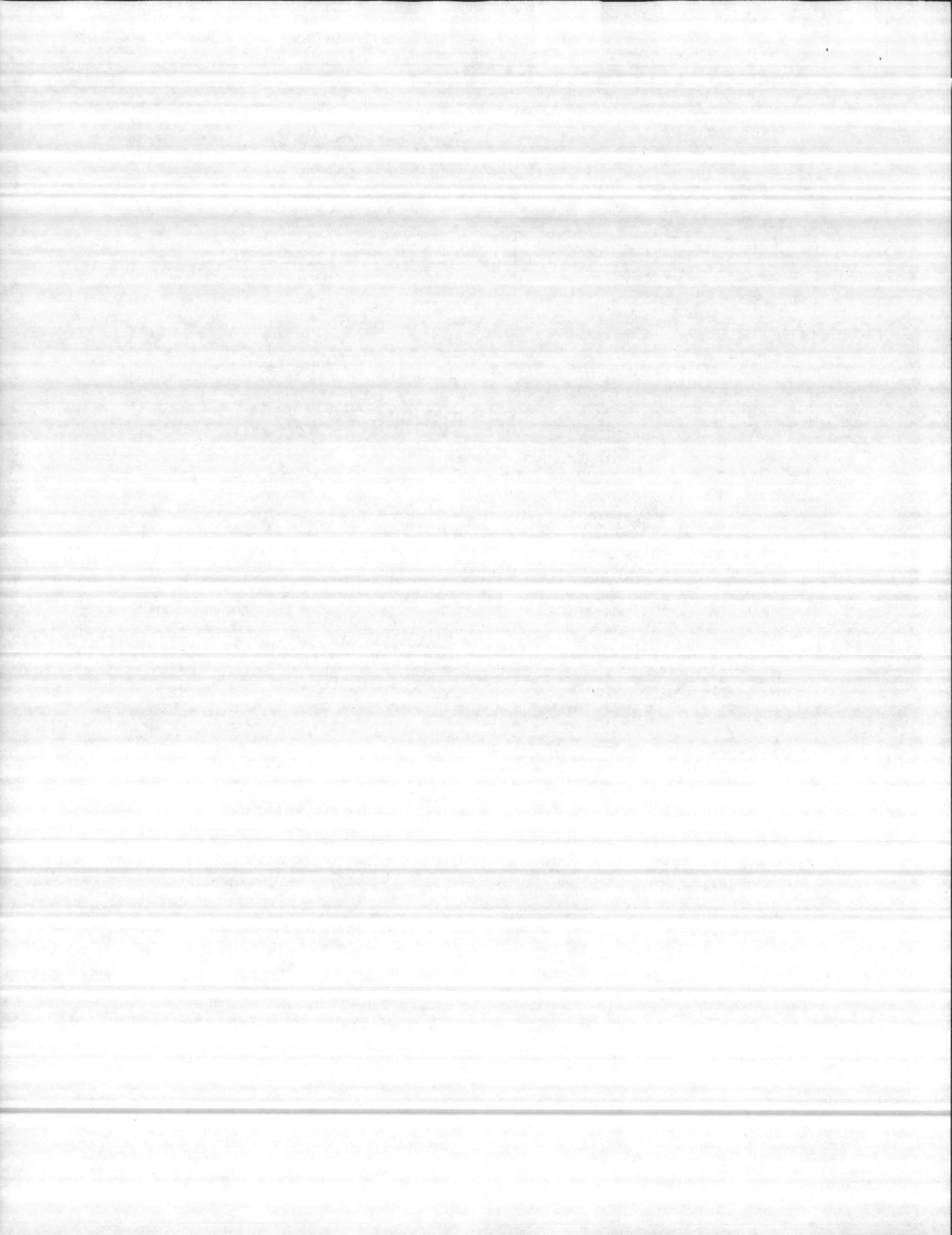
Scratch-resistant Teflon Bowl/Mouth Guard are color-coordinated with fountain exterior. Reliable attractive fountain for Roadside Rests, Parks, Playgrounds, Recreational Areas, Shopping Centers, etc.

Also available with Side Faucet - for use where combination Fountain/Hydrant unit is desirable.

Complete specifications sent on request.

MURDOCK, INC. • 2488 RIVER ROAD • CINCINNATI, OHIO 45204 • (513) 471-7700

FOOT-PEDAL PE-40 TAPEREX FOUNTAIN

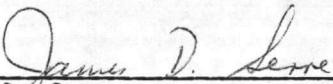


UNITED STATES OF AMERICA

STATE OF TENNESSEE)
HAMILTON COUNTY) SS

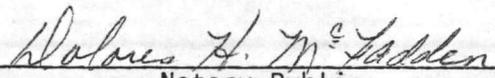
BE IT KNOWN, That on the day hereof, before me, the undersigned, a Notary Public in and for said county, personally appeared James D. Serre, Manager of Industrial, Tool and Product Engineering, MUELLER CO., Chattanooga, Tennessee

Who being duly sworn, according to law, did depose and say, that the 040 thru 120A238020LN MUELLER® Gate Valves sold to Davis Meter & Supply, Raleigh, North Carolina, and furnished to Jacobs Builders, Jacksonville, North Carolina, for the Camp LeJeune BEQ, Job # N62470-85-E-P 627, conform to AWWA specifications C500-80.



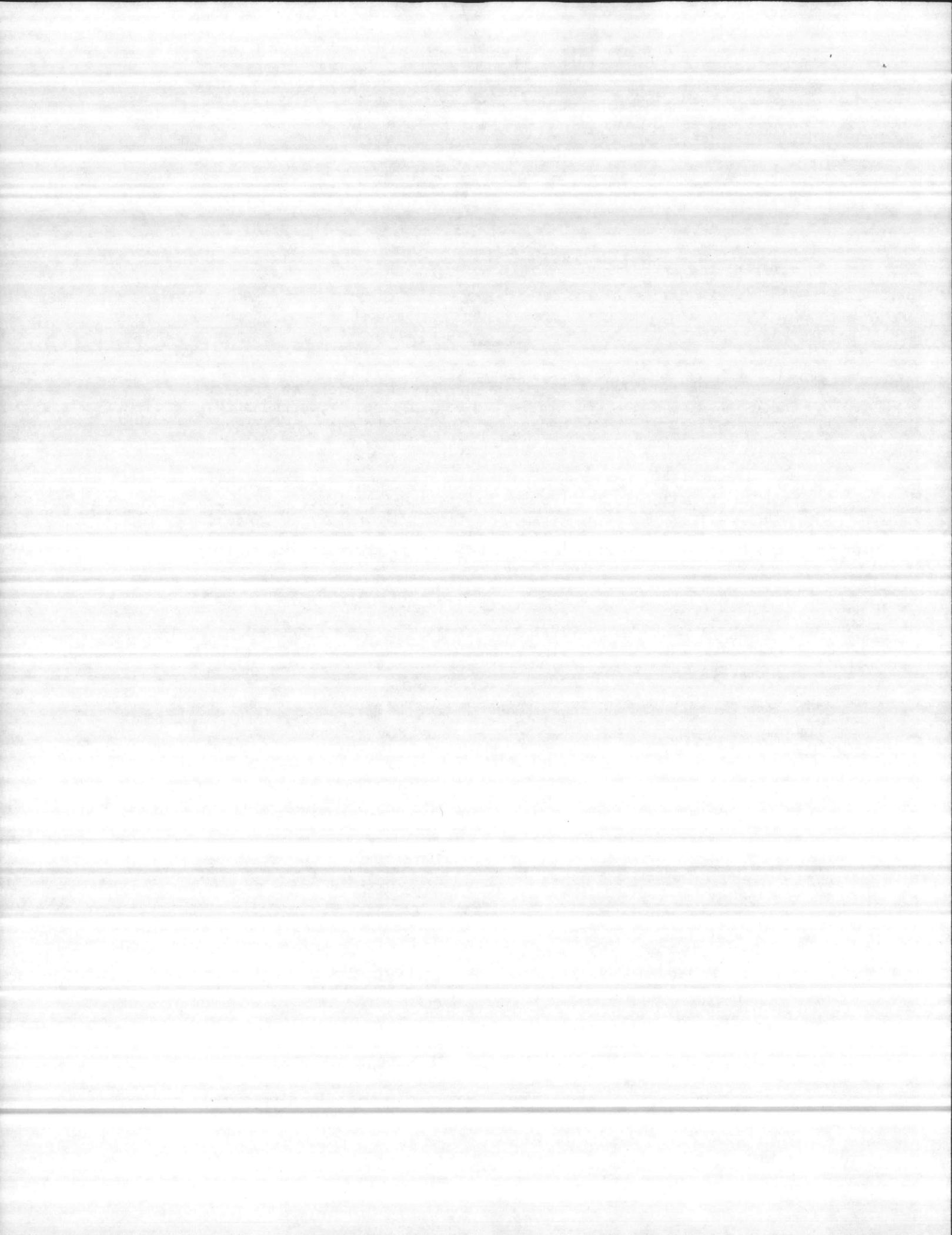
James D. Serre
Mgr. of Ind., Tool & Prod. Eng.

Sworn to and subscribed before me this
28th day of September A.D. 1987



Notary Public

My Commission Expires Mar. 22, 1989



VALVES AND VALVE BOXES MUELLER® AWWA GATE VALVES

Mueller® AWWA Gate Valves — iron body, bronze mounted, double disc, parallel seat, NRS or OS&Y types

Select Mueller AWWA Gate Valves from charts on pages E1-2 and E1-3.

Working and test pressures

2"-12" sizes —

200 psi (1379 kPa) working pressure
400 psi (2758 kPa) test pressure

14"-48" sizes —

150 psi (1034 kPa) working pressure
300 psi (2068 kPa) test pressure

End connections available

Standard mechanical joint ends

Dimensions complying to AWWA C111 and ANSI A21.11. Use with cast iron, ductile iron and class 200 cast iron O.D. PVC plastic pipe.

D-150 mechanical joint ends

Available with two specially designed gaskets to fit either of two diameters of cast iron or ductile iron pipe:

- Duck-tipped rubber gasket for class 150 pipe
- Plain rubber gaskets for class D pit cast pipe

Mueller Slip-On Joint Ends*

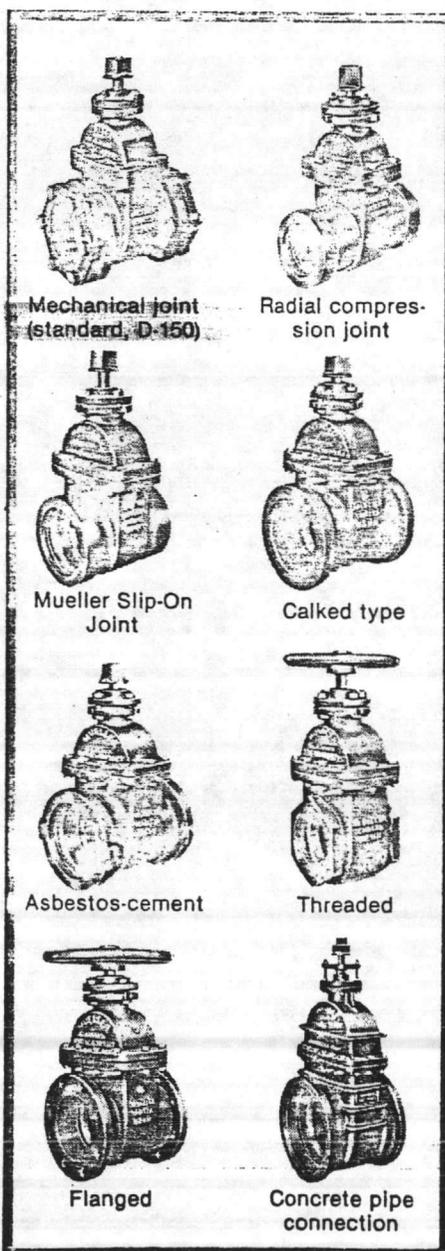
Complete with Mueller Slip-On Gasket. Fits plain end of all cast iron pipe classes 150, 200 and 250 manufactured to ANSI A21.6 and ANSI A21.8; ductile iron pipe manufactured to ANSI A21.51; including the plain end of all makes of cast iron or ductile iron of the slip connection type. Also fits classes 150 and 200 cast iron O.D. PVC plastic pipe**.

Asbestos-cement ends

Furnished less gaskets. For classes 150 and 200 machined end A-C pipe (use gaskets provided by pipe manufacturer). Also for classes 100, 150 and 200 cast iron O.D. PVC plastic pipe — 4" and 6" only (use A-C gaskets only).

Flanged ends

With flange dimensions and drilling complying to ANSI B16.1, class 125.



Radial compression joint ends

Use with I.P. size PVC plastic pipe.†

Hub ends

Use with cast iron or ductile iron pipe with end dimensions complying with AWWA C100.

Threaded ends

With end dimensions complying to ANSI B2.1.

Concrete pipe connection ends

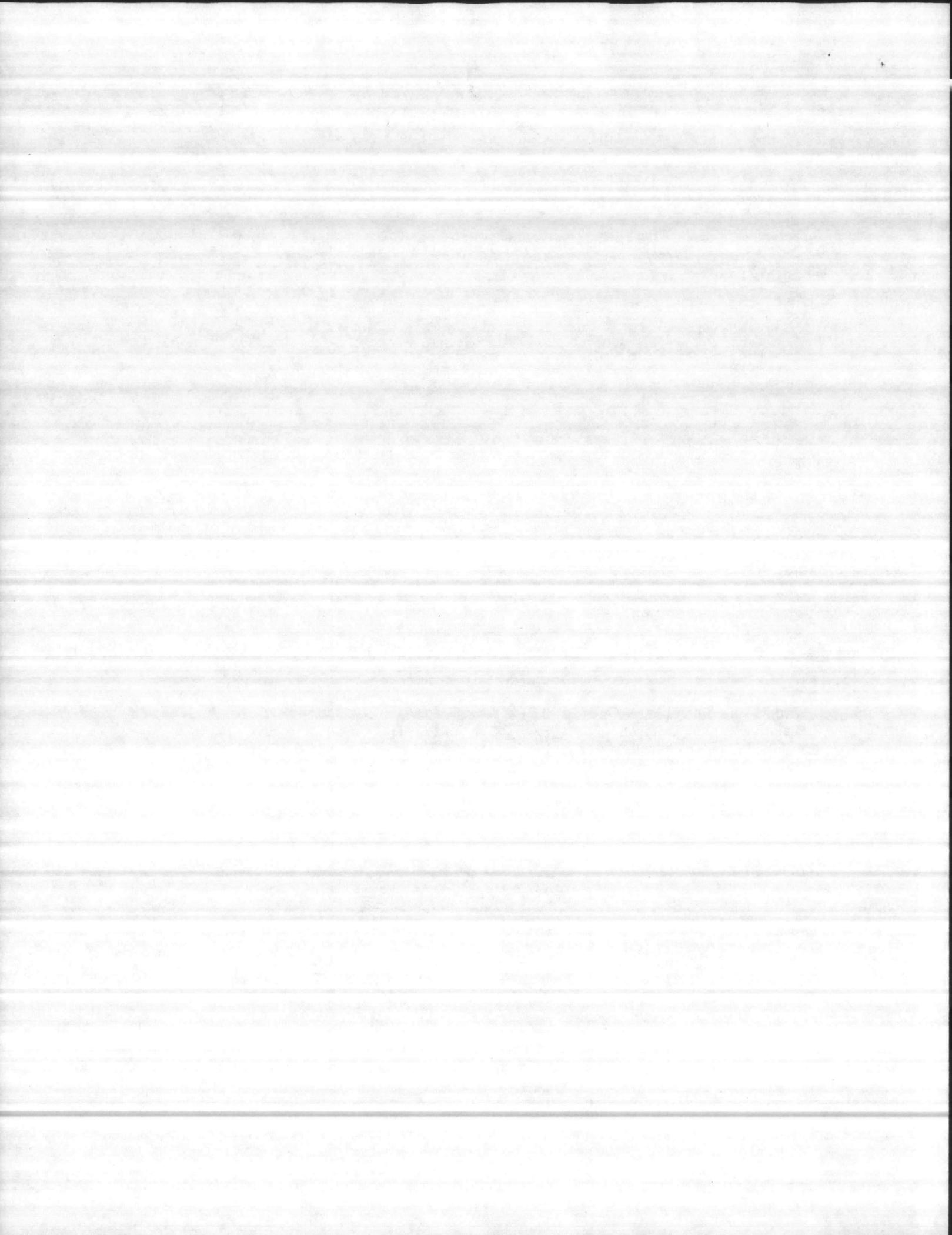
For types SP-5, SP-12 and P-381 reinforced concrete cylinder pipe.

*Design and dimensions of the joint are manufactured under license of U.S. Pipe and Foundry Company.

**When using CI O.D. PVC pipe, the gaskets supplied by Mueller Co. must be used with the valve. Gaskets supplied with the pipe by the pipe manufacturer cannot be used with this valve connection.

†Valve end gasket groove configurations and dimensions permit use of gaskets produced by Johns Manville Corporation; Ethyl Corporation, Visqueen Division-Pipe Products; and the Filintkote Company.

MUELLER CO. DECATUR, ILL.



VALVES AND VALVE BOXES

MUELLER® AWWA GATE VALVES

Mueller® AWWA Gate Valves — iron body, bronze mounted, double disc, parallel seat, NRS or OS&Y types

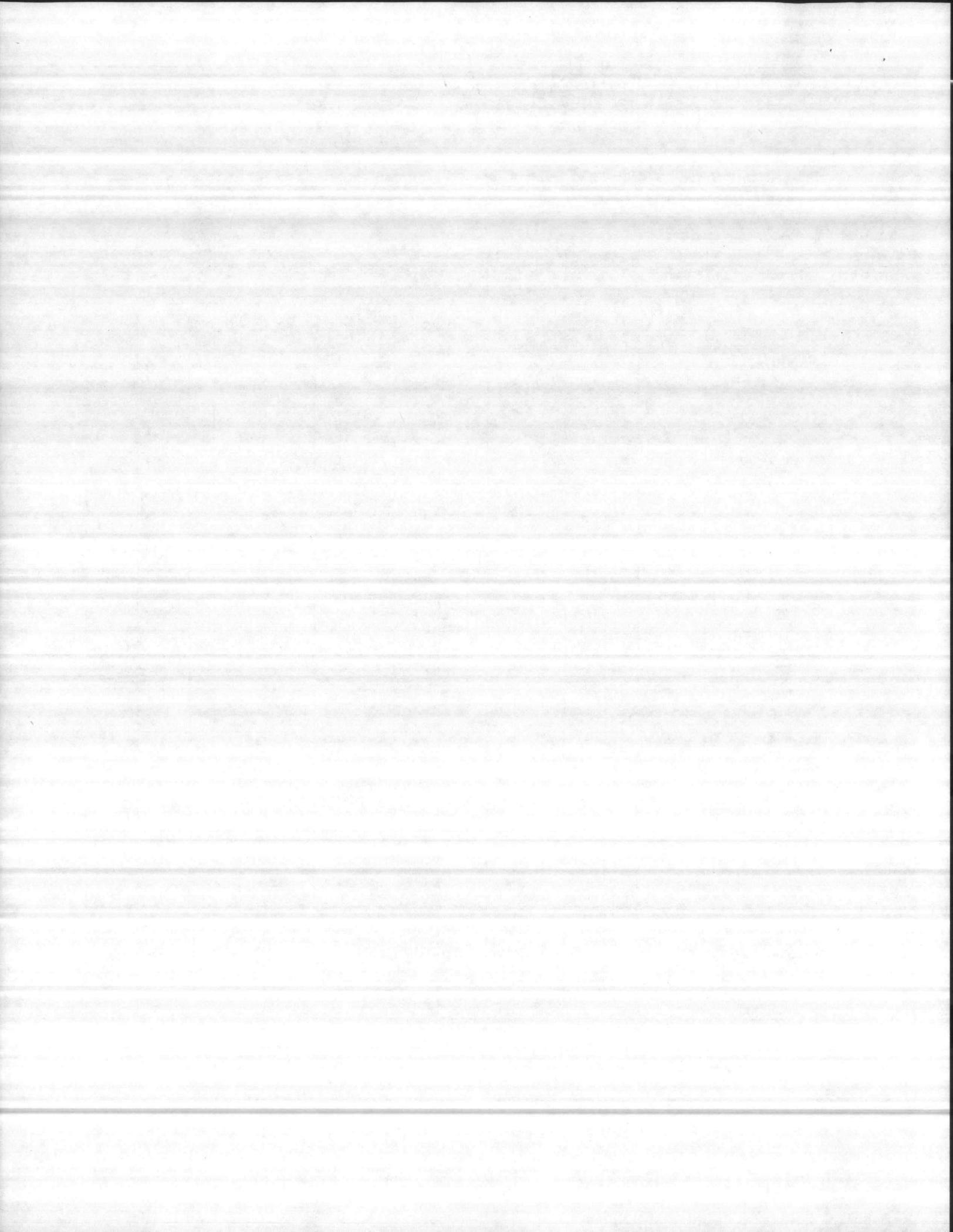
Mueller AWWA Gate Valves

End connections		Catalog number	Stem packing		Valve sizes available*																					
Type of inlet & outlet	Connection features		O-ring	Conventional	2"	2 1/4"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"		
Non-rising stem type																										
Mechanical joint both ends	With bolts, glands and rubber gaskets	A-2380-20	•		✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		A-2480-20		•																						
	With bolts, glands and lead tipped gaskets	A-2380-21	•		✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	With bolts, set screws in glands for bonding and rubber gaskets	A-2380-22	•		✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Without bolts, glands and gaskets	A-2380-23	•		✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		A-2480-23		•																						
Mechanical joint by flanged ends	With bolts, gland and rubber gasket	A-2380-16	•						✓	■	✓	■	■	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	With bolts, gland and lead tipped gasket	A-2380-17	•						✓	■	✓	■	■	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	With bolts, set screws in gland for bonding and rubber gasket	A-2380-18	•						✓	■	✓	■	■	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Without bolts, gland and gasket	A-2380-19	•						✓	■	✓	■	■	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mueller Slip-On Joint both ends	With Slip-On Gaskets	A-2380-38	•		✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Without gaskets	A-2380-40	•		✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mueller Slip-On Joint by flanged ends	With Slip-On Gasket	A-2380-41	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Without gasket	A-2380-43	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
D-150 mechanical joint both ends	With bolts, glands and duck-tipped rubber gaskets	H-862	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	With bolts, glands and plain rubber gaskets	H-863	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	With bolts, set screws in glands for bonding and duck-tipped rubber gaskets	H-866	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	With bolts, set screws in glands for bonding and plain rubber	H-867	•						✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

CONTINUED ON E1-3

See page E1-5 for ordering instructions

New



SPECIAL PURPOSE MAIN FITTINGS AND VALVES

TAPPING VALVES

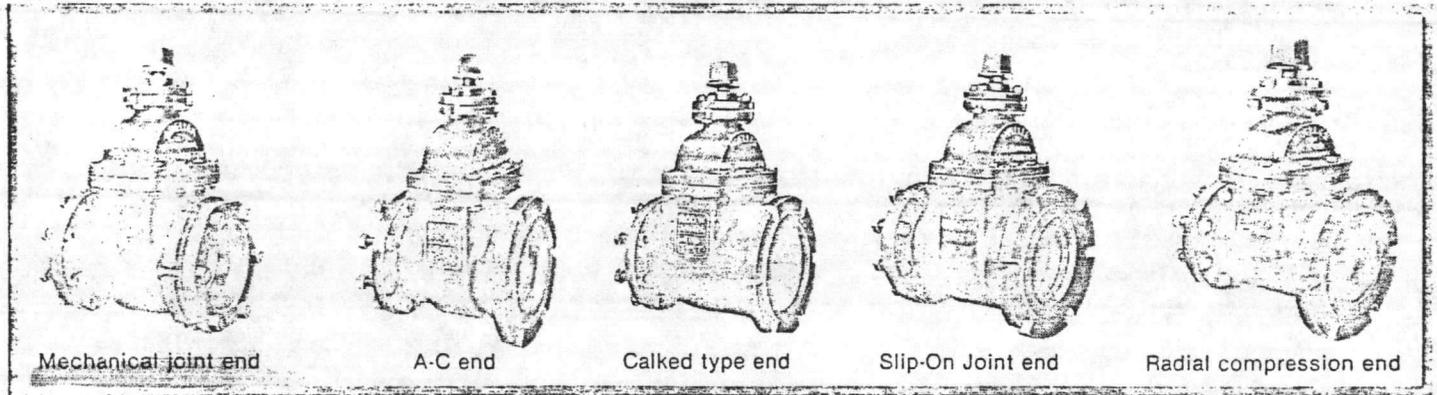
Tapping valves

Tapping valves have flanged inlet, class 125, ANSI B16.1. All valves have a 2" square wrench nut. Each type of outlet offered on Mueller® Tapping Valves will allow a Mueller Drilling Machine Adapter to be attached directly to the valve. The necessary flange is an integral part of the outlet end.

Working and test pressures

2"-12" valves are 200 psi (1379 kPa) working pressure — 400 psi (2758 kPa) test pressure.

14"-24" valves are 150 psi (1034 kPa) working pressure — 300 psi (2064 kPa) test pressure.



Tapping valves

Catalog number	Type end	Cutlet Type of pipe	Sizes available*												
			2"	2" X 2 1/4"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
H-667	Mechanical joint	Cast iron, ductile iron	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Class 200 cast iron O.D. PVC plastic, AWWA C900				✓	✓	✓	✓	✓					
H-642	Asbestos-cement	Machined end class 150 and 200 A/C			✓	✓			✓	✓					
		Machined end class 100, 150 and 200 A-C					✓	✓							
		Machined end or rough barrel class 100, 150 and 200 asbestos-cement				✓	✓								
H-662	Calked type	Cast iron	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ME or RB class 100, 150 and 200 asbestos-cement			✓	✓	✓	✓							
H-637	Mueller® Slip-On (less gasket)	Cast iron, ductile iron	✓	✓	✓	✓	✓	✓	✓	✓					
H-641	Mueller® Slip-On (with Lok-Tyton® gasket)	Lok-Tyton or class 150 and 200 cast iron O.D. PVC plastic, AWWA C900	✓	✓	✓	✓	✓	✓	✓	✓					
H-681	Mueller® Slip-On (with Mueller Slip-On Gasket)	Cast iron**, ductile iron	✓	✓	✓	✓	✓	✓	✓	✓					
H-696	Radial compression	Steel O.D. size (IPS) PVC plastic††	✓			✓									

*Nominal sizes.

**Fits plain end of all cast iron pipe, classes 150, 200 and 250, manufactured to specifications ANSI A21.6 and ANSI A21.8 including all makes of cast iron pipe of the slip connection type.

†Lok-Tyton is a registered trademark of U.S. PIPE AND FOUNDRY CO.

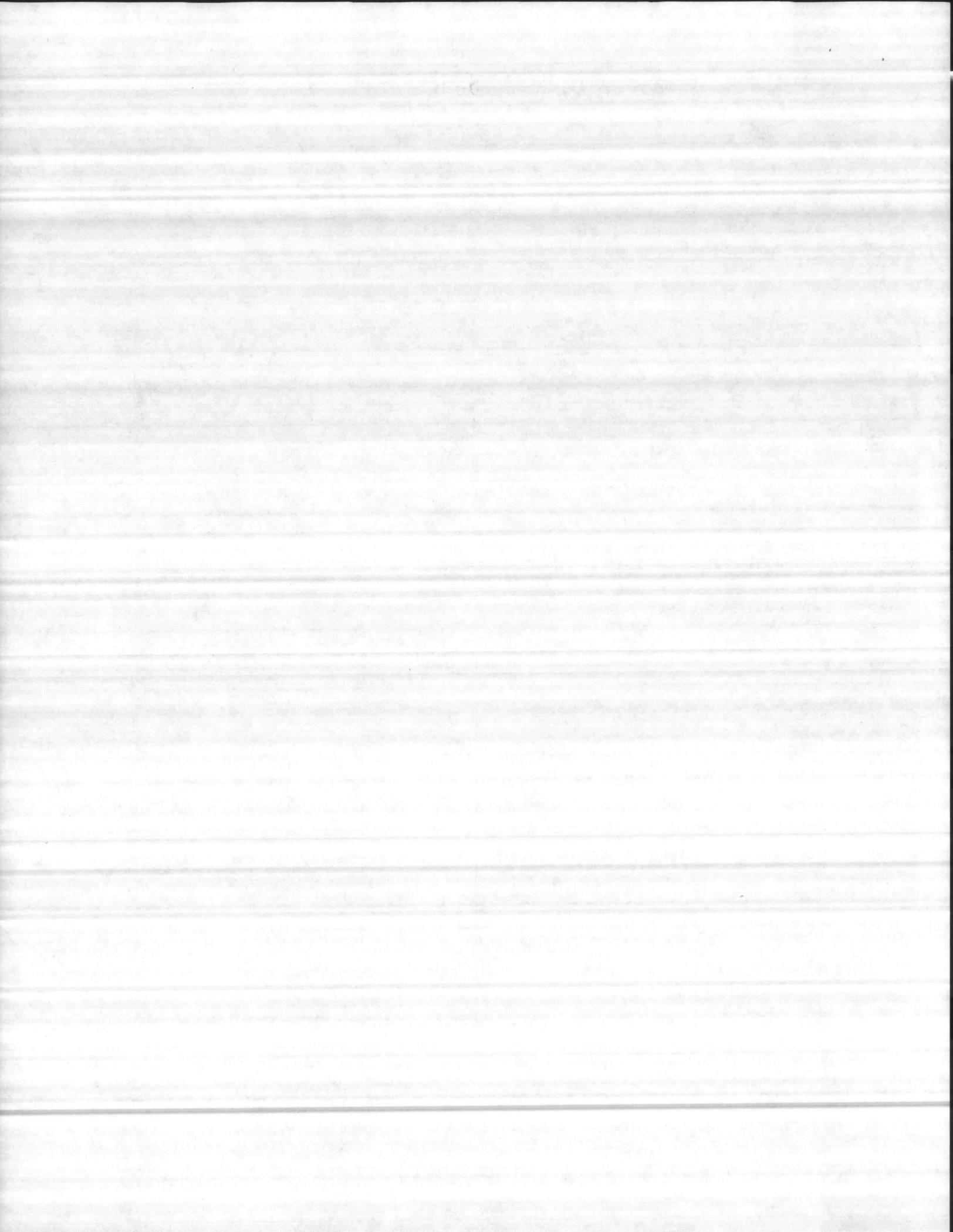
††ASTM D2241 or ASTM D1785.

The design and dimensions of the Slip-On Joint are manufactured under license of U.S. PIPE AND FOUNDRY CO.

MUELLER CO. DECATUR, ILL.

Order by quantity, size, catalog number and direction of opening

New



SPECIAL PURPOSE MAIN FITTINGS AND VALVES

TAPPING SLEEVES AND CROSSES — MECHANICAL JOINT

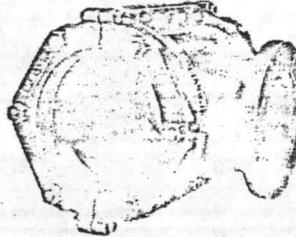
Mechanical joint tapping sleeves and crosses — for 4" through 24" cast iron or ductile iron, 4" through 8" asbestos-cement and 4" through 12" cast iron O.D. PVC plastic pipe

Outlet flange is class 125, ANSI B16.1.

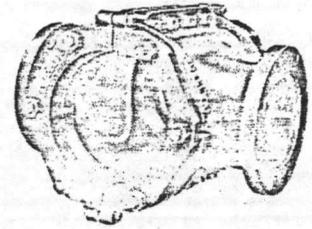
H-615 Tapping sleeve with duck-tipped end gaskets — 200 psi (1379 kPa) working pressure

H-715 Tapping cross with duck-tipped end gaskets — 200 psi (1379 kPa) working pressure (not illustrated)

The 4", 6" and 8" sleeves and crosses are shipped with both small and large O.D. range gaskets. The gaskets are clearly marked with the O.D. range. In addition, the small O.D. range gaskets have a yellow stripe for easy identification. Each set of end gaskets



Tapping sleeve



Tapping cross

also has an identification tag listing the O.D. range and type of pipe on which they can be used.

Use H-616 sleeve or H-716 cross for classes C and D cast iron pipe, sizes 10" and larger. See page E2-2.

Tapping sleeves and crosses

Size of main*	O.D. range of sleeve or cross		Class and type of pipe	Extra gasket part numbers ▲
	in	mm		
4"	4.74-4.86**	120.5-123.3	Cast iron classes 100, 150, 200 and A — Ductile iron	195824
	4.87-5.32	123.8-135.0	Cast iron classes B, C and D — Asbestos-cement classes 100 and 150	195653
6"	6.84-6.96**	173.8-176.7	Cast iron classes 100, 150, 200 and A — Ductile iron	195825
	6.97-7.40	177.1-187.9	Cast iron classes B, C and D — Asbestos-cement classes 100 and 150	195654
8"	8.99-9.11**	228.4-231.3	Cast iron classes 100, 150, 200, A and B — Ductile iron	195826
	9.12-9.62	231.7-244.2	Cast iron classes B, C and D — Asbestos-cement classes 100 and 150	195655
10"	11.04-11.16**	280.5-283.4	Cast iron classes 150, 200, 250, A B and old AGA Standard — Ductile iron	194680
12"	13.14-13.26**	333.9-336.7	Cast iron classes 150, 200, 250, A B and old AGA Standard — Ductile iron	194638
14"	15.22-15.35	386.7-389.8	Cast iron classes 50, 100, 150, 200, 250, A, B and old AGA Standard — Ductile iron	195127
16"	17.32-17.45	440.0-443.1	Cast iron classes 50, 100, 150, 200, 250, A, B and old AGA Standard — Ductile iron	195128
18"	19.42-19.55	493.4-496.5	Cast iron classes 50, 100, 150, 200, 250, A, B and old AGA Standard — Ductile iron	195266
20"	21.52-21.65	546.7-549.8	Cast iron classes 50, 100, 150, 200, 250, A, B and old AGA Standard — Ductile iron	195129
24"	25.72-25.85	653.4-656.5	Cast iron classes 50, 100, 150, 200, A, B and old AGA Standard — Ductile iron	195130

*Nominal sizes.

**These gaskets can also be used to fit classes 150 and 200 cast iron O.D. PVC plastic pipe — AWWA C900.

▲ Two gaskets are required.

Sizes available

Size of main*	Outlet size*											
	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
4"	†	†	†									
6"	†	†	†	†								
8"	†	†	†	†	†							
10"	✓	✓	✓	✓	✓	✓						
12"	✓	✓	✓	✓	✓	✓	✓					
14"				✓	✓	✓	✓	✓				
16"				✓	✓	✓	✓	✓	✓			
18"				✓	✓	✓	✓	✓	✓	✓		
20"				✓	✓	✓	✓	✓	✓	✓	✓	
24"				✓	✓	✓	✓	✓	✓	✓	✓	✓

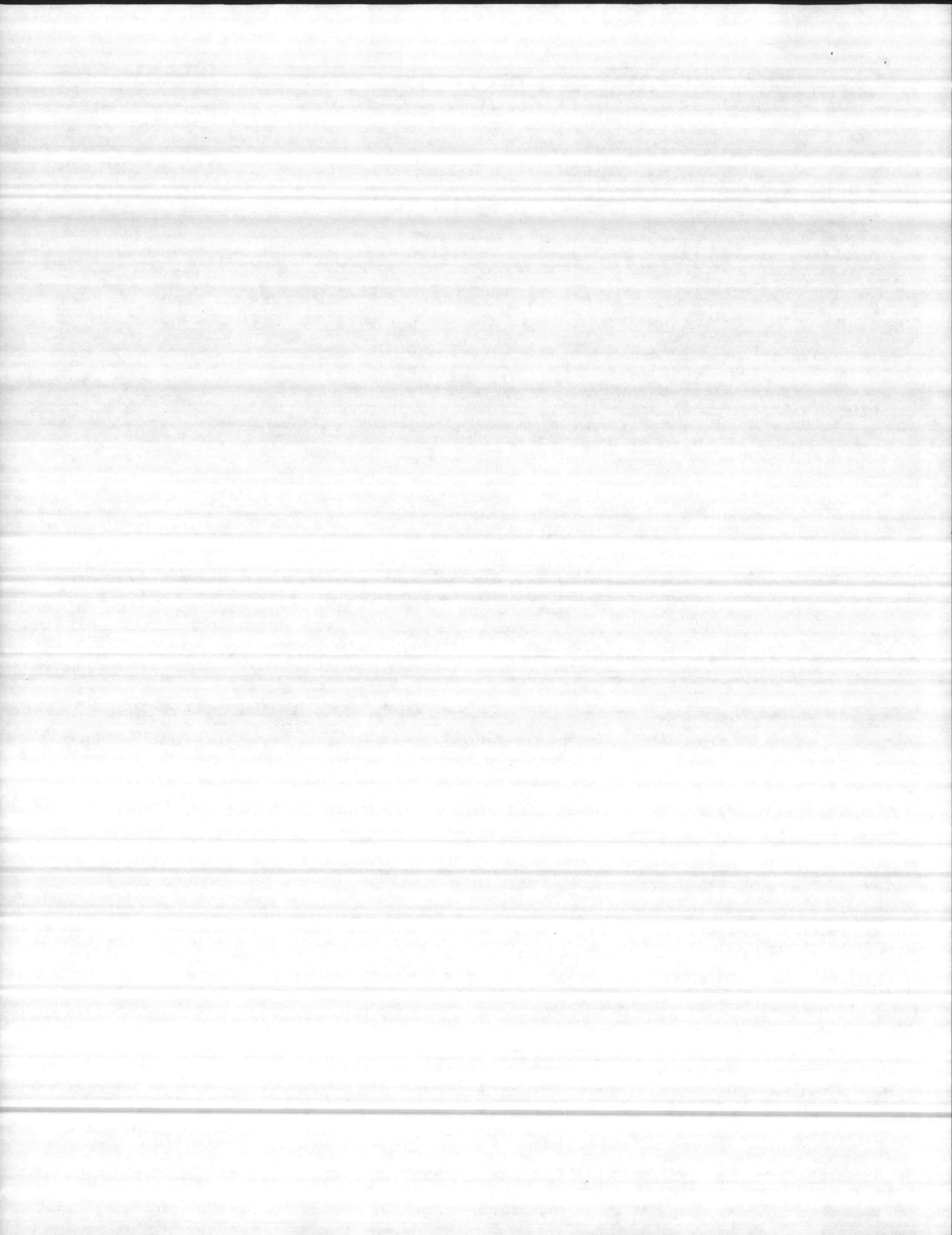
*Nominal sizes

†These sleeves and crosses are furnished with two sets of end gaskets. This will allow them to fit all classes of cast iron, ductile iron and classes 100 and 150 asbestos-cement pipe.

MUELLER CO. DECATUR, ILL. E

New

Order by quantity, catalog number, size, type and class of main, O.D. of main and size of outlet — extra gaskets by quantity and part number





WEAVER AVENUE
R.R. #3
ALBERTVILLE, ALABAMA 35950-9803
205-878-7930

STATE OF ALABAMA

MARSHALL COUNTY

BE IT KNOWN, That on the day hereof, before me, the undersigned, a
Notary Public in and for said county, personally appeared

J. R. Robinson

Who being duly sworn, according to law, did depose and say, that

The A423 Mueller Centurion® fire hydrants sold to:

Davis Meter
Raleigh, N.C.

for the following referenced job:

Naval Hospital BEQ
#N62470-85-E-5142-721

Contractor:

Jacobs Builders
Jacksonville, NC

were manufactured to AWWA Specification C502. All tests specified
therein were performed and all test requirements were met at the
time of manufacture.

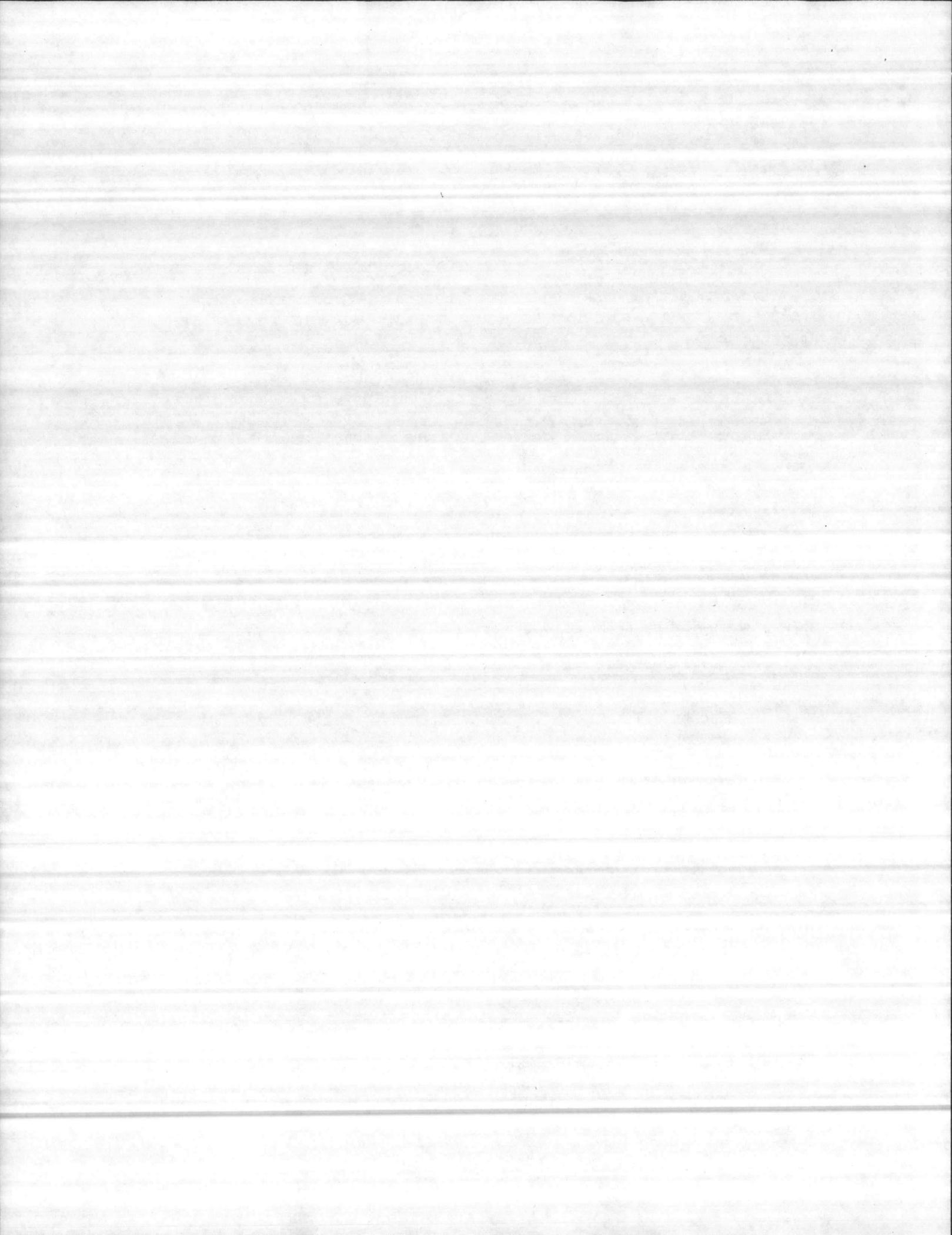
MUELLER CO., Route 3, Weaver Ave.
Albertville, Alabama

J. R. Robinson,
Manager Quality Control

Sworn to and subscribed before me this
30th day of September A.D. 1987.

(Notary Public)

My commission expires: 5/28/88



FIRE HYDRANTS

Mueller® Centurion® Fire Hydrant

150 p.s.i. (1034 kPa) working pressure — 300 p.s.i. (2068 kPa) test pressure. Compression type main valve closes with the pressure. Hydrant fully complies with

American Water Works Association Standard C-502. A variety of choices can be made regarding several fire hydrant features — see page D1-6 for additional information.

Centurion Fire Hydrants

Two way	2	2 1/2", 3"	—	—	4 1/2"	A-420	See page D1-2
					5 1/4"	A-422	
Three way	2	2 1/2", 3"	1	3 1/2", 4", 4 1/2", 5"	4 1/2"	A-421	See page D1-2
					5 1/4"	A-423	

*Nominal sizes. Other sizes can be specified — see page D1-6.

**Nominal size.

Bury lengths available

ft-in	1-6, 2-0, 2-6, 3-0, 3-6, 4-0, 4-6, 5-0, 5-6, 6-0, 6-6, 7-0, 7-6, 8-0, 8-6, 9-0, 9-6, 10-0
m	0.46, 0.61, 0.76, 0.91, 1.07, 1.22, 1.37, 1.52, 1.68, 1.83, 1.98, 2.13, 2.29, 2.44, 2.59, 2.74, 2.90, 3.05

SHALL BE 6" DIA W/ 5-INCH CLEAR OPENING WITH / 4.5" PUMPER CON. & 2- 2.5" HOSE CONNECTIONS.

BJ/JWPA.

Mueller® Modern Centurion® Fire Hydrant

150 p.s.i. (1034 kPa) working pressure — 300 p.s.i. (2068 kPa) test pressure. Compression type main valve closes with the pressure. Hydrant fully complies with

American Water Works Association Standard C-502. A variety of choices can be made regarding several fire hydrant features — see page D1-6 for additional information.

Modern Centurion Fire Hydrants

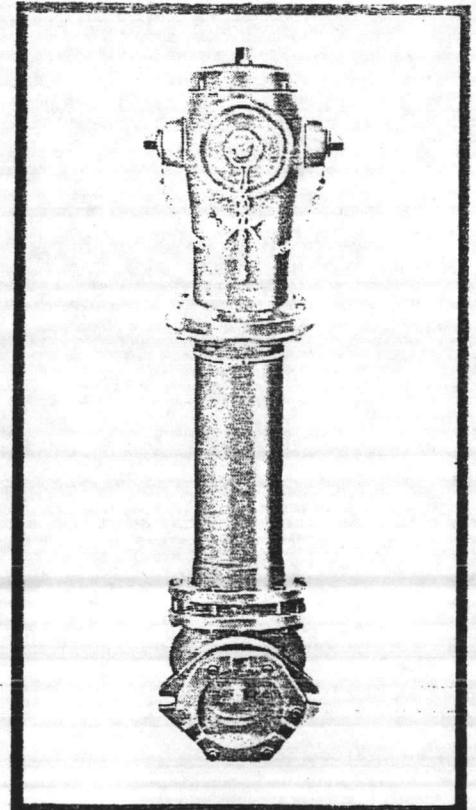
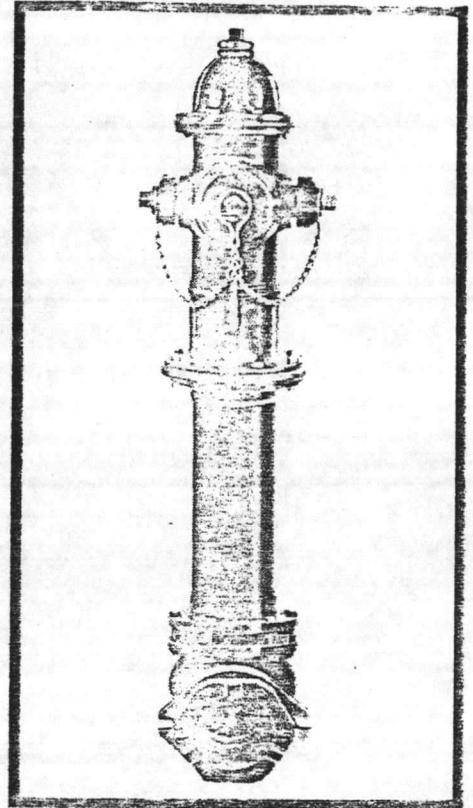
Three way	2	2 1/2", 3"	1	3 1/2", 4", 4 1/2", 5"	5 1/4"	A-442	See page D1-2
-----------	---	------------	---	------------------------	--------	-------	---------------

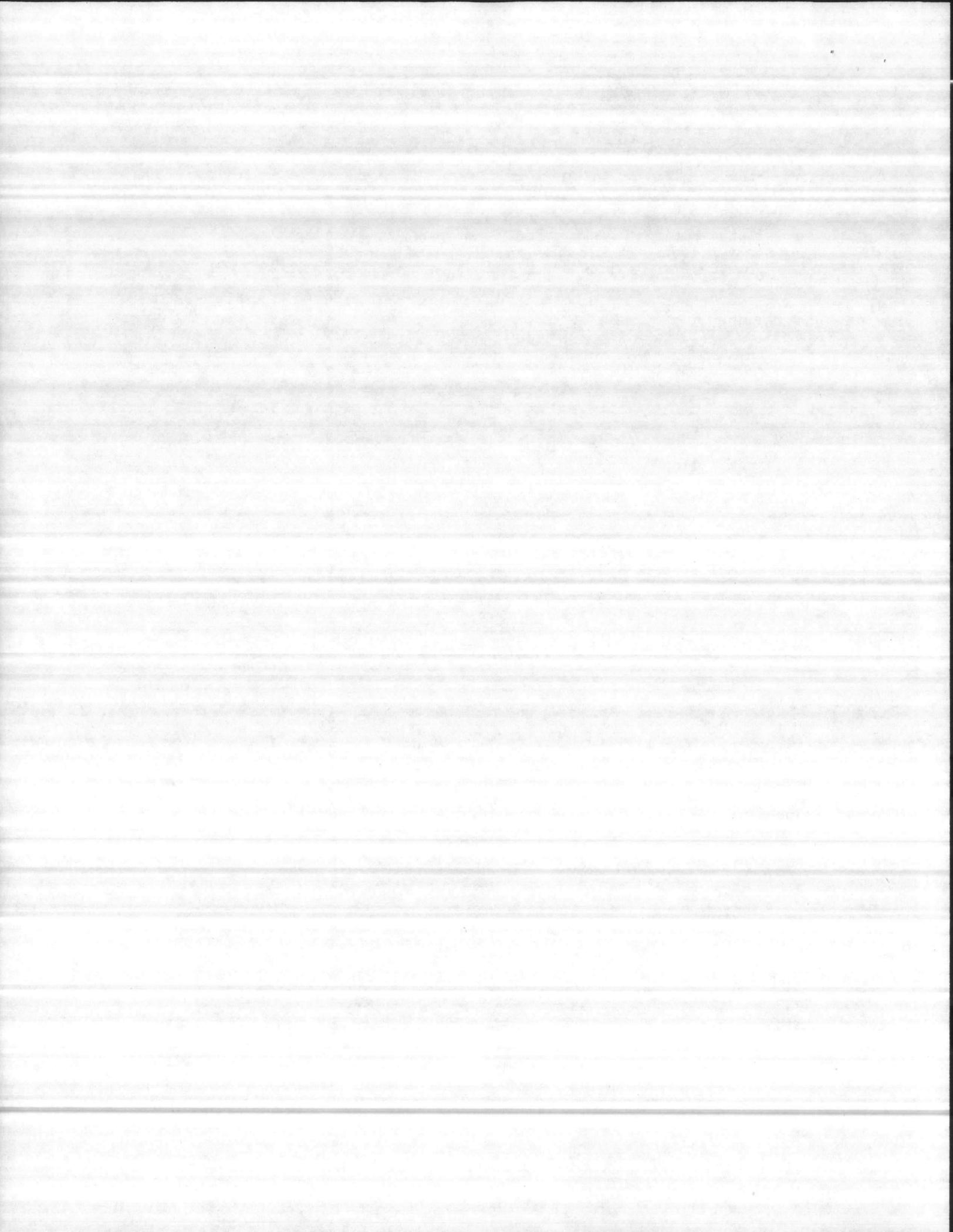
*Nominal sizes. Other sizes can be specified — see page D1-6.

**Nominal size.

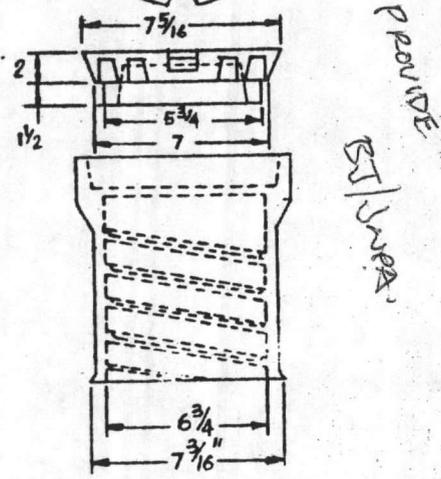
Bury lengths available

ft-in	1-6, 2-0, 2-6, 3-0, 3-6, 4-0, 4-6, 5-0, 5-6, 6-0, 6-6, 7-0, 7-6, 8-0, 8-6, 9-0, 9-6, 10-0
m	0.46, 0.61, 0.76, 0.91, 1.07, 1.22, 1.37, 1.52, 1.68, 1.83, 1.98, 2.13, 2.29, 2.44, 2.59, 2.74, 2.90, 3.05

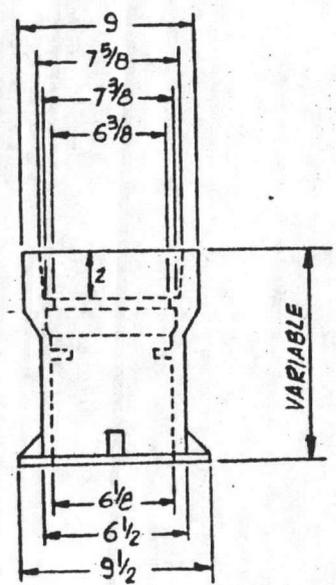
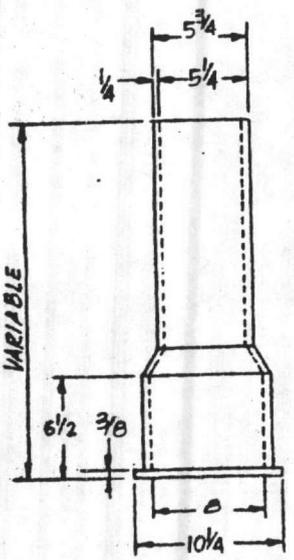
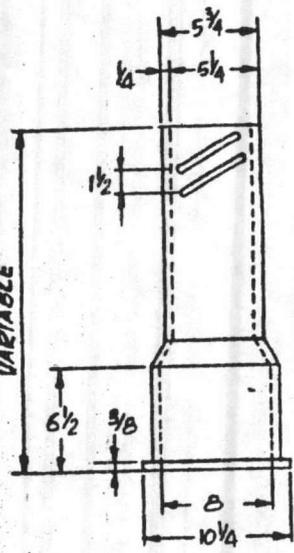




BOX COMPLETE	WEIGHT	TOP SECTION LENGTH	WITH LID WEIGHT	BOTTOM SECT LENGTH
18 X 24	60	10	35	15
26 X 32	70	10	35	24
24 X 36	80	16	45	24
32 X 44	85	16	45	30
36 X 48	90	16	45	36
36 X 52	105	26	65	30
38 X 60	110	26	65	36
52 X 72	135	26	65	24
62 X 84	145	26	65	36



PROVIDE
SLID/SCREW

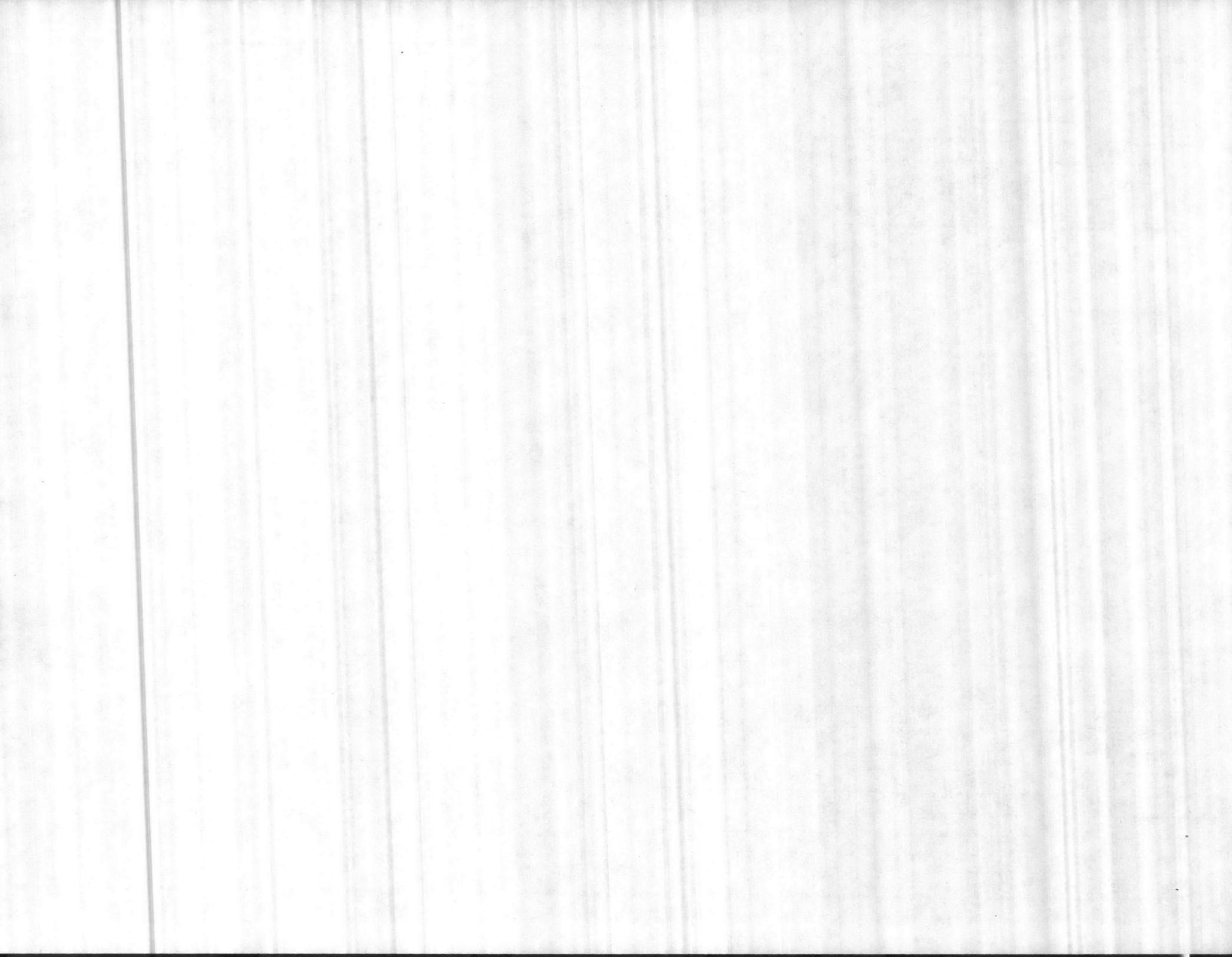


1.3.1,e
2.3.3

SOUTHERN STAR
10520 MEADOWGLEN FN, HOUSTON, TX 770
PHONE (713) 977-7780

TITLE:
VALVE BOXES SLID/SCREW T

DWN:	DATE:	SCALE:
CHK:	DATE:	
APPVD:	DATE:	
CUSTOMER:	DWG NO:	





THE HARRINGTON CORPORATION

P. O. BOX 10335 • LYNCHBURG, VIRGINIA 24506 • PHONE: (804) 845-7094

PLANT
3721 COHEN PLACE

REF: BEQ Camp Lejeune N62470-85-C-5142-627

This is to certify that Class 350 Ductile Iron fittings manufactured by The Harrington Corporation comply with the following specifications:

FITTINGS - All fittings shall be manufactured of Ductile Iron conforming to ASTM A536-72, Minimum grade 70-50-05. Nominal thicknesses of fittings shall be equal to, or exceed ANSI A21.51-1976 (AWWA C151-76), Class 54 Ductile Iron Pipe thicknesses. Radii of curvatures shall conform to ANSI A21.10-1971 (AWWA C110-71). Fittings shall have mechanical joints in accordance with ANSI A21.11-1972 (AWWA C111-72).

CEMENT LINING - All fittings shall be cement-lined in accordance with ANSI A21.4-1974 (AWWA C104-74).

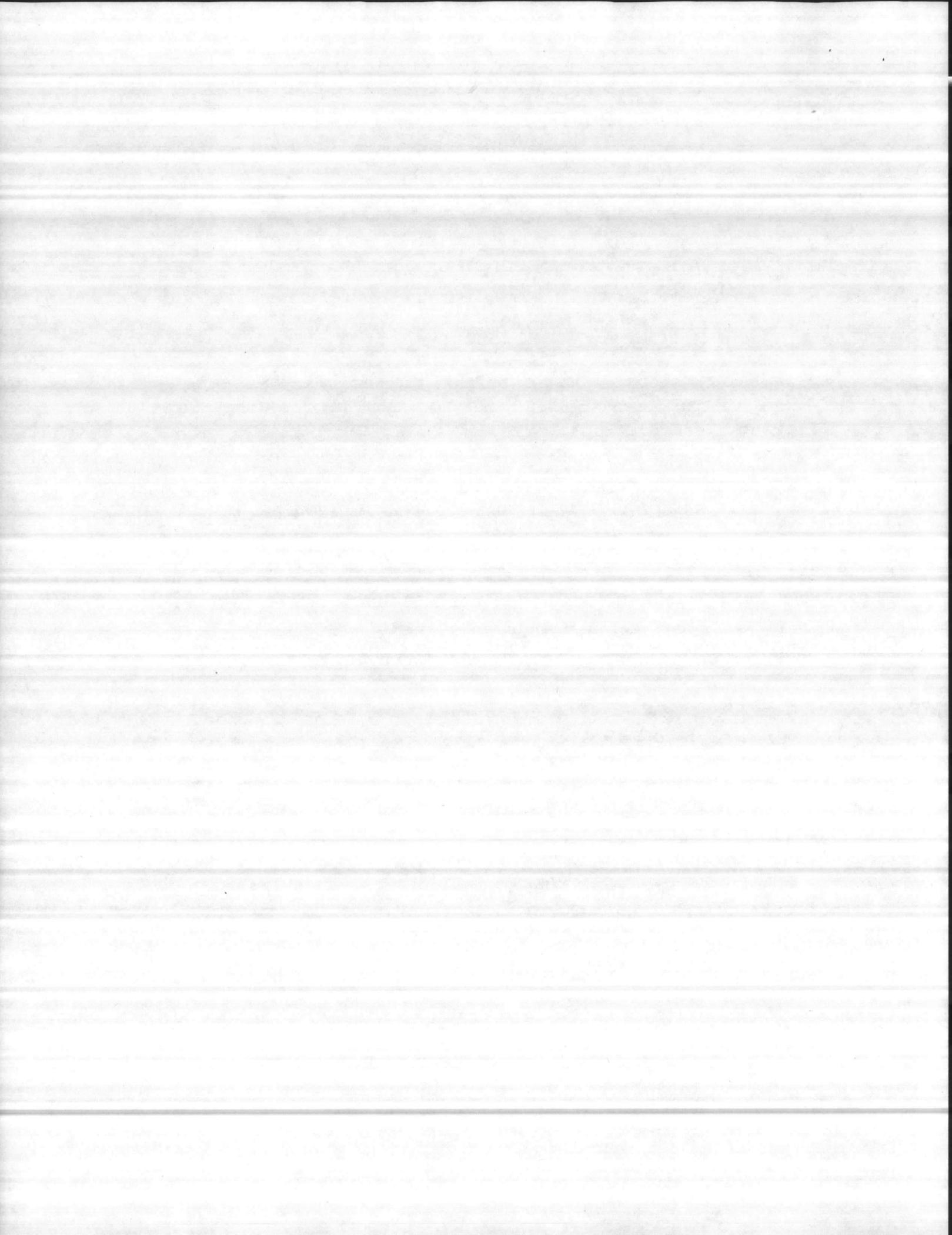
JOINT ACCESSORIES - All accessories; glands, bolts and gaskets, shall conform to ANSI A21.11-1972 (AWWA C111-72).

UNDERWRITERS LABORATORIES - All fittings are listed by Underwriters Laboratories for working pressure to 350 psi.

AWWA - All fittings comply with the requirements of ANSI/AWWA C153/A21.53-84.

THE HARRINGTON CORPORATION

A handwritten signature in cursive script, appearing to read "D.W. Harrington".
D.W. HARRINGTON



MECHANICAL JOINT DUCTILE IRON FITTINGS



FOR
DUCTILE IRON PIPE
CAST IRON PIPE
IPS SIZE PLASTIC PIPE
(With Transition Gasket)
C-900 SIZE PLASTIC PIPE

Class 350



THE HARRINGTON CORPORATION

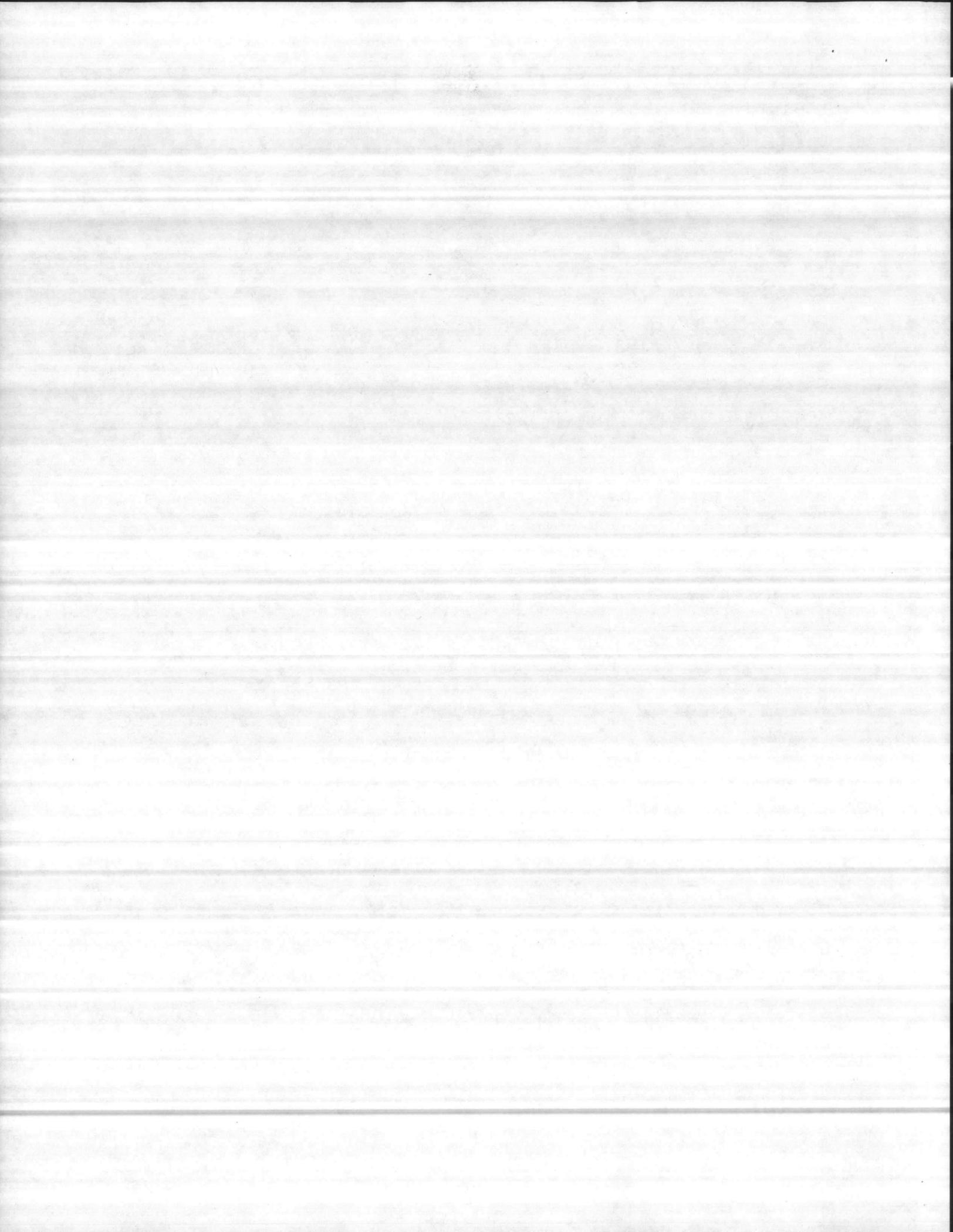
P. O. Box 10335

Lynchburg, Virginia 24506

804-845-7094

Telex 901610

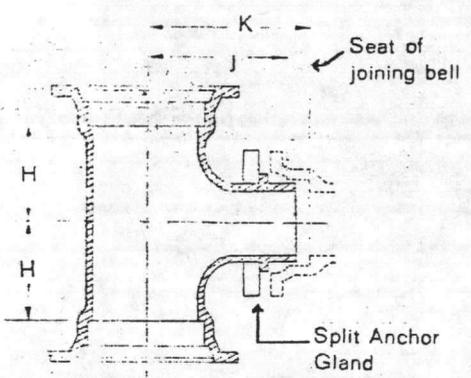




CLASS 350

DUCTILE IRON MECHANICAL JOINT FITTINGS

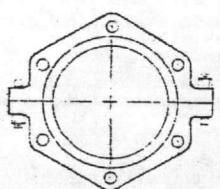
DIMENSIONS (INCHES) & WEIGHTS (POUNDS)



Hydrant Tee

Hydrant Tees				
SIZE	H	J	K	WT
6x6	5.8	10.0	11.25	66
8x6	6.9	11.0	12.25	90
10x6	7.9	12.5	13.75	120
12x6	8.9	13.5	14.75	150

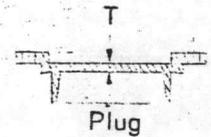
HARCO Hydrant Tee provides positive restraint of MJ fittings or valves attached to branch. The need for tie rods or blocking is eliminated. Rotating split anchor gland provides connection of attached fittings or valves at any grade or bolt hole alignment.



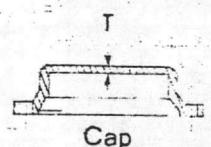
D. I. Split Anchor Gland

Split Anchor Gland — 6" size only
Weight — 10 lbs.

For use with HARCO ductile iron hydrant tees and all other cast iron hydrant (or swivel) tees.



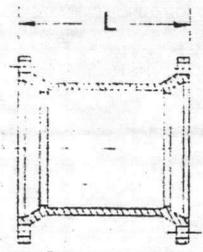
Plug



Cap

SIZE	Plugs		Caps	
	T	WT	T	WT.
4	.50	11	.50	11
6	.50	18	.50	18
8	.75	26	.75	31
10	.75	42	.75	46
12	.75	56	.75	60

SOLID SLEEVES



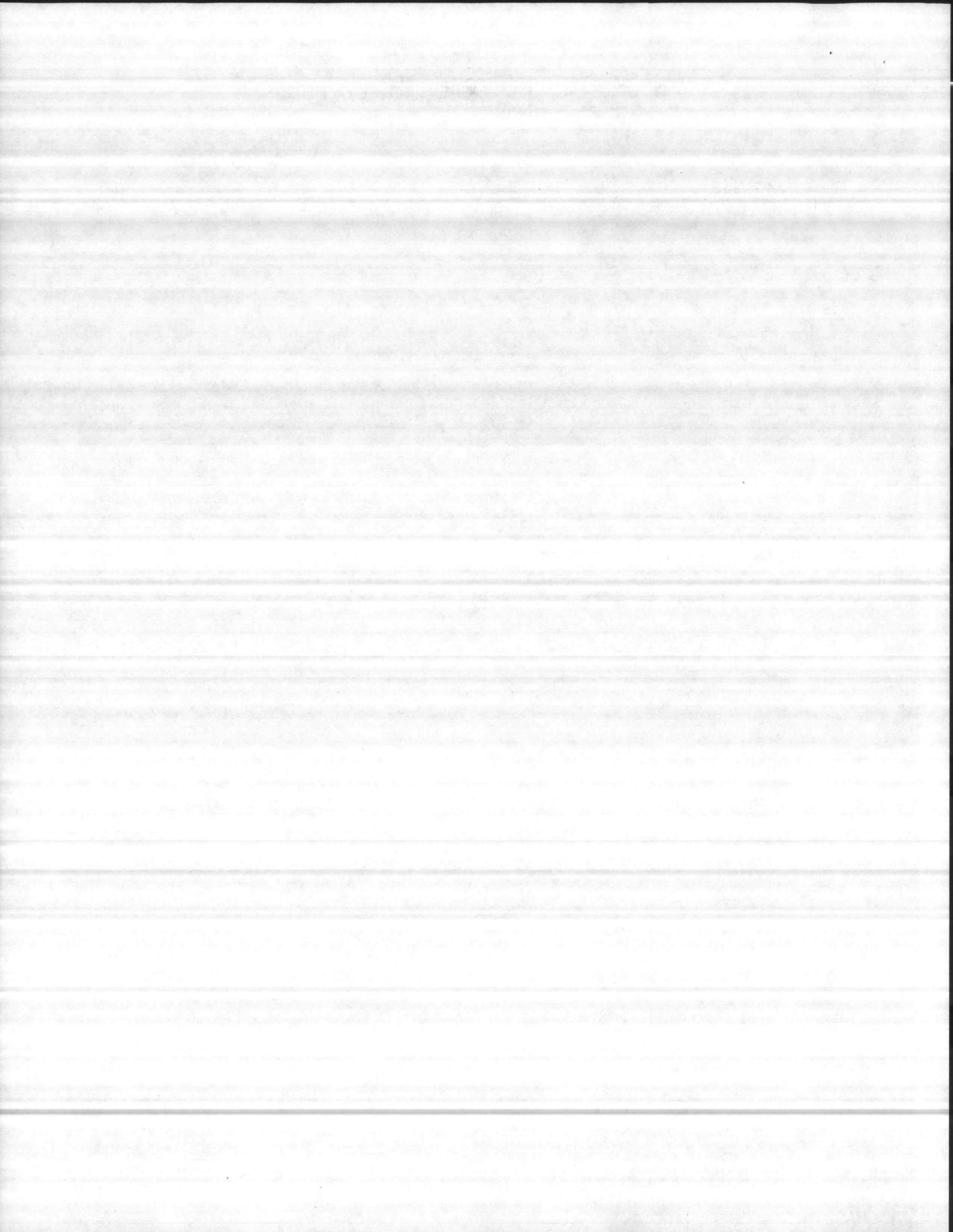
Solid Sleeve

SIZE	Short		Long	
	L	WT.	L	WT.
4	7.5	20	12	25
6	7.5	27	12	37
8	7.5	37	12	48
10	7.5	48	12	65
12	7.5	59	12	79

Notes:

- Weights do not include joint accessories
- Joints in accordance with ANSI/AWWA C111/A21.11-80
- Radii of curvature in accordance with ANSI/AWWA C110-77
- Cement lining in accordance with ANSI/AWWA C104/A21.4-80



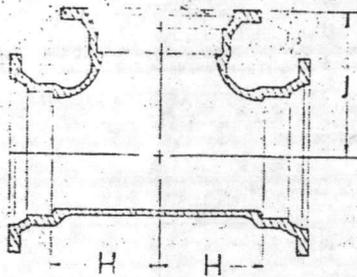


CLASS 150

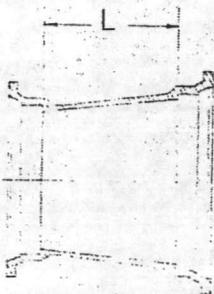
DUCTILE IRON MECHANICAL JOINT FITTINGS

All fittings furnished with accessories.

DIMENSIONS (INCHES) & WEIGHTS (POUNDS)

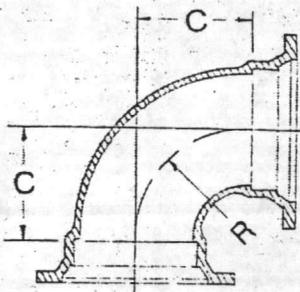


Tee

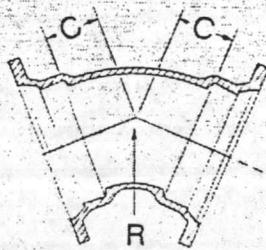


Reducer

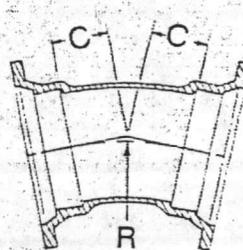
SIZE	Tees			Reducers	
	H	J	WT.	L	WT.
4x4	4.8	4.8	42	—	—
6x4	5.8	5.8	54	5.4	28
6x6	5.8	5.8	56	—	—
8x4	6.9	6.9	76	7.4	37
8x6	6.9	6.9	80	7.4	43
8x8	6.9	6.9	82	—	—
10x6	7.9	7.9	110	8.4	55
10x8	7.9	7.9	110	8.4	62
10x10	7.9	7.9	125	—	—
12x6	8.9	8.9	140	10.4	74
12x8	8.9	8.9	145	10.4	78
12x10	8.9	8.9	160	10.4	89
12x12	8.9	8.9	165	—	—



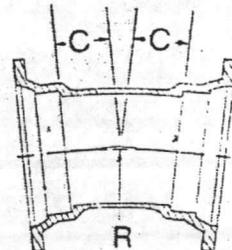
90° Bend



45° Bend



22½° Bend



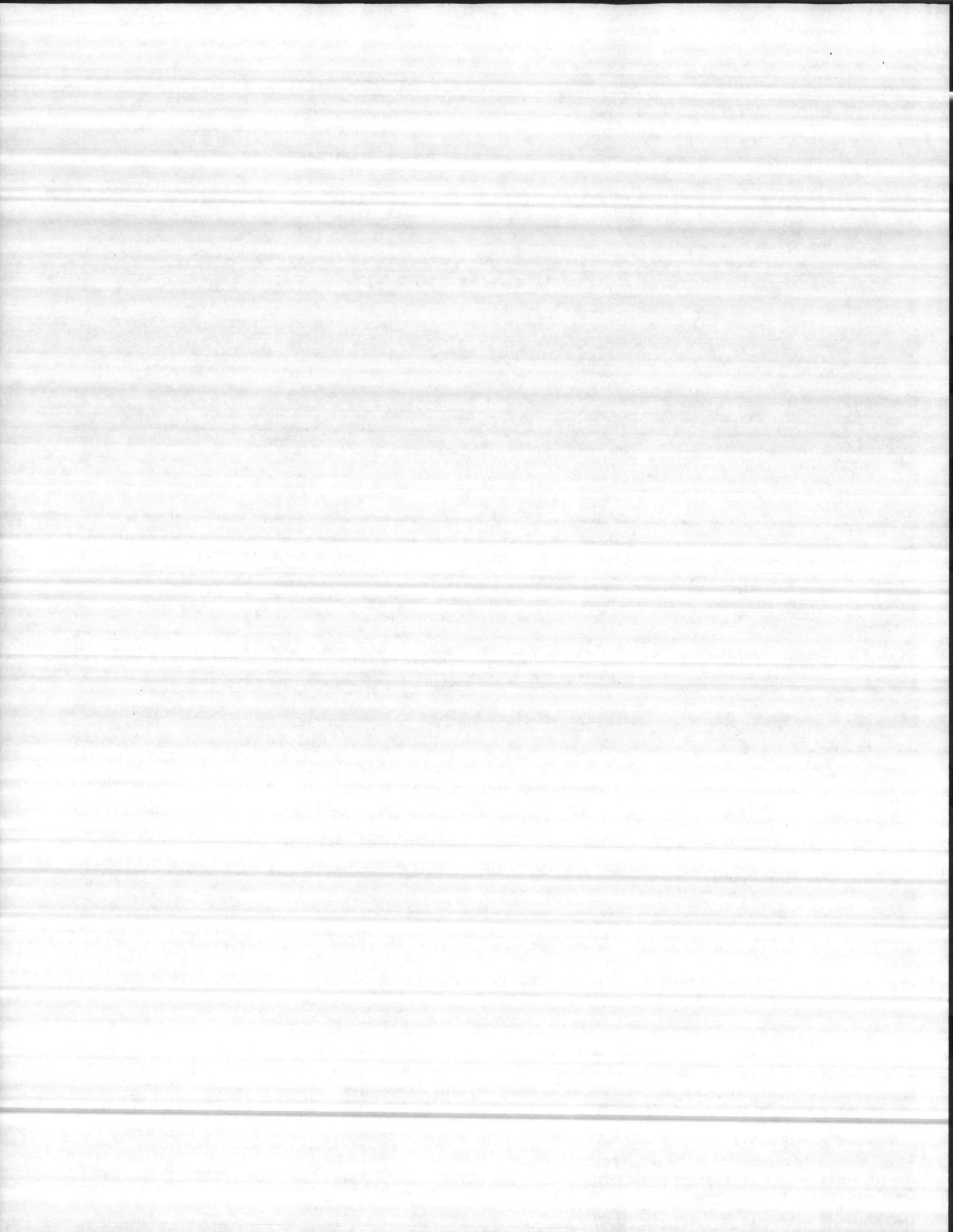
11¼° Bend

DIMENSIONS (INCHES) & WEIGHTS (POUNDS)

SIZE	90° Bend			45° Bend			22½° Bend			11¼° Bend		
	R	C	WT.	R	C	WT.	R	C	WT.	R	C	WT.
4	4.50	4.7	27	4.81	2.2	24	10.06	2.2	23	20.31	2.2	23
6	6.00	6.2	41	7.25	3.2	34	15.06	3.2	34	30.50	3.2	34
8	7.00	7.2	58	8.44	3.7	48	17.62	3.7	49	35.50	3.7	49
10	9.00	9.2	84	10.88	4.7	75	22.62	4.7	72	45.69	4.7	72
12	10.00	10.2	106	13.25	5.7	97	27.62	5.7	100	55.81	5.7	100

Notes:

- Weights do not include joint accessories
- Joints in accordance with ANSI/AWWA C111/A21.11-80
- Radius of curvature in accordance with ANSI/AWWA C110-77
- Cement lining in accordance with ANSI/AWWA C104/A21.4-80





THE HARRINGTON CORPORATION

P. O. BOX 10335 • LYNCHBURG, VIRGINIA 24506

HARCO DUCTILE IRON MECHANICAL JOINT FITTINGS

Harco ductile iron fittings are designed for 350 psi working pressures. Actual hydrostatic test pressures have exceeded 3000 psi without fitting failures.

The physical dimensions of Harco ductile iron fittings deviate from the ANSI/AWWA C110-77 standard in only two ways:

First: The wall thicknesses of the Harco fittings are equal to Class 54 ductile iron pipe, instead of Class D cast iron pipe.

COMPARISON OF WALL THICKNESSES

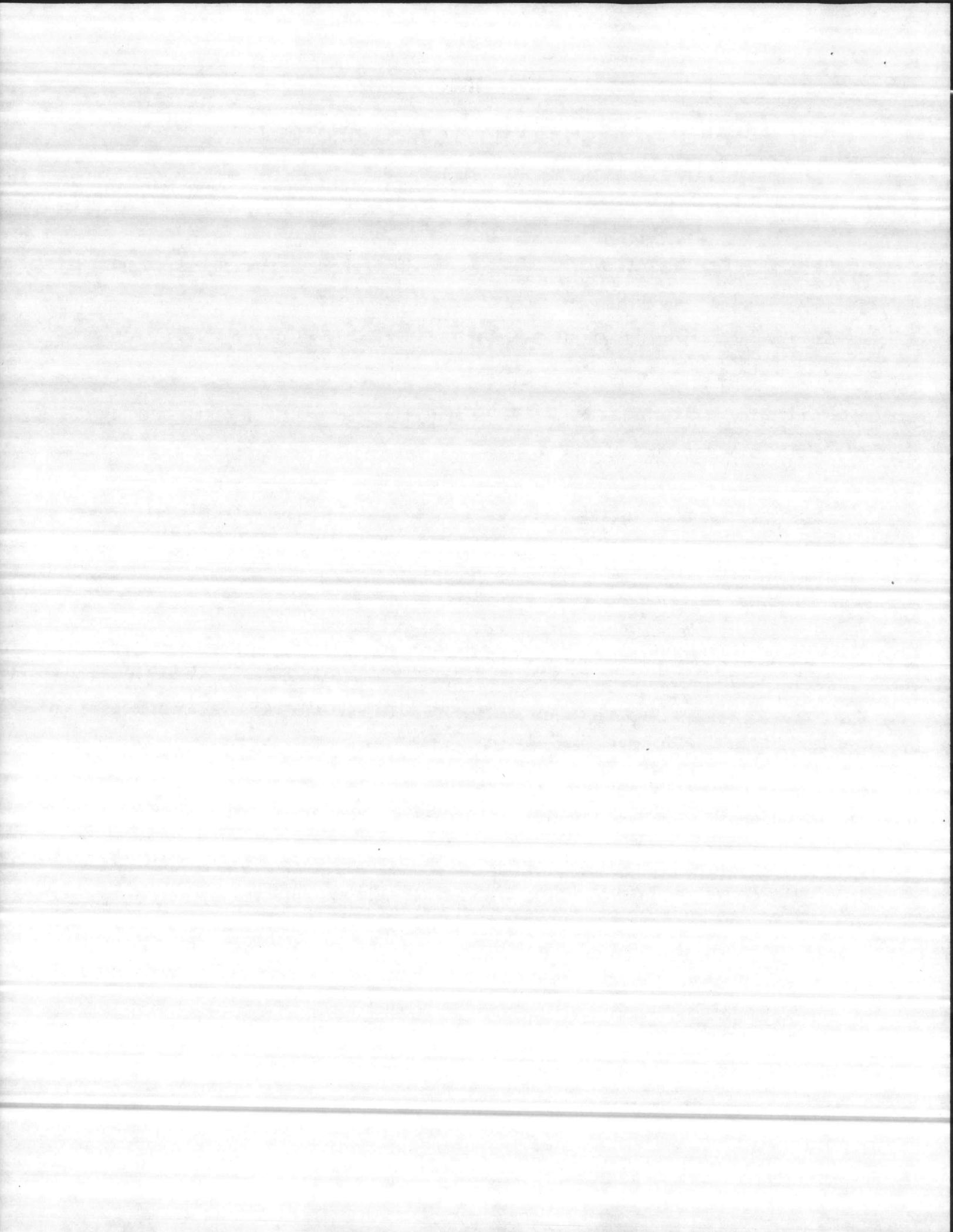
SIZE	CAST IRON FITTINGS (AWWA C110)	HARCO D.I. (Class 54 D.I. Pipe)	D.I. PIPE Class 50
4	.52	.35	.26
6	.55	.37	.25
8	.60	.39	.27
10	.68	.41	.29
12	.75	.43	.31

This reduction of wall thickness is accomplished without reducing the strength of the fitting by the use of ASTM A536-72 Grade 80-55-06 ductile iron, which possesses tensile strength of 80,000 psi versus 25,000 psi for cast iron.

Second: The overall laying lengths of Harco ductile iron fittings are less than those listed in ANSI/AWWA C110-77. This difference is the result of the "straight pipe section" of the bell being omitted from Harco fittings to provide a lighter more economical fitting. However, the AWWA turning radii are completely maintained in the Harco fittings, resulting in internal flow characteristics identical to ANSI/AWWA C110 fittings.

All Harco fitting joints meet requirements of ANSI/AWWA C111/A21.11-80 and cement lining is in accordance with ANSI/AWWA C104/A21.4-80.

Accessories furnished with fittings are cast iron glands, Corten T-head bolts and gaskets, all in accordance with ANSI/AWWA C111/A21.11-80.



HAMMOND
mark of quality in valves

HAMMOND VALVE CORP. * 1844 SUMMER STREET * HAMMOND, INDIANA 46320 * (219)931-3200

CERTIFICATE

This is to certify that the following Hammond Bronze and Iron Valves comply with Federal Specifications and/or Manufacturers' Standardization Society Standard Practices as indicated.

FIGURE NO.	Steam Pressure		DESCRIPTION	*FEDERAL SPECIFICATION	MSS STANDARD PRACTICE
	CLASS	PRESSURE			
IB 412	300		Bronze Globe	---	SP-80, Type 1
IB 413	150		Bronze Globe	---	SP-80, Type 2
IB 423	150		Bronze Globe (Solder Ends)	WW-V-51, Type I, Class B	SP-80, Type 2
IB 433	150		Bronze Globe	---	SP-80, Type 3
IB 440	125		Bronze Globe	WW-V-51, Type I, Class A	SP-80, Type 1
IB 444	300		Bronze Globe	---	SP-80, Type 3
IB 454	150		Bronze Angle	WW-V-51, Type II, Class B	SP-80, Type 2
IB 471	300		Bronze Angle	---	SP-80, Type 3
✓ IB 619	150		Bronze Gate	WW-V-54, Type II, Class B	SP-80, Type 2
IB 620	150		Bronze Gate	WW-V-54, Type II, Class B	SP-80, Type 2
IB 621	150		Bronze Gate	WW-V-54, Type I, Class B	SP-80, Type 1
IB 629	150		Bronze Gate	WW-V-54, Type II, Class B	SP-80, Type 2
IB 631	150		Bronze Gate	WW-V-54, Type III, Class B	SP-80, Type 3
IB 635	125		Bronze Gate (Solder Ends)	WW-V-54, Type II, Class A	SP-80, Type 2
IB 640	125		Bronze Gate	WW-V-54, Type II, Class A	SP-80, Type 2
IB 641	150		Bronze Gate	WW-V-54, Type II, Class B	SP-80, Type 2
IB 643	125		Bronze Gate	WW-V-54, Type III, Class A	SP-80, Type 3
IB 645	125		Bronze Gate	WW-V-54, Type I, Class A	SP-80, Type 1
IB 646	150		Bronze Gate	WW-V-54, Type I, Class B	SP-80, Type 1
IB 647	125		Bronze Gate (Solder Ends)	WW-V-54, Type I, Class A	SP-80, Type 1
IB 648	150		Bronze Gate (Solder Ends)	WW-V-54, Type II, Class B	SP-80, Type 2
IB 652	300		Bronze Gate	---	SP-80, Type 2
IB 654	300		Bronze Gate	---	SP-80, Type 2
IB 656	300		Bronze Gate	---	SP-80, Type 1
IB 904	125		Bronze Swing Check	WW-V-51, Type IV, Class A	SP-80, Type 3
IB 912	125		Bronze Swing Check (Solder Ends)	WW-V-51, Type IV, Class A	SP-80, Type 3
IB 940	125		Bronze Swing Check	WW-V-51, Type IV, Class A	SP-80, Type 3
IB 944	150		Bronze Swing Check	---	SP-80, Type 3
IB 945	150		Bronze Swing Check (Solder Ends)	---	SP-80, Type 3
IB 946	150		Bronze Swing Check	WW-V-51, Type IV, Class B	SP-80, Type 4
IB 949	300		Bronze Swing Check	---	SP-80, Type 3
IB 948	150		Bronze Lift Check	---	SP-80, Type 2
IR 116	125		Iron Globe, Bronze Trim	---	SP-85, Type I
IR 117	125		Iron Globe, All Iron Trim	---	SP-85, Type I
IR 313	250		Iron Globe, Bronze Trim	---	SP-85, Type I
IR 1138	125		Iron Gate, Bronze Trim	WW-V-58, Type I, Class 1	SP-70, Type I
IR 1140	125		Iron Gate, Bronze Trim	WW-V-58, Type I, Class 1	SP-70, Type I
IR 1144	125		Iron Gate, All Iron Trim	---	SP-70, Type I
IR 1146	125		Iron Gate, All Iron Trim	---	SP-70, Type I
IR 330	250		Iron Gate, Bronze Trim	WW-V-58, Type I, Class 2	SP-70, Type I
IR 1913	125		3% Nickel Iron Gate	---	SP-70, Type I
IR 1124	125		Iron Swing Check, Bronze Trim	---	SP-71, Type I
IR 1126	125		Iron Swing Check, All Iron Trim	---	SP-71, Type I
IR 322	250		Iron Swing Check, Bronze Trim	---	SP-71, Type I
IR 1937	125		3% Nickel Iron Swing Check	---	SP-71, Type I

* Federal Specifications WW-V-51, WW-V-54, & WW-V-58 have been cancelled by the United States Government.
MSS-SP-80 supercedes WW-V-51 and WW-V-54. MSS-SP-70 supercedes WW-V-58.

I hereby declare that all statements made and all information contained herein are true and correct.

HAMMOND VALVE CORP.

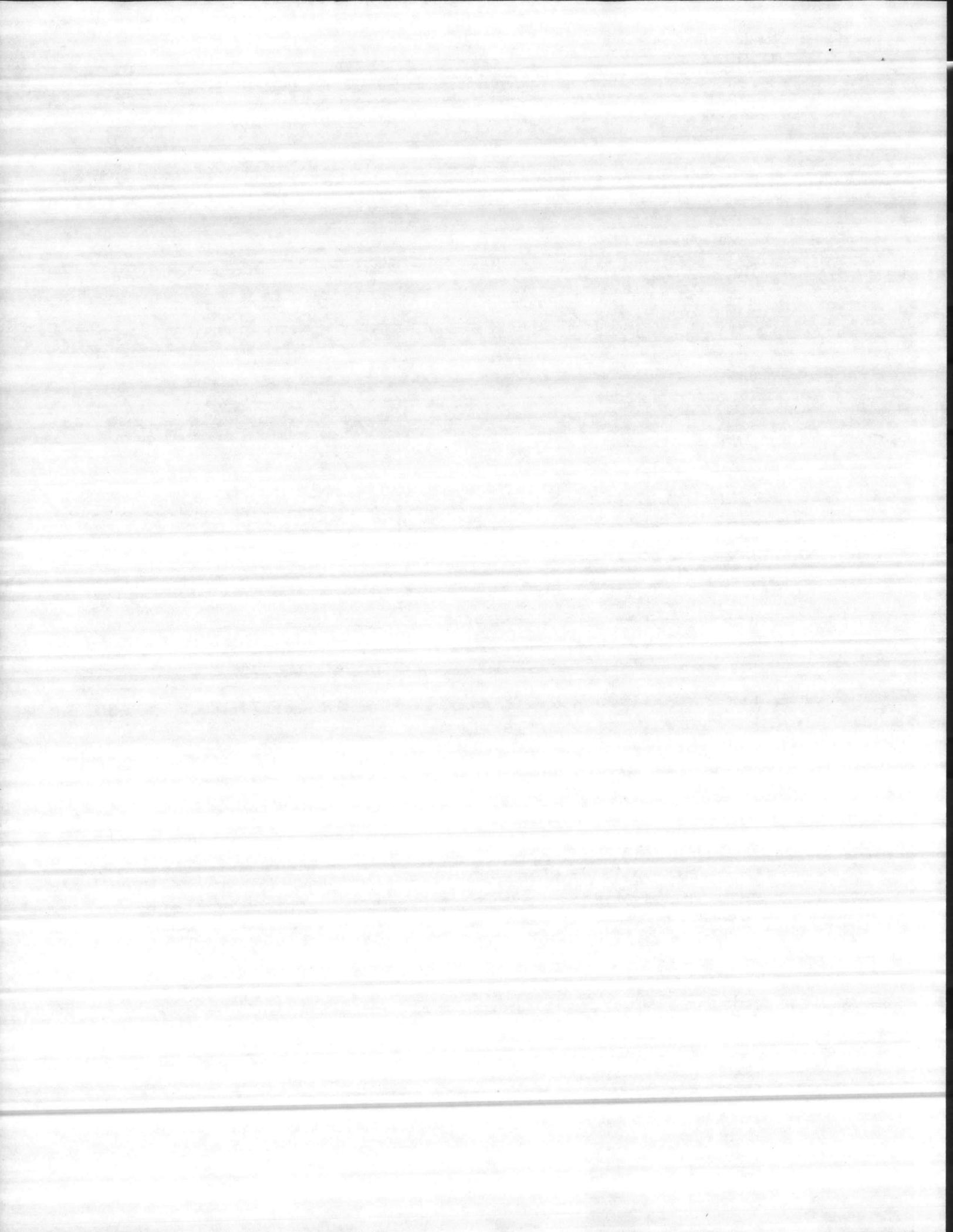
By

W. C. Clark

STATE OF INDIANA)
) SS:
COUNTY OF LAKE)

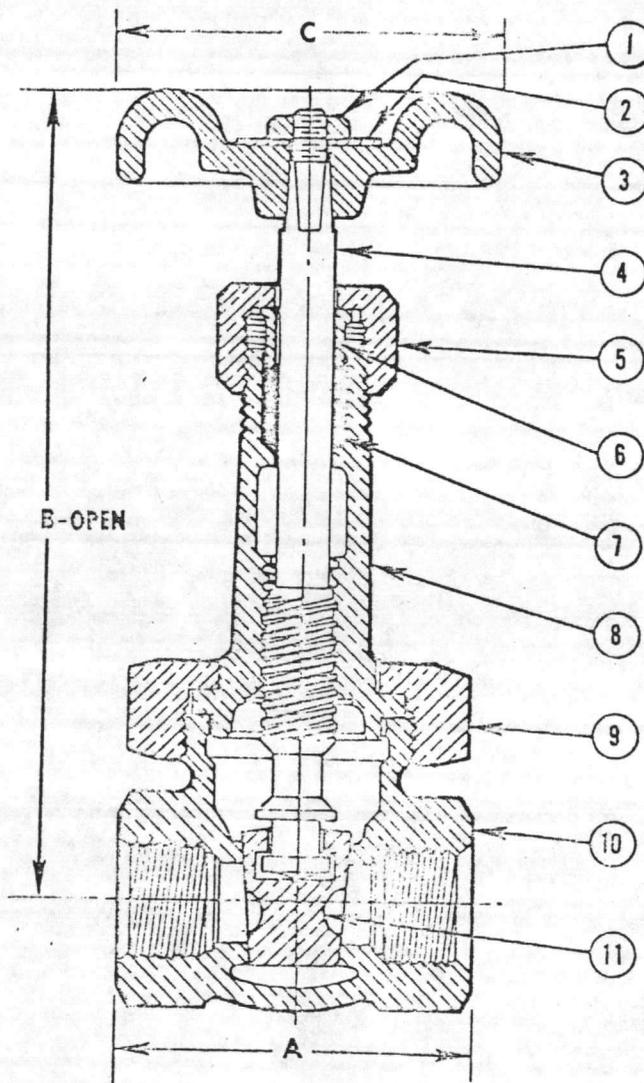
Subscribed and sworn to before me on Oct. 6 1987

Norma Besrud
Notary Public
Dake Co.
7/9/91



10-7-81

HATING
 Working Steam Pressure
 Water, Oil or Gas
 Non-Shock
 Federal Specification
 WW V-54 Type II, Class A



DIMENSIONS IN INCHES

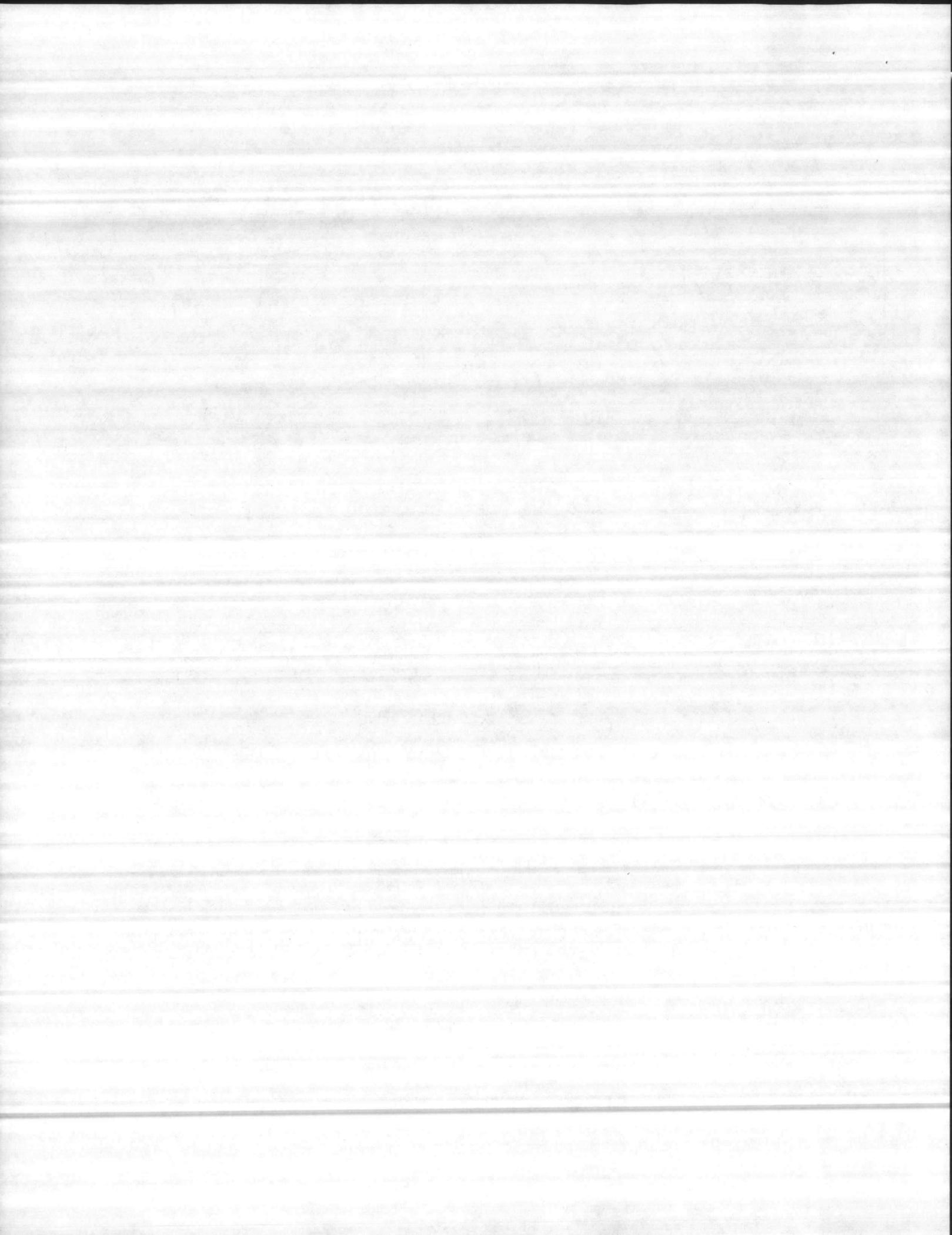
SIZE	A	B	C
1/4	1-25/32	5	2
3/8	1-25/32	5	2
1/2	2-3/16	5-3/32	2
3/4	2-5/16	6-13/32	2-3/8
1	2-17/32	7-17/32	2-3/4

SIZE	A	B	C
1-1/4	2-7/8	9	3
1-1/2	3-1/8	10-5/16	3-1/2
2	3-7/16	12-13/32	4
2-1/2	4-11/16	15-15/32	5-1/4
3	5-1/8	18	6

MATERIAL SPECIFICATIONS

1	Handwheel Nut	Steel	
2	Identification Plate	Aluminum	
3	Handwheel	Malleable Iron	ASTM A-47 (32510)
4	Stem	Silicon Brass Rod	ASTM B-371 Alloy 697
5	Packing Nut	1/4"-1 1/4"	Brass Rod ASTM B-16
		1 1/2"-3"	Cast Bronze ASTM B-584 Alloy 844

6	Gland Follower	Sintered Brass	ASTM B-282, Type I
7	Packing	Teflon - Asbestos	
8	Bonnet	Cast Bronze	ASTM B-62
9	Bonnet Ring	Cast Bronze	ASTM B-584 Alloy 844
10	Body	Cast Bronze	ASTM B-62
11	Disc	Cast Bronze	ASTM B-62





7614 Industrial Highway
Box 10098
Macon, GA 31297
Tel: (912) 788-3300

Subject: Camp Lejeune BEQ
N62470 - 85 - E - P627

LETTER OF CERTIFICATION
FOR POTABLE WATER AND PRESSURE PIPE

To whom it may concern:

Cannon Pipe Corporation, Southern Division, certifies that all PVC potable water and DWV pipe that we manufacture has been made and tested in accordance with the requirements ASTM and NSF as listed below:

DWV Pipe

ASTM-D1784 for PVC compound
ASTM-D2665 for pipe properties and dimensions

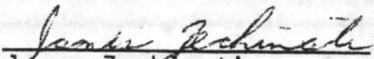
Schedule 40 Potable water pipe

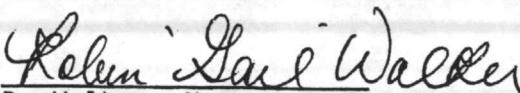
ASTM-D1784 for PVC compound
ASTM-D1785 for pipe properties and dimensions
ASTM-D2672 for integral bell dimensions

Pressure Rated SDR pipe

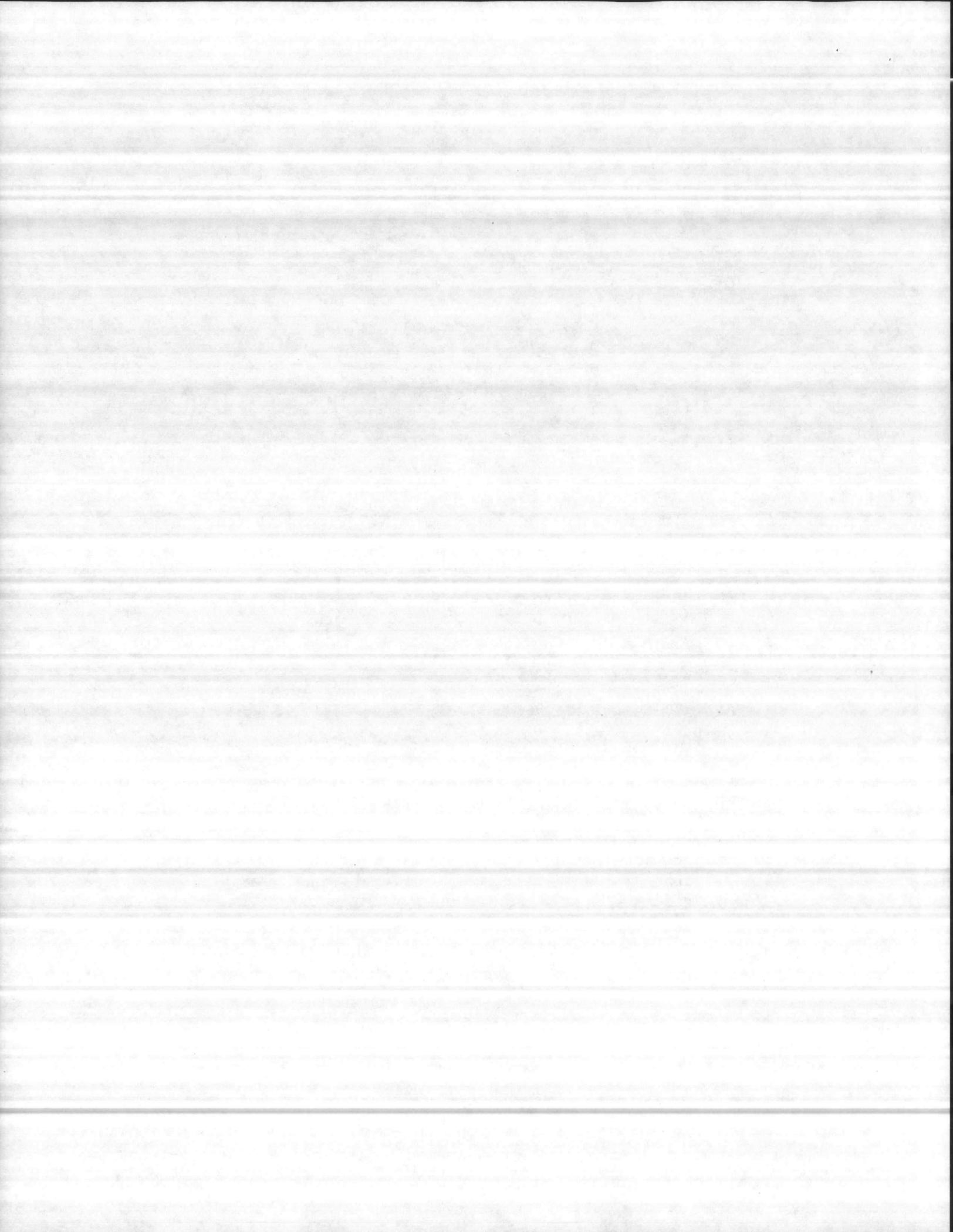
ASTM-D1784 for PVC compound
ASTM-D2241 for pipe properties
ASTM-D2672 for integral bell dimensions

These products carry the mark of the National Sanitation Foundation for potable water and drain, waste and vent uses. Complying with NSF requirements assures that the pipe is made from non-toxic materials and can be safely used in pressure applications as recommended.


James Zechinati
Engineering Manager, Cannon Pipe Corp


R. Walker, Notary Public

Notary Public, Bibb County, Georgia
My Commission Expires Nov. 25, 1990



PVC SCHEDULE 40 PRESSURE PIPE

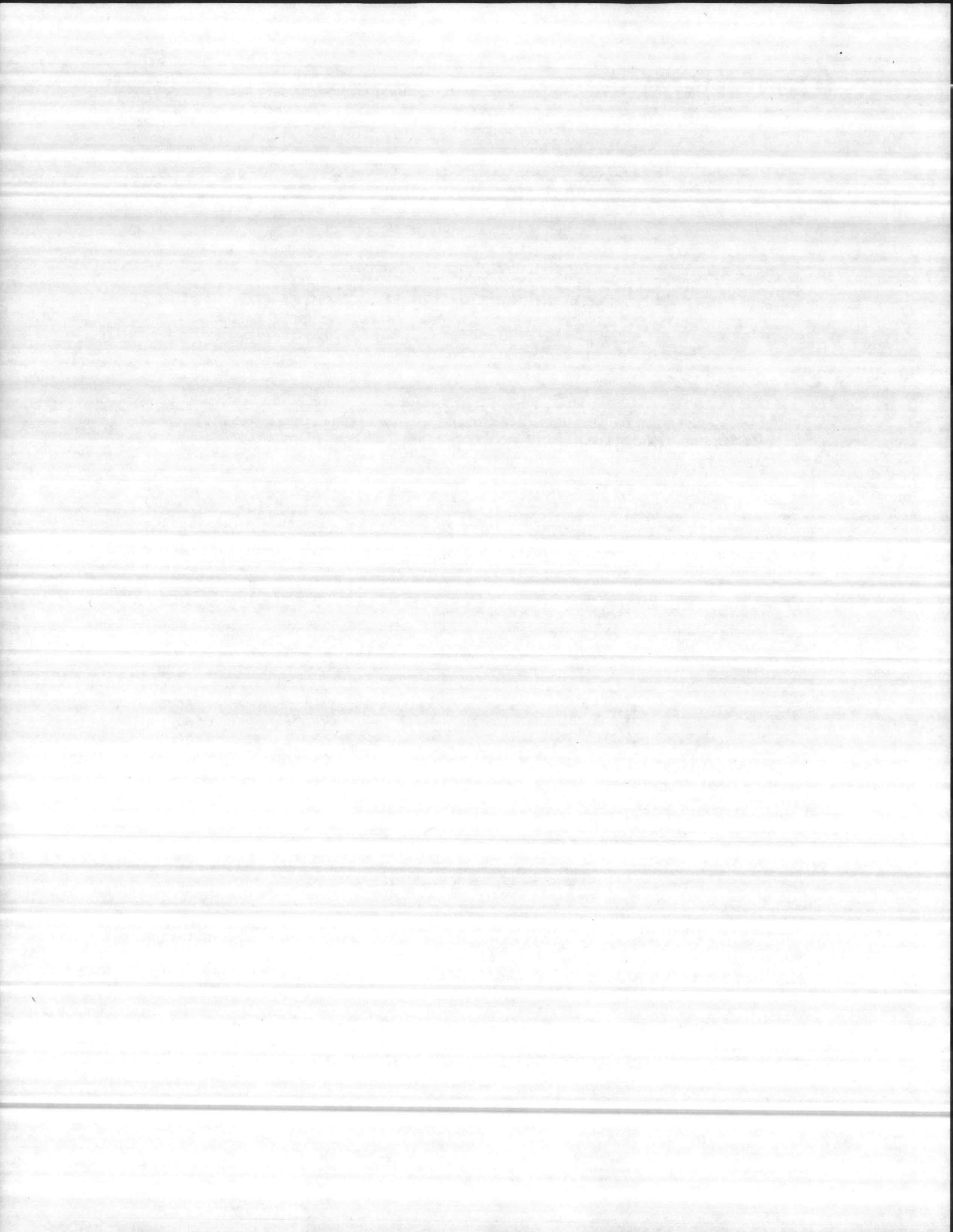
SPECIFICATION

Cannon Schedule 40 conforms to the following standards PVC 1120; ASTM D-1785 plain end; ASTM D-2672 belled end; NSF-pw

SCHEDULE 40 PVC 1120 ASTM D-1785						
NOMINAL SIZE	PRODUCT NUMBER	OUTSIDE DIAMETER	MINIMUM WALL	MAX W.P. @ 73° F	WEIGHT PER 100'	LENGTH BELLED END
1/2"	11005	.840	.109	600 PSI	16 lbs.	20'
3/4"	11015	1.050	.113	480 PSI	21 lbs.	20'
1"	11025	1.315	.133	450 PSI	32 lbs.	20'
1 1/4"	11035	1.660	.140	370 PSI	43 lbs.	20'
1 1/2"	11045	1.900	.145	330 PSI	52 lbs.	20'
2"	11055	2.375	.154	280 PSI	70 lbs.	20'
3"	11075	3.500	.216	260 PSI	144 lbs.	20'
4"	11095	4.500	.237	220 PSI	204 lbs.	20'
6"	11125	6.625	.280	180 PSI	360 lbs.	20'

INSTALLATION

- Fittings use only those meeting ASTM D-2466
- Solvent cements use only those meeting ASTM D-2564
- NSF standard 14. "Thermoplastic materials, pipe, fittings, valves and joining materials."



capco

CAPCO PIPE COMPANY, INC. — A Subsidiary of ASARCO Incorporated
1400 Twentieth Street, South • P. O. Box 55379 / Birmingham, Alabama 35255 • Phone 205 • 933-7281

I. L. TAYLOR
Vice President—Marketing

October 2, 1987

Jacobs Builders
Post Office Box 1399
Jacksonville, North Carolina 28541

Att: Mr. Wilbert Jacobs

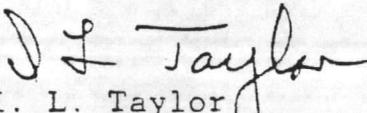
Ref: Camp Lejeune BEQ
N62470-85-C-5142 P-721

Gentlemen:

This is to certify that 3/4 to 3 inch SDR-21 Class 200 PVC pipe manufactured by Capco meets or exceeds the following specification:

Polyvinyl Chloride Pipe (PVC) shall be made from ASTM Type 1, Grade 1 resin, shall be NSF approved for potable water at 73° F., and shall further meet or exceed all requirements of ASTM D-3139, ASTM D-1784, and ASTM D-2241.

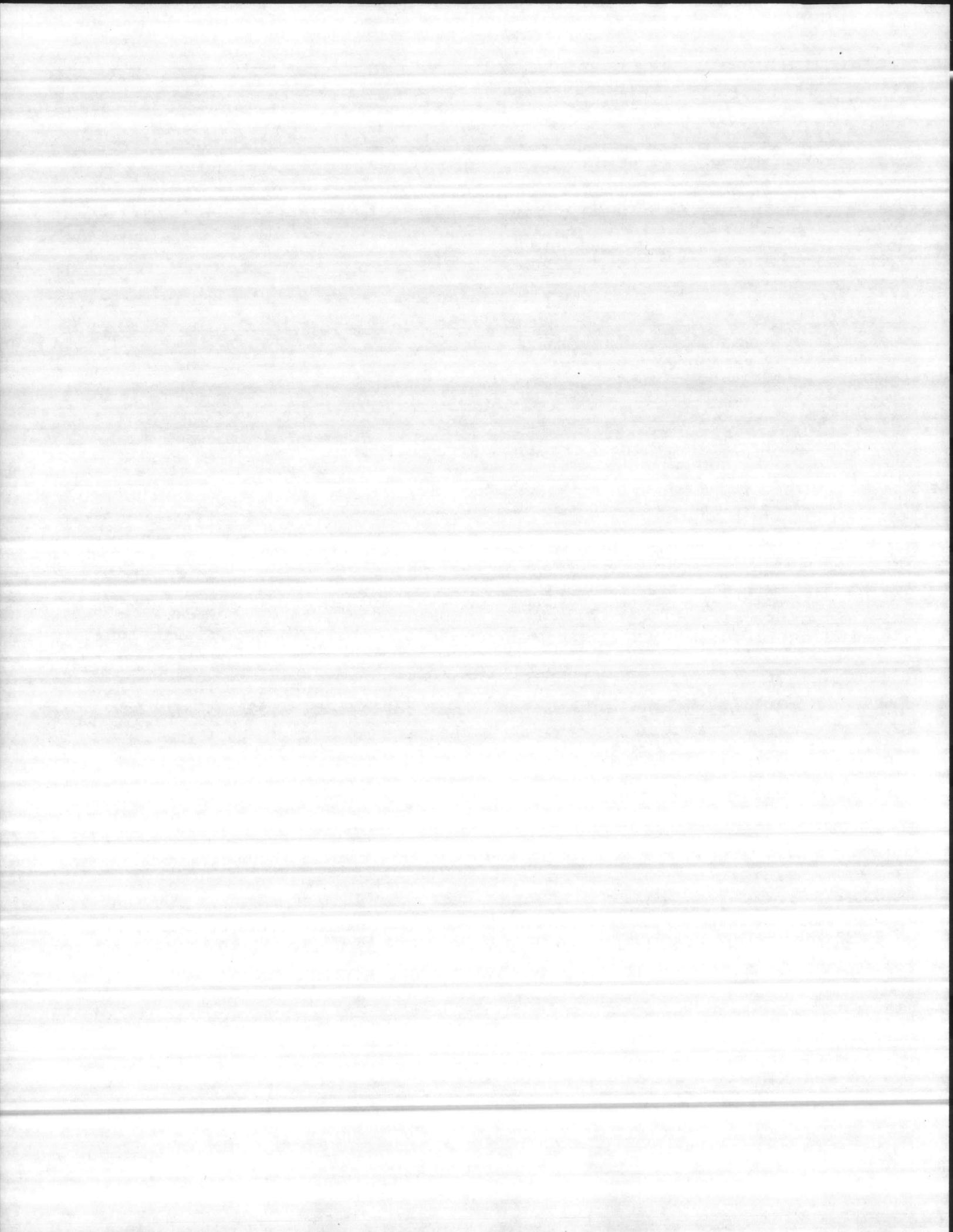
Very truly yours,


I. L. Taylor
Vice President

gj

Sworn to and subscribed before me
this 2nd day of October 1987.


Notary Public
My Commission Expires January 18, 1988



PLANT LOCATIONS
 Carrollton, Ohio
 Greensboro, North Carolina
 Pompano Beach, Florida
 Thomasville, Georgia
 Madison, Wisconsin



STRENGTH RATED PIPE

SDR 13.5 • PR 315 • 315 PSI AT 73°F • BELL END ONLY

NOM. SIZE	PART NO.	PALLET QTY.	ORDER UNIT	OD	MIN. WALL	AVG. WT/CFT
1/2	21702	8920	1	.840	.060	10

SDR 21 • PR 200 • 200 PSI AT 73°F • BELL END ONLY

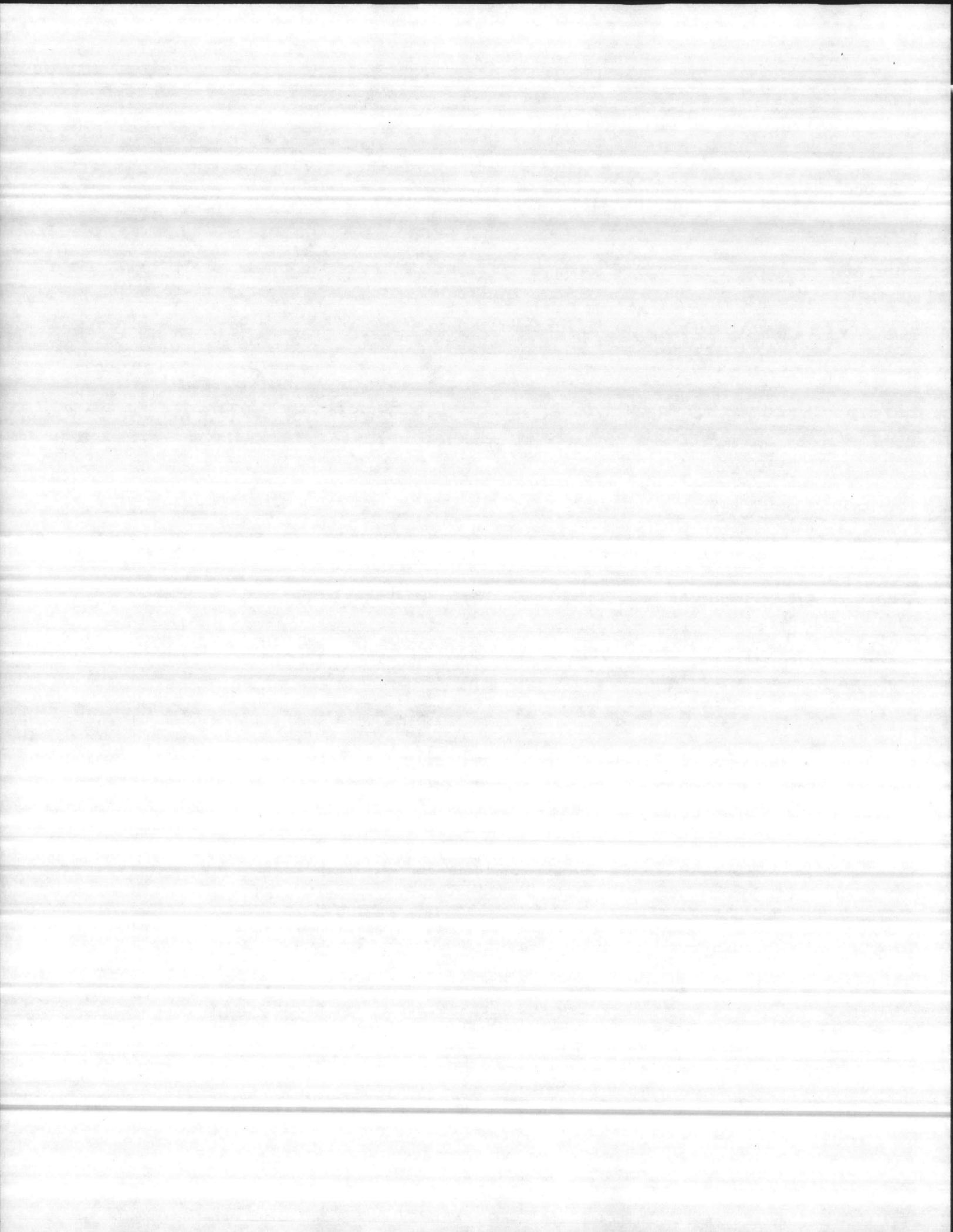
NOM. SIZE	PART NO.	PALLET QTY.	ORDER UNIT	OD	MIN. WALL	AVG. WT/CFT
3/4	20703	5540	1	1.050	.060	12.4
1	20704	4420	1	1.315	.063	16.4
1 1/4	20705	5620	2	1.650	.079	25.6
1 1/2	20706	4500	2	1.900	.090	33.1
2	20708	2800	2	2.375	.113	51.5
2 1/2	20710	2040	2	2.875	.137	74.9
3	20712	1260	2	3.500	.167	110.5
4	20716	760	2	4.500	.214	181.0
5	20720	1050	4	5.563	.265	275.8
6	20724	780	4	6.625	.316	390.6

SDR 26 • PR 160 • 160 PSI AT 73°F • BELL END ONLY

NOM. SIZE	PART NO.	PALLET QTY.	ORDER UNIT	OD	MIN. WALL	AVG. WT/CFT
1 1/4	16705	5620	2	1.650	.064	21.2
1 1/2	16706	4500	2	1.900	.073	27.5
2	16708	2800	2	2.375	.091	42.3
2 1/2	16710	2040	2	2.875	.110	61.3
3	16712	1260	2	3.500	.135	90.9
4	16716	760	2	4.500	.173	148.6
5	16720	1060	4	5.563	.214	225.9
6	16724	780	4	6.625	.255	319.4

- Standard lengths 20'.
- 48 order units is a truckload. Combine any LCP products to complete your order.
- Please use part number when placing orders.
- All sales of goods offered in this catalog are subject to seller's conditions of sale, a copy of which will be furnished upon request.





capco

CAPCO PIPE COMPANY, INC. — A Subsidiary of ASARCO Incorporated
1400 Twentieth Street, South • P. O. Box 55379 / Birmingham, Alabama 35255 • Phone 205 • 933-7261

W. H. BEASLEY
Vice President/Controller

August 28, 1987

Davis Meter CO.
3321 Hobby Crt.
Raleigh, N.C. 27604

RE: Jacobs Builders, Inc.
BEQ, Camp Lejeune, N.C.
Contract # 62470-85-C-5142-P627

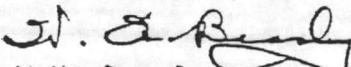
Gentlemen:

This is to certify that the Dr-18, Class 150 C-900, 4", 6", and 8" PVC pipe which is to be furnished by Capco on the above-referenced job meets or exceeds all requirements of AWWA C-900. We further certify that Capco C-900 pipe is listed by Underwriters' Laboratories and is approved by Factory Mutual.

Also the 8" and 10" SDR (35 Sewer Pipe) which is to be furnished by Capco meets or exceeds the following specification:

Polyvinyl Chloride pipe shall be made from materials having a cell classification of 12454-B as defined in ASTM-D 1784. It will also meet the requirements of ASTM-D-3034.

Very truly yours,


W.H. Beasley

WHB/lp

Sworn to and subscribed before me
this 28th day of August, 1987.

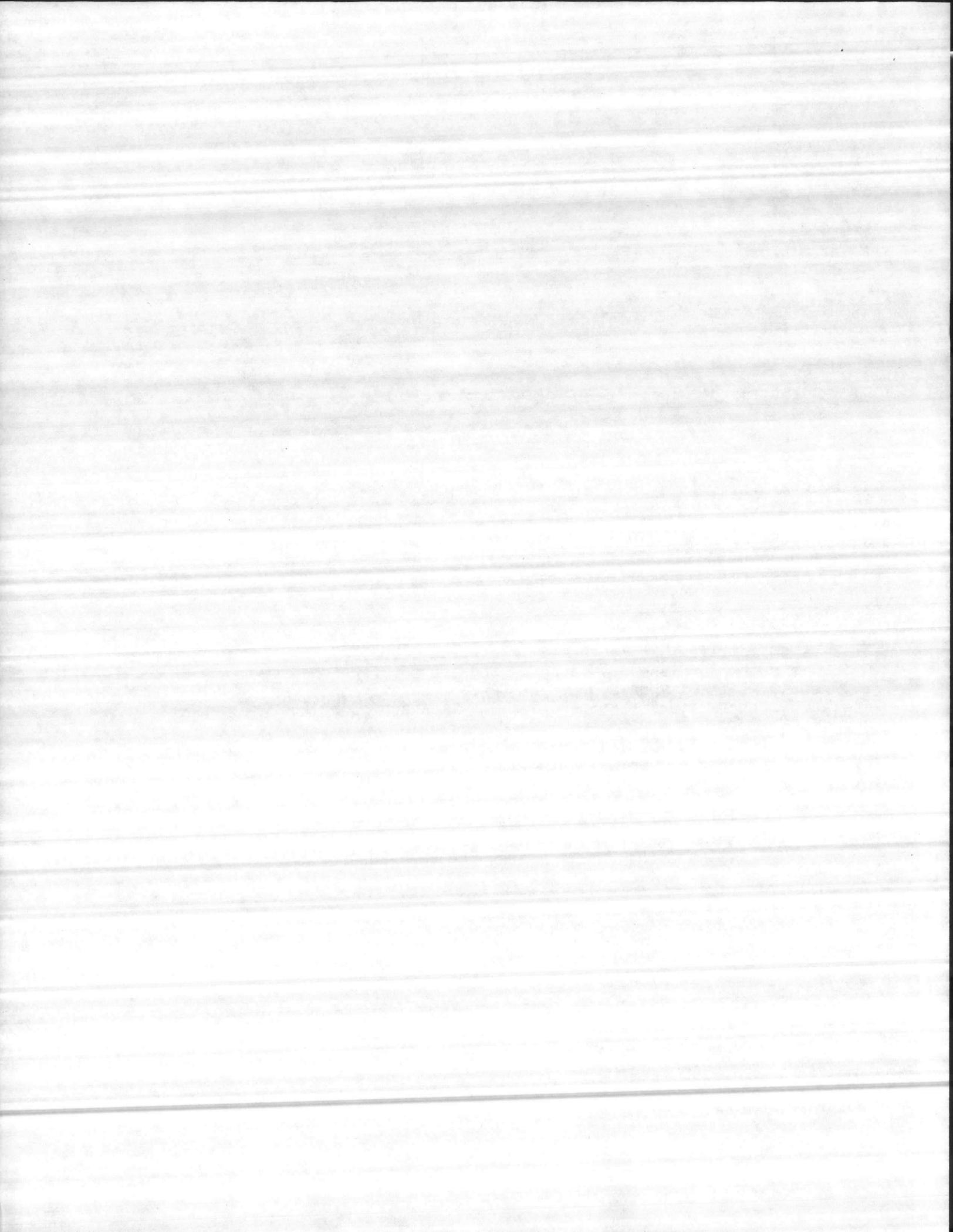
NOTE

MIN. SDR 35 PVC FOR
GRAVITY SEWER PIPING

BJ/JWPA.


NOTARY PUBLIC

My Commission Expires January 16, 1988



**CAPCO C-900
VC MUNICIPAL WATER PIPE**

C-9000

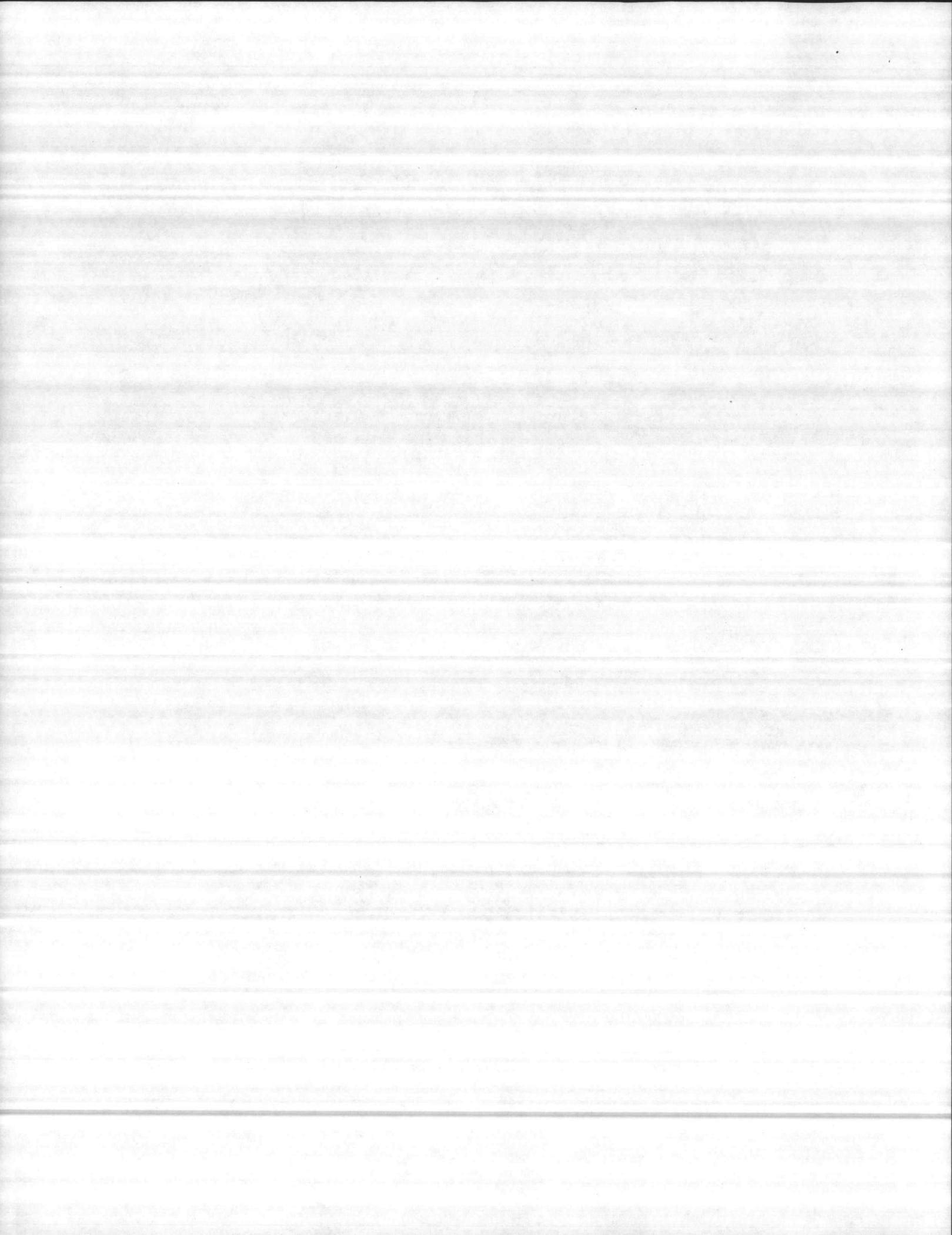
C-900

**CONFORMS TO
ANSI/AWWA**

C-900

STANDARD

CAPCO PIPE CO., INC.



AWWA C-900 PVC WATER PIPE SHORT FORM SPECIFICATION

SCOPE

This specification covers the manufacturer's requirements for Capco C-900 PVC Municipal Pipe. The pipe shall meet or exceed the industry standards set forth by the American Water Works Association and the American National Standards Institute.

MATERIALS

Capco C-900 PVC Pipe shall be made from Class 12454-A or Class 12454-B virgin compounds as defined in ASTM D-1784, with an established hydrostatic-design-basis rating of 4,000 PSI for water at 73.4° F.

PIPE AND GASKET

Capco C-900 PVC Pipe shall have a cast iron outside diameter and shall be suitable for use as a pressure conduit. All Class 100 pipe shall meet the requirements of DR-25; all Class 150 pipe shall meet the requirements of DR-18, and Class 200 shall meet the requirements of DR-14. Provisions must be made for expansion and contraction at each joint with an elastomeric sealing ring. Laying length shall be 20 feet \pm 1 inch for all sizes except that up to 10 per cent of the footage may be in random lengths of not less than 10 feet. The pipe shall have an integral bell, and the gasket seal shall be reinforced with a steel band or other rigid material. The joint shall be in compliance with the requirements for ASTM D-3139.

MARKING

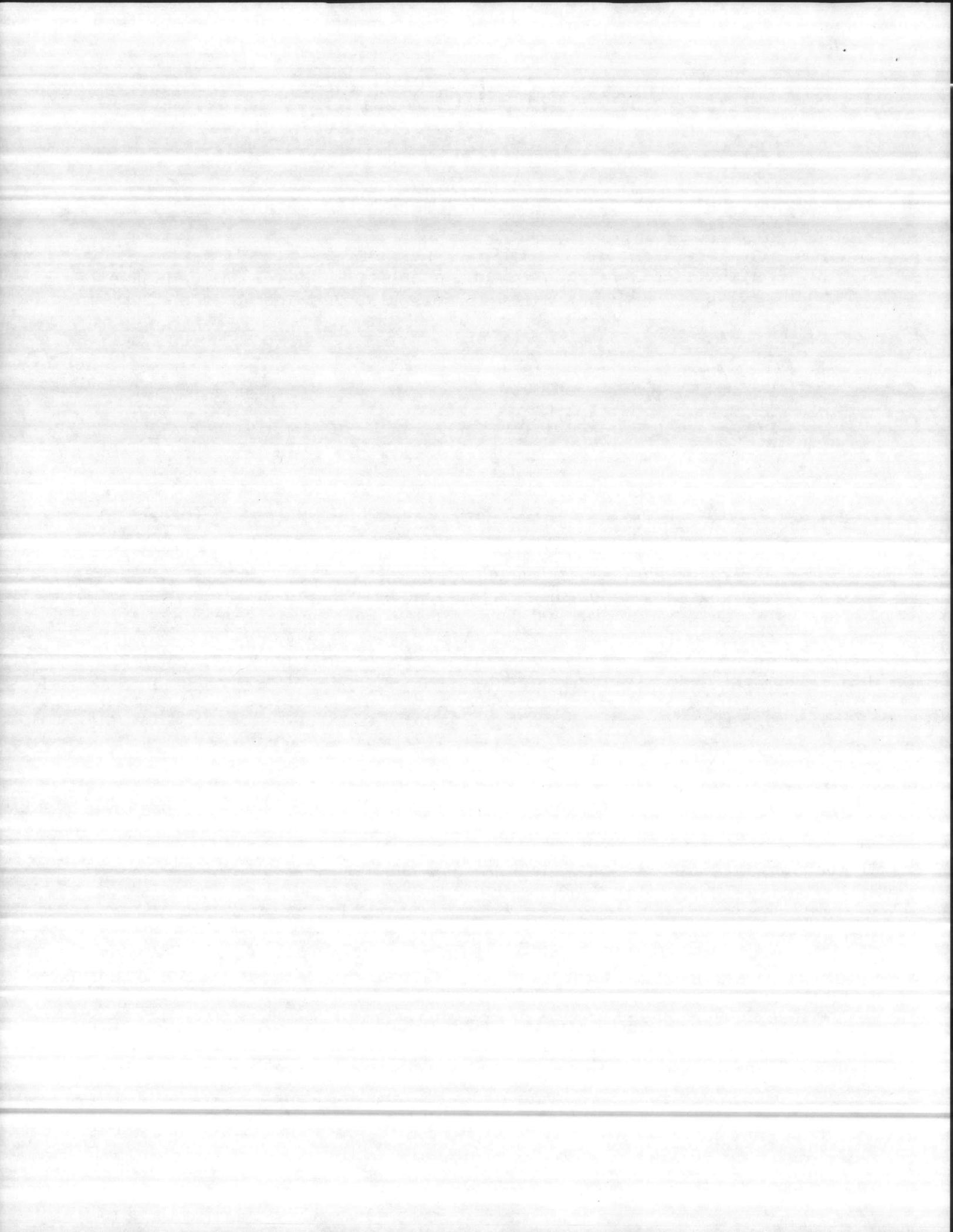
Capco C-900 PVC Pipe shall be marked as prescribed by AWWA standards; i.e., nominal pipe size, dimension ratio (DR), AWWA pressure class, manufacturer's name and code, and seal of testing agency that verified the suitability of the pipe material for potable water service.

TEST REQUIREMENTS

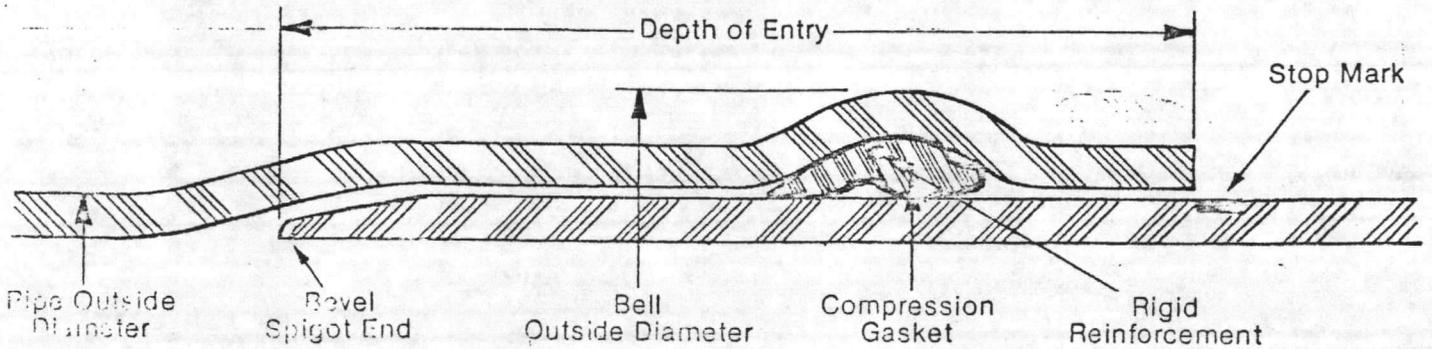
Each length of pipe (standard and random), including the integral bell, shall be pressure tested to four times the rated pressure for a minimum of five seconds. Pipe shall meet all additional test requirements as described in AWWA C-900.

APPROVALS

Capco C-900 PVC Pipe is listed by Underwriters Laboratories and approved by Factory Mutual in Classes 150 and 200.



Capco Technical Data



DR 25-Class 100

Nominal Size Inches	Pipe Outside Diameter Inches	Minimum Wall Thickness Inches	Inside Diameter Inches	Bell Outside Diameter Inches	Depth of Entry L Inches	Weight/Foot
4	4.800	.192	4.416	6.10	4.94	1.861
6	6.900	.276	6.348	8.25	6.75	3.824
8	9.050	.362	8.326	11.25	8.00	6.598
10	11.100	.444	10.212	13.25	9.00	9.971
12	13.200	.528	12.144	16.00	9.50	14.164

DR 18-Class 150

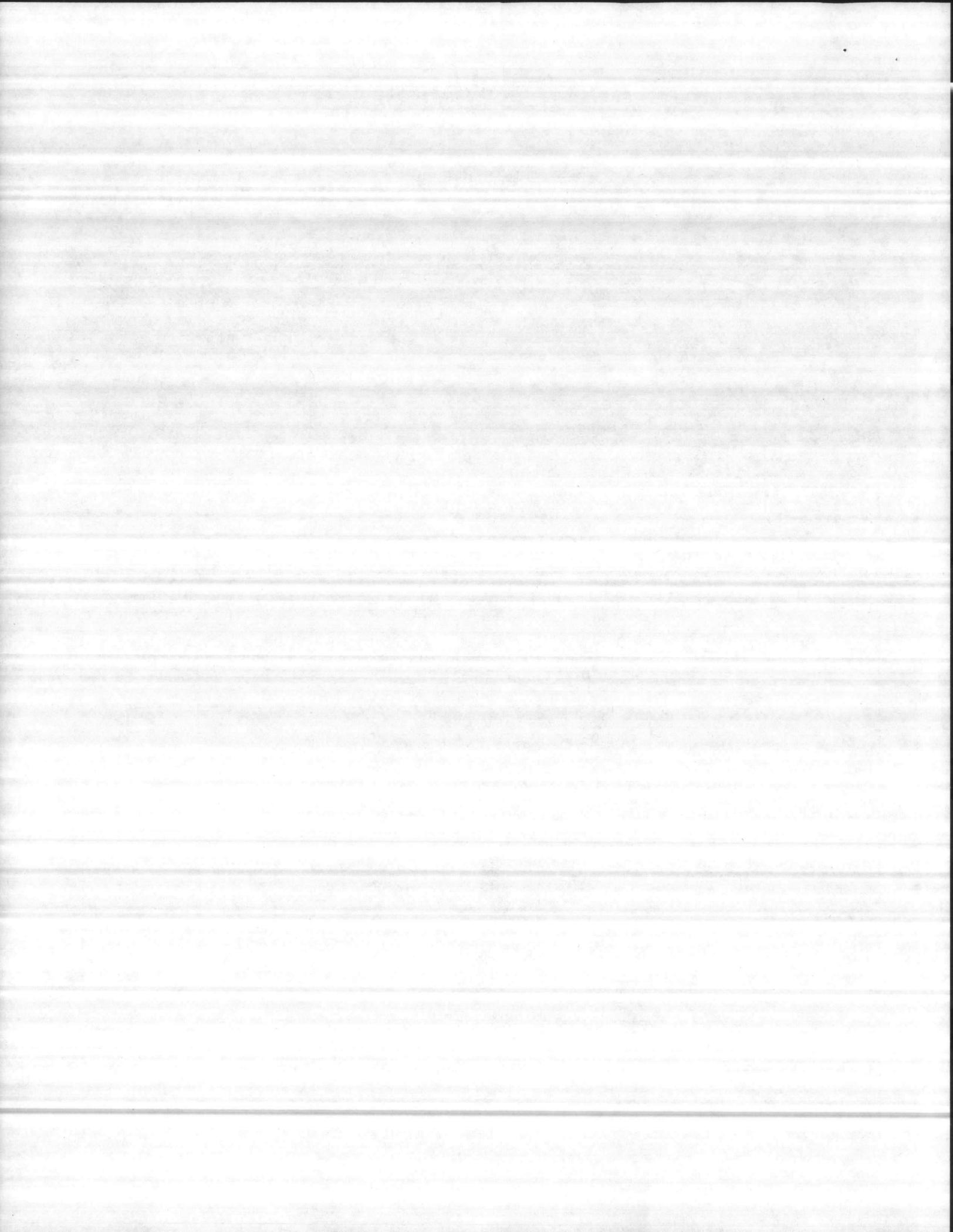
Nominal Size Inches	Pipe Outside Diameter Inches	Minimum Wall Thickness Inches	Inside Diameter Inches	Bell Outside Diameter Inches	Depth of Entry L Inches	Weight/Foot
4	4.800	.267	4.266	6.20	4.94	2.522
6	6.900	.383	6.134	8.25	6.75	5.213
8	9.050	.503	8.044	11.25	8.00	9.011
10	11.100	.617	9.866	13.25	9.00	13.625
12	13.200	.733	11.734	16.25	9.50	19.346

DR 14-Class 200

Nominal Size Inches	Pipe Outside Diameter Inches	Minimum Wall Thickness Inches	Inside Diameter Inches	Bell Outside Diameter Inches	Depth of Entry L Inches	Weight/Foot
4	4.800	.343	4.114	6.36	4.94	3.188
6	6.900	.493	5.914	8.50	7.00	6.602
8	9.050	.646	7.758	11.50	8.50	11.388
10	11.100	.793	9.514	13.75	9.50	17.233
12	13.200	.943	11.314	16.50	10.00	24.499

LOADING CHART

Size	C-900 (20 FOOT LENGTHS)			
	Pcs./Unit	Ft./Unit	Units/Truck	Ft./Truck
4"	51	1,020'	16	16,320'
6"	28	560'	12	6,720'
8"	10	200'	20	4,000'
10"	8	160'	16	2,560'
12"	6/8	120/160'	7	1,960'



INSTALLATION

RECEIVING, HANDLING AND STORING OF SHIPMENT

All shipments should be inspected as soon as possible after arrival. After examining the load for any damage that may have occurred during transit and checking the quantity, size and class of pipe against the packing slip, the unloading of the pipe can begin.

The preferred method of unloading is to remove each unit intact by the use of mechanical equipment. The units should be picked up with a fork lift truck or by a crane, being careful to avoid excessive swinging. Since the impact strength of PVC pipe decreases in cold weather, care should be taken not to drop the pipe nor to set the pipe down on sharp, protruding objects. If the pipe is to be stacked in racks, support it every 4 feet. **DO NOT THROW, WHIP, OR DROP THE PIPE; AND DO NOT USE CHAINS TO UNLOAD.**

INSTALLATION OF PIPE

Clean

Clean with a rag or brush. Remove all foreign material from the inside of the bell, and from the spigot end of the pipe.

Lubricate

Apply a thin coat of Capco lubricant to the beveled end of the pipe. Lubricate up to the stop mark.

Push

Align the bell and the spigot end of the pipe. Push together by hand or with the use of a bar and a wood block, or come along, until the stop mark is barely visible. **DO NOT PUSH PIPE TOGETHER WITH A BACKHOE.**

Depth of Trench

In situations where frost penetration and surface loads are not a factor, the trench should be deep enough to provide 30 inches of cover over the pipe at all places. A minimum of 3 feet of cover is recommended when surface loads are expected. Where frost is a factor, the pipe should be buried 6 inches below the greatest recorded frost penetration.

Width of Trench

The width of the trench measured at the bottom should be 1 foot greater than the O. D. of the pipe. The width of trench at the top should not be more than the O. D. of the pipe plus 2 feet.

Trench Bottom

The trench bottom should be smooth and free from rocks or any other hard objects. Bell holes should be dug so that the pipe is uniformly supported along its entire length.

Field Cutting

If it is necessary to cut the pipe, a square cut should be made with a miter box and a hand saw, or with a PVC pipe cutter. Burrs from the cut edge must be removed. Use either a field knife or fine sandpaper.

Beveling Cut Ends

If a beveling tool is available, bevel to a 15° angle; otherwise, a rasp can be used. Use a factory beveled piece of pipe as a guide to the correct angle of the bevel.

After beveling, draw a stop mark on the spigot end of the pipe using a factory-marked end of the same pipe size as a guide.

Thrust Blocking

Thrust blocking prevents movement of the pipeline where there is a direction change, or a diameter change, or the placement of valves, hydrants or plugs. Thrust blocks serve as anchor between the fittings and the solid trench wall and should be made of concrete with a calculated compression strength of 2,000 pounds per square inch.

The thrust block should be in direct contact with the undisturbed wall of the trench and should be constructed so that the bearing surface is in direct line with the major force created by the pipe or fittings.

Tapping C-900

Capco recommends tapping through service clamps or wide strap tapping saddles with outlet no larger than 2 inches.

For outlets larger than 2 inches, use tapping sleeve and valve.

BJ/WPA

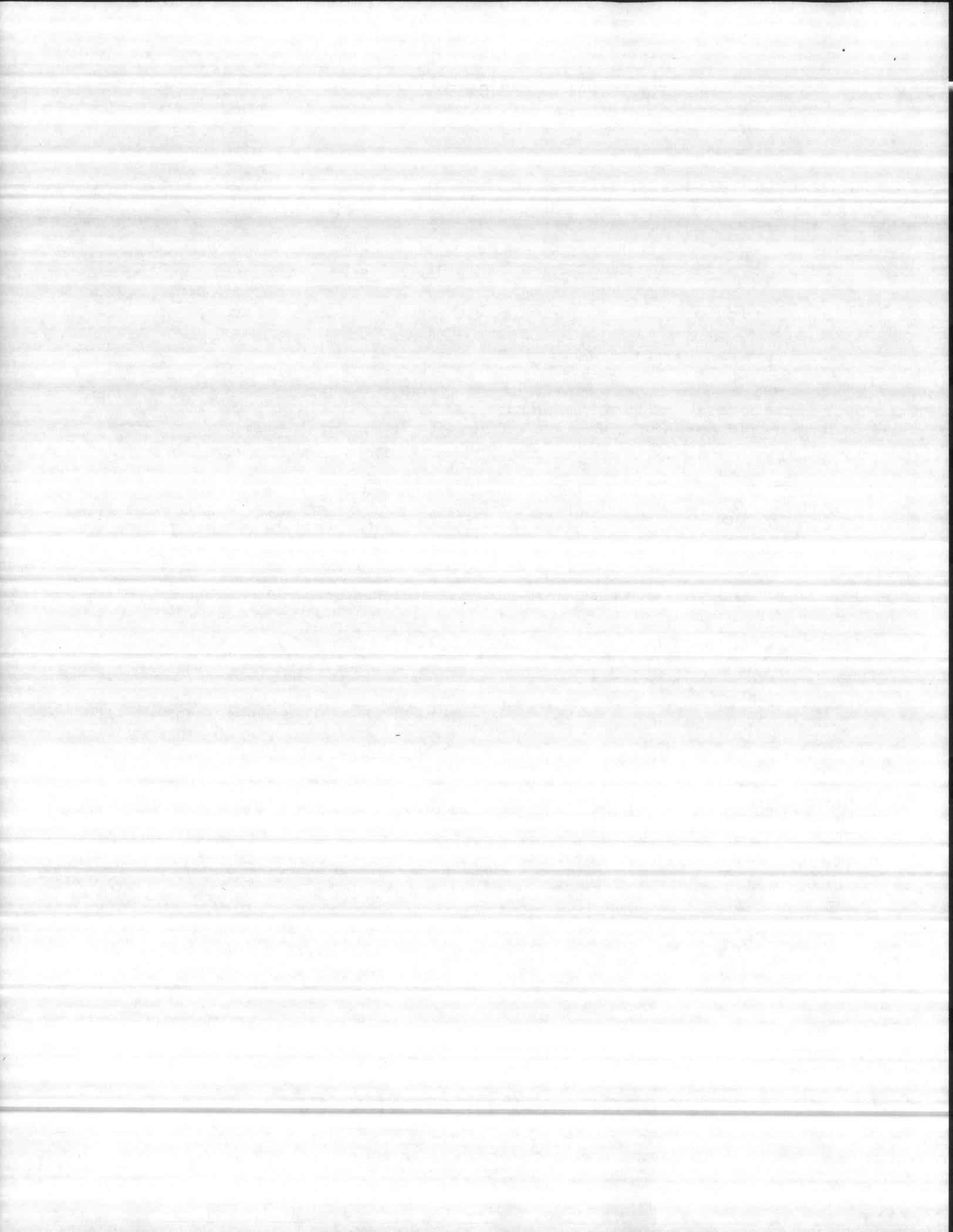
CAPCO PIPE COMPANY, INC.

A Subsidiary of ASARCO Incorporated

1400 South Twentieth Street Birmingham, Alabama 35205
1-800-633-3420

Litchfield, Illinois

Mt. Vernon, Indiana





ATLANTIC STATES CAST IRON PIPE CO.

183 Sitgreaves St., Phillipsburg, N. J. 08865

201-454-1161

GENERAL CERTIFICATION

SOLD TO:
JACOBS BUILDERS
P.O. Box 1399
Jacksonville, N.C. 28541-1399
SHIP TO:
BEQ P627/721

DATE: October 21, 1987
S.O.: -
CUSTOMER'S P.O. # -
DATE OF SHIPMENT: -
B/L # -
CARRIER: -

We certify that the material as listed below was manufactured, tested, and inspected in accordance with the following standard(s) and meets all the requirements thereof:

<u>MATERIAL</u>	<u>NOM. L/L</u>	<u>CLASS</u>
4" Tyton Jt. Pipe, DI	20'	51
6" Ditto	18'	50
8" Ditto	18'	50
10" Ditto	18'	50
12" Ditto	18'	50

STANDARDS:

DUCTILE IRON PIPE

ANSI/AWWA C151/A21.51-81
 Fed. WW-P-421D, Grade C

FITTINGS

ANSI/AWWA C110/A21.10-82
 ANSI/AWWA C153-84 (DI CL.350 Compact)

JOINTS

Tyton: ANSI/AWWA C111/A21.11-85
 MJ: ANSI/AWWA C111/A21.11-85
 Flange: ANSI/AWWA C115/A21.15-83

LINING (Per ANSI/AWWA C104 A21.4-85)

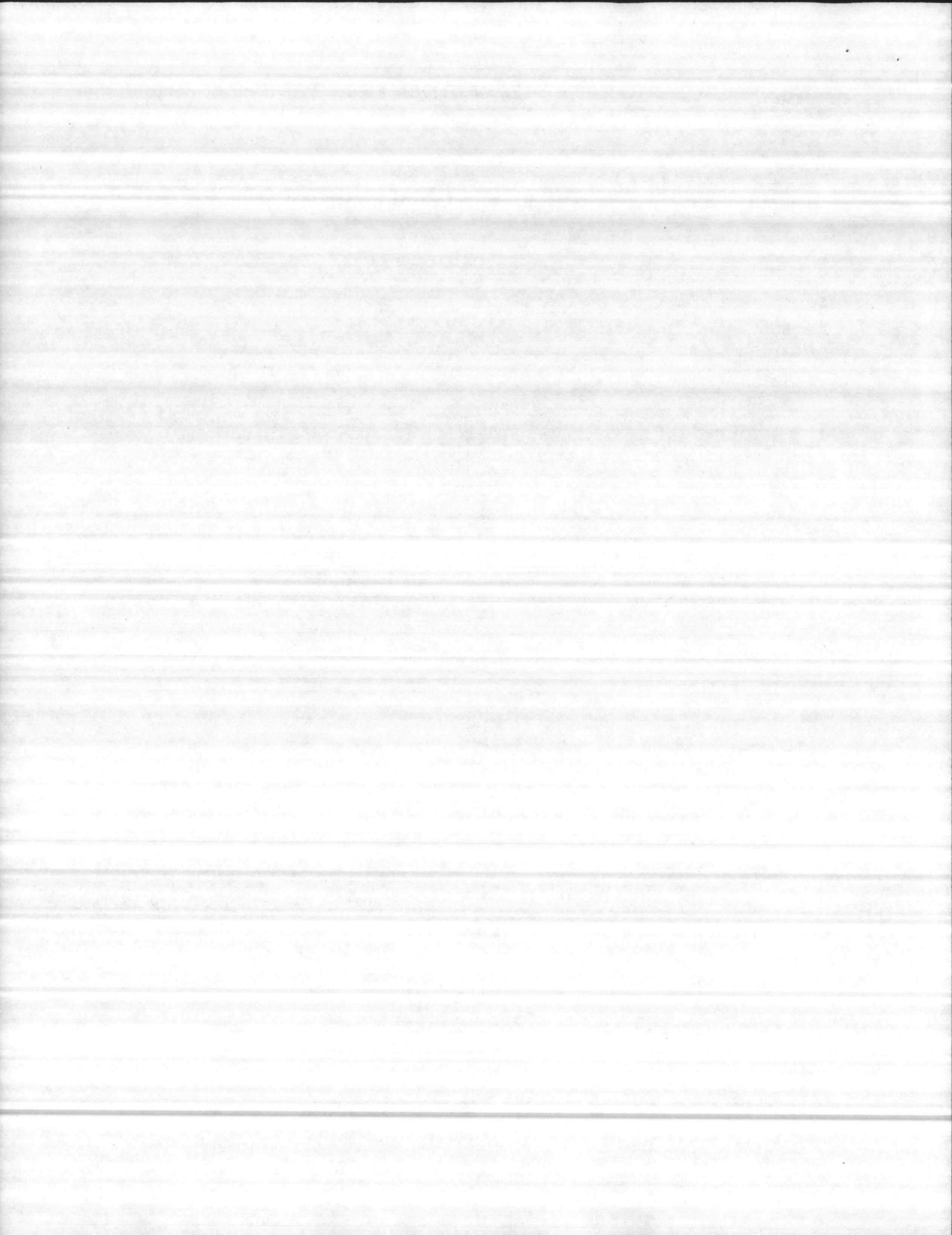
Asphaltic coated inside & outside
 Standard Cement Lining
 Double Cement Lining
 Other

Sworn to and subscribed before me this 21st day of October, 1987.

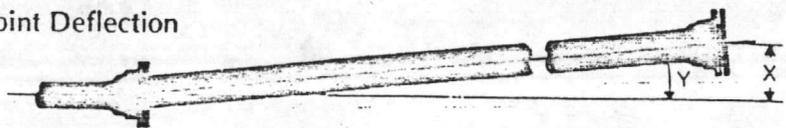
Wilma Mains
Notary Public of New Jersey
My Commission Expires January 10, 1989.

ATLANTIC STATES
Cast Iron Pipe Company

By: Francis B. Tone
Francis B. Tone
Title: Manager, Customer Services



Maximum Allowable Joint Deflection
Mechanical Joint Pipe



Size of Pipe	Y-Maximum Joint Deflection in Degrees	X Deflection in Inches 18 ft. Length	Approximate Radius in Feet of Curve Produced by Succession of Joints 18 ft. Length
3	8°-18'	35*	140*
4	8°-18'	35*	140*
6	7°- 7'	27	145
8	5°-21'	20	195
10	5°-21'	20	195
12	5°-21'	20	195
14	3°-35'	13.5	285
16	3°-35'	13.5	285
18	3°- 0'	11	340
20	3°- 0'	11	340
24	2°-23'	9	450

*20 Ft. length

Maximum Allowable Joint Deflection
Push-on Joint Pipe

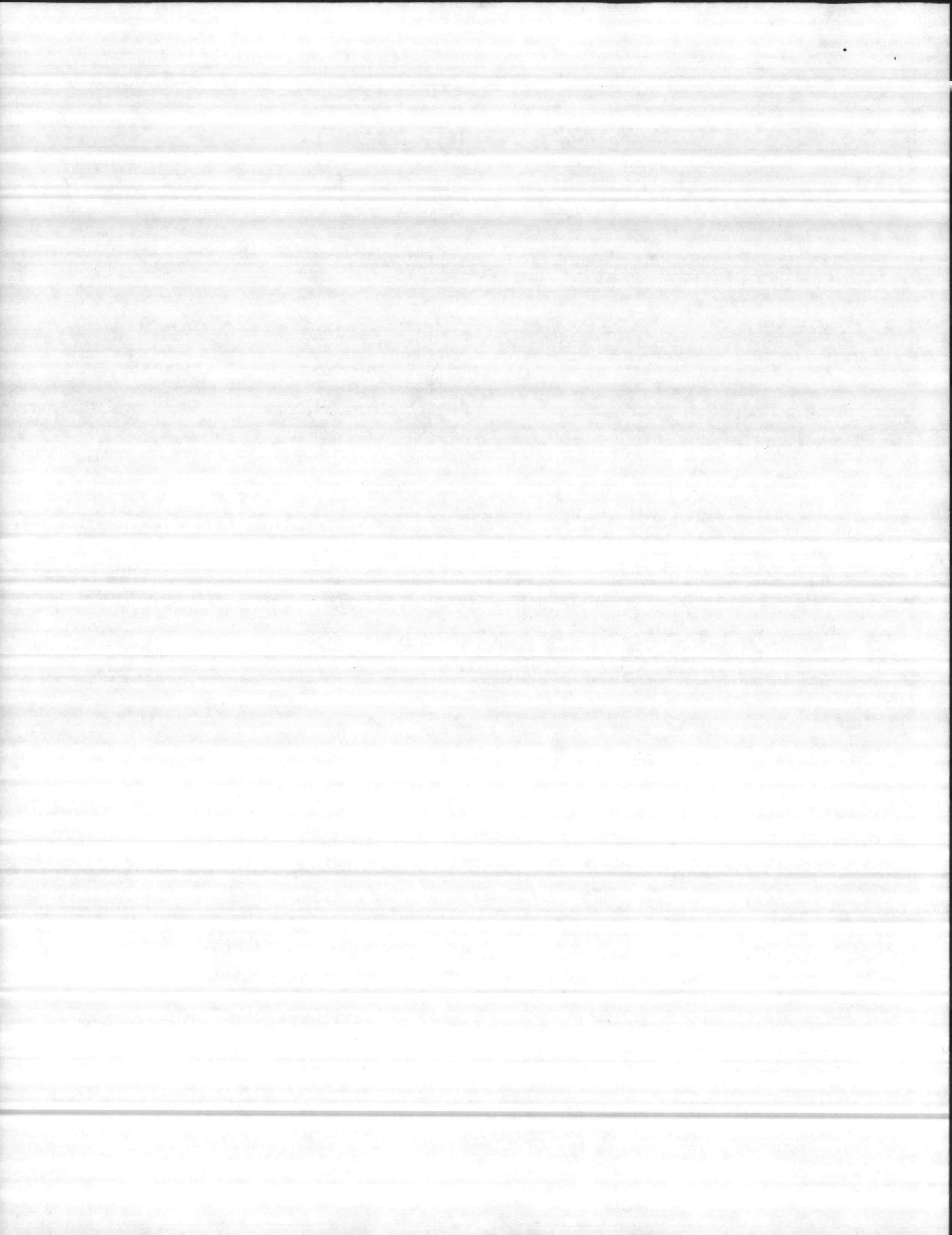


Size of Pipe	Y-Maximum Joint Deflection in Degrees	X Deflection in Inches 18 ft. Length	Approximate Radius in Feet of Curve Produced by Succession of Joints 18 ft. Length
3	5°	21*	230*
4	5°	21*	230*
6	5°	19	205
8	5°	19	205
10	5°	19	205
12	5°	19	205
14	4°	15	260
16	4°	15	260
18	3°	11	345
20	3°	11	345
24	3°	11	345
30	3°	11	345
36	3°	11	345

*20 Ft. length

Standards Applicable to Atlantic States Pipe and Fittings

Thickness Design of Ductile Iron Pipe	ANSI/AWWA C150/A21.50
Ductile Iron Pipe for Water and Other Liquids	ANSI/AWWA C151/A21.51
Ductile Iron Pipe for Gravity Flow Service	FEDERAL WWP421D, Grade C
Ductile and Gray Iron Fittings for Water and Other Liquids	ANSI/ASTM A746
3" through 48"	
Ductile Iron Compact Fittings	ANSI/AWWA C110/A21.10
3" through 12"	
Flanged Fittings	ANSI/AWWA C153/A21.53
	ANSI/AWWA C110/A21.10
	ANSI B16-1
	ANSI/AWWA C115/A21.15
Ductile Iron Pipe with Threaded Flanges	ANSI/AWWA C151/A21.51
Coatings and Linings:	ANSI/AWWA C110/A21.10
Asphaltic	ANSI/AWWA C153/A21.53
	ANSI/AWWA C104/A21.4
	MANUFACTURER'S STANDARD
	ANSI/AWWA C105/A21.5
Cement Lining	ANSI/AWWA C111/A21.11
Various Epoxy Linings	FEDERAL WWP421D
Exterior Polyethylene Encasement	ANSI/AWWA C115/A21.15
Joints—Pipe and Fittings	ANSI B16.1
Push-On and Mechanical Rubber-Gasket Joints	ANSI/AWWA C606
	ANSI B2.1
	ANSI/AWWA C600
Flanged	
Grooved and Shouldered	
Pipe Threads	
Installation	



THICKNESS, DIMENSIONS AND WEIGHTS OF TYTON JOINT AND MECHANICAL JOINT DUCTILE IRON PIPE CLASSIFIED BY SIZE FOR EACH THICKNESS CLASS

Pipe manufactured in accordance with ANSI/AWWA C151/A21.51 under method of design outlined in ANSI/AWWA C150/A21.50.

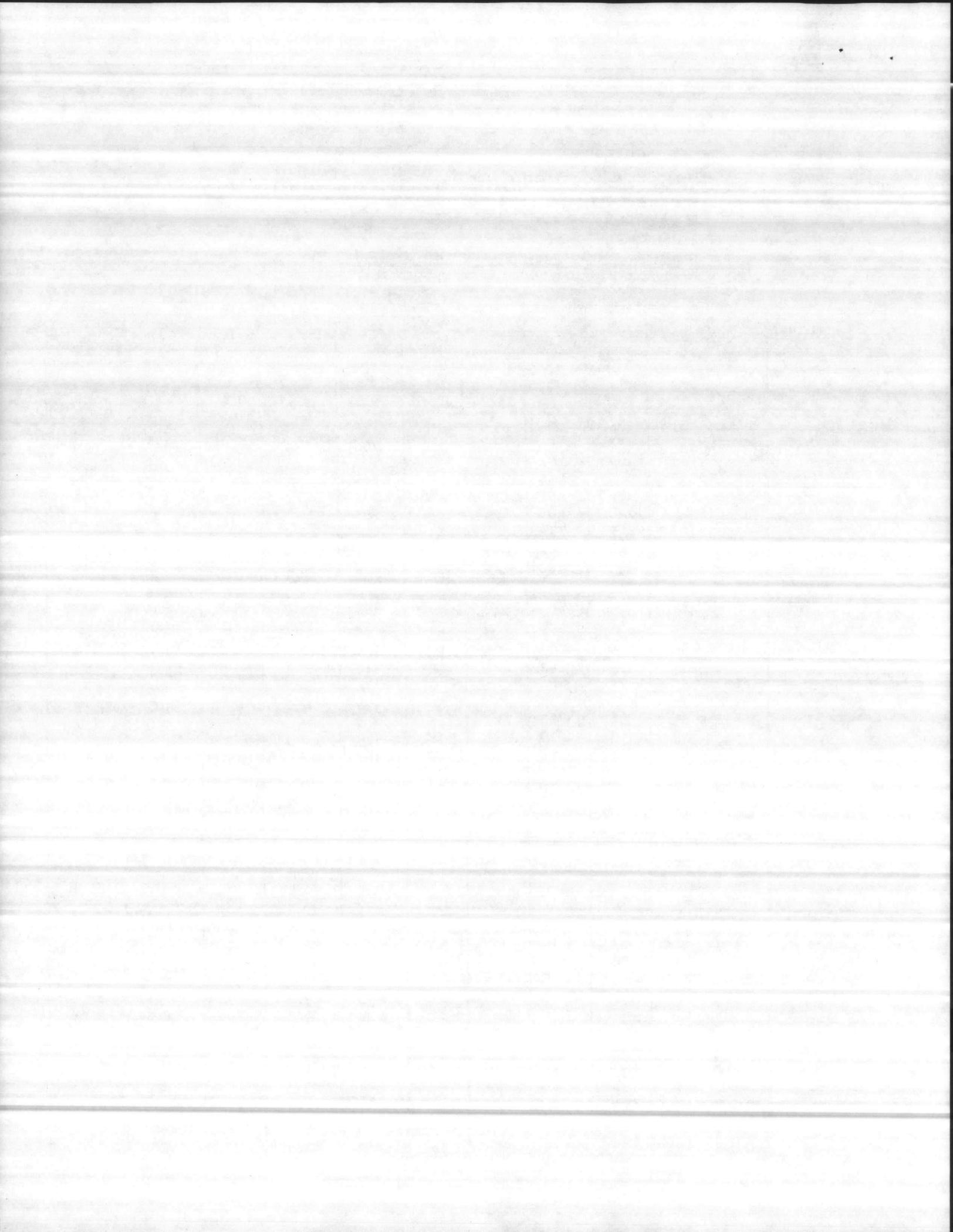
Size In.	Thick-ness Class	Thick-ness In.	OD* In.	Wt. of Barrel Per Ft. Lb.	Tyton Joint			Mechanical Joint		
					Wt. of Bell Lb.	Wt. Per Lgh. † Lb.	Avg. Wt. Per Ft. ‡ Lb.	Wt. of Bell Lb.	Wt. Per Lgh. † Lb.	Avg. Wt. Per Ft. ‡ Lb.
3	51	.25	3.96	8.9	9	185	9.4	11	190	9.4
3	52	.28	3.96	9.9	9	205	10.4	11	210	10.4
3	53	.31	3.96	10.9	9	225	11.4	11	230	11.4
3	54	.34	3.96	11.8	9	245	12.2	11	245	12.4
3	55	.37	3.96	12.8	9	265	13.2	11	265	13.4
3	56	.40	3.96	13.7	9	285	14.2	11	285	14.2
4	51	.26	4.80	11.3	11	235	11.8	16	240	12.1
4	52	.29	4.80	12.6	11	265	13.2	16	270	13.4
4	53	.32	4.80	13.8	11	285	14.4	16	290	14.6
4	54	.35	4.80	15.0	11	310	15.6	16	315	15.8
4	55	.38	4.80	16.1	11	335	16.6	16	340	16.9
4	56	.41	4.80	17.3	11	355	17.8	16	360	18.1
6	50	.25	6.90	16.0	18	305	17.0	22	310	17.2
6	51	.28	6.90	17.8	18	340	18.8	22	340	19.0
6	52	.31	6.90	19.6	18	370	20.6	22	375	20.8
6	53	.34	6.90	21.4	18	405	22.4	22	405	22.6
6	54	.37	6.90	23.2	18	435	24.2	22	440	24.4
6	55	.40	6.90	25.0	18	470	26.0	22	470	26.2
6	56	.43	6.90	26.7	18	500	27.7	22	505	27.9
8	50	.27	9.05	22.8	26	435	24.2	29	440	24.4
8	51	.30	9.05	25.2	26	480	26.6	29	485	26.8
8	52	.33	9.05	27.7	26	525	29.1	29	530	29.3
8	53	.36	9.05	30.1	26	570	31.5	29	570	31.7
8	54	.39	9.05	32.5	26	610	33.9	29	615	34.1
8	55	.42	9.05	34.8	26	650	36.2	29	655	36.4
8	56	.45	9.05	37.2	26	695	38.6	29	700	38.8
10	50	.29	11.10	30.1	34	575	32.0	39	580	32.3
10	51	.32	11.10	33.2	34	630	35.1	39	635	35.4
10	52	.35	11.10	36.2	34	685	38.1	39	690	38.4
10	53	.38	11.10	39.2	34	740	41.1	39	745	41.4
10	54	.41	11.10	42.1	34	790	44.0	39	795	44.3
10	55	.44	11.10	45.1	34	845	47.0	39	850	47.3
10	56	.47	11.10	48.0	34	900	49.9	39	905	50.2
12	50	.31	13.20	38.4	43	735	40.8	49	740	41.1
12	51	.34	13.20	42.0	43	800	44.4	49	805	44.7
12	52	.37	13.20	45.6	43	865	48.0	49	870	48.3
12	53	.40	13.20	49.2	43	930	51.6	49	935	51.9
12	54	.43	13.20	52.8	43	995	55.2	49	1000	55.5
12	55	.46	13.20	56.3	43	1055	58.7	49	1060	59.0
12	56	.49	13.20	59.9	43	1120	62.3	49	1125	62.6

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

‡ Including bell; average weight per foot, based on calculated weight of pipe before rounding.

Weights and dimensions are nominal per above standards.

*Tolerances of OD of spigot end: 3-12 in., ± 0.06 in.; 14-24 in., + 0.05 in., - 0.08 in.; 30-36 in., + 0.08 in., - 0.06 in.





J.C. WHITLAM MANUFACTURING COMPANY
200 WEST WALNUT STREET
P.O. BOX 71
WADSWORTH, OHIO 44281, U.S.A.

216-334-2524
800-321-8358 (IN U.S.A.)
800-828-0042 (IN OHIO)

20 October 1987

Davis Meter
3321 Hobby Court
Raleigh North Carolina 27604
Attn: Sheila

Dear Sheila:

Please use this letter as verification that our PVC heavy-duty solvent cement meets or exceeds ASTM spec. #D-2564. This has been certified by National Sanitation Foundation and uniform plumbing codes.

If I can be of any further assistance, please call our toll free number #800-321-8358.

Thanking you in advance, I am.....

Cordially yours,

Douglas A. Whitlam
Vice President

DAW/pr

