

NBU STANDARD PRODUCT LIST

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Attachment B	Mandrel size listing for Sheet 1.1.1
Attachment C	Pipe deflection listing for Sheet 1.1.2
Attachment D	Size listing for Sheet 2.5.0

Description:

DI water pipe and DI wastewater force main pipe complying with AWWA C 151 (and C 115 for flanged pipe only). DI Pipe shall have factory-applied asphaltic coating or zinc/asphaltic coating and cement-mortar lining with bituminous seal coat complying with AWWA C 104. Wastewater force main pipe shall be lined with approved corrosion-resistant material. Lining to be used shall be shown on submittal, with type, brand, and lot number marked on each pipe. No more than one type or brand of lining shall be used for any project. This pipe is not to be used for gravity flow wastewater lines.

Listing Date	Manufacturer	Product Identification	Approval
	American Cast Iron Pipe Co.	See notes	CE
	U.S. Pipe Co.	See notes	CE
	McWane Ductile	See notes	CE

Notes:

- DI water pipe, except flanged pipe, to 12" diameter shall be Class 350 as defined by AWWA C 150; sizes 16" and larger shall be Class 250 minimum. Flanged DI pipe shall be Special Thickness Class 53 meeting AWWA C 115, and shall comply with requirements of SPL W1.0.1.
- Materials shall meet applicable specification requirements. Acceptable sizes for potable and reclaimed water pipes are 8", 12", 16", 20", 24", 30", and multiples of 6" in larger sizes. 14", 18", and 20" are acceptable for repair only. Sizes for wastewater force mains shall be determined based on specific project requirements.
- Submittal shall include results of independent laboratory testing showing that seal coating on pipe meets test requirements of Section 5.2 of AWWA Standard C 104, and is in compliance with Section 4.12 of that Standard.
- For pipe larger than 24" in diameter, manufacturer must provide one of the following with project submittal: a) evidence of current ISO registration or b) name and qualifications of independent, third-party firm that will test and inspect pipe produced for NBU.
- Pipe manufacturer shall certify that wastewater pipe lining will withstand, without damage, high pressure jet washing that is used to flush lines prior to CCTV inspection and as required for normal maintenance purposes.
- Zinc coating for DI pipe will be considered on a case-by-case basis and only as approved by NBU. When used, pipe shall be identified as "Zinc Coated" (or similar), and zinc coating shall be applied as a base layer under asphaltic seal coat that complies with AWWA C 104. The use of polywrap is required with zinc coated pipe.

Description:

Water pipe, DI, flanged, meeting AWWA C 115, with factory applied asphaltic coating and cement-mortar lining with bituminous seal coat complying with AWWA C104, except when specified otherwise. Machined flange faces shall have a rust-preventative coating. Not for use in gravity wastewater applications.

Listing Date	Manufacturer	Product Identification	Approval
	Custom Pipe & Fabrication	See notes	
	Metro-Tex Fabricators	See notes	
	U.S. Pipe Co.	See notes	
	American Cast Iron Pipe Co.	See notes	

Notes:

1. Acceptable sizes are 8", 12", 16", 20", 24", 30", and multiples of 6" in larger sizes.
2. DI pipe by U.S. manufacturer.
3. Certification required for testing of each joint to 300 psi minimum.
4. For pipe larger than 24" in diameter, manufacturer must provide one of the following with project submittal: a) evidence of current ISO registration or b) name and qualifications of independent, third-party firm that will test and inspect pipe produced for NBU.

Description:

Pipe, PVC gravity sewer 6" to 15" in diameter meeting ASTM D 3034, minimum pipe stiffness of 115 psi according to ASTM D 2412 with elastomeric gasket joints meeting ASTM D 3212 and gaskets meeting F 477. For 6" diameter pipe, maximum distance from center of the gasket to outermost edge of the pipe bell shall be not over 2" (ASTM F 1336).

Listing Date	Manufacturer	Product Identification	Approval
	JM Eagle	See notes	
	North American Pipe Corp.	See notes	
	Diamond Plastics Corp.	See notes	
	Vinyltech Corp.	See notes	
	Northern Pipe Products	See notes	
	Pipelife-Jet Stream Inc.	See notes	
	Sanderson Pipe Corp.	See notes	

Notes:

1. Acceptable sizes for new installations are 6", 8", 12", and 15". 10" pipe shall be used only for repairs.
2. For each project, Design Engineer shall submit to Water and Wastewater Utility, deflection calculations based upon actual installation conditions as required by Sec. 217 of TCEQ rules. Installations will be considered for approval on a case-by-case basis.
3. Deflection testing is required and shall be conducted after final backfill has been in place at least 30 days. A rigid mandrel shall be used. Contractor shall submit proposed pipe mandrels to the E/A or his designated representative for concurrence prior to testing the line.

Description:

Pipe, PVC gravity sewer 18" to 48" in diameter meeting ASTM F 679, minimum pipe stiffness of 115 psi according to ASTM D 2412, elastomeric gasket joints meeting ASTM D 3212 and gaskets meeting ASTM F 477.

Listing Date	Manufacturer	Product Identification	Approval
	JM Eagle	See notes	
	North American Pipe Corp.	See notes	
	Diamond Plastics Corp.	See notes	
	Vinyltech Corp.	See notes	
	Northern Pipe Products	See notes	
	Pipelife-Jet Stream Inc.	See notes	
	Sanderson Pipe Corp.	See notes	

Notes:

1. For each project, Design Engineer shall submit to Water and Wastewater Utility, deflection calculations based upon actual installation conditions as required by Sec. 217 of TCEQ rules. Installations will be considered for approval on a case-by-case basis.
2. Deflection testing is required and shall be conducted after final backfill has been in place at least 30 days. A rigid mandrel shall be used. Mandrel sizes are listed in Attachment B.

Description:

Pipe, PVC 8" to 24" in diameter CI pipe size O.D. with elastomeric gasket joints for water service. AWWA C 900 current, Pressure Class 235 psi (DR18) or Pressure Class 305 PSI (DR14).

Listing Date	Manufacturer	Product Identification	Approval
	JM Eagle	See notes	
	Certainteed Corp.	See notes	
	North American Pipe Corp.	See notes	
	Diamond Plastics Corp.	See notes	
	Vinyltech Corp.	See notes	
	Northern Pipe Products	See notes	
	Pipelife Jet Stream, Inc.	See notes	
	Royal Building Products	See notes	

Notes:

1. Material must be rated above design pressure. Acceptable sizes are 8", 12", 16", 20", and 24".
2. AWWA C 900 water pipe shall not be used in easements or private property.
Changes in direction of PVC pipe shall only be by use of fittings or by deflecting straight pipe sections at joints.
3. Longitudinal bending of pipe is not allowed.
4. Deflection of pipe at fittings is not allowed.
5. Deflection of straight pipe sections shall not exceed 1 degree at each joint.
6. Pipe for potable water applications must have a solid blue exterior.
7. Pipe for force mains or gravity wastewater applications must have a solid green exterior.
8. Pipe for reclaimed water applications must have a solid purple exterior.

Description:

Pipe, PVC, 16" nominal diameter and larger with DI pipe size O.D. and Reibertype steel-reinforced elastomeric gasket joints for water service, meeting current AWWA C 905, Class 305 psi (DR14)



Listing Date	Manufacturer	Product Identification	Approval
	North American		
	Corp.		
	Diamond Plastic	Notes	

Notes:

- 1. Material must be rated above design pressure. Acceptable sizes are 16", 20", 24", 30", and multiples of 6" in larger sizes.
- 2. AWWA C 905 water pipe shall not be used in easements or private property and shall not be used for wastewater force mains or to convey anything but potable water.
- 3. Markings shall include nominal size and O.D. basis (16" CI), PVC, Dimension Ratio (DR14), Class (PC 305), test pressure for hydrotested pipe, AWWA C 905, manufacturer's name or trademark, production run record or lot code, and mark of certifying agency.
- 4. Changes in direction of PVC pipe shall only be by use of fittings or by deflecting straight pipe sections at joints.
- 5. Longitudinal bending of pipe is not allowed.
- 6. Deflection of pipe at fittings is not allowed.
- 7. Deflection of straight pipe sections shall not exceed 1 degree at each joint (even if joint restraint devices are installed), which corresponds to the offsets in pipe alignment listed in **Attachment C**.

Description:

Pipe, PVC Schedule 80, 1.5" through 3.5" in diameter, meeting ASTM D 1785 and made from Code Type PVC 1120. Bell ends of pipe shall be for solvent cement joints having dimensions given in ASTM D 2672.

Listing Date	Manufacturer	Product Identification	Approval
	IPEX, Inc.	XIRTEC PVC - SEE NOTES	

Notes:

1. Pipe is approved for use in small diameter force mains on a case-by-case basis.
2. In addition to the marking required by ASTM D 1785, the pipe shall be marked NON-POTABLE at intervals of 5 feet or less, or the pipe shall be green to designate wastewater. If the pipe marking includes POTABLE, that word shall be obliterated by black spray paint suitable for burial or by permanent black marker. Abrasive methods shall not be used to obliterate POTABLE.
3. Two detectable warning tapes shall be installed: one 12" above the top of pipe and the other 12" - 18" below top of subgrade in paved areas or finished ground surface in unpaved areas. The detectable tape shall contain the message "Caution: buried non-potable water line" at intervals of 5 feet or less.

Description:

Tubing, polyethylene (PE), 1" or 2" in diameter, copper tubing size (CTS), SDR 9, solid blue exterior meeting all requirements of AWWA C901 and ANSI/NSF 61 certified for potable water service.

Listing Date	Manufacturer	Product Identification	Approval
5/1/2022	Advanced Drainage Systems	Polyflex	
5/1/2022	Endot Industries, Inc.	Endopure	

Notes:

1. Pipe with solid black exterior with blue markings will be acceptable as an alternative if solid blue is not available with written approval from NBU. Pipe with solid black exterior must meet all other material requirements.
2. NBU approval required for use of 1" PE tubing for domestic water services.

Description:

Tubing, copper, 1/2" through 1", shall be annealed seamless Type K water tube meeting ASTM B 88 bearing NSF Standard 61 approval.

Listing Date	Manufacturer	Product Identification	Approval
	Mueller Copper Tube Co.	See notes	
	Cerro Copper Products Co.	Cerro Alloy C122; see notes	
	Cambridge-Lee Industries	See notes	
	Howell Metal Co.	See notes	
	KobeWeiland Copper Products, Inc.	See notes	
	Great Lake Copper Inc.	See notes	

Notes:

1. Tubing shall be wrapped with black polyethylene sheeting for potable water and purple polyethylene sheeting for reclaimed water.
2. Polyethylene sheeting shall extend into meter box.

Description:

DI fittings shall comply with requirements of AWWA C 110. All fittings shall have factory applied asphaltic or zinc/asphalt coating and cement-mortar lining with bituminous seal coat complying with AWWA C104. Alternately, the fittings may be fusion-bonded epoxy lined and coated according to AWWA C 116. Fusion-bonded epoxy must be red and shall comply with requirements of NSF 61. Wastewater fittings shall be lined with approved corrosion-resistant material. Lining to be used shall be shown on submittal, with type, brand, and lot number marked on each fitting. No more than one type or brand of lining shall be used for any project. These fittings are not to be used for gravity flow wastewater applications except when in the opinion of the Engineer the strength of DI makes its use appropriate; it may be used only if specifically shown on approved engineering drawings.

Listing Date	Manufacturer	Product Identification	Approval
	American Cast Iron Pipe Co.	See notes	
	U.S. Pipe Co.	See notes	
	Tyler Union/Division of McWane	See notes	
	C-1 (China); HJ (Korea) Star Pipe Products	See notes	
	WFD, EC, SC, JX, XD, HD, EC Foundries (India) Star Pipe	See notes	
	US Pipe/Metalfit (Mexico) Metalfit	Fittings only (flanged); see notes	
	Shanxi Yuansheng (China) Accucast	Fittings only (flanged); see notes	
	Calcutta Springs (India); XYF (China) Sigma	Flanged only	
	Xinyuan Pipe Fittings Co. (China) Serampore (SIP)	See notes	

Notes:

1. Materials shall meet applicable specification requirements. Acceptable sizes for potable and reclaimed waterline fittings are 4", 6", 8", 12", 16", 20", 24", 30" and multiples of 6" in larger sizes. 14" and 18" are acceptable for repair only. Sizes for wastewater force mains shall be determined based on specific project requirements.
2. Submittal shall include results of independent laboratory testing showing that seal coating on fittings meets test requirements of Section 5.2 of AWWA C 104, and is in compliance with Section 4.12 of that Standard.
3. Fitting manufacturer shall certify that the lining will withstand, without damage, high pressure jet washing that is used to flush lines prior to CCTV inspection and as required for normal maintenance purposes.
4. For fittings larger than 24" in diameter, manufacturer must provide one of the following with project submittal: a) evidence of current ISO registration or b) name and qualifications of independent, third-party firm that will test and inspect pipe produced for NBU.
5. Zinc coating for DI fittings will be considered on a case-by-case basis and only as approved by NBU. When used, fittings shall be identified as "Zinc Coated" (or similar), and zinc coating shall be applied as a base layer under an asphaltic seal coat that complies with AWWA C 104. The use of polywrap is required with zinc-coated fittings.
6. Ductile iron fittings for potable water systems shall confirm to ANSI/NSF Standard 61.

Description:

Compact DI fittings complying with AWWA C 153. All fittings shall have markings cast on the body as required by AWWA C 153. All fittings shall be asphalt coated or zinc/asphalt coated and cement-mortar lined with asphaltic seal coat complying with AWWA C 104, or fusion-bonded epoxy coated and lined (inside and outside) complying with AWWA C 116. Fusion-bonded epoxy must be red and shall comply with requirements of NSF 61. Wastewater fittings shall be lined with approved corrosion-resistant material. Lining to be used shall be shown on submittal, with type, brand, and lot number marked on each fitting. No more than one type or brand of lining shall be used for any project. These fittings are not to be used for gravity flow wastewater applications except when in the opinion of the Engineer the strength of DI makes its use appropriate; it may be used only if specifically shown on approved engineering drawings.

Listing Date	Manufacturer	Product Identification	Approval
	U.S. Pipe & Foundry Co.	All series	
	A-1 (China) / Sigma Corp.	All fittings	
	Tyler Union/Division of McWane	All series; 5 5/8 degree bends are acceptable	
	SOMEPE (SMP/Brazil) Star Pipe Products	All fittings; Includes Series 100 MJ x MJ Adapter (bolt-through MJ restraint)	
	Infact Corp.	Foster MJ x MJ Adapter (bolt-through MJ restraint) (Use accessory paks recommended by manufacturer)	
	Assured Flow Sales, Inc.	Gradelok Offset Fitting	
	Shanxi Yuansheng (China) / Accucast	4" - 12" logo on casting	
	Gaomi Zhongyide (China)	4" - 12" MJ x MJ Accu Adapter (bolt-through MJ restraint)	
	US Pipe/Metalfit (Mexico) Metalfit	All fittings	
	Xian Xian East Foundry Co., Ltd.	All fittings	

Notes:

- Materials shall meet applicable specification requirements. Acceptable sizes for potable and reclaimed waterline fittings are 4", 6", 8", 12", 16", 20", 24", 30" and multiples of 6" in larger sizes. 14" and 18" are acceptable for repair only. Sizes for wastewater force mains shall be determined based on specific project requirements.
- Submittal shall include results of independent laboratory testing showing that seal coating on fittings meets test requirements of Section 5.2 of AWWA C 104, and is in compliance with Section 4.12 of that Standard.
- Fitting manufacturer shall certify that the lining will withstand, without damage, high pressure jet washing that is used to flush lines prior to CCTV inspection and as required for normal maintenance purposes.
- For fittings larger than 24" in diameter, manufacturer must provide one of the following with project submittal: a) evidence of current ISO registration or b) name and qualifications of independent, third party firm that will test and inspect pipe produced for NBU.
- Zinc coating for DI fittings will be considered on a case-by-case basis and only as approved by NBU. When used, fittings shall be identified as "Zinc Coated" (or similar), and zinc coating shall be applied as a base layer under an asphaltic seal coat that complies with AWWA C 104. The use of polywrap is required with zinc coated fittings.

Description:

Corrosion-resistant linings for DI wastewater pipe and fittings for force mains. Pipe or fitting manufacturer remains fully responsible for satisfactory performance of the lined wastewater pipe and fittings. Not for use in gravity wastewater applications.

Listing Date	Manufacturer	Product Identification	Approval
	Madison Chemical Industries Inc.	Corropipe II Wasteliner or Polythane polyurethane lining	
	Induron Protective Coatings	Protecto 401; Epoxy Lining; Ceramic	
	ErgonArmor	Novocoat SP2000W Lining	
	Kerneos, Inc.	SewPerCoat	

Notes:

1. Materials shall meet applicable specification requirements.
2. Type and brand of lining shall be marked on each pipe or fitting.
3. Only one type and brand of lining shall be used for pipe and fitting on a project.
4. Lining shall be in accordance with manufacturer's recommendations, but in no case shall the lining thickness be less than 40 mils.

Description:

Fittings, socket type, PVC Schedule 80, 1.5" - 3.5" in diameter, meeting ASTM D 2467 and having Cell Classification 12454 - B.

Listing Date	Manufacturer	Product Identification	Approval
	Spears Manufacturing Co.	Schedule 80; 150 Series	

Notes:

Description:

Clamps, service (tapping saddles), single-strap having 12-mil nylon-coated DI saddle with flat S strap and SS bolts. Sizes are 2" x 3/4", 2.5" x 3/4", 2" x 1", and 2.5" x 1". Shall conform to AWWA C 800, where applicable.

Listing Date	Manufacturer	Product Identification	Approval
	Romac Industries, Inc.	Style 101NS; see note	
	Ford Meter Box Co., Inc.	FC101; see note	
	JCM Industries, Inc.	405 Series; see note	
	Smith-Blair, Inc.	Series 315; see note	
	Powerseal Pipeline Products, Co.	3415DI Series; see note	
	Mueller Co.	DR1S Series; see note	

Notes:

- 1 Bolt opening on one side or both sides of body must fully enclose strap bolt.

Description:

Clamps, service (tapping saddle), double-strap having 12-mil nylon-coated DI saddle with flat SS straps and SS bolts. Sizes are 4" x 3/4" through 12" x 2" for DI pipe O.D. or asbestos cement pipe O.D. Shall conform to AWWA C 800, where applicable.

Listing Date	Manufacturer	Product Identification	Approval
	Smith-Blair, Inc.	317 Series; see note	
	Romac Industries, Inc.	Style 202NS; see note	
	Ford Meter Box Co.	FC202 Series; see note	
	Powerseal Pipeline Products, Co.	Series 3417DI; see note	
	Mueller Co.	DR2S Series; see note	
	JCM Industries, Inc.	406 Series; see note	
	A.Y. McDonald	4856A; see note	

Notes:

1. Bolt opening on one side or both sides of body must fully enclose strap bolts.

Description:

Couplings, transition, bolted, welded steel or DI (12" - 24") for connecting pipes of same nominal size but having different outside diameters, meeting AWWA C 219 and coated inside and outside with fusion-bonded epoxy according to AWWA C 213.

Listing Date	Manufacturer	Product Identification	Approval
	Smith-Blair, Inc.	Style 441	
	Romac Industries, Inc.	Style 501;	
	JCM Industries, Inc.	Model #212	
	PowerSeal Corp.	Model 3501; Model 3506	
	Ford Meter Box Co.	Style FC2A	

Notes:

Description:

Couplings, transition, bolted, welded steel or DI (12" - 24") each with wide range of diameters for connecting pipes of same nominal size but having different outside diameters, meeting AWWA C 219 and coated inside and outside with fusion-bonded epoxy according to AWWA C-213.

Listing Date	Manufacturer	Product Identification	Approval
	Smith-Blair, Inc.	Quantum 461 & 462	
	JCM Industries, Inc.	Style 241 & 242 Optimum Range Couplings	
	Ford Meter Box Co.	Style FC2W	

Notes:

Description:

Threaded rod and nuts, made of ASTM A 242 HSLA steel and conforming to AWWA C 111, used for thrust restraint applications. Nuts shall be heavy hexagonal meeting the size requirements in Attachment E.

Listing Date	Manufacturer	Product Identification	Approval
	Birmingham Fastener Manufacturing	Double end threaded tie rod	

Notes:

- Galvanized and plain carbon steel all-thread rods are unacceptable for this application.
- See Attachment D for nut bolt size requirements.

Description:

Bolts, T-head for mechanical joints. HSLA steel, having design as required by AWWA C 111 and dimensions as given in Table 1 of AWWA C 110 for C 110 or C 111 (CI size) joints or in Table 1 of AWWA C 153 for compact DI fitting joints. Nuts to meet Table 5 of AWWA C 111, with dimensions as summarized in Note 1.

Listing Date	Manufacturer	Product Identification	Approval
	Birmingham Fastener & Supply, Inc.	HSLA steel bolt & nut (nuts manufactured by Unytite, Inc., marked U&LA)	

Notes:

- 1. See Attachment E for nut bolt size requirements.

Description:

Polyethylene encasement, linear low-density polyethylene (LLDPE), for DI pipe, meeting AWWA C 105, minimum thickness of .008" (8 mils), black for potable water, purple for reclaimed water, and brown for wastewater.

Listing Date	Manufacturer	Product Identification	Approval
	Mountain States Plastics	Manufacturer's marking: MSP	
	Infinity Plastics	Manufacturer's marking: Infinity Plastics LLC	
	Berry Global Films	Manufacturer's marking: Berry	

Notes:

- Standard marking: at least every two feet along its length, the polyethylene film shall be marked with the following information: manufacturer's name or trademark, year of manufacture, ANSI/AWWA/C 105/A 21.5, minimum film thickness (.008" or 8 mils required), and material type (LLDPE is required), applicable range of nominal pipe diameter sizes, "Warning - Corrosion Protection - Repair Any Damage" required on pipe.
- Special marking: in addition to the above information, the marking on polyethylene encasement used for reclaimed water shall contain "Reclaimed Water", and encasement used for wastewater shall contain "Wastewater".
- Any missing information is cause for rejection of material.

Description:

End seals for encasement pipe. Neoprene rubber with SS clamps unless otherwise noted.

Listing Date	Manufacturer	Product Identification	Approval
	Cascade Waterworks Manufacturing Company	CCEs End Seal	
	CCI Piping Systems	Model ESW wrap-around with mastic seal; Model ESC seamless pull-on	
	Advanced Products & Systems, Inc.	Model AW wrap-around with mastic seal; Model AC seamless pull-on	

Notes:

Description:

Sodium Hypochlorite and Calcium Hypochlorite for disinfecting potable water mains and appurtenances, meeting AWWA B 300 and being NSF 60 certified: chemicals may be in the form of tablets, granules, or liquids and shall not contain sequestering agents.

Listing Date	Manufacturer	Product Identification	Approval
	Allchem Performance Products	Clor Mor Cal Shock	
	Arch Chemicals, Inc.	Dry Tec Granular	

Notes:

1. Containers shall have markings indicating that the contents meet AWWA B 300 and are NSF 60 certified.
2. Products used for disinfecting pools and spas may be used for disinfecting potable water lines as long as those products meet AWWA B 300, are NSF 60 certified, and do not contain sequestering agents.

Description:

Brass goods - including but not limited to ball type corporation valves, ball curb stops, angle ball service valves, angle ball meter valves, couplings, coupling bends, water meter couplings, corporation stop couplings, branch connections and water meter relocator yokes. Service tubing connection shall be made with approved grip type compression connections. When used with polyethylene tubing, tubular SS insert stiffeners shall be used. Pressure Class 200 psi minimum. Shall conform to AWWA C 800, where applicable. All brass goods purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	James Jones Co.	See notes	
	Mueller Co.	See notes	
	Ford Meter Box Co.	See notes	
	Cambridge Brass	See notes	
	A.Y. McDonald Co.	See notes	

Notes:

James Jones Co.: Corporation stop ball valve 1.5" and 2". Model J-1935 SG CTS -- super grip with standard copper flare threads. Coupling Y-branch 60 degree CTS 1.5" x 1" x 1" Model J-2630. J-1966W angle meter stops not acceptable.

Mueller Co.: Corporation stop ball valve 1.5" and 2". Model B25028-36N -- MIP x SG CTS threads. Mueller 110 compression connections required for tubing. Insta-Tite Connection and 1 angle stop with meter saddle not acceptable.

Ford Meter Box Co.: Grip joint compression connection required for service tubing.

Cambridge Brass: Corporation stop ball valve. Models 301A3H3 and A4H4. 1.5" and 2" not acceptable.

A.Y. McDonald Co.: Angle valves: 74602BCSG 1.5" and 2"; 74602BCSQ 1.5" and 2"; Corporation stops: 74704BGFT 1.5" and 2"; 74704BG 3/4" and 1"; 74704BQ 3/4" and 1"; 74704BTFT 1.5" and 2"; 74704BT 3/4" and 1"; Y-Branches: 708Y2MG 1.5" x 1"; 708Y2MQ 1.5" x 1"; 708Y2MT 1.5" x 1"

Description:

Dry barrel, traffic model (break-away), post type, compression type main valve with 5-1/4" opening, closing with line pressure. Hydrants shall comply with the requirements of AWWA C502 and NSF 61.

Listing Date	Manufacturer	Product Identification	Approval
	Mueller Co.	A423 Super Centurion 200	
	American Flow Control	5-1/4" B-84-B-5	
	Clow Valve Co.	Medallion	
	East Jordan	East Jordan Iron Works	

Notes:

- Hydrants shall be equipped with integral storz nozzles. See SPL W7.1.0.

Description:

Storz nozzles shall be integral units with 5" Storz opening. Storz nozzles with female threads for retrofit to NH threads shall not be permitted. Metal caps shall be secured to hydrant body with stainless steel cable with neoprene jacket.

Listing Date	Hydrant Manufacturer	Product Identification	Approval
	Mueller Co.	Harrington # HIHS-MLR 50-45 5" Quick Disconnect, Part #287304	
	American Flow Control	Harrington # HIHS-WAT 50-45	
	Clow Valve Co.	Harrington # HIHS-Clow 50-45	
	East Jordan	Harrington # HIHS-EJIW 50-45	

Notes:

Description:

Butterfly Valves, 24" and larger, AWWA C504 and C550, Class 150B. Valve bodies shall be constructed of cast iron per ASTM A126, Class B, or ductile iron per ASTM A536, Grade 65/45/12. Valve discs shall be stainless steel or ductile iron. Seating edge shall be stainless steel. Valve stems shall turn clockwise to close.

Listing Date	Manufacturer	Product Identification	Approval
	CMB/K-Flo		
	Dezurik		
	M&H		
	Pratt		

Notes:

1. Specifying or use of valves outside the indicated size range requires approval by NBU on a project-by-project basis.
2. Contractor's/manufacturer's project submittal for valves larger than 24" in diameter, when approved for use, shall include catalogue drawings and assembly drawings (shop drawings) specific to valves required for the project.
3. All valves 24" and larger shall be geared.

Description:

Valves, swing check with outside lever and weight complying with ANSI/AWWA C508. Iron body, bronze-mounted for water works service. Copper alloy parts (bronze and brass) shall not contain over 16 percent zinc. Copper alloy UNS No. shall be shown on permanent external marking in addition to markings required by AWWA C 508. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	M&H Valve Co.	M&H Style 159-02	
	Mueller Co.	A-2600-6-02	
	Kennedy Valve	Series 1106	
	APCO Valve & Primer Corp.	APCO CVS-6000	
	Clow Corp./Valve Division	Style 1106LW Style 159-02	
	GA Industries	Figure 250	
	Val-matic	7800 Swing Check Valve	

Notes:

Description:

Valves, ball for curb stops complying with AWWA C 800. Inside iron pipe thread both ends. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	Ford Meter Box Co.	See notes	
	Mueller Co.	See notes	
	A.Y. McDonald Co.	See notes	
	James Jones Co.	See notes	
	Cambridge Brass	See notes	

Notes:

Ford Meter Box Co.:

- 1.5" BQT-11-66R
- 2" BQT-11-777R -- 360 degree rotation and 2" sq. operating nuts (for 2" water services)
- 1.5" straight ball valve with 3.625" handle No. B11-777-HT-67 (for water services and air releases)
- HT-34, 3/4" and 1" straight ball valves with handle (for water services)

Mueller Co.:

- 1.5" and 2" curb ball valves Model 20283-99001N -- 360 degree rotation and 2" sq. operating nut (for 2" water services)
- 1.5" and 2" ball valves with 3.625" handle Model B20283-36N

A.Y. McDonald Co.:

- 1.5" straight ball valve with 3.625" Model 6101FHDL
- 2" straight ball valve with 3.625" handle Model 6101FHDL (for water services and air releases)

James Jones Co.:

- 1.5" and 2" ball valves with 3.625" handle (Dwg. J-1994) (for water services and air releases)

Cambridge Brass:

- FIP curb ball valves with 3.625" handle
- 1.5" Model 202-F6F6L
- 2" Model 202-F7F7L

Description:

Valves, ball, with SS handles, used on meter nipple for property owner's cut-off. Conforms to specification MSS-SP-110. Threaded ends comply with ANSI B2. 1CSA/AGA/CGA certified. All valves shall be full port with chrome-plated bronze ball. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	Midland Metal Mfg.	See notes	
	NIBCO	See notes	
	MATCO-NORCA	See notes	
	Webstone Co., Inc.	See notes	
	B&K (Mueller)	See notes	

Notes:

Midland Metal Mfg.: IPS ball valves, full port, 600 WOG with SS tee (wing style) handle and nut
 3/4" - 948-154ST
 1" 948-155ST

NIBCO: IPS ball valves, full port, SWP 600 CWP with SS lever handle and nut (use only in rectangular or square valve box providing clearance for handle)
 3/4", 1", 1.5", 2" (All T-585-70-SSHN)

MATCO-NORCA: IPS ball valves, full port, 600 WOG with SS tee (wing style) handle, nut, and washer
 3/4" - 759T04TS
 1" - 759T05TS

Webstone Co., Inc.: IPS ball valves, full port, 600 WOG with SS tee (wing style) handle, nut, and washer
 3/4" - 41703SSW
 1" - 41704SSW
 1.5" - 41706SSW
 2" - 41707SSW

B&K (Mueller): 3/4" and 1" IPS ball valves, full port, 600 WOG with SS tee (wing type) handle
 3/4" - 107-824TNL
 1" - 107-825TNL

Description:

Valves, swing check - having outside lever and weight, air-cushioned. Copper alloy parts (bronze and brass) shall contain not over 16 percent zinc. Copper alloy UNS No. shall be shown on permanent external marking in addition to markings required by AWWA C 508. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	G-A Industries, Inc.	G-A Fig. 250-D	
	APCO Valve & Primer Corp.	APCO Series 6000	

Notes:

Description:

Resilient-seated gate valves, AWWA C509/C515. (4" - 36") Non-rising stem having end types with gaskets, glands, bolts, etc. as requisitioned. Copper alloy parts (bronze or brass) shall contain not over 16 percent zinc. Copper alloy UNS No. shall be shown on permanent external marking in addition to markings required by AWWA C 509/515. Valve stems shall turn clockwise to close.

Listing Date	Manufacturer	Product Identification	Approval
	Clow Corp./Valve Division	4" - 36"	
	Mueller Co.	Series A-2360 NBU Model E-301; Tapping valve T-2360 (4" - 12")	
	U.S. Pipe and Foundry Co.	Metroseal 250 (4" - 12") 16" for water distribution and wastewater collection service only.	
	American Flow Control	4" - 36"	
	American AKV Co.	Series 25 R/W (4" - 12") bronze or SS valve stems	
	Kennedy Valve	4" - 36"	
	M&H Valve	4" - 36"	
	Matco-Norca	4" - 24"	
	EJ	4" - 36"	

Notes:

1. Specifying or use of valves outside the indicated size range requires approval by NBU on a project-by-project basis.
2. Contractor's/manufacturer's project submittal for valves larger than 24" in diameter, when approved for use, shall include catalogue drawings and assembly drawings (shop drawings) specific to valves required for the project.
3. All valves 24" and larger shall be geared.

Description:

Pressure reducing valves for waterworks service. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	CLA-VAL	90G-01ABCSY or 90G-01HABCSY	

Notes:

1. Valves shall be designed to automatically reduce a higher inlet pressure to a lower, adjustable maximum outlet pressure regardless of fluctuations in demand.
2. Automatic control valves shall be fluid-actuated, having a single moving assembly. A flexible, nylon fabric-reinforced synthetic elastomer diaphragm shall be integral with this assembly to form a sealed chamber, operating free of drag or wear. The diaphragm shall not be used as a seating surface. This assembly shall have a stem that is fully guided by separate upper and lower bearings to preclude binding or deflection. When the valve is closed, sealing at the seat shall be by contact between one edge of a securely retained elastomer rectangular seal and a smooth seat surface. The seat shall be removable and not have edges that will induce seal cutting or wear at low flows. Progressive throttling of flow shall be accomplished by a characterized profile seal retaining washer. All internal valve components shall be removable and repairable while the valve body remains in line. The main valve shall be equipped with a position indicator with an air bleed for priming the main valve and for checking the main valve diaphragm for leakage. The main valve body shall be equipped with inlet and outlet gauges having 304/316 Stainless Steel (SS) exterior casing and internal trim. Gauges shall have a 2.5" diameter face, shall be glycerin-filled, and shall have a range of 0-300 psi on high side with 5 percent accuracy over spectrum, and 0-160 psi on low side in 2 psi increments with 3 percent accuracy over spectrum. Valve internal trim (seat and seal retainer plate) shall be SS, and all valve elastomers shall be FDA-approved. An FDA and NSF 61 approved epoxy coating shall be heat-fusion bonded to all internal and external ferrous valve surfaces. The pilot system shall include a fixed orifice opening speed flow control with SS tubing and brass fittings. On 3" and smaller valves, add opening speed flow control. The reducing pilot shall be SS or bronze with an adjustment range suitable for the pressure conditions at the installation location. Isolation ball valves with SS ball and handle for the pilot system shall be furnished on all sizes and include a y-strainer with blow-down ball valve.
H-type strainers shall be installed on the upstream side of pressure reducing valves.
3. Valves shall use only SS pilot tubing
- 4.

Description:

Air release valves, automatic, for water service. CI body, SS or bronze trim. Working pressure 0-150 psi. 3" and smaller 300 psi body - screwed (NPT) inlet. 4" and larger 250 psi body - flanged inlet (flat, class 125 except as specified). All valves shall have threaded or flanged outlets. Inlet and orifice sizes shall be as shown or approved in Engineer's design drawings. AWWA C 512. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	Val-matic Valve & Mfg. Co.	Air Release Valves	
	G-A Industries Inc.	1" and 2" Figure 920, 3" Figure 922, 4" and 6" Figure 923	
	Multiplex Mfg. Co.	CRISPIN PL Series	
	APCO	200 Series with SS internals	
	BERMAD	Model 4405	

Notes:

1. Valve types other than those defined by above description may be used if required by engineered design and shown on Engineer's approved design drawings. Any use of air vacuum valves in combination with air release valves will require piping be acceptably installed and protected.

Description:

Air release (combination, automatic)/vacuum relief valve for potable water service only, size and optional features to be shown on approved engineering drawings. Must comply with AWWA C 512. All valves purchased for NBU shall be "lead free" and marked by stamping, etching, or casting "NL" in the main body or by other methods acceptable by NBU.

Listing Date	Manufacturer	Product Identification	Approval
	A.R.I. Flow Control	D-040, D-060	
	RF Valves	Vent-O-Mat RBX Series	
	International Valve (Vent Tech)	Vent Tech WTR and WZW Series	

Notes:

Description:

Valve actuators, manual, multi-turn, totally enclosed spur or bevel gearing, fully-sealed lifetime lubrication, CI input housing and gear casing, one-piece solid input shaft machined from 431 SS, for buried installations (requires international standard ingress protection IP68-rated enclosure for continuous submergence up to 50 feet), meeting the applicable AWWA requirements, semi-gloss polyamide epoxy exterior coating. Maximum continuous output torque of the actuator shall be greater than the full torque of the valve at its rated working pressure.

Listing Date	Manufacturer	Product Identification	Approval
	Rotork Gears America	IS Multi-turn Gearbox Series (spur gear) IB Multi-turn Gearbox Series (bevel gear)	

Notes:

1. Contractor's project submittal shall identify gear box, gear ratio, input and output flange types, and other features about the specific actuator units to be supplied to the project.
2. Use on all valves 24" and larger. Use on other valves as indicated on NBU-approved drawings.

Description:

Valves, resilient-seated gate type, for installation on pressurized mains as temporary line stops or as permanent system valves, materials meeting AWWA C 509 or C 515.

Listing Date	Manufacturer	Product Identification	Approval
	Advanced Valve Technologies	See notes	
	Team Industrial Services	See notes	

Notes:

Advanced Valve Technologies:

Ez Valve. 4" - 12" for PVC, DI, AC, CI and oversized CI

16" and 24" for PVC, DI, and CI

For vertical or horizontal installation. Miter gearing required on horizontal installation.

Team Industrial Services:

Insert valve 4" - 12". For vertical or horizontal installation. Miter gearing required on horizontal installation.

1. To be used only when desired shutout of mains are not possible using existing system valves.
2. When left in place as a permanent valve, the depth of cover to the operating nut must be at least 18" to accommodate a valve box assembly, regardless of valve orientation.
3. When left in place as a permanent valve, gearing is required on horizontal valves and on valves 24" and larger, regardless of valve orientation.
4. When used only as a temporary line stop, the valve bonnet and actuation mechanism shall be removed and a blind flange (cover plate) meeting AWWA C 207 Class E rating installed over the completion plug.

Description:

Water pipe, DI complying with AWWA C 151, with special restrained joint bell. Pipe spigot end shall have a factory welded-on restraint ring or bead except for field-cut pipe, which shall be restrained using special restraint gaskets designed specifically to be compatible with the restrained joint bell. Pipe shall be asphalt-coated and cement-mortar lined with asphaltic seal coat complying with AWWA C 104. Fittings shall have same restrained joint system as pipe or shall have compatible integral system, shall comply with AWWA C 153 or AWWA C 110, and shall be asphalt-coated and cement-mortar lined with asphaltic seal coat complying with AWWA C 104 or fusion-bonded epoxy-coated and -lined (inside and outside) complying with AWWA C 116. Fusion-bonded epoxy must be red and shall comply with requirements of NSF 61. Not for use in gravity wastewater applications.

Listing Date	Manufacturer	Product Identification	Approval
	U.S. Pipe Co.	TR Flex 4" - 36"; Field Lok 350 Gasket - for field-cut pipe or closure pieces; HDSS 30" - 64"	
	American Ductile Iron Pipe	Flex-Ring 4" - 48"; Lok-Ring 54" - 64"; Field Flex-Ring - for field-cut pipe or closure pieces MJ Coupled Joint - for connecting factory-restrained spigot to MJ-bell	
	McWane Ductile	TR Flex 6" - 36"; TR Flex Gripper Ring - for field-cut pipe or closure pieces	

Notes:

- Warning tape shall be placed on the polyethylene wrap on top of the pipe for the full length of restrained joint pipe. The warning tape shall be yellow and shall have black lettering at least 2" high that states "Restrained Joint/Junta de Restriccion" at intervals not exceeding 24". The warning tape shall be polypropylene having a minimum thickness of 2 mils, a minimum width of 3", and adhesive backing on the side opposite the lettering.
- Field welded-on restraint rings or beads are not allowed.
- For pipe larger than 24" in diameter, contractor's/manufacturer's project submittal must include one of the following: a) evidence of current ISO registration or b) name and qualifications of independent, third-party firm that will test and inspect pipe produced for NBU.

Description:

Gaskets, rubber with SS teeth for wedging action, used to provide restrained joints on standard push-on (socket and spigot) pipe 4" - 16" in diameter. Color-coded for visual identification. Gaskets shall meet performance requirements of AWWA C 111.

Listing Date	Manufacturer	Product Identification	Approval
	American Ductile Iron Pipe	Fast-Grip Amarillo gasket (yellow) - used with Fastite push-on pipe	
	Specification Rubber Products, Inc.	Barracuda gasket (orange) - used with Tyton joint push-on pipe	
	MCWane Plant & Industrial	Sure Stop Blue 350 gasket (blue and black) - used with Tyton joint push-on pipe	
	U.S. Pipe Co.	Red Field Lok 350 (red) - used with Tyton joint push-on pipe	

Notes:

1. These gaskets shall be used only on pipe joints, not fittings.
2. Fittings, used on pipe that is restrained with these gaskets, shall be MJ that are restrained.
3. Warning tape shall be placed on the polyethylene wrap on top of the pipe restrained with these gaskets for the full length of restrained joint pipe and fittings. The warning tape shall be yellow and shall have black lettering at least 2" high that states "Restrained Joint/Junta de Restriccion" at intervals not exceeding 24". The warning tape shall be polypropylene having a minimum thickness of 2 mils, a minimum width of 3", and adhesive backing on the side opposite the lettering. Not to be used on pipe larger than 16" unless approved by NBU.
4. Not to be used on pipe installed in encasement pipe unless approved by manufacturer.
5. Not to be used on pipe installed above ground.
6. Joint restraint gaskets shall not be used on or attached to CI or asbestos concrete pipe without NBU approval.
- 7.

Description:

Pipe, PVC 4" - 12" CI pipe size O.D. with elastomeric gasket joints and factory-installed internal joint restraint system for water service. Pipe must meet AWWA C 900 DR14 Class 305. Joint restraint system must meet ASTM F 1674.

Listing Date	Manufacturer	Product Identification	Approval
	JM Eagle	Eagle Loc 900	
	Diamond Plastics Corp.	Diamond Loc-21	

Notes:

- Warning tape shall be placed on top of pipe and fittings for the full length of restrained joint pipe. The warning tape shall be yellow and shall have black lettering at least 2" high that states "Restrained Joint/Junta de Restriccion" at intervals not exceeding 24". The warning tape shall be polypropylene having a minimum thickness of 2 mils, a minimum width of 3", and adhesive backing on the side opposite the lettering.
- Material must comply with requirement of description above and be rated above design pressure.
- Field-fabricated fittings are not allowed.

Description:

Restraint devices for joints on pipe, fittings, and valves. Devices shall be 1) wedge-action lug-type MJ retainer glands, 2) split, full-circle grip-ring type with HSLA threaded thrust rods and nuts and SS clamping bolts and nuts, or 3) single-piece, solid-body bolt-through type. For use only with 4" - 16" DI pipe or 4" - 12" AWWA C 900 pipe as indicated and color-coded as noted. Restraint devices shall have working pressure rating that equals or exceeds the pressure of the pipe, fittings, or valves on which they are used. The only approved products are those having the exact same identification as listed below.

Listing Date	Manufacturer	Product Identification	Approval
	EBA Iron, Inc.	See notes	
	Uni-flange/Division of Ford Meter Box Co.	See notes	
	JL, RR, CD, EF, DMY, QB, HX, YS (China) Star Pipe	See notes	
	Romac Industries, Inc.	See notes	
	Sigma Corp.	See notes	
	Tyler Union/Division of McWane	See notes	
	Smith-Blair, Inc.	See notes	
	Infact Corp.	See notes	
	AccuCast	See notes	
	SIP Industries	See notes	

Notes:

EBA Iron, Inc.:

Megalug: 1104 to 1116, black MJ retainer gland for DI pipe; 1704 to 1716, black bell joint restraint harness for DI pipe with push-on joints; 2004PV to 2012PV, red MJ retainer gland for PVC pipe

Megaflange: 2104 to 2112, red MJ retainer gland for PVC pipe, not for buried installation

PVC Bell Restraint Harness 1500, red split full-circle grip-rings with HSLA threaded rods and SS clamping bolts

Uni-Flange/Division of Ford Meter Box Co.:

Uni-Flange: UFR 1300 C-4 to C-8, split full-circle grip-rings with HSLA bolts and SS clamping bolts. Black for DI, red for PVC; UFR 1390 C-4 to C-12, split full-circle grip-rings with HSLA threaded rods and SS clamping bolts. Black for DI, red for PVC; UFR 1400 D-4 to D-16, black MJ retainer gland for DI pipe; UFR 1450 D-4 to D-16, black MJ retainer gland for DI pipe with push-on joints; UFR 1500 CA- 4 to CA-12, red MJ retainer gland for PVC pipe

JL, RR, CD, EF, DMY, QB, HX, YS Foundries (China) - Star Pipe Products, Inc.:

Stargrip: 3000, black MJ retainer gland for DI pipe, 4" - 16"; 4000G2, red MJ retainer gland for PVC pipe,, 4" - 12"

PVCgrip: 3500, red MJ retainer gland for PVC pipe, 4" - 12"

PVC Pipe Restraint: 1000, red split full-circle grip-rings with HSLA threaded rods and SS clamping bolts for PVC pipe, 4" - 12"; 1100, red split full-circle grip-rings with HSLA threaded rods and SS clamping bolts for PVC pipe, 4" - 12"

Bolt-through Type: Series 100 MJ x MJ Adapter

Super Flange Series 7200: 4" - 12" red MJ retainer gland for PVC pipe, black for DI pipe, not for buried installation

Romac Industries, Inc.:

GripRing: yellow MJ retainer gland with black split full-circle grip-rings for DI or PVC pipe, 4" - 12"

RomaGrip: black MJ retainer gland for DI pipe, 4" - 16", red MJ retainer gland for PVC pipe, 4" - 12"

Sigma Corp.:

One Lok: wedge-action type; A-1 Foundry, China; (SLD) black MJ retainer gland for DI pipe, 4" - 16"; (SLC) red MJ retainer gland for PVC pipe, 4" - 12"

Bolt-Through Type: BH Foundry; MJ Connector, 4" - 12"

Tyler Union/Division of McWane:

TUFGrip: (TLD) black MJ retainer gland for DI pipe, 4" - 16"; (TLP) red MJ retainer gland for PVC pipe, 4" - 12"

Smith-Blair, Inc.:

Bell-Lock Serrated Joint Restraint Harness Model 165: full-circle grip-rings with HSLA threaded rods and SS clamping bolts.

Description:

Listing Date	Manufacturer	Product Identification	Approval

Notes:

Infact Corp.:

Bolt-through Type: Foster MJ x MJ Adapter

AccuCast:

Acculok: wedge-action type; EG Foundry, China; ALDI, 4" - 12", black MJ retainer gland for DI pipe; ALPV, 4" - 12", red MJ retainer gland for PVC pipe

Accu Adapter: MJ x MJ bolt-through type

SIP Industries:

EZ Grip: wedge-action type; EF Foundry, China; EZDP, 4" - 16", black MJ retainer gland for DI pipe; EZPVCP, 4" - 12", red MJ retainer gland for PVC pipe

EZ Grip: split, full-circle grip-ring type; EF Foundry, China; PTPVC, 4" - 12", red bell-joint restraint harness for PVC pipe

Only manufacturer's products indicated shall be used.

1. Restraint devices for DI pipe shall have a black coating.
2. Restraint devices for PVC pipe shall have a red coating.
3. These devices are not to be used on plain-end DI fittings.
4. Specifying or use of restraint devices outside the indicated size range requires prior approval by NBU on a project-by-project basis.
5. Threaded thrust rods and nuts used with split full-circle grip-ring restraint devices must be HSLA steel supplied by the restraint device manufacturer. Galvanized all-thread or similar rod is not allowed. HSLA components must meet AWWA C111.
6. Warning tape shall be placed on the top of PVC pipe restrained by these devices and on top of other polyethylene wrap around DI pipe restrained with these devices for the full length of restrained joint pipe and fittings. The warning tape shall be yellow and shall have black lettering at least 2" high that states "Restrained Joint/Junta de Restriccion" at intervals not exceeding 24". The warning tape shall be polypropylene having a minimum thickness of 2 mils, a minimum width of 3", and adhesive backing on the side opposite the lettering.
7. Wedge-action lug-type MJ restraints shall not be attached to CI or asbestos concrete pipe without NBU approval.
- 8.
- 9.

Description:

Enamel, quick-dry for exposed, exterior portions of drain valve assemblies, air valve ventilation pipes, and other applications, as specified.

Listing Date	Manufacturer	Product Identification	Approval
	Sherwin Williams	Sher-Cryl HP Acrylic - color code 4086 Safety Blue for potable water applications	
	Rustoleum Corp.	5200 System Acrylic - color code 5225 Safety Blue for potable water applications	
	Sherwin Williams	Silver Metallic paint	

Notes:

1. Paint applied on objects extending out of the ground shall be applied also at least 12" below final grade.
2. Surface shall be prepared according to paint manufacturer recommendations.

Description:

HDPE meter boxes for 5/8" to 2" meter applications.

Listing Date	Manufacturer	Product Identification	Approval
	DFW Plastics, Inc.	See notes	

Notes:

DFW Plastics, Inc.:

- 1) HDPE rectangular meter box with polymer cover for meter sizes 5/8" and 1". Polymer cover must be constructed of anti-float material and be equipped with magnetic detector and stainless pickhole pin.

Cover	Body	Combination
DFW38C-AF1MP-LID	DFW38C-14-BODY	DFW38C-14-AF1MP

- 2) HDPE rectangular meter box with polymer AMR/AMI cover for single 1.5" meters. Polymer cover must be constructed of anti-float material equipped with magnetic detector and stainless pickhole pin.

Cover	Body	Combination
DFW65C-AF1MP-LID	DFW65C-14-BODY	DFW65C-14-AF1MP

- 3) HDPE rectangular meter box with polymer AMR/AMI cover for single 2" meters. Polymer cover must be constructed of anti-float material equipped with magnetic detector and stainless pickhole pin.

Cover	Body	Combination
DFW1730F-AF1MP-LID	DFW1730F-12-BODY	DFW1730F-12-AF1MP

- 4) HDPE rectangular meter box for reclaimed water services with purple polymer cover for reclaimed meter use (sizes 5/8", 3/4", and 1"). Integrally tinted purple polymer cover must be constructed of anti-float material and be equipped with magnetic detector and stainless pickhole pin.

Cover	Body	Combination
DFW37C-AF5MP-LID	DFW37C-14-BODY	DFW37C-14-AF5MP

Description:

Listing Date	Manufacturer	Product Identification	Approval

Notes:

HDPE rectangular meter box for reclaimed water services with purple lids with polymer AMR/AMI cover for residential meter use (sizes 1.5" and 2")

Cover

DFW1730F-5MBAF AW-LID

Body

DFW1730F-12-BODY

Combination

DFW1730F-12-5MBAF AW

1. Not for use in areas subject to traffic.

Description:

Pre-cast reinforced concrete manhole sections consisting of risers, conical tops, flat slab tops, and base sections meeting ASTM C 478. Base sections shall consist of a riser section monolithically cast with an integral floor. Base riser sections must have approved connectors. Joint configuration and dimensions for 48" diameter sections shall be as shown on NBU standards. Gaskets shall be listed on SPL 12.3.0. Large diameter pre-cast manholes shall not be used for junction boxes unless shown on the contract drawings. Large diameter bottom riser sections used as junction boxes shall have connected pipe size limitations as follows: 60" I.D. riser section for pipe to 30" maximum, 72 I.D. riser section for pipe to 42" maximum. Shop drawings shall be submitted for NBU approval for large diameter pre-cast manholes used as junction boxes.

Listing Date	Manufacturer	Product Identification	Approval
	Forterra Building Products	48" diameter	
	Capital Concrete Products	48" diameter	
	Charlotte's Concrete	48" diameter	
	Capital Precast, Inc.	48" diameter	
	Oldcastle Precast, Inc.	48" diameter	

Notes:

1. Sections must comply with requirements of description above and with approved details.
2. Base sections shall be designed to prevent insertion of connecting pipe beyond inside surface of manhole wall.
3. Base sections shall be pre-cast.
4. Flat slab tops shall only be used when specified in the contract drawings.
5. Concrete used for pre-cast sections shall conform to TxDOT Item 421, 2004 Edition.
6. Cast-in-place manhole bottoms for 30" and larger pipe shall conform to standards.
7. Pre-cast plant must be NPCA-certified.
8. The shop drawings shall include flowline elevations of all incoming and outgoing pipes, elevations of transition from large diameter sections to 48" I.D. section, top of manhole elevation, surrounding ground elevation, as well as special construction considerations that are specified in the contract drawings.

Description:

Pre-cast reinforced polymer concrete manhole sections consisting of risers, conical tops, flat slab tops, and base sections. Base sections shall consist of a riser section monolithically cast with an integral floor. Base riser sections must have approved pipe connectors. Polymer concrete shall meet the requirements of ASTM D 6783 and manhole sections shall meet the requirements of ASTM C 478. Joint configuration and dimensions for 48" diameter sections shall be as shown on NBU standards. Large diameter pre-cast manholes shall not be used for junction boxes unless shown on the contract drawings. Large diameter bottom riser sections used as junction boxes shall have connected pipe size limitations as follows: 60" I.D. riser section for pipe to 30" maximum, 72" I.D. riser section for pipe to 42" maximum. Shop drawings shall be submitted to NBU for pre-cast manholes larger than 48" in diameter, junction boxes, and similar structures.

Listing Date	Manufacturer	Product Identification	Approval
	US Composite Pipe, Inc.	48" diameter - shop drawings not required 60" diameter and larger - shop drawings required	
	Armorock Polymer Concrete	48" diameter - shop drawings not required 60" diameter and larger - shop drawings required	

Notes:

1. Sections must comply with requirements of description above and with approved details.
2. Base sections shall be designed to prevent insertion of connecting pipe beyond inside surface of manhole wall.
3. Base sections shall be monolithically pre-cast.
4. Flat slab tops shall only be used when specified in the contract drawings.
5. Minimum wall thickness for pre-cast sections is 3" for 48" diameter components.
6. Manhole inverts at pipe connections shall be made smooth after pipe insertion using polymer grout mix of Sauereisen Sewergard Trowable No. 210 or Sikadur 42 Grout Pak.
7. Lifting devices shall not penetrate through walls. Any lifting cable inserts shall be cut flush to the polymer concrete surface. Joints shall be compatible with Portland cement pre-cast sections and incorporate either the wedge seal or O-ring as shown in standards.
8. The shop drawings shall include flowline elevations of all incoming and outgoing pipes; elevation of transition from large diameter sections to 48" I.D. section; top of manhole elevation with surrounding ground elevation; special construction considerations that are specified in the contract drawings; certification that manufacturer's Quality Control Plan (as accepted by NBU during product approval) shall be followed during the manufacturing process.
- 9.

Description:

Manhole seals, plastic, watertight, installed according to manufacturer's recommended procedures.

Listing Date	Manufacturer	Product Identification	Approval
	CANUSA/Division of Shaw Pipe Resources	Wrapid Seal - black, heat shrinkage manhole seal, 18" minimum width. Manufacturer-provided or -approved closure strip, primer, and torch/burner required	
	Miller Pipeline Corp.	Encap Seal - Miller Surfak Kit or I.D. Mold Repair Kit, as ordered - for sealing ring casting at top of manhole cone or adjustment rings	
	Asahi Denka Kogyo	Adeka Ultra Seal P-201 - used as waterstop around pipe wall penetrations on manholes with cast-in-place bases and on concrete chimney adjusting rings on manholes outside of pavement	
	Cretex Specialty Products	CretexWrap - black, metal-banded joint wrap, 12" minimum width	
	Pipeline Seals & Insulator, Inc.	Riser-Wrap - black, heat shrinkage manhole seal, 17" minimum width. Manufacturer-provided or -approved closure strip, primer, and torch/burner required	
	Sealing Systems, Inc.	Infi-Shield Gator Wrap - black, adhesive-coated backside, joint wrap, 12" minimum width	

Notes:

- Used for sealing the joints between pre-cast manhole sections. Not used for sealing the joints between grade rings.

Description:

Gaskets, elastomeric, for 48" diameter pre-cast manholes. Gaskets must meet ASTM C 443, including gasket marking, which shall include name of manufacturer, usable temperature range for application and storage, shelf life, lot or batch number, and manufacturer's product identification.

Listing Date	Manufacturer	Product Identification	Approval
	Hamilton Kent		
	Press-Seal Gasket Corp.	210-4G - solid-body wedge, requires lubrication	
	Universal Polymer & Rubber		

Notes:

Description:

Resilient connectors (boots): made of natural or synthetic rubber and conforming to ASTM C 923, for formed or cored holes, normal service of up to 30' of external head.

Listing Date	Manufacturer	Product Identification	Approval
	Press-Seal Gasket Corp.	PSX: Direct Drive, Nylo Drive	
	Trelleborg Pipe Seals	NPC Kor-N-Seal: S106 and S406 WPSB Series, both series having 2 positioning tabs protruding from the body to prevent over-insertion in the manhole wall	

Notes:

Description:

Manhole rings and covers (24" diameter covers) gray CI, ASTM A 48, Class 35B or higher or DI, ASTM A 536, Grade 60-40-18 or higher. Ring weight 160 pounds. Cover marked "NBU Sanitary Sewer" or "New Braunfels Utilities Sanitary Sewer" as ordered: weight 150 pounds (175 pounds if in state maintained right of way); weight (150 or 175) to be cast top and bottom of cover. Castings 5 pounds or more underweight will be rejected. 24" cover casting sets are for use only for replacement on older manholes, or -- with sampling port -- on large diameter (sampling) clean-outs. DI cover shall weigh no more than 115 pounds.

Listing Date	Manufacturer	Product Identification	Approval
	East Jordan	See note	
	Calcutta Foundry, Ltd. (India)	Not for use in TXDOT ROW; see note	
	Shree Ram Foundry (India)	Not for use in TXDOT ROW; see note	

Notes:

1. Must be in compliance with above description and with NBU Standard Detail. Machined surfaces shall be true to dimensions shown; no principal dimensions shall vary by more than 1/8" from dimension given on Standard Detail. Rocking or interference in fit between interchanged frame and cover will not be acceptable.

Description:

Manhole rings and covers (32" diameter covers): ring shall be gray CI, ASTM A 48, Class 35B or higher or DI, ASTM A 536, Grade 60-40-18 or higher. Cover shall be DI, ASTM A 536, Grade 60-40-18 or higher. Cover marked "NBU Sanitary Sewer" or "New Braunfels Utilities Sanitary Sewer" as ordered. Weight shall be as required for HS-20 loading with appropriate safety factors and as shown on manufacturer's drawings and on casting. Castings 5 pounds or more underweight will be rejected. Maximum weight of cover shall be 175 pounds plus 3 percent.

Listing Date	Manufacturer	Product Identification	Approval
	East Jordan	DI cover with CI ring. Includes top flange from V1816 ZPT; see notes	

Notes:

1. Must be in compliance with above description and with NBU Standard Detail. Machined surfaces shall be true to dimensions shown; no principal dimensions shall vary by more than 1/8" from dimension given on Standard Detail. Rocking or interference in fit between interchanged frame and cover will not be acceptable.
2. Manufacturer's application to the Water Systems Engineering department shall include independent laboratory testing report on proof load test. Load test shall meet AASHTO M-306. Proof load test shall be by domestic laboratory, and test results shall be sealed by Texas-licensed professional engineer. Utility will require certification every 2 years stating that there has been no change in design or manufacture of these castings. If variations from manufacturer's weights are found, a new test by an independent laboratory of a randomly selected casting set will be required at the manufacturer's expense.

Description:

Fittings, PVC gravity sewer, meeting ASTM D 3034 with minimum stiffness of 115 psi or meeting ASTM F 679 with minimum stiffness of 75 psi and with elastomeric gasket joints meeting ASTM F 1336 and gaskets meeting ASTM F 477.

Listing Date	Manufacturer	Product Identification	Approval
	Tigre USA, Inc.	ASTM D 3034 or F 679 - includes D 3034 6" two-way clean-out fitting	
	The Harrington Corp.	Marked "HARCO". Includes part No. 313-0806 for wastewater services connecting to AWWA C 900 DR 14 PVC wastewater mains	
	Plastic Trends, Inc.	Includes 4" or 6" two-way clean-out fitting, part No. H1004	
	GPK Products, Inc.	ASTM D 3034 or F 679 - includes 4" or 6" two-way clean-out fitting, part No. 993-0444 or 993-0666	CE
	Multi-Fittings Corp.	Trench Tough Plus	CE
	Specified Fittings, Inc.	ASTM D 3034 or F 679 - for 12" larger body size only	

Notes:

1. Acceptable fitting sizes are 6" minimum (service laterals only), 8", 12", 15", 18", 21", and 24".
2. All joint gaskets shall be secured in place.

Description:

End caps, rubber or approved equal, for temporary capping of wastewater service lines. Secured by SS worm-gear clamp.

Listing Date	Manufacturer	Product Identification	Approval
	Cherne Industries	Test-Kaps	
	Mission Rubber	Band-Seal End Caps	

Notes:

Description:

Lining, corrosion-resistant, spray or brush applied. Lining material shall be urethane, polyurethane, epoxy, or polyurea. Preparation and application shall be in strict accordance with manufacturer's recommendations. Required application thickness as per the table below.

Listing Date	Manufacturer	Product Identification	Approval
	Raven Lining Systems	Raven 405 High Build Epoxy, 80 mils min. thickness	
	Sprayroq, Inc.	Spraywall process, 80 mils min. thickness	
	Specialty Coating Products	SCP Dropliner S.F., 80 mils min. thickness	

Notes:

- Lining product used for repair shall be the same as that used in original application. Use of a different product, even if it is compatible with the original lining, requires written approval of NBU.
- Product may be applied to new manholes before wastewater lines are put into use or before hydrostatic testing of wastewater line or manhole, when allowed.
- Product may be applied to new manholes after wastewater lines have been put into use or after hydrostatic testing of wastewater line or manhole, when allowed.
- Product may be applied to existing manholes for rehabilitation. Minimum thickness will increase depending on manhole condition.
- Product may be applied to new lift station wet well before operation.
- Product may not to be used, regardless of any other permitted uses, if any part of the manhole or lift station wet well extends below existing groundwater level unless a water-proofing system, as specified on the drawings, is applied at the same time to the exterior surface of the manhole or wet well.

Description:

Structural lining, cementitious, corrosion-resistant, for lining existing wastewater manholes. Linings shall have 1" minimum thickness, and finished surfaces shall conform to the original configuration of the manhole. Preparation and application shall be in strict accordance with manufacturer's recommendations.

Listing Date	Manufacturer	Product Identification	Approval
	Strong Seal Systems	Strong-Seal high performance mix-calcium aluminates; Strong-Seal MS2C	
	Quadex	Quadex Aluminaliner	
	Kerneos, Inc.	SewperCoat - P.G. (pumpable grade) OR 2000 HS-Gunite Grade	
	Standard Cement Materials	Reliner MSP Cement	

Notes:

1. For manholes in which the pH may be 2.0 or less, an additional liner as listed in SPL W12.8.0 may be required for complete corrosion protection.

Description:

Lining, cementitious material, corrosion-resistant, spray- or brush-applied. Thickness shall be between 1/4" and 1/2". Substrate surface shall be prepared by sand blasting.

Listing Date	Manufacturer	Product Identification	Approval
	Kerneos, Inc.	SewperCoat 2000 HS Regular - applied by high-velocity dry-gunite machine SewperCoat PG - applied by low-pressure wet-spray machine	
	Hinterland Group	Refratta	

Notes:

1. Liner thickness shall be measured by the penetration method at locations specified by NBU inspector prior to final setting of the material.
2. May be applied by brush only on surfaces where low-pressure, wet-spray or high-velocity, dry-gunite applications would be unsatisfactory, such as on manhole inverts.

Description:

Grade rings for adjusting the elevations of manhole rings and covers. HDPE meeting ASTM D 4976 or expanded polypropylene meeting ASTM D3575 and ASTM D4819-13.

Listing Date	Manufacturer	Product Identification	Approval
	Ladtech		
	Cretex Special Products	PRO-RING	

Notes:

1. Provide for all polymer concrete manholes.

Description:

Sleeves, tapping, 4" and larger, SS body, for use on CI, DI, PVC, and AC pipe. Sleeves shall have split body that completely surrounds pipe. Sleeves shall have MJ body and flanged outlet and shall include duct-tipped or plain MJ gaskets (as required), split MJ glands, side flange gaskets, and approved bolts and nuts. (See W2.6.0) Outlet flange shall be flat-faced with bolt hole pattern (drilling) according to ASME/ANSI B 16.1 Class 125 (same as B 16.5 Class 150, aka 150 lb drilling). Outlet flange bolt holes shall straddle vertical centerline of the sleeve with sleeve in horizontal position. Flange recess dimensions for mating with tapping valve alignment lip shall be according to MSS SP-60.

Listing Date	Manufacturer	Product Identification	Approval
	Mueller Co.	H-615 for CI, DI 4" - 24" and PVC 4" - 12"; H-619 for AC; T-9 for CI and DI, 30" and 36"	
	U.S. Pipe & Foundry Co.	U.S. Mechanical Joint Tapping Sleeve	
	Tyler Union	Compact DI body used on DI, CI, and PVC pipe, 6" - 12"	
	American Flow Control	Series 2800C for CI, DI, and PVC; Series 2800A for AC	

Notes:

1. To be used only if indicated on NBU-approved drawings.
2. No size-on-size tapping sleeves will be accepted.

Description:

Sleeves, tapping, 16" and larger, meeting AWWA C 223, fabricated from SS, for use on CI, DI, PVC, and AC pipe. Sleeves shall have split body that completely surrounds pipe. Sleeves shall have MJ body and flanged outlet and shall include plain MJ gaskets, split MJ glands, and side flange gaskets. Outlet flange shall be flat-faced with bolt hole pattern (drilling) according to ASME/ANSI B 16.1 Class 125 (same as B 16.5 Class 150, aka 150 lb drilling). Outlet flange bolt holes shall straddle vertical centerline of the sleeve with sleeve in horizontal position. Flange recess dimensions for mating with tapping valve alignment lip shall be according to specifications.

Listing Date	Manufacturer	Product Identification	Approval
	JCM Industries, Inc.	See notes	
	Smith-Blair	See notes	

Notes:

JCM Industries, Inc.: JCM 414 ESS - with 304 SS nuts, bolts, and washers. AWWA C 207, Class E 275 psi flange, minimum 200 psi rated body, minimum 12 mil thick epoxy coating inside and out.

Smith-Blair: Type 624 - with 304 SS nuts, bolts, and washers. AWWA C 207, Class E 275 psi flange, minimum 200 psi rated body, minimum 12 mil thick epoxy coating inside and out.

1. To be used only if indicated on NBU-approved drawings.
2. Contractor's/supplier's submittal must include manufacturer's shop drawings and order data sheet that lists, among other information, the type of steel; type of nuts, bolts, and washers; type of coating; class of flange; and pressure rating of body, all meeting requirements in the description above.
3. Contractor's/supplier's project submittal must be approved by NBU.

Description:

Sleeves, tapping, meeting AWWA C 223, fabricated from SS, for use on CSC pipe. Sleeves shall have split body that completely surrounds the pipe. Sleeves shall have flanged outlet, gaskets, and grout ports. Outlet flange shall be flat-faced with bolt hole pattern (drilling) according to ASME/ANSI B 16.1 Class 125 (same as B 16.5 Class 150, aka 150 lb drilling). Outlet flange bolt holes shall straddle vertical centerline of the sleeve with sleeve in horizontal position. Flange recess dimensions for mating with tapping valve alignment lip shall be according to MSS SP-60.

Listing Date	Manufacturer	Product Identification	Approval
	JCM Industries, Inc.	See notes	
	Forterra Building Products	See notes	

Notes:

JCM Industries, Inc.: JCM 414 ESS - with SS nuts, bolts, and washers. AWWA C 207, Class E 275 psi flange, minimum 200 psi rated body, minimum 12 mil thick epoxy coating inside and out.

Forterra Building Products: Forterra 415 Type 2 ESS - with 304 SS nuts, bolts, and washers. AWWA C 207, Class E 275 psi flange, minimum 200 psi rated body, minimum 12 mil thick fusion-bonded epoxy coating inside and out.

1. To be used only if indicated on NBU-approved drawings.
2. Contractor's/supplier's submittal must include manufacturer's shop drawings and order data sheet that lists, among other information, the type of steel; type of nuts, bolts, and washers; type of coating; class of flange; and pressure rating of body, all meeting requirements in the description above.
3. Contractor's/supplier's project submittal must be approved by NBU.

Description:

Sleeves, tapping, meeting AWWA C 223, fabricated from SS, for use on CI, DI, and PVC. Sleeves shall have split body that completely surrounds pipe. Sleeves shall have MJ ends on the body conforming to AWWA C 110 and C 111; a flanged outlet conforming to AWWA C 207 Class E; and shall include plain MJ gaskets, split MJ glands, and side flange gaskets. Outlet flange shall be threaded for completion plug installation.

Listing Date	Manufacturer	Product Identification	Approval
	JCM Industries, Inc.	See notes	

Notes:

JCM Industries, Inc.: JCM 440 ESS - with 304 SS nuts, bolts, and washers. AWWA C 207 Class D blind flange, minimum 200 psi rated body, minimum 12 mil thick epoxy coating inside and out.

1. To be used only if indicated on NBU-approved drawings.
2. Contractor's/supplier's submittal must include manufacturer's shop drawings and order data sheet that lists, among other information, the type of steel, type of nuts, bolts, and washers; type of coating; class of flange; and pressure rating of body, all meeting requirements in the description above.

Description:

Sleeves, tapping, meeting AWWA C 223, fabricated from SS, for use on CSC pipe. Sleeves shall have split body that completely surrounds the pipe. Sleeves shall have a flanged outlet conforming to AWWA C 207 Class E; gaskets, and grout ports. Outlet flange shall be threaded for completion plug installation.

Listing Date	Manufacturer	Product Identification	Approval
	JCM Industries, Inc.	See notes	

Notes:

JCM Industries, Inc.: JCM 415 Type 2 ESS - with 304 SS nuts, bolts, and washers. AWWA C 207 Class D blind flange, minimum 200 psi rated body, minimum 12 mil thick epoxy coating inside and out.

1. To be used only if indicated on NBU-approved drawings.
2. Contractor's/supplier's submittal must include manufacturer's shop drawings and order data sheet that lists, among other information, the type of steel; type of nuts, bolts, and washers; type of coating; class of flange; and pressure of rating of body, all meeting requirements in the description above.
3. Contractor's/supplier's project submittal must be approved by NBU.

Description:

Sleeves, cutting-in, having MJ end with HSLA bolts and ducktipped or reinforced gaskets.

Listing Date	Manufacturer	Product Identification	Approval
	Mueller Co.	H 840 CI	
	Power Seal	Model 3520 DI	

Notes:

Description:

Meter vault, rectangular, for 3", 4", or 6" compound meters and fire demand meters, with 8" removable reinforced concrete top having valve openings and aluminum access hatch (with SS hardware), as listed in W19.0.0. Vault, including removable top and access hatch, to be designed for H-20 loading. (Not to be installed in areas of high density traffic.) Pre-cast plant must be NPCA certified. Concrete used for pre-cast vaults shall conform to TxDOT Item 421, 2004 Edition.

Listing Date	Manufacturer	Product Identification	Approval
	Forterra Pipe & Precast	Approved for all vault sizes	
	Capital Concrete Products	Approved for all vault sizes	
	Capital Precast	Approved for all vault sizes	
	Park-USA	Approved for all vault sizes	
	Oldcastle Infrastructure	Approved for all vault sizes	

Notes:

1. See shop drawings for approval of knockout and opening locations.

Description:

Strainer, H style, rated at a minimum of 250 psi, with 316 SS mesh in an epoxy-coated DI frame. Strainer body and cover shall be epoxy-coated DI, inside and out. The gasket between the cover and body shall be synthetic rubber, with the cover secured by SS bolts, nuts, and washers. Strainer mesh openings shall be 2000 micron (10 mesh or .078") or equivalent. Strainer body shall have flanged ends and SS, square-headed drain and blow-off plugs in both sides of the body, at the bottom.

Listing Date	Manufacturer	Product Identification	Approval
	CLA-VAL	Model X43H	

Notes:

- Strainer shall be capable of being serviced by removing only the top cover and without removing the body from the pipeline.

Description:

Casing spacers for support and isolation of carrier pipe within encasement pipe. 14 gauge bands (0.075") and 10 gauge risers (0.135") shall be Type 304 SS; all fasteners and exposed metal shall be SS; bands shall have insulating liners; runners shall be reinforced plastic, Dupont Co. "Rynite" or approved equal. For pipe up to 12" diameter, spacers shall be 8" long with 1" minimum width runners; for pipe larger than 12" diameter, spacers shall be 12" long with 2" minimum width runners. Maximum height of runner above the riser shall be 1.5". Number of bottom runners shall be multiples of two. Number of top runners shall be multiples of two.

Listing Date	Manufacturer	Product Identification	Approval
	Advance Products & Systems, Inc.	Model SSI8-1CR for pipe to 12" diameter; Model SSI12-2CR for pipe larger than 12" per shop details	
	Power-Seal Corp.	Model 4810 - AT SS - with 8" band for pipe to 12" diameter and 12" band for pipe larger than 12"	
	J-Four Pipeline Products	Model 63SS for pipe to 12" diameter; Model 59SS for pipe larger than 12"	
	CCI Piping Systems	Model CSS SS - with 8" band for pipe to 12" diameter and 12" band for pipe larger than 12" (UHMW polymer runners for all sizes)	
	The BWM Company	Model BWM SS SS - with 8" band for pipe to 12" diameter and 12" band for pipe larger than 12" (UHMW polymer runners for all sizes)	
	Cascade Waterworks Mfg.	Style CCS SS - with 8" band for pipe to 12" diameter and 12" band for pipe larger than 12" (UHMW polymer runners for all sizes)	

Notes:

1. Casing spacer configuration and spacing shall follow manufacturer's recommendations and shall be shown on contractor's project submittal, as approved by Engineer, covering the specific work.
2. End seals must also be shown on the drawings.
3. Field modification of casing spacer is prohibited.

Description:

Tape, locating, inductive, detectable, 5 mil minimum overall thickness and 0.34 mil minimum thickness solid aluminum foil core. All brands shall be a minimum of 12" wide and placed no deeper than 18" below surface. The tape shall be color-coded according to the American Public Works Association Uniform Color Code: blue for potable water, purple for reclaimed water, and green for wastewater.

Listing Date	Manufacturer	Product Identification	Approval
	Pro-Line Safety Products Co.		
	Dalian Metals I/E, Co. Ltd. (China), AccuCast		
	Reef Industries	Terra Tape	

Notes:

Notes section containing a large empty rectangular area for additional information.

Description:

Tracer wire access point for connecting locating equipment. Access points shall have 2 wire terminals for connections to tracer wire and a ground rod.

Listing Date	Manufacturer	Product Identification	Approval
	Copperhead Industries	SnakePit Access Point, see notes	
	Kris-Tech	Test-Tech Roadway Test Station, see notes	

Notes:

SnakePit Access Point - Two terminal lid with roadway base

Kris-Tech Test-Tech Roadway Test Station - Two terminal lid

1. Terminals shall be solid brass and externally accessible without removal of the test station lid.
2. Test stations lids will be black or color coded blue for potable water, purple for reclaimed water, or green for force mains.

Description:

Access doors for vaults constructed of 1/4" aluminum diamond plate designed to support pedestrian loading. Hinges, slam lock, compression-assist springs, handles, hold-open arms, and all fasteners to be Type 316 stainless steel. Doors are to be used in off-street locations where not subjected to high density traffic. Doors shall be equipped with aluminum safety grating for fall protection.

Listing Date	Manufacturer	Product Identification	Approval
	Halliday Products, Inc.	See notes	
	U.S.F. Fabrication	See notes	
	K&B Steel	See notes	
	EJ	See notes	

Notes:

1. Door shall support a minimum live load of 300 psf with maximum deflection of 1/150th of the span.
2. Door frame shall have manufacturer's name and door model number milled or stamped into the frame or shown on a plate permanently attached to the frame.
3. Doors shall be sized for both removal of equipment and per OSHA standards for personnel access. Minimum hatch size is 36" x 42".

Description:

Access doors for vaults constructed of 1/2" galvanized steel diamond plate and designed to support H-20 loading. Hinges, slam lock, compression-assist springs, handles, hold-open arms, and all fasteners to be Type 316 SS. Doors are to be used in off-street locations where not subjected to high density traffic. Doors shall be equipped with aluminum safety grating for fall protection.

Listing Date	Manufacturer	Product Identification	Approval
	Halliday Products, Inc.	See notes	
	U.S.F. Fabrication	See notes	
	K&B Steel	See notes	
	EJ	See notes	

Notes:

1. Door shall support a minimum live load of 300 psf with maximum deflection of 1/150th of the span.
2. Door frame shall have manufacturer's name and door model number milled or stamped into the frame or shown on a plate permanently attached to the frame.
3. Doors shall be sized for removal of equipment and per OSHA standards for personnel access. Minimum hatch size is 36" x 42".

Description:

Gray iron castings, ASTM A 48 Class 30B minimum, for valve boxes and bases, sanitary sewer clean-outs and other municipal construction castings as ordered.

Listing Date	Manufacturer	Product Identification	Approval
	EJ	See notes	
	Calcutta Foundry, Ltd. (India), Sigma Corp.	See notes	
	PLPL Foundry (India), Star Pipe Products	Water valve box base, cover, and paving ring	

Notes:

EJ: Includes Catalog No. 1564Z frame and 1564A cover for wastewater clean-out cover; includes water valve box and square lid for reclaimed water.

1. Must be in compliance with above description with NBU Standard Details and construction specifications. Machined surfaces shall be true to dimensions shown; no principal dimension shall vary by more than 1/8" from dimension given on Standard Detail. Rocking or interference in fit between interchanged frame and covers is unacceptable.

Description:

Debris cap shall be comprised of a hollow member having a cylindrical outer surface, a closure for one end, and three point resilient contact pads projecting from the outer surface. Cap shall have a flexible skirt that provides an outward seal preventing transport of dust sand, debris, and other particulates past the cap. Cap must withstand, without slippage, a minimum vertical force of 50 lbs at a loading rate of 1-inch per minute. Cap shall have retaining prongs to retain a standard location coil. Cap must be constructed of corrosion resistant materials.

Listing Date	Manufacturer	Product Identification	Approval
	SW Services	Debris Cap, see notes	

Notes:

1. Debris Cap must be in compliance with above description, NBU Standard Details, and NBU Specifications.

