Appendix "C"
Jefferson Parish
Department of Engineering
Water Distribution System General Standard Notes *[1]

** These notes shall be referenced and shall be included, in their entirety, unedited and unabridged, in all Jefferson Parish Projects as follows:*

- *New subdivisions – attach these notes to plans as **Appendix "C".***
- *All other projects – include these notes in Specification Booklets, which include any work related to the Parish Water Distribution System. Insert a copy of these notes, **on green paper**, at the end of the "Water Distribution System Technical Specification" Section of the Specification Booklet. Any Deviations and / or Variations from these General Standard Notes shall be tabulated under the heading of "Deviations From Jefferson Parish Water Standards Notes" and shall be included in the "Water Distribution System Technical Specification" Section of the Specification Booklet.*

1. NOTIFICATION:

CONTRACTORS SHALL NOTIFY THE DEPARTMENT OF WATER AT 736-6743 AND THE DEPARTMENT OF ENGINEERING, INSPECTION DIVISION AT 736-6793, 48 HOURS PRIOR TO ANY FIELD WORK RELATING TO WATER LINES, WATER VALVES, WATER METERS, HYDRANTS, ETC. ALL WATER VALVES 16 INCH AND LARGER SHALL BE OPERATED BY PARISH PERSONNEL. SMALLER VALVES MAY BE OPERATED (OPERATED SHALL MEAN, OPENING AND CLOSING. IF A CONTRACTOR FAILS TO REOPEN A VALVE WHICH HE HAD CLOSED DURING CONSTRUCTION, HE MAY BE HELD LIABLE FOR ANY COST, SAFETY OR HEALTH RELATED ISSUES WHICH CAN BE RELATED TO HIS NEGLIGENCE OF LEAVING THE VALVE CLOSED.) BY THE CONTRACTOR UNDER THE DIRECT SUPERVISION OF JEFFERSON PARISH PERSONNEL.

THE DEPARTMENT OF ENGINEERING MUST BE GIVEN A MINIMUM OF 48 HOURS NOTICE BEFORE A TAP IS TO BE MADE ON A WATER LINE (FOR METERS, FIRE SERVICES AND FIRE LINES).

WHERE A TIE-IN, FIRE SERVICE OR WATER METER INSTALLATION IS TO BE MADE BY OTHER THAN WATER DEPARTMENT PERSONNEL, THE OWNER, CONTRACTOR OR HIS AGENT SHALL CONTACT THE DEPARTMENT OF ENGINEERING 24 HOURS IN ADVANCE FOR THE INSPECTION OF THE INSTALLATION. THE INSTALLATION SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT OF ENGINEERING PRIOR TO BACKFILLING. **ALSO SEE** SECTION 26 (WATER DISTRIBUTION SYSTEM "AS-BUILT SKETCHES", "GPS COORDINATES", AND "AS-BUILT DRAWINGS")

[1] Jefferson Parish Department of Engineering Water Distribution System General Standard Notes, Originated - January 2002.

2. LICENSE REQUIREMENTS:

PER THE REQUIREMENTS OF LSA R.S. 40:1148 ET.SEQ., A CLASS IV WATER DISTRIBUTION OPERATOR CERTIFICATE (LICENSE) SHALL BE REQUIRED TO OPERATE VALVES OR COMPLETE A TIE-IN TO ANY ACTIVE (LIVE) WATER DISTRIBUTION OR WATER SUPPLY SYSTEM IN JEFFERSON PARISH. SUCH LICENSE SHALL NOT BE REQUIRED FOR MUNICIPAL AND PUBLIC WORKS CONTRACTORS WHO ARE PROPERLY LICENSED BY THE LOUISIANA STATE LICENSING BOARD TO CONSTRUCT WATER LINES. HOWEVER, CONTRACTORS WHO OPERATE, TIE-IN, OR REPAIR ANY WATER DISTRIBUTION OR WATER SUPPLY LINE WILL BE REQUIRED TO HAVE SUCH WORK OVERSEEN BY AN INDIVIDUAL POSSESSING A CLASS IV WATER DISTRIBUTION OPERATOR CERTIFICATE (LICENSE). ~~SUCH CERTIFICATES SHALL BE MAINTAINED ON FILE WITH THE JEFFERSON PARISH ENGINEERING DEPARTMENT, AND REFILED AT THE BEGINNING OF EACH 2-YEAR LICENSE CYCLE/PERIOD.~~

WHEN A CLASS IV WATER DISTRIBUTION OPERATOR CERTIFICATE (LICENSE) IS REQUIRED BY LAW, THE CONTRACTOR WILL HAVE A CHOICE TO UTILIZE HIS OWN CLASS IV OR REQUEST FOR THE PARISH TO PROVIDE ONE. DUE TO THE LIMITED NUMBER OF PARISH EMPLOYEES WITH CLASS IV LICENSE, ANY SUCH REQUEST MUST BE COORDINATED WITH THE PARISH IN ADVANCE (IF ALL POSSIBLE, IN WRITING).

3. MATERIAL

ALL MATERIALS USED IN JEFFERSON PARISH'S POTABLE WATER DISTRIBUTION SYSTEM SHALL BE IN TOTAL CONFORMANCE WITH THESE STANDARD NOTES, OTHER CURRENT JEFFERSON PARISH STANDARDS AND MATERIAL SPECIFICATIONS INCLUDING "**THE DEPARTMENT OF WATER ANNUAL MATERIAL SUPPLY CONTRACT SPECIFICATIONS**". IN ORDER TO SIMPLIFY "MATERIAL RELATED ISSUES" FOR THE ENGINEERS, CONSULTANTS, CONTRACTORS, SUPPLIERS, AND PARISH INSPECTORS EFFORTS HAVE BEEN MADE THROUGHOUT THESE STANDARDS TO MINIMIZE DISCREPANCIES BETWEEN THESE STANDARD NOTES AND THE "**THE DEPARTMENT OF WATER ANNUAL MATERIAL SUPPLY CONTRACT SPECIFICATIONS**".

QUALIFIED MANUFACTURERS AND/OR PRODUCTS FOR MOST ITEMS (**THE DEPARTMENT OF WATER ANNUAL MATERIAL SUPPLY CONTRACT SPECIFICATIONS SHALL BE REFERENCED FOR ITEMS NOT INCLUDED IN THESE NOTES)** HAVE BEEN PROVIDED THROUGHOUT THESE NOTES. THESE QUALIFIED MANUFACTURERS AND/OR PRODUCT INFORMATION MAY BE MODIFIED SEMIANNUALLY MAINLY. NEW PRODUCTS MAY BE PRESENTED TO THE JEFFERSON PARISH ENGINEERING AND WATER DEPARTMENTS SIMULTANEOUSLY FOR EVALUATION. ANY PRODUCT FOUND TO MEET

JEFFERSON PARISH STANDARDS WILL BE INCLUDED IN THESE STANDARDS WHEN SEMIANNUAL REVISIONS ARE MADE. FINAL DECISION FOR ACCEPTANCE OF ALL MATERIALS WILL BE MADE BY THE JEFFERSON PARISH DEPARTMENT OF WATER.

4. NON CONFORMANCE

THE DEPARTMENT OF ENGINEERING HAS THE RIGHT TO REJECT ANY AND ALL EQUIPMENT, OR WORK, WHICH DOES NOT CONFORM TO JEFFERSON PARISH STANDARDS AND SPECIFICATIONS. ANY WORK SO REJECTED SHALL BE REDONE BY THE CONTRACTOR AT HIS OWN EXPENSE.

5. WATER VALVE BOX ADJUSTMENT

ALL WATER VALVE BOXES ENCOUNTERED WITHIN THE CONSTRUCTION SITE SHALL BE PROTECTED AND ADJUSTED TO CONFORM TO THE FINAL ADJACENT FINISHED SURFACE.

IF THE CONTRACTOR FAILS TO ADJUST ANY WATER VALVE BOXES, THE VALVE BOXES, WHEN DISCOVERED, WILL BE ADJUSTED BY JEFFERSON PARISH, AND THE CONTRACTOR WILL BE BILLED.

VERIFICATION OF EXISTING UTILITIES PRIOR TO ORDERING MATERIALS

THE CONTRACTOR SHALL VERIFY THE SIZE AND MATERIAL OF ALL EXISTING UTILITIES BEFORE ORDERING MATERIALS. JEFFERSON PARISH WILL NOT REIMBURSE THE CONTRACTOR FOR ANY MATERIAL RE-STOCKING FEES.

6. DOMESTICITY

A. PURPOSE OF THIS SECTION

THIS SECTION INCLUDES INFORMATION AND PROVIDES ANSWERS TO SOME FREQUENTLY ASKED QUESTIONS REGARDING JEFFERSON PARISH DOMESTICITY POLICY.

B. CLARIFICATION OF TERMS

TERMS SUCH AS “DOMESTIC UNITED STATES OF AMERICA MANUFACTURE” AND/OR “MADE IN UNITED STATES” SHALL MEAN THAT EVERY COMPONENTS

OF THESE PRODUCTS OR ITEMS ARE 100% MADE, MANUFACTURED, ASSEMBLED, ETC. IN THE UNITED STATES OF AMERICA.

C. **VALVES AND HYDRANTS**

ALL DUCTILE IRON/CAST IRON VALVES AND HYDRANTS SHALL BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE. NO DUCTILE IRON/CAST IRON VALVES AND HYDRANTS MANUFACTURED OUTSIDE OF THE UNITED STATES OF AMERICA WILL BE ALLOWED.

D. **APPURTENANCES**

BY POLICY, DOMESTIC AS WELL AS GLOBALLY SOURCED (FOREIGN) APPURTENANCES {PIPE RESTRAINERS (MECHANICAL JOINT, PIPE TO PIPE, FLANGE ADAPTERS, BELL HARNESSES, ETC.), COUPLINGS, TAPPING AND REPAIR CLAMPS AND SLEEVES, SERVICE CONNECTORS AND SADDLES, ETC.} MAY BE PRESENTED TO THE JEFFERSON PARISH ENGINEERING AND WATER DEPARTMENTS SIMULTANEOUSLY FOR EVALUATION AS MENTIONED IN SECTION 3, ABOVE. ALL APPURTENANCES SHALL BE MANUFACTURED IN STRICT ACCORDANCE WITH THE LATEST APPLICABLE AWWA, ANSI AND ASTM STANDARDS FOR POTABLE WATER. IN ADDITION TO THESE REQUIREMENTS, ALL GLOBALLY SOURCED APPURTENANCES SHALL BE MANUFACTURED AT AN SIX SIGMA OR ISO (INTERNATIONAL ORGANIZATION FOR STANDARDS) REGISTERED MANUFACTURER WITH THE LATEST CERTIFICATIONS FROM THESE ORGANIZATIONS.

E. **FITTINGS**

DOMESTIC AS WELL AS GLOBALLY SOURCED (FOREIGN) DUCTILE IRON FITTINGS SHALL BE ALLOWED. ALL FITTINGS SHALL BE IN STRICT ACCORDANCE WITH THE LATEST APPLICABLE AWWA, ANSI (ANSI/AWWA C153/A21.53, ANSI/AWWA C110/A21.10, ANSI/AWWA C111/A21.11, ANSI/AWWA C104/A21.4, ETC.) AND ASTM STANDARDS FOR POTABLE WATER. IN ADDITION TO THESE REQUIREMENTS, THE GLOBALLY SOURCED FITTINGS SHALL ALSO BE MANUFACTURED BY AN ISO (INTERNATIONAL ORGANIZATION FOR STANDARDIZATION) REGISTERED MANUFACTURER, WHICH MANUFACTURER SHALL HAVE CURRENT ISO 9001 CERTIFICATION FOR STANDARDIZATION FOR FITTING PRODUCTS.

F. **ISO REGISTERED MANUFACTURER**

THESE MANUFACTURING FACILITIES MUST BE COVERED UNDER PERIODIC AUDITS BY THIRD PARTY ACCREDITATION BODIES FOR EVALUATIONS. THESE EVALUATIONS SHALL INCLUDE MANUFACTURING PROCESSES, QUALITY CONTROL, CORRECTIVE AND PREVENTIVE ACTIONS, AND DOCUMENT CONTROL. IN ADDITION, DISTRIBUTION CENTERS MUST BE AUDITED BY THIRD PARTY APPROVAL AGENCIES FOR PERIODIC CONFIRMATION TESTS AND SURVEILLANCE AUDITS. THESE PERIODIC CONFIRMATION TESTS AND SURVEILLANCE AUDITS SHALL DOCUMENT CONTINUATION OF PRODUCT APPROVALS OF EVERY SPECIFIC MANUFACTURING FACILITY BY AUDITING THE ENTIRE QUALITY SYSTEMS INCLUDING DESIGN, INFRASTRUCTURE, SYSTEM IMPLEMENTATION, DISTRIBUTION, TRAINING, QUALITY CONTROL AND ASSURANCE, AND DOCUMENT CONTROL. ALL FITTINGS AND APPURTENANCES MUST BE MANUFACTURED IN ACCORDANCE WITH NSF61.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND FURNISHING JEFFERSON PARISH WITH WRITTEN PROOF THAT ALL GLOBALLY SOURCED (FOREIGN) FITTINGS AND APPURTENANCES MEET THE AFOREMENTIONED AWWA, ANSI, AND ASTM STANDARDS. THE CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING THAT THESE FITTINGS AND APPURTENANCES ARE MANUFACTURED AT AN ISO REGISTERED MANUFACTURER WITH CURRENT 9001 CERTIFICATION FOR FITTINGS AND APPURTENANCE PRODUCTS AND SHALL FURNISH JEFFERSON PARISH WITH WRITTEN PROOF OF THIS REGISTRATION AND CERTIFICATION. ALL WRITTEN PROOF SHALL BE FURNISHED IMMEDIATELY AFTER EXECUTION OF THE CONTRACT DOCUMENTS AND PRIOR TO ORDERING FITTINGS AND ANY APPURTENANCE PRODUCTS.

7. WATER LINES:

A. **MINIMUM SIZE**

THE MINIMUM ACCEPTABLE SIZE FOR NEW WATER LINES IS 8 INCHES IN DIAMETER.

B. **DEPTH OF COVER**

NEW WATER LINES 10 INCHES AND SMALLER SHALL HAVE A MINIMUM OF 3 FEET AND A MAXIMUM OF 4 FEET OF COVER. WATER LINES 12 INCHES AND LARGER SHALL HAVE A MINIMUM OF 4 FEET AND A MAXIMUM OF 5 FEET OF

COVER. DEPTHS OUTSIDE THESE MINIMUMS AND MAXIMUMS WILL NOT BE ACCEPTABLE.

C. **BACKFILL**

BACKFILL ALL TRENCHES WITHIN STREET RIGHT-OF-WAY WITH RIVER SAND.

D. **PVC PIPE**

POLYVINYL CHLORIDE (PVC) PRESSURE PIPE 4 INCHES THROUGH 12 INCHES IN DIAMETER SHALL MEET AWWA SPECIFICATION C-900, MINIMUM CLASS 150, DR 18. PVC PIPE 14 INCHES THROUGH 30 INCHES IN DIAMETER SHALL MEET AWWA SPECIFICATION C-905, MINIMUM CLASS 165, DR 25. PVC PIPE WILL NOT BE USED FOR WATER LINES LARGER THAN 30 INCHES.

E. **DUCTILE IRON PIPE**

ALL DUCTILE IRON PIPE SHALL CONFORM TO ANSI/AWWA A21.51/C151, ANSI/AWWA A21.50/C150 AND "SHALL BE MINIMUM THICKNESS CLASS **51** OR GREATER" OR "SHALL BE MINIMUM PRESSURE CLASS **200** OR GREATER DUCTILE IRON PIPE IN ACCORDANCE WITH TABLE BELOW". ALL DUCTILE IRON PIPES THAT WILL HAVE LESS THAN 24" OF COVER SHALL BE MINIMUM THICKNESS CLASS 52 RESTRAINED JOINT PIPE. DUCTILE IRON PIPE SHALL HAVE A FACTORY CEMENT MORTAR LINING AS PER ANSI/AWWA A21.4/C104, AND FACTORY ASPHALTIC EXTERIOR COATING. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM 8 MIL THICK) SHALL BE REQUIRED FOR ALL DUCTILE IRON PIPES.

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DUCTILE IRON PIPE

NOMINAL THICKNESSES FOR STANDARD PRESSURE CLASSES OF DUCTILE IRON PIPE

SIZE IN.	OUTSIDE DIAMETER IN.	PRESSURE CLASS				
		150	200	250	300	350
		NOMINAL THICKNESS -- IN.				
3	3.96	-	-	-	-	0.25*
4	4.80	-	-	-	-	0.25*
6	6.90	-	-	-	-	0.25*
8	9.05	-	-	-	-	0.25*
10	11.10	-	-	-	-	0.26
12	13.20	-	-	-	-	0.28
14	15.30	-	-	0.28	0.30	0.31
16	17.40	-	-	0.30	0.32	0.34
18	19.50	-	-	0.31	0.34	0.36
20	21.60	-	-	0.33	0.36	0.38
24	25.80	-	0.33	0.37	0.40	0.43
30	32.00	0.34	0.38	0.42	0.45	0.49
36	38.30	0.38	0.42	0.47	0.51	0.56
42	44.50	0.41	0.47	0.52	0.57	0.63
48	50.80	0.46	0.52	0.58	0.64	0.70
54	57.56	0.51	0.58	0.65	0.72	0.79
60	61.61	0.54	0.61	0.68	0.76	0.83
64	65.67	0.56	0.64	0.72	0.80	0.87

**CALCULATED THICKNESSES FOR THESE SIZES AND PRESSURE RATINGS ARE LESS THAN THOSE SHOWN ABOVE. PRESENTLY THESE ARE THE LOWEST NOMINAL THICKNESSES AVAILABLE IN THESE SIZES.*

PRESSURE CLASSES ARE DEFINED AS THE RATED WATER WORKING PRESSURE OF THE PIPE IN PSI. THE THICKNESSES SHOWN ABOVE ARE ADEQUATE FOR THE RATED WATER WORKING PRESSURE PLUS A SURGE ALLOWANCE OF 100 PSI. CALCULATIONS ARE BASED ON A MINIMUM YIELD STRENGTH IN TENSION OF 42,000 PSI AND 2.0 SAFETY FACTOR TIMES THE SUM OF WORKING PRESSURE AND 100 PSI SURGE ALLOWANCE.

THICKNESS CAN BE CALCULATED FOR RATED WATER WORKING PRESSURE AND SURGES OTHER THAN THE ABOVE.

DUCTILE IRON PIPE IS AVAILABLE FOR WATER WORKING PRESSURES GREATER THAN 350 PSI.

PIPE IS AVAILABLE WITH THICKNESSES GREATER THAN PRESSURE CLASS 350.

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F. STREET CROSSINGS

JEFFERSON PARISH DEPARTMENT OF ENGINEERING MAY REQUIRE WATER LINES TO BE INSTALLED IN STEEL CASINGS WHEN CROSSING MAJOR (*TO BE DEFINED BY THE DEPARTMENT OF ENGINEERING*) STREETS.

WHEN PIPE IS INSTALLED IN CASINGS, COMMERCIALLY FABRICATED CASING SPACERS MUST BE USED TO PREVENT DAMAGE TO PIPE AND BELL JOINTS DURING INSTALLATION AND TO PROVIDE PROPER LONG-TERM LINE SUPPORT. USE OF WOODEN SKIDS WILL NOT BE PERMITTED. PIPES IN CASINGS SHALL BE RESTRAINED AND SHALL NOT REST ON BELLS. CASING SPACERS MUST PROVIDE SUFFICIENT HEIGHT TO PERMIT CLEARANCE BETWEEN BELL JOINTS AND CASING WALLS (ALL CASING PIPE SHALL HAVE AN INSIDE CLEAR DIMENSION AT LEAST 2" GREATER THAN THE MAXIMUM OUTSIDE DIMENSION OF THE CARRIER PIPE BELL OR MECHANICAL JOINT RESTRAINTS). SPACE BETWEEN THE CASING AND THE CARRIER PIPE SHOULD NOT BE BACKFILLED. JEFFERSON PARISH APPROVED END CASING SEAL WITH STAINLESS STEEL BANDS SHOULD BE USED TO SEAL THE ENDS OF THE CASINGS.

END SEALS SHALL BE SEAMLESS PULL-ON FULL CONICAL SHAPED. WRAP-AROUND AND ZIPPER STYLE END SEALS MAY BE ALLOWED WITH JEFFERSON PARISH ENGINEERING DEPARTMENT'S APPROVAL.

END CASING SEALS SHALL BE MANUFACTURED BY "CCI PIPELINE SYSTEMS", "ADVANCED PRODUCTS & SYSTEMS, INC.", OR APPROVED EQUAL.

CASING SPACERS SHALL BE HEAVY DUTY TWO–PIECE #304 STAINLESS STEEL SPACERS.

CASING SPACERS SHALL BE MANUFACTURED BY "CCI PIPELINE SYSTEMS" (MODEL CSS), "ADVANCED PRODUCTS & SYSTEMS, INC." (MODEL SSI), OR APPROVED EQUAL.

G. CANAL CROSSINGS

LONG-SPAN DUCTILE IRON PIPE SHALL BE USED AS PER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS FOR ALL CANAL CROSSINGS.

ALL EXPOSED FITTINGS AND JOINTS SHALL BE FLANGED WITH ***TORUSEAL*** "*OR APPROVED EQUAL"* GASKETS. UNDERGROUND FITTINGS AND JOINTS SHALL

HAVE RESTRAINED MECHANICAL JOINTS. ALTERNATIVE DESIGNS MAY BE CONSIDERED IF JUSTIFIED BY SPECIAL FIELD CONDITIONS.

CANAL CROSSINGS SHALL BE SUPPORTED BY CONCRETE PILES UNLESS OTHERWISE PERMITTED BY THE JEFFERSON PARISH DEPARTMENT OF ENGINEERING.

H. CONFLICT BOXES

WATER LINES INSTALLED WITHIN CONFLICT MANHOLES SHALL HAVE NO JOINTS. DUCTILE IRON PIPES, UP TO 12" IN DIAMETER, ARE AVAILABLE IN 18' AND 20' LAYING LENGTHS (LARGER DIAMETER PIPES ARE LIMITED TO 18' LAYING LENGTH). FLANGED DUCTILE IRON PIPE MAY BE USED FOR SPANS LONGER THAN 20'.

I. HDPE PIPE (*AND FITTINGS*) –

HIGH DENSITY POLYETHYLENE (PE) PIPE (*AND FITTINGS)* SHALL CONFORM TO CURRENT AWWA STANDARD C906, POLYETHYLENE (PE) PRESSURE PIPE AND FITTINGS, 4 IN. THROUGH 63 IN., FOR WATER DISTRIBUTION. (PE) PIPE (*AND FITTINGS)* SHALL CONFORM TO CURRENT REQUIREMENTS OF ASTM D3350 AND ASTM D2337 AND ALL PERTINENT AWWA, ASTM AND ANSI SPECIFICATIONS FOR SPECIFYING, INSTALLATION AND ACCEPTANCE (PRESSURE TESTING AND DISINFECTING) OF WATER DISTRIBUTION SYSTEMS.

POLYETHYLENE PIPING SHALL BE CONNECTED TO OTHER TYPE PIPES BY THERMAL BUTT-FUSION, FLANGE ASSEMBLIES OR POLYETHYLENE MECHANICAL JOINT ADAPTERS BASED UPON MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

POLYETHYLENE (PE) PIPE (*AND FITTINGS)* SHALL BE INSTALLED PER THE BURIAL-DESIGN GUIDANCE OF ASTM D2321 FOR THERMOPLASTIC PIPE.

POLYETHYLENE (PE) PIPE (*AND FITTINGS)* MATERIAL SHALL MEET THE REQUIREMENTS OF TYPE "III", CLASS "C", CATEGORY "5", GRADE "P34" AS DEFINED IN ASTM D1248, WITH STANDARD GRADE RATING OF 1600 PSI AT 73 DEGREES "F" AND HAVE A PPI RECOMMENDED DESIGNATION OF "PE 3408".

POLYETHYLENE (PE) PIPE (*AND FITTINGS)* SHALL BE SPECIFIED BY NOMINAL DUCTILE IRON PIPE SIZE AND SHALL MEET THE REQUIREMENTS OF STANDARD DIMENSION RATIO (SDR) SDR-17 FOR DIRECT BURIAL. PIPES USED FOR DIRECTIONAL BORES, STANDARD JACKING AND BORING, HIGHWAY AND

RAILWAY CROSSINGS SHALL BE SDR-11 OR GREATER STRENGTH IF REQUIRED BY SPECIAL DESIGN.

HYDROSTATIC LEAK TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH PERFORMANCE PIPE TECHNICAL NOTE 802 LEAK TESTING. PNEUMATIC PRESSURE TESTING IS PROHIBITED.

(HTTP://WWW.PERFORMANCEPIPE.COM/EN-US/DOCUMENTS/PP802-TN%20LEAK%20TEST.PDF).

THE FOLLOWING TEST PRESSURES AND DURATIONS WILL BE REQUIRED AS A MINIMUM, BASED ON THE NORMAL OPERATING PRESSURE OF 60 PSI:

- INITIAL EXPANSION PHASE, PRESSURE: 130 PSI, FOR THREE (3) HOURS
- TEST PHASE, PRESSURE 120 PSI, FOR ONE (1) HOUR
    - IMMEDIATELY FOLLOWING THE INITIAL EXPANSION PHASE, REDUCE TEST PRESSURE BY 10 PSI, AND STOP ADDING TEST LIQUID.
    - IF TEST PRESSURE REMAINS STEADY [(WITHIN 5% OF THE TARGET VALUE), (FOR EXAMPLE 6 PSI FOR THE TARGET VALUE OF 120 PSI)] FOR ONE (1) HOUR, NO LEAKAGE IS INDICATED.

J. POLYETHYLENE (PE) PLASTIC TUBING

ALL POLYETHYLENE (PE) PLASTIC TUBING, ¾ INCH THROUGH 2 INCHES SHALL BE PE 3408, DR9, CONFORMING TO ASTM D2737. THE PE MATERIAL SHALL MEET OR EXCEED THE REQUIREMENTS OF D1248 FOR TYPE III, GRADE "P34", CLASS "C" MATERIAL. ALL BRONZE/BRASS FITTINGS, CONNECTORS, CORPORATION STOPS AND ANY OTHER APPLICABLE AND APPROPRIATE APPURTENANCES USED IN CONJUNCTION WITH PE TUBING SHALL BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE, **SHALL BE MADE OF A LEAD FREE BRONZE/BRASS**, AND MEET ALL CRITERIA SET FORTH BY AWWA, ASTM AND ANSI FOR USE OF THESE ITEMS IN POTABLE WATER DISTRIBUTION SYSTEMS.

8. FITTINGS

FITTINGS SHALL BE DUCTILE IRON FLANGED, MECHANICAL OR BOLTLESS RESTRAINED JOINTS MEETING ANSI/AWWA C110/A21.10 AND ANSI/AWWA

C111/A21.11, CLASS 250, OR ANSI/AWWA C153/A21.53, CLASS 350, COMPACT STANDARD. ALL HYDRANT TEES SHALL BE SWIVEL TYPE.

DUCTILE IRON FITTINGS SHALL HAVE EITHER A FACTORY CEMENT MORTAR LINING AS PER ANSI/AWWA A21.4/C104, AND FACTORY ASPHALTIC EXTERIOR COATING**,** OR FACTORY APPLIED FUSION BONDED EPOXY COATING INSIDE AND OUT**,** IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF AWWA C-550, PROTECTIVE EPOXY COATINGS.

POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM 8 MIL THICK) SHALL BE REQUIRED FOR ALL DUCTILE IRON PIPES AND FITTINGS.

FITTINGS SHALL BE MANUFACTURED IN THE UNITES STATES OF AMERICA OR BE MANUFACTURED BY STAR PIPE PRODUCTS, SIGMA, TYLER/UNION FOUNDRY, SIP OR NACIP WITH CURRENT ISO CERTIFICATION.

9. MINIMUM PIPE LENGTH

THERE SHALL BE A MINIMUM OF 24 INCHES OF STRAIGHT PIPE BEFORE, AFTER OR IN BETWEEN VALVES, FITTINGS, ETC.

10. PIPE AND FITTING JOINT STYLE:

A. DUCTILE IRON

DUCTILE IRON PIPES AND FITTINGS SHALL BE FLANGED (AERIAL/BRIDGE CROSSINGS), PUSH-ON, MECHANICAL, RESTRAINED MECHANICAL OR BOLTLESS RESTRAINED JOINTS MEETING ANSI/AWWA A21.51/C151 AND ANSI/AWWA A21.50/C150.

B. PVC

- **PUSH-ON JOINTS** - PUSH-ON JOINTS SHALL CONSIST OF AN INTEGRAL BELL WITH A FACTORY INSTALLED “LOCKED-IN” ELASTOMERIC GASKET. THE SPIGOT END OF EACH JOINT SHALL BE FACTORY BEVELED. ELASTOMERIC GASKET SHALL MEET THE REQUIREMENTS OF ASTM “D 3139” AND “F 477”. RESTRAINING SHALL BE ACCOMPLISHED BY USE OF DUCTILE IRON MECHANICAL JOINTS RESTRAINER GLANDS OR BELL RESTRAINT HARNESS, ETC. WITH STAINLESS STEEL HARDWARE.

- **INTERNALLY RESTRAINED JOINTS** - THE FOLLOWING INTERNALLY RESTRAINED JOINT PIPES (NOT FOR DIRECTIONAL DRILL APPLICATIONS) WILL BE ALLOWED. DESIGN AND INSTALLATION OF THESE PIPES SHALL BE IN "TOTAL CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS & REQUIREMENTS" AND ALL APPLICABLE PROVISIONS OF JEFFERSON PARISH STANDARDS:

  - EAGLE LOC 900™ (4"-12")
  - DIAMOND LOK-21® (4"-12")
  - CERTA-LOK C900/RJ (4"-8")

C. **POLYETHYLENE**

POLYETHYLENE PIPING SHALL BE JOINTED BY THERMAL BUTT-FUSION, FLANGE ASSEMBLIES OR POLYETHYLENE MECHANICAL JOINT ADAPTERS BASED UPON MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

11. RESTRAINED JOINTS

ALL VALVES, FITTINGS, PLUGS, REDUCERS, ETC., SHALL HAVE RESTRAINED JOINTS. HYDRANTS, HYDRANT VALVES AND HYDRANT TEES SHALL BE RESTRAINED. UNLESS FIELD CONDITIONS AND / OR SPECIAL DESIGN CONDITIONS NECESSITATE, USE OF THRUST BLOCKING SHALL NOT BE PERMITTED. THRUST BLOCKS ARE PERMITTED ONLY WHEN ADEQUATE LENGTH OF PIPE CANNOT BE RESTRAINED DUE TO FIELD CONDITIONS AND/OR FOR TEMPORARY CONSTRUCTION. LENGTH OF RESTRAINED PIPES SHALL BE PER MANUFACTURER'S REQUIREMENTS. JEFFERSON PARISH WATER STANDARD DRAWINGS PROVIDE SOME MINIMUM LENGTHS FOR RESTRAINED PIPES IN OFFSETS. THESE MINIMUM REQUIREMENTS SHALL ONLY BE USED IF THE MANUFACTURER'S REQUIRED RESTRAINED LENGTHS, BASED ON SOIL TYPE, TRENCH TYPE, TEST PRESSURE, SAFETY FACTOR, DEPTH OF BURY, FITTING TYPE, NOMINAL SIZE, PIPE MATERIAL, ETC. ARE LESS THAN THESE MINIMUM REQUIREMENTS. IN-LINE VALVES SHALL BE RESTRAINED ADEQUATELY TO ENSURE STABILITY OF THE SYSTEM. UNLESS FIELD CONDITIONS AND / OR SPECIAL DESIGN CONDITIONS DO NOT PERMIT, IT IS REQUIRED THAT IN-LINE VALVES BE RESTRAINED, ON EACH SIDE, A MINIMUM OF 20' FOR VALVES UP TO 8" AND 40' FOR LARGER VALVES.

12. PAINT (EXPOSED WATER LINES)

EXPOSED WATER LINES, SUCH AS AERIAL/BRIDGE CROSSINGS OVER DRAINAGE CANALS SHALL HAVE FACTORY APPLIED PRIMER WITH FIELD-FINISH SILVER

ALUMINUM PAINT {ALUMINUM, QUICK DRY, 520 ENAMEL, IN GALLON CAN, BLP #520-26}. PRIMER AND PAINT MATERIAL SHOULD BE FULLY COMPATIBLE WITH THE EXTERNAL ENVIRONMENT AND IN FULL CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS FOR THE INTENDED PURPOSE.

13. TAPPING SLEEVES

TAPPING SLEEVES FOR PVC, AC AND DUCTILE IRON SHALL BE MANUFACTURED OF 18-8 304 STAINLESS STEEL WITH STAINLESS STEEL FLANGE OR M.J. CONNECTION. TAPPING SLEEVES FOR PRE-STRESSED CONCRETE CYLINDER PIPE SHALL BE IN ACCORDANCE WITH AWWA MANUAL M-2. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL WITH ANTI-SEIZE COMPOUND OR HEAT TREATED TEFLON COATED COR-TEN. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC, CASCADE, POWERSEAL, SMITH-BLAIR, FORD METER BOX COMPANY, JCM, OR TOTAL PIPING SOLUTIONS (TPS).

14. TAPPING VALVES

VALVES USED FOR TAPPING OPERATION SHALL BE FLANGED BY MECHANICAL JOINT RESILIENT WEDGE GATE VALVES AND SHALL BE MANUFACTURED BY MUELLER, CLOW, M&H, AMERICAN FLOW CONTROL, U.S. PIPE OR KENNEDY.

15. SERVICE SADDLES

SERVICE SADDLES FOR USE ON SERVICE TAPS AND WATER LINE BLOW-OFF INSTALLATIONS SHALL BE "CASCADE STYLE CS12", "SMITH-BLAIR 325", "ROMAC STYLE 202BS", "TOTAL PIPING SOLUTIONS (TPS) SERIES T3 WIDE RANGE". SADDLES WITH "U-BOLTS" SHALL NOT BE USED WITH PVC PIPE.

16. WATER SERVICE CONNECTIONS

WATER SERVICE CONNECTIONS, IF DISTURBED, SHALL BE REMOVED AND REPLACED FROM THE MAIN TO THE METER. NO SPLICING OF WATER SERVICE CONNECTIONS SHALL BE ALLOWED EVEN IF THE CONNECTIONS ARE BRAND NEW.

17. PIPE RESTRAINERS (PIPE RESTRAINTS)

A. APPLICABLE STANDARDS

ALL PIPE RESTRAINERS SHALL CONFORM TO THE FOLLOWING STANDARDS AND SPECIFICATIONS FOR MATERIAL, APPLICATION, COMPATIBILITY, COATING, ETC. AS APPLICABLE:

- ANSI/AWWA C110/A21.10
- ANSI/AWWA C111/A21.11
- ANSI/AWWA C153/A21.53
- AWWA C600
- ASTM A536, 65-45-12
- ASTM D2774
- ASTM E8

B. **COATING**

PIPE RESTRAINERS SHALL BE COATED BY A "FACTORY APPLIED FUSION BONDED EPOXY". BOTH "***FUSION-BOND EPOXY POWDER COATING***" AND "***ELECTROCOATING***"—IN STRICT ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS, REQUIREMENTS AND SPECIFICATIONS—SHALL BE ACCEPTABLE.

a. FUSION-BOND EPOXY POWDER COATING

- ***FASTENERS AND LUGS*** SHALL BE COATED WITH A FLUOROPOLYMER MATRIX CONSISTING OF LUBRICATING COMPOUNDS, UV STABILIZERS AND COLORING AGENTS OR PIGMENTS APPLIED TO A SUBSTRATE PREPARED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THIS COATING SHALL BE LOW VOC, RESIN BONDED AND THERMALLY CURED, SINGLE FILM, DRY LUBRICANT, PRIMARILY FORMULATED FOR USE ON FASTENERS. THE COATING SHALL BE DESIGNED TO PREVENT CORROSION AND IMPROVE TORQUE TENSION PERFORMANCE WHEN APPLIED TO FASTENERS. THE LUBRICITY OF THE COATING SHALL BE PROVIDED BY PROPER DISPERSION OF POLYTETRAFLUOROETHYLENE (PTFE) {WELL-KNOWN BRAND NAME "TEFLON"}. TOTAL COATING THICKNESS SHALL BE 0.7 TO 1.5 MIL.

- ***GLANDS*** SHALL BE COATED WITH A THERMOSETTING EPOXY RESIN COATING APPLIED TO A SUBSTRATE PREPARED IN ACCORDANCE WITH THE COATING MANUFACTURER'S RECOMMENDATIONS. BEFORE APPLYING THE COATING, THE SUBSTRATE MATERIAL SHALL BE PREHEATED TO ENHANCE ATTACHMENT OF THE COATING MATERIAL. THE POWDER COATING MATERIAL SHALL BE SPRAYED OR APPLIED USING AN ELECTROSTATIC SPRAY OR FLUIDIZED BED. WHEN SPRAYING A DIFFERENTIAL VOLTAGE SHALL BE APPLIED TO THE COATING

AND PART TO PROMOTE ATTRACTION OF THE COATING PARTICULATE. AFTER COATING, THE PART SHALL BE PLACED IN AN OVEN TO FULLY BOND AND CURE THE EPOXY. ANY TOUCH POINTS OR HOLIDAYS SHALL BE PATCHED TO INSURE 100% COVERAGE. COATING THICKNESS TO BE 8 MILS TO 16 MILS.

b. <u>ELECTROCOATING</u>

- ELECTROCOATED FASTENERS, LUGS, GLANDS, ETC. SHALL BE APPLIED PER SAMPLE SPECIFICATIONS FOR ELECTROCOATING INCLUDED IN THIS SECTION.

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*THE PURPOSE OF PRESENTING THE FOLLOWING SAMPLE SPECIFICATIONS ON **<u>FUSION-BONDED EPOXY POWDER COATING</u>** AND **<u>ELECTROCOATING</u>** IS TO ESTABLISH CERTAIN MINIMUM STANDARDS OF QUALITY AND SUBSEQUENTLY IDENTIFYING PRODUCTS OF EQUAL QUALITY FOR "MATERIAL APPROVAL PROCESS". IF AND WHERE CERTAIN BRAND NAMES AND OR MATERIALS ARE MENTIONED, "**THE APPROVED EQUAL**" PHRASE WILL APPLY.*

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c. <u>FUSION-BOND EPOXY POWDER COATING SAMPLE SPECIFICATIONS</u>

FUSION-BONDED EPOXY POWDER COATING SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS OR APPROVED EQUAL:

<u>FUNCTIONAL CHARACTERISTICS</u> - THE COATING POWDER SHALL HAVE THE FUNCTIONAL CHARACTERISTICS LISTED IN TABLE 1 WHEN APPLIED AT 1.5 – 4.0 MILS (3.0 MILS NOMINAL).

PROPERTIES	TEST METHOD	ACCEPTABLE VALUE
FLEXIBILITY	ASTM D522	180°, 0.250" MANDREL
PENCIL HARDNESS	ASTM D3363	2H MINIMUM
DIRECT/REVERSE IMPACT	ASTM D2794	≥ 160 IN. LBS.
CROSSHATCH ADHESION	ASTM D3359	100 % PASS 4B
SALT SPRAY RESISTANCE	ASTM B117	≥ 500 HOURS ON LESS THAN 1/8 INCHES UNDERCUT FROM X SCRIBE MARK
HUMIDITY RESISTANCE	ASTM D2247	≥ 1000 HOURS, NO BLISTERING
WEATHERABILITY	QUV-A-340	≥ 500 HOURS WITH ≤ 2 DELTA E (CIEL*A*B*) COLOR SHIFT OR 85-90% GLOSS RETENTION
SOLVENT RESISTANCE	PCI TEST PROCEDURE # 8	≥ 30 DOUBLE RUBS
POWDER STORAGE STABILITY	N/A	6 MOS. @ 70^0 F
ABRASION RESISTANCE	ASTM D4060, CS-10 WHEELS	≤ 0.037 GRAMS LOSS PER 1000 CYCLES

TABLE 1 FUNCTIONAL CHARACTERISTICS

APPEARANCE - THE COATING POWDER USED IN THIS APPLICATION SHALL HAVE THE APPEARANCE CHARACTERISTICS LISTED IN TABLE 2.

PROPERTIES	TEST METHOD	ACCEPTABLE VALUE
SMOOTHNESS	PCI SMOOTHNESS STANDARDS	CLASS 5 (MEDIUM ORANGE PEEL)
GLOSS 60°	ASTM D523	80% ± 5%
COLOR	CIELAB	TO MATCH **EBAA** VISUAL STANDARD DE < 1.0
COLOR FASTNESS	ASTM G-154	≥ 120 HOURS NO COLOR CHANGE USING XENON ARC LIGHT SOURCE

TABLE 2 FINISH APPEARANCE CHARACTERISTICS

THE POWDER COATING SHOULD EXHIBIT A UNIFORM APPEARANCE WITHIN THE SPECIFIED FILM THICKNESS RANGE AND BE FREE OF DIRT, PINHOLING AND OTHER SURFACE DEFECTS. FURTHER, THE POWDER COATING SHALL BE RESISTANT TO VOIDS CAUSED BY OUTGASSING INHERENT IN CAST METAL PRODUCTS.

{{THE COATING SHALL BE A FLUOROPOLYMER- METRIX CONSISTING OF LUBRICATING COMPOUNDS, UV STABILIZERS, AND COLORING AGENTS OR PIGMENTS, APPLIED TO A SUBSTRATE PREPARED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. THIS COATING IS TO BE LOW VOC, RESIN BONDED AND THERMALLY CURED, SINGLE FILM, DRY LUBRICANT, PRIMARILY FORMULATED FOR USE ON FASTENERS. THE COATING SHALL BE DESIGNED TO PREVENT CORROSION AND FACILITATE MAKE-UP TORQUE. THE LUBRICITY OF THE COATING SHALL PROVIDE A PROPER DISPERSION OF PTFE.

COATING IS TO BE APPLIED TO THE COMPONENT SUBSTRATE PREPARED IN ACCORDANCE WITH THE COATING MANUFACTURERS RECOMMENDATION, INCLUDING BUT NOT LIMITED TO, A CLEANER WASH, PHOSPHATING, RINSE, AND DRY PREPARATION. THE SPECIFIED COATING SHALL BE APPLIED AT A NOMINAL THICKNESS OF .35 MILS PER COAT, WITH A TOTAL OF 0.7 TO 1 MIL TOTAL DRY FILM THICKNESS AFTER TWO COATS ON ALL WEDGE AND WEDGE ACTUATOR COMPONENTS. NON-CRITICAL COMPONENTS SUCH AS THE TORQUE LIMITING TWIST OFF NUTS SHALL REQUIRE ONLY ONE COAT AS SPECIFIED ABOVE, AS THESE ITEMS ARE DISCARDED UPON USE.}}

d. ELECTROCOATING SAMPLE SPECIFICATIONS

ELECTROCOATING SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

GLANDS SHALL BE EPOXY COATED VIA THE ELECTRO-COAT (E-COAT) PROCESS. THE E-COAT PROCESS SHALL BEGIN WITH A PRE-TREATMENT SYSTEM THAT INCLUDES A CLEANING STAGE, AND A PHOSPHATE SURFACE CONDITIONING IN ADDITION TO VARIOUS RINSING STAGES. ALL PARTS SHALL THEN BE IMMERSED IN A HIGH QUALITY CATHODIC EPOXY. A DIFFERENTIAL VOLTAGE THROUGH THE PART AND THE COATING BATH SHALL BE USED TO ATTRACT THE POSITIVELY CHARGED COATING SOLIDS TO THE PRE-TREATED METAL SURFACE. THE COATED PART SHALL THEN BE CURED FOR 20 MINUTES AT 350 °F.

THE SELF-LIMITING ELECTRO-COATING PROCESS SHALL RESULT IN FILM THICKNESSES THAT VARY FROM 0.4 TO 1.5 MILS. THE RESULTING FILM PROPERTIES AND CORROSION RESISTANCE SHALL BE AS SPECIFIED IN THE TABLE BELOW:

E-COAT FILM PROPERTIES

PROPERTY	*TEST METHOD*	*PERFORMANCE*
FILM THICKNESS	NONE	0.4-1.5 MILS
GLOSS – 60 DEGREE	ASTM D523-89	50-80
PENCIL HARDNESS	ASTM D3363-00	2H MINIMUM
DIRECT IMPACT	ASTM D2794-93	100 IN-LB MINIMUM
REVERSE IMPACT	ASTM D2794-93	60 IN-LB MINIMUM
CROSS-HATCH ADHESION	ASTM D3359-97	4B-5B
HUMIDITY	ASTM D1735-99	500 HR. MINIMUM
WATER IMMERSION	ASTM D870-90	250 HR. MINIMUM
GRAVELOMETER	GM 9508 P	6 MINIMUM
RUST SPOT	GM 9632P	40 RUST SPOT (AVG.)
CORROSION RESISTANCE:		
SALT SPRAY 500 HOURS	ASTM B117-97	0 MM
SALT SPRAY 1000 HOURS	ASTM B117-97	0-1 MM
20 CYCLE SCAB	GM9511P	0-1 MM

THE EPOXY SHALL PROVIDE EXCELLENT EDGE COVERAGE AND SUPERIOR CORROSION RESISTANCE WITHOUT THE USE OF HEAVY METALS. THE COATING SHALL BE FREE FROM LEAD. THE VOLATILE ORGANIC COMPOUND (VOC) CONTENT SHALL BE LESS THAN 0.7 LBS/GALLON.

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C. **MATERIAL**

MECHANICAL JOINT PIPE RESTRAINERS SHALL BE MANUFACTURED AND MADE OF GRADE 60-42-12 OF DUCTILE IRON, WHICH EXCEEDS MINIMUM REQUIREMENTS OF "ASTM A536". ALL THREADED PARTS SUCH AS BOLTS, NUTS, RODS, WEDGES, WEDGE ACTUATORS, ETC. SHALL BE HEAT TREATED TEFLON COATED COR-TEN. WEDGES AND WEDGE ACTUATORS MAY BE ELECTROCOATED.

D. **MANUFACTURER**

PIPE RESTRAINTS SHALL BE COATED BY A "FACTORY APPLIED FUSION BONDED EPOXY" IN ACCORDANCE WITH THESE SPECIFICATIONS AND SHALL BE ONE OF THE FOLLOWING PRODUCTS.

I. DUCTILE IRON PIPE

a. EBAA IRON

- SERIES 1100 MEGALUG MECHANICAL JOINT RESTRAINT FOR DUCTILE IRON PIPE
- SERIES 1700 MEGALUG RESTRAINT HARNESS FOR DUCTILE IRON PUSH ON PIPE JOINTS
- SERIES 1100SD MEGALUG RESTRAINT FOR EXISTING MECHANICAL JOINTS ON DUCTILE IRON PIPE
- SERIES 1100HD MEGALUG RESTRAINT HARNESS FOR EXISTING PUSH ON JOINTS DUCTILE IRON PIPE
- SERIES 1100SDB MEGALUG MID SPAN RESTRAINT FOR DUCTILE IRON PIPE

b. STAR

- STARGRIP SERIES 3000 MECHANICAL JOINT WEDGE ACTION RESTRAINT FOR DUCTILE IRON PIPE.

- OVERSIZED STARGRIP SERIES 3000OS MECHANICAL JOINT WEDGE ACTION RESTRAINT FOR A, B, C, & D PIT CAST PIPE
- SPLIT STARGRIP SERIES 3000S MECHANICAL JOINT WEDGE ACTION RESTRAINT FOR NEW OR EXISTING DUCTILE IRON PIPE.
- TANDEM STARGRIP SERIES 3000T FOR HIGH PRESSURE DI PIPE TO MJ FITTING APPLICATIONS
- STARGRIP SERIES 3100P WEDGE ACTION RESTRAINT FOR DUCTILE IRON PIPE BELLS – NEW INSTALLATIONS
- SPLIT STARGRIP SERIES 3100S SPLIT WEDGE ACTION RESTRAINT FOR DUCTILE IRON PIPE- NEW OR EXISTING INSTALLATION

c. <u>SIGMA</u>

- ONE-LOK SERIES SLDEH MECHANICAL JOINT RESTRAINER GLAND
- ONE-LOK SERIES D-SLDE WEDGE ACTION RESTRAINT
- ONE-LOK SERIES SSLD SPLIT GLAND MECHANICAL JOINT WEDGE ACTION RESTRAINT FOR EXISTING DUCTILE IRON PIPE
- ONE-LOK SSLDH SPLIT BELL RESTRAINT FOR EXISTING DUCTILE IRON PUSH-ON PIPE BELLS.
- ONE-LOK SERIES SLDM MODIFIED MECHANICAL JOINT WEDGE ACTION RESTRAINER GLAND FOR CLASS A, B, C AND D CAST IRON PIPES

d. <u>ROMAC</u>

- GRIP RING PIPE RESTRAINER
- ROMAGRIP FOR DUCTILE IRON PIPE – DOMESTIC (3” – 24”) AND IMPORTED (30” – 48”)
- STYLE 611 FOR BELL & SPIGOT JOINTS, ROMAC COUPLINGS AND TRANSITIONS
- STYLE 612 FOR MECHANICAL JOINTS

e. <u>FORD</u>

- UNI-FLANGE SERIES 1400 WEDGE ACTION RETAINER GLAND FOR DUCTILE IRON PIPE
- UNI-FLANGE SERIES 1450 WEDGE ACTION RESTRAINER FOR PUSH-ON JOINTS OF DUCTILE IRON PIPE (NEW INSTALLATION ONLY)

f. <u>TYLER UNION</u>

- SERIES 1000 TUF GRIP WEDGE ACTION MECHANICAL JOINT RESTRAINT FOR DUCTILE IRON PIPE
- MJ FIELD LOK FOR DUCTILE IRON PIPE

g. SMITH-BLAIR

- CAM-LOCK 111 JOINT RESTRAINTS FOR DUCTILE IRON PIPE
- BELL-LOCK SERRATED JOINT RESTRAINTS

h. SIP INDUSTRIES

- EZ-GRIP WEDGE ACTION RESTRAINT GLAND FOR DUCTILE IRON PIPE

II. PVC PIPE

a. EBAA IRON

- SERIES 2000PV MEGALUG RESTRAINT FOR MECHANICAL JOINTS ON C900, C905 AND IPS OD (CLASS) PVC PIPE
- SERIES 2000SV MEGALUG RESTRAINT FOR EXISTING MECHANICAL JOINTS ON C900 AND IPS OD (CLASS) PVC PIPE
- SERIES 2200 MEGALUG RESTRAINT FOR MECHANICAL JOINTS ON C905 PVC PIPE (FOR LARGER PIPES)
- SERIES 2800 MEGALUG BELL RESTRAINT HARNESS FOR C905 PVC PIPE
- SERIES 1500 BELL RESTRAINT HARNESS FOR C900 PVC PIPE
- SERIES 15PF00 RESTRAINT FOR C900 PVC PIPE AT DUCTILE IRON FITTINGS
- SERIES 1600 BELL RESTRAINT HARNESS FOR C900 PVC PIPE
- SERIES 2500 RESTRAINT FOR C900 PVC PIPE AT PVC FITTINGS
- SERIES 1100HV RESTRAINT FOR EXISTING PUSH-ON JOINTS FOR C905 PVC

b. STAR

- STARGRIP SERIES 4000 MECHANICAL JOINT WEDGE ACTION RESTRAINT FOR AWWA C900/C905 AND IPS PVC PIPE
- STARGRIP SERIES 4100P WEDGE ACTION RESTRAINT FOR AWWA C900/C905 PVC PIPE BELLS – NEW INSTALLATION ONLY

c. SIGMA

- PV-LOK SERIES PVM FOR A MECHANICAL JOINT FITTING TO A PVC PIPE
- PV-LOK SERIES PVP FOR SPIGOT PVC TO PVC PIPE BELLS
- PV-LOK SERIES PVPF FOR PVC PUSH-ON FITTINGS
- ONE-LOK SERIES D-SLC MECHANICAL JOINT WEDGE ACTION RESTRAINING GLAND FOR PVC PIPE.
- ONE-LOK SERIES SLCEH RESTRAINED JOINT HARNESS FOR NEW PVC PUSH-ON PIPE BELLS.

- MODEL PWH RESTRAINED JOINT HARNESS ASSEMBLY FOR NEW OR EXISTING PVC PUSH- BELLS.

d. <u>ROMAC</u>

- GRIP RING PIPE RESTRAINER FOR C-900 AND IPS SIZE PVC
- ROMAGRIP FOR PVC PIPE – DOMESTIC (3" – 24")
- STYLE 470MJ FOR MECHANICAL JOINTS (C905 ONLY)
- STYLE 470SJ FOR BELL JOINTS & COUPLINGS

e. <u>FORD</u>

- UNI-FLANGE BLOCK BUSTER SERIES 1300 RESTRAINT DEVICE FOR PVC PIPE USED WITH MECHANICAL JOINT/PUSH-ON FITTINGS (4"-16" "C" STYLE CAN BE USED ON DUCTILE IRON PIPE)
- UNI-FLANGE BLOCK BUSTER SERIES 1350 RESTRAINT DEVICE FOR PVC PIPE BELL JOINTS
- UNI-FLANGE BLOCK BUSTER SERIES 1360 RESTRAINT DEVICE FOR PVC PRESSURE FITTINGS
- UNI-FLANGE BLOCK BUSTER SERIES 1390 RESTRAINT DEVICE FOR PVC PIPE BELL JOINTS

f. <u>TYLER UNION</u>

- SERIES 2000 TUF GRIP WEDGE ACTION MECHANICAL JOINT RESTRAINT FOR PVC PIPE
- MJ FIELD LOK FOR PVC PIPE
- SERIES 3000 BELL JOINT RESTRAINT FOR C900 OR IPS PVC PIPE TO PIPE
- SERIES 3000 PVC C900/905 PIPE TO PUSH-ON FITTINGS
- SERIES 3000 MJ PVC C900/905 PIPE TO MJ FITTINGS

g. <u>SMITH-BLAIR</u>

- CAM-LOCK 120 JOINT RESTRAINTS FOR PVC PIPE
- BELL-LOCK SERRATED JOINT RESTRAINTS

h. <u>SIP INDUSTRIES</u>

- EZ-GRIP WEDGE ACTION RESTRAINT GLAND FOR PVC PIPE

18. <u>COUPLINGS</u>

A. LONG BODY TRANSITIONAL, DUCTILE IRON, COUPLINGS

LONG BODY TRANSITIONAL COUPLINGS IN ACCORDANCE WITH THE FOLLOWING TABLE, SHALL BE USED FOR CONNECTING PROPOSED/NEW PIPES TO EXISTING PIPES OF DIFFERENT MATERIAL, FOR EXAMPLE, **"PVC C-900"** TO **"AC"** OR **"CAST IRON".** EXTENDED-RANGE OR WIDE-RANGE COUPLINGS SHALL BE MINIMUM 12" LONG. STANDARD COUPLINGS' SLEEVE OR BARREL LENGTH SHALL BE PER TABLE PROVIDED BELOW. LONG BODY TRANSITIONAL COUPLINGS SHALL BE:

a. ROMAC

- 501 STRAIGHT, TRANSITION, LONG BARREL COUPLING
- XR501 EXTENDED-RANGE COUPLING
- RC501 REDUCING COUPLING

b. FORD

- STYLE FC1 STRAIGHT COUPLING
- STYLE FC2A TRANSITION COUPLING
- STYLE FRC REDUCING COUPLING
- STYLE FC2W LONG SLEEVE WIDE-RANGE COUPLING

c. SMITH-BLAIR

- ~~SERIES 441 STRAIGHT AND TRANSITION COUPLING-STANDARD LENGTH~~
- SERIES 442 LONG SLEEVE TRANSITION COUPLING ~~IN SIZES 10"-16"~~
- QUANTUM, 462, WIDE-RANGE COUPLING

NOMINAL PIPE SIZE, INCHES.	TRANSITION COUPLING MINIMUM LENGTH, INCHES.
4, 6, 8	**12**
10, 12, 14, 16	**18**
18, 20, 24, 30, 36	**24**

B. **SPECIAL COUPLINGS**

a. HYMAX SERIES 2000

"HYMAX" SERIES 2000 TRANSITION COUPLINGS AS SUPPLIED BY TOTAL PIPING SYSTEMS OR KRAUSZ SHALL BE FURNISHED WITH 2 STAINLESS STEEL NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND COATING. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

b. TX3 EXTENDED RANGE TRANSITION COUPLING

"TX3" EXTENDED RANGE TRANSITION COUPLINGS AS SUPPLIED BY TOTAL PIPING SOLUTIONS (TPS), INC. SHALL BE FURNISHED WITH 2 STAINLESS STEEL NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND COATING. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM OF 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

c. VERSA-MAX SERIES 3100

"VERSA-MAX" SERIES 3100 REPAIR COUPLING AS SUPPLIED BY TOTAL PIPING SYSTEMS OR KRAUSZ. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

d. MACRO TWO-BOLT EXTENDED RANGE COUPLING

"MACRO" TOW-BOLT EXTENDED RANGE COUPLINGS AS SUPPLIED BY ROMAC INDUSTRIES, INC. SHALL BE FURNISHED WITH 2 STAINLESS STEEL NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND COATING. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM OF 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

e. TOP BOLT, 421, WIDE RANGE COUPLING

"TOP BOLT" 2-BOLT WIDE RANGE COUPLING SYSTEM AS SUPPLIED BY SMITH-BLAIR, INC. SHALL BE FURNISHED WITH 2 STAINLESS STEEL NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND COATING. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM OF 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

f. SMITH-BLAIR, SERIES 413 STEEL TRANSITION COUPLING

SERIES 413 STEEL TRANSITION COUPLING AS FABRICATED AND SUPPLIED BY SMITH-BLAIR, INC. SHALL BE FURNISHED WITH STAINLESS STEEL NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND COATING.

SLEEVE SHALL BE PER ASTM A-53, ASTM A512 OR CARBON STEEL HAVING A MINIMUM YIELD OF 30,000 PSI. WITH FUSION BONDED EPOXY. FUSION BONDED EPOXY SHALL BE AVERAGE 12 MIL PROTECTIVE COATING AND SHALL BE FDA APPROVED FOR POTABLE WATER SYSTEMS. FOLLOWERS (FLANGES) SHALL BE DUCTILE IRON ASTM A-536 OR STEEL AISI C1020, DESIGNED FOR HIGH STRENGTH/WEIGHT RATIO.

POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM OF 8 MIL THICK) SHALL BE REQUIRED FOR ALL COUPLINGS.

19. BOLTS AND NUTS

ALL BOLTS AND NUTS SHALL BE STAINLESS STEEL WITH ANTI-SEIZE COMPOUND OR HEAT TREATED TEFLON COATED COR-TEN.

20. FIRE HYDRANTS:

A. EASTBANK FIRE HYDRANTS

EASTBANK FIRE HYDRANTS SHALL BE THREE WAY COMPRESSION TYPE (OPENING AGAINST PRESSURE) CONFORMING TO AWWA C-502. HYDRANTS

SHALL HAVE A 5 ¼ INCH INLET CONNECTION WITH TWO 2 ½ INCH NOZZLES AND ONE 4 ¼ INCH PUMPER NOZZLE. ALL NOZZLES SHALL HAVE THE NEW ORLEANS SEWERAGE AND WATER BOARD THREAD STANDARDS. HYDRANTS SHALL HAVE A 1 1/8 INCH OPERATING NUT. RIGHT HAND OPENING (CL0CKWISE). ALL HYDRANTS FOR THE EAST JEFFERSON WATER DISTRICT SHALL BE MUELLER (NO. A423), KENNEDY GUARDIAN (MODEL K81D) OR AMERICAN DARLING (MODEL B-84-B-5). COLOR OF HYDRANT SHALL BE SILVER ALUMINUM, TO MEET OR EXCEED ANSI/AWWA STANDARD C502. EXISTING FIRE HYDRANTS AFFECTED BY THE PROJECT SHALL BE REMOVED AND REPLACED AND NOT BE REUSED/RELOCATED.

B. WESTBANK FIRE HYDRANTS

WESTBANK FIRE HYDRANTS SHALL BE THREE WAY, COMPRESSION TYPE (OPENING AGAINST PRESSURE) CONFORMING TO AWWA C-502. HYDRANTS SHALL HAVE A 5 ¼ INCH INLET CONNECTION WITH TWO 2 ½ INCH HOSE NOZZLES AND ONE 4 ¼ INCH PUMPER NOZZLE. ALL NOZZLES SHALL HAVE NATIONAL STANDARD THREADS. HYDRANTS SHALL HAVE A 1 ¼ INCH OPERATING NUT. LEFT HAND OPENING (COUNTER-CLOCKWISE). ALL HYDRANTS FOR THE WEST JEFFERSON WATER DISTRICT SHALL BE MUELLER SUPER CENTURION 250 (MUELLER NO. A423), KENNEDY GUARDIAN (MODEL K81D) OR AMERICAN DARLING (MODEL B-84-B-5). COLOR OF HYDRANT SHALL BE SILVER ALUMINUM, TO MEET OR EXCEED ANSI/AWWA STANDARD C502. EXISTING FIRE HYDRANTS AFFECTED BY THE PROJECT SHALL BE REMOVED AND REPLACED AND NOT BE REUSED/RELOCATED.

C. PRIVATE FIRE HYDRANTS

FIRE HYDRANTS PLACED ON A PRIVATE FIRE LINE MUST MEET THE REQUIREMENTS OF JEFFERSON PARISH REGARDING MANUFACTURE, DIRECTION OF OPENING, HOSE CONNECTION SIZE, ETC. PRIVATE HYDRANTS SHALL BE PAINTED RED AND SHALL HAVE BURIED CHECK VALVES (SIMILAR TO FIRE SERVICE CONNECTIONS) AT EACH CONNECTION TO THE PARISH WATER SYSTEM.

D. MINIMUM REQUIRED FIRE FLOW FOR PROPOSED SUBDIVISIONS

MINIMUM REQUIRED FIRE FLOW FOR RESIDENTIAL SUBDIVISION FIRE HYDRANTS SHALL BE “1000 GPM†” @ “20 PSI” RESIDUAL PRESSURE. MINIMUM REQUIRED FIRE FLOW FOR COMMERCIAL AND INDUSTRIAL SITES SHALL BE DESIGNED PER JEFFERSON PARISH FIRE DEPARTMENT’S LATEST REQUIREMENTS.

† THE 1000 GPM REQUIREMENT HAS BEEN ADOPTED FROM NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). THE FOLLOWING IS LANGUAGE FROM "NFPA" CONCERNING FIRE FLOWS IN ONE AND TWO FAMILY DWELLINGS UP TO 3600 SQUARE FEET ALONG WITH A COPY OF THE TABLE FOR THOSE ABOVE 3600 SQUARE FEET AND OTHER STRUCTURES.

H.5 FIRE FLOW REQUIREMENTS FOR BUILDINGS:

H.5.1 ONE- AND TWO-FAMILY DWELLINGS. THE MINIMUM FIRE FLOW AND FLOW DURATION REQUIREMENTS FOR ONE- AND TWO-FAMILY DWELLINGS HAVING A FIRE AREA THAT DOES NOT EXCEED 3600 FT2 (334.5 M2) SHALL BE 1000 GPM (3785 L/MIN) FOR 1 HOUR. FIRE FLOW AND FLOW DURATION FOR DWELLINGS HAVING A FIRE AREA IN EXCESS OF 3600 FT2 (334.5 M2) SHALL NOT BE LESS THAN THAT SPECIFIED IN TABLE H.5.1. NFPA 1 FIRE PREVENTION CODE.

H.5.2 BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS. THE MINIMUM FIRE FLOW AND FLOW DURATION FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS SHALL BE AS SPECIFIED IN TABLE H.5.1. (THE ATTACHED TABLE SCREEN SHOT)

H.5.2.1 A REDUCTION IN REQUIRED FIRE FLOW OF UP TO 75 PERCENT, AS APPROVED, SHALL BE PERMITTED WHEN THE BUILDING IS PROTECTED THROUGHOUT BY AN APPROVED AUTOMATIC SPRINKLER SYSTEM. THE RESULTING FIRE FLOW SHALL NOT BE LESS THAN 1000 GPM (3785 L/MIN.).

H.5.2.2 A REDUCTION IN REQUIRED FIRE FLOW OF UP TO 75 PERCENT, AS APPROVED, SHALL BE PERMITTED WHEN THE BUILDING IS PROTECTED THROUGHOUT BY AN APPROVED AUTOMATIC SPRINKLER SYSTEM, WHICH UTILIZES QUICK RESPONSE SPRINKLERS THROUGHOUT. THE RESULTING FIRE FLOW SHALL NOT BE LESS THAN 600 GPM (2270 L/MIN).

Folio Views - [National Fire Codes 2006 Annual Revision Cycle Edition (Shadow)]

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Table H.5.1 Minimum Required Fire Flow and Flow Duration for Buildings

Fire Area ft² (×0.0929 for m²)					Fire Flow gpm² (× 3.785 for L/min)	Flow Duration (hours)
I(443),I(332), II(222)[1]	II(111), III(211)[1]	IV(2HH), V(111)[1]	II(000),III(200), III(000)[1]	V(000)[1]		
38,701–48,300	21,801–24,200	12,901–17,400	9,801–12,600	6,201–7,700	2,250	
48,301–59,000	24,201–33,200	17,401–21,300	12,601–15,400	7,701–9,400	2,500	
59,001–70,900	33,201–39,700	21,301–25,500	15,401–18,400	9,401–11,300	2,750	
70,901–83,700	39,701–47,100	25,501–30,100	18,401–21,800	11,301–13,400	3,000	
83,701–97,700	47,101–54,900	30,101–35,200	21,801–25,900	13,401–15,600	3,250	3
97,701–112,700	54,901–63,400	35,201–40,600	25,901–29,300	15,601–18,000	3,500	
112,701–128,700	63,401–72,400	40,601–46,400	29,301–33,500	18,001–20,600	3,750	
128,701–145,900	72,401–82,100	46,401–52,500	33,501–37,900	20,601–23,300	4,000	
145,901–164,200	82,101–92,400	52,501–59,100	37,901–42,700	23,301–26,300	4,250	
164,201–183,400	92,401–103,100	59,101–66,000	42,701–47,700	26,301–29,300	4,500	
183,401–203,700	103,101–114,600	66,001–73,300	47,701–53,000	29,301–32,600	4,750	
203,701–225,200	114,601–126,700	73,301–81,100	53,001–58,600	32,601–36,000	5,000	
225,201–247,700	126,701–139,400	81,101–89,200	58,601–65,400	36,001–39,600	5,250	
247,701–271,200	139,401–152,600	89,201–97,700	65,401–70,600	39,601–43,400	5,500	
271,201–295,900	152,601–166,500	97,701–106,500	70,601–77,000	43,401–47,400	5,750	
295,901–Greater	166,501–Greater	106,501–115,800	77,001–83,700	47,401–51,500	6,000	4
295,901–Greater	166,501–Greater	115,801–125,500	83,701–90,600	51,501–55,700	6,250	
295,901–Greater	166,501–Greater	125,501–135,500	90,601–97,900	55,701–60,200	6,500	
295,901–Greater	166,501–Greater	135,501–145,800	97,901–106,800	60,201–64,800	6,750	
295,901–Greater	166,501–Greater	145,801–156,700	106,801–113,200	64,801–69,600	7,000	
295,901–Greater	166,501–Greater	156,701–167,900	113,201–121,300	69,601–74,600	7,250	
295,901–Greater	166,501–Greater	167,901–179,400	121,301–129,600	74,601–79,800	7,500	
295,901–Greater	166,501–Greater	179,401–191,400	129,601–138,300	79,801–85,100	7,750	
295,901–Greater	166,501–Greater	191,401–Greater	128,301–Greater	85,101–Greater	8,000	

[1] Types of construction are based on NFPA 220.

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E. LOOPED LINES

FIRE HYDRANTS SHALL BE SUPPLIED BY NOT LESS THAN AN 8 INCH DIAMETER LINE IN LOOPED SYSTEMS.

F. DEAD-END LINES

DEAD-END LINES, WHICH SUPPLY FIRE HYDRANTS, SHALL NOT EXCEED 600 FEET IN LENGTH FOR LINE SIZES LESS THAN 10 INCH IN DIAMETER. EXCEPTION TO THIS REQUIREMENT, WITH JEFFERSON PARISH FIRE DEPARTMENT'S APPROVAL, IS WHEN DESIGN CALCULATIONS WOULD DEMONSTRATE AVAILABILITY OF MINIMUM REQUIRED FIRE FLOW OF "1000 GPM" @ "20 PSI" RESIDUAL PRESSURE FOR THE DEAD-END FIRE HYDRANT.

ANY FACILITY THAT REQUIRES FIRE PROTECTION SHALL NOT BE FARTHER THAN 200 FEET FROM A FIRE HYDRANT. THIS REQUIREMENT MAY BE WAIVED (MODIFIED) BY THE JEFFERSON PARISH FIRE DEPARTMENT.

G. **HYDRANT VALVES**

A 6 INCH RESILIENT SEAT GATE VALVE (NRS) SHALL BE INSTALLED ON ALL NEW HYDRANT LEADS REGARDLESS OF WATER LINE SIZE.

H. **HYDRANT TEES**

ALL HYDRANT TEES SHALL BE SWIVEL TYPE.

I. **HYDRANT SPACING**

FIRE HYDRANT SPACING SHALL NOT BE GREATER THAN 400 FEET IN RESIDENTIAL AREAS, OR 350 FEET IN COMMERCIAL AREAS. ANY FACILITY THAT REQUIRES FIRE PROTECTION SHALL NOT BE FARTHER THAN 200 FEET FROM A FIRE HYDRANT.

21. VALVES:

A. **GATE VALVES**

ALL GATE VALVES, 4 INCH – 12 INCH, SHALL HAVE DUCTILE IRON BODIES, BRONZE STEM RESILIENT SEAT TYPE WITH A MINIMUM 200 P.S.I. WORKING PRESSURE. GATE VALVES SHALL CONFORM TO AWWA C509 OR C515 AND HAVE A NON-RISING STEM, 2 INCH OPERATING NUT AND OPEN IN A COUNTER-CLOCKWISE DIRECTION (LEFT HAND OPENING). GATE VALVES SHALL HAVE A FACTORY APPLIED EPOXY COATING AND HAVE STAINLESS STEEL OR HEAT TREATED TEFLON COATED COR-TEN BOLTS AND NUTS. NO CADIUM PLATED NUTS AND BOLTS ARE PERMITTED. GATE VALVES SHALL BE MANUFACTURED BY MUELLER, AMERICAN FLOW CONTROL, M & H, CLOW, OR U.S. PIPE. VALVES MUST BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE.

B. **BUTTERFLY VALVES**

ALL VALVES 14 INCHES AND LARGER SHALL BE BUTTERFLY VALVES CONFORMING TO AWWA C504, CLASS 150B. VALVES SHALL BE SHORT BODY DESIGN WITH MECHANICAL OR FLANGED ENDS AND OPERATE BY TURNING A TWO (2) INCH OPERATING NUT IN A COUNTER-CLOCKWISE DIRECTION (LEFT HAND OPENING). BUTTERFLY VALVES SHALL HAVE A FACTORY APPLIED EPOXY COATING AND HAVE STAINLESS STEEL OR HEAT TREATED TEFLON COATED COR-TEN BOLTS AND NUTS. NO CADIUM PLATED NUTS AND BOLTS

ARE PERMITTED. BUTTERFLY VALVES SHALL BE MANUFACTURED BY HENRY PRATT COMPANY, MUELLER COMPANY, M & H, CLOW OR DZURICH. VALVES MUST BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE.

C. CHECK VALVES (AWWA C-508)

a. METAL SEATED SWING CHECK VALVES

CHECK VALVES SHALL BE PLAIN TYPE WITH BRONZE MOUNTING SUITABLE FOR DIRECT BURIAL, AND BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE.

CHECK VALVES 3 INCH TO 12 INCH IN SIZE SHALL BE A PLAIN SWING CHECK TYPE WITH A CAST IRON OR DUCTILE IRON BODY, STAINLESS STEEL HINGE PIN, BRONZE DISC AND SEAT RING. THE VALVE SHALL BE SUITABLE FOR DIRECT BURIAL AND SHALL HAVE FLANGED OR MECHANICAL JOINT ENDS. VALVES SHALL BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE.

REFER TO THE "VALVE COMPARISON CHART" (SECTION 21.F) FOR VALVE MANUFACTURERS AND MODELS.

b. RESILIENT SEATED SWING CHECK VALVES

RESILIENT SEATED CHECK VALVES SHALL BE MANUFACTURED FROM DUCTILE IRON MEETING OR EXCEEDING ASTM A536. VALVES SHALL BE RATED FOR 250 PSIG COLD WATER WORKING PRESSURE. VALVES SHALL HAVE A METAL DISC FULLY ENCAPSULATED WITH EPDM RUBBER. DISC TRAVEL TO CLOSURE SHALL NOT BE MORE THAN 35 DEGREES AND SHALL SEAL WITH NO LEAKAGE AT PRESSURES ABOVE 5 PSIG. VALVES TO BE COATED WITH FUSION-BONDED EPOXY ON ALL INTERNAL AND EXTERNAL FERROUS SURFACES. BODY TO BONNET FASTENERS TO BE TYPE 304 STAINLESS STEEL. EXPOSED METALLIC RINGS ARE NOT ALLOWED. DISC SHALL BE THE ONLY ALLOWABLE MOVING PART. NO O-RINGS, PIVOT PINS OR OTHER BEARINGS ARE ALLOWED.

VALVES SHALL BE SUITABLE FOR DIRECT BURIAL, AND BE OF DOMESTIC UNITED STATES OF AMERICA MANUFACTURE.

REFER TO THE "VALVE COMPARISON CHART" (SECTION 21.F) FOR VALVE MANUFACTURERS AND MODELS.

D. VALVE LOCATION AND SPACING

VALVES SHALL BE INSTALLED AS PER PROJECT / SUBDIVISION PLANS AND SHALL MEET THE FOLLOWING MINIMUM JEFFERSON PARISH VALVE REQUIREMENTS: **1**) VALVES SHALL BE INSTALLED AT EACH INTERSECTION, IN ACCORDANCE WITH JEFFERSON PARISH STANDARD DRAWINGS. **2**) VALVES SHALL BE PLACED SO THAT NO SINGLE CASE OF PIPE BREAKAGE SHALL REQUIRE SHUTTING OFF FROM SERVICE AN ARTERY, OR MORE THAN 500 FEET OF PIPE IN HIGH VOLUME DISTRICTS (RESIDENTIAL OR COMMERCIAL), OR MORE THAN 800 FEET OF PIPE IN ANY AREA (TRANSMISSION LINES). ANY DISCREPANCIES BETWEEN THESE PLANS AND JEFFERSON PARISH MINIMUM REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.

E. LOCATION IDENTIFICATION

THE SYMBOL " ∧ " (LETTER "V", UPSIDE DOWN) SHALL BE PLACED IN THE FACE OF THE CURB POINTING TO ALL WATER VALVES (EXCLUDING FIRE HYDRANT VALVES).

F. VALVE COMPARISON CHART

THE FOLLOWING, DRAFT, "VALVE COMPARISON CHART" HAS BEEN INCLUDED IN THESE "GENERAL STANDARD NOTES". THIS CHART INCLUDES ADDITIONAL INFORMATION, AND ALSO IS MEANT TO BE USED AS A QUICK REFERENCE. ALL OTHER REFERENCES TO VALVES INCLUDED IN THESE "GENERAL STANDARD NOTES" SHALL REMAIN VALID:

VALVE COMPARISON CHART

MANUFACTURER	DIRECT BURIAL		GATE VALVES	BUTTERFLY VALVES	TAPPING VALVE
	METAL SEATED SWING CHECK VALVES	RESILIENT SEATED CHECK VALVES			
MUELLER	A2602-6	A2600-6	A-2360	LINESEAL III, LINESEAL XPII, LINESEAL XP	T-2360-19
CLOW	F-5380	1106	2639	4500 & 1450	2639
AMERICAN FLOW CONTROL	52-SC	SERIES 2100	SERIES 2500		SERIES 2500
M&H	59-02	506	SERIES 4000 & 7000	450&1450	
ARD	1106	506	2640	450 & 1450	
KENNEDY	1106	506	8571	450&1450	
CRISPIN		RF SERIES		500 &47	
U.S. PIPE					
APCO/DEZURIK	CVS-6000	CRF		BAW	
HENRY PRATT	8001, 9001, 8501	8001, 9001, 8501, RD SERIES (FLEX CHECK)		GROUNDHOG, TRITON XR-70, 2FII, 2MII, MKII, HP 250II, HP250	

{THE TERM "DRAFT" IS USED TO INDICATE THAT THIS "VALVE COMPARISON CHART" MAY NOT BE COMPREHENSIVE AND PART NUMBERS MAY NOT BE UP TO DATE!}

22. METERS:

A. RESIDENTIAL METERS

RESIDENTIAL METERS (2" OR SMALLER) SHALL BE PROVIDED BY AND INSTALLED BY THE JEFFERSON PARISH DEPARTMENT OF WATER. APPLICANTS SHALL CONTACT THE JEFFERSON PARISH DEPARTMENT OF WATER, EASTBANK (736-6072/73) OR WESTBANK (349-5075), OFFICES TO REQUEST FOR RESIDENTIAL METERS. ALL APPLICABLE FEES ARE PAYABLE TO THE DEPARTMENT OF WATER.

B. **IRRIGATION/GARDEN METERS**

IRRIGATION/GARDEN WATER METERS (2" OR SMALLER) SHALL BE PROVIDED BY AND INSTALLED BY THE JEFFERSON PARISH DEPARTMENT OF WATER. APPLICANTS SHALL CONTACT THE JEFFERSON PARISH DEPARTMENT OF WATER, EASTBANK (736-6072/73) OR WESTBANK (349-5075), OFFICES TO REQUEST FOR IRRIGATION/GARDEN WATER METERS. ALL APPLICABLE FEES ARE PAYABLE TO THE DEPARTMENT OF WATER.

C. **COMMERCIAL METERS 2 INCH OR SMALLER**

ALL WATER METERS 2 INCH OR SMALLER SHALL BE PROVIDED BY AND INSTALLED BY THE JEFFERSON PARISH DEPARTMENT OF WATER. APPLICATIONS FOR ALL COMMERCIAL WATER METERS SHALL BE MADE TO THE DEPARTMENT OF ENGINEERING (504) 736-6814 PRIOR TO SCHEDULING ANY CONSTRUCTION. THE APPLICANT SHALL COMPLETE A WATER METER VERIFICATION FORM AS REQUIRED BY THE DEPARTMENT OF ENGINEERING.

D. **COMMERCIAL WATER METERS 3 INCH AND LARGER**

ALL WATER METERS 3 INCH AND LARGER, SHALL BE FURNISHED AND INSTALLED BY THE APPLICANT. METERS 3 INCH AND LARGER SHALL BE OF THE TYPE AND MANUFACTURER SPECIFIED BY THE DEPARTMENT OF ENGINEERING (SEE APPENDIX C-1, COMMERCIAL WATER METERS 3 INCH AND LARGER). ~~CONTACT THE DEPARTMENT OF ENGINEERING FOR REQUIRED METER SPECIFICATIONS PRIOR TO ORDERING ANY METER EQUIPMENT OR MATERIALS.~~ ALL METERS 3 INCH AND LARGER SHALL BE FURNISHED WITH A STRAINER. BY-PASS METERS, IF REQUESTED BY THE OWNER AND/OR IF DEEMED NECESSARY BY THE JEFFERSON PARISH DEPARTMENT OF WATER, SHALL BE 2 INCH MINIMUM. THE APPLICANT MUST PRESENT A RECEIPT FOR ALL REQUIRED FEES AND DEPOSITS (CONSUMER RECEIPT) ON THE INSTALLATION TO THE DEPARTMENT OF ENGINEERING, INSPECTION DIVISION, (736-6793) PRIOR TO ANY CONSTRUCTION.

E. **METER ELEVATION**

THE CONTRACTOR SHALL EXPOSE THE LINE TO DETERMINE DEPTH OF THE METER BOX. METER ELEVATION IS TO BE DETERMINED BY THE DEPARTMENT OF ENGINEERING. THE MAXIMUM DISTANCE BETWEEN GROUND SURFACE AND THE CENTERLINE OF THE WATER METER SHALL BE 24 INCHES UNLESS OTHERWISE AUTHORIZED BY THE DEPARTMENT OF ENGINEERING.

F. **METER VAULTS INSTALLATION**

MATERIALS TO BE USED IN CONSTRUCTION OF METER VAULTS INSTALLED IN TRAFFIC AREAS MAY BE COMMON BRICK, CONCRETE BLOCK, POURED IN PLACE REINFORCED CONCRETE OR A PRECAST CONCRETE BOX AS MANUFACTURED BY BROOKS PRODUCTS.

G. **METER VAULTS ACCESS HATCH AND VALVE COVERS**

METER VAULT ACCESS HATCH SHALL BE A HEAVY DUTY CAST IRON MANHOLE RING AND COVER WITH MACHINED RING SEATS. THE WORD "WATER" SHALL BE EMBOSSED ON THE COVER. THE MANHOLE RING AND COVER SHALL BE CENTERED OVER THE METER AND SHALL BE A VULCAN V-1406 W/COVER. WATER VALVE COVERS FOR THE METER VAULT SHALL BE HEAVY DUTY CAST IRON VULCAN V-8460. THE VALVE COVERS SHALL BE CENTERED OVER THE VALVES AND THE WORD "WATER" SHALL BE EMBOSSED ON THE COVER.

H. **MAINTENANCE RESPONSIBILITY**

JEFFERSON PARISH WILL ASSUME MAINTENANCE RESPONSIBILITY FOR LARGE WATER METERS (3 INCHES AND ABOVE) 365 CALENDAR DAYS FROM THE DATE THE OWNER ACCEPTS THE PROJECT, OR ALL WATER FACILITY WORK IS COMPLETED IN ACCORDANCE WITH JEFFERSON PARISH STANDARD SPECIFICATIONS, WHICHEVER OCCURS LAST. UNTIL JEFFERSON PARISH ISSUES A "LETTER OF WATER FACILITY ACCEPTANCE", THE OWNER IS RESPONSIBLE FOR ALL REPAIR AND REPLACEMENT COSTS FOR WATER FACILITIES.

23. FIRE SERVICE:

A. **FIRE SERVICES 2 INCH OR SMALLER**

ALL FIRE SERVICES 2 INCH OR SMALLER SHALL BE PROVIDED BY AND INSTALLED BY THE JEFFERSON PARISH DEPARTMENT OF WATER. APPLICATIONS FOR ALL FIRE SERVICE INSTALLATIONS SHALL BE MADE TO THE DEPARTMENT OF ENGINEERING (504) 736-6814 PRIOR TO SCHEDULING ANY CONSTRUCTION. THE APPLICANT SHALL COMPLETE A FIRE SERVICE WATER VERIFICATION FORM AS REQUIRED BY THE DEPARTMENT OF ENGINEERING. ALL APPLICABLE FEES ARE PAYABLE TO THE DEPARTMENT OF WATER.

B. **FIRE SERVICES "3" INCH AND LARGER**

ALL FIRE SERVICE TAPS, 3 INCH AND LARGER, SHALL BE FURNISHED AND INSTALLED BY THE APPLICANT. THE APPLICANT MUST PRESENT A RECEIPT FOR ALL REQUIRED FEES AND DEPOSITS (CONSUMER RECEIPT) ON THE INSTALLATION TO THE DEPARTMENT OF ENGINEERING INSPECTION DIVISION (736-6793) PRIOR TO ANY CONSTRUCTION.

C. FIRE SERVICE LINES FOR BUILDING SPRINKLER SYSTEMS

FIRE SERVICE LINES FOR BUILDING SPRINKLER SYSTEMS SHALL HAVE CHECK VALVES ADJACENT TO AND DOWNSTREAM OF THE TAPPING VALVE.

D. MAINTENANCE RESPONSIBILITY

JEFFERSON PARISH MAINTENANCE RESPONSIBILITY FOR FIRE SERVICE LINES WILL NOT INCLUDE ANY SEGMENT OF THESE LINES ON THE PRIVATE PROPERTY SIDE OF THE REQUIRED CHECK VALVE, INCLUDING THE CHECK VALVE. FIRE SERVICE LINE CHECK VALVES WILL BE PRIVATELY OWNED AND MAINTAINED.

E. INSPECTION BY JEFFERSON PARISH ENGINEERING DEPARTMENT

ALL FIRE LINES SHALL BE INSPECTED BY THE JEFFERSON PARISH ENGINEERING DEPARTMENT. INSPECTION SHALL INCLUDE THE ENTIRE FIRE SERVICE LINES (INCLUDING THE CHECK VALVE AND THE FIRE LINE INSIDE PRIVATE PROPERTY, ALL THE WAY TO THE BUILDING). THE JEFFERSON PARISH DEPARTMENT OF "INSPECTION & CODE ENFORCEMENT" SHALL BE RESPONSIBLE FOR INSPECTION OF THE FIRE PROTECTION SYSTEM INSIDE BUILDINGS.

24. LINES CONSTRUCTED ON PRIVATE PROPERTY

ALL WATER LINES (INCLUDING "LOOPED" WATER LINES), FIRE LINES (FIRE SERVICE LINES), FIRE HYDRANTS, INSTALLED ON PRIVATE PROPERTY SHALL BE INSTALLED IN ACCORDANCE WITH JEFFERSON PARISH STANDARDS AND SPECIFICATIONS. ALL WATER LINES, AND/OR FIRE SERVICE LINES CONSTRUCTED ON PRIVATE PROPERTY, SHALL REMAIN PRIVATE. IN SPECIAL CIRCUMSTANCES WHEN JEFFERSON PARISH MAY HAVE TO TAKE OVER THE MAINTENANCE OF ANY FIRE SERVICE LINE, A 20 FOOT WIDE MINIMUM SERVITUDE, CENTERED ON THE LINE, MUST BE DEDICATED TO JEFFERSON PARISH.

25. CLEARANCE:

A. BETWEEN WATER LINES AND SANITARY SEWER LINES

WHEN SANITARY SEWER LINES ARE PARALLEL TO WATER LINES, THE CLEARANCE SHALL BE A MINIMUM OF 6 FEET (MEASURED HORIZONTALLY): WHEN SEWER AND WATER LINES CROSS, VERTICAL CLEARANCE SHALL BE 18 INCHES, WITH THE WATER LINE CROSSING ON TOP. IF THESE CONDITIONS CANNOT BE MET, DUE TO FIELD CONDITIONS, THE "10 STATE STANDARDS" ((PHONE (518) 439-7286, WEB SITE: WWW.HES.ORG)) GUIDELINES CAN BE FOLLOWED, WITH APPROVAL OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT.

B. BETWEEN WATER LINES AND ANY PRIVATE UTILITY LINES

MINIMUM CLEARANCE BETWEEN A WATER LINE AND ANY PRIVATE UTILITY LINE SHALL BE 6 FEET (MEASURED HORIZONTALLY). PRIVATE UTILITIES SHALL BE INSTALLED IN PRIVATE SERVITUDES.

C. BETWEEN WATER LINES AND BUILDINGS

WATER LINES SHALL NOT BE INSTALLED CLOSER THAN 10 FEET (MEASURED HORIZONTALLY) FROM ANY BUILDING FOUNDATION, WALL OR BUILDING OVERHANG. THIS 10 FOOT CLEARANCE MAY BE REDUCED TO 6 FEET IN AREAS WITH COMMERCIAL ZONING WITH LIMITED RIGHT-OF-WAY AND WITH APPROVAL OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT.

26. WATER DISTRIBUTION SYSTEM "AS-BUILT SKETCHES", "GPS COORDINATES", AND "AS-BUILT DRAWINGS"

1. Prior to installation of any water distribution items, the contractor must provide an acceptable, ongoing procedure and documentation methodology that would fully satisfy the requirements of this section (As-Built). Any such procedures and documentation methodologies must be discussed in an official meeting to include; the contractor, A/E's construction manager and resident inspector, and Parish representatives from the Engineering Department. The minutes of this meeting must be prepared by the AE and must be distributed to all the attendees.

2. Three days prior to pressure testing and chlorination of any segment of the water distribution system, as a minimum, the following items should be submitted (three hard copies and PDF) to the Engineering Department [(the hard copies must be delivered to Mr. Peter Blaha, Joseph S. Yenni Building, 1221 Elmwood Park Blvd. Suite 702, Jefferson, La 70123) and (the PDF

copies must be emailed to: the A/E's construction manager and resident inspector and the following Parish personnel; Peter Blaha, Michael Calecas, Chanen Joseph, Ray Mowla, and Jefferson Parish **Construction Project Engineer**).

- An As-Built sketch of the installed water distribution system. This sketch shall:
  - Be Prepared by the contractor,
  - Be Reviewed by the resident inspector,
  - Be Reviewed by the A/E construction manager, and forward to Jefferson Parish **Construction Project Engineer,** recommending acceptance or rejection.
  - Include:
    - Type, size, and location of valves,
    - Location of Hydrants,
    - Type, size, and location of fittings, couplings, and any other appurtenances,
    - Type, size, and length of pipes,
    - Restrained pipe location and measurements,

- GPS coordinates in a format of a "shape file" (preferred) or a table,
  - GPS coordinates shall be referenced to "State Plane Coordinates System 1983, zone 1702, Louisiana South with X and Y coordinates in feet",
  - GPS coordinates shall be provided for each of the following water distribution features:
    - Hydrants,
    - Valves,
    - Fittings,
    - Couplings,
    - Reducers,
    - Etc.

- Valve Operating Logs (Department of Water form "W-101")
- **Note,** GPS coordinates of all fittings or couplings which are used for connecting (tie-in locations) the new water lines to the existing system, must be provided to the parish, as soon as possible, as it is described above.

3. The requirements of the above sections (As-Built sketch and GPS coordinates) is separate from the parish requirements for the final project As-Built drawings (plans) which will be submitted to the Jefferson Parish **Construction Project Engineer**, by the A/E, prior to the acceptance of the project as a whole, which would include the acceptance of the water distribution system. The following signed and sealed copies are required:

- One hard copy,
- PDF (CD-ROM),
- ACAD 2012 (CD-ROM),

- The ACAD electronic copy of the completed as-built plans shall be a properly geo-referenced (Referenced to State Plane Coordinates System 1983, zone 1702, Louisiana South with X and Y coordinates in feet),
- The geo-referenced final ACAD As-Built drawing must include X and Y coordinates, for all Water Distribution Features (Hydrants, Valves, Couplings, Fittings, Reducers, etc.)

4. Contact information for current Jefferson Parish Personnel who have parts and responsibility for As-Built Drawings:

   - Peter Blaha, Engineering Department Utility Inspection Supervisor
     - Peter Blaha PBlaha@jeffparish.net

   - Michael Calecas, Engineering Department Utility Inspection Coordinator
     - Michael Calecas MCalecas@jeffparish.net

   - Chanen Joseph, Professional Civil Engineer II, Engineering Department, Utilities
     - Chanen Joseph CPJoseph@jeffparish.net

   - Ray Mowla, Chief Engineer, Engineering Department, Utilities
     - Ray Mowla RMowla@jeffparish.net

   - Matthew Zeringue, Professional Civil Engineer I, Engineering Department, Roads and Bridges (**Construction Project Engineer**)
     - Matthew Zeringue MZeringue@jeffparish.net

27. PRESSURE TESTING AND DISINFECTION OF WATER LINES

ALL NEW AND/OR MODIFIED SEGMENTS OF THE WATER DISTRIBUTION SYSTEM SHALL BE TESTED TO A PRESSURE OF 50% ABOVE THE NORMAL OPERATING PRESSURE OR 100 P.S.I. WHICHEVER IS GREATER. THIS PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) HOURS WITH NO DISCERNIBLE PRESSURE LOSS. LEAKS SHALL BE REPAIRED BY REMOVING AND REPLACING FAULTY SECTIONS. THE PRESSURE TEST SHALL BE PERFORMED BY THE CONTRACTOR UNDER THE DIRECT SUPERVISION OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT. BEFORE BEING PLACED IN SERVICE, ALL NEW, MODIFIED AND/OR CONTAMINATED SEGMENTS OF THE WATER DISTRIBUTION SYSTEM SHALL BE FLUSHED AND DISINFECTED (CHLORINATED) BY THE CONTRACTOR UNDER THE DIRECT SUPERVISION OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT.

FLUSHING SHOULD BE DONE AT FLOW RATES SUFFICIENT TO PROVIDE A VELOCITY IN THE LINES OF AT LEAST 2.5 FEET PER SECOND. DISINFECTION SHOULD COMPLY WITH AWWA STANDARD C651, "DISINFECTING WATER MAINS".

IN ORDER TO MINIMIZE BACKFLOW (BACK SIPHON, BACK PRESSURE) OR UNDESIRED REVERSAL OF THE FLOW OF UNCLEAN LIQUIDS INTO THE DRINKING WATER DISTRIBUTION SYSTEM, AS A MINIMUM, THE USE OF A SINGLE CHECK VALVE IS REQUIRED DURING **FLUSHING**. WHEN PRACTICAL (MAINS UP TO 12" IN DIAMETER) A FLOATER METER MUST BE USED FOR FLUSHING. UTILIZING A FLOATER METER WILL PROVIDE THE NECESSARY BACKFLOW PREVENTION AND ALSO WILL HELP THE PARISH TO ACCOUNT FOR THE WATER USE. AS ALWAYS, THE CONTRACTOR WILL NOT BE CHARGED FOR USING ANY REASONABLE AMOUNT OF WATER FOR **FLUSHING**.

ONLY AFTER SATISFACTORY PRESSURE TESTING AND DISINFECTION (CHLORINATION), AND SUCCESSFUL BACTERIOLOGICAL ANALYSIS FROM THE JEFFERSON PARISH WATER QUALITY MICROBIOLOGY LAB IS COMPLETED CAN THE SEGMENT BE TIED INTO THE EXISTING WATER DISTRIBUTION SYSTEM. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED TO MAKE A TIE-IN TO THE EXISTING WATER DISTRIBUTION SYSTEM WITHOUT DIRECT SUPERVISION OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT. ALL COSTS ASSOCIATED WITH THE TESTING AND CHLORINATION PROCEDURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

TYPICALLY THE CONTRACTOR WILL NOT BE CHARGED FOR THE WATER USED TO FLUSH, PRESSURE TEST AND CHLORINATE THE SYSTEM. THE CONTRACTOR WILL BE CHARGED FOR THE EXCESS WATER WHEN THE WATER DISTRIBUTION SYSTEM WILL REQUIRE AN EXCESS AMOUNT OF WATER TO BE PROPERLY FLUSHED, PRESSURE TESTED AND CHLORINATED, DUE TO NEGLIGENCE OF THE CONTRACTOR.

28. PIPE INSTALLATION

THE INSTALLATION OF WATER MAINS AND OTHER RELATED APPURTENANCES SHALL BE STRICTLY IN ACCORDANCE WITH THESE JEFFERSON PARISH STANDARD NOTES, AND LATEST APPLICABLE AWWA STANDARDS SUCH AS AWWA C600 (INSTALLATION OF DUCTILE-IRON WATER MAINS AND APPURTENANCES), AWWA C605 (UNDERGROUND INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATER), ETC. AND THE MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.

IN ADDITION TO ANY PREVIOUSLY MENTIONED REQUIREMENTS FOR POLYETHYLENE ENCASEMENT, POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 (MINIMUM 8 MIL THICK) SHALL BE REQUIRED FOR ALL "DUCTILE IRON PIPES, FITTINGS" AND "APPURTENANCES" REGARDLESS OF ANY SPECIFIC COATING.

29. WATERLINE ABANDONMENT, REMOVAL AND DISPOSAL

UNLESS OTHERWISE SPECIFIED, THERE SHALL BE NO DIRECT PAYMENT FOR WATERLINES (WATERLINES HEREIN SHALL MEAN PIPES, FITTINGS, VALVES, APPURTENANCES, ETC.) ABANDONMENT, REMOVAL OR DISPOSAL.

UNLESS OTHERWISE SPECIFIED, WHEN PAY ITEMS HAVE BEEN ESTABLISHED FOR ABANDONMENT, REMOVAL OR DISPOSAL OF WATERLINES, THESE PAY ITEMS SHALL BE FULL COMPENSATION FOR THE ABANDONMENT, REMOVAL OR DISPOSAL OF WATERLINES REGARDLESS OF THE SIZE AND/OR MATERIAL OF THE WATERLINES BEING ABANDONED, REMOVED OR DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES.

30. PIPE BEDDING

THE OBJECTIVE OF BEDDING IS TO PROVIDE A CONTINUOUS SUPPORT FOR THE PIPE AT REQUIRED LINE AND GRADE. THE BEDDING MAY OR MAY NOT BE COMPACTED, BUT IN ANY EVENT, THE PROJECTING BELLS OF THE PIPE SHOULD BE PROPERLY RELIEVED IN THE TRENCH BOTTOM SO THAT THE ENTIRE PIPE IS EVENLY SUPPORTED BY THE BEDDING. WHERE THE TRENCH BOTTOM IS UNSTABLE (ORGANIC MATERIAL, OR "QUICK" SAND OR SIMILAR MATERIAL), THE TRENCH BOTTOM SHOULD BE OVER-EXCAVATED AND BROUGHT BACK TO GRADE UTILIZING DUNNAGE BOARDS, GEOGRID, GEOTEXTILE FABRIC OR APPROVED BEDDING MATERIAL AND/OR ANY COMBINATION OF SAME.

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