

PINE BLUFF WASTEWATER UTILITY

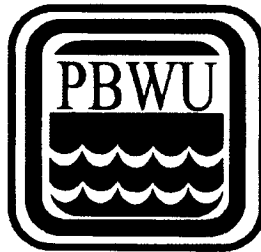
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OPERATIONS, POLICIES, AND PROCEDURES MANUAL

June, 2012

Volume 1, Edition 1



Engineering
Division
8/22/2012
C. H. H. H.

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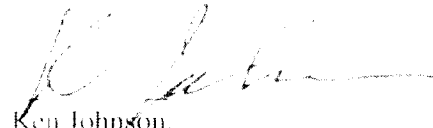
PURPOSE OF THIS MANUAL.

The purpose of this manual is to provide information concerning the acceptable practices and procedures of the Pine Bluff Wastewater Utility (PBWU) as they relate to customers, developers, and contractors.

In this manual you will find the latest revision of the PBWU Customer Service Policy, Developer Policy, Contractor Policy, Forms, Details and Specifications. These documents have been included to detail the necessary procedures, minimum sanitary sewer specifications, and construction details that must be followed. We have, also, included important testing procedures and forms for your convenience.

We recognize that some changes or revisions may be necessary prior to the publication of the next edition of this manual. Any recommended changes should be communicated to the Technical Services - GIS Department at the Utility for approval by our Utility Commission. Final revisions will be communicated through letters, memos, or listed on our website at www.pbwastewater.com.

At PBWU, we look forward to working with you to enhance our sewer system for the benefit of the environment and all customers served within the City of Pine Bluff. Should you have questions or desire an explanation on the revisions as stated in this manual, please call our office at (870) 535-6603.



Ken Johnson,
General Manager
May 2012

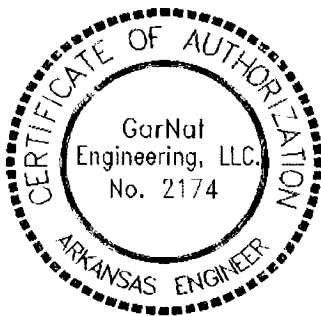
CERTIFICATE OF ENGINEERING RESPONSIBLE CHARGE

This is to certify that I have supervised the preparation of the following document:

**PINE BLUFF WASTEWATER UTILITY
OPERATIONS, POLICIES, AND PROCEDURES MANUAL
JUNE, 2012**

In the process of creating this document, I reviewed all specifications, details, and drawings. I was granted the authority to make any necessary and appropriate changes to bring this document into compliance with generally accepted standards for the design and construction of sanitary sewers and their appurtenances. To the best of my knowledge, I have fulfilled all of the requirements for having responsible charge of this document.

Vernon J. Williams, P.E.
GarNat Engineering, LLC
May 31, 2012



6-14-2012

CUSTOMER SERVICE POLICY

3.1 General

- A. This is a customer service policy fact sheet and is not intended to provide detailed plans and specifications for all aspects of sanitary sewer construction as required by the Pine Bluff Wastewater Utility (PBWU). Detailed specifications are not included with this document due to their proneness to frequent change. Likewise, this document is dynamic and subject to change as deemed necessary by the PBWU. A more detailed Policy document may be prepared and various Detailed Specifications and Detailed Standard Drawings may be available from the PBWU if needed or desired.
- B. All materials and construction methods shall meet or exceed the Recommended Standards for Wastewater Facilities (Ten State Standards), latest revision and the minimum requirements of the Arkansas Department of Health. The Ten State Standard is also used as a guideline by the PBWU. As required by state law, all project plans and specifications must be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas. The PBWU reserves the right to have all materials and construction methods conform to our applicable specifications and standards before the work will be accepted.
- C. The Sanitary Sewer Extension Procedure and Details of the PBWU shall become a supplement to the Specifications of any Project designed by any Registered Engineer, Architect or Engineering Firm if said project is to be accepted by the PBWU. The most stringent specifications shall be used.
- D. Certain standard and typical details are included in this document and shall be considered as the minimum acceptable for materials, work, and construction techniques allowed for projects to be accepted by the PBWU. If any project includes work that is not covered by this document, contact PBWU to verify the appropriate specifications, standards, and practices.

3.2 Wastewater Service Line Requirements

- A. General: each separate property, lot, tract, residence, business, and/or industry served must have a main sewer line adjacent to the property and be serviced by a single/individual service line (unless it is determined by the PBWU to allow an additional service tap.) Multiple residences, businesses, and/or industries may not connect to a single sewer service line. An Owner/Developer that builds more than one Apartment, etc. on a single lot, or track of property may connect the units to a 6" or 8" service line, so long as it meets the City and State Codes. This line will be owned and maintained by the Owner. No Developer may purchase a track of property and subdivide it into individual lots without providing a sewer main adjacent to each lot.

- B. Sizing: service lines shall be sized for the anticipated load. The minimum size for service lines shall be four (4) inch.
- C. Location: the sewer service line for one property, lot, and/or tract may not cross another separate property, lot, or tract without a FILED EASEMENT from that property owner. The FILED EASEMENT must meet the approval of the PBWU. A property, lot, or tract is defined as the subdivided property occupied by a single residence, business, or industry. Property owners may not gain sewer service without a main extension to their property without prior PBWU approval.
- D. Restrictions: service connections may not be made directly to any trunk sewer main 15" diameter or larger. Properties adjacent to a trunk sewer main must be served by a lateral main less than 15" in diameter or a sewer service line tied directly to an existing manhole.
- E. Piping Material: pipe for sewer service lines located on the sewer main side of double cleanouts shall be PVC SDR-26/PS115 solid wall gravity sewer pipe. Any line with less than 36" of cover shall be ductile iron. All ductile iron castings and fittings shall be manufactured by an ISO certified factory. Ductile iron sewer service line pipe shall be class 50 with cement lining.
- F. Pipe Bedding
 - 1. Bedding Material: bedding shall be Class I crushed stone, granite or hard lime rock, ¾" nominal size. Other sizes and gradations of bedding material may be used only with written approval from the PBWU.
 - 2. Bedding for Ductile Iron: ductile iron pipe shall be bedded in a 3" minimum thick bed of crushed stone under pipe.
 - 3. Bedding for PVC: PVC pipe shall be bedded per Pine Bluff Wastewater standard details.
 - 4. Special Bedding: Any pipe laid in extremely deep cuts or bad subgrade conditions may require special bedding. Coordinate bedding requirements with PBWU Technical Service Division.
- G. Installation
 - 1. Sewer services shall be installed using industry standard techniques and construction methods acceptable to PBWU.
 - 2. Sewer service lines shall be laid to the minimum standards of 2 feet per second velocity. The following minimum grades are provided for your convenience:

Pipe Diameter	Minimum Grade
4"	1.0%
6"	0.60%
8"	0.40%
10"	0.28%

3. Provide cleanouts as required by this document and Arkansas State Plumbing Code.
4. Provide bedding as required by this document.
5. Provide backwater traps as required by the Arkansas State Plumbing Code.
6. No ground water, surface water, or storm water shall be allowed to enter the sanitary sewer system through any component of the sewer system, including cleanouts and traps.
7. Plugged service lines shall be marked per PBWU standard details.
8. Pipe trenches located under special and driving surfaces shall be totally backfilled with compacted Bottom Ash Blend (BAB), a 50% mix of Bottom Ash and Fly Ash. BAB is obtainable from a local provider. It should be placed in lifts not exceeding 18" thick. Paved surfaces shall be repaired as per the governing department/agency requirements. Do not place BAB against any metal without properly protecting the metal surface with approved plastic wrapping, paint, or other protectant

H. Cleanouts: all service lines shall have a double cleanout installed at a convenient and safe-from-harm location at or very near the property/lot line or easement line. All PVC service lines (from double cleanout to the main) shall be bedded with $\frac{3}{4}$ " crushed stone, 4" under and to the top of the pipe. The Double cleanouts shall be constructed per Pine Bluff Wastewater standard details. Double cleanouts will mark the change of ownership and maintenance responsibility between the Owner/Developer and the PBWU. Service lines run directly into a manhole shall also be constructed with a double cleanout.

I. Testing:

1. Sewer services shall be visually inspected by PBWU. Contact PBWU at least 24 hours before the commencement of any construction. Any inspection work performed by PBWU personnel on weekends or legal holidays will be subject to overtime fees.
2. Sewer service lines shall be air tested as per the generally accepted wastewater (Professional) or engineering standards for low air pressure sewer line testing.

3.3 Grease Trap & Oil Separator Requirements

- A. Any commercial building or facility to be connected to the sewer system that will have a food preparation kitchen or produce wastewater that may contain oil, grease, or like contaminants will be required to install a grease trap and/or oil separator.
- B. Any commercial building or facility to be connected to the sewer system that will produce wastewater that may contain dirt, sand, gravel, or like contaminants will be required to install a sediment/sand trap.
- C. Sizing of all traps and separators shall be performed by the PBWU's Designated Engineer or PBWU Inspector based on the anticipated sewer flow characteristics.
- D. Typical grease trap and sediment trap details and a Grease Trap Sizing Form are attached to this document.
- E. With the prior approval of the PBWU and under the following circumstances, the owner may install a Dormont model WD-35L (70 lbs.) under the counter grease trap:
 - 1. Kitchen plumbing fixtures consist of a three compartment sink only (no floor drain, no mop sink, no dishwasher, and etc.).
 - 2. The owner provides PBWU access to the grease trap for monitoring.
 - 3. The owner agrees to notify PBWU if the menu is altered to allow for an increase in grease/oil production.
 - 4. The owner understands that if grease problems are experienced downstream of the restaurant that PBWU may require the owner to take immediate corrective actions and that the owner will pay the cost for these corrective actions. Corrective actions include, but are not limited to:
 - a. Cleaning the grease trap.
 - b. Cleaning the sewer lines.
 - c. Installing an in ground grease interceptor.
- F. With the prior approval of the PBWU and under the following circumstances, existing restaurants that have closed and are re-opened, may be granted a grease trap waiver from PBWU:
 - 1. The owner agrees to notify PBWU if the menu is altered to allow for an increase in grease/oil production.
 - 2. The owner understands that if grease problems are experienced downstream of the restaurant that PBWU may require the owner to take immediate corrective actions and that the owner will pay the cost for these corrective actions. Corrective actions include, but are not limited to:
 - a. Cleaning the grease trap.
 - b. Cleaning the sewer lines.

- c. Installing an in ground grease interceptor.
- G. No grease trap or oil separator shall be installed without the installer having a written sizing form stating PBWU's approval of the trap design and size. Installers shall contact the PBWU 24 hours in advance to provide ample time for inspection. All traps shall be inspected by the PBWU after installation and prior to backfilling.

3.4 Sewer Pipeline Location Policy

- A. The Owner/Developer shall provide Easements for all main lines located on private property. A sample Easement is included in this document. Easements or a Memorandum of Understanding shall be acquired before construction begins. Signed Easements forwarded to the PBWU will be filed for recording at the Jefferson County Court House.
- B. For gravity lines less than ten (10) feet deep, minimum easement width shall be twenty (20) feet.
- C. For gravity lines from ten (10) to fifteen (15) feet deep, minimum easement width shall be twenty-five (25) feet. For gravity lines exceeding fifteen (15) feet in depth, minimum easement width shall be determined by the PBWU on an as-needed basis.
- D. For sewage force mains (pressure lines), minimum easement width shall be twenty (20) feet.
- E. Sewer lines to be placed in city street or state highway rights-of-ways must have location approval from the governing department/agency. Sewer lines shall not be placed on state highway rights-of-ways except for crossings (i.e. no parallel runs inside state R-O-W).

3.5 Damage Prevention Policy

- A. PBWU participates in the Arkansas One Call System.
- B. Excavators are encouraged to visit www.arkonecall.com to learn about their responsibilities as an excavator, which include:

Prior to excavation

- 1. Marking excavation locations with white paint, chalk or flags prior to calling.
- 2. Give notice to the Arkansas One-Call Call Center (800-482-8998) at least two, but not more than 10, working days before starting the work.
- 3. Provide accurate and specific information concerning the site and the extent or scope of the work.

4. Provide where on the site the work will take place.

Once a reference or ticket number is created for a job

1. Call in a new locate request if additional areas outside the scope of the original ticket need to be marked.
2. Renew a locate request if work does not start within 10 working days.
3. Renew a locate request anytime markings are no longer visible and work is continuing.
4. Renew a locate request if work will continue past 20 working days.
5. Use an excavation method approved by the PBWU owner or hand dig within 18 inches either side of the markings (safe zone)
6. Notify the utility owner immediately if damage occurs. If the damage permits the escape of hazardous gas or liquid, the police and fire departments must also be immediately notified.
7. Establish and maintain communication and coordination on projects that are delayed or lengthy until the project is completed.

C. When the Arkansas One Call System issues a locate ticket, the PBWU will locate its infrastructure within two working days.

D. Damages to the PBWU's infrastructure caused by the failure of excavators to exercise reasonable care in protecting them are the financial responsibility of the excavator. PBWU will seek reasonable compensation for such damages.

3.6 Relocation of Wastewater Infrastructure

A. From time to time, the relocation of PBWU's infrastructure may be necessary to accommodate the needs of others. As with any work on its infrastructure, PBWU must be located during the planning stages of the relocation. Preliminary approval for any proposed sanitary sewer relocation must be granted by the Manager of the PBWU.

B. Relocations will be subject to the same design, sewer service application, plan submission, construction review fee, easement, permit, licensing, inspection, testing, and bonding requirements as new construction. See Sanitary Sewer Extension Policy for more information.

C. It is the Owner/Developer's responsibility to maintain the operation of the PBWU's collection system during the relocation. Provide bypass pumps as required. If requested, Owner/Developer shall submit a bypass pumping plan for review and approval.

3.7 Sanitary Sewer Extension Policy

A. Preliminary approval for any proposed sanitary sewer extension must be granted by the Manager of the PBWU. A vicinity map and site plan, in most cases, shall be sufficient to indicate the Owner/Developer's intentions. Preliminary approval

does not constitute automatic final approval of any sewer extension. An Engineering Report may be required for any Project, regardless of size. Preliminary information provided by the PBWU is normally limited to aerial maps showing the site location and the nearest available sewer lines, pump stations, and force mains. Elevations of manholes and size of existing pipes are given if known. The Owner/Developer is responsible for providing an Engineers design plan to be reviewed by the PBWU Designated Engineer or Consulting Engineering Firm.

- B. A proposed detailed CONSTRUCTION PLAN AND SPECIFICATIONS shall conform to the PBWU's latest standards. At the discretion of the PBWU, small projects may use the STANDARD DETAILS and SPECIFICATIONS as published by the PBWU. Large projects may require submittal of DETAILED SPECIFICATIONS prepared by the project's Engineer. As required by state law, all construction plans and specifications must be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas. One complete set of the proposed Construction Plan is sufficient for the preliminary review.
- C. After review by the PBWU, corrections and adjustments to the PLAN and SPECIFICATIONS as detailed and/or directed by the PBWU shall be resubmitted by the Owner/Developer. Final written approval of CONSTRUCTION PLANS and SPECIFICATIONS must be made by the PBWU and the Arkansas Department of Health, Engineering Section, before construction of the project can commence.
- D. A construction review fee of 0.5% of the estimated construction cost will be required for each project whose estimated construction cost exceeds \$50,000. The construction review fee shall not exceed \$1,000.
- E. Before construction can begin, signed RIGHT-OF-WAY EASEMENTS shall be obtained by the Owner/Developer for all portions of the project located on or across private property. A MEMORANDUM OF UNDERSTANDING developed by PBWU may be substituted for a signed EASEMENT. PERMITS shall be obtained from the applicable department and/or agency for all portions of the project located on or across public property (i.e. streets, highways, parks, etc.). EASEMENTS and PERMITS shall be submitted to the PBWU for review and approval prior to start of construction. Pump stations shall be located on property deeded to the City of Pine Bluff.
- F. Projects valued at less than \$20,000 may be installed by either an Arkansas licensed Master Plumber or an Arkansas licensed General Contractor. Projects valued at \$20,000 or more must be constructed by an Arkansas licensed General Contractor with applicable project bonding and insurance as per State law. Arkansas State Licensing Law for Commercial Contractors Act 150 of 1965 and Act 162 of 1987 (as amended) requires the Installation Contractor to have a Contractors Licenses Classification of Municipal and Utility Construction.

- G. The PBWU's Designated Engineer or PBWU Inspector shall be informed at least 24 hours before any construction is commenced on the project. During construction, no sewer pipe or appurtenances shall be backfilled, encased, or permanently covered until inspected by the PBWU or its contracted representative. The project shall be subject to continuous and/or random inspection by the PBWU or its contracted representative. All materials and/or work found to be in non-conformance with the PLANS AND SPECIFICATIONS shall be rejected. A project containing any uncorrected non-conformance materials and/or work will not be accepted by the PBWU.
- H. A Final Inspection and certain forms of testing on the project will be required as shown in the DETAILED SPECIFICATIONS and/or the SANITARY SEWER DESIGN GUIDELINES (QUICK FACT SHEET).
- I. After completion of the construction phase of the project, the following items shall be submitted by the Owner/Developer to the PBWU for its review and approval:
1. Testing results.
 2. "AS-BUILT PLANS".
 3. CERTIFICATE OF CONFORMANCE certifying proper construction of the project (a blank form is available). This item must be completed and submitted to the PBWU BEFORE the project is placed into service (i.e. no physical service line connections to and no introduction of sanitary wastes into the new sewer line(s) before the CERTIFICATE OF CONFORMANCE is completed and submitted to the PBWU).
 4. BILL OF SALE transferring ownership of the project assets to the PBWU (a blank form is available). This item must be completed and submitted to the PBWU BEFORE the project is placed into service (i.e. no physical service line connections to and no introduction of sanitary wastes into the new sewer line(s) before the BILL OF SALE is completed and submitted to the PBWU).
 5. SEWER MAINTENANCE BOND, if applicable.
 6. EASEMENT: A signed RIGHT-OF-WAY EASEMENT shall be obtained by the Owner/Developer for all portions of the project located on or across private property. This item must be completed and submitted to the PBWU BEFORE the project is placed into service.
- J. Upon (a) completion of a properly constructed project, (b) the Final Inspection and approval, and (c) submittal of all items required above, the PBWU will issue a formal letter of acceptance. PBWU will transmit a copy of the acceptance letter to the Arkansas Department of Health, Engineering Section, District #5.

- K. A SANITARY SEWER EXTENSION CHECK OFF LIST will be maintained by the PBWU through the duration of the project to track the progress of the project. A copy of Check Off List is included in this document.

3.8 Demolition Policy

- A. When a structure is demolished, it is the responsibility of the property owner to contact PBWU to coordinate the proper demolition of the sewer service.
- B. The sewer service will be exposed at the property line. The service will be disconnected and capped with nonshrink grout to prevent ground water from infiltrating into Pine Bluff Wastewater Utilities' collection system.
- C. Pine Bluff Wastewater shall be notified 24 hours in advance of the work, so they may inspect the demolition of the service and photograph the completed project. Inspection work shall take place during regular business hours.

3.9 Property Restoration Policy

- A. When PBWU conducts work within existing rights-of-way or easements, PBWU will be responsible for the repair of damages to existing facilities. All repairs shall be made at no cost to the property owner. All items such as fences, mailboxes, shrubbery, trees, culverts, lawns, sidewalks, sewers, and etc. which have been disturbed by Pine Bluff Wastewater Utilities' operations will be restored to original condition and usefulness in a timely manner.
- B. Lawn replacement will be with sod or seed and mulch, using Bermuda grass. PBWU may remove existing grass or sod, maintain same, and replace in all disturbed areas to satisfactory condition.
- C. Shrubs removed for subsequent replacement and resetting will be kept moist and healthy unless new and equal plants replace those destroyed.
- D. Fences will be restored to their original conditions using the same type of materials that were used in their original construction.
- E. Pine Bluff Wastewater will store materials and excavations, so as to keep such restoration work to a minimum.

DEVELOPER POLICY

4.1 General

- A. This is a developer policy fact sheet and is not intended to provide detailed plans and specifications for all aspects of sanitary sewer construction as required by the Pine Bluff Wastewater Utility (PBWU). Detailed specifications are not included with this document due to their proneness to frequent change. Likewise, this document is dynamic and subject to change as deemed necessary by the PBWU. A more detailed Policy document may be prepared and various Detailed Specifications and Detailed Standard Drawings may be available from the PBWU if needed or desired.
- B. All materials and construction methods shall meet or exceed the Ten State Standards and the minimum requirements of the Arkansas Department of Health. The Ten State Standard is also used as a guideline by the PBWU. As required by state law, all project plans and specifications must be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas. The PBWU reserves the right to have all materials and construction methods conform to our applicable specifications and standards before the work will be accepted.
- C. This Developer Policy and Details of the PBWU shall become a supplement to the Specifications of any Project designed by any Registered Engineer, Architect or Engineering Firm if said project is to be accepted by the PBWU. The most stringent specifications shall be used.
- D. Certain standard and typical details are included in this document and shall be considered as the minimum acceptable for materials, work, and construction techniques allowed for projects to be accepted by the PBWU. If any project includes work that is not covered by this document, contact PBWU to verify the appropriate specifications, standards, and practices.

4.2 Sewer Improvement Districts

- A. PBWU's current policy on expansion of its wastewater collection relies on those that are not currently served to coordinate and fund any improvements required for them to be served. Historically, expansions have either been funded by developers or potential customers banding together to form sewer improvement districts.
- B. Potential customers who wish to be served are responsible for selecting, coordinating with, and compensating the professionals, including attorneys, engineers, and appraisers, necessary to form their sewer improvements district.

- C. As with any expansion of its system, PBWU will support sewer improvements districts by providing information on existing infrastructure, meeting with the improvements district and its representatives, and reviewing/approving the planned improvements.
- D. Infrastructure constructed by sewer improvement districts are subject to the same design, sewer service application, plan submission, construction review fee, easement, permit, licensing, inspection, testing, and bonding requirements as new construction. See the other remaining sections of this Developer Policy for Policy for more information.

4.3 Sewer Service Application

- A. Any potential customer seeking service from the PBWU will complete and submit a Sewer Service Application.
- B. The Sewer Service Application is included in this document.

4.4 Submission of Development Design Plans and Specifications

- A. Preliminary approval for any proposed sanitary sewer extension must be granted by the Manager of the PBWU. A vicinity map and site plan shall be sufficient to indicate the Owner/Developer's intentions. Preliminary approval does not constitute automatic final approval of any sewer extension. An Engineering Report is required for any Project, regardless of size. Preliminary information provided by the PBWU is normally limited to aerial maps showing the site location and the nearest available sewer lines, pump stations, and force mains. Elevations of manholes and size of existing pipes are given if known. The Owner/Developer is responsible for providing an Engineers design plan to be reviewed by the PBWU Designated Engineer or Consulting Engineering Firm.
- B. A proposed detailed CONSTRUCTION PLAN AND SPECIFICATIONS shall conform to the PBWU's latest standards. At the discretion of the PBWU, small projects may use the STANDARD DETAILS and SPECIFICATIONS as published by the PBWU. Large projects may require submittal of DETAILED SPECIFICATIONS prepared by the project's Engineer. As required by state law, all construction plans and specifications must be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas. One complete set of the proposed Construction Plan is sufficient for the preliminary review.
- C. After review by the PBWU, corrections and adjustments to the PLAN and SPECIFICATIONS as detailed and/or directed by the PBWU shall be resubmitted by the Owner/Developer. Final written approval of CONSTRUCTION PLANS and SPECIFICATIONS must be made by the PBWU and the Arkansas Department of Health, Engineering Section, before construction of the project can commence.

- D. A construction review fee of 0.5% of the estimated construction cost will be required for each project whose estimated construction cost exceeds \$50,000. The construction review fee shall not exceed \$1,000.

4.5 Easements and Permits

- A. Before construction can begin, signed RIGHT-OF-WAY EASEMENTS shall be obtained by the Owner/Developer for all portions of the project located on or across private property. A MEMORANDUM OF UNDERSTANDING developed by PBWU may be substituted for a signed EASEMENT.
- B. PERMITS shall be obtained from the applicable department and/or agency for all portions of the project located on or across public property (i.e. streets, highways, parks, utility easements, etc.).
- C. Any work on AHTD right-of-way requires a permit and compliance with the AHTD's Utility Accommodation Policy. The Developer and his contractor will strictly comply with all AHTD requirements. The AHTD's Utility Accommodation Policy does not allow the Developer to directly secure AHTD Utility Permits. Instead, AHTD policy requires that all AHTD Utility Permits for PBWU projects be acquired and bonded by the PBWU. The Developer will be responsible for coordinating with the AHTD, filling out all permit forms for execution, and submission to AHTD by PBWU. The Developer will be financially responsible for all costs associated with the AHTD permit and of any PBWU bonds forfeited due to his or his contractor's failure to comply with the AHTD Utility Accommodation Policy.
- D. EASEMENTS and PERMITS shall be submitted to the PBWU for review and approval prior to start of construction. Pump stations shall be located on property deeded to the City of Pine Bluff.

4.6 Licensing Requirements

- A. Projects valued at less than \$20,000 may be installed by either an Arkansas licensed Master Plumber or an Arkansas licensed General Contractor. Projects valued at \$20,000 or more must be constructed by an Arkansas licensed General Contractor with applicable project bonding and insurance as per State law. Arkansas State Licensing Law for Commercial Contractors Act 150 of 1965 and Act 162 of 1987 (as amended) requires the Installation Contractor to have a Contractors Licenses Classification of Municipal and Utility Construction.
- B. Contractors will be required to comply with all requirements outlined in the Pine Bluff Wastewater Utilities' Contractor Policy.

4.7 Construction Inspection & Testing Requirements

- A. The PBWU's Designated Engineer or PBWU Inspector shall be informed at least 24 hours before any construction is commenced on the project. During construction, no sewer pipe or appurtenances shall be backfilled, encased, or permanently covered until inspected by the PBWU or its contracted representative. The project shall be subject to continuous and/or random inspection by the PBWU or its contracted representative. All materials and/or work found to be in non-conformance with the PLANS AND SPECIFICATIONS shall be rejected. A project containing any uncorrected non-conformance materials and/or work will not be accepted by the PBWU.
- B. A Final Inspection and certain forms of testing on the project will be required, as shown in the DETAILED SPECIFICATIONS and/or the SANITARY SEWER DESIGN GUIDELINES (QUICK FACT SHEET).
- C. After completion of the construction phase, the following items shall be submitted by the Owner/Developer to the PBWU for its review and approval:
 - 1. Testing results.
 - 2. "AS-BUILT" PLANS.
 - 3. CERTIFICATE OF CONFORMANCE.
 - 4. BILL OF SALE.
 - 5. SEWER MAINTENANCE BOND.
 - 6. Any revisions to easements and permits, required for construction.

4.8 Sewer Maintenance Bond Requirements

- A. A SEWER MAINTENANCE BOND is required prior to acceptance on any sewer infrastructure by the PBWU.
- B. The SEWER MAINTENANCE BOND must be submitted on Pine Bluff Wastewater Utilities' standard form.
- C. The surety issuing the SEWER MAINTENANCE BOND must be licensed to practice in the State of Arkansas.

4.9 Sewer Infrastructure Design Requirements

- A. Wastewater Service Connections: Wastewater service connections shall comply with the requirements of Paragraph 3.2 of the Customer Service Policy.
- B. Gravity Collection Mains

1. Sizing: gravity collection mains shall be sized for the anticipated load. The minimum size shall be eight (8) inch, unless six (6) inch is approved by the PBWU in writing.
2. Piping Material: pipe for sewer lines shall be PVC SDR-26/PS115 solid wall gravity sewer pipe. Any line with less than 36" of cover shall be ductile iron. All ductile iron castings and fittings shall be manufactured by an ISO certified factory. Ductile iron sewer pipe shall be class 50 with cement lining.
3. Bedding
 - a. Bedding Material: bedding shall be Class I crushed stone, granite or hard lime rock, ¾" nominal size. Other sizes and gradations of bedding material may be used only with written approval from the PBWU.
 - b. Bedding for Ductile Iron: ductile iron pipe shall be bedded in a 3" minimum thick bed of crushed stone under pipe.
 - c. Bedding for PVC: PVC pipe shall be bedded per Pine Bluff Wastewater standard details.
 - d. Special Bedding: Any pipe laid in extremely deep cuts or bad subgrade conditions may require special bedding. Coordinate bedding requirements with PBWU Technical Service Division.
4. Installation
 - a. All sewer main lines shall be laser aligned for grade and line using industry standard laying techniques and construction methods acceptable to the PBWU.
 - b. Sewer main lines shall be laid to the minimum standards of 2 feet per second velocity. Unless approved in writing by PBWU, minimum sewer grades will be used in an effort to maintain sewer depth to allow for future upstream development. The following minimum grades are provided for your convenience:

Pipe Diameter	Minimum Grade
6"	0.60%
8"	0.40%
10"	0.28%
12"	0.22%
14"	0.17%
15"	0.15%
18"	0.12%
21"	0.10%
24"	0.08%
27"	0.067%
30"	0.058%
36"	0.046%
42"	0.037%

- c. Manholes as required by this document.
 - d. Pipe bedding as required by this document.
 - e. Pipe trenches located under special and driving surfaces shall be totally backfilled with compacted Bottom Ash Blend (BAB), a 50% mix of Bottom Ash and Fly Ash. BAB is obtainable from a local provider. It should be placed in lifts not exceeding 18" thick. Paved surfaces shall be repaired as per the governing department/agency requirements. Do not place BAB against any metal without properly protecting the metal surface with approved plastic wrapping, paint, or other protectant.
5. Testing
- a. Sewer main lines shall be air tested as per the generally accepted wastewater (Professional) or engineering standards for low air pressure sewer line testing.
 - b. Sewer main lines shall be hydro cleaned and video inspected by camera after completion of work. PBWU will provide TV video of any sewer main line extension performed by a Contractor up to two line segments at no charge. Larger projects will be video inspected at Owner/Developer's expense. A TV log must accompany video showing Project Name, Manhole Numbers, Pipe Size, and Wye Locations/distances. TV video and log shall be recorded in DVD format from downstream to upstream.
 - c. All main lines constructed of flexible pipe material (i.e. PVC) shall be mandrel tested 30 days after backfill (hand pull, 5% maximum deflection, using go/no-go mandrel). The mandrel must be stamped with the proper % of deflection for the type of pipe testing being conducted. If using an adjustable mandrel, a sizing ring must be provided for the size used.
 - d. Manholes shall be vacuum tested as per industry standards.
 - e. The PBWU Inspector shall be present for all testing. All test results shall be submitted to the PBWU's Designated Engineer for review and approval.

C. Manholes

- 1. Manholes shall be cast-in-place, per Pine Bluff Wastewater Standard Details, or precast, by Peterson Concrete Tank or equal and meeting Pine Bluff Wastewater Standard Specifications.
- 2. Minimum inside diameter is four (4) feet.
- 3. Maximum spacing between manholes is 400 feet.
- 4. All manholes shall have a preferred fall across the manhole invert of 0.10 feet, 0.05 feet minimum
- 5. All construction joints and pipe penetrations in cast-in-place and precast manholes shall be filled smooth with a non-shrink grout and sand mixture.
- 6. Inverts shall be smooth all around to prevent catching of debris.

7. Manhole ring and cover shall be the Arkansas standard 250 pound set, 22" clear opening, 23 1/2" diameter cover with an edge thickness of 1 1/2".
8. Manholes located in flood prone areas shall be elevated above the 100-year flood plain elevation or provided with an approved watertight, bolt-down ring and cover.
9. Drop manholes shall be constructed when the invert of any two lines entering and leaving a manhole exceeds two and one-half (2.5) feet in elevation.
10. Before being accepted for service, manholes must pass a vacuum test per industry standards. Manholes failing vacuum testing must either be repaired or replaced and retested.

D. Wastewater Lift Stations

1. Pump stations will not be allowed in any project unless physical limitations preclude the construction of an all-gravity system. A pump station may not be included in a project without the written approval of the PBWU. If a pump station is required and approved, the PBWU will provide or assist with general construction and capacity requirements for the station.
2. Any Pump Station that will be turned over to the PBWU to operate and maintain shall be required to have a PBWU pre-approved monitoring system installed at the Developer's expense.
3. Final design of the pump station must meet with the approval of the PBWU.
4. Pump Stations shall, as a minimum, conform to the requirements of "Ten States Standards", with particular attention to the following:
 - a. A minimum of two submersible, wetwell mounted sewage pumps shall be installed in the station, with each pump sized to pump the design capacity of the pumping station.
 - b. Station shall be equipped with an alternator to equalize the wear on the pumps.
 - c. Pumps shall be capable of passing a three (3) inch sphere. Grinder type pumps are not permitted.
 - d. Wetwell level shall be sensed and utilized in starting and stopping pump operations using an electronic level transducer, Consolidated or PBWU approved equal.
 - e. Pump Stations shall be equipped with an emergency pump connection to permit connection of an auxiliary portable pump to the force main.
 - f. When lift station is designed to pump into common force main with one or more other lift stations, provide hydraulic modeling to confirm that performance of all lift stations is not compromised by installation of new pump station. If necessary, Developer will be responsible to modifications to other stations required to maintain their performance.

E. Wastewater Force Mains

1. Sizing: force main shall be designed for a minimum scouring velocity of 2 feet per second.
2. Pipe for force main shall be one of the following, as approved by PBWU:
 - a. Ductile iron pipe with “push-on” joints, AWWA C151/A21.51-02, with cement mortar lining AWWA C104/A21.4-03, minimum pressure class 150 psi.
 - b. PVC Pressure Pipe, ASTM D2241, minimum wall thickness ratio SDR-21.
 - c. PVC Pressure Pipe (DI o.d.) AWWA C900, latest revision, minimum wall thickness DR-18.
3. Force main (except ductile iron pipe) shall have a copper tracing wire wrapped around the pipe, at intervals not to exceed 20 feet, before backfilling.
4. Pipe shall also have Detector Locator Tape (Conductive Tracer) placed flat in the trench with warning message facing up, vertically above pipe and at a depth halfway between top of force main and finish ground surface.
5. Bedding: provide same bedding material as gravity collection mains.
6. Pipe trenches located under special and driving surfaces shall be totally backfilled with compacted Bottom Ash Blend (BAB), a 50% mix of Bottom Ash and Fly Ash. BAB is obtainable from a local provider. It should be placed in lifts not exceeding 18” thick. Paved surfaces shall be repaired as per the governing department/agency requirements. Do not place BAB against any metal without properly protecting the metal surface with approved plastic wrapping, paint, or other protectant.
7. Installation:
 - a. Force main shall be installed to grade with continuous positive and negative slopes between air valves.
 - b. Provide air valves at all high points to ensure proper management of air within the force main.

G. Air Valves

1. Air valves shall be stainless steel combination sewage air release valve, ARI or approved equal.
2. Developer’s engineer shall size air valves and submit calculations to the PBWU for approval.

CONTRACTOR POLICY

5.1 General

- A. This is a contractor policy fact sheet and is not intended to provide detailed plans and specifications for all aspects of sanitary sewer construction as required by the Pine Bluff Wastewater Utility (PBWU). Detailed specifications are not included with this document due to their proneness to frequent change. Likewise, this document is dynamic and subject to change as deemed necessary by the PBWU. A more detailed Policy document may be prepared and various Detailed Specifications and Detailed Standard Drawings may be available from the PBWU if needed or desired.
- B. All materials and construction methods shall meet or exceed the Ten State Standards and the minimum requirements of the Arkansas Department of Health. The Ten State Standard is also used as a guideline by the PBWU. As required by state law, all project plans and specifications must be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas. The PBWU reserves the right to have all materials and construction methods conform to our applicable specifications and standards before the work will be accepted.
- C. The Sanitary Sewer Extension Procedure and Details of the PBWU shall become a supplement to the Specifications of any Project designed by any Registered Engineer, Architect or Engineering Firm if said project is to be accepted by the PBWU. The most stringent specifications shall be used.
- D. Certain standard and typical details are included in this document and shall be considered as the minimum acceptable for materials, work, and construction techniques allowed for projects to be accepted by the PBWU. If any project includes work that is not covered by this document, contact PBWU to verify the appropriate specifications, standards, and practices.

5.2 Application to Conduct Business with PBWU

- A. Any contractor seeking to contract with the PBWU will complete and submit a Contractor/Engineer/Consultant Application Form.
- B. The Contractor/Engineer/Consultant Application Form is included in this document.

5.3 Engineering Requirements

- A. If the Contractor is required to provide engineering services by the Contract Documents, state law, or other Authorities Having Jurisdiction, Work shall be designed, signed, and stamped by a Professional Engineer registered in the State of Arkansas.

5.4 Contract Requirements

- A. Prior to the first partial payment estimate the Contractor shall submit construction progress schedules showing the order in which the Contractor proposes to carry on the Work, including dates at which various parts of the Work will be started and completed.
- B. The intent of the Contract Documents is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental Work necessary to complete the project in an acceptable manner, ready for use, occupancy or operation by the Owner.
- C. Any discrepancies found between the Contract Documents and site conditions or any inconsistencies or ambiguities shall be immediately reported to the PBWU, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.
- D. The Owner shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work. From the information provided by the Owner, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys as needed for construction. The Contractor shall carefully preserve bench marks and will be responsible for their reestablishment after loss or disturbance.
- E. Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, the Contractor shall promptly notify the Owner in writing.
- F. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary

construction of any nature, permits, fees, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the Work within the specified time.

- G. Materials and equipment shall be stored as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.
- H. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer. Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and approved by the Owner.
- I. Materials, supplies or equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale Contract or other agreement by which an interest is retained by the seller.
- J. The Contractor will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the Work, a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the Work.
- K. The Owner may at any time, as the need arises, order changes within the Scope of the Work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for the Performance of the Work, and equitable adjustment shall be authorized by Change Order.
- L. The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents and Work embraced shall be commenced on a date specified in the Notice to Proceed.
- M. The Contractor will proceed with the Work at such rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time for completion of the Work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work.

- N. If the Contractor shall fail to complete the Work within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the Agreement for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents. Contractor shall not be charged liquidated damages if delay is caused by:
1. To any preference, priority, or allocation order duly issued by the Owner.
 2. To unforeseeable causes beyond the control and without fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.
- O. The Owner may suspend the Work or any portion thereof for a period of not more than ninety (90) days or such further time as agreed upon by the Contractor, by written notice to the Contractor and the Engineer which shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspensions.
- P. After ten (10) days from delivery of a written notice to the Contractor and the Engineer, the Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the Contract. In such case the Contractor shall be paid for all Work executed and any expense sustained plus a reasonable profit.
- Q. The Contractor may, after ten (10) days from delivery of a written notice, terminate the Contract and recover from the Owner payment for all Work executed and all expenses sustained if:
1. Work is suspended for a period of more than ninety (90) days by the Owner, an order of the court, or other public authority.
 2. Owner fails to pay the Contractor within thirty (30) days of its approval of a pay request.
- R. The acceptance by the Contractor of the final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds.
- S. Neither the Contractor nor the Owner shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of any right, title or interest therein, or any obligations thereunder, without written consent of the other party.

- T. The Contractor will indemnify and hold harmless the Owner and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the Work, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, and Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.
- U. Prior to issuance of Notice to Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work. The Owner shall provide to the Contractor, information which delineates and describes the lands owned and rights-of-way acquired. The Contractor shall provide at its own expense and without liability to the Owner, any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.
- V. All claims, disputes, and other matters in question arising out of, or relating to, the Contract Documents or the breach thereof, except for claims which have been waived by making an acceptance of the final payment, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.
- W. The Contractor will pay all Federal, State, and local sales, consumer, use and other similar taxes required by the laws of the place where the Work is being performed.

5.5 Bidding Requirements

- A. Each Bid must be submitted in a sealed envelope addressed to the PBWU at 1520 South Ohio Street, Pine Bluff, Arkansas 71601. Each sealed envelope containing a Bid must be plainly marked on the outside with the name of the Bid and the envelope should bear on the outside the Bidder's name, address, and Contractor's license number, and the name of the project for which the Bid is submitted. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Owner at PBWU, 1520 South Ohio Street, Pine Bluff, Arkansas 71601.
- B. All Bids must be made on the required Bid forms. All blank spaces for Bid prices must be filled in, in ink or typewritten, and the Bid form must be fully completed and executed when submitted. Only one copy of each Bid form is required.

- C. The Owner may waive any informalities or minor defects or reject any or all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the Bidder.
- D. Any Bidder may modify his Bid by facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided such facsimile communication is received by the Owner prior to the closing time, and provided further, the Owner is satisfied that a written confirmation of the facsimile modification over the signature of the Bidder was mailed prior to the closing time. The facsimile communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the facsimile modification.
- E. Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the drawings and specifications, including Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of the nature of the Work to be done.
- F. The Owner shall provide to Bidders prior to Bidding, all information which is pertinent to, and delineates and describes, the land owned and the rights-of-way acquired or to be acquired.
- G. Bidder must agree to commence Work on or before a date to be specified in a written Notice to Proceed from the Owner and fully complete the project within sixty (60) consecutive calendar days thereafter. Bidder must agree also to pay as liquidated damages, the sum of \$250.00 for each consecutive calendar day thereafter as hereinafter provided in the General Conditions and the Supplemental General Conditions.
- H. The Contract Documents contain the provisions required for the construction of the Project. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks of obligations assumed by the Contractor from fulfilling any of the conditions of the Contract.
- I. Each Bid of over \$20,000 must be accompanied by a Bid Bond payable to the Owner for five (5) percent of the total amount of the Bid. As soon as the Bid prices have been compared, the Owner will return the Bonds of all except the three lowest responsible Bidders. When the Agreement is executed, the bonds of the two remaining unsuccessful Bidders will be returned. The Bid Bond of the

successful Bidder will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a Bid Bond.

- J. For contracts over \$20,000, a Performance Bond and Payment Bond each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the Contract. Attorneys-in-fact who sign Bid Bonds, Payment Bonds or Performance Bonds must file with each Bond a certified and effective dated copy of their power of attorney.
- K. The party or parties to whom a Contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when the Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the Bidder to execute the Agreement, the Owner may consider the Bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.
- L. The Owner within ten (10) days of receipt of acceptable Performance Bond, Payment Bond, Agreement and Insurance requirements, signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the Bidder may by Written Notice withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.
- M. The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and the Contractor. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.
- N. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Agreement and to complete the Work contemplated therein.
- O. Award will be made to the lowest responsible Bidder.

- P. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout.
- Q. Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to its Bid.
- R. The low Bidder shall supply the names and addresses of all major material Suppliers and Subcontractors when required to do so by the Owner.

5.6 Living Wage Ordinance

- A. Profitable organizations (individual, partnership, corporation, Limit Liability Company, sole proprietorship, association, joint adventure, estate, trust or any other entity) with contracts with the PBWU that meet the following criteria must comply with the City of Pine Bluff's Living Wage Ordinance:
 - 1. 5 or more employees;
 - 2. Full-time, part-time, seasonal or contracted workers, contingent workers, temp force workers or employment agency designees; and
 - 3. Your annual cumulative contract amount is \$5,000 or more.
- B. The Living Wage Rate is increased each January, so Contractor will contact the City of Pine Bluff for current Living Wage Rate for part-time and full-time employees.
- C. Contractor shall pay employees the Living Wage Rate or more.
- D. Contractors who provide Professional Services, such as Legal, Banking, Architectural, Computer, Engineering, Financial Advisory, Construction Management or Land Surveying are exempt.

5.7 Pine Bluff Occupational Tax Requirements

- A. Contractor shall comply with Pine Bluff City Ordinance 13-72 by acquiring a \$5,000 Surety Bond and paying an occupation tax of \$500.00 plus an additional \$10.00 per tradesman or laborer over one. The occupation tax will be paid to the Pine Bluff City Collector's office at 200 East 8th Avenue.

5.8 Public Service Announcements

- A. The Contractor shall make every effort to maintain sewer service usage throughout the duration of the project. In the event that a sewer service will be out of service, the Contractor shall provide for bypass pumping of that service so that the customer may maintain the use of their sewer service. A public

notification program shall be implemented, and shall as a minimum, require the Contractor to be responsible for contacting each home or business connected to the effected sanitary sewer and informing them of the work to be conducted, and when the sewer will be out of service. The Contractor shall also provide the following:

1. Contractor shall place one advertisement in the Pine Bluff Commercial to serve as public notification of the contractor's work on this project. The advertisement is subject to the Engineer's review & approval prior to publication. The Contractor is responsible for all costs associated with the advertisement.
2. Written notice to be delivered to each home or business describing the work, schedule, how it affects them, and the telephone number of the Contractor that they can call to discuss the project or any problems which could arise.
3. Personal contact and written notice the day prior to the beginning of work being conducted on the section relative to the residents affected.
4. Personal contact with any home or business which cannot be reconnected within the time stated in the written notice

5.9 Working Hours

- A. Preferred working hours shall be from 7:00 a.m. to 5:00 p.m., Monday through Friday, excluding Legal Holidays. No work will be performed outside of preferred working hours, including weekends, without the written approval of PBWU. Historically, PBWU has endeavored to accommodate reasonable contractor requests for work outside of preferred working hours. No work shall be begun which cannot be completed within preferred working hours.
- B. Legal holidays during which no work shall be performed include New Year's Day, Martin Luther King Jr.'s Birthday, George Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, Christmas Eve, and Christmas.

5.10 Traffic Control Requirements

- A. Whenever work on is adjacent to or within avenues of traffic, Contractor shall be responsible for the complete and safe maintenance and control of traffic through the project area.
- B. The Contractor shall supply, erect, and maintain all necessary signs, barricades, cones, lights and other traffic control devices required by federal, state, or local agency responsible for control of the traffic avenue affected.
- C. When directed by PBWU, Contractor shall provide a written maintenance of traffic plan for the project.

- D. Contractor shall keep traffic disruption to a minimum. Contractor shall make all viable efforts to prevent the complete blockage of a traffic avenue and shall utilize detours as a last resort unless otherwise approved by the PBWU and the owner of the traffic avenue.

5.11 Safety Policy

- A. The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor will take all necessary precautions for the safety of, will provide the necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss of employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities, not designated for removal, relocation or replacement in the course of construction.
- B. The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders by any public body having jurisdiction. The Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. The Contractor will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury, or loss to any property caused directly or indirectly, in whole or part, by the Contractor and any Subcontractor or anyone directly or indirectly employed by any of them or anyone whose acts of any of them be liable, except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of the Owner, of the Engineer or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault of negligence of the Contractor.
- C. If emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization, shall act to prevent threatened damage, injury or loss. The Contractor will give the PBWU prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved

5.12 Warranty Requirements

- A. Contractor shall warrant and guarantee that all Work will be in accordance with the Contract Documents and will not be defective. Contractor's warranty and guarantee excludes defects or damage caused by:

1. Abuse, modification, or improper maintenance or operation by persons other than Contractor, subcontractor, suppliers, or any individual or entity that Contractor is responsible.
 2. Normal wear and tear under normal usage.
- B. Warranty period shall be one year from date of Substantial Completion.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents:
1. Observations by PBWU or its representative.
 2. Approval of pay request or any progress or final payment.
 3. Issuance of a certificate of Substantial Completion.
 4. Use of the Work or any part thereof by the PBWU.
 5. Any acceptance by PBWU or any failure to do so.
 6. Any review and approval of shop drawings or sample submittal.
 7. Any inspection, test or approval by others.
 8. Any correction of defective Work by Owner.

5.13 Contractor Payment Policy

- A. At least ten (10) days before each progress report payment falls due (but not more often than once a month), the Contractor will submit a partial payment estimate filled out and signed by the Contractor covering the Work performed during the period covered by the partial payment estimate and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the PBWU, as will establish the PBWU's title to the material and equipment and protect the PBWU's interest therein, including applicable insurance. The PBWU will, with ten (10) days after receipt of each partial payment estimate, either indicate in writing approval of payment and begin the final processing for payment or return the partial payment estimate to the Contractor, indicating in writing, the reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The PBWU will, within ten (10) days of written approval of a partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate less the retainage. The retainage shall be an amount equal to ten percent (10%) of said estimate until fifty percent (50%) of the work has been completed. At the fifty percent (50%) completion, further partial payments shall be made in full to the Contractor and no additional amounts may be retained unless the Engineer certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the Contractor. At fifty percent (50%) completion or at any time thereafter when the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than ten percent (10%) of the

value of the Work completed. Upon substantial completion of the Work, any amount retained may be paid to the Contractor. When the Work has been substantially completed except for the Work which cannot be completed because of weather conditions, lack of materials or other reasons which, in the judgment of the PBWU, are valid reasons for noncompletion, the PBWU may take additional payments, retaining at all times, an amount sufficient to cover the estimated cost of the Work still to be completed.

- B. The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.
- C. Prior to Substantial Completion, the PBWU may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.
- D. The PBWU shall have the right to enter the premises for the purpose of doing Work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor as the sole responsibility for the care and protection of the Work, or the restoration of any damaged work except such as may be caused by agents or employees of the PBWU.
- E. Upon completion and acceptance of the Work, the PBWU shall issue a certification attached to the final payment request that the Work has been accepted under the conditions of the Contract Documents. The entire balance found to be due to the Contractor, including the retained percentages, but except such sums as may be lawfully retained by the PBWU, shall be paid to the Contractor within thirty (30) days of completion and acceptance of the Work.
- F. The Contractor shall indemnify and save the PBWU or the PBWU's agents harmless from all claims growing out of the lawful demand of subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the Work. The Contractor shall, at the PBWU's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so, the PBWU may, after having notified the Contractor, either pay unpaid bills or withhold them from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment of the Contractor shall be resumed in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the PBWU to either the Contractor, the Contractor's Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the PBWU shall be considered as a payment made under the Contract Documents by the PBWU to the Contractor and the PBWU shall not be liable to the Contractor for any such payments made in good faith.

- G. If the PBWU fails to make payment thirty (30) days after approval, in addition to other remedies available to the Contractor, there shall be added to each such payment, interest at the maximum legal rate, commencing on the first day after said payment is due and continuing until the payment is received by the Contractor.

5.14 Submittal Requirements

- A. The Contractor shall provide all shop drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The PBWU shall promptly review all shop drawings. The approval of any shop drawing shall not release the Contractor from the responsibility for deviations from the Contract Documents. The approval of any shop drawing which substantially deviates from the requirements of the Contract Documents shall be evidenced by a Change Order.
- B. When submitted for review, shop drawings shall bear the Contractor's certification that he has reviewed, checked, and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.
- C. Portions of the Work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

5.15 Inspection Requirements

- A. The PBWU's Designated Engineer or PBWU Inspector shall be informed at least 24 hours before any construction is commenced on the project. During construction, no sewer pipe or appurtenances shall be backfilled, encased, or permanently covered until inspected by the PBWU or its contracted representative. The project shall be subject to continuous and/or random inspection by the PBWU or its contracted representative. All materials and/or work found to be in non-conformance with the PLANS AND SPECIFICATIONS shall be rejected. A project containing any uncorrected non-conformance materials and/or work will not be accepted by the PBWU.
- B. The Owner shall provide all inspection and testing services not required by the Contract Documents
- C. The Contractor shall provide at the Contractor's expense the testing and inspection services required by the Contract Documents.
- D. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be specifically inspected,

tested or approved by someone other than the Contractor, the Contractor will give the PBWU timely notice of readiness. The Contractor will then furnish the PBWU the required certificates of inspection, testing or approval.

- E. Inspections, tests, or approvals by the PBWU or others shall not relieve the Contractor from the obligation to perform the Work in accordance with the requirements of the Contract Documents.
- F. The PBWU and its representatives will, at all times, have access to the Work. In addition, authorized representatives of any agents of any participating Federal, State or local agency shall be permitted to inspect all Work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.
- G. If any Work is covered contrary to the written instructions of the Engineer, it must, if requested by the Engineer, be uncovered for the Engineer's observation and replaced at the Contractor's expense.
- H. If the PBWU considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the PBWU's request, will uncover, expose or otherwise make available for observation, inspection or testing as required, that portion of the Work in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection testing and reconstruction and an appropriate Change Order shall be issued
- I. When the entire project is ready to serve its intended purpose, the Contractor shall notify PBWU to schedule an inspection for substantial completion. PBWU and the Contractor will jointly inspect the project to determine substantial completion. At that inspection, PBWU will develop a punch list and submit it to the Contractor.
- J. Once the substantial completion punch list is complete, the Contractor shall notify PBWU and schedule a follow up inspection.
- K. After completion of the construction phase, the following items shall be submitted by the Owner/Developer to the PBWU for its review and approval:
 - 1. Testing results.
 - 2. "AS-BUILT" PLANS.
 - 3. CERTIFICATE OF CONFORMANCE.
 - 4. SEWER MAINTENANCE BOND.
 - 5. Any revisions to easements and permits, required for construction.

5.16 Stormwater Pollution Prevention Requirements

- A. Contractor shall comply with the City of Pine Bluff Stormwater Regulations, which are included in Article IV of Chapter 28 of the City of Pine Bluff Code of Ordinances.
- B. If the Work disturbs less than 1 acre, a city stormwater permit is not required. However, the Contractor is required to follow the best management practices for erosion control. The Contractor shall coordinate the review of best management practices with the City of Pine Bluff Code Enforcement staff to ensure compliance with the Pine Bluff Stormwater Regulations. Contractor shall provide submittal information to the PBWU to outline the best management practices and confirm their review by the City of Pine Bluff.
- C. If the Work disturbs more than 1 acre, a city stormwater permit is required. The PBWU will pay all permit fees associated with city stormwater permit fee. The Contractor will be responsible for coordinating the preparation of a stormwater pollution prevention plan for the Work. The stormwater pollution prevention plan will list the PBWU as Owner and the Contractor as operator. The Contractor will submit the stormwater pollution prevention plan to the City of Pine Bluff Code Enforcement for review and approval. After the stormwater pollution prevention plan has been reviewed and approved by the City of Pine Bluff Code Enforcement staff, the Contractor shall coordinate the execution of the stormwater pollution prevention plan by the Manager of the PBWU. Contractor will be responsible for complying with all aspects of the stormwater pollution prevention plan.
- D. Due to its status as Owner, the PBWU will be subject to fines and other enforcement activities if the Contractor does not fully comply with the City of Pine Bluff's Stormwater Regulations. If the PBWU is fined due to the Contractor's actions or inability to comply with these stormwater regulations, the Contractor will be responsible for reimbursing the PBWU for those fines and any reasonable costs associated with responding to the City of Pine Bluff, the Arkansas Department of Environmental Quality and the EPA.

5.17 Policy for Communication with Public or Media

- A. PBWU encourages contractors to maintain and develop good relationships with the media and to promote a positive corporate image through the publication of project information in local newspapers, trade publications, and on social media. Pine Bluff requires an advanced review of all media releases or trade publication stories that relate to PBWU Projects.

5.18 Property Restoration Policy

- A. Contractor will be responsible for the repair of damages to existing PBWU facilities. All repairs shall be made at no cost to the PBWU and property owners. All items such as fences, mailboxes, shrubbery, trees, culverts, lawns, sidewalks, sewers, and etc. which have been disturbed by Contractor's operations will be restored to original condition and usefulness in a timely manner.
- B. Lawn replacement will be with sod or seed and mulch, using Bermuda grass. Contractor may remove existing grass or sod, maintain same, and replace in all disturbed areas to satisfactory condition.
- C. Fences will be restored to their original conditions using the same type of materials that were used in their original construction.
- D. Contractor will store materials and excavations, so as to keep such restoration work to a minimum.

5.19 Public Street Restoration

- A. When necessary to cut a paved city street, the Owner will obtain a permit from the City of Pine Bluff to do the work. The Owner will saw cut the asphalt/concrete street, furnish gravel backfill material to the site, furnish cold mix asphalt to the site for the temporary repair, and be responsible for the permanent street repair.
- B. The Contractor shall excavate the trench/insertion pit, dispose of excavation, install pipe bedding, install backfill, compact trench, and install cold mix asphalt in order to make the street repair suitable for traffic. Contractor shall confine his excavation to within the limits of the saw cut area.

CERTIFICATE OF CONFORMANCE

The undersigned, sponsor of the sewer project designated

In accordance with the policy adopted by the Pine Bluff Wastewater Utility Commission, does hereby certify that the construction of the sewer facilities in said sewer project were completed in accordance with the approved plans and specifications of the Pine Bluff Wastewater Utility for said project; that the cost of the said project was the total sum of \$ _____; and that all bills and accounts for materials, labor and services have been paid in full.

Executed this _____ day of _____, 20____

ACKNOWLEDGEMENT

STATE OF ARKANSAS } SS

COUNTY OF _____ }

BE IT REMEMBERED that on this day came before me, the undersigned, a Notary Public within and for the county and state aforesaid, duly commissioned and acting, to me well known as the Grantors in the foregoing instrument, and acknowledged that they each had executed the same for the consideration and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public on this _____ day of _____, 20____

NOTARY PUBLIC

My commission expires: _____

BILL OF SALE

STATE OF ARKANSAS } SS

COUNTY OF _____ }

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned _____
for and in consideration of the permission and consent of the Pine Bluff Wastewater Utility, to
connect the sewer facilities hereinafter described to the Pine Bluff Sanitary Sewer System and
the sum of One Dollar to the undersigned cash in hand paid by the Pine Bluff Wastewater Utility,
the receipt of which is hereby acknowledged, does hereby bargain, sell, convey, assign, transfer
and deliver to the Pine Bluff Wastewater Utility the following described property:

The completed sewer project known as

including all pipe, machinery, equipment, pumps, casements, fixtures and any and all other
property installed in the completed sewer project mentioned above.

TO HAVE AND TO HOLD the same unto the Pine Bluff Wastewater Utility, its
successors and assigns forever.

The undersigned does hereby warrant that all of the costs of the installation of the
sanitary sewer project mentioned above have been paid in full and that the same is free from any
and all encumbrances.

The undersigned does also warrant and guarantee all materials, equipment, and
workmanship to be free of defects, deficiencies, failures, and errors for a period of twelve (12)
months from the date of substantial completion as prescribed in the SANITARY SEWER
DESIGN GUIDELINES provided by the Pine Bluff Wastewater Utility.

WITNESS our hands and seals this _____ day of _____, 20 _____

ACKNOWLEDGEMENT

STATE OF ARKANSAS } SS

COUNTY OF _____ }

BE IT REMEMBERED that on this day came before me, the undersigned, a Notary Public within and for the county and state aforesaid, duly commissioned and acting, to me well known as the Grantors in the foregoing instrument, and acknowledged that they each had executed the same for the consideration and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public on this _____ day of _____, 20 _____

NOTARY PUBLIC

My commission expires: _____

SEWER MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That, _____, as Principal and,
_____, as Surety are held and firmly bound
unto the Pine Bluff Wastewater Utility, as Obligee, in the amount of
_____ Dollars (\$ _____)
for the payment whereof Principal and Surety bind themselves, their heirs, executors,
administrators, successors, and assigns, jointly and severally, firmly by these presents:

Now, therefore, the condition of this obligation is such that if the Principal, upon receiving notice
within a period of twelve (12) months from the date of acceptance of these sanitary sewer lines
and appurtenances by the Pine Bluff Wastewater Utility, of defects, deficiencies, and/or errors in
the following improvements: SANITARY SEWER PROJECT designated

shall promptly correct said defects and perform the necessary maintenance in keeping with the
requirements of the approved plans and specifications for this project then such obligation shall
be null and void; otherwise, it shall remain in full force and effect. Any suit under this bond
must be instituted before the expiration of three (3) months from the end of the period of
notification referred to above.

No right of action shall accrue on this bond to or for the use of any person or corporation
other than the Owner named herein or the heirs, executors, administrators, or successors of
Owner.

Signed and sealed this _____ day of _____, 20 _____

PRINCIPAL

By _____

SURETY

By _____

Insurance Binder Attached

RIGHT OF WAY EASEMENT

Individual
Married
Corporation

KNOW ALL MEN BY THESE PRESENTS:

THAT I (WE), _____ and
_____, Grantor (s) , for and in consideration of the sum of
One Dollar (\$1.00) cash in hand paid by the Pine Bluff Wastewater Utility Commission, and
other good and valuable consideration, the receipt and sufficiency of which is hereby
acknowledged, do hereby grant, bargain, sell and convey unto the City of Pine Bluff, for the use
and benefit of the Pine Bluff Wastewater Utility Commission, Grantee, and unto its successors
and assigns forever, a perpetual right, privilege and easement for the purpose of (1) laying,
constructing, operating, maintaining, repairing, replacing, reconstructing, testing, inspecting and
adding sewer mains and sewer lines, whether one or more, and appurtenances thereto, now and at
different times in the future; (2) keeping the easement clear of all buildings and other
improvements of any kind that would conflict or interfere with the Grantee's use of the
easement; and (3) having the right of free ingress and egress across adjacent lands of the
Grantor(s) to the lands more particularly described below.

The easement herein conveyed is over, upon, under, and across lands situated in the City
of Pine Bluff, Jefferson County, Arkansas, and is more particularly described as follows:

An easement..... (description here)

Grantor(s), at the risk of Grantor(s), reserves the right to otherwise use the easement for
purposes not prohibited herein so long as such use does not conflict or interfere with the
Grantee(s) use of the easement in any way.

To have and to hold said easement, rights and privileges unto the said Grantee, and unto
its successors and assigns forever, for the purpose aforesaid.

And said Grantor(s) covenant(s) with said Grantee, its successors and assigns, the
Grantor(s) will forever warrant and defend the title to said easement and rights against the claims
of all persons whomsoever and that said Grantee, its successors and assigns, shall have at all
times the quiet use and enjoyment of said easement and rights.

IN WITNESS WHEREOF, I hereunto set my hand and seal this _____ day of _____, 20____

ACKNOWLEDGEMENT

STATE OF ARKANSAS } SS

COUNTY OF _____ }

BE IT REMEMBERED that on this day came before me, the undersigned, a Notary Public within and for the county and state aforesaid, duly commissioned and acting, to me well known as the Grantors in the foregoing instrument, and acknowledged that they each had executed the same for the consideration and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public on this _____ day of _____, 20____

NOTARY PUBLIC

My commission expires: _____

PINE BLUFF WASTEWATER UTILITY

CONTRACTOR/ENGINEERS/CONSULTANT APPLICATION FORM

Legal Name of Company or Firm (or Individual)			
Trade Name of Business (if different from above)			
Mailing Address			
Street Address (if different)			
City, State and Zip Code			
Name of Principal Officer, General Partner, or other Designated Authority			
Tax Identification Number		Date Company Started or Date of Incorporation	
Telephone:	Facsimile:	E-Mail:	

Type of Entity (check only one box)

- | | |
|--|---|
| <input type="checkbox"/> Sole Proprietor (SSN) _____ - _____ - _____ | <input type="checkbox"/> Partnership |
| <input type="checkbox"/> Corporation | <input type="checkbox"/> Personal Service Corporation |
| <input type="checkbox"/> Federal Government/Military | <input type="checkbox"/> State/Local Government |
| <input type="checkbox"/> Church or Church-Controlled Group | <input type="checkbox"/> Nonprofit Organization _____ |
| <input type="checkbox"/> Other (specify) _____ | |

Principal Activity of Business (check one box)

- | | | |
|--|---|--|
| <input type="checkbox"/> Construction | <input type="checkbox"/> Manufacturing | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Warehousing | <input type="checkbox"/> Transportation | |
| <input type="checkbox"/> Finance/Insurance | <input type="checkbox"/> Wholesale | |
| <input type="checkbox"/> Retail | <input type="checkbox"/> Accommodation & Food Service | |
| <input type="checkbox"/> Engineering | <input type="checkbox"/> Consultant | |

Estimated Cost of Work to be performed: _____

Number of Employees: ☐ 1-5 ☐ 6-15 ☐ 16-25 ☐ 26-40 ☐ 41+ Estimate of Years in Business _____

Principal line of merchandise sold; specific construction work done; products produced; or services provided.

Has the applicant ever worked for Pine Bluff Wastewater Utility in the past? ☐ yes ☐ no
 If funding has been received from this organization in the past, please indicate the amount and for what purpose?

Under penalty of perjury, I declare that I have examined this application, and to the best of my knowledge and belief it is true, correct and complete.

Name and Title (type/print clearly)>

Signature >



**SEWER SERVICE APPLICATION
FOR NEW COMMERCIAL PROPERTY AND SUB-DIVISIONS**

APPLICATION DATE _____

APPLICANT NAME (Please Print) _____

MAILING ADDRESS OF APPLICANT _____

HOME/BUSINESS PHONE # _____ MOBILE # _____

DEVELOPER NAME _____

MAILING ADDRESS OF DEVELOPER _____

ENGINEER/CONSULTANT NAME _____

HOME/BUSINESS PHONE # _____ MOBILE # _____

ADDRESS/LOCATION OF PROPERTY _____

INTENDED USE OF THE PROPERTY: APARTMENTS ___ OFFICE ___ DUPLEX ___ CHURCH ___ OFFICE ___
INDUSTRIAL ___ MANUFACTURING ___ RETAIL ___ OTHER ___ EXPLAIN _____

PROJECTED DEVELOPMENT START DATE: _____

PROJECTED DEVELOPMENT COMPLETION DATE: _____

WILL THE FOLLOWING DEVICES BE REQUIRED?

OIL SEPARATOR:	YES _____	NO _____
SAND TRAP:	YES _____	NO _____
OIL/GREASE SEPARATOR:	YES _____	NO _____

**SITE PLAN OR SKETCH REQUIRED ON ALL PROJECTS, SHOWING BUILDINGS,
STREETS, HIGHWAYS, ETC.**

I, the undersigned, understand that this application for sewer service is for the Utilities information only. The latest revised edition of the Sanitary Sewer Extension Procedure and Detail (SSEPD) Specification manual has the necessary guidelines to proceed with this project. NO SEWER SERVICE INSTALLATION, BY PBWU OR OTHERS, IS PERMITTED WITHOUT PERMISSION AS OUTLINED IN THE SSEPD SPECIFICATION MANUAL.

SIGNATURE OF APPLICANT

DATE

SSEPD specification manual available via .pdf file at www.pbwastewater.com. Hardcopies may be printed from this site or by request at the office of Pine Bluff Wastewater Utility. Contact the Engineering Department for additional information @ (870) 535-6603.

1520 S. OHIO ST.
PINE BLUFF, ARKANSAS 71601
870-535-6603

AD DATE:
OPENING DATE:

_____ and then publicly opened, for furnishing the service as described below.

BY:

**WITHIN 2 WEEKS FROM ISSUANCE OF PURCHASE ORDER
BID PRICE MUST INCLUDE TAXES, DELIVERY, & APPLICATION**

BID SCHEDULE				
ITEM NO.	DESCRIPTION	QTY	UNIT	AMOUNT
	(According to the following specifications):			
	Note: Bidders must have 5 years prior experience with working on large diameter sewer lines			
		TAX		\$ _____
		FREIGHT		\$ _____
		SUB		\$ _____
	<u>NOTE TO BIDDER:</u>			
	BIDDER MUST SUBMIT A SEALED ENVELOPE WITH THE BID NUMBER CLEARLY INDICATED ON THE OUTSIDE	TOTAL		\$ _____

DATE: _____

(PERSON AUTHORIZED TO SIGN BIDS) (TITLE)

NOTICE TO BIDDERS; SEE REVERSE SIDE FOR INSTRUCTIONS AND CONDITIONS

**PINE BLUFF WASTEWATER UTILITY
CONDITIONS OF BIDDING**

COMPLIANCE WITH THE FOLLOWING CONDITIONS IS NECESSARY FOR BID CONSIDERATION

1. **SIGNATURE** - This bid must be signed with the firm name and by an authorized officer, employee, or agent.
2. **SALES OR USE TAX** - **IS** to be included in the bid price, but is to be added by the vendor to the invoice billing to the Utility. The Utility is not exempt from Arkansas Sales & Use Tax.
3. **FREIGHT/DELIVERY** - charges to destination (at designated Utility facility) must be included on the bid submitted. Charges may **not** be added after the bid is opened.
4. **DISCOUNTS** - Show rate, total amount, and last day any discounts will be allowed after receipt of article and invoice, otherwise, Utility will deduct allowed discount when payment is made.
5. **FIRM PRICE** - All prices quoted will remain firm for at least 30 days from date of bid opening, unless otherwise specified by the Utility or bidder.
6. **ARKANSAS PREFERENCE** - The request for preference must be in writing (when bid is submitted) to be considered as a factor in awarding a contract.
7. **IDENTICAL BIDS** - In the event of two or more identical low bids, the contract may be awarded arbitrarily or for any reason to either bidder or split (in any proportion) between the lowest bidders at discretion of the Utility.
8. **LIQUIDATED DAMAGES** - Liquidated damages shall be assessed beginning on the first day following the maximum delivery or completion time entered on this bid form and/or provided for in the plans and specifications.
9. **AMBIGUITY IN BID** - Any ambiguity resulting from omission, error, lack of clarity or noncompliance by the bidder (i.e. specifications, instructions, and all conditions of bidding) shall be construed in the light most favorable to Utility.
10. **CONSTRUCTION**
 - A. When noted, the Contractor is to supply the Utility with evidence of having and maintaining proper and complete insurance, specifically Workman's Compensation Insurance in accordance with the law of the State of Arkansas, Public Liability and Property Damage. All premiums and insurance costs shall be paid by the Contractor. In no way shall the Utility be responsible in case of an accident.
 - B. A certified check or bid bond in the amount of 5% of total bid shall accompany the bid, unless otherwise noted.
 - C. A Performance Bond equaling the total amount of any bid exceeding \$20,000.00 is required for any contract which calls for the repair, alteration or erection of any public building, public structure or public improvement. (Pursuant to Ark. Stat. SS 18-44-503 as amended.) A 100% Payment Bond is, also, required on any such contract.
11. The City reserves the right to reject any and all bids, to accept in whole or in part any bid, to waive any formalities in bids received. The City reserves the right to accept bids on materials or equipment with variations from specifications in those cases where efficiency of operation will not be impaired and (unless otherwise specified by the bidder) to accept any item in the bid. If unit prices and extensions thereof do not coincide, the Utility may accept the bid for the lesser amount whether reflected by the extension or by the correct multiple of the unit price.

**INSTRUCTIONS TO BIDDERS
(PLEASE READ CAREFULLY)**

1. Submit bids using the bid form on reverse side of this sheet.
2. Address all bids to Pine Bluff Wastewater Utility, ATTN: Annette Monk and make certain to indicate the identifying bid number on the envelope containing the bid submitted.
3. **DO NOT** include Federal Excise tax in bid. Utility will furnish exemption certificate.
4. State the Manufacturer, Brand Name, Model, etc. for each item bid.
5. Samples of items, when required, must be furnished free of charge. If those samples are not called for within 30 days from date of bid opening, they will be disposed of by the Utility.
6. Bids received after stated bid opening time will **not** be considered.
7. Read all conditions and verify amounts before submitting bids. No changes or additions will be allowed **after** the bid opening.
8. Guarantees and warranties should be attached (as a part of the bid) as they may be a consideration in awarding a contract.
9. Delivery date or contract completion time is to be shown on the bid. If time is of the essence, the delivery date may be a determining factor in the award.
10. Additional information may be obtained from David Dean, Operations Director at 870-534-8123.

THIS CITY RESERVES THE RIGHT TO ACCEPT PART OR ALL OF ANY SPECIFIC BID OR BIDS,
AND TO ACCEPT ANY BID WITH OR WITHOUT TRADE-IN. THE CITY FURTHER RESERVES THE
RIGHT TO REJECT ALL BIDS, OR PART OR ALL OF ANY SPECIFIC BID OR BIDS.

PINE BLUFF WASTEWATER UTILITY

1520 S. OHIO ST. • PINE BLUFF, ARKANSAS 71601-6055 • PHONE: (870) 535-6603 • FAX (870) 535-6243

GREASE TRAP SIZING FORM

Business Name _____

Street Address _____

Contact Person _____ Phone # _____

Other Information _____

Date Received _____ Date Due _____

Kind of Fixture	Units	# of Fixtures	Total	Comments
Floor Drain	1			
Bar Sinks	2			
Wash Sinks	3			
Hand Wash Sinks	1			
Constant Flow	2/gpm			
Misc.				
Dishwashers	See below			

Grand Total

Dishwasher FUs are based upon the maximum discharge rate divided by 7.5 gpm.

Trap Size (in gallons) = total FUs x 7.5 gpm x 12

COMMENTS: _____

TRAP SIZE REQUIRED _____

COMPLETED BY: _____

DATE: _____

MISSION

We are committed to provide our customers with efficient, reliable service while protecting the public health and maintaining a clean environment.

SANITARY SEWER EXTENSION CHECK OFF LIST

Project Title _____

Developer's Information

Name: _____

Address: _____

City, St, Zip: _____

Phone, Fax: _____

Website: _____

	<u>BY</u>	<u>DATE</u>
1. Preliminary Project Approval Given:	_____	_____
2. Construction Plans & Specs Received:	_____	_____
3. Construction Plans & Specs Approved:	_____	_____
4. R-O-W Easements Received/Approved:	_____	_____
5. Written Approval for Project Start:	_____	_____
6. Testing Completed & Accepted:	_____	_____
7. As-Built Plans Received & Approved:	_____	_____
8. R-O-W Easements Filed at Court House:	_____	_____
9. Certificate of Conformance Received:	_____	_____
10. Bill of Sale Received & Approved:	_____	_____
11. Maintenance Bond Received & Approved:	_____	_____
12. Project Final Inspection & Approval:	_____	_____
13. Written Approval Issued by Utility:	_____	_____
14. Project Accepted by Utility Commission:	_____	_____

SERVICE TAP AND CONNECTION FEES

- A. The following charges shall be paid for connection to the PBWU sanitary sewer system:
1. Single-family residence (except mobile homes), each \$50.00
 2. Mobile homes (per park):
 - a. First unit, each \$50.00
 - b. All additional units, each \$50.00
 3. Individually metered multi-family residential:
 - a. First unit, each \$50.00
 - b. All additional units, each \$50.00
 4. Commercial, industrial, master-metered multifamily residential, and nonresidential:
 - a. 5/8-inch water meter \$110.00
 - b. 3/4-inch water meter \$125.00
 - c. 1-inch water meter \$160.00
 - d. 1 1/2-inch water meter \$200.00
 - e. 2-inch water meter \$290.00
 - f. For water meters over two (2) inches the charge will be two dollars and fifty cents (\$2.50) per GPM of rated continuous meter delivery.
- B. Where a sponsor (individual, firm, partnership, association or corporation) constructs an extension or expansion to the sanitary sewer system with the approval of the sewer committee, and the cost of the extension or expansion is borne entirely by the sponsor, PBWU will not charge a connection fee to anyone who connects to the extension or expansion for a period of three (3) years from the date that the final as-built plans are approved and the system accepted by the sewer committee. After the three-year period, anyone connecting to the extension or expansion will pay a connection fee as set by this document.
- C. In no case is anyone permitted other than PBWU to collect any connection fees. A sewer connection is permitted only when a sewer main is adjacent to the property to be served by the connection. In no case shall a service line extend

into a street, alley or right-of-way for a distance greater than the width of the street, alley or right-of-way.

- D. The following charge shall be paid for tap services provided by the PBWU when needed. All taps are to be performed by PBWU personnel only. A tap fee is not to be paid when a stubout is used.

- | | |
|--|----------|
| 1. Main (up to twenty-four (24) inches in diameter)
or manhole taps | \$100.00 |
| 2. Mains larger than twenty-four (24) inches in
diameter | \$150.00 |

VACUUM MANHOLE TESTING

The standard test of 10" Hg (Mercury) shall be used.

Start the vacuum pump assembly, open the inlet/outlet ball valve and evacuate the manhole to 10" Hg.

Close vacuum inlet/outlet ball valve, disconnect vacuum pump and monitor vacuum for the specified time period. (See Table Below) If the vacuum does not drop in excess of 1" Hg over the specified time period, the manhole is considered acceptable and passes the test.

VACUUM TEST TIMETABLE

DEPTH - FEET	DIAMETER - INCHES		
	48"	60"	72"
4'	10 sec.	13 sec.	16 sec.
8'	20 sec.	26 sec.	32 sec.
12'	30 sec.	39 sec.	48 sec.
16'	40 sec.	52 sec.	64 sec.
20'	50 sec.	65 sec.	80 sec.
24'	60 sec.	78 sec.	96 sec.
*	05 sec.	6.5 sec.	8.0 sec.
**Add "T" times for each additional 2' depth. (The values listed above have been extrapolated from ASTM designation C924-85.)			

Note: Repeat the above test procedure after backfilling for final acceptance test.

LOW PRESSURE AIR TESTING

1. For Testing: Clean pipe to be tested by propelling snug fitting inflated rubber ball through the pipe with water.
2. Plug all pipe outlets with test plugs. Brace each plug securely.
3. If the pipe to be tested is submerged in groundwater, insert a pipe probe by boring or jetting into the backfill material adjacent to the center of the pipe, and determine the pressure in the probe when air passes slowly through it. This is the back pressure due to ground water submergence over the end of the probe. All gauge pressures in the test shall be increased by this amount.
4. Add air slowly to the portion of the pipe installation under test until the internal air pressure is raised to 4.0 psig above back pressure, but less than 5.0 psig.
5. After an internal pressure of 4.0 psig above back pressure is obtained, allow at least two minutes for air temperature to stabilize, adding only the amount of air required to maintain pressure, but less than 5.0 psig.
6. When pressure decreases to 3.5 psig above back pressure, start stopwatch. Determine the time in seconds that is required for the internal air pressure to reach 3.0 psig. Minimum permissible pressure holding times for runs of single pipe diameter are indicated in the following table:

AIR TESTING

PIPE SIZE	TIME FOR VARIOUS PIPE LENGTHS								
	PIPE LENGTHS								
INCHES	50'	100'	250'	200'	250'	300'	350'	400'	450'
	TIME IN MINUTES & SECONDS								
6	5:40	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	9:26	9:26	9:26	9:26	11:52	13:51	15:49	17:48
12	11:20	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:47	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33

PRESSURE AND LEAKAGE TESTING OF FORCE MAINS

All force mains from the pump station to the discharge shall be pressure tested and tested for leakage prior to being accepted by PBWU and placed into service. Air testing of pressure pipe is prohibited. Force mains shall be hydrostatically tested as follows:

The pressure test shall be for a minimum of two (2) hours and shall be at a pressure of 150% of maximum working pressure or 50 psi, whichever is greater. (Minimum test pressure shall be 50 psi) The test shall be conducted in the presence of an authorized representative of PBWU, and shall be performed with a test pump and meter assembly specifically designed and manufactured for the purpose of pressure and leakage testing of water and sewage pressure pipelines. During the test period, the force main route shall be walked and carefully examined for evidence of leakage or surface disturbance, indicating movement of a blocked fitting. The test shall be as specified in the American Water Works Association (AWWA) Standard C600, latest revision. The allowable leakage shall be the water required by the test pump to maintain the test pressure in the line continuously during the test, with a drop of line pressure of no greater than 5% of the test pressure. The leakage metered by the test assembly shall not exceed the allowable leakage as specified in AWWA C600, latest revision, as calculated by the following formula:

$$L = SD\sqrt{P}/148,000$$

Where: L = allowable leakage in gallons per hour
S = length of pipeline section subject to test
D = nominal diameter of pipe subject to test
P = test pressure, psig
For closed valves subject to test, add 0.0078 gallons/hour/inch of nominal diameter of valve

Sample Calculation:

Force Main Diameter: 6 inches
Length of Test Section: 1,000 feet
Maximum Pressure during operation: 40 feet TDH = 17.32 psig. (Use minimum 50 psig)
2 – closed valves (discharge valves in Pump Station)

$$L = SD\sqrt{P}/148,000 = (1,000 \times 6 \times \sqrt{50})/148,000 + 2 \times .0078 \times 6 \\ = 42,426.41/148,000 + 0.09 =$$

L = 0.38 gallons per hour, or 0.76 gallons for a two hour test.

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Deflection Gauges (mandrels) are used to test flexible sewer pipes for out-of-roundness or deflection. This testing ensures that flexible pipe has been properly bedded and back-filled to give optimum performance.

(Per ASTM Designation D2321-89).

Cherne's adjustable aluminum gauges utilize a nine arm design to ensure the pipe is tested accurately-often required in mandrel design specifications. Accurately sized to .01" to meet ASTM requirements.

The Cherne Aluminum Fin Gauges are designed to allow gravel and debris to pass through easily. Other gauges can get hung up on rocks and obstructions causing a deflection test to fail even though the pipe is within deflection tolerances causing a great expense for the contractor.

- Constructed of lightweight aluminum, gauges will not rust and are up to 75% lighter than comparable steel models.

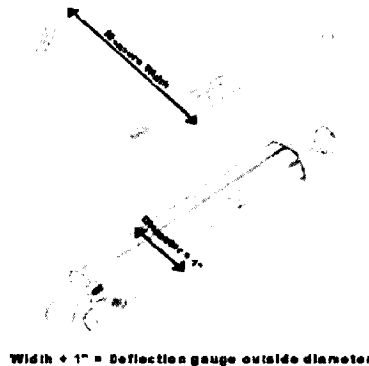
- Economical and versatile patented design features interchangeable fins for various pipe sizes.

- Cherne's unique fin design allows for accurate field size verification using a tape measurer or yardstick. Simply put two fins end-to-end and measure the width. Add one inch to that dimension and you have the outside diameter of the deflection gauge.

- Fins for gauges 4" through 15" have a skid size equal to the nominal pipe size, ensuring the gauge meets regional codes. This also guarantees that the gauge will not tip in the line.

- Fin design assembles easily without tools and all sizes fit through a standard 24" manhole.

- **Larger & Custom Sizes Available!**



Cherne's Fin Style Deflection Gauges are designed to be field verified by inspectors without the need for a proving ring. Simply place two fins end to end as pictured above and measure the width. Add one inch for the mandrel and you have the outside dimension of the gauge. Using this method simplifies the inspector's job of verifying sizing on deflection gauges.

Part Number	Set/Size(s)	Gauge Diameter	Pipe	Deflection	Product Weight
Aluminum Fin Set Kits (Includes Box, Fins, and Mandrel)					
285 688	6", 8" & 10"	Mandrel	SDR 26	5%	18 lbs (8.2kg)
285 698	8", 10" & 12"	Mandrel	SDR 26	5%	19 lbs (8.6kg)
285 005	6", 8" & 10"	Mandrel	SDR 35	5%	18 lbs (8.2kg)
285 021	8", 10" & 12"	Mandrel	SDR 35	5%	19 lbs (8.6kg)
285 013	6", 8" & 10"	Mandrel	SDR 35	7.5%	18 lbs (8.2kg)
285 048	8", 10" & 12"	Mandrel	SDR 35	7.5%	19 lbs (8.6kg)
Fin Sets (Using 10" Mandrel)					
285 617	10" Mandrel (Good for fins from 4" - 15")				4 lbs (1.8kg)
285 056	4"	3.70"	SDR 35	5%	2 lbs (0.9kg)
285 072	6"	5.46"	SDR 35	5%	4 lbs (1.8kg)
285 080	8"	7.28"	SDR 35	5%	5 lbs (2.3kg)
285 099	10"	9.08"	SDR 35	5%	6 lbs (2.8kg)
285 102	12"	10.79"	SDR 35	5%	6 lbs (2.8kg)
285 110	15"	13.20"	SDR 35	5%	6 lbs (2.8kg)
285 137	4"	3.60"	SDR 35	7.5%	2 lbs (0.9kg)
285 153	6"	5.31"	SDR 35	7.5%	4 lbs (1.8kg)
285 161	8"	7.09"	SDR 35	7.5%	5 lbs (2.3kg)
285 188	10"	8.84"	SDR 35	7.5%	6 lbs (2.8kg)
285 196	12"	10.51"	SDR 35	7.5%	6 lbs (2.8kg)
285 218	15"	12.86"	SDR 35	7.5%	6 lbs (2.8kg)
285 638	6"	5.33"	SDR 26	5%	4 lbs (1.8kg)
285 648	8"	7.11"	SDR 26	5%	5 lbs (2.3kg)
285 658	10"	8.87"	SDR 26	5%	6 lbs (2.8kg)
285 668	12"	10.55"	SDR 26	5%	6 lbs (2.8kg)
285 678	15"	12.86"	SDR 26	5%	6 lbs (2.8kg)
Fin Sets (Using 24" Mandrel)					
285 250	24" Mandrel (Good for fins 18" - 48")				11 lbs (5.0kg)
285 536	18"	16.13"	SDR 35	5%	8 lbs (3.6kg)

285 544	21"	19.00"	SDR 35	5%	8 lbs (3.6kg)
285 552	24"	21.36"	SDR 35	5%	8 lbs (3.6kg)
285 595	27"	24.06"	SDR 35	5%	9 lbs (4.1kg)
285 560	18"	15.70"	SDR 35	7.5%	8 lbs (3.6kg)
285 579	21"	18.50"	SDR 35	7.5%	8 lbs (3.6kg)
285 587	24"	20.80"	SDR 35	7.5%	8 lbs (3.6kg)
285 609	27"	23.43"	SDR 35	7.5%	9 lbs (4.1kg)
285 323	18"	16.53"	Spirolite	5%	8 lbs (3.6kg)
285 331	21"	19.30"	Spirolite	5%	8 lbs (3.6kg)
285 358	24"	22.08"	Spirolite	5%	8 lbs (3.6kg)
285 366	27"	24.84"	Spirolite	5%	9 lbs (4.1kg)
285 374	30"	27.62"	Spirolite	5%	9 lbs (4.1kg)
285 382	33"	30.38"	Spirolite	5%	10 lbs (4.5kg)
285 390	36"	33.15"	Spirolite	5%	11 lbs (5.0kg)
285 404	42"	38.68"	Spirolite	5%	12 lbs (5.4kg)
285 412	48"	44.21"	Spirolite	5%	13 lbs (5.9kg)

Part Number	Size	Pipe	Deflection	Product Weight
Proving Rings				
073 199	6"	SDR 35	5%	4 oz (.11kg)
073 202	8"	SDR 35	5%	4 oz (.11kg)
073 210	10"	SDR 35	5%	6 oz (.17kg)
073 229	12"	SDR 35	5%	6 oz (.17kg)
073 237	15"	SDR 35	5%	7 oz (.20kg)
075 868	18"	SDR 35	5%	9 oz (.26kg)
073 245	6"	SDR 35	7.5%	4 oz (.11kg)
073 253	8"	SDR 35	7.5%	4 oz (.11kg)
073 261	10"	SDR 35	7.5%	6 oz (.17kg)
073 288	12"	SDR 35	7.5%	6 oz (.17kg)
073 296	15"	SDR 35	7.5%	7 oz (.20kg)
075 876	18"	SDR 35	7.5%	9 oz (.26kg)
Larger & Custom Sizes Available				

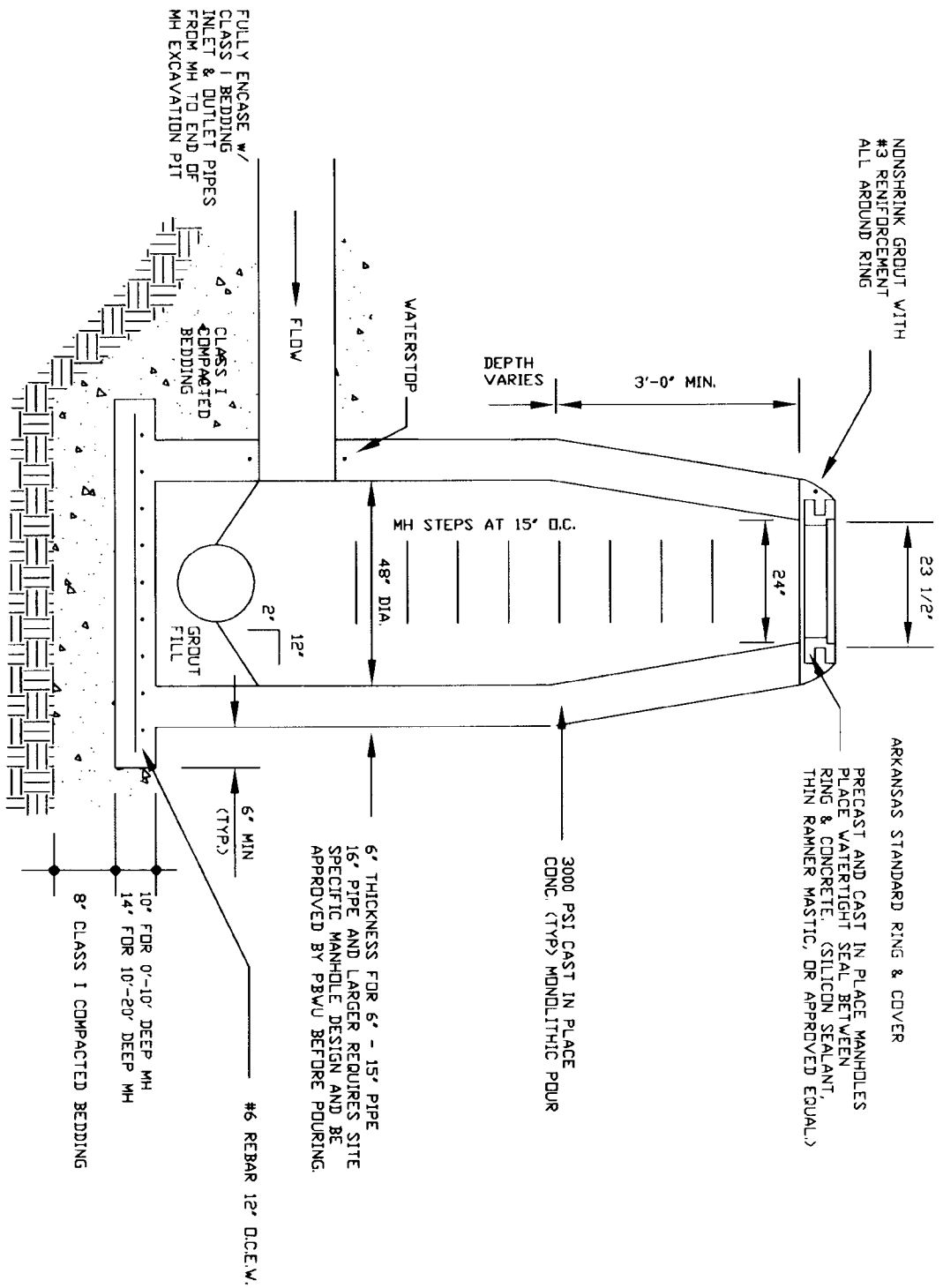
[TRENCH SAFETY](#)[PIPE LASERS](#)[PIPE PLUGS &
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PINE BLUFF WASTEWATER UTILITY

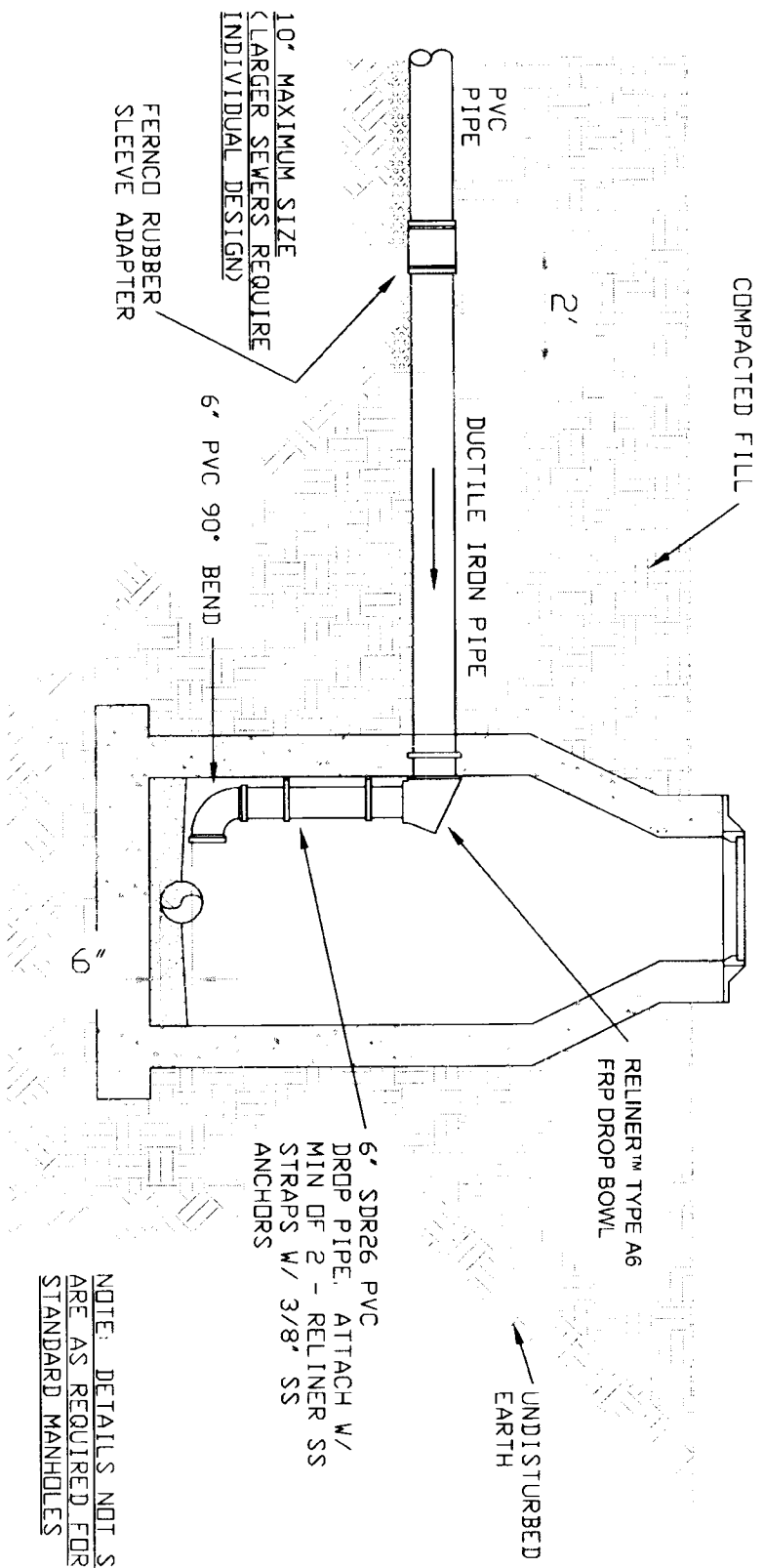
PRECAST MANHOLE SPECIFICATIONS

1. The precast reinforced concrete manhole shall be reinforced concrete manhole sections that will interchange with the sections manufactured by Peterson Concrete. The manhole sections shall be as made from crushed granite coarse aggregates and natural silica fine sand aggregates. The concrete when tested in compression shall not be less than 4000 PSI and absorption shall not exceed 9%. Minimum wall thickness of the manhole riser shall be as follows: 48" I.D. - 5" and 60" I.D. - 6". The 48" I.D. manhole riser shall be manufactured in 1.0', 2.0', 3.0', and 4.0' sections. The 60" I.D. manhole riser shall be manufactured in 2.0', 3.0', 4.0', and 5.0' sections. The 48" I.D. cone shall be manufactured in 1.5', 2.0', 2.3', 2.5', 2.7', and 3.0'. The 24" I.D. adjustment rings shall be manufactured in 2", 4" and 6" heights. If specified, the cast iron ring and cover shall be cast onto the cone section. The 48" I.D. and 60" I.D. flat top sections shall be manufactured in 8.0" up to 2.0" heights with block-out or cast-in ring/cover or hatch cover. All base sections 48" I.D. and 60" I.D. shall be manufactured with the bottom cast monolithically. The minimum thickness of the bottom shall be 6" for 48" I.D. and 8" for 60" I.D. The bottom thickness shall be increased when specified. The 48" base section shall have the 6" extended bottom. The 60" I.D. shall have the 6" extended bottom only when specified. The 48" I.D. base sections shall be manufactured in 24", 30", 36", and 48" heights. The 60" base sections shall be manufactured in 36", 48", and 60" heights.
2. Two lift holes, or lift holes with threaded inserts, shall be cast into each cone or riser section for the purpose of handling and laying. Approximate weight per foot - 48" I.D. = 1,011 lbs, 60" I.D. = 1,477 lbs.
3. Suitable openings for the inlet and outlet pipe shall be cored into the base sections (riser sections for drop manholes). These openings shall be true size, circular and located as required for each manhole. Kor-N-Seal, or equal, flexible pipe-to-manhole connector shall be installed in each opening to assure a flexible watertight seal of the pipe to the manhole.
4. Inverts shall be cast into the base section of the manhole as required.
5. The manhole steps shall be the Bowco Industries, Inc. #93810-R, or equal, reinforced plastic orange safety step.
6. The joints between the manhole sections shall be the Hamilton Kent Tylox Superscal, or equal, pre-lubricated gasket seal, made of top quality rubber and shall meet the requirements of the ASTM C-433 and C-361 specifications. There shall be a suitable spigot cast into the tongue of each component to contain the seal. The seal shall consist of a supporting compression section and a thin sliding flap which has been pre-lubricated. When the sections are fitted together, the edge of the bell encounters the flap which then slides towards the compression section.
7. Optional -- Coatings shall be applied on the interior and exterior as required.
8. Optional -- Cast iron ring and cover shall be cast on cone as required.
9. Manholes shall comply with ASTM C-478 latest revision.



DETAIL - CAST IN-PLACE MANHOLE

N.T.S

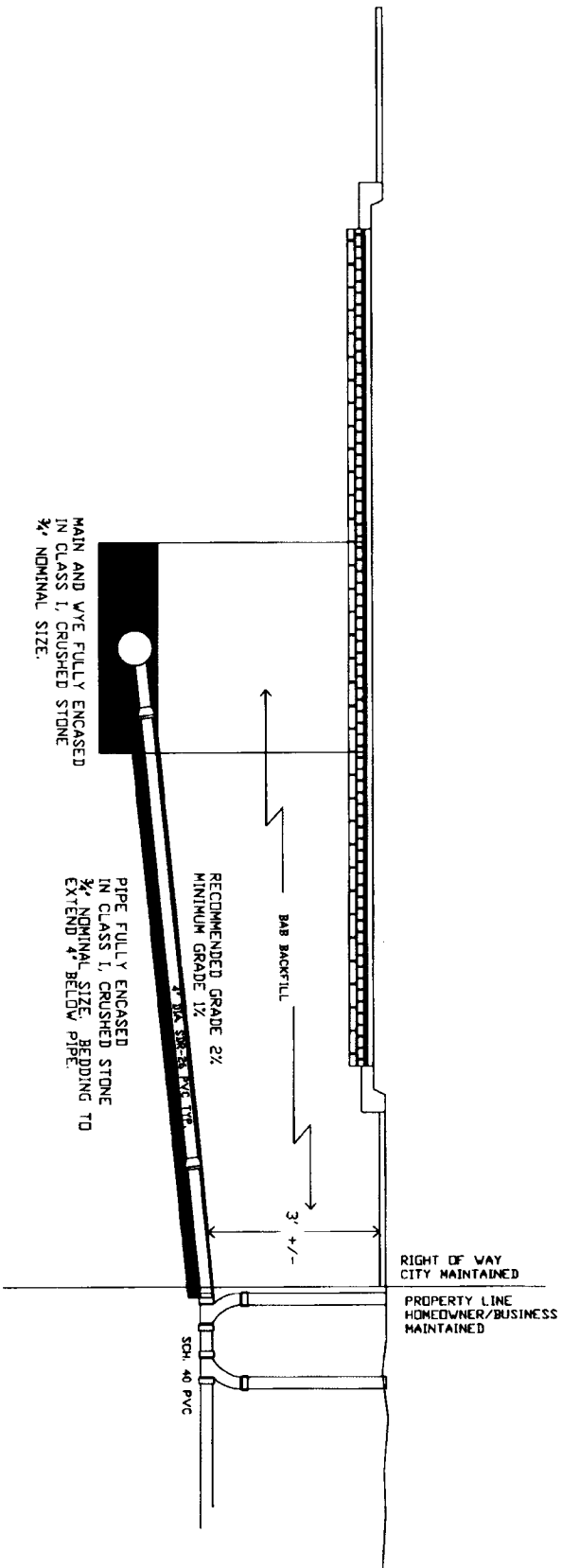


NOTE: DETAILS NOT SHOWN
ARE AS REQUIRED FOR
STANDARD MANHOLES

PBWU

DETAIL - DROP MANHOLE
NOT TO SCALE

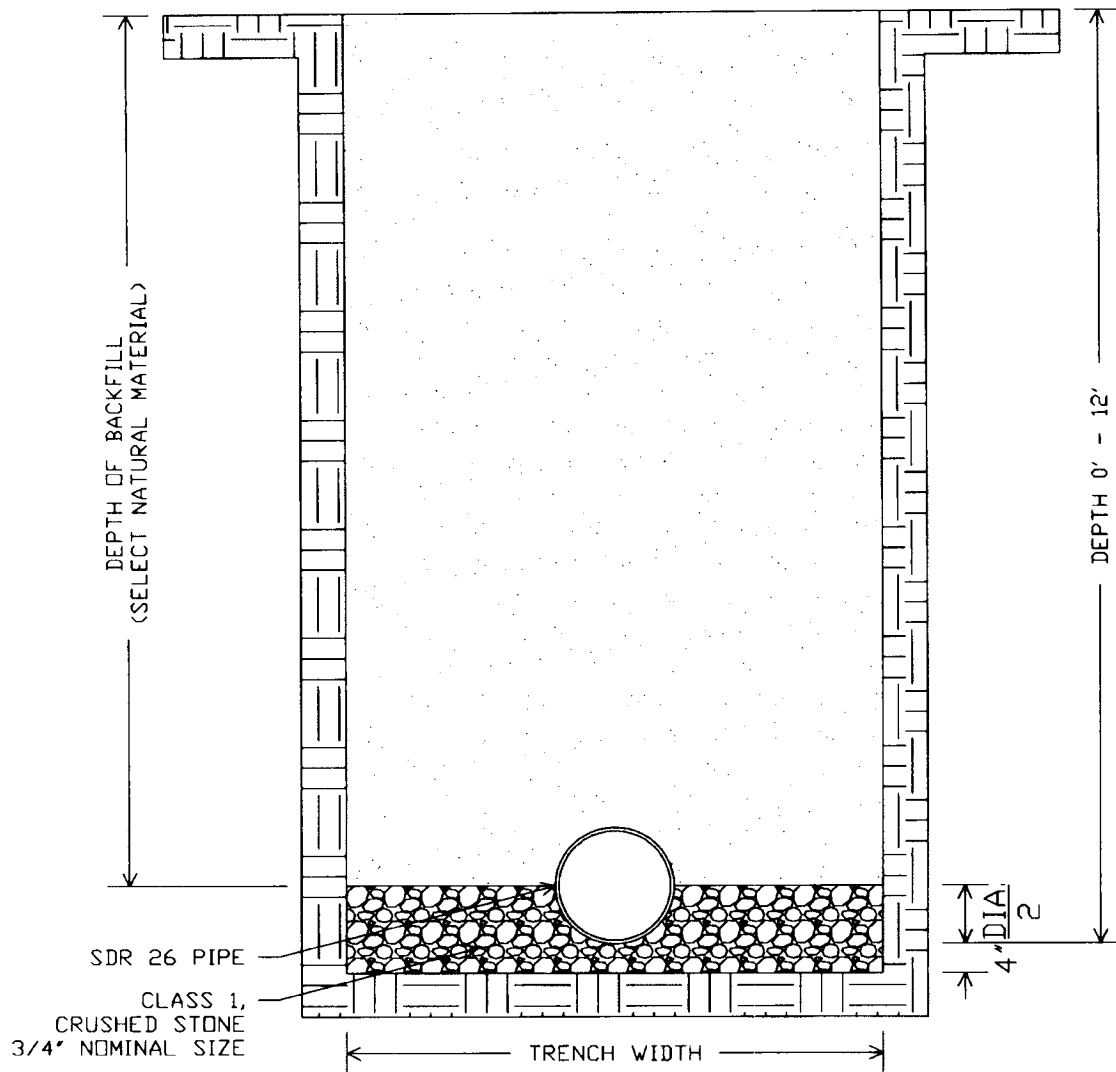
APRIL 2006 USE WHERE VERTICAL DIFFERENCE IN INTERSECTING SEWERS IS
2.0 FEET OR GREATER



PVC SEWER SERVICE LINE EMBEDMENT

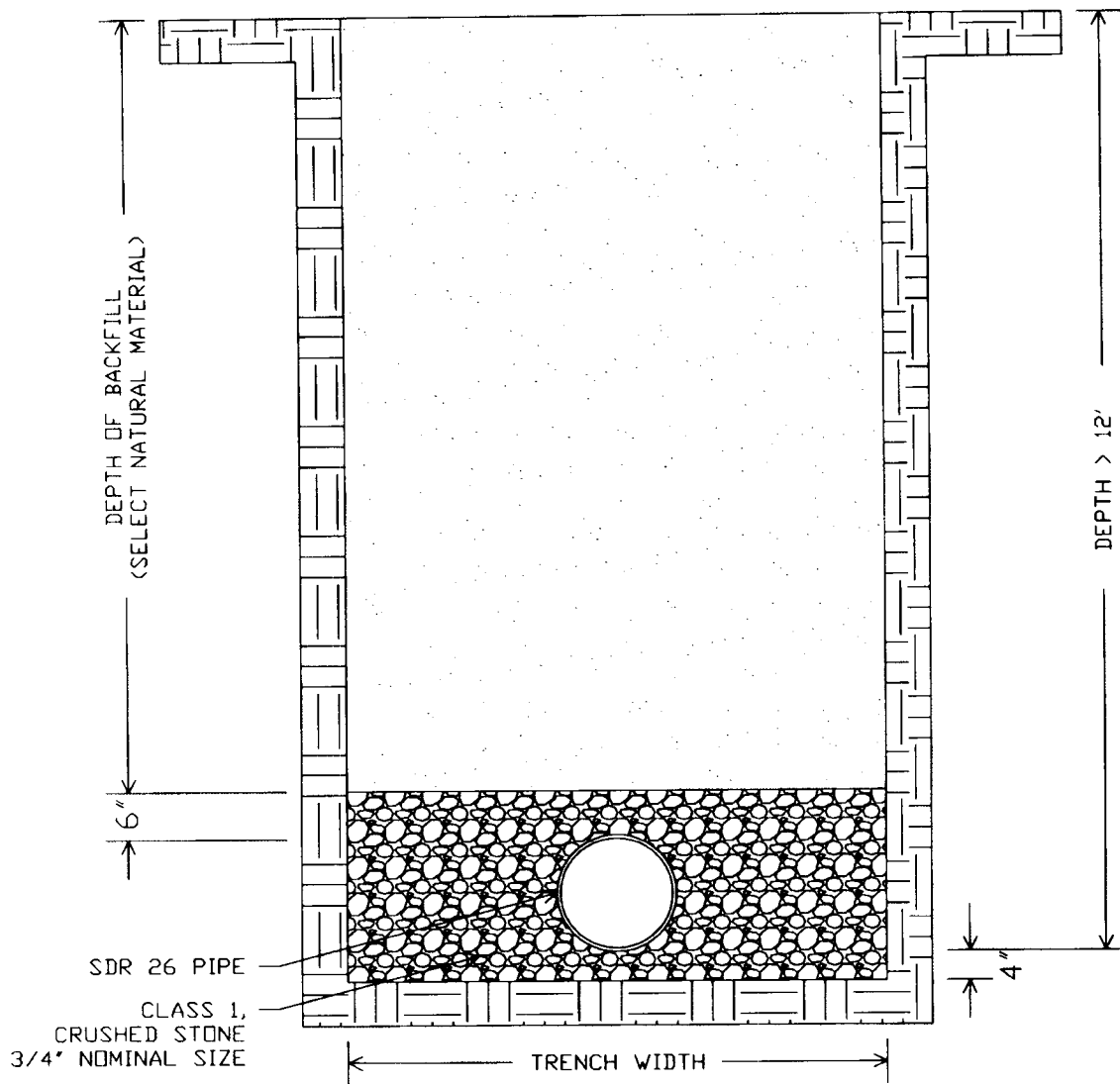
NTS

PINE BLUFF WASTEWATER UTILITY
JANUARY, 2006



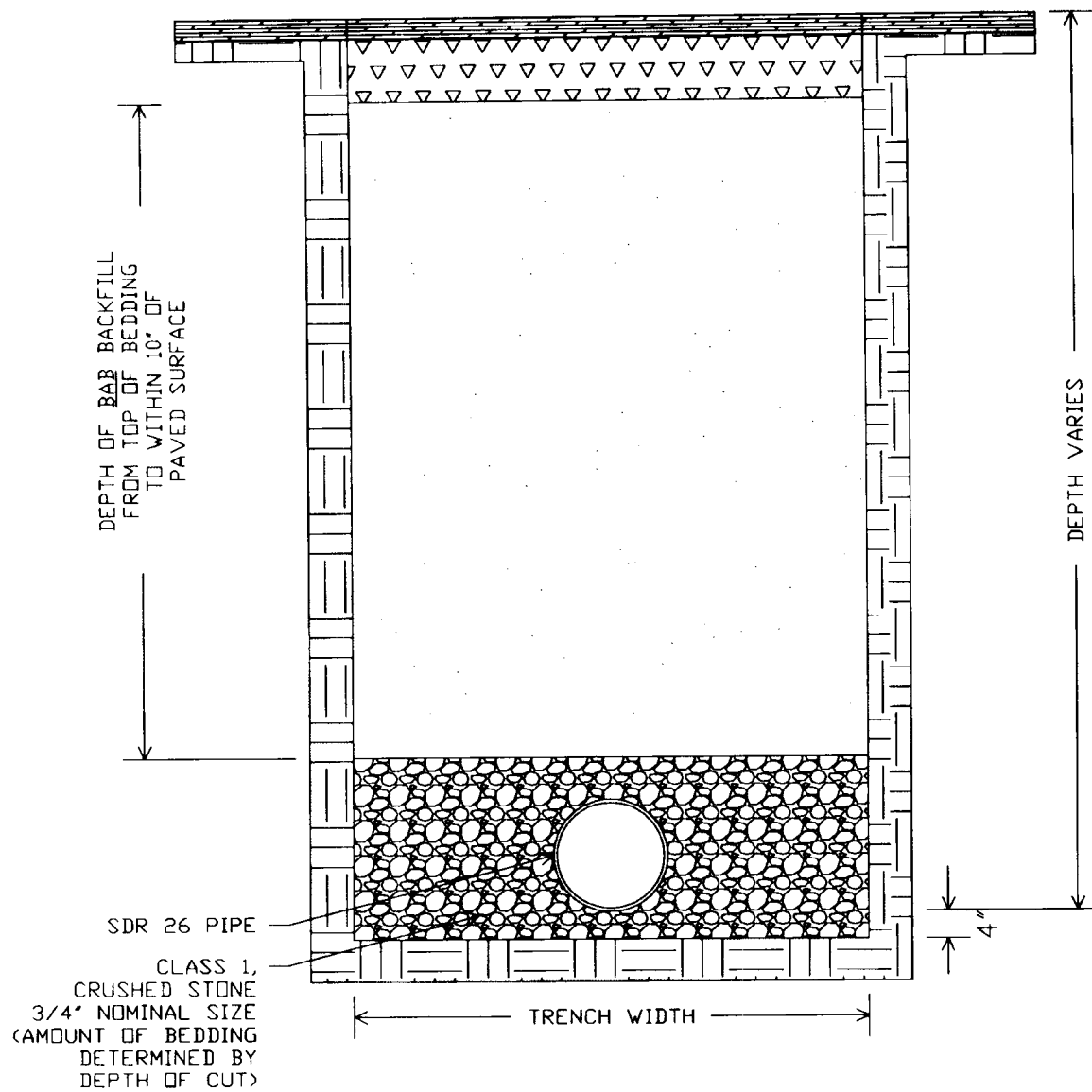
FIRST CLASS EMBEDMENT DEPTH 0' - 12'

NOT TO SCALE



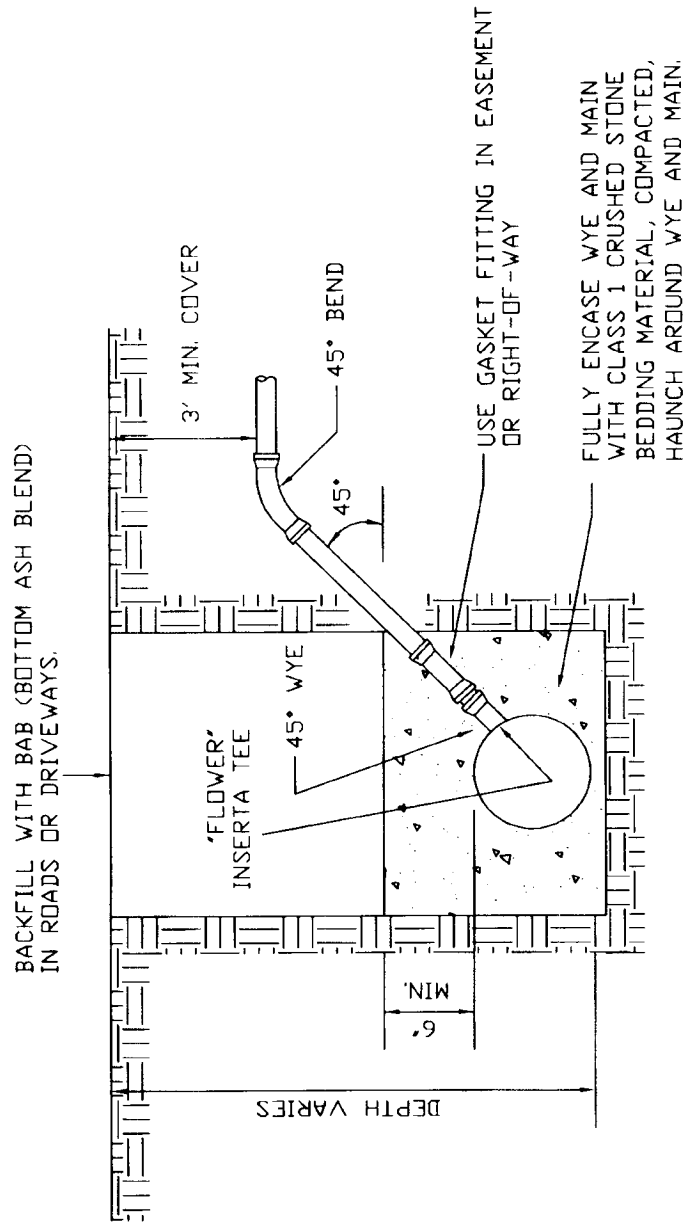
DEEP PIPE EMBEDMENT DEPTH GREATER THAN 12'

NOT TO SCALE



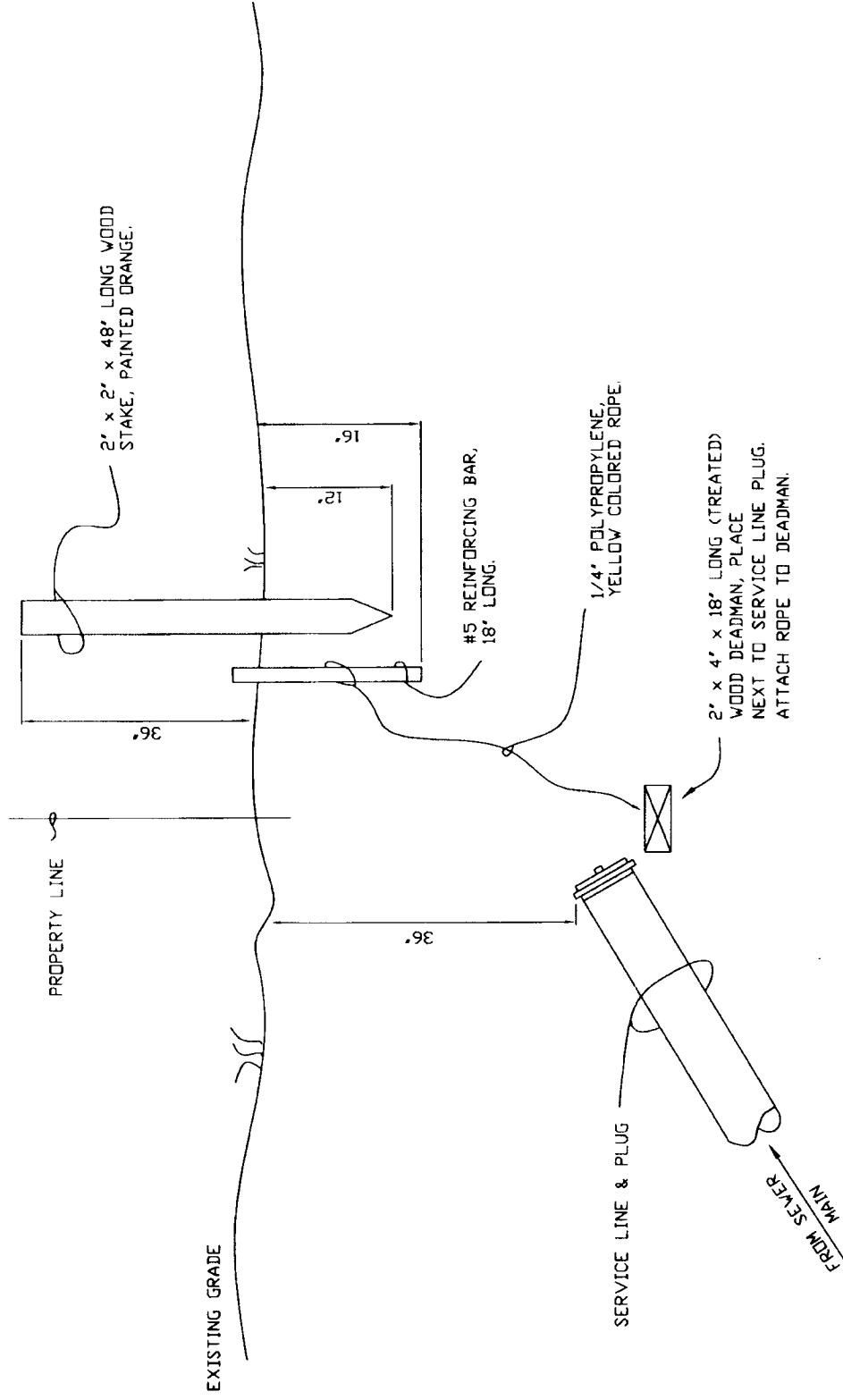
PIPE EMBEDMENT & BACKFILL UNDER STREET @ ANY DEPTH

NOT TO SCALE



TYPICAL SERVICE WYE DETAIL

UPDATED 2003
N.T.S.



SERVICE LINE LOCATION AND MARKING DETAIL

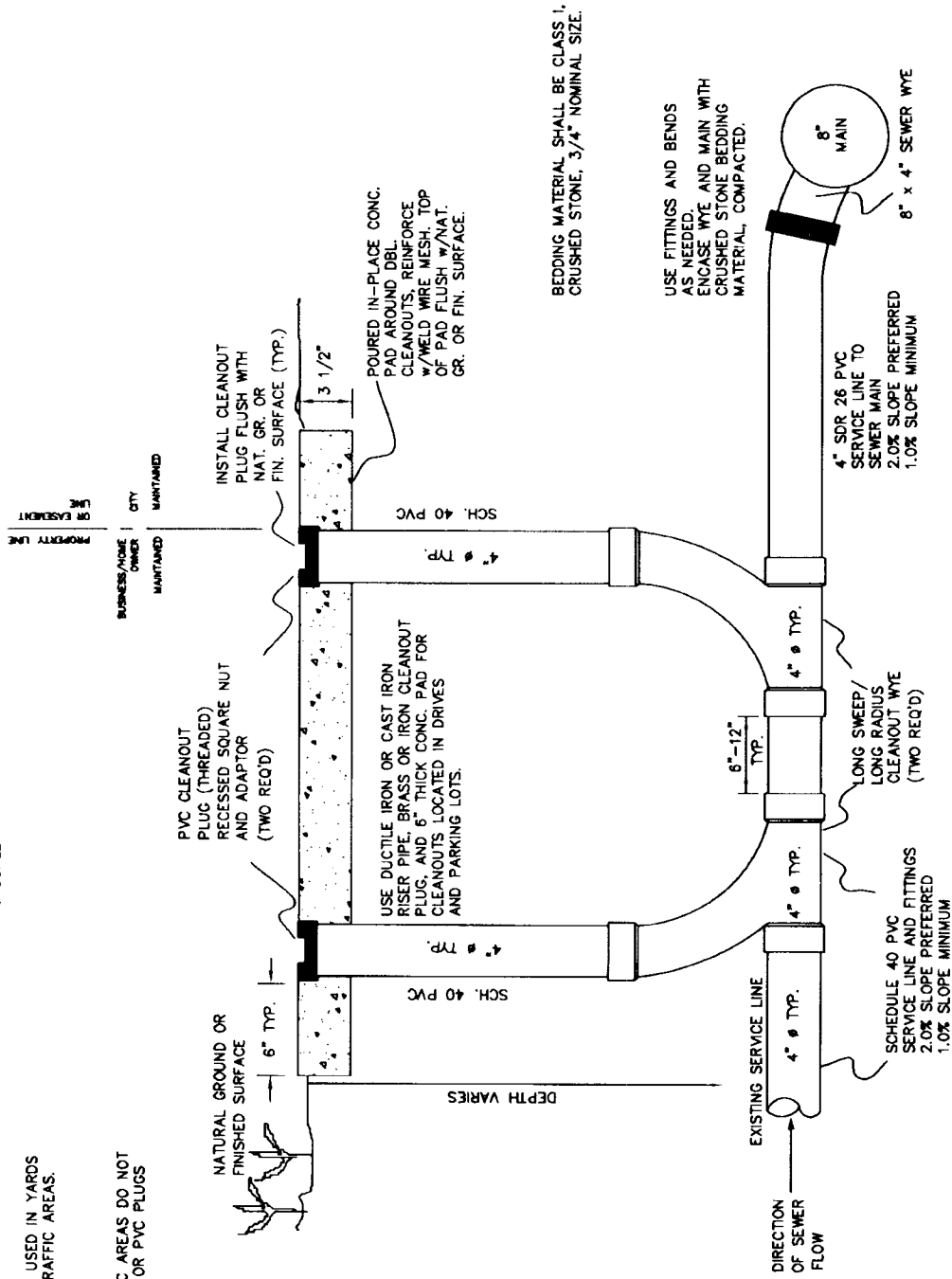
N.T.S.

DOUBLE CLEANOUT STANDARD DETAIL - OPTION "A"

NO SCALE

THIS OPTION MAY BE USED IN YARDS
AND IN VEHICULAR TRAFFIC AREAS.

IN VEHICULAR TRAFFIC AREAS DO NOT
USE PVC RISER PIPE OR PVC PLUGS



PINE BLUFF WASTEWATER UTILITY
FEBRUARY, 2006

PROPERTY LINE	OR EASEMENT LINE	CITY	MAINTAINED
---------------	------------------------	------	------------

**DO NOT USE THIS OPTION
IN VEHICULAR TRAFFIC AREAS**

NATURAL GROUND OR
FINISHED SURFACE

DO NOT USE PVC
PIPE WHEN EXTENDING
CLEANOUT ABOVE NAT. OR
FIN. GR. ELEV.

NAT. GR.

IRON

LE IRON

DEPTH VARIES

PVC TO DUCTILE
IRON ADAPTOR
(TWO REQ'D)

6" MAX.

BEDDING MATERIAL SHALL BE CLASS 1,
CRUSHED STONE, 3/4" NOMINAL SIZE.

USE FITTINGS AND BENDS
AS NEEDED.
ENCASE WYE AND MAIN WITH
CRUSHED STONE BEDDING
MATERIAL, COMPACTED.

SCHEDULE 40 PVC
SERVICE LINE AND FITTINGS
2.0% SLOPE PREFERRED
1.0% SLOPE MINIMUM

LONG SWEEP/
LONG RADIUS
CLEANOUT WYE
(TWO REQ'D)

4" SDR 26 PVC
SERVICE LINE TO
SEWER MAIN
2.0% SLOPE PREFERRED
1.0% SLOPE MINIMUM

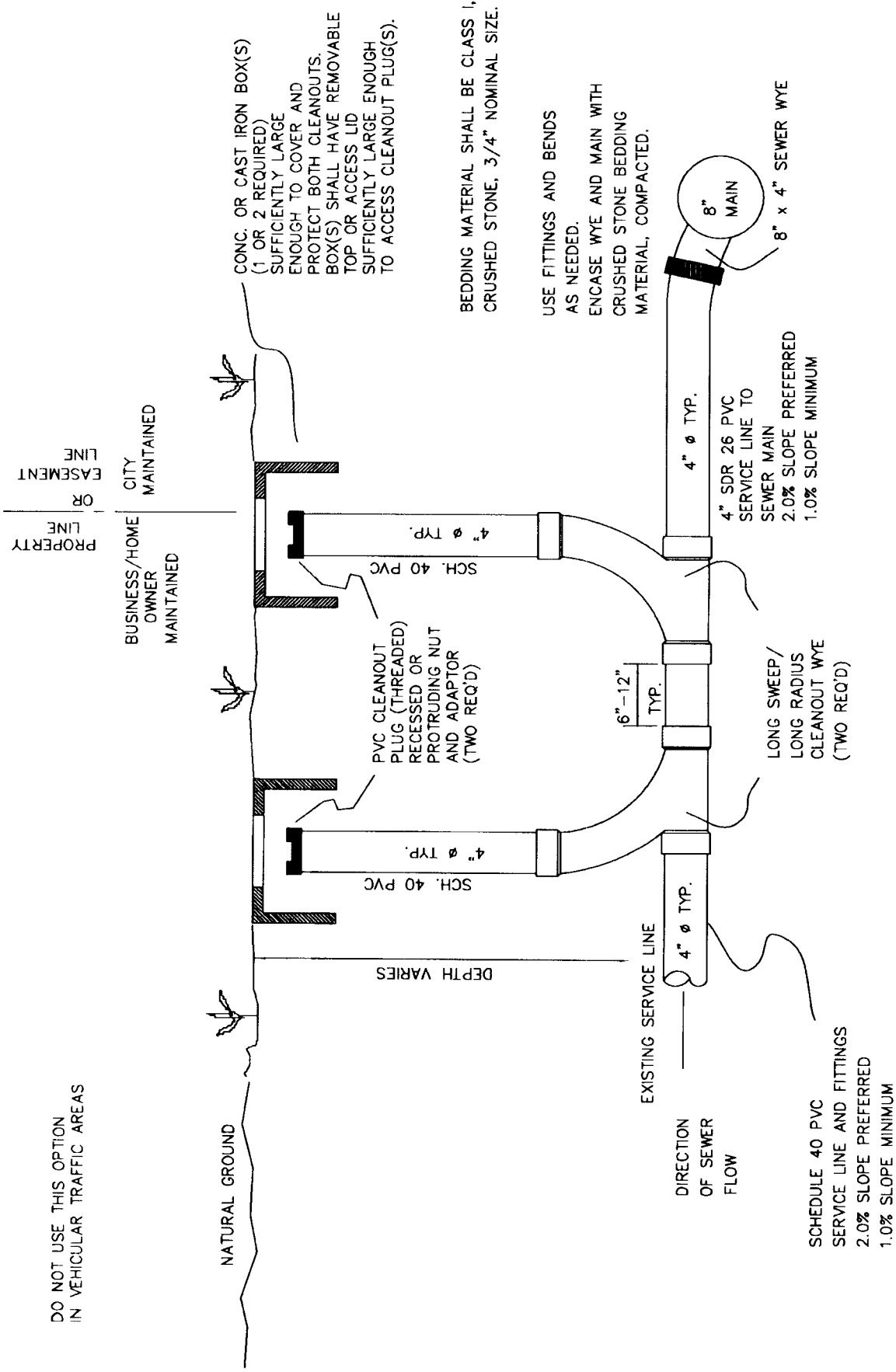
8" x 4" SEWER WYE

PINE BLUFF WASTEWATER UTILITY
FEBRUARY, 2006

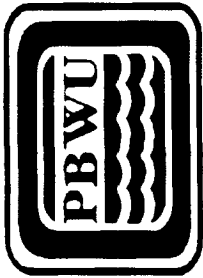
DOUBLE CLEANOUT STANDARD DETAIL—OPTION "C"

NO SCALE

DO NOT USE THIS OPTION
IN VEHICULAR TRAFFIC AREAS

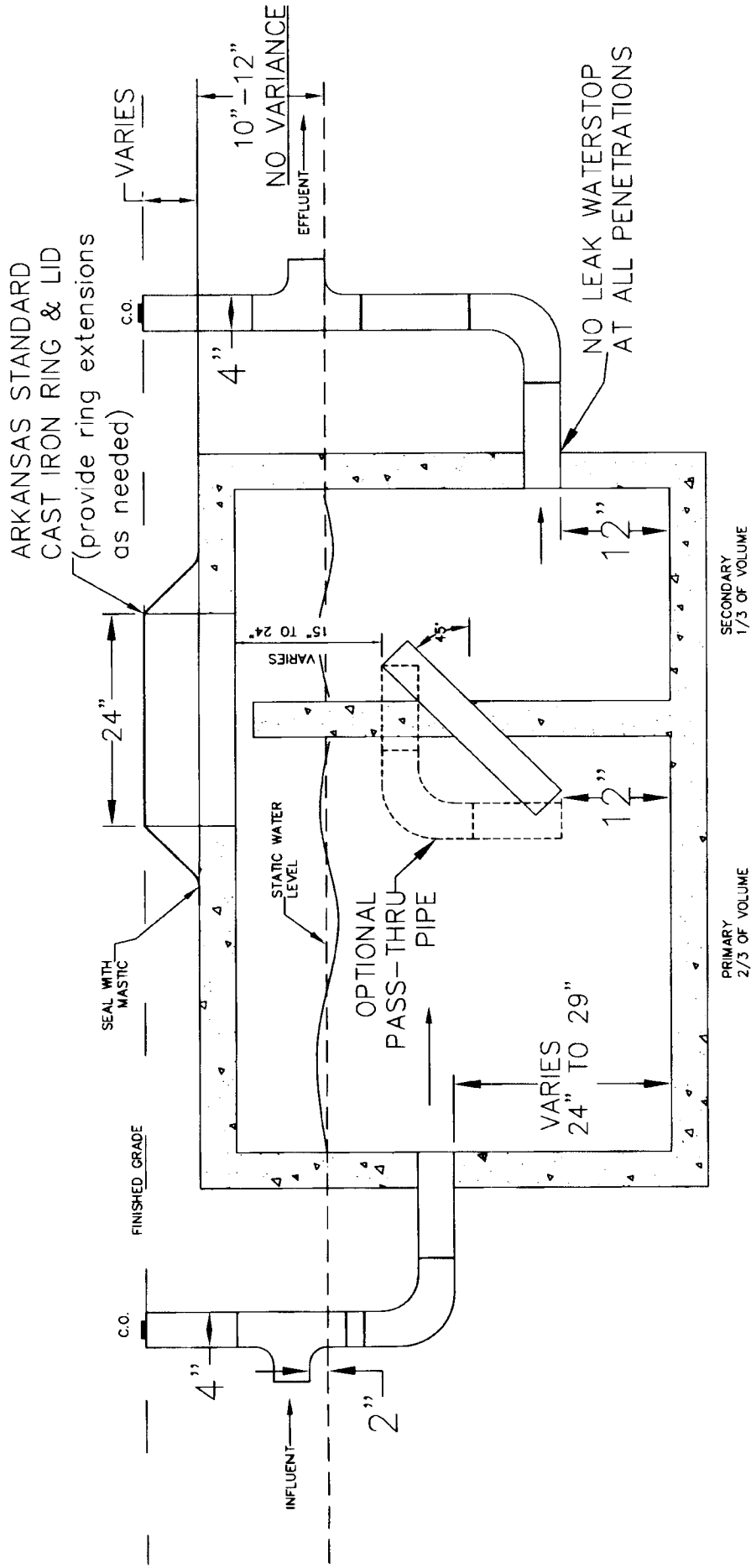


PINE BLUFF WASTEWATER UTILITY
FEBRUARY, 2006



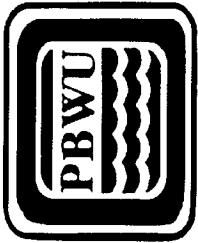
PINE BLUFF WASTEWATER UTILITY

1520 S. Ohio Street • Pine Bluff, Arkansas 71601-6055 • 870-535-6603 • FAX 870-535-6243



GENERAL NOTES

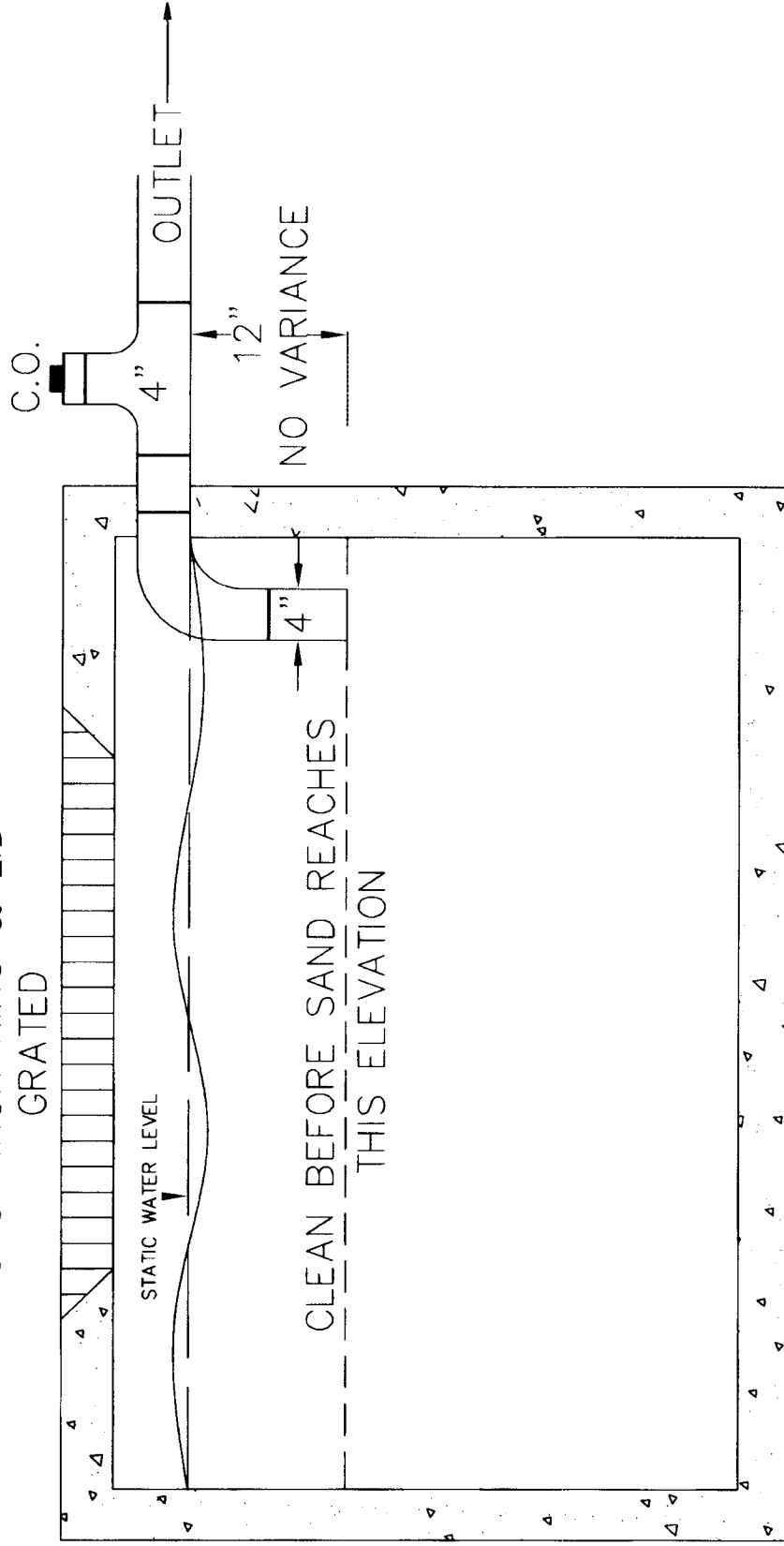
- 1.) ALL GREASE/OIL SEPARATORS MUST BE SIZED AND APPROVED BY PBWU.
- 2.) ALL PIPING SHALL COMPLY WITH CITY, STATE, AND PBWU CODES AND REGULATIONS.
- 3.) GREASE / OIL SEPARATOR SHALL BE INSPECTED BY PBWU INSPECTOR PRIOR TO BACKFILL.
- 4.) PINE BLUFF CITY PLUMBING INSPECTOR IS RESPONSIBLE FOR INSPECTION OF INLET & OUTLET PIPING PRIOR TO BACKFILL.
- 5.) PLUMBERS/CONTRACTORS SHALL OBTAIN TANK DIMENSIONS FROM TANK MANUFACTURER.
- 6.) PRIMARY AND SECONDARY COMPARTMENTS OF TANKS LARGER THAN 500 GALLONS SHALL HAVE THEIR OWN RING AND LID PER COMPARTMENT.
- 7.) FLOW LINE OF INFLUENT SHALL BE 2 INCHES HIGHER THAN FLOW LINE OF EFFLUENT.
- 8.) INFLUENT AND EFFLUENT TURN-DOWNS AND CLEANOUT PLUGS MUST BE INSTALLED AS SHOWN.



PINE BLUFF WASTEWATER UTILITY

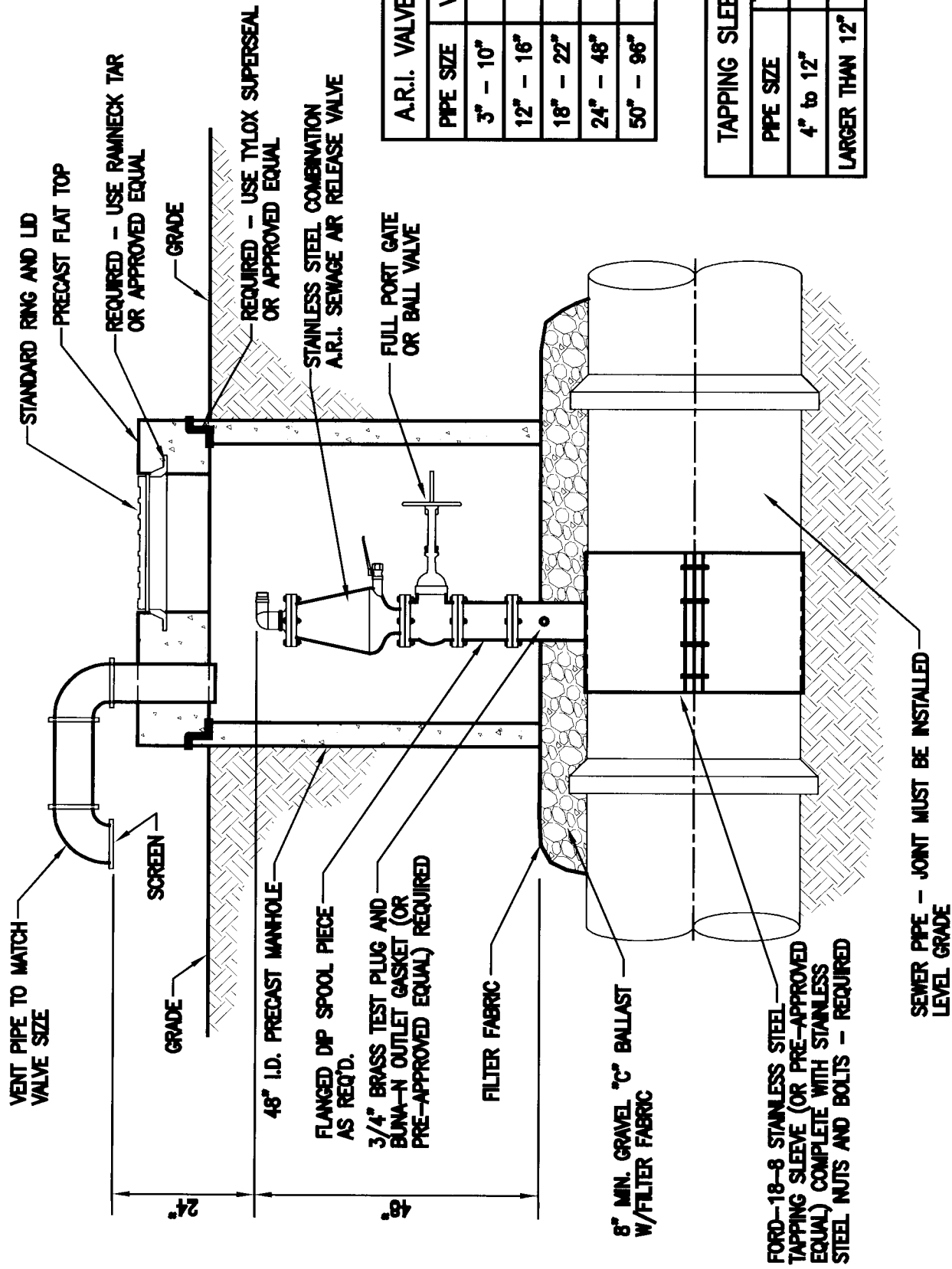
1520 S. Ohio Street • Pine Bluff, Arkansas 71601-6055 • 870-535-6603 • FAX 870-535-6243

CAST IRON RING & LID GRATED



GENERAL NOTES

- 5.) ALL SAND TRAPS MUST BE SIZED AND APPROVED BY PBWU.
- 6.) ALL PIPING SHALL COMPLY WITH CITY, STATE, AND PBWU CODES AND REGULATIONS.
- 7.) SAND TRAP SHALL BE INSPECTED BY PBWU INSPECTOR PRIOR TO BACKFILL.
- 8.) PINE BLUFF CITY PLUMBING INSPECTOR IS RESPONSIBLE FOR INSPECTION OF INLET & OUTLET PIPING PRIOR TO BACKFILL.
- 9.) PLUMBERS/CONTRACTORS SHALL OBTAIN TANK DIMENSIONS FROM TANK MANUFACTURER.
- 10.) INFLUENT AND EFFLUENT TURN-DOWNS AND CLEANOUT PLUGS MUST BE INSTALLED AS SHOWN.
- 11.) NO RAIN OR STORMWATER SHALL BE ALLOWED TO ENTER THE SAND TRAP.



A.R.I. VALVE SIZING	
PIPE SIZE	VALVE SIZE
3" - 10"	2"
12" - 16"	3"
18" - 22"	4"
24" - 48"	6"
50" - 96"	8"

TAPPING SLEEVE SIZING		
PIPE SIZE	TAPPING SLEEVE SIZE	
4" to 12"	PIPE SIZE + 2"	
LARGER THAN 12"	PIPE SIZE + 4"	

COMBINATION SEWAGE AIR RELEASE VALVE NO SCALE