

# SECTION 00700

## POLICY

### **1.01 STATEMENT OF POLICY**

- A. It is the policy of University Area Joint Authority (UAJA), in Centre County, Pennsylvania, which Authority owns, operates, administers and maintains a wastewater collection system for the conveyance of wastewater to the treatment facility owned by the University Area Joint Authority to accept any request for service to a new development within the service area of the Authority as defined by the then current Sewage Facilities Act (Act 537) of the municipality in which the new land development proposal is offered so long as the request for service meets the intent of this policy and these regulations. The decision to approve any proposed sanitary sewer extension to the existing system shall be approved so long as capacity exists in the collection system for conveyance, capacity exists at the University Area Joint Authority facility for treatment, no prohibited wastes are discharged and all other regulations of both Authorities are met. In the event subject sewers are accepted by the Authority, the responsibility for operation and maintenance of those sewers will be assumed by the Authority unless special circumstances and conditions must be met as delineated in the Sewer Extension Agreement between the Developer of the property and the Authority.

### **1.02 REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION**

- A. All regulations and requirements of the Pennsylvania Department of Environmental Protection (DEP) as those regulations and requirements pertain to the construction of sanitary sewers are incorporated herein as if those rules and regulations were fully written in this document.
- B. Any DEP rule, regulation and/or requirement which is more stringent than the rules and regulations contained in this document have precedence and shall supersede the regulations contained herein.
- C. The construction of sanitary sewers shall not be permitted until the proper permit(s) has been issued either by the Department of Environmental Protection to the Authority or the Authority itself has issued a permit to the developer authorizing construction of sanitary sewers.

### **1.03 OWNERSHIP AND EASEMENTS**

- A. The Authority shall assume ownership and will authorize use of, and will maintain and operate sanitary sewers, which have been constructed by a Developer to serve the land improved by the Developer in question under the following terms and conditions:
  - 1. The Developer has requested and the Authority has approved service to the Developer's project.
  - 2. The Developer has provided evidence that Land Planning Modules or an Exemption as may be required by the Department of Environmental Protection and/or the municipality in which the development occurs have been approved.
  - 3. The Developer has provided to the Authority the proper Sewer Extension Agreement which Agreement will differ depending upon whether the Commonwealth requires a Water Quality Management Permit issued by the Department of Environmental Protection and/or the Authority requires the issuance of a Water Quality Management Permit issued by the Authority. Examples of the Sewer Extension Agreements, as required, are attached hereto as Appendix B and C.

4. The Developer of the land in question provides to the Authority easements as may be required to maintain sewers in accordance with the rules and regulations then in effect at the time said easements are obtained. Easements shall be obtained and shall be recorded in the name of the respective Authority.
5. All easements obtained and recorded for the Authority shall have a minimum width of 20 feet, centered upon the sanitary sewer. In addition, it is recommended that no structure be constructed within 20 feet from the centerline of the sanitary sewer for purposes of future repair requirements.

#### **1.04 DEFINITION OF TERMS**

- A. "Authority" - The University Area Joint Authority (serving College, Harris, Patton, and Ferguson Townships), bodies corporate and politic empowered to construct, operate, and maintain a public sanitary sewer system to serve College, Harris, Patton, and Ferguson Townships, whose responsibility it is to inspect and approve all sanitary sewers that are to discharge into and become a part of the existing public sanitary sewer system. The Authority reserves the right to employ an agent to perform its inspection duties.
- B. "Consultant" - The individual, firm or corporation presently employed as Consulting Engineer by the Authority and responsible for the review and advisement to the Authority as to the satisfaction of the sewerage system design as presented by the Owner.
- C. "Contractor" - The individual, firm, partnership, co-partnership or corporation designated by the Owner for the construction of sanitary sewers.
- D. "Easement" - Right of access to private property to allow construction or maintenance of public utility. The easement prohibits the building of any permanent structures within the right-of-way except fences.
- E. "Engineer" - The individual, firm, or corporation designated by the Owner as responsible for the preparation of drawings or plans necessary for construction of sanitary sewers and appurtenances and the "As-Built" drawings; Owner's Engineer.
- F. "Gravity Basement Service"-
  1. For new home construction on lots where the profile of the building setback line is equal to or higher than the profile over the sewer main, the sewer main shall be constructed at an elevation such that the invert of the lateral servicing the lot shall be 9' below the finish grade shown on the profile over the sewer main.
  2. For new home construction on lots where the profile of the building setback line is lower than the profile over the sewer main, a first floor elevation is to be established and shown on the plan. The sewer main shall be constructed at an elevation such that the invert of the lateral servicing the lot shall be 9' below the first floor elevation.
  3. Every service lateral shall be constructed at a grade sufficient to achieve a velocity of two (2') feet per second [2% or 1/4" per foot for six (6") inch pipe] with an additional 8" in elevation (drop) provided for connecting the service lateral to the sewer main.
- G. "House Connection, Lateral Connections and Laterals" - the sewer which connects the house sewer to the street sewer. A lateral connection (to be 6" minimum) normally begins at the right-of-way or property line and connects to the street sewer by means of a "wye" or "tee" fitting.
- H. "House Sewer" or "Sanitary Sewer" - That portion of the sewer conveying the sewage from the structure to the lateral and being within private property. It is not part of the system dedicated to the Authority. The size and material of the house connection are subject to the plumbing ordinance of the Township; however, the house sewer and construction of same

are subject to inspection and testing by the Authority. If the house sewer is installed independently of the other sewers, it is subject to testing and connection procedures as being presently used by the Authority; Private Lateral.

- I. "Owner" - The party or parties seeking approval for construction of sanitary sewers and bearing the financial burden of construction; Developer.
- J. "Planning Commission" - The Local governing body responsible for the coordinated review of comprehensive planning.
- K. "Planning Module" - Components 3 and 4 of the Pennsylvania Department of Environmental Protection Sewage Facilities Planning Modules.
- L. "Pressure Sewer System" - A sanitary sewer system that utilizes individual grinder sewage pumps for each customer to convey sewage under pressure to the Sewer Main. Typically, a Pressure Sewer System includes a gravity House Connection, a grinder pump station, a pressure lateral, and a force main.
- M. "Street Sewer, Collector Sewers and Sewer Main" - The sewer or sewers in the public or private right-of-way which services, or is capable of serving, more than one "House connection".
- N. "Township" - The municipal governing body of College Township, Ferguson Township, Harris Township, or Patton Township
- O. "Work" - The installation of the sewer lines and appurtenances performed by the Contractor or Owner; Project.

**1.05 ABBREVIATIONS UAJA - University Area Joint Authority**

UAJA	- University Area Joint Authority
DEP	- Pennsylvania Department of Environmental Protection
PennDOT	- Pennsylvania Department of Transportation
OSHA	- Occupational Safety and Health Administration

**1.06 GENERAL SEQUENCE OF AUTHORITY APPROVAL**

- A. Submission Time - All project design plans shall be submitted to the University Area Joint Authority and successfully pass through the review process outlined in 2.0 PLAN SUBMITTALS in order to be eligible for placement on the Board's regularly scheduled meeting agenda.
- B. Approval for the construction of an extension to the system owned by the University Area Joint Authority shall follow, in general, the three stages outlined below:
  - 1. **Planning Approval**
    - a. The Developer shall submit one copy of a Land Development Plan or Sketch Plan to the Authority accompanied by a written request that the Authority either authorize execution of Planning Documents or certify documentation for a Planning Exemption, for the proposed development. The Sketch or Land Development Plan must at least show the proposed lot layout within the subdivision. Draft copies of Sewage Facilities Planning Modules (in duplicate) or a Planning Exemption Card as may be required by the municipality and/or the Department Environmental Protection shall accompany the Land Development Plan or Sketch. As a minimum, the Land Development Plan and/or Sketch Plan must contain the following

information:

- i. The name of the proposed subdivision or land development.
  - ii. North Arrow.
  - iii. Graphics Scale.
  - iv. Day, month, year plan prepared and/or revised.
  - v. Name and address of developer.
  - vi. Name and address of individual or firm preparing the plan.
  - vii. Key map showing location of proposed subdivision and land development.
  - viii. Total acreage of property.
  - ix. Location and widths of rights-of-way and cartways.
  - x. The layout of each lot.
  - xi. Utility, drainage and other easements.
  - xii. Point of connection to existing sewer system.
  - xiii. Preliminary layout of proposed sewage facilities.
- b. The Authority shall take into consideration the Developer's request for planning approval, and, if appropriate, shall authorize execution of the Sewage Facilities Planning Modules. If the Authority deems the submission for planning approval to be incomplete, additional action necessary by the Developer to gain planning approval shall be indicated at the meeting when the request for planning approval is considered.
- c. The Authority's approval of Developer's request for "planning approval" shall not constitute approval to serve the proposed subdivision or land development project.

2. **Service Approval**

- a. Following either Planning Module or Exemption approval, of the Developer's Land Development/Sketch Plan, the Developer shall make a formal request to the Authority for sanitary sewer service to the project or subdivision. If necessary, as determined by the Authority, the request shall encompass all of the lots in the proposed subdivision or individual lots within that subdivision. The Request for Service shall contain, as a minimum, three copies of the final Land Development Plan and/or subdivision plan as approved by the Municipality which plan shall contain, as a minimum, all of the information required under Section 1.06(B) subparagraph (1)(a) above.
- b. The Developer or his Engineer shall provide the Authority with a copy of the Department of Environmental Protection' approval of either the Planning Exemption or the Sewage Facility Planning Modules.
- c. Based upon the information presented by the Developer in the Request for Service, the Authority shall make a determination whether an application for a "Special Permit for the Discharge of Non-Domestic Wastewater" must be submitted to the Authority with respect to service to any one individual or all the lots contained in the Subdivision Plan or Land Development Plan. It is the intent herein to ascertain at this time whether wastewater, which is proposed for discharge to the sanitary sewer, will require pretreatment to be

provided by the Owner/Developer of the subdivision and/or lot within that subdivision before discharge to the sewer is permitted.

- d. Based upon the content of the Request for Service submitted to the Authority and the review thereof, the Authority will either approve the Request for Service or will make recommendations which will indicate what action must be taken by the Developer prior to the Request for Service being approved. If additional information is required from the Developer, they will be so notified.
- e. The Authority's approval of the Request for Service shall not constitute approval of the final design of the wastewater collection system required for service to the proposed subdivision or Land Development Plan.

3. **Final Design Approval**

- a. The Developer and/or their Engineer shall present to the Authority a design of sanitary sewers required to provide service to the subdivision or project which is to be developed. The Developer is referred to § 2.0 – Plan Submittals for requirements of the final design when submitting same to the Authority for review and approval.
- b. The Developer shall present to the Authority for its consideration a fully executed (in triplicate) Sewer Extension Agreement as contained in Appendices B and/or C attached hereto.
- c. Based upon the content of the submittal for final design approval, the Authority will either approve the submission or make recommendations which will indicate what action must be taken by the Developer prior to the Developer receiving approval of final design of the extension to the wastewater collection system. If additional information is required, the Developer shall be so notified.
- d. If the Department of Environmental Protection has determined a Water Quality Management Permit need not be issued by the Department authorizing the construction of sanitary sewers, the Developer shall submit, in duplicate, with a request for final design approval, an application for a Water Quality Management Permit to be issued by the Authority. The application shall be accompanied by the applicable fee in effect at the time application is made. Following approval of the final design of the wastewater collection system which is required to serve the Developer's subdivision and/or land development project, the Authority, if appropriate, will issue a Water Quality Management Permit authorizing the construction of sanitary sewers. In the event a Water Quality Management Permit must be issued by the Department of Environmental Protection, the Developer shall submit along with the request for final design approval, the appropriate application mandated by the Department of Environmental Protection in triplicate accompanied by the requisite fee as mandated by the Department. Following approval of the final design, the Authority shall submit the application for a Water Quality Management Permit to the Department of Environmental Protection.
- f. Construction of sanitary sewers may not commence until the requisite Water Quality Management Permit has been issued either by the Authority or by the Commonwealth of Pennsylvania, Department of Environmental Protection.

#### 4. **Procedures for Obtaining Approval to Construct and Use Sewers**

- a. The Developer and/or their Engineer shall present to the Authority for review and approval As-Built drawings, prepared and certified by the Engineer, of the extension constructed to the collection system owned by the University Area Joint Authority. At the time the As-Built drawings are presented for review and approval, the Developer shall convey to the Authority by a Deed of Dedication the sanitary sewer extension as detailed in the Sewer Extension Agreement. The requirements for As-Built drawings are contained in § 2.04 herein. No extension constructed by the Developer will be accepted and approved for use until such time as As-Built drawings have been approved, the Authority has televised the pipe construction and has found it to be free of defects, all fees have been paid to the Authority and/or the Authority's representative, and the Deed of Dedication has been offered to the Authority.
- b. The Developer shall pay all fees, premiums, royalties, etc. necessary for the construction as well as for the processing of applications for the proposed project. Where required, the Developer shall have the Engineer prepare the application for a Water Quality Management Permit to be issued by the Authority or the Department of Environmental Protection, whichever is applicable. In the event an application is prepared for submission to the Department of Environmental Protection, it shall be prepared in the name of the Authority together with all required modules. These documents shall be delivered to the Authority in triplicate for review by the Authority and the Authority's Consulting Engineer. The Consultant, after review and approval of the permit application, modules and other documents, together with the necessary plans shall provide their approval to the Authority in writing before documentation is submitted to the Department of Environmental Protection or the Authority issues a Water Quality Management Permit in its own behalf.

The Developer shall pay all premiums for bonds even if the Authority must obtain a bond prior to the commencement of construction. The Developer shall provide the necessary blasting bond if such is required by the Commonwealth of Pennsylvania Department of Transportation.

The Developer is also responsible for the following permits and approvals and any associated fees.

- i. PennDOT Highway Occupancy Permit and Maintenance Bond
- ii. Township/Borough Road or Street Occupancy Permit
- iii. Stream Encroachment Permit
- iv. Soil Erosion and Sedimentation Control Approval
- v. Earth Disturbance Permit
- vi. Any other Permits required by any Agency

If so required by the Authority, the Developer shall obtain the Permits in the name of the Authority.

The Developer shall pay the Authority for all costs of inspection of the construction of extensions to the sanitary sewer. A pre-construction conference shall be held at which time the predetermined, estimated fee for inspection shall be paid. No construction may be initiated until this fee has

been paid.

**1.07 BOND AND MAINTENANCE**

The Developer shall post a bond in accordance with the requirements of the Township which bond shall cover the cost of construction of the wastewater collection facilities shown on the plans as approved by the Authority and maintenance of the wastewater collection facilities for a period of eighteen months. The bond shall be posted concurrently with the bonds for other public improvements related to the project and shall be in an amount approved by the Township and/or the Authority.

If blasting is to be performed, a blasting bond, in accordance with PennDOT requirements shall be posted by the Authority, but the cost of said bond shall be borne by the Developer or their Contractor.

The Developer shall maintain all sewage and related paving items associated with the project, and shall correct all defects in workmanship and materials, including settlement of backfill, for a period of eighteen (18) months from the date of acceptance of the wastewater collection facilities by the Authority.

When repairs or replacements are required, the Authority will notify the Developer in writing advising of the extent of the work. Within seven (7) days thereafter, the Developer shall begin to perform the necessary work and carry it through expeditiously until it is completed. If the Developer delays beyond the seven (7) days from the date of said notice, the Authority will institute action under the bond to have the work done by outside forces and charge same against the Surety on the bond.

**1.08 REFERENCE TO STANDARDS**

Whenever reference to specifications or to standards is made relative to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization, or body, it shall be construed to mean the latest standards, code, specifications, or tentative specification adopted and published at the date of issuance of the sewer extension permit by the Authority, even though reference has been made to an earlier standard.

Reference to a technical society, organization, or body may be made in the Specifications by abbreviation, in accordance with the following list:

ACI	for American Concrete Institute
AGA	for American Gas Association
AIEE	for American Institute of Electrical Engineers
AISC	for American Institute of Steel Construction
ASA	for American Standards Association
ASCE	for American Society of Civil Engineers
ASME	for American Society of Mechanical Engineers
ASTM	for American Society for Testing and Materials
AWSC	for American Welding Society Code
AWWA	for American Water Works Association
CIPRA	for Cast Iron Pipe Research Association
Fed Spec.	for Federal Specification
AASHTO	for American Association of State Highway and Transportation Officials

NEMA	for National Electrical Manufacturers Association
AWPA	for American Wood Preservers Association
OSHA	for Occupational Safety and Health Administration
SCS	for Soil Conservation Service
DEP	for the Department of Environmental Protection
EPA	for the Environmental Protection Agency

When no reference is made to a code, standards or specification, the Standard Specification of the ASTM shall govern.

## **1.09 INDEMNIFICATION AND INSURANCE**

The Developer and/or Contractor shall indemnify and hold harmless the Authority and the Authority's Consultant and their agents and employees from and against all third party liability.

The Developer and/or Contractor shall obtain an Owner's and Engineer's Protective Liability Insurance Policy with the Authority named as the Insuree on said policy.

The Authority's Consultant shall be named as an additional insured under the policy; the minimum amount of the policy shall be \$1,000,000.

The Developer shall instruct the Contractor to carry the following types of insurance plus whatever special types of insurance the Authority and/or Township require.

- Workmen's Compensation
- Contractor's Public Liability and Property Damage
- Vehicle Liability
- Scope of Insurance and Special Hazards
- Builder's Risk Insurance
- Blasting Insurance

All subcontractors shall be required by the prime contractor to carry all required insurances enumerated herein.

Prior to the start of the construction (at the initial pre-construction conference), the Developer shall furnish to the Authority a Certificate of Insurance certifying that the Contractor (and all subcontractors) have taken out and is maintaining the types of insurance required by the Authority. The Owner's and Engineer's Protective Liability Policy shall be presented to the Authority at the pre-construction conference. Each certificate shall contain substantially the following statement: "The insurance covered by this certificate shall not be canceled or materially altered except after thirty (30) days written notice has been provided to the Authority."

## **1.10 WORKMANSHIP AND MATERIALS**

It is the intent of the University Area Joint Authority to require all sewer construction, which is carried out under the auspices of this policy by a Developer as defined herein, in College, Harris, Patton and/or Ferguson Townships, to meet the specifications enumerated herein, and to require the Developer to adhere strictly to the requirements enumerated herein. The intent of the Specifications is to define the quality and character of the workmanship and materials necessary to meet the requirements of the University Area Joint Authority and the Pennsylvania Department of Transportation for sewer construction in the rights-of-way and paved areas of state and township highways.

**1.11 NOTIFICATION OF UTILITY COMPANIES**

The Developer and/or representatives are hereby advised of their obligation under the Underground Utility Line Protection Law, to contact all utility companies who maintain underground utilities in the project area. The Authority will not assume any responsibility for the failure of the Developer and /or representatives to fulfill their requirements and obligations under the Underground Utility Line Protection Law.

**1.12 PRESSURE SEWER SYSTEMS**

The construction of a pressure sewer system will be considered when the following is met:

A. Criteria

1. The finish grade of the proposed development requires conventional gravity sewer mains to be greater than 15-feet deep as measured from the top of the sewer pipe to finish grade.
2. Site-specific conditions include wetlands, streams, or other natural water obstructions.
3. The location of the pressure sewer system is such that subsequent development in the vicinity will not be forced to connect to the pressure sewer system.

B. Additional Requirements

1. Each home or structure must have an individual grinder pump station. Sharing of grinder pump stations is not allowed. All grinder pump stations shall be located exterior to and at least 10-feet from any; structures on the property.
2. Prior to the issuance of connection permits, the developer shall deposit funds with the Authority, to be placed in escrow, equal to both the initial and replacement costs for the number of spare pumps listed in the following table, that are required for the size of the development proposed.

<u>No. of Grinder Pumps on Pressure System</u>	<u>Spare Grinder Pumps</u>
1 - 4	1
5 - 8	2
9 - 12	3
13 - 16	4
17 - 25	5
26 - 30	6
More than 30	6 plus one for every 7 additional or part thereof

3. The developer shall deposit funds with the Authority equal to the replacement cost of the total number of grinder pumps in the pressure sewer system. The funds will be placed in escrow by the Authority, and used to bring the expectant life of the pressure sewer system to 20-years. This cost may be passed on to the property owner, to be paid at the time of connection. The amount will coincide with current

cost at the time of connection.

C. Responsibilities and Maintenance

1. The individual property owner will be responsible for the maintenance and operation of the following components of the pressure sewer system:
  - a. Power and Electrical
  - b. House lateral to the grinder pump station
  - c. Wet Well
  - d. Pressure lateral including all fittings
  - e. Controls
2. The Authority will be responsible for the maintenance of the following components of the pressure sewer system. The deeds of each property served by the pressure sewer system shall contain a covenant allowing the Authority access to the grinder pump station for inspection, maintenance, and observation.
  - a. Grinder Pumps
  - b. Common Main

1.13 **Laterals**

A. Single Family Residential

1. From the six (6) inch lateral at the mainline, install test-tee and reducer which transitions to four (4) inch Schedule 40. Install clean-out two (2) feet inside property line. Install an additional clean-out every fifty (50) feet and at any directional change (horizontal or vertical). Any separate connection of a detached structure to the primary use on the lot shall be considered a "Private to Private" connection and shall follow the same requirements as the primary building connection however it shall require a separate permit as described in the Rate Resolution.
2. On properties where the sidewalk is to be located on the property rather than in the public Right-of-Way, the clean-out should be located in the Right-of-Way and the pipe is reduced and extended behind the sidewalk, within the utility easement.

B. Duplexes

1. Duplex buildings may always be served with an individual four (4) inch lateral to each unit adhering to specifications of the Authority. Any separate connection of a detached structure to the primary use on the lot shall be considered a "Private to Private" connection and shall follow the same requirements as the primary building connection however it shall require a separate permit as described in the Rate Resolution.
2. Duplex building where each unit will be rented may be served by extending the six (6) inch Schedule 40 lateral at the mainline into the property where it can be manifolded with a wye and reduced to four (4) inch Schedule 40 to serve each unit.
3. At duplex buildings where the units are individually owned and are not part of a condominium, each unit must be served by an individual four (4) inch lateral that adheres to specifications of the Authority.
4. Duplex building that are condominiums may be provided service with one lateral subject to the following conditions:
  - a. A condominium association must be established and a maintenance agreement with UAJA must be enacted.

- b. There must be no ability to subdivide the property, or any of the buildings within the condominium association, under current zoning regulations.
- c. The laterals serving multi-unit buildings must be six (6) inches in diameter.
- d. The minimum grade of the lateral must be ¼ inch per foot (2.00%).
- e. The lateral must extend completely through the building with a clean-out at the end.
- f. Additionally, a clean-out must be provided for each individual unit in an accessible location that is not within the living area of the unit.
- g. Grade certification must be provided to UAJA staff for each lateral within the association.

C. Three or More Units Per Building (Multiple Unit)

- 1. Multiple unit buildings (greater than duplex) where each unit will be rented may be served by one six (6) inch Schedule 40 lateral for the building. Any separate connection of a detached structure to the primary use on the lot shall be considered a "Private to Private" connection and shall follow the same requirements as the primary building connection however it shall require a separate permit as described in the Rate Resolution.
- 2. Multiple unit buildings (greater than duplex) that are condominiums may be provided service with one lateral subject to the following conditions:
  - a. A condominium association must be established and a maintenance agreement with UAJA must be enacted.
  - b. There must be no ability to subdivide the property, or any of the buildings within the condominium association, under current zoning regulations.
  - c. The laterals serving multi-unit buildings must be six (6) inches in diameter.
  - d. The minimum grade of the lateral must be ¼ inch per foot (2.00%).
  - e. The lateral must extend completely through the building with a clean-out at the end.
  - f. Additionally, a clean-out must be provided for each individual unit in an accessible location that is not within the living area of the unit.
  - g. Grade certification must be provided to UAJA staff for each lateral within the association.
- 3. Multiple unit buildings (greater than duplex) that are condominiums and are constructed as two (2) stories or higher, may follow "Common Element" methodology as allowed by the [PA Uniform Condominium Act]. This provides for the use of common vertical stacks which converge into common 6" diameter lateral(s) prior to connection to the mainline sewer, where the lateral is not located under the building slab. If the lateral is located under the building slab, conditions a. through e. and g. of point 2 above will prevail.

D. Commercial

- 1. Lateral design must be reviewed and approved by Staff.

E. Industrial

- 1. Lateral design must be reviewed and approved by Staff.

## 2.0 PLAN SUBMITTALS

### 2.01 SUBMISSION TO AUTHORITY OF DESIGN AND AS-BUILT DRAWINGS FOR REVIEW AND APPROVAL

#### Design Drawings:

- A. The Developer and/or Engineer shall submit two (2) complete sets of Plans of the proposed wastewater collection construction project for review and approval by the Authority, with one (1) additional set of Plans being submitted directly to the Authority's Consultant for review and comment. These submissions must be made by scheduling "Review Dates". This process will be triggered by the Authority's return of the Developer's request for Planning Exemption Response or request for Planning Module. With the returned Response will be a statement to the Developer that they may now proceed with preparation of Design Drawings for the Project and that they should instruct the Engineer to contact the Authority to schedule three (3) Review Dates. This scheduling must be done so that approval can be secured at any given UAJA Board Meeting. A Review Date will insure that a comment document will be received from the Authority/Consultant in Five (5) days.[ For example: 1. Drawings arrive on Monday as scheduled. 2. Completeness review takes place Tuesday. 3. Consultant reviews and comments to Authority on Wednesday. 4. UAJA reviews and compares comments on Thursday. 5. Authority and Consultant discuss review comments and finalize review comment letter, then send by E-mail or Fax to the Engineer and Developer on Friday.] This completes one Review Date. The next step is for the Engineer to revise the drawings as instructed and return them in time to meet the previously scheduled Review Date. If the schedule is not met, a rescheduling must take place, and in all likelihood will cause a delay in the approval. Assuming that the schedule is met, then the process begins all over with steps 1 through 5, and will result in either another review comment letter or notification that the drawings will be recommended for approval at the next UAJA Board Meeting, which will delete the necessity for the third Review Date. No more than four (4) projects (depending on size) will be processed concurrently in the same Review Date cycle. It is the responsibility of the Developer and their Engineer to adhere to the "Review Date" schedule in order to secure a timely approval of the drawings for the project. When approval of the drawings has been achieved, execution of the Sewer Extension Agreement completed, and assignment of a Water Quality Management Permit for construction has been made, then a "Job Conference" may be scheduled to discuss the project with the Contractor and UAJA Inspectors prior to the commencement of construction.

#### As-Built Drawings:

- B. At the completion of construction, a letter is sent to the Developer informing them that the TV inspection resulted in a confirmation that the construction portion of the project is now complete. Upon receipt of that letter the Developer is responsible for arranging the completion of "Provisional As-Built" drawings by the Project Engineer. The Developer and/or Project Engineer shall submit to the Authority two (2) complete sets of "Provisional As-Built" prints of all facilities for which consideration of Authority approval and acceptance is being requested, with one (1) additional set being submitted directly to the Authority's Consultant for review and comment. "Provisional As-Built" drawings shall show the installed system as described in 2.04 (B.). **When the final revisions have been made to the submittal, the electronic submission, as described in Appendix F- (Specifications for Electronic Submission) of this Document, will be required. The purpose being to provide a timely update to the Authority's Geographical Information System. Upon receipt and insertion into the GIS, of the properly formatted corresponding Electronic Submission, the review process will be considered complete and approval of the "Provisional As-Built" drawings will be granted. A letter will then be sent to the Developer informing them of the approval and that they may now make application for connection permits.** The Developer is also informed that they are now responsible for instructing the Project Engineer to proceed immediately with finalization (ie:

two (2) print sets of Final As-Builts and one (1) set of Reproducible Mylars), which must be received not more than 30 calendar days from the date of the approval letter. It is also noted in the letter that if Inspection Escrow money is owed, it will be invoiced and must be paid in full according to the terms of the invoice. If there is a balance, it cannot be refunded until the finalization is complete.

- C. In addition to the Plans and Specifications called for above, if the Authority deems it necessary, the Developer shall provide three (3) sets of any other plans, catalog cuts and specifications, as might be furnished for his project by a material or equipment manufacturer, whether it be a material, installation or maintenance specification.
- D. If the Project requires a DEP WQM permit for construction then all submissions must be increased by two (2) additional sets to be submitted by the Authority to the Department for review. This includes both Design and As-Built drawings.

**2.02 MINIMUM STANDARDS FOR DESIGN**

- A. Reference is made to the Minimum Standards for Construction Drawings contained herein and § 1.02 for design standards not specified below. Reference is also made to the Sewerage Manual published by the Commonwealth of Pennsylvania, Department of Environmental Protection, Bureau of Water Quality Management, latest edition. In the event these specifications require stricter standards than the Sewerage Manual promulgated by the Commonwealth, these specifications take precedence.
- B. No mainline sewer pipe shall be less than eight inches (8") in diameter with the exception of service laterals, which shall be six inches (6") in diameter.
- C. The following are the minimum slopes that shall be provided:

<u>Pipe Size (inches)</u>	<u>Minimum Slope in Feet per 100 Feet</u>
8	0.50
10	0.38
12	0.32
14	0.27
15	0.25
16	0.24
18	0.22
21	0.20
24	0.18
27	0.167
30	0.158
36	0.146

- D. The maximum distance between manholes shall be three hundred feet (300'). A manhole shall be provided at every change in horizontal and/or vertical alignment and as a termination for all 8" or greater diameter pipe.
- E. For new home construction, gravity basement service, as defined in 1.04(F), shall be

provided.

- F. When required by the Authority, any Developer desiring to discharge non-domestic wastewater to the sanitary sewer shall install a suitable control manhole or manholes on each connecting sewer or sewers (or each lateral connection) to facilitate observation, sampling, and measurement of the flow of non-domestic wastewater. At the discretion of the Authority the Developer must plumb the building so as to separate domestic and non-domestic wastewater. Such control manhole or manholes shall be accessible and safely located and shall be constructed in accordance with the plans approved by the Authority. The manhole or manholes shall be installed by the Developer at their expense and shall be maintained by the Developer so as to be safe and accessible to the Authority or its authorized representatives at all times.

## **2.03 MINIMUM STANDARDS FOR CONSTRUCTION DRAWINGS**

- A. The Plans for construction shall include the following:
1. A coversheet that details the name of the project for which the plans have been prepared. On the coversheet, the Engineer's name shall be shown together with the name of the Authority that owns the collection system. The name of the Township in which the project is located shall be shown. Centre County, Pennsylvania should also be shown on the drawings. The date the drawing was prepared shall be shown. A key map showing the location of the project shall be shown on the coversheet. An extract from a USGS map may be used for the key map with the area of project defined on the key map. The permit number, for connection to existing sanitary sewers, shall be shown on the cover sheet. During the design phase, the Sewer Extension permit number shall be left blank but shall be completed at the As-Built phase in drawing production. In addition, during the generation of As-Built drawings, the front cover shall definitively state that the drawings depict the As-Built condition of the sewers. Also on the front cover of the As-Built drawings, the required certification from the design engineer that the sewers have been constructed in accordance with the design and the rules and regulations of the appropriate Authority together with the Department of Environmental Protection shall be shown. If any changes have been authorized during construction, the changes shall be listed underneath the certificate. The front cover of each set of drawings shall bear the Engineer's original impressed seal and signature.
  2. The second sheet of the folio of drawings shall be the table of contents with the contents of each page definitively shown. The Engineer's standard table showing changes, individuals who designed, checked, drew and surveyed the information shall be shown. Each subsequent page in the folio of drawings shall contain the name of the project, the name of the engineer, and the name of the Authority. If the drawings are As-Built the word "As-Built" shall appear.
  3. The third sheet in each set of drawings shall be a general plan of the entire project showing the locations of all lots (if appropriate) and the location of sanitary sewers in streets and rights-of-way (graphically correct) together with lot numbers, roads, streets, etc. The scale shall be such that the majority of the sheet is used to depict the project.
  4. The plans shall be at a scale of 1 inch = 50 feet. In congested areas a scale of 1" = 20' may be used with prior approval of the Authority. Uniform sheet size shall be 24" x 36". A profile of the street, sewer, and ground surface over the sewer shall be shown with pipe sizes and grades between manholes clearly shown. The profile showing the sewer shall be the actual ground profile over the centerline of the sewer between manholes shown to scale. A street centerline profile will not be acceptable for the use of a sewer profile unless the street and sewer centerlines are coincident

over the entire length sewer from manhole to manhole. The profile will be developed so that all features shown are in the vertical plane of the sewer. In addition, a ground profile at the building setback line shall be shown. The profile shall be drawn at a horizontal scale of 1 inch = 50 feet and a vertical scale of 1 inch = 5 feet. Both Plans and Profiles will be drawn to scale to a tolerance of 0.10 inch. Therefore, stated distances and dimensions should scale to within 5 feet on plan views and within 0.5 feet on profiles.

5. Sewer Stationing - Stationing for sewers shall be independent of street stationing or any other utility stationing. Stationing for sewers shall begin at the connecting manhole of the existing sewer and be indicated as 0+00. The stationing shall proceed in 50-foot intervals with exact stationing labeled for manholes, wyes and laterals. The stationing shall continue in a consecutive manner along the sewer and shall end at the terminal manhole at the end of the tributary sewer with the stationing representing the total linear feet of sewer in the tributary system.
6. Manhole Numbering - It is the policy of the University Area Joint Authority to maintain a consistent system of manhole numbering. For new developments, manholes shall be numbered consecutively starting with the number 1. Each number shall be preceded with the initials of the development name. The Authority will provide ultimate guidance for this task.
7. Inverts of sewers at manholes and manhole top elevations shall be shown. There shall be a minimum 0.20-foot difference in elevation between invert in and invert out for every manhole. The datum shall be that of the Authority's system. The Authority or the Consultant will supply benchmark elevations. A minimum of one (1) benchmark shall be shown on each sheet of the construction plans.
8. Structures to be served shall be located in plan and profile with the basement and first floor elevations clearly indicated. It is the policy of the Authority to serve the basements of all structures by gravity within its service area unless gravity basement service proves unfeasible. The Authority shall be the sole judge as to whether gravity basement service may be eliminated and, if so, the plans shall indicate that gravity basement is not available to the specified lot(s).
9. Street drainage or other utilities, crossing, paralleling or otherwise causing potential interference with the proposed construction shall be clearly shown in both plan and profile.
10. The location of proposed individual laterals shall be shown on the design plans. The Developer and/or Engineer shall use good judgment in the selection of the lateral location; placement shall be in respect to topography and lot disbursement. It shall be noted on the design plans that laterals to lots are typical and final location will be chosen in the field by the Authority inspector. "Wye" and lateral ends shall be stationed along the centerline of the sewer between manholes with a length and distance either left or right from the centerline of the sewer main. A lateral shall be constructed to each lot within a subdivision. The lateral end elevation at the property line shall be indicated on the plans.
11. A North arrow and flow direction of all sewers shall be shown on each sheet. Plans for construction are expected to be completed using straight edges and standard drawing templates for letters, numbers and symbols. No free hand lettering or numbering will be permitted. The Developer and/or Engineer are advised to examine drawings that are available at the Authority's offices so they may clearly understand what standards are acceptable for construction drawings. In addition, a checklist for construction drawings and specifications is contained in Appendix D.

## 2.04 MINIMUM STANDARDS FOR "AS-BUILT" DRAWINGS

- A. Sewer Extension plans for all projects shall be prepared by a Professional Engineer, registered in the Commonwealth of Pennsylvania and shall bear the original impression seal and signature of the Engineer that prepared the plans on the front cover sheet of each plan set.
- B. The Developer shall furnish to the Authority an electronic submission (as described in Appendix F), and two (2) sets of "Provisional As-Built" prints in order to be able to secure connection permits, then submit within 30 calendar days a set of reproducible Mylar "As-Built" drawings and two (2) sets of "Final As-Built" prints of all facilities for which Authority acceptance is being requested. If requested, two (2) additional copies of the "As-Built" drawings (prints) submitted by the Developer shall be transmitted to the Department of Environmental Protection by the Authority as "As-Built" Drawings to replace the design drawings previously forwarded to the Department for permit purposes. These Records are to show the system as installed with all revisions. Manholes, wyes, and laterals are to be correctly stationed with respect to centerline of manholes with depth, length of laterals, and invert elevation **as well as GPS reference** at the end of the lateral noted. Pipe material and angles of sewers at the manholes shall be shown. A 4 X 4 pressure treated post is to be placed at the end of the lateral and shall extend from the invert of the lateral to a minimum of three (3) feet above the ground. The top of the post shall be painted with sewer green for at least a distance of 12" from the top of the post. The total distance from the top of the post to the invert of the lateral shall be indicated on the "As-Built" drawings at the proper centerline station either left or right. The "As-Built" drawings shall contain thereon the same information required for the design drawings corrected to "As-Built" conditions and shall include the locations of all streets and utilities (both main lines and laterals) that parallel or cross the installed sanitary sewers. The location of the lateral end, shown in the plan view, shall be graphically correct with respect to property corners, manholes, utility poles, etc., **and shall be GPS referenced in the appropriate lateral chart.** The "As-Built" drawings shall be prepared so that the graphical accuracy tolerances noted in Section 2.03 Part A.4 are maintained. Each drawing shall be marked "As-Built" and dated. Appendix E contains a checklist for As-Built drawings and specifications.
- C. The Developer and Engineer are advised that since the "As-Built" drawings become the property of the Authority and an official part of their public records, the Authority expects nothing less than the most professional engineering and drafting work. The Authority prides itself in having clear and neat records available to the public for future reference.
- D. All "As-Built" drawings are expected to be completed utilizing straight edges and standard drawing templates for letters, numbers and symbols. No freehand lettering or numbering will be permitted. The Developer and/or Engineer are advised to examine existing "As-Built" drawings, which are available at the Authority's Offices, so that they may clearly understand what standards the "As-Built" drawings must meet.
- E. The reproducible mylars of the "As-Built" drawings are to bear a seal of a Registered Professional Engineer, registered in the Commonwealth of Pennsylvania. The registered professional engineer shall certify that the "As-Built" information is true and correct. The mylar "As-Built" drawings shall be signed and dated by the Registered Professional Engineer. Submission in an Authority approved electronic format (see Appendix F) is also required for GIS updating.
- F. The Developer may request permission for the Authority to accept portions of permitted sanitary sewers that are installed on a piece-meal basis. The Authority will consider this only if "As-Built" drawings are completed in accordance with the above-noted standards. If the piece-meal method is used, a general plan of all sewers that are permitted within the Developers project area shall be included and that portion for which Authority acceptance is

being requested shall be clearly indicated.

- G. In the event more than one Engineer is retained by the Developer over a period of time to produce "As-Built" Drawings on a piece-meal basis, it will be the responsibility of the Developer when all sewers covered by permit have been constructed to retain one Engineer to produce a complete set of drawings showing "As-Built" conditions of all sewers, and provide an updated version of the Electronic Submission as described in Appendix F.

## **2.05 PLANS TO CONTRACTOR**

- A. A sufficient number of Plans and Specifications shall be made available by the Developer to the Contractor or Contractors performing the work.

## **3.0 SCOPE OF WORK**

### **3.1 GENERAL**

- A. The work included in the proposed sewer construction shall be defined in detail and be complete in scope so that in no way shall the Authority be held responsible for any interconnection work or maintenance of roadway paving after final inspection and acceptance of the work.
- B. The Developer, or the Contractor under the construction contract with the Developer if such be the case, shall furnish all plant, materials, equipment, supplies, labor, transportation, fuel, power, water and air necessary to complete and test the work properly, in accordance with the Specifications and Plans thereof.
- C. The work shall be complete and all the work, materials, and services not expressly called for in the Specifications or not shown on the Plans, which are necessary and required for the proper construction and operation of all items of work and equipment specified and shown, shall be performed, furnished and installed to the satisfaction of all regulatory agencies and governing bodies and the Authority.

### **3.2 QUANTITIES AND AMOUNTS OF WORK**

- A. For purposes of establishing a book value of the sewer system of the Authority, copies of all lump sum and unit prices given to the Developer by the Contractor (Contractor's proposal to complete the work) shall be given to the Authority.
- B. Field changes in the work, requiring more or less of the items for which prices are stipulated in the Proposal, may be made upon written approval of the Authority. The "scope of work" must remain such that the Developer provides a complete, operational system.
- C. Records of final (As-Built) quantities along with lump sum or unit price tabulations shall be given to the Authority.

### **3.3 CONTRACTOR TO CHECK PLANS AND DATA**

- A. The Contractor is required to check all dimensions and quantities on the Plans or Schedules given by the Developer's Engineer, and the Contractor shall notify the Engineer or Developer of all errors, omissions, conflicts, and discrepancies found therein. Contractor will not be allowed to take advantage of any error or omission in these Specifications, as the Authority

shall furnish full instructions to the Developer should such errors or omissions be discovered, and the Developer shall carry out such instructions as if originally specified. Figures marked on the Plans shall, in general, be followed in preference to scale measurements. Large-scale drawings shall, in general, govern small-scale drawings. In all cases where dimensions are governed by conditions already established, the Contractor shall depend entirely on measurements by self. As a condition of overall approval and acceptance by the Authority, the Developer must agree to save harmless the Authority from any damage resulting from errors or omissions.

**END OF SECTION**