

NORTH WALES WATER AUTHORITY RATES AND REGULATIONS

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NWWA ADMINISTRATIVE OFFICE
Montgomery County Business Office
200 West Walnut Street
P.O. Box 1339
North Wales, PA 19454
215-699-4836

BUCKS COUNTY BUSINESS OFFICE
1560 Easton Road
P.O. Box 1018
Warrington, PA. 18976
267-482-6940

www.nwwater.com

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ARTICLE I. - GENERAL PROVISIONS

WATER AND SANITARY SEWER SERVICES

1.1 -General Provisions:

Any applicant, individual, or entity requesting or receiving operational or administrative services from the North Wales Water Authority for water or sewer services shall at all times comply with these Rules and Regulations and all other applicable requirements and policies of the Authority, as a condition of approval, initiation, and continuation of services, by the Authority. If any provision, section, sentence, clause, or part of this Resolution shall be held to be invalid, such invalidity shall not affect or impair any remaining provisions, paragraph, sentence, clause, or any part of this Resolution, it being the intent of the Board members that the remainder of the Resolution shall remain in full force and effect.

1.2 -Rules and Regulations - Applicability:

All general business of the Authority is to be performed in a manner consistent with these Rules and Regulations (hereinafter referred to as "Rules"), which are hereby adopted, published, and binding upon the Authority and its Customers, except as might be otherwise stated herein, or as required by statute or a court of jurisdiction. All provisions are subject to change by official action of the Authority Board or by emergency declaration or other authorized administrative act during emergency conditions. The Authority reserves the exclusive right to charge and/or to modify any or all charges, fees, and rates, for either water services, sanitary sewer services, or both, and to assess other charges for services and functions performed by any Authority staff or agents, as might be deemed appropriate by the Authority from time to time. Any specific rule, regulation, or policy of the Authority, which is not contained herein, or which is not incorporated by referenced by this document, shall be determined by the Authority Board of Directors, or in the absence of the Board, the Executive Director, or his/her designee, in a manner consistent with the overall intent and purpose of this document.

1.3 -Agreements:

No agent or employee of the Authority has the legal authority to bind the Authority by oral or written promise, agreement, actual or apparent representation, in any manner that does not comply with these Rules and Regulations.

1.4 -Limitations on Liability of the Authority:

The Authority shall not be liable for failure, omission, or neglect to render water or sewer service in the event of a labor dispute, inability to obtain materials, Acts of God, and external cause not in the control of the Authority, negligence of any employee, or any other similar good cause. Any provision to the contrary notwithstanding, any act, ordinance, or law of the Commonwealth of Pennsylvania which in any manner or respect limits, reduces, or eliminates, any cause of action against the Authority shall be binding, thereby superseding, or rendering null and void and contrary provision in this section.

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1.5 - Additional Limitations on Authority's Liabilities and Obligations.

The Authority shall not be liable for damages resulting from failure to provide water and/or sewer service for any reason, including loss occurring from shutting off water to make repairs or connections, repairs or maintenance to the water or sewer systems, or failure from other cause affecting either system, beyond its reasonable control.

The Authority reserves the absolute right to reduce or restrict the supply of water, in case of scarcity or other cause, or to limit sewer flows, when the public welfare may require such action - in the sole determination of the Authority.

The Authority shall not be liable for damages resultant of leaks, backflows, broken pipes, or from any other cause occurring upon or within any structures or property. By acceptance of service, it is expressly stipulated by and between the Authority and the Customer that the Authority shall not be liable due to bursting or breaking of any main or service line that is a part of the Authority's distribution system. . The Authority may forward any claim(s) made to the Authority's Liability Insurance carrier for consideration, or may offer repairs and remediation to the customer.

Nothing contained herein shall bind or otherwise obligate the Authority to maintain any particular level of water volume or pressure for service. It is agreed by all parties receiving public or private fire service that the Authority does not guarantee any specific water pressure, volume, or storage capacity. As such, as a condition of service, it is agreed by the parties receiving said service that the Authority shall be exempt from any claims for loss or damages of any kind due to fire, water, or failure to supply water, pressure, or capacity.

1.6 - Limitations on Authority's Obligation to Provide Sewer Service:

The Authority's ability to provide sewer service shall be limited to the available capacity within the collection system, pump station, or the sewage treatment facility. If there is a lack of capacity within any part of the Authority sewer facilities, the Authority reserves the right to decline new service connections or an increase in flows from existing connections/customers. The Authority shall not be liable for any damages resulting from the refusal of service due to a lack of capacity as determined by the Authority or for any moratorium on new service that may be placed on the Authority by the Pennsylvania Department of Environmental Protection or other agency of jurisdiction.

1.7 - Authority Standard Specifications and Details:

Incorporated herein by reference is the "Standard Specifications and Details of the North Wales Water Authority," which shall serve as minimum requirements for any new design or installation activities involving Authority facilities. The Standard Specifications and Details of the North Wales Water Authority are to be used in conjunction with all specifications, guidelines, contracts, agreements, and other official documents and rules of the Authority concerning all water and sewer service facilities. Circumstances may, at times, require

ARTICLE II - DEFINITIONS

For the purpose of this document and rules, unless otherwise stated, the following definitions shall be applied. Words in the present tense include the future. The singular number includes the plural number. The plural number includes the singular number. The word "shall" is mandatory, while the words "may" or "will" are to be considered permissive.

1. **"Authority"** shall mean the "North Wales Water Authority" or authorized representative.
2. **"Backflow"** shall mean the flow of water or other liquids, mixtures, or substances into the water lines of the Authority from any source except the authorized and intended source.
3. **"B.O.D."** (Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedures for five days at 20° C expressed as a concentration (mg/l), in accordance with EPA Test Method 405.1, as referenced in 40 CFR 136.3.
4. **"Board of Directors"** shall mean the Board of Directors of the North Wales Water Authority.
5. **"Commercial Users"** shall mean all non-residential use of water or sewer services or facilities, including but not limited to; retail, office, business, institutional, industrial, and manufacturing facility use, also wholesale or bulk sales, repairs of private facilities, recreational uses, , and any other uses not specifically defined as residential use, as determined by the Authority.
6. **"Excess Water Consumption over Reserved Capacity"** shall mean the metered use of water in excess of the water capacity paid and reserved by the customer, resulting in a surcharge imposed by the Authority, which is greater than the normal user rate.
7. **"Cooling Water"** shall mean the water discharged from any use such as air conditioning, cooling, or refrigeration or to which the only pollutant added is heat.
8. **"Customer"** shall include a person, partnership, association, corporation, or other entity which utilizes the full services of the Authority's water system and or sewer system, or any individual who is legally obligated to connect to the Authority's water system and or sewer system and obligated to pay the Authority for services rendered - whether or not any agreement shall be written and executed with the Authority. All Customers receiving service must comply with the Authority's fee schedule, the Rules and Regulations, and the exhibits and attachments hereto, and as included by reference, and as may be modified by the Authority from time to time. The terms "Consumer, User, Tenant, Property Owner, Owner, and Permittee" may be used interchangeably with the term "Customer" throughout these Rules and Regulations and associated documents of the Authority. The term "Customer" does not always

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special design features that the Authority shall determine at the time of the design review. In such cases, the Authority reserves the right to impose additional requirements to the Standard Specifications and Details of the North Wales Water Authority or delete or modify any of the provisions therein. In the event of a conflict with other codes, rules, or regulations of any other agency of jurisdiction, the higher and more restrictive standard shall apply.

1.8 -Right of Access:

Protection of the public water system is paramount as a condition of service; authorized employees or agents of the Authority, upon providing identification, shall have the right of access to the properties served (hereinafter referred to as "Premises") at all reasonable hours. Such access shall be limited to the purposes of investigating system problems, unusual flows, reading of meters, maintaining, repairing, replacing, inspecting, or improving pipes and any other water and sewer facilities under the jurisdiction of the Authority. Access shall also be permitted to observe the condition of the facilities and for any other purposes that are proper and necessary in the conduct of the Authority's customary responsibilities, as the Authority may determine appropriate. Failure to provide access may result in the termination of service and legal action necessary to gain entry at the Authority's option.

1.9 -Inspection and Copying of Authority Records:

Any eligible party shall have the right to take extracts or make copies of individual public records while such records are in the possession, custody, and control of the lawful custodian thereof or authorized deputy. However, the legal custodian of such documents shall have the right to adopt and enforce reasonable rules governing the making of such extracts or copies or restrict access to comply with applicable laws requiring such restriction or confidentiality. The Rules established by this Authority governing the inspection and copying of records are to be implemented under Pennsylvania Senate Bill No. 1 (Act 3), signed into law on February 14, 2008, and as may be amended from time to time. This legislation became effective January 1, 2009, and is commonly called the "Right-to-Know Law." (RTK)

SEE APPENDIX H FOR MORE DETAIL ON THE NWWA RIGHT TO KNOW POLICY

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4. **"Board of Directors"** shall mean the Board of Directors of the North Wales Water Authority.
5. **"Commercial Users"** shall mean all non-residential use of water or sewer services or facilities, including but not limited to; retail, office, business, institutional, industrial, and manufacturing facility use, also wholesale or bulk sales, repairs of private facilities, recreational uses, , and any other uses not specifically defined as residential use, as determined by the Authority.
6. **"Excess Water Consumption over Reserved Capacity"** shall mean the metered use of water in excess of the water capacity paid and reserved by the customer, resulting in a surcharge imposed by the Authority, which is greater than the normal user rate.
7. **"Cooling Water"** shall mean the water discharged from any use such as air conditioning, cooling, or refrigeration or to which the only pollutant added is heat.
8. **"Customer"** shall include a person, partnership, association, corporation, or other entity which utilizes the full services of the Authority's water system and or sewer system, or any individual who is legally obligated to connect to the Authority's water system and or sewer system and obligated to pay the Authority for services rendered - whether or not any agreement shall be written and executed with the Authority. All Customers receiving service must comply with the Authority's fee schedule, the Rules and Regulations, and the exhibits and attachments hereto, and as included by reference, and as may be modified by the Authority from time to time. The terms "Consumer, User, Tenant, Property Owner, Owner, and Permittee" may be used interchangeably with the term "Customer" throughout these Rules and Regulations and associated documents of the Authority. The term "Customer" does not always

include wholesale, bulk, and municipal accounts which do not receive full services as may be provided to our retail “customers,” although the term “customer” may inadvertently be used.

9. **“Equivalent Dwelling Unit (EDU)”** – A unit of measurement or capacity allocation for water and sewage planning, capacity reservation, and billing purposes.
 - a. For water and sewer purposes, an EDU shall mean a specific amount of water or sewer capacity reserved within the systems and shall also be used as a means of allocating capacity and tracking the water or sewer capacity reserved for the particular property being served. Each EDU shall be equal to 178 gallons of reserved capacity per day. For instance, a single EDU will receive an allocation of 178 gallons per calendar day (24-hour period). Two (2) EDUs would have a daily allocation of 356 gallons per day, and so on. This EDU allocation may be used to calculate any Excess Water Consumption or Sewer Surcharge that becomes payable.
 - b. Sewage treatment planning capacity:
 - i. The Pennsylvania Department of Environmental Protection has enacted the following definition: **“Equivalent Dwelling Unit (EDU)** for the purpose of determining the number of lots in a subdivision only as it relates to the determination of planning exemptions and fees for planning module reviews under this chapter, that part of a multiple-family dwelling or non-residential establishment with flows equal to **400 GPD**. These flow estimates are not to be used to calculate flows for the design of community sewerage systems or the allocation of flows related to community sewerage systems. Community sewerage system flows for design and permitting purposes shall be calculated using the procedures established in the Department’s Domestic Wastewater Facilities Manual (DEP-1357)”.
 - ii. Upper Gwynedd Township requires that the North Wales Water Authority purchases capacity (EDUs) at **330 GPD per EDU**, which includes both sewage flow and I & I entering the system, per EDU, and is not an entitlement of capacity at the property being served.
 - iii. *The Authority issues both water and sewer EDUs at a capacity of 178 GPD at the building or structure and does not include I&I.*
10. **“Ground Water”** shall mean water, which is standing upon, in, or passing through the ground. This may also be occasionally referred to as storm water or Infiltration and Inflow. (I&I)
11. **“Industrial Wastes”** shall mean any liquid, gaseous, radioactive, solid, or other substances, not sewage, resulting from any manufacturing or industry, or establishment, as herein defined, and mine drainage, refuse, silt, coal mines, coal collieries, breakers, or other coal-processing operations.

12. **"Line Extension"** shall mean an addition to the Authority's water or sewer system, which is necessary to serve the premises of a Customer.
13. **"mg/L"** shall mean milligrams per liter and is equivalent to parts per million by weight.
14. **"National Pollutant Discharge Elimination System Permit"** shall mean a permit issued to a sewage treatment plant pursuant to Section 402 of the Act (33 U.S.C. § 1342).
15. **"pH"** shall mean the logarithm (Base 10) of the reciprocal of the concentration of hydrogen ions, expressed in moles per liter of solution. A measure of the acidity or alkalinity of a substance expressed in standard units.
16. **"ppm"** shall mean parts per million by weight in water and wastewater analysis.
17. **"ppb"** shall mean parts per billion by weight in water and wastewater analysis.
18. **"ppt"** shall mean parts per trillion by weight or measurement in water and wastewater analysis.
19. **"Primary Customer"** – Where two (2) or more Customers are served off a single water or sewer service (these connections are no longer allowed by the Authority for new connections), the Customer whose customer facilities are directly connected to a water or sewer service connection extending from the Authority's water main is designated as the "Primary Customer."
20. **"Prohibited Waste"** shall mean any wastes that can in the Authority's judgment harm either the sewers or sewage treatment process or equipment which; can have an adverse effect upon the receiving stream; can otherwise endanger life, health, or property, or which constitutes a public nuisance, per EPA regulations. A list of prohibited wastes is listed within the Authority's Wastewater Control Regulations and Industrial Pretreatment Program found in Appendix E
21. **"Residential Unit"** including a dwelling unit or individual dwelling units shall mean any structure intended to be occupied as a place of residence by one family, or each apartment intended to be occupied by one family, or any other one-family living unit, containing plumbing, kitchen, or toilet facilities. Multifamily units or apartments will each be considered separate units.
22. **"Sanitary Sewage"** shall mean the combination of liquid and water-carried effluent discharged from structures with toilet facilities and other sanitary sewage plumbing facilities connected to the Authority system.

23. **"Secondary Customer"** – Where two (2) or more Customers are on the same single service (these connections are no longer allowed by the Authority); the Customer whose customer facilities are connected to the Primary Customer's facilities is designated as the Secondary Customer.
24. **"Sewer Line"** shall mean any sanitary sewer line or main as follows:
- a. **Sewer Main:** A sewage collection pipe owned and maintained by the Authority and located in a street, road, alley, right of way, or other easements available to the Authority.
 - b. **Sewer Lateral:** An individual sewage collection pipe owned and maintained by the Authority and typically located between the Authorities' main and the edge of the Right of Way, cart way, curb line, or easement line unless further defined by or restricted by local ordinance.
 - c. **Building Sewer:** An individual sewage collection pipe typically owned and maintained by the Customer or other private party or entity.
25. **"Sewage Surcharge Fee"** shall mean a charge, fee, or penalty imposed upon a Customer in instances where a pollutant or discharge is in violation of any Authority, Borough, Township, Federal or State Regulation or Statute.
26. **"Sewer System"** shall mean the sanitary sewer collection and intercepting systems of the Authority, Sewerage Pumping Stations, and any Sewage Treatment Plant or Plants hereafter owned by the Authority, or any connections thereto for which the Authority might have the responsibility, and any improvements, additions, or extensions that subsequently may be made thereto by the Authority, or to any part or parts of any or all thereof.
27. **"Significant Industrial User"** shall mean the following: An industrial customer shall be considered a Significant Industrial User if they meet any of the criteria found in Appendix E
28. **"Standard Industrial Classification"** shall mean a classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972, as amended.
29. **"Standing Ready to Serve"** shall mean the Authority's reserve capacity made necessary for fire service use based upon the size of the service line, meter, or gallons of water capacity purchased and reserved by a water Customer
30. **"Stormwater"** shall mean that portion of the precipitation that runs off over the surface during a storm and for a period following a storm, and can also include groundwater at times. Storm water is a term used to describe water that originates during precipitation events. It may also be used to apply water that originates with

snowmelt or runoff water from overwatering that enters the Stormwater system. Stormwater that does not soak into the ground becomes surface runoff, which either flows directly into surface waterways or is channeled into storm sewers, which eventually discharge to surface waters.

31. **"TSS"** shall mean total suspended solids and represents the sum of solids that float on the surface or are in suspension in water, sewage, or other liquids and that which are removable by laboratory filtration.
32. **"Water Line"** shall mean any water line or main as follows:
 - a. **Water Main:** A water distribution pipe owned and maintained by the Authority and located in a street or dedicated easement.
 - b. **Water Service Line:** An individual water distribution pipe owned and maintained by the Authority and located between the Authority main and the curb stop.
 - c. **Building Service Line:** An individual water distribution pipe owned and maintained by the Customer and located between the curb stop and the premises.
33. **"Water System"** shall mean all the facilities of the Authority for the supplying of water to the Authority's consumers.
34. **"Water or Sewer Services"** shall mean the general administrative and operational services provided by the Authority to water or sanitary sewer customers.

ARTICLE III – WATER SERVICE

Section 3.1 Water Service

3.1.1 -Water Service

The Authority shall review applications from customers requesting water service and agreeing to the adherence of all conditions of receiving water service as set forth in these Rules and Regulations of the Authority. If water service is supplied to the Customer, each Customer facility and use shall typically be separately metered, unless otherwise approved by the Authority under particular conditions.

3.1.2 -Authority Specifications:

All work performed upon, and all additions made to the water system shall be done in accordance with the Standard Specifications and Details of the North Wales Water Authority, which can be found in **Appendices C & D** unless otherwise approved in writing by the Authority.

3.1.3 -Inspections

If work on the water system is being completed by other than employees of the Authority, the Authority shall be permitted to inspect all parts of the water service up to and including the water meter and required appurtenances. To obtain an inspection, the Customer must provide the Authority with a minimum of five (5) calendar days' notice of the time and date when the inspection is needed so that the Authority may schedule the staff required to inspect the work and complete any necessary testing. This schedule for inspection(s) may be extended by the Authority during holidays, emergencies, Authority closures, or due to unexpected circumstances or workloads.

3.1.4 -Permits from Governmental Entities:

In addition to any Authority permits, the Customer shall be responsible for permits required by other governmental entities. The Customer shall comply with all requirements of such governmental entity, including methods of construction, types of material, methods of backfill, methods of repaving, methods of protection and warning, and all other applicable specifications imposed by such entity, which may require a greater standard than imposed by the Authority. PennDOT and DEP permits and applications shall be in the name of the Authority. Applications for permits shall be based upon designs and plans that have been reviewed by the Authority and such plans shall incorporate all changes, corrections, and modifications required by the Authority. No work shall commence until all required permits and agreements have been obtained.

3.1.5 -Reserve or Restricted Water Supply:

The Authority shall have the right to reserve a portion of the total water within the system as deemed necessary by the Authority as a sufficient backup supply of public water for fire and other public emergencies. The Authority shall also have the right to restrict or regulate the quantity of water used by any or all customers in the case of scarcity or whenever the public welfare may so require, as shall be determined by the Authority.

3.1.6 -Continuity of Water Service:

The Authority may reduce, restrict, or may temporarily suspend water service at any time, as it deems appropriate in its sole opinion, to make repairs or improvements to the water system or other reasonable cause. In such events, the Authority will attempt to provide reasonable advance notice to customers when feasible but shall not guarantee such notice, or be liable in any way for failure to do so.

3.1.7 -Water System Pressure:

Water system pressure can vary in different sections of the system. As such, subject to the minimum service pipe and water meter sizes required by the Authority, the Customer shall assume all responsibility for the sizing of the water service. The Authority does not guarantee that water system pressure will remain constant. The Authority will endeavor to maintain operating pressures of at least 20 pounds per square inch (psi) in the distribution system during non-emergency and routine operations - per PA DEP regulations. Customers with elevated buildings, lawn or irrigation sprinkler systems, fire service sprinkler systems, or other uses requiring higher water pressures may need to install water pressure booster pumps to obtain the desired pressure levels. If such additional pressure is necessary, the Customer shall pay all costs for such booster pumps and approved backflow devices. Services installed in areas where the static water pressure is 80 psi or greater (or a lesser maximum psi if required by local plumbing code) shall require that the Customer provides the installation and ongoing maintenance of a pressure regulator to control high pressure at the Customers own expense.

3.1.8 -Responsibility for Damage to Water System:

The Customer is responsible at his own risk and expense to maintain all apparatus and appliances that may be receiving, controlling, applying, and utilizing water furnished by the Authority. The Authority shall not be responsible for any damage occurring on the premises served, or elsewhere, because of open faucets, faulty fixtures, or broken hoses or pipes on such premises when water service is turned on or restored, whether or not at that time there be any responsible interested person on the premises, nor for any damage resulting from the turning off of water service. Any damage occurring to meters, pipes, or other appurtenances owned by the Authority caused by carelessness or neglect of the Customer or other party shall be charged to the Customer by bill of the Authority. When any party is determined to be responsible for damage to a fire hydrant or other water facility, the Authority shall charge

that Party for the cost of repairs plus the cost of water loss computed on the basis of duration of flow and the flow rate as estimated by the Authority.

3.1.9 -Contract for Water Services:

The approved application, whether verbal or written for services, shall constitute a contract between the Authority and the applicant. In the case where a tenant occupies a property, the owner must sign the service application and shall retain all responsibilities for all water charges and fees, regardless of any arrangements made between the applicant and the tenant. The applicant and owner hereby agree to pay the Authority rates and charges as established from time to time and comply with its Rules and Regulations. All contracts for water services shall continue in force until mutually agreed otherwise unless terminated by the Authority for cause.

3.1.10 -Change of Customer and Responsible Party:

A new customer account will typically be required when:

- a. There is a legal change in Property Ownership – the Authority must receive, in writing, pertinent Settlement Information including Settlement Date, Title Company Name and Contact, and full name(s) of new Property Owner; or
- b. The Authority has received the completed Owner Agreement/Tenant Declaration forms

3.1.11 -Change of Occupancy:

A change in occupancy that is not a result of change of Property Ownership or completion of the Authority's Owner Agreement/Tenant Declaration forms will not require a new customer account. The property owner (s) should advise the Authority of the accurate billing address and contact information for emergency notification and other service contact purposes; otherwise, a new customer account may be required by the Authority.

3.1.12 -Change of Use:

A change in use of any property served MAY require a change in the number of EDUS issued and capacity reserved with the Authority even if ownership does not change. It is the property owners' responsibility to notify the Authority of any change in use, occupancy, or operations that could be expected to change the amount of water being used, and or sewer being returned to the system, or change the individual(s) being billed. The customer should confirm the purchase and allocation of sufficient capacity reservations to always prevent excess use surcharges, even if increases are incremental.

SECTION 3.2 - APPLICATIONS FOR WATER SERVICE LINE

3.2.1 -Service Connections:

Any party desiring a water service line connecting to an existing Authority water main or a main to be constructed and dedicated to the Authority shall make written application for such connection using the form furnished by the Authority attached hereto as **Appendix B**.

The Rules and Regulations of the Authority shall regulate and control the installation of the line and continued water service to the premises being served. Payment of all fees shall be made in accordance with **Appendix A** prior to installation.

Separate service lines are required in the following cases:

- a. All multi-unit dwellings intended for each individual unit or apartment to be individually metered and billed by the Authority.
- b. All non-residential buildings or portions thereof are intended to be metered and billed separately by the Authority.
- c. In all installations, when the Authority deems separate applications advisable due to circumstances such as the partitioning of a building or structure, different habitation units, or for separation and isolation of residential vs. non-residential use and occupancies.

3.2.2 -Limitation on Applications:

Applications for service connections will be approved only when there are mains in streets, easements or rights-of-way abutting the premises to be served, with the capacity to serve determined to be adequate and sufficient by the Authority, unless the Applicant makes arrangements acceptable to the Authority for the main water extension.

3.2.3 -Approval of water service line installation by Authority

The approval for a new water service without a new main extension agreement shall be granted if the Authority finds that the following conditions are met:

- a. A new water service line from existing Authority facilities can provide water service to the intended property without requiring anything other than an incidental main extension.
- b. That the proposed service does not include buried joints unless approved by the Authority. In the case of services over 100 feet, any underground joint or connection must be made according to Authority specifications. Any service longer than 200 feet requires the installation of an Authority-approved meter pit.

- c. That the Customer has agreed in writing, in the form presented by the Authority, to the payment of any expenses or reimbursements, and has provided for such payments.
- d. That any rights-of-way or easements needed exist, or are provided as required.
- e. That the service line installed will not be located to run parallel to the centerline within the shoulder or bed of any existing or proposed public street or road.
- f. That the Customer agrees to install the line as the Authority has specified; and,
- g. That no unusual circumstances exist that would, in the Authority's opinion, require a service contract or main extension agreement.

SECTION 3.3 - CONDITIONS OF SERVICE

3.3.1 - Restriction of Customer to Supply Water:

No Customer shall sublet or otherwise supply other customers or premises with water from Authority facilities by connection or interconnection, without the prior written permission of the Authority. Violations of this rule may cause water to be immediately shut off. This shut-off may remain in effect until the Authority is satisfied that these Rules and Regulations are observed.

3.3.2 - Authority Service Lines:

Except as might be otherwise provided within an approved Professional Services or Main Extension Agreement, the Authority will typically be responsible for the installation, maintenance, and repair of the water service line located between the main and the curb stop. (This does not include the customers' water service line from the curb stop to the structure).

- a. Upon Authority approval of an application for water line connection, and once all road opening and other required permits and approvals are obtained, the Authority will schedule the installation of the water service, typically including tapping the water main, insertion of the corporation stop, and installation of a water service pipe to the Authority installed curb stop and service box. The customer shall be responsible for the line beyond this point.
- b. The location of the service line must be approved by the Authority, and no service line shall occupy the same trench with any other facility of a public service company or be within four (4) feet of an open excavation or vault unless such installation has been authorized by written approval of the Authority.
- c. No service connection will be installed during times that street openings are prohibited by municipal regulations, nor at any time when, in the judgment of the Authority, conditions are deemed to be improper or unsafe by reason of weather or working conditions.

- d. Service lines between the main and the curb stop will not be installed when the service line passes over or through premises that are not owned by the owner of the premises to be supplied unless the Authority is provided with an approved easement, right-of-way, or license agreement - acceptable to the Authority, with the Customer being responsible for obtaining and paying for any easements, rights of way, or licenses.

3.3.3 -Building Water Service Line:

The building service line, which is that portion of the pipeline located between the curb stop and the premises, shall be installed and maintained by and at the expense of the Customer. (This has sometimes been referred to as a water service "lateral" or private "water service" line).

- a. The portion of the water service line installed by the Customer shall be of Type "K" copper unless other materials are approved by the Authority. The line must be not less than one inch in diameter, shall be installed at least 42 inches below the finished surface of the ground or street, shall be at least 48 inches in horizontal distance from any open area, or vault, or other utility lines, or property line, and shall not be covered until the tap on the main is made, and the service line is tested, as required by the Authority.
- b. If defects in quality are found, upon Authority inspection, water service will not be turned on until such deficiencies are remedied to the satisfaction of the Authority.
- c. Except as might be authorized (in the sole discretion of the Authority) all service lines must be constructed in a straight line from the curb stop to the premises. This is beneficial when attempting to locate the line for repairs or maintenance or when marking the line location prior to future excavations and construction activities.
- d. Unless otherwise approved by the Authority, service lines must be constructed in a straight line from the curb stop to the meter pit and in a straight line from the meter pit to the premises when a meter pit is used.
- e. All services lines between the curb stop and the premises must be located upon the property being served unless other arrangements acceptable to the Authority are in place.
- f. Lead and or galvanized water service lines cannot be installed or repaired and retained in the system. Plastic pipes require approval.
- g. No connections shall be permitted to service lines between the curb stop and the water meter. All water delivered by the Authority must pass through the water meter. Any unauthorized connections and unmetered water consumption shall be considered as theft of services.

3.3.4 - Two or More Customers on Same Water Line:

When under existing circumstances, two (2) or more customers are supplied with water from the same water service connection, in a manner previously allowed but no longer permitted by Authority, the following shall apply:

- a. The Authority, at its own expense, may replace the non-conforming service connection(s) with separate service connections; or,
- b. Where reconstruction or substantial changes to the structure occurs, or when a significant change in the use of the structure occurs, or if occupancy classification changes, or if the owner requires replacement or relocation of the water service, the Authority may at the expense of property owner(s), replace or require the replacement of any nonconforming service connection, with new separate and conforming water service connections; or,
- c. In the event such a condition already exists and is not deemed by the Authority to warrant immediate correction, the Authority may permit by a special agreement that the condition remains in place for an agreed-upon term.
- d. No new connections serving more than a single customer shall be permitted, and it is the expressed intention of the Authority to phase out any such existing connections.

3.3.5 - Two or More Customers exists on the Same Service:

Where two (2) or more Customers are on the same single service, the Customer whose Customer facilities are directly connected to a service connection extending from the Authority's water main is designated as the "Primary Customer" for purposes of this rule, and the Customer whose Customer facilities are connected to the Primary Customer's facilities is defined as the "Secondary Customer."

Any violation of the Rules and Regulations of Authority by either or any of said Customers shall be deemed a violation as to all, and Authority may take such action as could be taken against a single Customer, except that where the Secondary Customer is not otherwise in violation of the Rules and Regulations of Authority, such action shall not be taken until the Secondary Customer has been given a reasonable opportunity, at their own expense, to attach their pipes to a separately controlled service connection;

As a condition of continued water service to two or more Customers on a single service, the Authority shall have the right to enter the property of either the Primary or the Secondary Customer, or both, for the limited purposes of disconnecting the connection between the Primary and Secondary Customer's facilities, and for installing any necessary facilities to eliminate the violation.

Where water service to the Secondary Customer has been terminated because of a violation of the Rules and Regulations of Authority, service shall not be resumed until a separately controlled service connection has been installed at the Secondary Customer's expense.

3.3.6 -Meter Pits:

Whenever the length of the service line is in excess of 200 feet, the customer is required to use an Authority-approved meter pit and is responsible for the installation, cost, and any maintenance related to the meter pit. Authority-approved meter pits must be installed at the property line or street line, and Authority representatives must have access to the meter at all times; therefore, the location of the meter pit must be approved by the Authority. Non-residential Customers shall install meter pits when determined appropriate by the Authority, regardless of the length of the service line. Meter pits and all appurtenances to it shall be installed and maintained in good condition, and repair at all times by the Customer. All meter pits shall remain accessible to Authority for inspection at all times. If the Customer fails to make the repairs required by the Authority, the Authority may terminate water service to the premises.

3.3.7 -Opening and Closing Valves and Stops:

It shall be illegal for anyone not authorized by the Authority to operate, modify, open or close, or to tamper with any curb stops or street valves in any portion of the Authority water system.

3.3.8 -Construction Water:

Contractors, builders, or others are required to obtain written approval from the Authority before using water for construction, dust control, lawn or landscaping watering, or any similar purposes. Water for such purposes will typically be furnished by a temporary metered service in a meter pit. The Authority will install and disconnect the meter at the contractor, builders, or applicants' expense. Charges for construction water shall be in accordance with the Authority's current retail customer rate schedule.

3.3.9 -Excess Water Consumption

The Excess Use Charge is designed to promote conservation. It is only activated during the peak outdoor water usage months of April through October. It is calculated by averaging the number of gallons from two winter quarters, then adding 40% or adding 12,000 gallons for quarterly customers, or 4000 gallons for monthly customers, whichever is greater. The greater of the two numbers is used as the conservation allowance. Once the summer allowance is exceeded, a conservation charge is added for every 1,000 gallons over your allowance. See Appendix A.

3.3.10 -Customer Prohibitions:

In addition to all other applicable rules and regulations, the following activities and conditions are expressly prohibited:

- Cross-connection of the Authority water system with any other water supply systems, public or private – including private wells.
- Any device that may create or cause a water hammer in the water system.
- Two or more Customers on the same service line.
- An owner or tenant supplying water to any other persons or families or other premises, except by written permit from the Authority.

SECTION 3.4- BILLINGS AND INVOICES

3.4.1 -Bills and charges:

Bills will be processed, and payment shall be made in accordance with **Appendix I**

SECTION 3.5 - WATER METERS

3.5.1 -Determination of Metering location:

The Authority reserves the right to approve where the water meters are installed on the property or within any structure. This will typically be as close to the point where the water service line enters the building as is possible. The customer should plan this location to permit access and to have sufficient heating to prevent freezing of the service pipe and meter and access to an exterior wall for remote meter reading devices.

3.5.2 -Size and Ownership of Water Meters:

The Authority shall determine the size of the meter to be installed and will furnish and set meters and reading devices. The meter and reading device shall remain the property of the Authority and the Authority's access to it for the reading of the meter, inspection, testing, repairs, etc., which must be permitted at all reasonable times.

3.5.3 -Initial Purchase and Installation of Water Meter(s):

The Customer/Owner must purchase approved water meters from the Authority at the official published Authority fees, as listed in **Appendix A**. Approved meters are necessary to ensure compatibility with the Authority's meter reading equipment and software and to comply with Lead-free regulations. All preparation for the meter installation shall be at the Customer's expense.

3.5.4 -Replacement of Meters During the term of Normal Usage:

The replacement of water meters shall be by the Authority and installed at no additional expense to the customer when replacement is required because of normal wear, age, or Authority convenience, such as a system upgrade.

3.5.5 -Authority to be Notified When Meter or Register Not Working:

In the event that a customer becomes aware of damage to the water meter or appurtenances, or if a meter is not functioning properly, the Customer shall immediately notify the Authority.

3.5.6 -Responsibility for Damaged Meters or Registers:

The customer shall be responsible for protecting the meter from damages from any cause, including but not limited to freezing, excessive heat, or flood. In the event that a meter is damaged, the customer shall be responsible for reimbursing the Authority for all costs associated with the repair or replacement of the meter, including all equipment and labor.

3.5.7 - Reinstallation of Meters after Customer Request to Remove:

The Customer shall pay a charge for the reinstallation or changing of a meter when removed and reinstalled at the request of the customer. The amount shall be in accordance with **Appendix A**.

3.5.8 -Meter Location:

The customer is responsible for obtaining Authority review and approval of the proposed installation location for all water meters. If the meter is to be located within a building, the space required shall be at no cost to the Authority. If the customer or Authority decides that the meter is to be placed outside of the building, it must be placed in an Authority-approved meter pit and location providing adequate access and installation or removal of the meter. The meter pit shall be of a type approved by the Authority and installed and maintained at the expense of the customer.

3.5.9 -Meter Testing:

At the written request of a Customer, the Authority will schedule and make a test of the accuracy of a water meter. The meter will be tested by a third-party testing agency, and the customer will be furnished with a copy of the test results. Any customer requesting the testing of a water meter shall deposit funds with the Authority needed to cover the cost of the testing, as set forth in **Appendix A**.

If the water meter tested is found to have an erroneous registration (higher than the tolerances permitted by AWWA standards), there shall be NO CHARGE to the customer for the meter testing, if not already done, the meter will be replaced by the Authority at no cost

to the customer, and the customers' water bill shall be adjusted in arrears for up to six (6) months, in a like manner consistent with the test results.

However, if the registration (reading) level is found to within tolerances permitted by AWWA standards, the cost of the meter test and exchange of meters shall be deducted from the customers' deposit, with any deposit balance being returned to the Customer or credited to the customers' water account.

3.5.10 -Replacement of Meter:

At its sole discretion, the Authority may determine that a water meter installed at a Customer's premises shall be removed and replaced by a similar or technologically advanced meter at any time. In such a case, the Customer shall receive notice from the Authority indicating the date and approximate time that the existing meter will be removed, and replacement meter installed by the Authority or duly authorized Authority agents. The customer must permit reasonable access to the Customer's premises to permit the Authority to perform the work. The notice from the Authority shall be transmitted to the Customer not less than ten (10) calendar days before the meter replacement date.

Any Customer desiring to reschedule the meter replacement date must contact the Authority at least 48 hours before the scheduled appointment. The customer's refusal to reschedule the work may result in termination of water service until access is permitted. The meter replacement shall be during regular Authority business hours unless alternate arrangements mutually acceptable to the parties are agreed.

3.5.11 -Billing Adjustments:

All water delivered to the premises and metered or otherwise determined to be delivered by the Authority shall be charged according to the rates defined in **Appendix A**.

The Authority has no obligation to grant an adjustment to water charges due to leaks or other water loss; however, adjustments may be permitted in the sole discretion of the Authority due to unusual or extraordinary circumstances.

Guidelines for adjustments, if permitted, are described in **Appendix A**

SECTION 3.6 - CROSS-CONNECTION CONTROL & BACKFLOW PREVENTION

Cross-connection and backflow regulations are required to safeguard the public drinking water system from the introduction of contaminants caused by "water flowing backward" into the public system from private connections or interconnected water systems. Without proper protection, the backflow of water into the public system could occur whenever the public water system pressure drops (such as during a power failure), pump failure, extensive water main break, or significant fire call. Backflow could also occur when a private connection inadvertently increases pressure by using pumps or other means, causing a pressure-induced backflow of water into the public water system. Illegal connections to the NWWA water system, including tampering with any portion of the system, unauthorized connections, or non-approved emergency operation of fire hydrants, will be treated

seriously and may result in the filing of criminal charges against the violator by the Authority or agency of jurisdiction.

3.6.1 -Cross-Connection Control

Under the Safe Drinking Water Act Amendments of 1986 (Public Law 99-339) and regulations of the Pennsylvania Department Environmental Protection (Section 109), as amended from time to time, the Authority has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering and degrading the public potable water system. Therefore, no connection shall be made between lines, pipes, or containers carrying water from any other source with lines or pipes carrying water supplied by the Authority.

3.6.2 -Backflow Prevention

Where backflow devices are installed in water systems, provisions for thermal expansion are highly recommended by the Authority and may be required by local code. The Authority shall install and maintain all Authority required backflow prevention devices for three-quarter (3/4) and one (1) inch - typical low hazard residential water service lines.

All other water service lines, regardless of size, shall have backflow prevention devices as follows:

- a. The Authority shall determine the “degree of hazard” of a customer’s system by evaluating the conditions and activities within the premises per PA DEP guidelines. The “degree of hazard” is subject to change.
- b. An actual or potential impairment of the water quality to the degree that it does not create a hazard to public health, but which does adversely and unreasonably affect the aesthetic qualities, a double check valve backflow prevention assembly is required conforming to ANSI/AWWA C-510 standards.
- c. Where an actual or potential impairment of the quality of the water creates a hazard to public health through poisoning or through the spread of disease, a reduced-pressure principle backflow prevention assembly is **required**, which conforms with ANSI/AWWA C-511 standards.
- d. Where testable backflow devices are required under this regulation, it shall be the responsibility of the building/property owner to purchase, install, certify, and maintain the device. The aforementioned shall be performed by a qualified individual or firm approved by the Authority. The Authority reserves the right to inspect the installation and test the device as deemed necessary.
- e. If the device is found to be malfunctioning by either the Authority or during routine testing, the building/property owner shall make repairs and furnish a certificate as required by the Authority.

- f. Backflow prevention devices installed at the “point of entry” of a water system by either the Authority or the customer do not guarantee any internal cross-connect or backflow protection requirements of the internal elements of the premises. It is in the best interest of all parties that the plumbing system complies with current national, state, and local plumbing code requirements.
- g. The Authority may use an outside agency to administer the backflow prevention program.

SECTION 3.7 - INSTALLATION OF FIRE HYDRANTS

3.7.1 -Installation of Hydrants:

All fire hydrants shall be installed in accordance with Authority regulations after Authority consideration of the local municipal and Fire Marshal recommendations on spacing and location.

3.7.2 -Hydrant Maintenance:

The Authority will provide periodic maintenance of all public fire hydrants under the ownership of the Authority. An annual fee for hydrant maintenance shall be charged by the Authority in accordance with **Appendix A**. The Customer shall be responsible for and properly maintain any privately owned fire hydrants.

3.7.3 -Use of Hydrants:

No person is permitted to open any fire hydrant or to use any water from a hydrant without permission in writing from the Authority under the penalty as prescribed by law -- except in case of authorized fire personnel for official and authorized business or public emergency. Tampering with hydrants or removal of hydrant caps is forbidden, and violators will be prosecuted.

3.7.4. -Change of Location for Hydrant:

Whenever a change in location of any fire hydrant is desired, the Authority, upon written request, will consider such a change. If the Authority approves the change in location, the party requesting the location change shall be responsible for all costs related to the change.

3.7.5 -Fire Service Water Use:

Fire Hydrant and fire protection charges are partial compensation for Authority costs for “Standing Ready to Serve” fire reserve capacity. The actual use of water from the fire service connection (hydrant) is not contemplated or authorized except for use in the actual extinguishing of fires or the periodic testing, maintenance, or flushing of the water system by the Authority. Fire protection connections and water lines serving sprinklers or other forms of fire protection shall not be used for any other purpose and shall **not** be used for irrigation, filling of pools or water trucks, landscapers, or any similar use. All water used

illegally and for purposes (other than the actual extinguishing of fire) will be charged in accordance with the Authority rates, in addition to any legal actions pursued by the Authority.

3.7.6 -Separate Fire and Water Services -Unless otherwise approved by the Authority, service lines for domestic and fire service shall be separate

In no case shall a combined fire and domestic service be permitted, except as expressly permitted by statute, or required by a court of competent jurisdiction, or similar mandate. The Authority does not accept or assume any responsibility for sprinkler design or the flow calculations leading to the sizing of the water service line requested by the customer. A meter furnished by the Authority (and paid for by the customer) shall be provided on all fire services. The Authority reserves the right to read the water meter and operate the test valve to ensure the proper functioning of the water meter and valve. This "read and test" procedure is for the benefit of the Authority to test the meter and determine unauthorized use of water only. It is not to determine the functional nature of the fire line or fire system for which the Authority assumes no liability or maintenance responsibility.

SECTION 3.8 - TERMINATION OF WATER SERVICE

3.8.1 -Discontinuance of water service at Customer request

All agreements and accounts for water service shall continue in force until the Authority, in response to a written customer request to terminate service, approves termination of service. Water service may be terminated without affecting the agreement or regulations pertaining to Sewer service. When a property is vacated, the Customer should give notice to the Authority so that that water may be turned off at the valve box (curb line). A new application for service may be required by the Authority to reactivate a terminated service.

3.8.2 -Discontinuance of water service by Water Authority

Water service may be discontinued or terminated by the Authority for any of the following reasons:

- a. For any substantial misrepresentation in service application upon which the Authority relied in approving service.
- b. For a continued excess use of water above reserved capacity.
- c. For use of water for any property or purpose other than as approved by the Authority.
- d. For altering any service pipe, meter, curb stop, meter seal, or appurtenance of the Authority.
- e. For backflow and introducing water into the Authority system.

- f. For neglecting to make required payments for water charges against the property.
- g. For refusal of reasonable access to the premises for authorized purposes.
- h. For violation of any of these Rules and Regulations of the Authority.
- i. Due to breakdowns or other unavoidable causes, requiring system repairs, connections, etc.

3.8.3 -Customer Water Termination without Authority Approval

A Customer shall not turn the water service on or off at any corporation stop, curb stop, or disconnect or remove the meter, or permit its disconnection or removal without the prior written consent of the Authority.

3.8.4 -Renewal of Service after Discontinuance

Water service will be renewed, under a proper application, when the conditions under which such services were discontinued have been corrected and upon the payment of all proper charges, fees, payments, and reimbursements due from the Customer. Field personnel cannot accept payments. If the water service is terminated for any cause, reinstatement of service can only be provided by the Authority during normal business hours.

3.8.5 -Termination of Water Service – Tenant Rights

Where an Owner/Landlord Ratepayer fails to make payment for water/sewer services, and in the event that (i) the Authority is notified that tenants occupy the premises and, (ii) where there is not an owner tenant declaration agreement, each tenant must be given at least thirty (30) days' notice of the service termination and the opportunity to pay the amount in arrears. The Owner/Landlord Ratepayer is required to furnish the Authority with each tenant's name and address for the location in arrears. See the Utility Service Tenant Rights Act, Act 299 of 1978, 68 P.S. § 399.51 for more detailed information.

ARTICLE IV - SANITARY SEWER SERVICE

SECTION 4.1 - GENERAL INFORMATION- Sanitary Sewers

4.1.1 -Sanitary Sewer Service:

The Authority, under the conditions and circumstances set forth herein, shall make Sanitary Sewer Service available to all qualified customers by connections to the Authority's system.

4.1.2 -Authority Specifications - Sewer:

All work performed on and or additions made to the Sanitary Sewer System shall be made in accordance with Standard Specifications and Details of the North Wales Water Authority.

4.1.3 -Inspection – Sewer:

As a condition of receiving sewer service, employees of the Authority shall be permitted at reasonable hours to inspect the premises for any purpose connected with connection to and furnishing of sanitary sewer service. The Customer must give the Authority at least seventy-two (72) weekday hours' notice before connections are to be made to the Authority system so that the Authority may inspect the work and conduct lateral inspection or testing. The Authority will not make any inspections until the service application is complete and the required fee is fully paid. All work performed on the Sanitary Sewer System shall be subject to inspection by the Authority. Any cost incurred by the Authority in providing inspection shall be the responsibility of the Customer.

4.1.4 -Permits from Governmental Entities – Sewer:

In addition to any Authority permits and charges, the Customer shall obtain and pay for all other permits required by another governmental entity. The Customer shall comply with all requirements of such governmental entity, including methods of construction, types of material, methods of backfill, methods of repaving, methods of protection and warning, and all other applicable specifications imposed by such entity, with the greater or most strict regulation applying in the event of a conflict between municipal and Authority regulations or specifications. All PennDOT and DEP permits, and applications shall be in the name of the Authority unless refused by the Authority. Applications for permits shall be based upon designs and plans that have been reviewed by the Authority, and such plans shall incorporate all changes, corrections, and modifications requested at the time by the Authority. No work shall be commenced until all required permits have been received and all required agreements have been executed.

4.1.5 -Continuity of Sanitary Sewer Service:

Whenever the Authority find it necessary for the purpose of making repairs or improvements to the Sanitary Sewer System, it has the right to suspend the collection of Sanitary Sewer Service temporarily. The making of such repairs or improvements will be completed as rapidly as may be practicable and, if possible, at such times as will cause the least inconvenience to Customers. The Authority will attempt to provide reasonable notice to Customers of such suspension when feasible but shall not be liable for failure to do so.

4.1.6 -Contract for Sewer Services:

An approved application for sewer service shall constitute a contract and agreement between the Authority and the applicant to adhere to the provisions of this document. In the case where a tenant occupies any property receiving sewer service, the property owner shall be the applicant, and all bills related to the service shall remain the legal responsibility of the owner regardless of any arrangements made between the owner/applicant and the tenant. As a condition of service, the owner/applicant hereby agrees to pay the Authority rates and charges as established from time to time and comply with its Rules. The Authority agrees to supply Sanitary Sewer Service in conformity with these Rules. All contracts for Sanitary Sewer Service shall continue in force from month to month, but either party may cancel the contract by giving ten (10) calendar days written notice that the contract shall terminate on the first day of the month, following the date of the notice. The Authority's courtesy in permitting a "Tenant Account" does not waive or diminish the owners' responsibilities.

4.1.7 -Change of Customer/Owner – Sewer:

A new customer account is required for all changes in ownership, regardless of whether or not a change in use or occupancy occurs. The legal owner must be named as the responsible party for any account and property served. The Authority shall be at liberty to discontinue the service until such a new account has been made and approved.

4.1.8 -Change of Use or Occupancy – Sewer:

A new customer account is required for all changes in ownership, regardless of whether or not a change in use or occupancy occurs. The Authority should be notified by the owner if there is a change in Tenancy. The legal owner shall remain the responsible party for any account and property served, regardless of tenancy. The Authority may discontinue service until such a new account has been approved. Any change in the intensity of use, requiring a change to the sewer service connection, or the reservation of additional sewer capacity shall also require the approval of the Authority. This may also require the establishment of a new account and the reservation of the required sewer capacity from the Authority.

SECTION 4.2 - APPLICATIONS FOR SEWER CONNECTIONS OR SERVICE

4.2.1 -Service Connections/Lateral:

Any Customer desiring a Sanitary Sewer Service lateral or laterals connecting to the Authority's main, or to a sewer main intended to be dedicated to the Authority, shall make written application using the form which is furnished by the Authority attached hereto as **Appendix B**, at least thirty (60) calendar days before service is required. Additional time may be required if additional treatment capacity needs to be purchased from Upper Gwynedd Township. In addition, the following terms shall apply:

- a. The property owner or his duly authorized agent must sign the application.
- b. The application, together with the Rules and Regulations of the Authority, regulates and controls the collection of sanitary sewage from such premises.
- c. A plan showing the proposed sewer service may be required.
- d. Payment of all fees shall accompany each application unless otherwise approved by the Authority.
- e. Fees and charges shall be made in accordance with **Appendix A** of these Rules.
- f. When an individual other than the property owner makes an application for service, the property owner must guarantee in writing on the form provided by the Authority responsibility and payment for all services rendered and water furnished.
- g. Separate applications and agreements must be made in the following cases:
- h. All multi-unit dwellings intended to be metered and billed separately; or,
- i. All non-residential buildings or portions thereof intended to be metered and billed separately; or
- j. In such other cases as to the Authority shall seem proper and advisable under the circumstances, which may include, but not necessarily be limited to, the partitioning of any building or structure for purposed of separate habitation or use and occupancy, or separation of residential to non-residential occupancies. All service applications are taken subject to the approval of the Authority.

4.2.2 -Limitation on Applications:

Applications for service connections are approved only when there are mains in streets, rights-of-way, or easement, abutting the premises to be served as determined adequate by the Authority.

4.2.3 -Approval by Authority:

- a. Issue an EDU certificate or Letter Certification of Reserved Capacity for each approved application. Approval for a sewage connection shall be granted only when the Authority finds that all of the following conditions are met:
- b. Authority Collection system capacity is available
- c. Upper Gwynedd Township conveyance and wastewater treatment system capacity is available.
- d. No extensions of the sewer system main would be required. (otherwise, an additional DEP Planning Module may be required)
- e. That the quantity and strength of the waste would not adversely affect the Authority's systems or be in violation of the Authority Industrial Pretreatment Program. See **Appendix E**
- f. That the Customer has agreed in writing to pay all fees and charges associated with the new sewer connection.
- g. No new rights-of-way or easements are required unless provisions for the same acceptable to the Authority are made before approval.
- h. The sewer lateral installed does not run along the shoulder or bed of any existing or proposed public street or road unless approved by the Authority to safeguard public health, safety, and welfare.
- i. The Customer agrees to use a straight line of minimum dimensions (diameter and pipe specifications) as the Authority has specified; and,
- j. That no other unusual circumstances exist that would, in the Authority's opinion, make a formal special service contract appropriate under the circumstances.
- k. The Authority shall not issue an approval for capacity unless it determines that the customer has complied with all Authority requirements for the same. If a review by the Authority Engineer is required before EDU approval, the Customer may be required to enter into a Professional Service Agreement (PSA) for services. The Authority may

SECTION 4.3 - CONDITIONS OF SANITARY SEWER SERVICE

4.3.1 -Restriction of Customer to Receive Sanitary Sewer Service:

No Customer afforded Sanitary Sewer Service provided by the Authority shall allow any other Customer or building to be connected to the lateral without permission from the Authority. Customers or premises violating this rule may have their water shut off and remain off until the Authority is satisfied that the Rules and Regulations are being observed. The Authority may also initiate any legal action deemed appropriate to remedy any violation(s).

4.3.2 -Sewer Laterals and Building Sewers:

Unless otherwise approved by the Authority, the Authority will be responsible for the installation, maintenance, and repairs of the portion of the lateral located between the main sewer line and the edge of the public right of way, easement line, or the Authority owned clean out.

- a. In situations where no lateral between the main sewer and the property and/or easement line was provided during the original construction of the sewer main, the property owner shall be responsible for the construction of the lateral, obtaining the required permits, and all related cost, when connecting to the existing sewer main.
- b. The location of the lateral connection to the sanitary sewer main shall be designated by the Authority, and any utilities installed shall be maintained as per the most restrictive standards of all applicable codes.
- c. The portion of the sewer lateral located between the property and/or easement line and the premises, whichever applies, shall be initially installed, and thereafter maintained by, and at the expense of, the Customer.
- d. The portion of the lateral installed by the Customer is referred to in the plumbing code as a building sewer and shall conform to all local codes.
- e. The Customer shall be responsible for all permits and fees required by the local municipality.
- f. It shall be the responsibility of the property owner to maintain the building sewer.
- g. Broken pipes, root infestation, and other malfunctions that cause the building sewer to be in poor working condition shall be repaired immediately by the property owner.
- h. Failure to repair the building sewer could result in the loss of Authority services to the property.

4.3.3 -Service Lateral Separation Requirements:

The location of the lateral connection to the sanitary sewer main shall be designated by the Authority, and any utilities installed shall be maintained as per the most restrictive standards of all applicable codes.

4.3.4 -Several Service Laterals for One Customer:

Two (2) or more sanitary sewer service laterals may serve one premise only if the Authority grants permission. This is typically not permitted and granted only under unusual physical circumstances when a conventional installation is not physically possible or otherwise impractical.

4.3.5 -Two or More Customers on same service lateral:

- a. Under circumstances where two (2) or more Customers are supplied with sewer service from the same service lateral in a manner previously, but no longer permitted by Authority, and the Authority is modifying its facilities, the Authority may at its own expense replace such service lateral with separate service laterals.
- b. Where changes occur to the use and occupancy of the property, the Authority may require, at the expense of the property owner(s), replacement of service lateral with separate service laterals. In the event such a condition already exists, the Authority may require a special agreement to allow the condition to remain in place for an agreed-upon term.
- I. Other Connections –
Service laterals to all public buildings, churches, apartment houses, and all other non-residential establishments shall be installed to conform to detailed plans and specifications to be submitted to the Authority by the Customer, after review, correction, and approval of those plans and specifications by the Authority.
- II. Prohibition of other Water Discharges into the sanitary sewer system–
It shall be a violation of these rules for any person to discharge, allow, or cause to be discharged any water from sump pumps, floor drains, stormwater, groundwater, roof runoff, subsurface drainage, foundation drainage, or cooling water into the Authority system. Stormwater and all other similar drainages shall be discharged to such sewers that are specifically designed as storm sewers or to a natural waterway or inlet. Industrial cooling water or unpolluted process waters may be discharged to a storm sewer or natural outlet only upon the issuance of a permit to do so from the U.S. EPA or the Pennsylvania Department of Environmental Protection. The customer and/or owner of the property shall be responsible for obtaining any such permits and approvals. Authority Industrial Pretreatment Regulations must be adhered to at all times, per **Appendix E**

- III. Prohibited Wastes –
No person shall discharge or cause to be discharged any prohibited waste to or into the sanitary sewer system. Prohibited wastes are defined by Section 2 A & B of the Authority's Wastewater Control Regulations **See Appendix E.**
- IV. Sewer Surcharges –
Sewer Surcharges are defined in Section 10 of the Authority's Wastewater Control Regulations. **See Appendix E.**
- V. Requirements for Non-Residential Customers –
All Non-Residential Customers shall be required to adhere to the Wastewater Control Regulations of the Authority as contained in **Appendix E.**

SECTION 4.4 - PRESSURE SYSTEMS – Sewer

Where sanitary sewer service is not possible via gravity sewer, the Authority may grant the applicant permission to construct a community pressure system to serve one or more Customers. Periodic maintenance of the pump associated with the pressure system is required, and the Customer shall be responsible for all such maintenance as well as the cost to install the system between the public sewer main and the building(s) to be served. The design of all pressure systems is to be prepared by the customer but must be approved by the Authority prior to installation. The Engineer will establish the design parameters of the system design, which may include upsizing of the main if needed to accommodate other properties in the general area.

SECTION 4.5 - SEWER GRINDER PUMPS

Where service to a building is prohibited by the use of gravity lateral, the Authority may grant the Customer permission to construct a grinder pump to service the building. This may be in conjunction with a pressure system, as described above. The Customer shall be responsible for all construction cost related to the installation of the system. Periodic maintenance of the grinder pump is required, and the Customer shall be responsible for all maintenance and cost of the pump and pressure system between the lateral and the building. The Authority may be responsible for the maintenance and repairs of the lateral located between the main sewer and the property and/or easement line, whichever applies. All grinder pump designs must be reviewed and approved by the Authority Engineer prior to approval and installation.

SECTION 4.6 - SEWER PUMPING STATIONS

Where service to an area is better accommodated by the use of a pumping station, the Authority may grant the Customer permission to construct a pumping station to serve the area. The Customer shall be responsible for all costs related to the design and construction of the pumping station and related force main. Prior to the design of the pump station and force main, the Customer shall meet with the Authority Engineer to determine the

parameters of the design and to define the area that the pump station will serve. All pump stations and force main design must be reviewed and approved by the Authority Engineer prior to approval and installation.

SECTION 4.7 - SEWER BILLINGS

4.7.1 -Sewer Bills Rendered:

All Authority sewer bills will be processed at stated intervals, either monthly or quarterly, at the option of the Authority, for service during the previous month or quarter. Refer to **Appendix I** for more details. Bills for metered service will typically be determined by meter registration or, where the meter fails to register, a bill will be prepared based on average consumption during a similar period when the meter was in order, giving proper consideration to any change in the facilities or practices that may have occurred, or by such consumption estimate as to the Authority, in its sole discretion, deems proper. A charge in accordance with **Appendix A** will be assessed on all new accounts.

4.7.2 -Sewer Bills for Properties with wells:

Where the Authority sewer Customer is not connected to public water, the Customer shall request the installation of a water meter on his water supply line, and the usage will determine the amount of the sewer billing. The cost of the meter and the installation shall be the responsibility of the Customer. Water meters must be purchased from the Authority.

4.7.3 -Billing Adjustments:

In the event that an adjustment has been approved by the Authority for the water service bill, the Authority may also consider a similar adjustment to the sewer rate portion of the bill. The Authority has no duty to permit any adjustment to these charges; however, adjustments may be allowed at the sole discretion of the Authority due to unusual or extraordinary circumstances.

SECTION 4.8 - TERMINATION OF SEWER SERVICE

4.8.1 -Sewer Agreement/Contract for Service:

All agreements or contracts for sewer service shall continue in force until the Authority gives its approval for termination.

4.8.2 -Termination of Water Service as it Affects Sewer Service:

Water service to any premises may be terminated without affecting the agreement for sewer service. For instance, if water service is terminated for non-payment or other cause, payment for sewer services shall continue to be due and payable, without proration for any time during which water service was discontinued. In accordance with Pennsylvania law, the

Authority is required to terminate the water service if sewer bills are not paid as required to other entities providing sewer service.

4.8.3 -Discontinuance of Sewer Service:

Sewer service will not typically be considered a service subject to shutoff. Customer requests for discontinuance of sewer service will be permitted only in cases of demolition, fire, flooding, or by order of the Board of Health.

4.8.4 -Landlord as the Ratepayer and Tenants Rights Act:

Where an Owner/Landlord Ratepayer fails to make payment for water/sewer services, and if;

- (i) the Authority is notified that tenants occupy the premises and,
- (ii) (ii) where there is not an owner tenant declaration agreement, each tenant must be given at least thirty (30) days' notice of the service termination and the opportunity to pay the amount in arrears.

The Owner/Landlord Ratepayer is required to furnish the Authority with each tenant's name and address for the location in arrears.

See the Utility Service Tenant Rights Act, Act 299 of 1978, 68 P.S. § 399.51 for more detailed information.

Article V - WATER AND SEWER MAIN EXTENSION PROCESS

SECTION 5.1 – MAIN EXTENSION GENERAL PROCESS:

- a. Main extension agreements may differ in complexity based upon location, nature of the extension, and the number of units involved. Typically these agreements are initiated by a developer, property owner/applicant, or other interested parties. Most times, the process is initiated by telephone call or other inquiry to the NWWA, requesting information about our ability to serve (sometimes referred to as a “Will Serve” letter) a particular site or a contemplated project. When receiving a service request as referenced above, the Authority will first attempt to determine whether the site in question is or is not within our service area, using system maps and similar data. If it is determined that the property is not in a location we can lawfully serve, the developer/applicant shall be advised, and there shall be no further actions required by the Authority.
- b. In the alternative, if it is determined that the property is within the Authority’s service area, the individual initiating the inquiry shall be so advised, including preliminary findings as to the location of existing mains and the potential for requiring a main extension, and then instructed to submit a formal application for service - providing additional details as to the proposed project, projected flows, and legal ownership.
- c. Upon submission of the above-referenced application, the Authority will again confirm the service area and infrastructure, and upon such confirmation, respond with a non-binding “will-serve” letter.
- d. All water/sewer main extensions will first be reviewed in-house by the Authority, and when it is determined by the Authority to be necessary, a Professional Services Agreement (PSA) will be required. In such a case, the required documents will be forwarded to the developer/applicant for signature, as well as the funding of the initial plan review, legal, engineering, deposit(s), and administrative fees, which shall be paid to the Authority. The PSA, when required, will typically be prepared, and forwarded to the developer/applicant by the Authority Solicitor.
- e. The Authority Board of Directors next approves or disapproves the Professional Services Agreement at an Authority business meeting. If approved, the legal and engineering review will commence.
- f. The applicant will receive a review letter from the Authority or Authority Engineer. This review may recommend plan approval, or it may require plan modification and resubmission for further review
- g. Once the plans are approved by the Authority, the developer/applicant next submits an escrow breakdown for all construction to the Authority. This submission must be

upon the letterhead of a bona fide contractor. The Authority reserves the right to approve or disapprove the escrow amount and to request increases in the amount posted if it believes the amount recommended by the developer/applicant contractor is insufficient to guarantee project completion.

- h. Developer next submits the following items to Authority:
 - I. Four (4) full final plan sets for Authority use.
 - II. One (1) digital copy of plans in a format acceptable to the Authority.
 - III. Three (3) signed and sealed originals of legal plans and easement descriptions.
- i. The Authority Solicitor prepares both the Line Extension and Easement Agreements.
- j. Developer/applicant then returns all executed Agreements and pays all required fees, and posts construction escrows funds per terms of the Agreement.
- k. The Authority Board of Directors then formally approves or disapproves the Agreements.
- l. The Authority Solicitor records the Agreement(s) when appropriate. Acceptance and recording of any deed of dedication for land or property, easement, or right of way, shall be at the sole option of the NWWA. Any such offering of dedication or easement shall not expire but shall not require Authority acceptance. If not already complete, the NWWA may require a title search, correction of defects, title insurance, and evidence of good and marketable title before acceptance of any deed or easement. Any plans of subdivision or land development offering such property rights as being recorded as public record shall bear notice of any offering of dedication to the Authority.
- m. Once all plans and agreements are approved and all required fees and escrows posted and paid, the developer/applicant will be required to attend a pre-construction meeting with the Authority.
- n. In addition to the above, the main extensions may require additional approvals from outside agencies, such as the PADEP. The applicant shall be responsible for all permit costs and filing fees for said approvals and should budget sufficient time for these approvals.

SECTION 5.2 - REQUIREMENTS FOR DEDICATION OF FACILITIES**a. General**

Any Developer or owner wishing to dedicate water and sewer facilities to the Authority must first contact the Authority in writing, stating their desire to dedicate the facilities. The Authority reserves the exclusive right to accept or reject any offer of dedication. Failure of the Authority to respond to an offering of dedication does not automatically constitute either acceptance or rejection of any offer. Any offer of dedication will be reviewed by staff and will then be presented to the Board of Directors for their official consideration. The Authority Board may, at its sole option, accept or reject any offers of dedication or to delay action upon any such offering - as deemed in the best interest of the Authority and/or public.

b. Minimum Additional Requirements for Consideration of Dedication -

- I. All testing of the facilities to be dedicated must be completed to the satisfaction of the Authority.
- II. All paving must be completed in the areas of the facilities to be dedicated. (This may be temporarily waived by the Authority if sufficient security, acceptable to the Authority, is posted with the Authority)
- III. All punch list items must be addressed to the satisfaction of the Authority.

c. Procedure for Dedication -

- I. The Developer must submit two paper copies and one electronic record drawing of the facilities to be dedicated for review by the Authority/Engineer.
- II. The Record Drawings shall be in accordance with the Authority's Standard Specifications.
- III. The Customer must schedule a pre-dedication inspection with an Authority representative.
- IV. Using the Record Drawings, the facilities will be inspected for dedication conformance.
- V. A punch list will be created, and completion of all punch list items will be required prior to dedication acceptance.
- VI. All sanitary sewer lines to be dedicated must be televised, and a video must be submitted and approved by the Authority/Engineer.
- VII. The televising of the sewer must occur once all punch list items are addressed.
- VIII. Legal descriptions of all lines and appurtenances to be dedicated must be submitted with the development plans to the Authority and approved by the Authority prior to the dedication.
- IX. Straight-line diagrams showing all sewer lateral locations and depths must be submitted on 8 1/2 x 11 sheets to the Authority Engineer for approval.
- X. The Authority may require a "Release of Mechanics Lien" or similar documentation prior to the formal acceptance of dedication, or approval of final construction, by the Authority.

ARTICLE VI - APPENDICES

The following Appendices shall supplement these RATES AND REGULATIONS and are incorporated herein;

APPENDIX A - AUTHORITY RATES, FEES, and CHARGES

All rates, fees, deposits, and all other charges listed herein shall be reviewed by the Authority from time to time and may be eliminated, modified, or supplemented at any time. However, in the absence of any such modification or supplement, each of these Fees, Charges, and Rates shall remain in full force and effect until contrary official action of the Authority Board of Directors and do not require re-enactment each year to remain valid and in effect. ***Currently, the Authority bills in full 1,000-gallon increments with any non-billed water consumption carrying over to the next billing cycle - however, the billing increment may change at any future time as determined appropriate by the Authority and as our billing software permits.**

A. Rates and Charges for retail metered water usage EFFECTIVE January 1 2025:

1. **Residential & Non-Residential:** *Rate of \$6.19 per thousand gallons until such time the billing rate or process is modified by official action of the Authority Board of Directors. It is anticipated that all rates and fees will be reviewed at least annually and adjusted as needed.
2. **Conservation Rate:** \$1.60 per thousand gallons over the allowance additional

These rates will remain applicable until such a time the billing rate or process is modified by the official action of the Authority Board of Directors. It is anticipated that rates and fees will be reviewed annually and adjusted as needed.

3. Municipal and Negotiated Bulk Water Contracts:

The rate charged for negotiated retail rates for acquired systems, and bulk water sales, may be established by individual contracts or agreements. These terms will typically consider the duration of the contract, the quantity of water expected to be purchased, cost-sharing of infrastructure, minimum daily, monthly, or annual gallonage required to be purchased, and similar terms. The agreements may include provisions for capital contributions and or reserved capacity charges, as deemed necessary. The agreement may also provide for a fixed, indexed, or escalating negotiated water rate. *(The base charge for metered bulk water is currently \$2.50 per thousand gallons unless otherwise provided within an individual agreement approved by the Authority Board of Directors).* Any negotiated or bulk water rate may be adjusted from time to time as mutually agreed, or in accordance with the purchase agreement or contract, considering the amount of water purchased, the minimum required daily or periodic purchase, the term of the agreement, or as may otherwise be amended by official action of the Authority. Many Authority water purchase contracts and agreements are indexed against the annual billing rate for water purchased by the Authority from the Forest Park Treatment Plant.

4. **Base (Minimum) Fee per meter size:**

Each water account has a “Base” fee, which shall typically be billed either monthly or quarterly, which shall also be the *minimum charge applicable to that service account* for that billing period. The minimum fee is not dependent upon water consumption or flow but is to help recapture certain fixed costs to the Authority for maintaining customer service and emergency staff, administrative and stand-by services, and to maintain water capacity if needed by the customer. There is no gallonage included within the minimum charge that would accrue. The amount billed to the customer will include the Base charge, the applicable water rate for all metered flows, any late charges, or penalties, adjusted for any accrued credits or liabilities carried over from prior billing periods.

<u>Meter Size</u>	<u>Minimum Per Month</u>	<u>Minimum Per Quarter</u>
½ and 5/8 inch	\$ 6.88	\$ 20.63
¾ inch	\$ 8.59	\$ 25.79
1 inch	\$ 11.47	\$ 34.39
1 ½ inch	\$ 34.39	\$ 103.16
2 inches	\$ 55.02	\$ 165.05
3 inches	\$ 123.79	\$ 371.36
4 inches	\$ 178.80	\$ 536.41
6 inches	\$ 330.10	\$ 990.29
8 inches	\$ 474.51	\$ 1423.54
10 inches	\$ 687.70	\$ 2063.10

APPENDIX A - CONTINUED

B. Fire Service Rates

1. Fire Hydrants-

Fire hydrants dedicated to and maintained by the Authority shall be billed at the rate of **\$132.00** per annum, per hydrant, with the invoice being payable to either the municipality(s) or other responsible parties if a privately owned hydrant. This annual fee may be adjusted by the Authority from time to time, as shall be included herein. Adjustments to the invoice may be made for hydrants shared by two or more municipalities. The annual shared rate is **\$ 67.00**. The Authority may also, at its sole option, determine that a certain number of hydrants shall not be billed to the municipality or customer if they are installed to be used exclusively by the Authority for flushing or other Authority purposes and not installed fire service use. The Authority may also, at any time, determine to instead include the hydrant rental fee as part of the base water billing rate or as a supplement thereto.

2. Fire Service Charges-

Each customer shall be charged minimum fees based on the size of the meter and the fire service line. This charge is in addition to any water consumption charges. Both fees shall be applicable as follows:

3. Minimum Fire Meter Charges: (Includes meter maintenance by the Authority)

Meter Size	Monthly Base Charge	Quarterly Base Charge
5/8 x 3/4" to 1"	\$ 3.44	\$ 10.32
1.5"	\$ 6.88	\$ 20.63

4. Standing Ready to Serve Charge: An additional charge to any domestic water service or meter. (Charge does not include maintenance of the service line by the Authority)

Fire Service Size	Monthly Base Charge	Quarterly Base Charge
1.5 " or Smaller	\$ 12.03	\$ 36.10
2"	\$ 17.20	\$ 51.58
4"	\$ 48.01	\$ 143.99
6"	\$ 93.15	\$ 279.38
8"	\$ 146.71	\$ 440.13
10"	\$ 209.90	\$ 629.69
12"	\$ 282.26	\$ 846.78

APPENDIX A - CONTINUED

c. Domestic and Fire Service Water Connections Fees:

Tapping fees are imposed by the Authority to provide for the recovery of capital funds previously invested by the Authority to construct elements of the existing water system, to provide funds for the facilities that serve a special purpose or specific service area, and/or to provide for the reimbursement of tapping fee funds as provided for in PA Act 57. These fees are calculated in accordance with guidelines provided in Pennsylvania Act 57 of 2003 as amended from time to time.

There are five (5) billing and payment components, and all are based upon the tap and meter size, as follows:

Connection/Deposit - This deposit is the estimated amount of the actual costs to connect the facilities from the main to the property line.

Customer Facilities Fee - This fee covers the costs of the facility - except for that portion from the property line to the proposed or existing building - but includes the materials and installation of the meter.

Capacity Fees - These fees can be assessed separately for both domestic and fire capacity to reimburse the Authority for costs associated with capacity related facilities, including, but not limited to, the source of supply, water treatment, water pumping, water transmission lines, trunk, interceptor, and outfall mains, or other general system facilities. These fees allow new customers to “buy into” the system by paying their fair share of the costs of capacity-related facilities that will be needed to provide them with service and enable them to achieve equal standing with existing and prior customers.

Distribution Fee - This fee recovers the costs of mains, plants, and other appurtenances and the required reimbursement to a third party/property owner or owner who previously funded facilities that benefit new customers (as defined in Act 57) beyond the limits of their own development. This repayment is commonly referred to as a “recapture payment,” which allows a prior customer to recover costs to connect to any facilities, paid for and installed by the prior customer, to the benefit of future customers.

Special Purpose Fee - This fee is applicable only to a particular group of customers or serving a particular purpose area as defined in Act 57.

Tap Size Inches	Meter Size Inches	Connection Deposit/Actual Cost	Customer Facility Fee*/Actual Costs	Capacity Fee \$6.87 per gallon	Distribution Fee \$8.68 per gallon	Fire Capacity Fee \$27 P/GPM	Capacity Allowance based on GPD
1	5/8 x 3/4	NWWA Estimated Cost	\$283	\$1,223	\$1,545	N/A	178
1	3/4	NWWA Estimated Cost	\$300	\$2,060	\$2,600	N/A	300
1	1	NWWA Estimated Cost	\$330	\$5,153	\$6,510	\$405	750
1.5	1.5	NWWA Estimated Cost	\$485	\$14,839	\$18,749	\$810	2,160
2	2	NWWA Estimated Cost	\$713	\$38,060	\$48,087	\$1,296	5,540
3				\$118,851	\$150,164	\$2,592	17,300
4	4	NWWA Estimated Cost	Actual Cost	\$252,679	\$319,250	\$4,050	36,780
6	6	NWWA Estimated Cost	Actual Cost	\$371,392	\$469,241	\$8,100	54,060
8	8	NWWA Estimated Cost	Actual Cost	\$687,000	\$868,000	\$12,960	100,000
10	10	NWWA Estimated Cost	Actual Cost	Actual Requirements to be Calculated	Actual Requirements to be Calculated	\$20,250	Actual Requirements to be Calculated
12	12	NWWA Estimated Cost	Actual Cost	Actual Requirements to be Calculated	Actual Requirements to be Calculated	N/A	Actual Requirements to be Calculated
Multi Family				\$890	\$1,130		130

*-Meters other than the standard NWWA approved meter shall be charged the actual cost of the meter to NWWA. (For example, a 1-inch UL approved meter is currently \$388.00)

Project Review Deposits, Fees, and Charges:

General:

Deposits are required to secure the Authority against costs associated with the review of an application or project, regardless of approval, denial, or withdrawal of plans. The deposit is based upon our estimated cost of review per the following schedule. All deposit accounts may require the applicant to maintain a minimum balance equal to 50% of the initial deposit unless otherwise provided in the PSA or Authority review agreement.

Example: If the applicant is required to make a \$5,000.00 Deposit, recurrent replenishment of the deposit account is required to maintain the 50% level every time the account falls below 50% of the original amount deposited.

If a project is approaching completion, the deposit owner may request that the Authority waives or reduces the percentage to be maintained. However, the Authority shall be under no obligation to approve any such request.

Unused portions of all deposit (escrow) accounts will be returned to the depositor or lawful designate only after the project is completed, dedicated when applicable, and all documentation is in good standing - as determined by the Authority.

Fees and Charges are in addition to deposits and escrows. They are typically nonrefundable and are intended to reimburse the Authority for internal and external expenses and costs incurred during initial reviews, the establishment of accounts, and maintaining accounting records. An example would be staff time to review applications and to prepare "will serve" letters, preliminary cost estimates, and other activities before an actual application and posting of a deposit or escrow. Many times, the Authority completes this work, and the applicant never proceeds with the project. These fees help protect the ratepayers from subsidizing these expenses.

Non-Residential: Review to match the forms included in this document

Project Administration Fee (Non-refundable fee)	\$500.00
Plus a fee of \$250.00 per 1,000 square foot of floor area, for internal review expenses	
Deposit for Projects requiring PSA review by Authority Engineer or Legal	\$10,000.00
plus an additional deposit of \$250.00 per 1,000 square foot of building floor area	

Residential:

Project Administration Fee (Non-refundable fee)	\$500.00
Plus a fee of \$250.00 per dwelling unit, for up to 10 dwelling units and \$100.00 per dwelling unit thereafter for internal review expenses	
Deposit for Projects requiring PSA Review by Engineer /Legal	\$10,000.00
PLUS additional deposit of \$250.00 per dwelling unit regardless of the type	

Meter Testing:

(Charges are for testing, labor, and shipping if required)

Meter Size	Deposit Amount
up to 5/8 by 3/4 inch	\$258.75
1 inch	\$281.75
1 1/2 to 2 inches	\$454.25
	To Be Determined by the Authority
Greater than 2 inches	Based on Actual Costs

The actual amount charged for meter testing shall be equal to the actual Authority cost, including shipping and handling plus a 5% administrative charge. Any amount over the required deposit will be billed to the customer and be due and payable with the next water billing, or 90 calendar days, whichever comes first.

Water Meter Reinstallation Charges: (Does Not Include the Meter)

Meter Size	Resetting Charge
Up to 1"	\$46.00
1.5"	\$69.00
2"	\$92.00
3"	\$230.00
4"	\$345.00
6"	\$460.00

D. Administrative Charges:

1. New Account Set Up charge \$25.00
2. Account transfer charge \$12.00
3. Water Certification Fee \$25.00
4. Penalty for payment after the due date, each month or quarter
 - a. 5% of current amounts due for Quarterly Accounts
 - b. 2% of current amounts due for Monthly Accounts
5. Posting of payment due in the accounting system for a delinquent account \$10.00
6. Site Visit Due to Shut off or other cause \$50.00
7. Returned check from a bank is the Actual Charge subject to a \$30.00 minimum
8. Business-related copies of Authority documents shall be charged at the rate of \$0.25 cents per 8.5 x 11-inch black ink page, or \$0.50 per color page, with larger size pages up to 11x17 being 20% more, including any reproduction of documents under a Right to Know request.
9. Water Meter Readings to Authorities or others providing sewer service per the Water Services Act 53 P.S. 3102.101
Regular rate of .50 cents per reading per water customer if coterminous with NWWA regularly scheduled water meter readings. Special readings shall be provided at the option of NWWA at the same rate plus a travel time and staff fee of \$50.00 per hour, portal to portal.
10. Other fees not included herein:
Any fees or charges for Authority services which are not specifically listed herein shall be established on a case-by-case basis by the Authority Board of Directors, or by the Executive Director, in accordance with the general guidelines and intent of the document.

Appendix A - Continued

E. SEWER SERVICE FEES, CHARGES, AND RATES

These rates, fees, and charges shall be reviewed annually and shall remain in effect until further modified or supplemented at any time by official action of the Executive Director or Board of Directors.

SEWER FEES, RATES, AND CHARGES

Charge for Sewer Service: Sewer service rates are based on METERED water usage, regardless of the source. The rates may be amended from time to time. If no meter reading is available for any reason, the billing will be determined by the Authority based upon prior water meter readings or other reasonable means determined by the Authority. **Fees, rates, and changes may be modified by the Authority at any time.**

Rate per thousand gallons \$16.29

Minimum monthly fee per EDU - \$27.70, *which includes up to the first 2,000 gallons.* Unused gallonage does not carrier over.

Due to current metering limitations, the Authority may bill in thousand-gallon increments allowing any additional flows to carry over to the next billing cycle.

Background:

When sewer capacity is allocated or assigned by the Authority, the capacity will come from a pool of sewer capacity purchased by the Authority at the Upper Gwynedd Township Sewage Treatment Plant. This purchase of capacity commenced in 2010, then consisting of 1303 EDUS/connections, most of which were then allocated to existing Authority sewer customers. Since that time, the Authority has purchased additional capacity for allocation to new sewer customers, as needed and at the NWWA customer request.

New sewer connections and sewer allocations typically require the Authority to purchase additional capacity from Upper Gwynedd Township at the then-current rate. The Authority passes this cost along to the new customer, plus a \$100.00 administrative fee. The 2023 for rate UGT sewer capacity is charged at the rate of \$3,973.00 **per EDU or as amended by UGT at any future time.** The customer is responsible for purchasing sufficient **sewer** capacity equal to anticipated water use and sewer flows and must be consistent with the number of **water** EDUS and capacity reserved.

There are three specific components to the sewer fees applicable to all new connections (including the above), all being subject to change and subject to any use requiring additional capacity.

These fees are listed below:

CONNECTION Component:

This component is for the cost of making the actual physical connection to the NWWA public sewer system. The cost varies by location and physical construction conditions. The non-refundable fee is \$2,847.00. In addition to the non-refundable fee, a \$5,000.00 deposit amount shall be required. The deposit will be used to reimburse the Authority for actual construction and connection costs. The applicant or developer may be required to replenish the deposit upon request of the Authority, should the funds on deposit decrease below \$3,000.00 at any time. Any unused portion of the deposit will be returned at the completion of the project.

COLLECTION Component: \$2,012.00 flat nonrefundable fee

This is for the cost of the existing mains, utility holes, and sewer pump station needed to convey the sewage to the NWWA metering pit for transfer to the UGT sewage treatment facility.

CAPACITY Component:

\$3,973.00 – Capacity reserved at the UGT plant and purchased from UGT by the NWWA, **or as amended by UGT at any future time**, plus a \$100.00 Authority Administrative Fee.

This purchase will typically be required for a new connection or a change in use requiring an increase in capacity.

The current cost of each EDU at the Upper Gwynedd facility is \$3,973.00 per EDU, and any of the fees and charges described above may be modified by the official action of the Authority at any time.

APPENDIX B - STANDARD FORMS

- 1. Owner Agreement for Service to Property with Tenant Occupancy**
- 2. Tenant Declaration**
- 3. Application & Contract for Water (and) or Sewer Service**
- 4. Checklist for Water /Sewer Service Availability Application**
- 5. Domestic (and) or Fire Water Service Application**
- 6. Application & Release for Sanitary Sewer Lateral Video Inspection**
- 7. NWWA Project Review**
- 8. Project Review Requiring PSA**

**NORTH WALES WATER AUTHORITY
OWNERS AGREEMENT FOR SERVICE TO
PROPERTY WITH TENANT OCCUPANCY**

Return to:

NWWA Montgomery County Office: P.O. Box 1339 North Wales, PA. 19454-0339

Or

NWWA Bucks County Office: P.O. Box 1018 Warrington PA 18976-1061

www.nwwater.com

(PLEASE PRINT)

OWNER(S) NAME(S): _____

SERVICE ADDRESS: _____

OWNER MAILING ADDRESS: _____

OWNER EMAIL ADDRESS: _____

OWNER HOME PHONE: _____

OTHER PHONE NUMBER(s): _____

OWNER'S DECLARATION AND AGREEMENT

I/we, as OWNER(s) of the Service Address, do declare and agree that:

- (1) I/we are Owner(s) of the property at the above Service Address.
- (2) Effective _____ (MM/DD/YYYY), I/we request that North Wales Water Authority bill the Tenant directly, including any charges or penalties for overdue accounts. I/we understand that the Authority will not bill the Tenant directly until the Tenant completes, signs, and returns the Tenant Declaration form, attached hereto. I/we agree that the Authority is not responsible for resolving any payment disputes between Owner(s) and Tenant(s) and that the Authority will proceed to enforce payment from the owner(s), if necessary. This authorization remains in effect until the Authority is otherwise notified in writing and the Authority changes account status.
- (3) I/we understand that regardless of the reason(s), if the tenant(s) defaults on payments, all rates and charges shall be recoverable against me/us as a debt owed to North Wales Water Authority.
- (4) The North Wales Water Authority has the right to terminate water service to the tenant-occupied property for non-payment or other lawful cause.

- (5) The North Wales Water Authority has the right, but not the obligation, to file a lien on my/our interest in the property for uncollected balances, according to the Pennsylvania Municipal Claims and Tax Liens Act (Act of May 16, 1923, P.L. 207, No. 153), as amended, 53 P.S. §§ 7101 *et seq.*
- (6) I/we acknowledge that North Wales Water Authority does not waive and has not waived its right to pursue all available legal remedies against the Tenant identified above.
- (7) I/we agree to notify North Wales Water Authority of any changes in the occupancy of the Service Address and any address for the Tenant or the Owner(s), or any other information supplied herein, promptly.
- (8) This agreement is non-transferable. A new agreement is required for any change in ownership.
- (9) I/we acknowledge that North Wales Water Authority has the right to cut off the supply of utilities and to remove the meter or related fixture(s) whenever the bill for these utilities is in arrears or if I/we are in breach of this Tenant Declaration.
- (10) I/we appoint the person(s) to whom the bills and notices are directed as my/our representative(s) to grant North Wales Water Authority access to the Service Address concerning the Authority's provision of water or wastewater services and related activities, including but not limited to inspection, at or to the Service Address, even if such activities results in charges to the Service Address.

OWNER(S) SIGNATURE(S)

Date: _____

For properties with multiple tenants, a separate sheet may be used. There is also a form for this purpose on our website.

TENANT DECLARATION

NORTH WALES WATER AUTHORITY

Montgomery County Office: P.O. Box 1339 North Wales PA 19454-0339

Bucks County Office: P.O. Box 1018 Warrington, PA., 18976-1061

www.nwwater.com

(PLEASE PRINT)

TENANT NAME (s) _____ (add list if needed)

Tenant Mailing Address: _____

Tenant Phone(s): _____

Tenant Occupancy Date _____

I/we, (Printed Name(s)): _____ being tenant(s) at the premises listed above, hereby declare and agree as follows:

- (1) I/we acknowledge that we are responsible for paying, jointly and severally, all water and sewer bills when due for the Service Address for the period that I/we are tenants/occupants of said Service address.
- (2) I/we acknowledge and understand that North Wales Water Authority will not establish an account in my/our name for the Service Address unless and until the Authority receives the proper authorization from the Property Owner.
- (3) I/we understand that North Wales Water Authority may pursue legal remedies against me/us to collect any unpaid balances on the water and sewer account.
- (4) I/we understand that North Wales Water Authority will require a security deposit per the Rules and Regulations and Fee Schedule of the Authority.
- (5) Failure to submit the required security deposit as required could result in termination of water service to the Service Address.
- (6) I/we acknowledge and agree that North Wales Water Authority will mail late payment notices or collection notices to the Owner of the Service Address.
- (7) I/we agree to give North Wales Water Authority free access to the Service Address during regular business hours to permit the Authority to read, repair, remove and replace meters. However, the Authority will not enter the Service Address to read a meter until the Tenant Declaration is signed and submitted to the Authority.

TENANT(S) SIGNATURE(S)

NORTH WALES WATER AUTHORITY

APPLICATION AND CONTRACT FOR WATER AND/OR SEWER SERVICE

I (We) _____ (owner/owners), in exchange for the provision of water and/or sewer service at

Service Address: _____

The North Wales Water Authority (Authority) do hereby promise to abide by the following terms and conditions.

Initiation of Service:

No service shall be initiated unless a written application/contract for water and/ or sewer service has been completed by the owner of the property where the service is to be provided, and all required fees and /or charges have been received by the Authority.

Meter Requirements:

No domestic water service to a premise shall be made use of unless a meter is properly installed and in proper working order per the current Authority rules and Regulations. It is the Customer's responsibility to notify the Authority if the meter is missing, a seal is not intact, the meter is inoperative, or meter tampering is suspected.

Customer shall assure free and safe access to the meter for reading, removal, inspection, or replacement.

Meters serving residential or non-residential premises are read and billed either quarterly or monthly.

Compliance with Laws, Ordinances, Rules, and Regulations:

Water and /or sewer shall be taken in compliance with the laws of the Commonwealth of Pennsylvania and the Rules and Regulations of the Authority governing the provision of water and/or sewer service. The preceding contractual terms are an inclusive statement of obligations. If they are in conflict with or delimit the laws, ordinances, rules, and regulations governing the Authority and its customers' such laws, rules and regulations shall prevail over this agreement.

I/We, the undersigned, have read the terms and conditions of this agreement and agree(s) to comply with and be bound by the Rules and Regulations of the Authority now in force, or as hereafter duly and legally supplemented, amended or changed.

Owner of Record Signature: _____

Date: _____

NORTH WALES WATER AUTHORITY

Checklist for Water/Sewer Service Availability Application

Applicant/Owner Name: _____ Phone: _____

Address: _____, City, _____ State, _____ Zip: _____

Reason for Request

[] Purchase of New Water Meter and Service Line.

Size & Type requested: Domestic _____ Fire _____ Irrigation _____

Service Size Desired from water main _____

[] To Purchase New Sewer Service Only (Check All That Apply)

Size & Type: Residential _____ Non-Residential _____

NWWA to Install _____

Contractor to Install _____

[] Required for Service Permit (Check all That Apply)

_____ Non-Residential Classification _____

_____ SFR/Duplex Number of Stories _____

_____ Multi Family Number of Dwelling Units _____

[] Required for Main Extension Permit

_____ Unit Lot Sub-Division/Short -Plat

_____ Vicinity Map or Parcel Numbers

If the request for utility service is for a land development proposal, a site plan is required.

Residential land development proposals are required to comply with local zoning ordinances. The site plan will need to include the following information:

- Proposed number of lots (including gross and net square footage), units, or buildings size in square feet
- Existing and proposed utilities (water & sewer), with pipe sizes and connection points.
- All Easements-existing and proposed, including a dedicated Right-of-Way (ROW) for water and/or sewer utilities, must have a minimum of thirty (30') foot width or otherwise approved.
- A complete legal description of the subject property certified by a licensed engineer or surveyor.

- Type of units proposed Single Family Residence (SFR), duplex, etc.

____ Equivalent Dwelling Units (EDUs) Requested: _____

____ Average Daily Flow: _____ gpd

As the current property owner and applicant, and on behalf of its successors and assigns, I /we agree to indemnify and hold NWWA harmless from any and all liability, loss, or damage, including reasonable costs up to and including attorney's fees, which arise from or are in any way related to this application for water/wastewater capacity. NWWA has requested reserve capacity for water and/or sewer connection at the property mentioned above. The availability and the ability to connect are guaranteed only when the requisite fees and charges have been paid in full.

Applicant Signature

Date

NWWA Representative

Date

NORTH WALES WATER AUTHORITY
DOMESTIC & FIRE WATER SERVICE APPLICATION

Applicants must provide the following:

Contact Name & Phone Number _____

Service Location desired _____

Approved Sprinkler Design (If Applicable)

Township Letter of Approval (If Applicable)

1 Set Site Drawings or Plans

Instructions and Process:

- The applicant(s) must submit the information listed above.
- A two-foot stake marked in BLUE or with the word "WATER" on it must be placed to mark where the water service is *requested* to be located.
- The Authority will then determine an *approved* location.
- The Authority will determine any applicable Backflow Device requirements.
- The Authority will determine if a Water Meter Pit is required.
- If service is approved, the customer must pay all fees and required deposits with the Authority. The Authority will apply for any municipal or PennDOT permits needed to install the service. This process may take several weeks.
- Once all information, fees, permits, and approvals, are received by the Authority, the Authority shall schedule the service installation and notify the applicant(s).

Additional Information required:

General Contractor:

Contact Name: _____

Mailing Address: _____

Mailing Address: _____

City _____ State _____ Zip Code _____

Daytime Phone: _____ Evening Phone: _____

Cell Phone: _____ Fax: _____

Email: _____

Plumbing Contractor:

Contact Name: _____

Mailing Address: _____

Mailing Address: _____

City _____ State _____ Zip _____

Daytime Phone: _____ Evening Phone: _____

Cell Phone: _____ Fax: _____

Email: _____

Property Owner:

Contact Name: _____

Mailing Address: _____

Mailing Address: _____

City _____ State _____ Zip _____

Daytime Phone: _____ Evening Phone: _____

Cell Phone: _____ Fax: _____

Email: _____

Shopping Center or Development (IF APPLICABLE): _____

Store # or Lot #: _____

Name on Bill: _____

Billing Address: _____

City State & Zip: _____

Settlement/Occupancy Date: _____

Please select one of the following:

General Contractor ☐
Owner Occupied ☐
Tenant Occupied ☐

Is a Tenant Responsible for Bills? _____

If so, Tenant and Owner Agreements are required.

1. Please note that where more than one tenant occupies a building, and there is a single water service, the Owner will be billed.
2. If a tenant is responsible, the NWWA requires a deposit. Please call our office to determine the amount of the deposit
3. A New Account Fee of \$25.00 will appear on the first water billing.

APPLICATION FOR WATER SERVICE INSTALLATION

Service Address: _____

Service Use Type: _____

Daily Capacity Requirement: _____

If a Capacity requirement is not given, the Authority will determine the proper amount.

Approximate Distance from Dwelling to Curb Line: _____

Township: _____ Tax Parcel #: _____

Nearest Cross Street: _____

For Authority Use only:

Sprinkler Design Received Date:

Municipal Letter of Approval Received Date:

NWWA Parcel #:

NWWA Service #:

Work Order #

Job Cost Code:

Pressure Code:

Sewer Code:

MXU Class Code:

Book-Seq. #:

Customer Class:

Domestic SCP:

Fire SCP:

Notes: _____

This section of the form completed by NWWA Representative _____

Date: _____

NORTH WALES WATER AUTHORITY
APPLICATION AND RELEASE FORM
SANITARY SEWER LATERAL VIDEO INSPECTION

The undersigned individual(s), being the lawful owners (or legal agents) ("Owner") of and for the property referenced below ("Property"), hereby requests that North Wales Water Authority (NWWA), its employees and/or agents, perform a **VIDEO INSPECTION OF THE SANITARY SEWER LATERAL (or laterals) serving the Property located at:** _____, In exchange for said inspection, I/we agree to pay the NWWA Inspection Fee of **\$35.00** for this service – Pass or Fail. This fee will be added to the next sewer invoice.

Further, the undersigned, on behalf of all property owner(s) and/or occupants, hereby grants NWWA the right to enter the property as needed to complete this inspection and to hold harmless NWWA and its employees or agents from any claim for property damage or any cause of action in any way related to the inspection. Further, it is understood and agreed that this VIDEO INSPECTION is a visual inspection only and, therefore, it may not include all sections of the lateral and/or reveal all defects, nor is it a guarantee of future lateral function or a release of the Property Owner's responsibility to repair any defects.

WITHIN 10 DAYS OF THE VIDEO INSPECTION, NWWA WILL FORWARD AN INSPECTION REPORT TO BOTH THE PROPERTY OWNER AND THE BOROUGH OF NORTH WALES OUTLINING THE RESULTS OF THE INSPECTION AND SPECIFYING ANY REPAIRS OR MODIFICATIONS NEEDED TO THE SANITARY SEWER LATERAL PERTAINING STRICTLY TO INFLOW AND/OR INFILTRATION, AND WHETHER ANY SUCH REPAIRS OR MODIFICATIONS ARE REQUIRED OR RECOMMENDED PRIOR TO A NEW OR CONTINUED USE AND OCCUPANCY OF ANY STRUCTURE(S) LOCATED UPON THE PROPERTY.

I/we _____ hereby request a VIDEO INSPECTION of the SEWER LATERAL(S) serving the property listed above in accordance with and in acceptance of the terms and conditions as written above.

Special Notes or Concerns: _____

Printed Name of Property Owner(s) or Agent

Signature

Date



Application for New Services Project Review (NWWA Project Review)

This application should be completely filled out and returned to the North Wales Water Authority with the following Required Items and Project Review Fees in the schedule below:

Non-Residential: ☐

- Project Administration Fee- Nonrefundable filing and processing fee of \$500.00
- Plus a fee of \$250.00 per 1,000 square foot of floor area, for internal review expenses

Residential: ☐

- Project Administration Fee- Nonrefundable filing and processing fee of \$500.00
- Plus a fee of \$250.00 per dwelling unit, for up to 10 dwelling units and \$100.00 per dwelling unit thereafter for internal review expenses

Required Items:

1. Three (3) copies of sub-division or land development plans of the project
2. Copy of deed for the property
3. The latest title report for the property

For Authority Use Only

Total Square Footage: _____

Project Administration Fee Due: _____

NWWA Internal Review Fee Due: _____

Per Unit Additional Cost Due: _____

Total Amount Due For Project Review: _____

Project Information

Date of Application: _____

Name of Applicant: _____

Applicants Mailing Address: _____

Applicants Mailing Address: _____

City: _____ State _____ Zip _____

Daytime Phone: _____ Fax: _____

Email: _____

Name & Location of Project:

Name of Project: _____

Location of Project:

Street or Road: _____

Township: _____

Is the Project? ☐ Non-Residential or ☐ Residential

Number of Services:

Fire: _____ Domestic: _____

Contact Names & Phone Numbers:

Engineer: _____

Project Manager: _____

Attorney: _____

Property Information

***Note: A copy of the deed and latest title report must be included with the application**

Legal Owner:

Name of Legal Owner (As On Deed): _____

Address of Legal Owner (As On Deed): _____

City, State & Zip: _____

If Legal Owner is a Corporation:

President: _____

Vice President: _____

If Legal Owner is a Partnership:

Partner 1: _____

Partner 2: _____

Equitable Owner:

Name of Equitable Owner (If under Agreement of Sale or Option):

Address of Equitable Owner: _____

City, State & Zip: _____

If Equitable Owner is a Corporation:

President: _____

Vice President: _____

If Equitable Owner is a Partnership:

Partner 1: _____

Partner 2: _____



Application for Line Extension Project Review Requiring a Contract for Professional Services Agreement (CPSA)

This application should be completely filled out and returned to the North Wales Water Authority with the following Required Items and Project Review Fees in the schedule below:

Non-Residential: ☐

- Project Administration Fee- Nonrefundable filing and processing fee of \$500.00
- Deposit for projects requiring CPSA review by the engineer/legal of \$250.00 per 1,000 sq. ft. floor area \$10,000.00 Plus additional deposit

Residential: ☐

- Project Administration Fee- Nonrefundable filing and processing fee of \$500.00
- Deposit for projects requiring CPSA review by the engineer/legal of \$250.00 per dwelling unit regardless of type \$10,000.00 Plus additional deposit of

Required Items:

4. Three (3) copies of sub-division or land development plans of the project
5. Copy of deed for the property
6. The latest title report for the property

All deposit accounts shall maintain a minimum balance equal to 50% of the initial required deposit unless otherwise provided in the PSA review agreement.

For Authority Use Only

Professional Administration Fee Due: _____

CPSA Review Deposit Due: _____

Per Unit Additional Cost Due: _____

Total Amount Due For Project Review: _____

Project Information

Date of Application: _____

Name of Applicant: _____

Applicants Mailing Address: _____

Applicants Mailing Address: _____

City: _____ State _____ Zip _____

Daytime Phone: _____ Fax: _____

Email: _____

Name & Location of Project:

Name of Project: _____

Location of Project:

Street or Road: _____

Township: _____

Number of Services:

Fire: _____ Domestic: _____

Contact Names & Phone Numbers:

Engineer: _____

Project Manager: _____

Attorney: _____

Property Information

***Note: A copy of the deed and latest title report must be included with the application**

Legal Owner:

Name of Legal Owner (As On Deed): _____

Address of Legal Owner (As On Deed): _____

City, State & Zip: _____

If Legal Owner is a Corporation:

President: _____

Vice President: _____

If Legal Owner is a Partnership:

Partner 1: _____

Partner 2: _____

Equitable Owner:

Name of Equitable Owner (If under Agreement of Sale or Option): _____

Address of Equitable Owner: _____

City, State & Zip: _____

If Equitable Owner is a Corporation:

President: _____

Vice President: _____

If Equitable Owner is a Partnership:

Partner 1: _____

Partner 2: _____

APPENDIX C - STANDARD SPECIFICATIONS

Article 1.00 GENERAL REQUIREMENTS

Section 1.01 GENERAL DESCRIPTIONS

- A. The work to be covered by these Specifications consists of all labor, equipment, materials, and other facilities necessary and proper to construct water and/or sanitary sewer main extensions, including the associated appurtenances and restoration work. The Specifications in this document are written with the intention of, in whole or in part, to be included in the Contract executed by and between Developer and Contractor. The Authority will not accept the facilities provided by a Developer unless and until they conform to the requirements of the applicable portions of these Specifications. These Specifications are not intended to provide a complete description of the requirements for private water and sanitary sewer lines and facilities located outside of the public right-of-way or easement or within the interior of the structure receiving water and/or sanitary sewer service. The Pennsylvania Uniform Construction Code, as amended by the local municipality, shall apply in those locations unless specifically indicated otherwise in this Standard Specification or on the Standard Details.
- B. All design and construction shall be in accordance with the latest requirements and standards for water and sewer facilities of the Pennsylvania Department of Environmental Protection and in accordance with the standards established by the rules and regulations of the Authority.
- C. The Drawings and Specifications are intended to cover a complete project with respect to water and/or sanitary sewer facilities, and it shall be thoroughly understood that failure to mention specifically any work, which would naturally be required to complete the project, shall not relieve the Contractor of his responsibility to perform such work.
- D. The Standard Details at the end of this document represent the standards of construction of the Authority. Where reference is made herein to "Detail Drawings" or "Standard Details," it shall be understood to mean these drawings. These may be supplemented from time to time. They are to be followed by the Developer and/or his Engineer in preparing plans for water and sanitary sewer extensions.
- E. The Applicant and/or Developer shall select a Contractor to construct the water and/or sewage system who is skilled in the work proposed to be done and who is equipped in all respects to ensure the proper and complete construction of all elements of the system. The word Contractor used hereinafter shall mean the contractor selected by the Applicant and/or Developer.
- F. All construction work on the water and/or sanitary sewer system shall be completed under the inspection of the Authority. Construction work requiring inspection and testing shall not be backfilled without the approval of the Authority, and construction work backfilled without such approval or consent shall be uncovered, the cost of uncovering and replacing to be borne by the Contractor.

Section 1.02 DEFINITIONS

As used in these specifications, words in the singular include the plural, and those in the plural include the singular. The word "may" is permissive, and the words "shall" and "will" are mandatory. Wherever in these Specifications the following words, terms, and expressions, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

A. Applicant:

In the context of these Specifications, the term "Applicant" shall also be interpreted as the "Developer."

B. Authority:

The North Wales Water Authority, acting directly or through any agent, officer, or employee duly authorized to act for the said part in the execution of the legal functions of Authority.

C. Board of Directors:

The Board of Directors of the North Wales Water Authority.

D. Contract:

The written agreement executed by and between Developer and Contractor, covering the performance of the work and the furnishing of labor, materials, and service in the construction of water and/or sanitary sewer facilities (including appurtenant facilities) within the franchise areas of Authority.

E. Contractor:

Party of the Second Part or Second Party to the Contract, acting directly or through his authorized lawful agents, legal representatives, superintendents, or employees, appointed to act for a said party in the performance of the work under contract. In the context of these Specifications, the term "Contractor" shall also be interpreted as the "Developer" in certain instances where specific responsibilities are not defined or can be performed by either party.

F. Developer:

Party of the First Part or First Party to the Contract; the corporation, partnership, or individual intending to develop for residential or other purposes a certain tract of land situated within the water and/or sewer franchise areas of Authority, acting directly or through any authorized lawful agents, legal representatives or employees appointed to act for a said party in the execution of the work of the Contract.

G. Drawings and Plans:

Collectively, all of the drawings which show the character and scope of the work to be performed on the project and which have been prepared by an Engineer and approved by the Authority; and also such supplementary drawings as may be issued from time to time in order to explain or clarify said Contract Drawings or show details which are not shown thereon

H. Engineer:

The Authority Engineer duly employed by the North Wales Water Authority as a consultant and authorized to inspect the results of the performance of the work under Contract by the Contractor, acting directly or through properly authorized agents, Engineers, assistants, inspectors, or other representatives acting severally within the scope of the particular duties entrusted to them. The

word "Engineer" shall include the officers, agents, or employees of the Engineer.

I. Inspection:

The examination of the Work performed by Contractor to determine its conformity with the Drawings and the Specifications.

J. Owner:

In the context of these Specifications, the term "Owner" shall also be interpreted as the "Authority."

K. Project:

All the necessary performance, services and materials required for the satisfactory completion of the work under contract as described in the Specifications and shown on the Drawings.

L. Resident Project Representative:

The authorized representative of the Authority who may be assigned to the site of the Work.

M. Specifications:

Collectively the Standard Specifications and Details for water and sanitary sewer facilities and all of the written technical descriptions of materials, equipment, construction systems, standards, and quality pertaining to the project's construction, which is a part of the contract but not contained herein.

N. Work:

The entire completed construction of the water and/or sanitary sewerage facilities is to be dedicated to the Authority as shown on the Drawings and described in the Specifications. The Work includes and is the result of performing or furnishing labor and incorporating materials and equipment into the construction and performing or furnishing services and furnishing documents, all as required by the Drawings and the Specifications.

Section 1.03 REFERENCED STANDARDS AND SPECIFICATIONS

All work shall comply with the current issues of the following codes, regulations, and requirements, any, or all references to earlier dated editions notwithstanding.

1. Pennsylvania Department of Labor and Industry, Regulations for Trenches, and Excavations
2. Federal and State Air Pollution Regulations
3. AASHTO - American Association of State Highway and Transportation Officials
4. ACI - American Concrete Institute
5. AISC - American Institute of Steel Construction, Manual of Steel Construction
6. ANSI - American National Standards Institute
7. ASME – American Society of Mechanical Engineers
8. ASTM - American Society of Testing and Materials
9. AWWA - American Water Works Association

10. IPC – International Plumbing Code
11. PA DEP - Pennsylvania Department of Environmental Protection: Public Water Supply Manual, Domestic Wastewater Facilities Manual, and Erosion and Sediment Pollution Control Program Manual
12. FS - Federal Specifications
13. ISO - Insurance Services Office
14. NACE - National Association of Corrosion Engineers
15. NEC - National Electric Code
16. NEMA - National Electrical Manufacturer's Association
17. NFPA - National Fire Protection Association
18. OSHA - Occupational Safety and Health Administration
19. PennDOT - Pennsylvania Department of Transportation: Publications 203 and 408
20. PTM - Pennsylvania Test Method
21. PAUCC – Pennsylvania Uniform Construction Code

Section 1.04 EASEMENT/PROPERTY DEDICATIONS

- A. The developer shall be responsible for acquiring all necessary easements and property prior to the start of construction. The Developer shall pay all costs associated with easement and property acquisition.
- B. Authority may assist in acquiring an off-site easement or property utilizing its right of eminent domain if such easement or property is deemed in the best interest of the public.
- C. Developer shall provide dedications of easements and property within the development site at the execution of the Line Extension Agreement to be recorded by the Authority.
- D. Easements shall be a minimum of thirty (30) feet in width unless otherwise approved by the Authority.
- E. Legal descriptions shall be submitted to the Authority for review. The legal descriptions shall be accompanied by an attached legal plan on 8.5" x 11" paper showing the easement. After the legal plan and descriptions are approved by the Authority, three (3) copies of each with original seal and signature shall be submitted to the Authority.
- F. Any pumping stations, transfer stations, or tank sites requiring access shall be provided to the Authority in the form of fee simple ownership. The necessary site area and configuration shall be acceptable to the Authority.

Section 1.05 DRAWINGS, REPORTS, AND SPECIFICATIONS

- A. Prior to the start of construction, the Developer shall furnish plans for the proposed facilities for review by the Authority and written approval by the Board of Directors. The Developer must design and construct the water and/or sewer system to the point of connection to the Authority's system.
- B. Drawings of the water and/or sanitary sewer system which is to be submitted for approval shall be drawn on sheets 24 by 36 inches to the following minimum scales:
 - Key Sheet 1" = 100', or as approved by Engineer
 - Detail Sheets - Plan and Profile
 - Horizontal 1" = 50'
 - Vertical 1" = 5'
- C. The Key Sheet shall show the horizontal orientation of the project and the arrangement of plan and profile drawings. Pipe sizes shall be shown on the Key Sheet together with the names of all streets and all valves, fire hydrants, and sewer utility holes (if applicable). The scale should be 1" = 100', or another scale approved by the Authority, which legibly shows the project on one 24" x 36" size sheet. A vicinity map showing the entire development in relation to existing streets shall be provided on the Key Sheet. The scale of the vicinity map is optional.
- D. On the detail sheets, the location of each existing and proposed building shall be shown on the Plan with the elevation of the existing or proposed finished floor. The water and sewer facilities shall have ties to existing permanent or semi-permanent features. The water and sewer facilities shall be referenced to stationing for the centerline of the roadway, easement, or pipe. Stationing shall be shown on both the Plan and Profile views.
- E. The Plan view shall indicate the horizontal location of all water and sewer facilities in relation to pertinent features. The size and material of all pipes, fittings, and appurtenances shall be labeled.
- F. The Profile view shall indicate the vertical location of all water and sewer facilities in relation to pertinent features. The size and material of all water and sewer mains shall be labeled. For gravity sewers, the pipe distance between manholes, measured horizontally from center to center of the manholes, and the slope of each pipe shall be labeled. For water mains, all proposed vertical fittings shall be labeled. For manholes, the rim, invert in and invert out elevations shall be labeled. The existing and proposed profile of the roadway ground surface shall be shown. Where other utilities cross the proposed pipeline, the size and invert elevations (top and bottom elevation in the case of duct lines) shall be given. Limits of concrete and polyethylene encasement shall be indicated, where appropriate.
- G. A material list with the Authority stock number for each item shall be provided for all materials to be provided by the Authority for the project. The list shall include a breakdown by size and footage of main the quantities of all appurtenances to be provided by the Authority. The Developer is responsible for the accuracy of the information.

Plans for special facilities such as pump stations, transfer stations, or water tanks shall be prepared in accordance with the requirements of the Pennsylvania Department of Environmental Protection but shall be subject to review by the Authority and approval by the Board of Directors.

Section 1.06 EQUAL OR APPROVED EQUAL

- A. In the various detailed sections of the Specifications, where any item of material or equipment is specified by proprietary name, trade name, and/or name of one or more manufacturers, without the addition of such expressions as "or equal," it is to be understood that these items are so specified for reasons of standardization or for specific requirements of the job. For items, so specified, no substitute products will be acceptable.
- B. In the various detailed sections of the Specifications, where any item of equipment is specified by proprietary name, trade name, and/or name of one or more manufacturers, with the additions of such expressions as "or equal," it is to be understood that equal quality equipment or products, of either a manufacturer named or of a manufacturer not named, which meet the detailed requirements of the specifications, are intended and are subject to the acceptance of Authority as to the equality thereof. It is distinctly understood that: (1) Engineer is to use his own judgment in determining whether or not any item of equipment or product proposed is equal to that specified; (2) the decision of Authority on all such questions of equality shall be final; and (3) in the event of any adverse decision by Engineer, no claim of any sort shall be made or allowed against Engineer or Authority.
- C. If in normally rare occurrences, it becomes necessary (because of delays in delivery, strikes, discontinuance of the manufacture of items specified or the equal thereof, or any other similar reasons) for Contractor to request the use of any item of equipment or product which is of a different type than the equipment or product specified or the approved equal thereof, Authority at its discretion, may authorize the use of such different type equipment or product of the same, greater or less cost than that specified.
- D. In such cases, as described in Paragraphs B and C above, Contractor shall submit to Engineer in writing (1) his request for permission to make a substitution, (2) a complete description of the proposed item, including dimensions, operational characteristics, changes (if any) that will be required to other related parts of the work, etc., and (3) full information as to the costs of the item specified, the cost of the different type item being proposed, as well as costs (additional or credits) or changes (if any) to any related parts of the work. Such information shall be in such form and detail as to permit Authority to check, to his satisfaction, the reason and costs involved.
- E. If any submitted equipment necessitates changing electrical, water, gas, vacuum, air or other utility services from the sizes, capacities, configurations, and locations shown on the Drawings, it shall be Contractor's responsibility to bear the construction cost of all changes. It shall also be the Contractor's responsibility to bear the cost of engineering fees to analyze, design, specify and formulate the construction changes necessitated by the proposed deviations from the specified equipment and/or the Drawings.
- F. The decision of the Authority as to any credits allowed, or payments to be made to Contractor, shall be final and conclusive upon Contractor.

Section 1.07 OBSERVANCE OF LAWS

Contractor at all times shall observe and comply with all Federal and State laws and regulations, and local bylaws, ordinances, and regulations in any manner affecting the conduct of the work or applying

to employees on the Project, as well as all safety precautions and orders or decrees which have been promulgated or enacted, or which may be promulgated or enacted, by any legal bodies or tribunals having Authority or jurisdiction over the work, materials, equipment, employees or the Contract; such observance and compliance shall be solely and without qualification the responsibility of Contractor without reliance on superintendence or direction by the Authority or Engineer. The duty of enforcement of all of said laws, ordinances, regulations, orders, or decrees lies with the body or agency promulgating them, not with the Authority or Engineer.

Section 1.08 REGULATIONS OF THE DEPARTMENT OF LABOR AND INDUSTRY

Special attention is drawn to the regulations of the Pennsylvania Department of Labor and Industry relating to wage scales, trenches and excavations, tunnel construction, equipment, materials, labor, safety, sanitation, and other regulations on which the Contractor shall be fully informed and with which he shall fully comply. Observance of and compliance with said regulations shall be solely and without qualification the responsibility of the Contractor, without reliance on superintendence of or direction by the Authority or Engineer. The duty of enforcing such laws and regulations lies with the said Department, not with the Authority or Engineer.

Section 1.09 PERMITS AND LICENSES

- A. The Developer shall be responsible for securing all necessary governmental permits/applications for the Work prior to start of construction and shall give all notices necessary and incident to the proper and lawful prosecution of the work. The Developer shall pay all application fees, charges, and costs associated with the required submissions for permits and approvals. A copy of all permits/approvals shall be provided to the Authority prior to the start of construction.
 1. If the Pennsylvania Department of Transportation requires any of their personnel to be on hand during the construction of the work, payment for such personnel shall be borne by the Contractor or Developer.
 2. Where work is to be done by the Contractor in placing any pipe or other construction under railroad tracks, or within the right-of-way of any railroad company, the Contractor shall be governed by the requirements of the railroad company involved and shall consult with the officials thereof relative to the installation. If the railroad company requires any of their personnel to be on hand during the construction of the work, payment for such personnel shall be borne by the Contractor or Developer.
- B. If facilities are to be dedicated to the Authority, the Developer shall prepare permit applications in the name of the Authority and shall submit the same, with the necessary application fees and supporting documentation to the Authority for review and execution.
- C. Permits/approvals may include but are not limited to the following:
 1. PA Department of Environmental Protection
 - Planning Module Approval (Act 537)
 - Water Quality Management Permit
 - BDWM-GP-5 (Utility Line Stream Crossing)
 - Blasting Permit

2. PENNDOT
 - Highway Occupancy Permit
 3. County Conservation District
 - Soil Erosion and Sedimentation Control Plan Approval
 4. Township/Borough
 - Road Opening Permit
 - Blasting Permit
- D. The Developer/Contractor is responsible for complying with all relevant conditions of any governmental permits or approvals for the Work, including giving all necessary notices.

Section 1.10 NOTICES

The service of any notice by the Authority or Engineer to the Developer or Contractor shall be considered accomplished upon completion of any one of the following procedures:

- A. When delivered, in writing, to the person in charge of the office used by the addressee to conduct business.
- B. When delivered, in writing, to the addressee or any of his authorized agents in person.
- C. When delivered, in writing, to the addressee or any of his agents at the office used by the addressee to conduct the business of the Contract at or near the Site of the work.
- D. When deposited in the United States Mail, postpaid, or transmitted by e-mail or fax machine, and addressed to the party intended for such service at his office used for conducting the business of the Contract at the Site of the work, or his last known place of business; or
- E. When filed at any company-operated office of the Western Union Telegraph Company and addressed to the party intended for such service at his last known place of business or for conducting the business of the Contract at the Site of the work.

Section 1.11 PART 2 – PRODUCTS MATERIALS AND EQUIPMENT

- A. All materials and equipment supplied for use on this project shall be new and purchased specifically for incorporation into the work included in the Drawings and Specifications, except as noted.
- B. The Contractor shall furnish the Authority promptly after the award or execution of the Agreement, a complete statement of the origin, composition, and manufacture of all materials not furnished by the Authority that are to be used in the construction of the Project. Only materials conforming to the requirements of these Specifications, the Plans, and approved by Authority shall be used in work.
- C. Representative preliminary samples of the materials of the character and quality prescribed in the Contract shall be submitted when indicated or directed for advance examination or test. Written approval of the quality of such samples shall be received by the Contractor prior to obtaining materials from the respective sources of supply.

- D. Samples of all materials requiring laboratory tests shall be taken under the direction or supervision of, or in the manner prescribed by the Authority. Such materials shall not be used until accepted as the result of such tests. Materials will be used only as long as the quality of the material remains equal to that of the accepted sample. The acceptance at any time of any material shall not be a bar to its future rejection if it is subsequently found to be defective or inferior in quality to the material specified.
- E. Required laboratory tests of materials shall be made by a testing laboratory or agency selected or approved by Authority and in accordance with the methods indicated herein. When standard specifications and serial numbers of technical societies and associations are stipulated, the reference shall be construed to be the latest of such specifications and serial numbers.
- F. The Contractor shall furnish all labor, materials, and equipment necessary for collecting, packaging, and identifying representative samples of materials and the shipping of such samples to the testing laboratory.
- G. For tests or inspections conducted by, and at the option of, Authority, at sites other than the testing laboratory and not under the jurisdiction thereof, Contractor shall furnish or arrange with the producer to furnish all material, labor, tools, and equipment, and every facility for the verification of the accuracy of all scales, measures, and testing equipment, necessary for such tests or inspections.
- H. The Contractor shall permit or arrange with the producer to permit Authority or any agent of the testing laboratory to inspect or test any and all material being used or to be used, at any time before, during, or after its preparation, or while being used during the progress of the work or after the work has been completed.
- I. Materials shall be stored so as to ensure the preservation of their specified quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other hard and clean surfaces, and not on the ground, and shall be placed under cover when directed. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without permission of the Owner or lessee of the property.
- J. If any material intended for use in the construction of the Project has been inspected and rejected after such material has been delivered to the Site, all such rejected material shall be immediately removed from the property by the Contractor.

Section 1.12 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Proper and suitable tools, equipment, and appliances for the safe and convenient handling and placing of all materials and equipment shall be used.
- B. During loading, unloading, and placing, care shall be taken in handling the equipment and materials so that no equipment or materials are damaged. The Contractor shall inspect all material furnished by the Authority at the time of delivery. Any damaged material shall be reported to the Authority at that time. Materials found to be damaged after such times are the responsibility of the Contractor.

- C. Any precautions necessary to protect items of equipment and materials from damage while stored on the construction site shall be exercised.
- D. All mechanical and/or electrical equipment and paint delivered to the job site shall be stored under the roof, protected on all sides, and supported off the ground with pedestals. The resulting enclosure shall be weather-tight in all respects.
- E. The Contractor shall follow all written instructions and recommendations of the equipment manufacturer and all requirements of the Authority regarding the oiling, exercising, maintenance, and protection of the equipment during storage. It shall be the Contractor's complete responsibility to satisfactorily store and care for equipment and materials.
- F. Equipment may be initially delivered to a warehouse, conveniently located in the vicinity of the site, with the approval of it and under such conditions as may be further imposed by the Authority.

Section 1.13 PROTECTION AGAINST ELECTROLYSIS

Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, non-metallic separators or washers, or other approved materials. When requested by the Authority, the Contractor shall prove by acceptable test the effectiveness of the insulation.

Section 1.14 PART 3 – EXECUTION Engineer's Duties

- A. When so authorized by the Authority, The Engineer and his assistants are the representatives of the Authority during the construction of the Work. When authorized by the Authority, it shall be the duty of the Engineer to see that all materials and Work conform fully to the requirements of these Specifications. He shall, in no case act as foreman or perform other duties for the Contractor or Applicant nor interfere with the management of the Work done by the Contractor.
- B. The Engineer shall have full Authority to decide all questions which may arise under the Contract relative to the quality and acceptability of materials furnished and the manner, quality, and acceptability of Work performed, and the interpretation of any or all Drawings and Specifications.
- C. In case of any dispute relative to the quality of materials or Work, or the manner of performing the Work, the Engineer shall have Authority to reject materials or suspend the Work. He shall not be authorized to revoke, alter, enlarge, relax, or release any requirements of these Specifications, nor to approve or accept any portion of the Work or issue instructions contrary to these Specifications.

Section 1.15 PRELIMINARY INSPECTION

The Contractor is required to carefully examine the site of the work, Drawings, Specifications, and all applicable State, County, and local codes for the work contemplated; and it will be assumed that he has familiarized and satisfied himself as to the conditions and obstacles to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of the Drawings and Specifications.

Section 1.16 PRE-CONSTRUCTION MEETING

The Authority or Engineer will schedule a conference after formal acceptance of the Developer's Line Extension Agreement by the Authority, but prior to commencement of any Work. This conference will normally include the Developer, Contractor(s), Authority, Engineer, and Resident Project Representative, if applicable.

The agenda for the Preconstruction Conference will include the following items as a minimum:

1. Designation of representatives for various parties
2. Construction schedule submission
3. Submittal requirements
4. Escrow drawdown application procedures
5. Inspection notifications
6. Connection(s) to existing water and/or sewer systems
7. Testing requirements
8. Permit requirements/notifications
9. Erosion control plan implementation
10. Record drawings
11. Emergency contact information (minimum of 2 contacts)

The Contractor is required to submit a construction schedule showing the order in which the Contractor proposes to carry on the work, the dates on which he will start several of the more prominent features, and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate the percentage of work completed at any time.

A field visit of the construction area of the Work shall be conducted at the discretion of the Authority or Engineer when it is determined to be necessary to observe pertinent conditions related to easements, rights-of-way, existing structures, or obstructions and/or features to be removed, or changed.

Section 1.17 PROGRESS MEETINGS

- A. During the construction period, progress meetings shall be held with the Authority and/or Engineer at the job site to discuss recent developments and future work plans as they relate to the schedule. Progress meetings will be held weekly in general, but the interval between meetings may be increased or decreased by the Authority or Engineer to suit the current circumstances.

- B. The Authority or Engineer, Contractor, and major Subcontractors shall be represented at every meeting by a responsible member of their respective organizations. All decisions and interpretations given by the Authority at project meetings shall be conclusive of the Contractor and Subcontractor's affected.

Section 1.18 SHOP DRAWING SUBMITTALS

- A. Shop drawings in this Specification are intended to mean fabrication and erection drawings. These drawings and pertinent data shall be complete and in such detail as Authority may require for providing information regarding the design, installation, and operation for such materials and/or equipment.
- B. Detailed shop drawings, data, and literature for fabricated materials or equipment to be incorporated in the Project shall be submitted to the Authority for review before fabrication. The contractor shall obtain and check the manufacturer's shop drawings, certified prints, and other pertinent data for conformance with all requirements of the Drawings and Specifications in ample time to permit satisfactory progress of the work. After completion of such checking and verification by Contractor, Contractor shall sign and stamp such drawings, which shall state as follows:

Specification Section: _____

Checked By: _____
(Contractor's Name)

Signed By: _____
(Checker's Name)

- C. All data, drawings, and correspondence from subcontractors, material men, or suppliers shall be routed through the Contractor. This procedure is required so that the Contractor's superintendent can familiarize himself with all information that Contractor sends to Authority and prevent Authority from acting upon something other than that desired by Contractor. Authority shall consider for approval only such data and details as are verified and transmitted to him directly by the Contractor. Failure of Contractor to note his approval on Shop Drawings will be a reason for Authority to return such submission to Contractor unchecked. If it appears that Shop Drawings submitted by the Contractor to Authority have not been properly checked, even though the Contractor's approval has been noted thereon, it will also be considered a reason for Authority to return such submission to the Contractor unchecked.
- D. A sufficient number of shop drawings and review data shall be submitted to the Authority, who will be allowed to retain five (5) copies of each submittal if it is electrical in nature and four (4) copies otherwise. All additional copies, up to a maximum of four (4), received by the Authority will be returned to the Contractor or his representative at the job site. Authority's notations of the action which it has taken will be noted on all the returned copies. Sufficient time for the review of all shop drawing submittals shall be allowed in the Contractor's schedule.

- E. Drawings of minor or incidental fabricated materials and/or equipment may not be required by Engineer. Contractor shall furnish Engineer with tabulated lists of such fabrications, showing the names of the manufacturers and catalog numbers, together with samples of general data as may be required to permit an intelligent determination as to their responsibility for incorporation in work.
- F. The approval of shop drawings will be general and shall not relieve Contractor from responsibility for errors and discrepancies in such drawings and for proper fit and construction of the work; or from furnishing materials and work required by the Contract which may not be indicated on the shop drawings when approved.
- G. All review of shop drawings, datasheets, and information or literature is subject to the products fulfilling the specific requirements of the Drawings and Specifications. Review of items that do not conform in detail to the specified product shall place upon Contractor the entire responsibility for successful operation of the proposed product. Should the item subsequently prove to be defective or otherwise unsatisfactory for the service for which it was intended, the Contractor shall, without cost to Authority and without obligation on the part of Engineer, replace the item with the material originally specified. Authority's acceptance of shop drawings or layout for any material, apparatus or device shall not relieve Contractor from the responsibility of furnishing the same of proper dimension, size, quantity, quality, and all performance characteristics to efficiently perform the requirements and intent of the Drawings and Specifications. Such review shall not relieve Contractor from responsibility for any errors of any sort on the shop drawings. If the shop drawings deviate from the Drawings and Specifications, the Contractor shall advise the Authority of the deviations in writing accompanying the shop drawings, including the reasons for the deviations, and shall request a deviation from the Contract as hereinafter described.
- H. The shop drawings are intended to be utilized by the Contractor for additional fabrication, assembly, and erection data. The shop drawings do not change or supersede the Drawings and Specifications. The contractor's request for a change shall give, in detail, the specific change requested and shall state the reason for the change. Changes requested by Contractor and reviewed by Authority shall not be construed to include acceptance of any change except the changed details specifically requested.
- I. It shall be the responsibility of the Contractor to make all the necessary changes in other items, which result from deviations or changes requested by Contractor and accepted by Authority so that all items perform the requirements and intent of the Drawings and Specifications.

Section 1.19 RE-SUBMITTALS

- A. The contractor shall make resubmittal under procedures specified for initial submittals and shall identify changes made since previous submittals.
- B. Each re-submittal shall contain the original submittal number plus a suffix letter after the original number, such as "A" for the first re-submittal, "B" for the second re-submittal, "C" for the third, and so forth.

Section 1.20 CONSTRUCTION STAKEOUT

The Contractor shall perform construction stakeout. The Contractor shall furnish, set, and maintain without cost to the Authority, suitable stakes, grade boards temporary structures, templates, and other materials for establishing and maintaining points, marks, and lines, and shall furnish the Authority with such assistance as he may require in setting or checking such points, marks, or lines, and in making or checking measurements necessary in the prosecution of the work. The Contractor shall be responsible for protecting and preserving all reference points for the duration of the Project. Reference points for vertical control and all elevations shall be based on U. S. Geological Survey datum.

- A. All mains shall be survey staked at all fittings, manholes, and at fifty (50) foot intervals along the alignment for straight runs and at twenty-five (25) foot intervals along curves. Survey stakes must be clearly inscribed with the station points, top of the final grade, and, when applicable, the face of curb. When pipeline location is used for placement of survey stakes, the stakes shall be offset a minimum of ten (10) feet and a maximum of twenty (20) feet from the pipeline so as not to interfere with the installation of the pipe.

Section 1.21 CONDUCT OF WORK

- A. No work subject to inspection shall be performed without proper notification by the Contractor to the Authority. A minimum of 3 working days' notice is required prior to the commencement of work.
- B. All work at the site shall normally be performed during regular working hours except as otherwise required for the safety or protection of persons, the Work, or property at or adjacent to the site. The Contractor shall give prior notice to the Authority and Engineer if performance of Work on an overtime basis or on weekends or legal holidays is scheduled.
 - 1. When the Contractor believes working outside of regular work hours is required, he shall notify the Authority a minimum of 72 hours in advance.
 - 2. When the Authority believes the work must be performed outside of regular hours, the Authority will notify the Contractor of such so that he may make the appropriate schedule.
- C. No work shall be done when, in the opinion of the Authority, the weather is unsuitable for good and careful work to be performed. Should the severity of the weather continue such that the work cannot be prosecuted successfully, the Contractor, under an order of Authority, shall cease all such work until directed to resume the same.
- D. The Contractor shall arrange for and be responsible for a sufficient amount of illumination at all times, subject to the approval of the Authority, to carry on all phases of the work.
- E. All work shall be subject to the control of the Authority and/or its agent. In the performance of the work, the Contractor shall abide by all orders, directions, and requirements of the Authority and/or its agent and shall perform all work in such manner and sequence as Authority may require. The Authority and/or its agent shall determine the amount, quality, acceptability, and fitness of all parts of the work; shall interpret the Drawings and Specifications; shall issue any extra work orders; and shall decide all other questions in

connection with the work. The Contractor shall employ no plant, equipment, materials, or methods to which the Authority and/or its agent objects and shall remove no plant, materials, equipment, or other facilities from the site of the work without the permission of the Authority and/or its agent. Upon request, the Authority and/or its agent shall confirm in writing any oral order, direction, requirement, or determination. If any person employed on the Work by the Contractor shall appear to the Authority and/or its agent to be incompetent or to act in a disorderly or improper manner, such person shall be removed immediately upon request by the Authority and/or its agent.

- F. The Contractor agrees to use, at all times on the work, only such labor as will in no way disturb or affect labor employed by the Authority and/or other contractors on the project. The Contractor and each and every subcontractor performing work at the site of the project shall comply with all "Labor Laws" of the Government and of the State, County, and local municipality in which the project is located.

Section 1.22 CONTRACTORS' PERSONNEL

- A. The Contractor shall keep a competent resident superintendent on the Project at all times during its progress. This individual will be the Contractor's representative at the site of the Work and shall have Authority to act on behalf of the Contractor.
- B. The Contractor shall be available at all times, including nights, weekends, and holidays, and shall provide an emergency maintenance crew and a person of Authority and responsibility to act in cases of emergency such as flooding, cave-ins, etc., resulting from construction associated with the Work. The Contractor shall submit to the Developer, Authority, and Engineer the names and location of emergency personnel prior to the start of construction.
- C. The Contractor shall provide competent, suitably qualified personnel to construct the Work as required by these Drawings and Specifications. These requirements shall not operate against the employment of physically disabled persons, otherwise employable, where such persons may be safely assigned to Work which they can ably perform. The Contractor shall at all times maintain good discipline and order at the site and shall remove any employees found under the influence of drugs or alcohol from the site.

Section 1.23 ADVERTISING

No advertising will be permitted on any part of buildings, scaffolding, fences, materials, obstructions, barricades, or Work.

Section 1.24 SAFETY REQUIREMENTS

- A. The contractor shall furnish, erect, and maintain at closures, intersections, and throughout the Project, all necessary and approved barricades, suitable and sufficient red lights, torches, approved reflectors, danger signals, warning, and closure signs, provide a sufficient number of watchmen and take all necessary and legal precautions for the protection of the Work or Worker and safety of the public. All barricades, danger signals, warning signs, and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. All materials and safety devices (i.e., barricades, flashing warning, torches, reflectors, and signs) which the Contractor provides for the purpose of protecting the Work and the safety of the public and for maintaining and protecting traffic must conform to the requirements specified in. Section 901 of the current edition of the Commonwealth of

Pennsylvania Department of Transportation Specifications Publication 408, as supplemented and to the requirements specified in the current edition of PA Code Title 67, Transportation Chapter 213 - Work Zone Traffic Control which complements Sections 901.

- B. The safety provisions or applicable laws and regulations of the Pennsylvania Department of Labor and Industry and building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction," published by the Associated General Contractors of America, to the extent that such provisions are not in contradiction of applicable state and local laws. Observance of, and compliance with, said regulations shall be solely and without qualification, the responsibility of the Contractor, without any responsibility whatsoever on the part of the Authority or Engineer. The duty of enforcing such laws and regulations lies with the said Department, not with the Authority or Engineer.
- C. The provisions of the "OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970" of the U.S. Department of Labor shall be complied with in the performance of the Work. Observance of, and compliance with, said Act shall be solely and without qualification the responsibility of the Contractor, without reliance on superintendence of, or direction by, the Authority or Engineer. The duty of enforcement of the provisions of the Act lies with the U.S. Department of Labor, not with the Authority or Engineer.

Section 1.25 PROTECTION OF PUBLIC AND PRIVATE PROPERTY

- A. The Contractor shall take all necessary precautions to protect and prevent damage to overhead and underground utilities, structures, streets and driveways, culverts, street signs, fences, trees/shrubs, property markers, pins/monuments, and other existing features within or adjacent to the area of the Work.
- B. The Contractor shall comply with the requirements of PA Act 287, December 10, 1974, as last amended by PA Act 181 in December 2006 with regard to underground utilities prior to performing excavation or demolition activities.
- C. The Contractor shall be responsible for damage to public and private property and shall restore any damaged property to a condition at least as good as which existed prior to construction.
- D. The Contractor shall videotape with accompanying narrative any off-site construction Work areas along rights-of-ways or easements prior to construction. A minimum of two (2) copies, in a format acceptable by the Authority, shall be submitted to the Authority prior to commencement of any work.
- E. The Contractor shall protect all property markers and/monuments to be affected by construction until they have been properly referenced. Any disturbed property markers, pins and/or monuments shall be correctly reset following construction activities.
- F. The Contractor shall take exceptional care to avoid interference with the operation of any existing utilities. Where there is any possibility of interference or damage, the Contractor shall make satisfactory arrangements with the responsible officers or Owners of the utilities covering the necessary precautions to be used as safeguards during the performance of the Work. A sequence of construction relative to any connection to the Authority's water or sanitary sewerage systems shall be reviewed with and approved by the Authority prior to

construction of any connection.

Section 1.26 BLASTING REQUIREMENTS

- A. Blasting will be permitted except in areas where the proximity of structures, underground facilities, or public safety precludes the use of explosives. The contractor shall observe the utmost care in the use of explosives so as not to endanger life or property. Nothing in this section shall relieve Contractor of his responsibilities for damages, nor shall it result in any responsibility to Authority or Engineer.
- B. Developer/Contractor shall comply with all local, state, and Federal laws relating to the transportation, storage, handling, and use of explosives, blasting agents, and caps.
- C. Blasting requirements are more completely addressed elsewhere in these specifications; the following requirements are among those imposed on the Developer/Contractor.
 - 1. Obtain a permit from the State and, if applicable, local municipality.
 - 2. Obtain a permit from PennDOT relative to any pre-drilling and/or blasting within the State highway right-of-way.
 - 3. Submit any blasting bonds, insurance certificate (public liability and property damage), or other financial security required by Authority, PennDOT, or other involved governmental agency.
 - 4. Conduct a Pre-blasting Survey of nearby buildings relative to structural conditions and water supply wells.

Section 1.27 TRAFFIC CONTROL

- A. The Contractor must maintain safe and efficient movement of traffic in the vicinity of construction.
- B. The Contractor shall implement the Traffic Control Plan and any associated requirements as approved by Penn Dot's Highway Occupancy Permit and/or the local municipality's Road Opening Permit relative to Work in and along Highways and Streets.
- C. The Contractor shall furnish, erect, and maintain traffic cones, drums, barricades, flashing danger signal lights, directional signs and provide trained and equipped flagmen as required by the Traffic Control Plan and State and local permit requirements to restrict the movement of traffic within the construction areas and to clearly indicate the restrictions well in advance to vehicular traffic (See Section 1.24 SAFETY REQUIREMENTS).
- D. The Contractor shall consult with the Authority having jurisdiction in establishing public thoroughfares to be used for haul routes and public access.
- E. The Contractor shall provide advance notification to any parties so noted in Penn Dot's Highway Occupancy Permit or local municipality's Road Opening Permit in accordance with the required time schedule. In any event, the local municipality's Police Department shall be

notified at least ten (10) days prior to the date the Contractor desires to restrict traffic in or along any highways or roads.

- F. The Contractor shall obtain advanced approval from the Authority having jurisdiction (PennDOT, County, Township, & Borough) should it be necessary to close a road temporarily. The following parties shall be notified at least twenty-four (24) hours in advance.
1. Local Municipality Police Department
 2. Local Fire Company
 3. Local School District
 4. Local Ambulance Service
 5. Local Post Office
 6. All affected residents
- G. At least one lane must be open for traffic during non-working periods, and the Contractor must be prepared to allow passage of emergency vehicles at any time.
- H. The Contractor shall control parking of construction equipment and construction personnel vehicles to prevent interference with public traffic and parking access by emergency vehicles and the Authority's operations.
- I. The Contractor shall prevent parking on or adjacent to public streets or in non-designated areas unless prior approval is obtained from the Authority having jurisdiction (PennDOT, County, Township, and Borough).
- J. Work at all times shall be so conducted as to cause a minimum of inconvenience to pedestrian and vehicular traffic and to private and public properties along the line of work. Access must be maintained at all times to the maximum extent feasible during working periods to all crossing walks, sidewalks, driveways and entrances of adjacent properties, and other roadways open to traffic and in a satisfactory condition and to keep all fire hydrants, water valves, fire alarm boxes, and letterboxes accessible for use. In this regard, the construction and maintenance of steel plates or other decking across the trench may be necessary to reduce to a minimum interference with access to the adjacent properties.
- K. At the shutdown of work at the end of the workday, all streets shall be left in such condition whereby they can be readily opened and safely traveled in cases of emergency such as a fire or for ambulance service. Open trenches in or along highways or roads shall be safely decked during non-Work periods by the use and maintenance of steel plates or other decking, which shall have sufficient strength to safely support all traffic, including truck loads. However, plates and decking are prohibited between October 15th and April 15th, during which period the streets shall be paved during non-Work periods to accommodate plowing. Whenever it is necessary to maintain pedestrian traffic over open trenches, a timber bridge of at least three (3) feet in width and equipped with side railings shall be provided. Where the trench is so close to the curb line that the excavated material would encroach upon the sidewalk or private property, the Authority may order planking, together with other necessary lumber, to be placed to keep the sidewalk clear.

- L. When the work, including repaving, has been completed, the temporary measures of the Traffic Control Plan shall be removed, any damage caused by the installation of the temporary measures shall be repaired, and traffic shall be restored to its former condition.

Section 1.28 TEMPORARY FACILITIES

- A. The Contractor shall furnish and maintain all temporary telephone, gas, electric, water, and sewer utilities required for construction, start-up, and performance testing of the Project. All costs for providing temporary utilities shall be borne by the Contractor up to and including the date of acceptance. The contractor is not required to provide field facilities for Authority.
- B. The Contractor shall furnish and erect all necessary temporary fences required to provide adequate security for all materials, equipment, and structures throughout the project.
- C. The Contractor shall provide sanitary conveniences complying with the regulations of the Pennsylvania Department of Health or other bodies having jurisdiction therewith for the use of the workmen, and their exclusive use shall be strictly enforced. Temporary sanitary conveniences shall be removed from the project site promptly at the completion of the Work.

Section 1.29 CLEANING UP

- A. Continuously keep the work, the site, and adjacent properties free from accumulations of waste materials, excess excavation, rubbish, and windblown debris resulting from construction operations. Periodically remove waste materials, excess excavation, debris, and rubbish from the site and dispose of at legal disposal areas away from the project site.
- B. Remove grease, mastics, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from site-exposed interior and exterior surfaces of structures. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds. Restore areas disturbed by construction. Provide continuous dust control during construction.
- C. At the completion of the Work, or each major portion thereof, the Contractor shall remove surplus materials, tools, construction equipment, and machinery and leave the site clean and ready for occupancy by the Authority.

Section 1.30 TESTS AND INSPECTIONS

- A. The Authority reserves the right to inspect and test all water and sewer extensions and house connections to the Authority's system. Said inspections shall be conducted in accordance with a schedule to be mutually agreed upon by the Authority and the applicant.
- B. The Authority, Engineer, Resident Project Representative, and other representatives and personnel of the Authority, independent testing laboratories, and governmental agencies with jurisdictional interests shall have access to the Work at reasonable times for their observation, inspecting, and testing. The Contractor shall provide them proper and safe conditions for such access and advise them of the Contractor's site safety procedures and programs so that they may comply as applicable.
- C. All inspections and tests shall be performed without unnecessarily delaying the Work. The Authority shall have the right to reject defective material or quality or require its correction.

- D. If the Specifications, the Authority's instructions, laws, ordinances, or any public Authority require the Work to be specially tested or approved, the Contractor shall give the Authority timely notice of readiness of the Work for all required inspections, tests, or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspection and tests.
- E. In addition to all other tests and inspections required by these specifications, an audio-videotape of the inside of all sanitary sewer lines and two (2) copies, in an acceptable format to the Authority, shall be submitted to the Authority for review. Refer to specification Section 3.03 for detailed requirements
- F. The Contractor shall perform, or have performed, and pay for all tests required as set forth in the Specifications.
- G. If any Work that is to be inspected, tested, or approved is covered by the Contractor, it must, if requested by the Authority, be uncovered for observation. Uncovering Work shall be at the Contractor's expense unless the Contractor has given the Authority timely notice of the Contractor's intention to cover the same and the Authority has not acted with reasonable promptness in response to such notice. If any Work is covered contrary to the written request of the Authority, it must, if requested by the Authority, be uncovered for the Authority's observation, and be replaced at the Contractor's expense.

Section 1.31 DEFECTIVE WORK

- A. Prompt notice of all defective Work of which the Authority has actual knowledge will be given to the Contractor. All defective Work may be rejected, corrected, or accepted as provided in this section. Failure or neglect on the part of the Authority to condemn or reject any bad or inferior work or materials shall not be so construed as to imply an acceptance of such work or materials if such bad or inferior material or work becomes evident at any time prior to the end of the maintenance bond period.
- B. If Work is defective, or the Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform Work in such a way that the completed Work will conform to the Drawings or the Specifications, the Authority may order the Contractor to stop Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Authority to stop Work shall not give rise to any duty on the part of the Authority to exercise this right for the benefit of the Contractor or any surety or other party.
- C. If required by the Authority, the Contractor shall promptly, as directed, correct all defective Work, whether fabricated, installed, or completed, or, if the Work has been rejected by the Authority, remove it from the site and replace it with Work that is not defective. The Contractor shall pay all claims, costs, losses, and damages caused by or resulting from such correction or removal (including but not limited to all costs or repair).
- D. If within one year after the date of acceptance any Work is found to be defective, the Contractor shall promptly without cost to the Authority and in accordance with the Authority's written instruction: (i) correct such defective Work, or, if it has been rejected by the Authority, remove it from the site and replace it with Work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other Work or the worth of others

resulting there from. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the Authority may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses, and damages caused by or resulting from such removal and replacement (including but not limited to all costs or repair or replacement of Work of others) will be paid by the Contractor.

- E. In exceptional circumstances where a particular item of equipment is placed in continuous service before the Authority accepts the Work, the correction period for that item may start to run from an earlier date as established by the Authority.
- F. Where defective Work (and damage to other Work resulting there from) has been corrected, removed, or replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- G. If instead of requiring correction or removal and replacement of defective Work on the Project, the Authority prefers to accept it, the Authority may do so. The Contractor shall pay all claims, costs, losses, and damages attributable to the Authority's evaluation of and determination to accept such defective Work (such costs to be approved by the Engineer as to reasonableness).

Section 1.32 OPERATION AND MAINTENANCE MANUALS

- A. The Contractor shall furnish six (6) copies of a complete instruction manual for installation, operation, maintenance, and lubrication of each component of mechanical and electrical equipment. All copies shall be submitted to the Authority. Each instruction manual furnished shall be fixed in hard back cover or file folder, which is clearly labeled to designate the system or equipment for which it is intended with reference to the section and pages where the item is specified.
- B. Each instruction manual shall include but not be limited to the following: detailed description of the function of each principal component of the system; installation instructions; procedure for starting; procedure for operating; shutdown instructions; maintenance and overhaul instructions which shall include detailed assembly drawings with part numbers, parts list, and complete instructions for ordering spare parts; lubrication instructions which shall list points to be greased or oiled, and recommend the frequency of lubrication; safety precautions, diagrams and illustrations; test procedures; and performance data. It is intended that the manual shall be complete in all respects for all equipment, controls, accessories, and associated appurtenances.
- C. Each instruction manual shall be transmitted to the Authority according to the established schedule and prior to installation of the equipment, and all equipment shall be serviced in accordance with the manufacturer's recommendations prior to operation. A service record shall be maintained on each item of equipment and shall be delivered to the Authority prior to final acceptance of the project.
- D. Operating instructions for use by operating personnel shall be provided for each principal equipment component. The instructions shall be placed adjacent to the applicable equipment and shall be protected against weathering with a laminated plastic coating. The instructions shall include but not be limited to the following: start-up, proper adjustment, operation,

shutdown, safety precautions, the procedure in the event of equipment failure, and any other necessary items of instruction as recommended by the manufacturer of the unit.

Section 1.33 RECORD DRAWINGS

- A. The contractor shall maintain on-site one (1) copy of Drawings in which shall be recorded all field changes concurrent with construction progress to accurately show the "as-built" conditions of the constructed Work.
- B. Prior to acceptance by Authority of the Work, Developer shall provide to Authority a set of reproducible drawings showing the "as-built" conditions of the constructed Work. Each drawing shall be noted as a Record Drawing and dated along with a certification letter from Developer/Contractor stating that the Record Drawings represent a true and accurate record of the constructed Work (Authority intends to use prints of the reproducible to provide information to designers and contractors as required by the Commonwealth of Pennsylvania Act 287 of 1974 as amended). Two paper copies shall first be submitted to the Authority for review and comment. After all appropriate Record Drawings are reviewed and approved by Authority, three (3) paper copies of each drawing shall be submitted to Authority. A digital Auto CAD electronic file shall also be provided of all Record Drawings in a Release format acceptable to the Authority.
- C. All as-built features shown on Record Drawings shall be surveyed by a Registered Professional Surveyor, licensed to practice in the Commonwealth of Pennsylvania. All as-built Electrical Drawings shall be sealed by a Registered Professional Electrical Engineer, licensed to practice in the Commonwealth of Pennsylvania. Each paper copy of Drawings shall have the original seal and signature of the Registered Professional Surveyor and/or Engineer responsible for the specific Drawing.

The following statement is also required on all record drawings:

These record plans have been completed and certified by _____, as reflecting as-built conditions. Responsibility for accuracy of the plan rests with the above surveyor.

Surveyor's Signature and Certification

- D. The Record Drawings shall incorporate but not necessarily be limited to the following as built features:
 1. Sanitary Sewer Project
 - Lateral locations (stationing at the main connection, offset to R-O-W or easement)
 - Lateral cleanout locations (with survey ties to front corners of building)
 - Manhole data (location, rim & invert elevations) Original design information relating to the rim and invert elevations shall be crossed out and as-built information shall be added in parentheses.
 - As-built plans and profiles of sewer. Original design information relating to size, material, length, and slope of gravity sewers shall be crossed out and as-

built information shall be added in parentheses.

- Concrete encasements (location & length)
- Utility locations
- Location of sewers and manholes within easements

2. Water Distribution Project

- Service connection locations (stationing and length)
- Curb stop & box (with survey ties to front corners of building)
- Fire hydrant locations
- Valve locations (from fixed reference points)
- Utility locations
- Size and material of water mains
- Horizontal and vertical alignment of water mains
- Depth of cover over water mains
- Location of water mains within easements

3. Sewage Force Main Project

- Horizontal and vertical alignment of force main
- Size and material of force main
- Utility locations
- Special chambers (air release, cleanout)
- Depth of cover over force main
- Location of force mains within easements

4. Sewage Pumping Station, Sewage Treatment Facilities, Water Booster Station, Water Treatment or Storage Facilities

- Internal building as-built conditions, including electrical, plumbing, HVAC, and mechanical process equipment
- Survey location, dimensions, and elevations of manholes (including rim & invert elevations), buildings (including finished floor elevations), subsurface utilities (including depth), wet wells and chambers (including top slab, inside bottom and pipe centerline elevations),

- Survey location of site features including paved areas, utility poles, equipment and equipment pads, fence, gates, trees, and shrubs.
- Surveyed as-built topographic features, using the same elevation datum used for original plan submission.
- Location and size of electrical/communication conduits

5. All projects

Authority or Engineer's notes and sketches. Any field notes or sketches provided by the Authority or Engineer shall be scanned onto the Record Drawings. These notes or sketches will be used by the Authority to facilitate future maintenance of the facilities.

Section 1.34 TWELVE MONTHS RESPONSIBILITY

- A. Unless specifically superseded by agreement between the Developer or Contractor and the Authority, it shall be understood that the Developer and Contractor agree to furnish such material and appliances and to construct the whole work in such substantial and workmanlike manner that it shall be continuously stable and efficient, and the Contractor shall promptly make good, or replace, any or all parts of the materials or installation, including all details, which may be found to be unstable or defective in any particular, ordinary wear and tear excepted, for a period of guarantee of twelve (12) months after the whole installation has been entirely completed, tested and accepted by the Authority, except that a period of guarantee of two (2) years after acceptance by Pennsylvania Department of Transportation shall apply for restoration work within a State Highway right-of-way.
- B. The Developer shall PROVIDE a twelve (12) month guarantee, in the form of a bond, be provided from the date of acceptance of all sewerage facilities to be dedicated to the Authority. The bond shall be furnished under such conditions and form with surety as shall be approved by the Authority to guarantee the maintenance of these facilities against failure due to improper workmanship for twelve (12) months and shall be in the amount equal to fifteen percent (15%) of the cost of such improvements or Five Thousand Dollars (\$5,000) whichever is greater.

Section 1.35 TWELVE MONTHS RESPONSIBILITY NOTWITHSTANDING INSPECTION

The acceptance, after inspection by the Authority, or his representative, of any portion of the work or material, shall be subject to its freedom from the exhibition of any inherent or developed defect, or any failure to conform to these Specifications, between the time of its acceptance, and the expiration of the above-named period of twelve (12) months (two (2) years within a State Highway right-of-way).

Section 1.36 TWELVE MONTHS RESPONSIBILITY FOR DIMENSIONS

The acceptance by the Authority of any of the dimensions proposed by the Contractor shall always be understood to be with the proviso, whether stated at the time of acceptance or not, that the said dimensions shall be proved to be adequate and proper at all times until the expiration of the above-named period of twelve (12) months (two (2) years within a State Highway right-of-way).

Section 1.37 DEDICATION

- A. Developers requesting dedication of water and sanitary sewer facilities shall notify the Authority in writing of their intent to dedicate the facilities.
- B. The following information is required for the dedication of Developer constructed water and/or sanitary sewer facilities to Authority:
 - Working Punch list - Prior to final road paving, the Authority shall review the condition of the subject facilities and prepare a "Working Punch list." All testing of water and sewer facilities shall be completed and approved prior to final paving. Final Paving shall not be completed until a working punch list has been prepared and all facilities within the roadway have been repaired to the satisfaction of the Authority.
 - Final Punch list - After final road paving, the Authority will prepare a "Final Punch list." All items on the Final Punch list shall be completed and approved by the Authority prior to the dedication.
 - Legal Descriptions shall be submitted to Authority for the following:
 - Land with facilities to be transferred directly to the Authority.
 - Road Right-of-Ways with water and/or sewer facilities.
 - Easements with water and/or sewer facilities.
 - All Legal Descriptions shall have an attached sketch detailing the area described. The sketch shall be 8.5" x 11" or 11" x 17" foldout and shall have described area highlighted. After legal descriptions and sketches are reviewed and approved by Authority, three (3) copies of each (with original seal/signature) shall be submitted to Authority.
 - Record Drawings shall be submitted to an approved by the Authority. Paper copies and digital AutoCAD electronic files shall be provided in accordance with this specification.
- C. Prior to the dedication, an audio videotape of the inside of all sanitary sewer lines shall be submitted to the Authority.
- D. Prior to the dedication, the Developer shall be responsible for completing all leakage and, if applicable, water quality tests in accordance with current Authority approved methods.
- E. At the time of dedication, a maintenance bond shall be submitted to the Authority in an amount as specified in the Financial Security Agreement and in a form satisfactory to the Authority Solicitor.

Article 2.00 Special Requirements

Section 2.01 GENERAL

- A. The Contractor should plan his work to provide adequate protection during storms. Certain portions of the work may be affected during storms and floods. Provisions for preventing damage should be always made available. All work shall be always protected against damage from uplift due to high ground water levels.
- B. Streets shall not be unnecessarily obstructed. The Contractor shall take such measures as may be necessary to keep the street or road open and safe for traffic.
- C. All driveways shall be restored to a condition equal to their original undisturbed condition using the same type and quality of materials as that of the driveway restored.
- D. All curbs, gutters, and sidewalks damaged or disturbed shall be replaced with the same type of materials as the original curb, gutter, or sidewalk. The replaced curbs, gutters, and sidewalks shall be of the same shape, thickness, and surface finish as the original curb, gutter, or sidewalk.
- E. At the conclusion of work at the end of the workday, all streets shall be maintained in such a condition whereby they can be readily opened and safely traveled.
- F. The Contractor shall provide a competent and dependable person who is delegated to be readily available and have full Authority to act on behalf of the Contractor in case it is necessary to deal with any emergency situations which may arise in connection with the project during off working hours, evenings, weekends, and holidays.
- G. The use of a "HYDRA-HAMMER" for compaction of backfill will not be permitted.
- H. The use of calcium chloride additives in concrete is prohibited.
- I. No structures, fences, plantings, or trees shall be placed within Authority easements.
- J. These Specifications are for standard facilities involved with typical water and sewer extensions. Special facilities such as pumping stations, transfer stations, and water tanks will be designed and constructed directly by the Authority. Should a need arise whereby the Developer must provide such facilities, the Authority must be consulted regarding the design. The Authority may direct the Engineer to provide specifications to the Developer for the facilities to ensure standardized materials and equipment throughout the Authority's system.

Section 2.02 WATER SYSTEM DESIGN STANDARDS

- A. The basis for Design: Water systems are to be dedicated to the Authority and shall be designed, constructed, inspected, and tested at the Developer's expense. The Authority will provide the Developer with a schematic layout of the proposed water system upon which the design of the water system will be based. The water system design shall be submitted to the Authority for review and approval, and the Authority and/or Engineer shall inspect the construction. The Authority will conduct testing at the Developer's expense or may instruct the Developer to conduct all necessary tests. The design shall be in accordance with the standards herein and the review comments of the Authority. All water mains shall be designed in accordance with the latest edition of the PA Department of Environmental Protection "Public Water Supply Manual" and the latest applicable AWWA Standards.
- B. Depth of Cover: The minimum depth of cover from the top of the water main to the proposed grades shall be a minimum of 4 feet.
- C. Controls: Water systems shall be constructed with construction stakes indicating the alignment and grade of the water main.
- D. System Loops: Wherever possible, water distribution systems shall be looped. Mains shall be extended to the outer limits of the development parcel for connection to existing mains or potential future mains.
- E. Location of Mains: All mains must be in public roadways or utility right-of-way, or a water easement dedicated to the Authority.
- F. Fire Hydrants: The entire development must fall within fire hydrant coverage. Hydrants shall be spaced no more than 500 feet apart. Hydrants shall be placed at high points and as required by the Authority or local Fire Marshal.
- G. Pipe Deflection: Deflection of the pipe at the joint may be permitted upon the approval of the Engineer. The deflection cannot exceed the pipe manufacturer's maximum allowable deflection and shall be no greater than two and one-half degrees.
- H. Isolation Valves: Unless otherwise approved, isolation gate valves shall be placed at all directions in intersection piping (i.e., tee intersection, three valves, cross intersections four valves), and continuous runs of pipe shall be provided with isolation gate valves at a maximum spacing of 500 feet in commercial districts and 800 feet in other areas.
- I. Residual Pressure: Minimum residual water pressure during peak flow or fire flow shall be 20 psi.
- J. Fire Flow Rates: Minimum rate shall be 1000 gallons per minute for two hours or greater as required by local ordinances and/or I.S.O. requirements.

K. Minimum Pipe Sizes:

- 8" for street main.
 - 4" for cul-de-sac main less than 400' long (8", otherwise).
 - 6" for fire hydrant branch connection.
 - 12" or larger for transmission main as directed by the Authority
 - 1" for water services
- L. Each water customer shall have its own water service line and shall be connected to the water main with a corporation stop and a curb stop (shut off valve) and curb box. The water service from the curb stop to the corporation stop shall be at a ninety-degree angle from the water main.
- M. Customers with service lines less than 200 feet in length shall have a meter with a backflow preventer installed in the house with a remote reading registration meter on the outside wall. For services greater than 200 feet in length, the meter and backflow preventer shall be in a meter box or pit located at the property line outside of the legal right of way.
- N. Fire lines must have a backflow prevention device, in accordance with the Authority's Backflow Prevention Policy, and be separate from the domestic backflow preventer.
- O. Buildings with sprinklers that cannot be supported by a shared 1" domestic service must have a separate fire line.
- P. All dead ends, fittings, and fire hydrants shall be provided with both mechanical restraint and concrete thrust block, which shall be independently designed to restrain the pipe.
- Q. Water lines are to be designed to have a minimum horizontal separation from other utilities and structures of four (4) feet (OUT TO OUT) and with a minimum vertical clearance of 18 inches (OUT TO OUT).
- R. Water lines are to be designed to pass over sanitary sewers and sanitary laterals with a minimum clearance of 18 inches (OUT-TO-OUT).

Section 2.03 SANITARY SYSTEM DESIGN STANDARDS

- A. The basis for Design: Sanitary systems are to be dedicated to the Authority and shall be designed, constructed, inspected, and tested at the Developer's expense. The Authority will provide the Developer with a schematic layout of the proposed sanitary sewer system upon which the design of the sanitary sewer system will be based. The sanitary sewer system design shall be submitted to the Authority for review and approval, and the Authority shall inspect the construction and testing. The design shall be in accordance with the standards herein and the review comments of the Authority. All sanitary sewers shall be designed in accordance with the latest edition of the PA Department of Environmental Protection "Domestic Wastewater Facilities Manual."

- B. Depth of Cover: The minimum depth of cover from the top of the sanitary sewer main to the proposed grades shall be a minimum of 4 feet.
- C. Controls: Sanitary sewer systems shall be constructed with construction stakes indicating the alignment and grade of the sanitary sewer main.
- D. Location of Mains: All mains must be in public roadways or utility right-of-way, or a sanitary sewer easement dedicated to the Authority.
- E. Force Main Pipe Deflection: Deflection of the pipe at the joint may be permitted upon the approval of the Engineer. The deflection cannot exceed the pipe manufacturer's maximum allowable deflection and shall be no greater than two and one-half degrees.
- F. Laterals: Each sewer customer shall have its own sanitary sewer lateral. The minimum lateral size shall be four (4) inch diameter. Laterals shall not connect directly to manholes. Laterals shall connect to the main using tee wyes.
- G. Sanitary sewer lines shall be designed to pass under water mains with a minimum clearance of 18 inches (OUT-TO-OUT) wherever possible.
- H. Connections to Existing Manholes: Connections to existing manholes shall be made in such a manner as to provide a watertight installation. The Contractor shall take all necessary precautions to prevent cutting debris from entering the existing sewage flow. Sewer connections to existing manholes shall be made by carefully boring an opening no greater than two (2) inches around the new pipe. The existing bench and channel must be cut to invert to form a channel for the new pipe. A CMA Concrete Manhole Adaptor, as manufactured by Fernco, or approved equal, shall be installed, and the inside face of the gasket be filled with non-shrink hydraulic cement. The newly cut channels shall be finished with non-shrink grout and troweled to meet the existing channel.

Article 3.00 AUDIO VIDEO DOCUMENTATION – GENERAL

Section 3.01 DESCRIPTION

The Contractor shall furnish all labor, materials, and equipment necessary for audio DVD or CD recording surface features located within the zone of influence of construction operations. For projects with extensive off-site water or sewer facilities and/or within the right-of-way limits of a State Highway, the Developer or his Contractor shall engage the services of a professional electrographer actively involved with color audio DVD or CD recordings for various municipalities and construction projects similar to the work included under this Project.

Section 3.02 QUALITY ASSURANCE

- A. The Owner may make such investigation as he deems necessary to determine the ability of the Contractor or electrographer to perform the work, and the Contractor 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 the Contractor or any electrographer if the investigation fails to satisfy the Authority that such Contractor or electrographer is appropriately qualified to carry out the work specified herein. Upon rejection, the Contractor shall engage the services of another electrographer, which shall undergo the review and approval process set hereinbefore.
- B. No construction shall begin prior to the review and approval of the CDs or DVDs covering the construction area. Any coverage not acceptable to the Authority shall be refilmed at any additional charge. All CDs or DVDs and written records shall become the property of the Owner.

Section 3.03 SUBMITTALS

Two (2) complete sets of project coverage CDs or DVDs, in a format acceptable to the Authority shall be submitted to the Authority for approval. An additional copy is required for projects with work in State Highway right-of-way limits.

Section 3.04 JOB CONDITIONS

All video recordings shall be done during times of good visibility. No recording shall be done during periods of visible precipitation or when more than 10% of the ground area is covered with snow unless otherwise authorized by the Authority.

Section 3.05 PRODUCTS EQUIPMENT

A. Mobile Unit:

When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve feet (12') to ensure proper perspective.

In some instances, audio-video coverage will be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the Authority.

B. Audio-Video Recording Medium:

Audio-video recording shall be Professional and/or Industrial DVD or CD in a format acceptable to the Authority.

C. Camera:

Video output from camera(s) used must be capable of producing NTSC-525 lines/60 field/s. Resolution in the Y channel, minimum 500 TV lines at center, utilizing a bias lit beam split prism, in combination with Professional and/or Industrial charge-coupled detector (CCD) camera, for optimum color imagery and minimum lag through ten (10) foot candles, with Geometric Distortion not to exceed 1.5% of Picture Height at any point in the picture area.

D. Lighting:

The Contractor shall provide, if required, all lighting and power, therefore, to fill in all shadow areas caused by trees, signs, and other objects.

Section 3.06 RECORDED INFORMATION

A. Audio:

Each DVD or CD shall begin with the current date, project name, and municipality and be followed by the general location, i.e., name of the street or location of "cross-country" line, viewing side, and direction of progress.

B. Video:

The Engineering stationing numbers shall be continuous, be accurate, correspond to the project stationing, and include the standard Engineering symbols (for example, 14+84). This transparent information shall appear in the lower half of the viewing screen.

Below the Engineering stationing, periodic transparent alphanumeric information consisting of the name of the project, name of the area covered, the direction of travel, viewing side, etc., shall appear.

To preclude the possibility of tampering or editing in any manner, all video recordings shall, by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording, as well as the corresponding Engineering stationing numbers. The date information shall contain the month, day, and year (for example, 10/5/72) and shall be placed directly below the time information. The time information shall consist of hours, minutes, and seconds, separated by colons (for example, 10:35:18). This transparent information shall appear on the extreme upper left-hand third of the screen or as approved by the Authority.

C. Audio-Video Tracks:

The DVD or CD shall consist of both video and audio information recorded simultaneously. Tracks shall consist of original live recordings and thus shall not be copies of other audio or video recordings. Audio track shall contain the narrative commentary of the electrographer, recorded simultaneously with his fixed elevation video record of the zone of influence of construction. Provide a microphone

and mixing equipment for the narrative commentary and evaluations of the ground level remote technician whose function shall be to provide complete circumspsection of any features not visible to the electrographer and to describe in detail the extent of any damage encountered. The Engineer shall have the option of recording comments on the audio track.

Section 3.07 EXECUTION DVD OR CD COVERAGE

- A. The entire project site shall be taped. The zone of influence shall extend to 50 feet from each side of each pipeline to be installed.
- B. Taped coverage shall include all surface features located within the zone of influence of construction supported by the appropriate audio description. The audio description shall be made simultaneously with video coverage. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, and retaining walls or buildings located within such zone of influence.
- C. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, i.e., manholes on a sewer system, can be located by reference.
- D. The rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 48 feet per minute. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that during playback will produce clarity of the object viewed.

Section 3.08 IDENTIFICATION

- A. All DVD's or CD's (on the disk and on storage case) shall be properly identified by number, location and project name and municipality in a manner acceptable to the Authority.
- B. A record of the contents of each DVD or CD shall be supplied by a sheet identifying each segment in the DVD or CD by location, i.e., roll number, street or road viewing, tape counter number, viewing side, point starting from, traveling direction, and ending destination point.

Section 3.09 ADDITIONAL REQUIREMENTS FOR BLASTING

- A. Coverage shall include all surface features located within 500 feet of the blasting area and supported by the appropriate audio description. The audio description shall be made simultaneously with video coverage. Building exterior coverage shall include, but not be limited to, all masonry features of the building, such as walls, foundations, chimneys, or porches. Building interior coverage shall include, but not be limited to, all outside basement walls and flooring. Taping shall be performed twice to record "before" and "after" blasting conditions. All defects and cracks shall be dimensioned and recorded in a written log.
- B. Taping of a structure shall commence with a 360-degree pan of the exterior with the building address displayed. To maintain viewer orientation and taping integrity, the camera shall run continuously as taping proceeds from exterior view to inside taping. The electrographer shall pan and zoom in and out to control sufficiently the clarity of the objects being viewed and will not exceed a rate of more than two (2") inches per second on telephoto zoom.
- C. Visual Orientation: In order to orientate the viewer, all recorded material shall contain in the video portion a display showing the direction of North by means of an adequate number of highly visible arrows or place cards, on or near the walls, floors, and structures mentioned above.

- D. Three (3) attempts must be recorded by the electrographer to complete the video project at each location and a log sheet describing the day, time, and disposition of the contact.
- E. At no time will the Contractor be allowed to use any electrical circuits within the building structure. All taping shall be done during regular business hours unless otherwise specified by the Authority. The Contractor shall be responsible for notifying building Owners and occupants and for coordinating taping hours. The Contractor must enter and leave the property in a professional and orderly workmanlike manner and must carry photo identification.

Article 4.00 CLEARING AND GRUBBING – GENERAL

Section 4.01 DESCRIPTION

The Contractor shall furnish all labor, materials, and equipment necessary for clearing the work area of all trees, down timber, snags, brush, rubbish, all other objectionable material, and other vegetation, except leaves, grass, and weeds. All stumps and matted roots shall be grubbed.

Section 4.02 QUALITY ASSURANCE

The Contractor shall remove all obstructions within the permanent and construction rights-of-way except those indicated on the Drawings or specified to be saved or restored. If the Contractor removes extra material that is required on the Project, then all suitable material removed shall be replaced by the Contractor at his own expense. If the Contractor exceeds the clearing limits specified, he shall, if directed, restore such areas to their original condition.

Section 4.03 SUBMITTALS

Submit two (2) copies of the agreement with each property Owner releasing the Authority from responsibility in connection with the disposal of debris.

Section 4.04 JOB CONDITIONS

State and local code requirements shall control the disposal of all materials. Arrange for disposal of debris resulting from clearing and grubbing to locations outside the Authority's right-of-way and obtain written agreements with the Owners of the property where the debris will be deposited. On-site disposal or burning shall not be permitted.

Section 4.05 PREPARATION OF GROUND SURFACE

- A. Grading operations shall not be started in any area until all clearing, and grubbing have been completed. In areas where excavation is to be made, the ground shall be cleared of all living or dead trees, stumps, brush, or other objectionable material. All embedded stumps, root mats, etc., shall be removed to a depth not less than two (2) feet below the sub-grade or slope surfaces. All depressions made as the result of such removal shall be backfilled with suitable material and compacted.
- B. In areas of fill or embankment where the depth of fill or embankment is to be five (5) feet or deeper, trees and stumps shall be cut off not more than 6 inches above the existing grade. If

the fill is to be less than five (5) feet, all trees, stumps, roots, brush, root mat, and debris shall be removed completely.

Section 4.06 MATERIALS TO REMAIN

Before commencing the work, the Authority shall clearly mark trees, shrubs, or any other objects or materials which are to remain within the areas to be cleared. The Contractor shall provide fencing or other suitable protection devices, as directed by the Authority, to protect these objects from damage during the course of construction.

Section 4.07 STRIPPING AND STOCKPILING TOPSOIL

Strip topsoil to whatever depth it may occur from areas to be excavated, filled, or graded and stockpile at a location approved by the Authority for use in finish grading. The topsoil is the property of the Authority and shall not be used as backfill or removed from the site.

Section 4.08 TREE REMOVAL

- A. All individual trees, groups of trees, or bushes, shall be removed from all easements for the full width of the easement. All stumps and roots larger than three inches (3") in diameter shall be excavated and removed.
- B. Trees requiring removal or trimming of roots and branches which interfere with construction or traffic shall not be removed without written permission of the Authority.
- C. In order to minimize damage to trees that are to be left standing, trees shall be felled toward the center of the area being cleared.
- D. Transplanting of trees and pruning procedures shall conform to the latest standards of the American Association of Nurserymen.

Section 4.09 DEBRIS DISPOSAL

Materials not required on the project or retained by the Authority shall become the property of the Contractor and shall be legally disposed of off-site.

Section 4.10 RESTORATION

- A. Remove protective fences, enclosures, and guards upon the completion of the project.
- B. Repair all injuries to bark, trunk, limbs, and roots of remaining plants by properly dressing, cutting, tracing, and painting using approved arboricultural practices and materials. Replace trees, shrubs, and plants designated to be saved that are permanently injured or die during the life of the Contract as a result of construction operations with like species acceptable to the Authority.
- C. Restore any obstructions removed to facilitate construction to the condition equal to that existing before construction operations.

Article 5.00 STREAM CROSSING GENERAL

Section 5.01 SCOPE OF WORK

The Contractor shall furnish all materials, labor, and equipment necessary to install water and sewer mains across the stream.

Section 5.02 DESCRIPTION

A. The work includes, but is not limited to:

1. Construction of diversion dams and piping, sedimentation dikes, and maintenance and pumping of the enclosed work area for construction in the dry of the pipeline to the line and grade shown on the drawings.
2. Prosecution of the work in a manner so as to avoid deposition of any material of any nature in the creek outside the diversion dams.
3. Flooding of the work area, and complete removal of the diversion dams and sedimentation dikes when work has been completed.
4. The work area shall include that area of creek bed between the diversion dams that is maintained in a dry condition while the installation of the sewer pipeline takes place.

Section 5.03 SUBMITTALS

Should the Contractor propose to perform the stream crossing in a manner different than as specified, and as shown on the drawings, he shall submit to the Authority a plan and narrative depicting his method for performing the stream crossing. All plans shall be signed and sealed by a Professional Engineer registered in the Commonwealth of Pennsylvania. Submission of plans shall be at least 30 days prior to the anticipated date of the stream crossing. The plan shall include the method of crossing, erosion and sedimentation controls, soil borings, flood data information, HEC-2 analysis if the stream is to be restricted as part of the plan, narrative, and schedule for the crossing.

Section 5.04 SMALL STREAM CROSSINGS

Construct small stream crossings in accordance with the Drawings using a temporary diversion pipe and rock filtration dams or other methods approved by the DEP Bureau of Dams and Waterway Management.

Section 5.05 TESTING

The Contractor shall test the pipelines as soon as possible after the pipes have been installed and before the stream crossing has been flooded.

Section 5.06 CONSTRUCTION OF CREEK DIVERSION

The Contractor shall construct and maintain the necessary diversion dams and pipes and sedimentation dikes as shown on the Drawings. The stream crossing facilities shown on the Drawings are the minimum required to perform the work. The Contractor shall provide any

additional diversion dams, diversion pipes, and sedimentation control facilities as necessary to perform the work as specified and as shown on the drawings.

Section 5.07 DEWATERING OF THE CREEK CROSSING

- A. The Contractor shall furnish, install, operate, and maintain all pumping and other equipment required to maintain the work area free of water while construction and testing of the main take place. Adequate standby-powered pumping units shall be provided for this purpose, including reserve equipment. The Contractor shall maintain all equipment in first-class operating condition at all times.
- B. Dewatering operations shall be carried out in such a manner as to prevent boiling and detrimental under-seepage at the bottom of the excavation.
- C. The Contractor shall keep the excavation free of water while excavating, preparing the subgrade, installing pipe, placing concrete, and backfilling the trench. The Contractor shall not be entitled to extra compensation by reason of the amount of water that may leak into the work area.
- D. To help minimize siltation, all water pumped or drained from the work area shall be pumped to a sedimentation basin before being discharged back into the stream. At no time shall water be discharged directly into the stream or to any sewer manhole or inlet. In the event that pumps fail for any reason, the Contractor shall be fully responsible for all damage resulting from such failure.

Section 5.08 FLOODING OF THE CREEK CROSSING

- A. After the pipeline(s) have been installed and the trench backfilled to the existing grade, the Contractor shall flood the work area before removing the diversion dams.
- B. The Contractor shall notify the Authority in writing that he desires inspection by the Engineer and that all portions of the pipelines have been installed, cleaned, and tested, concrete placed, and that all surplus materials and construction equipment has been removed from the work area.
- C. Upon receipt of written notification, the Authority shall arrange for an inspection, and if the work is found to be complete, s/he shall notify the Contractor that the work area may be flooded. If the inspection reveals that the work is not sufficiently complete to permit flooding, the Contractor shall take immediate steps to correct all deficiencies and request an additional inspection. The Contractor shall not flood the work area until he is directed to do so by the Authority.
- D. The diversion dams, pipes, sedimentation dikes, and any other temporary construction facilities installed by the Contractor shall be removed to the finished grades of the creek bed. All materials removed shall remain the property of the Contractor and shall be properly disposed of off-site.

Section 5.09 CROSSING DETAILS

- A. All sewer mains shall be encased in concrete as indicated in the Drawings. Water mains shall not be concrete encased unless directed by the Authority. Do not backfill until the concrete has achieved its initial set and concrete work is examined by the Authority.

- B. Prior to the start of any construction, all Erosion and Sedimentation Controls must be placed as per the rules, regulations, and requirements of the Pennsylvania Department of Environmental Protection (DEP). The Contractor is advised that the DEP rules, regulations, and requirements also apply to all other work on this project outside the Stream Crossing locations.
- C. Pipe trench subgrade shall be prepared a minimum of six (6) inches below the bottom of the pipe. Unsuitable sub-grade material shall be removed and backfilled with 2A coarse aggregate. After the trench subgrade has been prepared, the sewer pipe shall be encased in Class C, 2,000 psi concrete: a minimum of six (6) inches thick around the outside diameter of the pipe as per the Detail Drawings. The pipe may be supported in the trench by the use of a solid concrete block.
- D. The Contractor may start the backfilling operation once the concrete, if any, has sufficiently set as determined by the Authority. The backfilling shall be performed so as to avoid the formation of a permanent ridge in the streambed. After backfilling is complete, the Contractor shall remove all excess material and debris from the streambed.
- E. Construction of the stream crossings shall be completed in one operation. The Contractor may not start another operation until the stream crossing is completed, the streambed restored, and the temporary crossing removed unless otherwise approved by the Authority.
- F. The Developer or Contractor is responsible for all stream crossing permits. Authority's approval of the stream crossing plan will not substitute for and is not valid without the required permits.

Article 6.0 EARTHWORK GENERAL

Section 6.01 DESCRIPTION

The Contractor shall excavate, sheet, shore, dewater, backfill, and compact all excavation and shall make all fill that may be necessary for constructing the work under this project. The above shall also include all subsurface explorations and rough grading. The Contractor shall furnish all labor, materials, and equipment necessary for the completion of the work. Excavation shall be unclassified.

Section 6.02 QUALITY ASSURANCE

- A. Employ, at Contractor's expense, soil testing laboratory to perform compaction tests. Five (5) tests shall be performed at 1'-0" depth intervals down to undisturbed soil. Conduct compaction tests at locations directed by the Authority during backfilling operations.
- B. Determine compaction in state highways and shoulders by the testing procedure contained in PTM No. 112 or PTM No. 402. Determine compaction in areas other than state highways and shoulders by the testing procedure contained in ASTM D1556 or ASTM D2922.

Section 6.03 SUBMITTALS

- A. Before proceeding with work, submit the name and credentials of retained soil testing laboratory for review by the Engineer.
- B. Submit a Statement of Compliance together with supporting data from the materials supplier attesting the composition analysis of backfill materials that meet specification requirements.
- C. Submit certified compaction testing results from the soils testing laboratory.

Section 6.04 JOB CONDITIONS

- A. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
- B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- C. The Contractor to comply with OSHA requirements.
- D. The Contractor shall cooperate with other Contractors holding contracts for certain phases of the work so as to assure the proper incorporation of or provisions for all items which will be furnished and placed by others.
- E. The Contractor shall be responsible for giving notice to the other Contractors, utility companies, etc., so that their work may be placed in ample time to prevent any delay in this work.

Section 6.05 UNAUTHORIZED EXCAVATION

Unauthorized excavation consists of the removal of materials beyond indicated sub-grade elevations or dimensions without specific direction from the Authority. Unauthorized excavation, as well as remedial work directed by the Authority, shall be at the Contractor's expense.

Section 6.06 PART 2 - PRODUCTS PIPE BEDDING MATERIAL AND SUB-BASE

Pipe bedding material for PVC pipe shall be AASHTO No. 8 coarse aggregates conforming to Section 703.2 of PennDOT Publication 408. Pipe bedding for ductile iron pipe shall be 2A coarse aggregate conforming to Section 703.2 of PennDOT Publication 408. Structural sub-base shall be 2A coarse aggregate conforming to Section 703.2 of PennDOT Publication 408. Pipe bedding for copper pipe shall be screenings or Type B #3 fine aggregate conforming to Section 703.1 of PennDOT Publication 408, or as approved by the Authority. Slag or cinders shall not be used for pipe bedding or structural sub-base.

Section 6.07 CRUSHED STONE BACKFILL

Stone backfill material for utility trenches shall be 2A coarse aggregate conforming to Section 703.2 of PennDOT Publication 408, or as required by road opening permit.

Section 6.08 SUITABLE BACKFILL MATERIAL

Shall be free from boulders, rocks larger than six (6) inches, frozen lumps, debris (bricks, masonry batts, plaster, etc.), vegetation or other organic or foreign material.

Section 6.09 FILL MATERIAL

Shall be inorganic soil, free from frozen lumps, debris, or vegetation and shall have a liquid limit not exceeding 45, and a plasticity index not less than 6 nor greater than 15.

Section 6.10 PART 3 –EXCAVATION FOR STRUCTURES

- A. The Contractor shall comply with the requirements of the PA Act 287 of December 10, 1974, and as amended, and will proceed with caution in any excavation and shall use every means possible to determine the location and extent of underground structures, utilities, conduits, etc., prior to excavation and to protect such facilities from damage or displacement during excavation. The Contractor shall be held strictly responsible for the repair and/or replacement of any structure, pipeline, or other facilities, above or below the ground which may be damaged in any way by his operations.
- B. The excavation work shall be performed on an "unclassified basis," that is, the removal of all earth or rock formations regardless of the type or hardness of such formations.
- C. The contractor shall make all the necessary excavations and fills on the premises necessary to bring the finished floors and grades to the levels shown on the Drawings, or if not so shown, then to the elevation as directed by the Authority.
- D. Excavation includes removal of any old foundations, stumps, paving, building construction or building materials that may be concealed beneath the present grade (within a building or outside of the building) and filling of any old cisterns, cesspools, wells, etc.
- E. All excavated materials shall be segregated into suitable and unsuitable materials. The suitability of all materials shall be determined by the Authority. Only suitable materials shall be used for backfilling. Unsuitable materials shall be promptly removed from the site by the Contractor.
- F. The bottoms of all excavations for foundations shall be properly leveled off and footings placed on undisturbed soil. All loose materials shall be removed, and the excavations shall be brought into approved condition to receive concrete or other material. No earth filling shall be allowed under any foundations. Excavations shall not be carried lower than required for footings and foundations. If, through an error, any part of the excavation is carried below the depth shown on the Drawings, the Contractor shall maintain the excavation and shall start the footings or foundations from the excavated level, and no extra compensation will be considered.
- G. The contractor shall notify the Authority as soon as excavations for footings or foundations are completed in order that the bearing quality of the bottoms may be inspected before concrete is poured.
- H. Protect the bottom of the excavation from frost. Do not place foundations, footings, or slabs on frozen ground.

- I. Sheet piling, wood or steel, and all bracing, shoring, or sheeting as required or necessary to conduct the work safely, retain the excavations, and complete the work, shall be furnished, and installed by the Contractor unless noted otherwise.
- J. The Contractor shall remove all water, including rainwater or subsurface water, encountered during the course of the excavation. Removal shall be by the use of pumps, drains, and other approved methods and shall keep the excavation free from water until the construction is completed and the backfilling is finished. The water shall be discharged through sediment traps to catch basins, sewers, and other drainage points as directed.
- K. The Contractor shall, at his own expense, maintain all backfilled excavations in proper condition until the end of the guarantee period following the date of the final payment. All depressions appearing in the backfilled excavations shall be promptly refilled regardless of the extent of seeding performed. The Contractor shall be responsible for any injury or damage that may result from improper maintenance of any backfilled excavations at any time during the guarantee period.

Section 6.11 TRENCH LIMITS

- A. Trenches shall be excavated to the depths and widths as approved. The sides of the trenches will be as vertical as possible. The trenches shall be excavated true to the line so that a minimum clear space of six inches (6") is provided on each side of the pipe barrel for pipes up to 3" in diameter, ten inches (10") for pipes up to 20" in diameter, and twelve inches (12") for pipes 20" in diameter and larger, to a height not less than the top of the pipe. The maximum allowable trench width shall be two feet (2') wider than the outside diameter of the pipe barrel. Where sheeting is used, the maximum width below the top of the pipe shall be measured between interior faces of the sheeting as driven, but in no case shall stringers or whaling strips be so placed as to interfere with proper compaction of stone under and around the pipe. If sheeting does not extend below a point six inches (6") above pipe as laid, the maximum width allowed shall be measured between faces of excavation below the bottom of sheeting.
- B. Where a section of the trench has been excavated to a greater depth than specified, it shall be brought to proper grade, using crushed stone.
- C. Where, in the opinion of the Authority, the grade is suitable for the foundation of work, the bottom of the trench shall be excavated flat to receive pipe bedding material, and the bedding under each joint or couplings hollowed out to allow for making joints. Trenches excavated below proper grade shall be filled to proper grade at the Contractor's expense with bedding material thoroughly rammed to ensure adequate support and stability of pipe or other structures.
- D. The Authority shall have the right to limit the amount of trench opened in advance of the completed water or sewer main. Excavation shall be completed a minimum of twenty feet (20') in advance of pipe installation. The amount of pipe laid in advance of backfilling shall not exceed one hundred feet (100'). Trench excavation in wetlands shall be limited to a length that can be excavated, laid, backfilled, tamped, and completed in one (1) working day.
- E. The Authority shall be empowered at any time to require backfilling of open trenches, and the Contractor may be compelled to stop excavation or other work temporarily. If work is

stopped on any trench, for any reason except by order of the Authority, and excavation is left open for an unreasonable length of time in advance of construction, the Contractor, shall if so directed, backfill such trench, and shall not again open said trench until he is ready to complete structure therein. If the Contractor refuses or fails to backfill such trench completely within two (2) hours of being instructed to do so by the Authority, the Authority shall be authorized to do the work and charge expense thereof to the Contractor.

- F. Where the location of a trench must be changed from the proposed Drawings due to the presence of an obstruction or other causes, the Contractor may be entitled to additional compensation.

Section 6.12 PREPARATION OF TRENCH FOUNDATION

All irregularities and cavities either in earth or rock excavation, in the bottom of trenches or tunnels, shall be filled to the required level with clean earth or other approved material and firmly compacted before pipelines are laid therein, all without extra compensation. However, where in the opinion of the Authority, the proper grade is unsuitable for foundation of the work, the bottom of the trench shall be excavated to an additional depth of six (6) inches minimum and backfilled with gravel or crushed stone to the proper elevation at the Contractor's expense.

Section 6.13 ROADWAY EXCAVATION, BACKFILL, AND COMPACTION

- A. This work consists of furnishing all labor, materials, and equipment for performing excavations for the construction of road sub-grades, including all ditches, gutters and shoulders; disposing of all excavated materials in embankments and fills; dressing, shaping, wetting, and compacting to the full width of pavement areas including shoulders; all in conformity with lines, grades, cross-sections and dimensions shown on the Drawings, as staked by or as directed by the Authority.
- B. The rough excavation shall be carried to such depth that sufficient material will be left above the designated grade to allow for compaction. Likewise, on embankments, sufficient material shall be placed above the designated grade to allow for compaction and settlement. Should the Contractor, through negligence or other faults, excavate below the designated lines, he shall replace such excavation with approved materials, in an approved manner and condition, at his own expense.
- C. The Contractor shall be responsible for and shall take all necessary precautions to protect and preserve or provide necessary temporary services for existing drainage, conduits, utilities, or similar underground structures or parts thereof. The Contractor shall also provide temporary access to the site. The Contractor shall, at his own expense, satisfactorily repair all damage to such facilities or structures which may result from any of his operations or from negligence during the period of the contract.

Section 6.14 DISPOSITION OF EXCAVATED MATERIAL

- A. The Contractor shall grub and clear surface and remove all surface materials, of whatever nature, over the line of trench and site of other structures.
- B. Excavated materials shall be classified, separated, and stored for use in backfilling, repaving, or replacing topsoil. Otherwise, replacement materials shall be furnished of equal quantity and quality, as directed, to replace the displaced material.

- C. Excavated material shall be placed so as not to interfere with traffic on the streets and driveways in an unreasonable manner. All surplus excavated materials shall be removed from the site of the work, but none shall be deposited on private property unless written consent of the property Owner has been obtained and a copy filed with the Authority.
- D. In case more material is excavated than can be used for backfilling or stored at the site without causing conflict with traffic or drainage problems, the excess material shall be removed, stored, and returned as required for re-use as backfill.
- E. The Contractor shall furnish approved equipment for transporting loose or wet material over streets or highways.
- F. The Contractor shall be responsible for any loss or damage to curbing, gutter, sidewalk, and flagstones, and to paving material through their careless removal or neglectful or wasteful storage, disposal, or use.
- G. The Contractor shall perform all necessary work for the removal of trees. No trees shall be cut down or trimmed unless approved by the Authority.

Section 6.15 ROCK EXCAVATION

- A. Rock excavation shall be accomplished by drilling and wedging or blasting as permitted. Should blasting operations in any way shatter rock below the specified grade or specified width, so that, in the opinion of the Authority, the area is unfit for foundation, such rock shall be removed, and the area backfilled with approved material, to the proper grade.
- B. All excavated rock material that is unfit for backfilling shall be immediately removed from the site.

Section 6.16 EXPLOSIVES AND BLASTING

- A. The use of explosives shall comply with Title 25, Rules, and Regulations, set forth by DEP, Subpart D - Environmental Health and Safety, Article IV-Occupational Health and Safety, Chapter 211 - Storage, Handling and Use of Explosives. Before blasting, the Contractor shall obtain State and local permits, if any, and provide copies to the Authority.
- B. Before blasting, the Contractor shall perform preconstruction audio-videotaping in accordance with Article 3.00.
- C. Before blasting, the Contractor shall conduct a survey of all water supply wells within 250 feet of the blasting area. As a minimum, the survey shall consist of monitoring the water supply wells for water level, taking water samples from each well, and performing laboratory testing of the water samples for total coliform organisms and total suspended solids. Monitoring and testing results shall be provided to the Authority prior to the start of blasting.
- D. All field blasting shall be field monitored using seismographic type equipment and shall be performed under the supervision of a blaster licensed to practice in the Commonwealth of Pennsylvania. The Contractor shall keep and submit to the Authority an accurate record of each blast. The record shall show the general location of the blast, depth, and number of drill holes, the kind and quantity of explosives used, ground velocity and displacements, and other data required for a complete record.

- E. The Contractor shall be solely responsible for injury to persons or property located within or beyond the area or scope of the project that may result from the use of explosives. The Contractor shall use heavy timbers, blasting mats, or other suitable devices to prevent damages from flying rock.
- F. Rock excavation within ten (10) feet of sewers, water, or gas mains shall be done by hand and with non-explosive methods, including hydraulic rock splitting or jackhammer, and the utmost care shall be exercised to avoid disturbance of the main. All exposed sewers and special structures shall be carefully protected from the effects of blast, and any damage to them by blasting shall be promptly repaired by the Contractor at his expense, and in no case shall the blasting be done within 20 feet of newly laid pipe or within 48 hours of placement of concrete.
- G. All explosives shall be stored and transported as directed in the State Regulations. The Contractor, prior to initiation of any drilling or blasting operations, shall thoroughly familiarize himself with all State, County, and Local Rules and Regulations pertaining to the use and storage of explosives and methods of drilling. Under no conditions shall detonation devices, firing caps, priming cord, etc., be stored or transported in proximity to explosive materials.
- H. All explosives shall be stored and transported in a secure and safe manner. All such storage places and vehicles shall display proper signs or markings and shall be in the care of a competent watchman at all times. Explosives shall be kept on the site only in such quantity as may be needed for the work being done and only during such time as they are being used.
- I. Blasting for excavation will be permitted only after securing the written permission of the Authority and after securing required blasting permits, insurance, and bonds.
- J. Should any street paving adjoining any excavation be damaged in consequence of the Contractor's blasting operations, he shall immediately cease his blasting operations and repair the damaged street paving.
- K. Prior to blasting, sufficient warning shall be given to all persons in the vicinity, and traffic shall be stopped at the proper distance from the site and controlled by flagmen.
- L. After blasting operations, the Contractor shall remove all debris, including spent detonation devices, firing caps, and priming cord.

Section 6.17 DEWATERING EXCAVATIONS

- A. There shall be provided and maintained at all times during construction of work, ample means, and devices, including all necessary equipment, power, and labor to pump, bail, or otherwise promptly remove and properly dispose of all water and/or sewage entering or found in the excavations and other parts of work. Well points shall be utilized wherever necessary to maintain dry conditions throughout working areas.
- B. All excavations shall be free of water during the construction of structures and backfilling operations. Temporary flumes, channels, or pipes shall be used to divert water from the excavation.

- C. All water from any source shall be pumped or bailed to provide a dry trench and shall be discharged in such manner as not to cause injury to work completed, damage to property, health hazards, or impediment to traffic.
- D. In no case shall water be permitted to rise into or flow through a completed pipeline unless permitted by Authority. In no case shall drainage through a completed pipeline be permitted until Authority has been satisfied that all precautions have been taken to prevent the admission of sand or other material, and in no instance shall internal pressure be permitted at any point in lines. Adequate means shall be provided at all times and continually maintained to relieve any internal pressure that might otherwise be exerted. All methods used to accomplish dewatering must be approved by the Authority.

Section 6.18 SHEETING AND SHORING

- A. All work performed and materials used for sheeting, bracing, and shoring shall be in conformity with the current requirements of the United States Department of Labor Occupational Safety and Health Administration (OSHA) requirements.
- B. Trenches shall be properly and adequately shored at all times. The prevention of accidents and protection of surrounding ground and adjacent structures is the responsibility of the Contractor. When directed by the Authority, tight wood sheeting (approved steel sheeting optional) shall be installed for the protection of the workmen, property, and the work. Voids found behind sheeting shall be immediately filled with granular material and compacted.
- C. All timbering or underpinning shall be placed or driven by men skilled in such work and shall be so arranged that it may be withdrawn as backfilling proceeds without injury to structures built or adjacent structures or properties. If in the opinion of the Authority, the material furnished for timbering excavations is not of proper quality, size, or improperly placed, the Contractor shall repair or replace it as required by the Authority.
- D. Contractor shall, upon notice, procure and place satisfactory timbering or place said timbering in a satisfactory manner. Upon his failure to do so, work may be ordered stopped until said notice has been complied with by the Contractor.
- E. Timbering in excavations may be withdrawn as the backfilling is being done, except to such extent as the Authority shall order that said timbering be left in place. The Contractor shall cut-off any sheeting left-in-place at least two (2) feet below finished grade and shall remove cut-off material without compensation, therefore.
- F. When in quicksand or soft ground or for protection of any structure or property, sheeting shall be driven to a depth below the bottom of excavation as may be required by the Authority.

Section 6.19 RESPONSIBILITY FOR CONDITION OF EXCAVATION

- A. The Contractor shall be solely responsible for the condition of all his excavations, and any slides or cave-ins shall be removed.
- B. Failure or refusal of the Authority to order the use of bracing or sheeting, to order better quality or larger sizes of timber; to order sheeting, bracing or shoring left-in-place; to give

orders or directions on methods of placing or driving sheeting, brace, or shores, shall not relieve the Contractor of any responsibility concerning the condition of excavations or his obligations under the contract. Any delay that requires keeping an excavation open longer than would otherwise have been necessary shall not relieve the Contractor from his obligation to protect the excavation properly and adequately from cave-ins or slipping or any of these obligations under the Contract relating to injury of persons or property.

Section 6.20 UNDERGROUND UTILITIES AND STRUCTURES

All utility services encountered shall be supported by timber struts or by other suitable means. Utilities or other structures located transversely across the trench will be protected from damage or displacement. It is the Contractors responsibility to contact /coordinate with affected utilities to assure each utility is supported correctly.

Section 6.21 PROTECTION OF PROPERTY AND STRUCTURES

The Contractor shall, at his own expense, sustain in their places and protect from direct or indirect injury all pipes, conduits, poles, tracks, walls, buildings, and other structures or property in the vicinity of his work, whether above or below ground. He shall replace any drainpipe, even if not used and damaged, and shall at all times have a sufficient quantity of material available for sheeting his excavations, and for sustaining or supporting any structures that are uncovered, under drained, endangered, threatened, or weakened.

Section 6.22 OBSTRUCTION SHOWN ON DRAWINGS

The Drawings show, in addition to structures to be built, certain information regarding the location of tracks, pipes, conduits, and other structures which exist along the lines of work, both at and below the surface of the ground. The Authority expressly disclaims any responsibility for the accuracy and completeness of the information given in the Drawings with regard to existing structures. Said structures are shown only for the convenience of the Contractor. The information does not relieve the Contractor of any of his obligation to protect said structures in every way as provided for in the Specifications.

Section 6.23 OBSTRUCTIONS AND MAINTENANCE OF SERVICES

- A. Any work on poles, pipes, conduits, or other structures that, in the opinion of the Authority, requires removal, realignment or change because of work to be done under the Contract will be done by the Contractor or by the Owner of the structure. The Contractor shall uncover, and support said structures within the limits of the trench.
- B. There shall be maintained at all times a continuous flow in all existing gas, water, sewer, conduit, electric power, and telephone lines, or any other pipes or drainage structures encountered in the prosecution of work under this project, whether above or below ground surface.
- C. For the prosecution of the work, the Contractor shall arrange for any relocation, temporary removal, and restoration of all utility company facilities when required or directed by the Authority.
- D. At track crossings, any expense to which the Owner of the track has made in shoring up tracks or in maintaining traffic shall be borne by the Contractor, whether same is billed directly to

him or to the Authority.

Section 6.24 MISCELLANEOUS EXCAVATION

- A. The Contractor shall do such miscellaneous excavating work as may be necessary and directed by the Authority. Such excavation shall be subject to the same conditions and requirements specified herein trench excavation.
- B. Miscellaneous excavation shall include extra excavation for any special structure or outside trench that may not be shown on Drawings or described in Specifications, where such excavation is done at the direction of the Authority.

Section 6.25 BACKFILLING AND COMPACTION - STRUCTURES

- A. No backfilling is to be done around any part of the structure, walls, piers, or columns until such parts have been inspected and the backfilling authorized by the Authority. No filling inside the building or backfilling against foundations, walls, curbs, or footings shall be done until concrete forms have been removed. Filling and backfilling inside of the building and to a point five feet (5') outside the exterior of all structures shall be installed in six-inch (6") layers and tamped solid with pneumatic tampers. Filling greater than five feet (5') outside of all structures shall be installed in layers uniformly spread and tamped and then leveled or sloped as required. No backfilling shall be done until concrete and/or masonry walls are braced. Compaction shall be 95% of maximum Modified Proctor Density under building slabs and 90% of maximum Modified Density Proctor elsewhere as determined by ASTM D1557.
- B. Compaction for Slabs on Fill: All fill under slabs on-grade shall be in accordance with the following requirements.
 - 1. Materials to be selected from an approved source and be free from debris and rock six inches (6") and larger, which shall be pulverized or removed.
 - 2. Placement of fill on frozen ground or fill which is frozen will not be permitted.
 - 3. Areas designated on the Drawings as original ground shall be rolled before any fill or embankment is placed. This shall be done with a sheep's-foot roller having a minimum pressure of 350 pounds per square inch and making four (4) passes over the area when the soil is within 2% of optimum moisture content.
 - 4. All soil fill shall be compacted to 95% of the maximum Modified Proctor Density, as determined by ASTM D1557. Fill shall be spread in horizontal layers of six inches (6") maximum compacted thickness.
 - 5. Remove debris from excavation and area to be backfilled. All rock, paving material, trees, debris, stumps, and other unsuitable backfill material shall be removed from the site by the Contractor.
- C. Any excavations (e.g., utilities, walls, footing, etc.) made within the compacted fill area shall be replaced with compacted fill as previously designated. Where compacted fill is placed adjacent to walls, the difference in elevation of the top of the fill on either side of the wall can be no more than one foot (1') or the wall shall be braced.

Section 6.26 BACKFILLING AND COMPACTION - TRENCHES

- A. Backfilling includes all refilling of excavations and the tamping and rolling required for satisfactory compaction. Backfilling shall be done as promptly as possible without damage to pipe or structure in place. Backfilling will be done following inspection and approval of the work by the Authority, and only with permission of the Authority.
- B. No part of a pipeline or other structure that needs to be tested, located, or measured, shall be filled over or around until required tests and measurements have been made or witnessed by the Authority and their permission so given to backfill. Any backfilling without authorization shall be uncovered by the Contractor at his own expense.
- C. All pipes shall be laid on an even and uniform bedding surface. The bedding shall be installed from a depth of six inches (6") below the pipe barrel. Bell holes and depressions for joints of the pipes shall be dug after the bedding materials have been properly graded. The pipe shall then be laid to its true grade and alignment. The bedding materials shall then be shovel placed and hand tamped to fill all spaces under and adjacent to the pipe to hold the pipe in its true grade and alignment during the test. The lines, grades, and joints of the pipes will be inspected before any further backfilling above the pipe is commenced. After the inspection is completed, the bedding shall be continued in layers not exceeding six inches (6") to a height above the top of the pipe as indicated on the Drawings. The materials shall be placed with hand shovels and shall be solidly rammed down.
- D. Backfill material shall be used above the bedding as shown on the Drawings. This material shall be carefully and manually deposited for an additional height of one foot (1'). The compaction shall be done for the full length of the pipe, and in such a manner as not to disturb or damage the pipe. Hand-operated mechanical tampers may be used for compaction.
- E. From one (1') foot above the top of the bedding, machine backfilling and compaction may be used. Above this level, except for the last two (2) feet, small stones not larger than six inches (6") in their greatest dimension will be permitted, but this should not be in excess of 15% of the total volume of the backfill materials in the entire depth. Such stones shall be evenly distributed throughout the entire mass.
- F. The excavated material removed from the trenches can be used for backfilling purposes, provided it meets the material classifications. In the areas where the conditions require the removal of the excavated materials, all the backfilling shall be done using crushed stone backfill. The backfilling materials should compact readily by the usual method of tamping. Unsuitable materials, such as clay that will crumble under light pressure by hand, frozen materials, ashes, cinders, tree stumps, and other organic and unsuitable materials, shall not be used for backfilling. Organic soil will not be permitted as backfill except for the top 18" of trenches located in wetlands.
- G. The materials backfilled in trenches shall be deposited in layers not exceeding eight inches (8"). Each lift shall be compacted to 95% maximum Modified Proctor Density, as determined by ASTM D1557. The degree of compaction shall be checked by the Soils Engineer, and each successive lift shall not be placed or compacted until the previous lift is inspected and approved by the Soils Engineer. The fill shall be compacted to elevations and limits indicated on the Drawings.

Section 6.27 BACKFILLING OF TRENCHES UNDER STATE, COUNTY OR AUTHORITY JURISDICTION

Backfill material used for all utility lines in State, County, Township, and Borough roads shall be as specified by these governmental agencies. Where 2A coarse aggregate or other special material is specified by the agency having jurisdiction, the Contractor shall install such backfill. The excavated material from the trench shall be removed and legally disposed of at suitable locations. The trench shall then be backfilled with the material and procedure specified by these agencies.

Section 6.28 RESTORATION OF EASEMENTS

- A. The Contractor shall take necessary precautions to protect the property, trees, shrubs, etc., in the areas adjoining the right-of-way and/or easement lines. Any damages caused during construction to such areas shall be repaired or replaced at the Contractor's expense.
- B. All trees, stumps, and debris shall be removed from the site in a satisfactory manner and disposed of at proper locations.
- C. The Contractor shall restore the area to its original condition. The restoration shall include, but not be limited to, regrading the area; placing of topsoil; seeding/sodding; replanting of shrubbery; landscaping; repair or replacement of sidewalks, driveways, and curbs; replacement of signs, lighting, mailboxes, spotlights, and sprinklers; and any damage during construction.
- D. The restoration shall commence immediately after backfilling of trenches with proper conditions for paving or planting. If the Contractor fails or neglects to commence the restoration work as specified, he shall assume all responsibilities and expenses for all damages arising out of such non-compliance.
- E. As the restoration work is completed, all surplus earth and other materials shall be disposed of in a satisfactory manner.

Section 6.29 RESTORATION OF WETLANDS

- A. Trenches located in wetlands shall be restored to the existing natural grade with suitable backfill material. The top eighteen inches (18") of all trenches in wetlands shall be backfilled with topsoil previously stripped from the trench.
- B. All excess excavated material and any other miscellaneous material shall be removed from the wetlands.
- C. No fill, materials, or debris may be stockpiled on wetlands areas, except for stripped wetlands soils.
- D. All heavy equipment shall use mats for operating and moving across wetland areas.
- E. Stockpiles shall be placed in approved locations, as close to the disturbance area as possible, and outside of the 100-year floodplain. Provide temporary stabilization of stockpile surfaces with mulch. The Contractor shall water stockpiled areas during the summer months and as directed by the Authority.

Section 6.30 ROUGH GRADING

- A. The Contractor shall rough grade all areas throughout the site to the limits shown on the Drawings, to a level at least six (6") inches below the finished grades shown on the Drawings. Banks shall not exceed 1:4 except where specifically noted. Walks shall be graded to the depth required for the placing of fill and paving material.
- B. The Contractor will be held responsible for determining the true amount of cut and fill for supplying all earth fill that may be required to accommodate the grades noted.
- C. All fills shall be placed in six (6") inch layers (compacted thickness) and shall be compacted to 95% maximum Modified Proctor Density under buildings and 90% maximum Modified Proctor Density elsewhere, as determined by ASTM D1557.
- D. After placing or removing the final layer of material, the subgrade shall be brought to a smooth, even finish conforming to the configuration of the finish grades at grass areas and to a depth as noted to receive other toppings.
- E. The maximum tolerance from the required grade at any point shall be 1½", and wherever the deviation shall exceed this limit, it shall be corrected immediately by the removal or addition of sufficient material to make it so conform before proceeding further with the work.
- F. Control grade points shall be set up and continuously maintained by the Contractor throughout the entire grading operation, and these points shall be close enough to each other to afford control of grades within the tolerances stated. They shall in no case be more than 100' apart, both longitudinally and laterally, and where the slope of finished grade is 2% or more, not more than 50' apart. The Authority may, at its discretion, require maintenance of special control wherever he may deem necessary to meet existing conditions.

Article 7.00 EROSION AND SEDIMENTATION CONTROL**Section 7.01 DESCRIPTION**

The Contractor shall provide labor, equipment, tools, materials, and services needed to accomplish work as described herein and as shown or called out on the Drawings.

Section 7.02 PART 2 - PRODUCTS MATERIALS

All materials shall be in accordance with the description herein and as shown or called out on the Drawings.

Section 7.03 PART 3 - EXECUTION PROCEDURES

- A. The Contractor shall obtain all necessary regulatory agency permits and approvals for earthmoving activities associated with the work and shall comply with the requirements of the agencies. The Contractor shall maintain at the work site a copy of the Erosion and Sedimentation Control Plan for the project. The Contractor shall implement all controls indicated on the Plan and will be responsible for implementing any additional controls necessary to protect the environment from erosion and sedimentation.

- B. The Contractor shall schedule and conduct his operations to minimize erosion of soils and to prevent silting and muddying of wetlands, streams, rivers, irrigation systems, and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities and performance of the contract work, which will contribute to the control of erosion and sedimentation, shall be carried out in conjunction with earthwork operations or as soon thereafter as practicable. The area of bare soil exposed at any one time by construction operations shall be kept to a minimum.
- C. Prior to the suspension of construction operations for appreciable lengths of time, the Contractor shall shape the earthwork in a manner that will permit storm runoff with a minimum of erosion. Temporary erosion and sedimentation control measures such as berms, dikes, or slope drains, deemed necessary by the Authority shall be provided and maintained until permanent erosion control features are completed and operative. Temporary erosion control measures will be considered as a subsidiary obligation of the Contractor during the course of his work.
- D. The Contractor shall also conform to the following practices and controls:
1. Waste or disposal areas and construction roads shall be located and constructed in a manner that will keep sediment from entering streams.
 2. When work areas are located in or adjacent to drainage facilities, such areas shall be separated from the easement by a dike or other barrier to keep sediment from entering a drainage easement. Care shall be taken during the construction and removal of such barriers to minimize the siltation of adjacent drainage facilities or streams.
 3. Pollutants such as fuels, lubricants, bitumen, raw sewage, and other harmful materials shall not be discharged into or near rivers, streams, wetlands, and impoundments or into natural or manmade channels leading thereto. Wash water or waste from concrete mixing operations shall not be allowed to enter live streams or discharged in wetlands.
 4. All applicable regulations of fish and wildlife agencies and statutes relating to the prevention and abatement of pollution shall be complied with in the performance of the contract.
 5. Immediately after earth disturbance activity ceases, the Contractor shall stabilize any areas disturbed by the activity. During non-germinating periods, mulch must be applied at specified rates. Disturbed areas that are not at finished grade and which will be re-disturbed within one year must be stabilized in accordance with temporary vegetative stabilization specifications. Disturbed areas that are at finished grade or which will not be re-disturbed within one year must be stabilized in accordance with permanent vegetative stabilization specifications.
 6. When drainage ways are crossed, they shall not be left blocked overnight if this blockage could cause siltation downstream or flooding to adjacent property. All drainage ways shall be restored to existing conditions or improved as directed by the Authority.

7. Dumping of excavated or spoil material into adjacent streams or on the banks of the stream where it may wash or slide into stream waters shall not be permitted. Dumping of excavated material, other than for stockpiling for backfilling of trenches, shall not be permitted in wetlands.
 8. Pumping of silt laden water from trenches into streams or wetlands shall not be allowed.
 9. All construction equipment shall be operated in such a manner as to prevent pollution of any streams.
 10. Temporary stream crossings will be used to convey equipment and materials from one stream bank to the other. Under no circumstances will construction equipment be permitted to cross natural stream channels.
 11. Excavated material or new backfill shall not be stored between trenches and bodies of water; rather, they shall be stored on the opposite side of the trench.
 12. All restoration work shall proceed as the work progresses and not left until end of the project.
 13. Any sediment cleaned from the erosion and sedimentation controls must be legally disposed of off-site.
- E. When it becomes necessary, the Authority will inform the Contractor of unsatisfactory construction procedures, and operations as far as erosion control and water pollution are concerned. If the unsatisfactory construction procedures and operations are not corrected promptly, the Authority may suspend the performance of the construction until the unsatisfactory condition has been corrected.

Article 8.00 BORING AND JACKING GENERAL

Section 8.01 DESCRIPTION

The Contractor shall furnish all labor, materials, and equipment required to install a steel casing for the proposed installation as shown on the Drawings. The work shall include casing installations by specified methods, design of jacking pit sheeting and shoring, excavation and backfill, maintaining the tunnel and pits free of water, furnishing and installation of the steel casing pipe, furnishing and installation of ductile iron carrier pipe, grout backfill (inside and outside), end seals, and restoration of all disturbed areas following the satisfactory completion of work and required testing.

Section 8.02 QUALITY ASSURANCE

The Contractor or Subcontractor proposing to do the work shall demonstrate to the Authority the successful completion of at least four (4) similar casing installations within the past five (5) years of comparable diameter and length.

Section 8.03 SUBMITTALS

The methods and materials for the construction of each crossing must be approved by the Authority prior to the start of construction of the crossing. The contractor shall submit his proposed construction procedures and other information as may be necessary for review by the Authority. Such submittals shall include drawings of jacking pits and method of construction prepared and sealed by a Registered Professional Engineer and a detailed narrative of proposed construction procedures.

Section 8.04 JOB CONDITIONS

- A. The Contractor shall give written notice to Authority having jurisdiction over the highway or railroad, with copies to the Authority not less than fourteen (14) days in advance of when he or his subcontractor will start work in order that work can be properly coordinated. All work shall be performed in a manner satisfactory to Authority having jurisdiction over the highway or railroad. Traffic shall be maintained at all times with safety and continuity, and the Contractor shall conduct all of his operations on or under the right-of-way fully within the rules, regulations, and requirements of the Authority having jurisdiction. The Contractor shall be responsible for acquainting himself with such requirements. The Contractor shall be responsible for traffic safety. The Contractor shall be responsible for any injury to persons and damage to property.
- B. The Contractor shall be fully responsible for the design, safety, and adequacy of the jacking and/or tunneling and for the proper construction, handling, placing, maintaining, operating, and removing of all equipment materials and related services.

Section 8.04 PRODUCTS CASING PIPE

The casing pipe shall be steel having a minimum yield strength of 35,000 psi. Pipe ends shall be beveled with a single V-groove for field welding. Pipe joints shall be butt-welded by a certified welder with a full penetration weld on the outside circumference of the pipe. If required, fittings for outside grouting shall be as shown on the Drawings. The casing pipe shall be 6-8 inches larger than the outside diameter of the carrier pipe bells.

Section 8.06 GROUT

Grout shall be a uniform mixture of 1:6 cement grouts.

Section 8.07 EXECUTION GENERAL REQUIREMENTS

- A. The steel casing shall be installed by means of the Boring or Drilling Method. All equipment and methods shall be approved by the Authority and the Authority having jurisdiction over the roadway or railroad. All supervisory and operating personnel engaged in the operation of boring or drilling equipment shall be fully qualified for such work and shall have had at least twelve (12) months of experience in the operation of the equipment being used. The casing pipe shall be installed true to line and grade as shown on the Drawings. Bored installations shall have a bored hole the same as the outside diameter of the pipe. If voids should develop or if the bored hole diameter exceeds the outside diameter of the casing, grouting or other approved methods shall be employed to fill such voids at the Contractor's expense. When augers or similar devices are used for casing pipe placement, the front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the pipe and thereby assuring that there will be no unsupported excavation ahead of the pipe. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or poor material. Plans and descriptions of the auger stop arrangement to be used shall be submitted to the Authority for approval, and no work shall proceed until such approval is obtained and the arrangement is inspected in the field by the Authority. Work started prior to this inspection will be halted and the installed casing abandoned in place.
- B. Sheeted and shored pits shall be constructed for boring or jacking the casing. The Contractor shall submit the proposed design for supporting the pit walls to the Authority for review and approval. The sheeting/shoring design shall be prepared by a Professional Engineer licensed to practice in the Commonwealth of Pennsylvania. If a jacking machine is used with an auger as a vehicle removing the material, the machine must be able to jack independently of the auger. The use of water or other liquids to facilitate casing placement and spoil removal is prohibited. Installation of the steel pipe casing shall start at the low end.
- C. The boring operation shall be continued without interruption, except to install new lengths of casing pipe. The lengths of the casing pipe shall be joined by a bevel cut full penetration welds. The joints shall be welded completely around the circumference of the pipe so as to prevent water leakage from the casing throughout its length. After the joints are formed, the welds shall be coated with a bituminous coating at least two (2) mils in thickness.
- D. If groundwater is encountered during the installation of the casing and the carrier pipe, the Contractor shall take all steps necessary to maintain dry conditions in the boring pit, including channels, water collection wells, embankments, and pumping. Extreme care must be taken by the Contractor so that soil and/or soil fines are not removed by erosion during the dewatering operation. The discharge water shall be clear. If during the dewatering operation unstable soil conditions occur, the Contractor shall take all necessary steps to

rectify the problem by stabilizing the soil. The Contractor shall provide sedimentation and erosion controls. No water pumped from excavations will be permitted to be pumped directly to sewers, inlets, or to a creek but must first be filtered through a sedimentation trap or other approved sedimentation control device prior to discharge.

- E. In the event that voids develop between the casing and the surrounding soil, or if the casing passes through rock, the outside of the casing shall be grouted by the Contractor with cement grout.
- F. After the casing has been installed, the carrier pipe shall be installed as follows:
 - 1. Unless otherwise approved by the Authority, the carrier pipe shall be installed in accordance with the Drawings. Spacers shall be installed on the carrier pipe and arranged in accordance with the manufacturer's recommended instructions to maintain the proper horizontal and vertical alignment of the carrier pipe inside the casing.
 - 2. The carrier pipe shall be properly insulated to prevent electrolytic or galvanic corrosion through contact with other metals.
 - 3. The annular space between the carrier pipe and casing pipe shall be filled with cement grout or, when approved by the Authority, fine aggregate.
- G. The ends of the casing shall be permanently sealed by a method approved by the Authority, after inspection, and after tests have been completed and accepted by the Authority.
- H. If applicable, specific requirements of PennDOT or the railroad owning the right-of-way to be crossed shall apply.
- I. The Contractor shall provide a bulkhead and sandbags on site. The contractor shall provide a stockpile of gravel sufficient to make emergency restoration of undermined areas. The contractor shall also provide lights for night work. Lights are to be aimed into the excavation and must not be directed toward roadway traffic or buildings.
- J. Where jacking is to pass through grouted soil, no jacking shall proceed until satisfactory test reports are received by the Authority, and the Authority provides written authorization to commence jacking operations.
- K. Objectionable debris shall be disposed of at approved locations, and the work areas left in a neat and clean condition.

Article 9.00 PAVING RESTORATION GENERAL

Section 9.01 DESCRIPTION

- A. The Contractor shall furnish all labor, materials, and equipment required to restore all paving removed or damaged by construction operations and place new paving as required.
- B. All work shall be done in strict accordance with regulations of the Authority having jurisdiction of the roadway (PennDOT, County, Township, & Borough).

- C. All openings or holes cut through any paving for test holes, borings, well points, or for any reason shall be replaced in accordance with these Specifications at the Contractor's expense.

Section 9.02 QUALITY ASSURANCE

- A. Use only materials which are furnished by a bulk bituminous concrete producer regularly engaged in the production of hot-mix, hot-laid bituminous concrete and is listed in PennDOT Bulletin 41, List of Commercial Producers of Bituminous Mixtures, or by a Redi-mix cement concrete producer as listed in Publication 42, List of Commercial Producers of Redi-mix concrete.
- B. Referenced Standards:
- Pennsylvania Department of Transportation (PennDOT):
 - Regulations Governing Occupancy of Highways by Utilities (67 PA Code, Chapter 459)
 - Publication 408 - Specifications, 1990 as Amended
 - Publication 27 - Specification for Bituminous Mixtures (Bulletin 27)
 - Publication 37 - Specification for Bituminous Materials (Bulletin 25)
 - Publication 213 - Work Zone Traffic Control Guidelines
 - Publication 30 - Portland Cement Concrete (Bulletin 5)
 - Publication 72 - Standards for Roadway Construction

Section 9.03 SUBMITTALS

Submit a Statement of Compliance, together with supporting data, from bituminous and aggregate suppliers attesting that the materials conform to the State Specifications.

Section 9.04 PROJECT/SITE CONDITIONS

Take measures to control traffic during repaving operations. Do not allow traffic on repaved areas until authorized by the Authority.

All paving damaged by the Contractor's operations beyond the limits of work shall be restored to its original condition at the expense of the Contractor.

Section 9.05 PRODUCTS BITUMINOUS PAVING MATERIALS AND AGGREGATES

Refer to PennDOT Publication 408 Specifications. All bituminous materials and aggregates used in paving and resurfacing are designated and shall conform to the applicable portions of the State Specifications.

Section 9.06 EXECUTION OF PAVEMENT RESTORATION IN BOROUGH OR TOWNSHIP ROADS

- A. Temporary paving must be maintained until replaced by permanent paving. Temporary paving shall be performed as shown on the Standard Details.
- B. All paving removed or damaged by construction operations shall be replaced in kind and/or repaired as specified herein. All paving damaged beyond limits herein specified, shall be replaced with new paving at the Contractor's expense.

- C. All work shall meet the requirements of the Pennsylvania Department of Transportation for replacing pavement over all excavated or disturbed areas of the improved surface of the right-of-way.
- D. All pavement restorations shall be in accordance with local municipal standards and specifications. When no local municipal standards apply, the following shall: Temporary patching shall be removed and replaced with five inches (5") of Superpave asphalt mixture design, HMA base course, 3 to <10 million ESALS, 25.0 mm mix; two inches (2") of Superpave asphalt mixture design, HMA binder course, 3 to <10 million ESALS, 19.0 mm mix; and 1½ inches (1½ ") of Superpave asphalt mixture design, HMA wearing course, 0.0 to <0.3 million ESALS, 9.5 mm mix. The base course shall be flush with the surface of the existing base coarse pavement. The base coarse shall extend a minimum of one foot (1 foot) (cutback 5" deep and 1' wide into the existing base coarse, and or sub-base) on each side of the original excavation.
- E. The placing of bituminous material for base and surface courses of permanent pavement replacement may be terminated at any time between October 15 and October 31 and shall not be resumed prior to April 1st or later, as determined by the Authority, depending upon PennDOT 408 Standards and or weather conditions. Bituminous material for base and surface courses of permanent pavement replacement shall not be placed when the air temperature is 40 degrees F. or lower; nor when the temperature of the pavement, base, or binder on which it is to be placed is 40 degrees F. or lower, as determined by the Authority.
- F. At joints between existing pavements and repaving work, the edges of existing pavements shall be cut back parallel with the trench at right angles, neatly trimmed, and approved by the Authority. An application of Class AC-20 asphalt cement shall be provided at all locations where new bituminous pavement joins existing bituminous pavement; no separate or additional payment will be made for this work.

Section 9.07 PAVEMENT RESTORATION IN STATE HIGHWAYS

- A. All paving removed or damaged by construction operations shall be replaced as specified. All paving damaged beyond the limits specified shall be replaced with new paving at the Contractor's expense.
- B. Prior to the installation of new pavement, the existing sub-base adjacent to the trench and trench backfill shall be compacted as specified in PennDOT Publication 408, Section 350.3(e).
- C. Base course cement concrete shall conform to PennDOT Publication 72, Standards for Roadway Construction, RC-20, RC-26, and RC-27, and Publication 408, Section 301. The base course concrete pavement shall be dowelled into the existing concrete pavement along the longitudinal joint and at each end of the new pavement. For trenches perpendicular to the roadway, the existing cement concrete pavement shall be cut back, and the new base course concrete installed as specified in PennDOT Publication 72.
- D. The bituminous concrete base course and wearing course shall not be installed until the cement concrete base course has developed a minimum compressive strength of 3000 PSI as determined by compressive tests made on cylinder specimens, in accordance with Pennsylvania Test Method No. 604. When the base course cement concrete has achieved the required compressive strength, the bituminous base course and wearing course shall be installed, extending one foot (cut back 12" wide into the existing bituminous pavement) on

each side of the base course concrete. The existing bituminous pavement shall be squared so that patch boundaries are either parallel or perpendicular to the trench line. A tack coat of type E-1 bituminous material shall be applied to the concrete prior to the placement of the bituminous paving.

- E. All work shall meet the requirements of PennDOT for replacing and patching pavement, over all excavated or disturbed areas of the improved surface, within the right-of-way.

Section 9.08 REPLACEMENT OF DRIVEWAYS, CURBING, AND SIDEWALKS

- A. Curbing and sidewalks that have been damaged or removed during construction shall be replaced in kind as shown on the Drawings. All joints between the existing curb and sidewalk and replacement work shall be saw cut at right angles and neatly trimmed. Provide ¼" pre-molded expansion joint material between old and new joints.
- B. For bituminous paved residential driveways, the replacement paving shall consist of a crushed stone base course and a bituminous concrete surface course. The base course shall not be less than eight inches (8") thick after compaction, and the top surface thereof shall not be less than four-inch (4") below the surface of the adjacent existing paving. The bituminous concrete surface course shall consist of a four-inch (4") thick wearing course of ID-2A bituminous concrete. The top surface shall be flush with the surface of the adjacent existing paving.
- C. Cement concrete residential driveways shall be replaced by the Contractor using Class "A" concrete conforming to the requirements specified in PennDOT Publication 408, Section 704. The replaced driveway shall be of the same thickness, workmanship and surface finish as the original driveway unless otherwise required by the Authority.

Section 9.09 TESTING

- A. Obtain a minimum of one 6" diameter core sample for every 500 linear feet of permanent paving, or fraction thereof, for a test of the depth of bituminous material courses.
- B. Take core samples at locations as directed by the Authority after final compaction rolling.
- C. Bituminous or cement concrete courses deficient more than ¼-inch from the specified depth in any one sample, or uniformly more than 1/8-inch in three or more samples, shall be removed and replaced to the correct depth.
- D. Refill and compact test holes with material acceptable to, and under direction of, the Authority.

Article 10.00 MANHOLES, VAULTS, AND COVERS GENERAL

Section 10.01 DESCRIPTION

The Contractor shall furnish and install precast reinforced concrete manholes and vaults as indicated on the Drawings. All precast structures shall be of the same manufacturer and shall be subject to the

Authority's approval.

Section 10.02 SUBMITTALS

- A. Submit certified dimensional shop drawings and manufacturer's product data on precast sections and bases, frames and covers, steps, resilient pipe-to-manhole connection gasket, and joint sealant compound.
- B. Submit a Statement of Compliance together with supporting data from the materials supplier attesting that the materials meet or exceed specification requirements.

Section 10.03 QUALITY ASSURANCE

- A. Design loading shall include dead load, live load, impact, loads due to water table, handling stresses before and during installation, and any other loads indicated on the Drawings. Live loading shall be for A-16 per ASTM C890. A live load shall be considered as that load that produces the maximum shear and bending moments in the structure.
- B. All manhole steps furnished for the project must be acquired from the same manufacturer, and the manufacturer must be approved by the Pennsylvania Department of Transportation and listed in PennDOT Publication No. 35, Bulletin 15.

Section 10.04 PART 2 – PRODUCTS MATERIALS

- A. Crushed stone sub-base shall be 2A coarse aggregate in accordance with PennDOT Publication 408. Slag-based sub-base and backfill materials will not be permitted.
- B. Concrete: Refer to Section 03010 - Concrete for Utility Construction.
- C. Joint Sealant Compound: Provide a double ring of preformed sealing compound conforming to ASTM C990, so that the joint will remain watertight under all conditions of service, including movement due to expansion, contraction, and normal settlement. Sealant compound shall be "Butyl-Lok" as manufactured by A-Lok Products, Inc., or approved equal, which shall contain a moisture insensitive epoxy resin, capable of bonding concrete and masonry surfaces down to 32° F.

Section 10.05 MANHOLES AND VAULTS

- A. Precast concrete manholes, riser sections, and bases shall be manufactured in accordance with ASTM C478. Manholes shall have an internal diameter of four feet unless otherwise noted on the Drawings. The cone section shall be an eccentric type with a minimum 24" access opening.
- B. Precast vaults shall be manufactured in accordance with ASTM C913. Openings for hatches and sumps shall be as indicated on the Drawings.

Section 10.06 APPURTENANCES

- A. Manhole Frames and Covers: Grey cast iron conforming to ASTM A48 Class 30 or better. Contact surfaces shall be machined and matched, and the frames and covers shall conform to the details shown on the drawings. All manhole frames and covers shall be HS-20 load rated.
- B. They shall be smooth, free from scale, lumps, blisters, cracks, holes, swells, and cold shuts, and other imperfections. Frames and covers shall be factory coated with one coat of water-based asphaltic paint with a smooth finish. The manufacturer's name, country of origin, product number, and date of manufacture shall appear on the casting. Covers shall fit the

frame in any position. The letters "DANGER KEEP OUT" and "NORTH WALES" shall be cast around the edge of the cover in two-inch (2") high letters, as shown in the details. The letters "SANITARY SEWER" shall be cast in the center of the cover in one inch (1") high letters as shown on the details. The standard frame and cover shall be East Jordan Iron Works Catalog No. 1045Z and 1040AGS. Watertight assembly shall be East Jordan Iron Works Catalog No. 1045ZPT. All manhole frames and covers shall be HS-20 load rated.

- C. **Manhole Inserts:** Manhole inserts shall be provided for standard manhole frames located within roadways and shall conform to the dimensional details shown in the drawings for standard manhole frames and covers. They shall be made from a "durable" High-Density Polyethylene Copolymer material that meets ASTM Specification Designation D-1248 Class A, Category 5, Type III, as supplied by Parson Environmental Products, or approved equal. Manhole inserts shall incorporate two 3/16" holes 180-degrees apart, approximately 1" from the top of the insert to allow for ventilation. They shall have a corrosion-resistant nylon strap installed for easy removal and re-installation into the manhole frame.

Manhole steps shall meet one of the following specifications:

- Aluminum alloy 6061-T6 or plastic-coated steel.
 - Plastic coated steel: ASTM A615, Grade 60 deformed reinforcement bar, coated with copolymer polypropylene plastic conforming to the requirements of ASTM D2146, Type II, Grade 43758.
- D. **Resilient Pipe Connection Gasket:** Conforming to ASTM C923 and integrally cast into manholes as indicated on the Drawings. The gasket shall be A-Lok as manufactured by A-Lok Products Corporation of Tullytown, PA; or equal.
- E. **Access hatches in vaults** shall be ¼" thick diamond checkered aluminum plate cover designed for a minimum 300 pounds per square foot loading. Hatches shall be provided with channel frame and drainpipe discharging to the ground. Hatches shall be in accordance with the dimensions shown on the Drawings. Furnish hatches with heavy bronze hinges, stainless steel inside a snap lock, and removable key-wrench lifting handle. Hatches shall be Bilco or approved equal.

Section 10.07 PROTECTIVE COATINGS

All outside surfaces of manholes and vaults shall receive two (2) coats of Koppers, 300-M epoxy coating or approved equal, with a minimum dry film thickness of 8 mils each for a total dry film thickness of 16 mils. The concrete surfaces shall be cleaned and free from all loose concrete or soil particles before the application of any coatings. The coating shall be placed on entire exterior surfaces from the top of the bottom slab to the bottom of the frame and cover. The protective coating may be applied in the shop.

Section 10.08 PART 3 - EXECUTION INSTALLATION

- A. The Contractor shall provide an excavation of sufficient size to accommodate the outside dimensions of the structure as shown on the Drawings. Prior to setting the unit, the Contractor shall prepare an 8" minimum base of compacted 2A stone suitable for receiving the structure. The base material shall be compacted and leveled to the elevations shown on the Drawings.

- B. The Contractor shall provide sufficient labor and equipment to unload and place the units. Should rental of a crane be required for unloading and setting the unit, it shall be coordinated with the manufacturer's dispatch office in sufficient time to acquire the equipment.
- C. The bases for manholes shall be precast. The inlet and outlet pipes shall be set to proper grade, with their ends flush with the inside of the manhole prior to placement of concrete.
- D. All precast sections shall be lifted and moved by use of suitable lifting slings and lugs to prevent damage to the precast joint edge. If minor damage occurs to the precast sections, such damage will be repaired in the presence of and to the satisfaction of the Engineer.
- E. All joints between sections shall receive a 1" equivalent diameter joint sealant. One layer of tape shall be applied to both inside and outside flanges of the manhole section groove before lowering the precast unit in place. This should be done in such a manner that when the modules are pressed together, a small amount of excess bonder is forced out of the joint area evenly. If no bonder is forced out of the joint area, immediately pull apart the top section and repress the units together.
- F. Pipes entering precast sections shall be set securely in the opening provided to the correct line and grade shown on the Drawings. Concrete shall be placed under the pipes for a minimum of three (3) feet from the manhole wall or within six (6) inches of the pipe joint.
- G. Leveling the manhole sections by use of wedging or placing shims will not be permitted. Manholes shall not be backfilled without the permission of the Authority or Engineer.
- H. Manholes shall be constructed as promptly as practical to coincide with the adjacent sewer pipe construction. If the construction of the manholes is unnecessarily delayed, the Authority shall have the Authority stop trenching and pipe laying until manholes are constructed to complete sections of the sewer.
- I. The top of all precast manholes shall be brought to proper grade for receiving manhole frames by adding concrete grade rings. The joints between these rings shall be constructed to be watertight and shall meet the specifications for joints as specified above. A maximum of five (5) rings may be constructed above the cone.
- J. Precast grade rings shall meet the requirements of ASTM C-478 with 4000 psi concrete. The grade rings shall be 8" wide x 2" thick and shall be manufactured in half-circular sections for handling convenience. Holes shall be provided in the grade ring at suitable locations to receive anchor bolts. Grade rings shall be laid in a minimum 1/8" thick (1/8" thick after spreading) of Butyl-Lok sealant or approved equal. The application shall be by hand or trowel.
- K. Construct drop connections as indicated on the Drawings.
- L. All manholes as indicated on the drawings shall be provided with a short piece of pipe, approved stopper, and plug for future connections. Where future drop connections are to be made, complete vertical drop connections shall be installed. The plugs and stopper shall be set in 1:2 cement mortar. Proper support shall be provided for the piping outside the manhole. The opening inside and outside the manhole shall be filled with cement mortar to provide a neat watertight connection.

M. Doghouse manholes shall be constructed per the Drawings.

Section 10.09 MANHOLE TESTING

- A. The testing equipment shall be an NPC Manhole Vacuum Tester as supplied by NPC Systems, Inc., Milford, NH, or approved equal.
- B. Manholes shall be vacuum tested using the following procedure:
 1. All manholes shall be tested after manhole is brought to final grade and castings attached.
 2. Plug all sewer openings, taking care to securely brace the plugs and the pipe.
 3. Connect the vacuum pump to the outlet port with the valve open.
 4. Draw a vacuum of 10" of mercury and close the valve. Start the test.
 5. Determine the test duration for the manhole from the following Table:

VACUUM TEST TABLE

Manhole Depth (ft.)	Manhole Diameter and Test Period (Sec.)		
	48 Inch Diameter	60 Inch Diameter	72 Inch Diameter
0-10	60	90	120
10-20	90	120	150
20-30	120	150	180

6. Record the vacuum drop during the test period. If the vacuum drop is greater than 1.0" of mercury during the test period, repair and retest the manhole. If a vacuum drop of 1" of mercury does not occur during the test period, discontinue the test; the manhole will be accepted.
- If the manhole fails the initial test, the Contractor shall locate any leaks and make proper repairs. Leaks may be filled with a wet slurry of accepted quick-setting material.

Article 11.00 UTILITY PIPE AND FITTINGS GENERAL

Section 11.01 DESCRIPTION

The Contractor shall supply all necessary labor, materials, and equipment for the installation and testing of water mains, water services, sanitary sewer mains, sanitary sewer force mains, and low-pressure sewage force mains and lateral piping as indicated on the Drawings.

Section 11.02 QUALITY ASSURANCE

- A. Materials contaminated with gasoline, lubricating oil, liquid or gaseous fuels, aromatic compounds, paint solvent, paint thinner, or acid solder will be rejected.
- B. Pipe strengths specified shall be provided unless otherwise indicated on the Contract Drawings. Pipe fittings shall be of the same strength rating as the piping on which they are installed.

Section 11.03 SUBMITTALS

- A. Submit a Statement of Compliance, together with supporting data, from each product supplier attesting that the pipe, pipe fittings, joints, joint gaskets, and lubricants meet or exceed specification requirements.
- B. Submit manufacturer's instructions for installation of adapters and for assembly of mechanical, push-on, and compression type joints, including the manufacturer's maximum recommended deflection per joint. Submit tightening torque requirements for anchor studs, set screws, and bell bolts.

Section 11.04 PRODUCT HANDLING, DELIVERY, AND STORAGE

- A. A packing list shall accompany every delivery made to the site. The absence of such a list may cause refusal of shipment. The packing list shall contain complete information, including customer's order number, contract number, truck number, truck routing, kind and class of pipe, diameter, weight per pipe, length of pipe, and date or other plant identification of the particular lot of pipes contained in the shipment. A copy of the packing list shall be submitted to the Authority as soon as practicable after the delivery of the pipe to the job site.
- B. During loading and unloading, care shall be taken in handling all pipe and fittings so as not to damage in any way the exterior coating or the lining. Under no circumstances shall a pipe or fitting be dropped. In unloading, mechanical equipment should be used whenever possible.
- C. The hook-sling method of lifting pipe, in which hooks, or similar devices are inserted into each end of the pipe for lifting, will not be permitted. One acceptable method would be the use of the single or double sling, which is placed around the barrel of the pipe. Pipe being unloaded on skids shall not be rolled or skidded against pipe already on the ground.
- D. PVC pipe shall be protected from exposure to ultraviolet light.
- E. Pipe may be strung along the alignment where approved by the Authority. Do not place materials on private property without written permission from the property Owner.

Section 11.05 PRODUCTS DUCTILE IRON PIPE FOR WATER MAINS

- A. Pipe shall conform to ANSI A21.51/AWWA C151 Class 52. Furnish pipe with double thickness cement mortar lining and seal coat in accordance with ANSI A21.4/AWWA C104. All piping shall have gasketed push-on type and/or mechanical joints conforming to ANSI A21.11/AWWA C111.
- B. Fittings shall be standard or compact size and of ductile iron in accordance with ANSI A21.10/AWWA C110 (full body fittings) and ANSI A21.53/AWWA C153 (compact fittings). All fittings shall be cast from Ductile Iron Grade 70-50-05. Fittings shall have a minimum working pressure of 350 psi. The fittings shall be cement lined on the inside and have a Petroleum - Asphaltic Coating on the outside in accordance with AWWA C104 / ANSI A21.4-95, or be coated inside and out with 6-8 mil nominal thickness fusion bonded epoxy conforming to the requirements of ANSI/AWWA - C116/A21.16. Provide mechanical or push-on joints for sewage force main piping. Furnish fittings with double thickness cement mortar lining and seal coat consistent with pipe.

- C. All ductile iron pipes and fittings located inside structures shall be flanged. Flanged ductile iron pipe shall conform to ANSI A21.15/AWWA C115 Class 53. Flanges shall be flat-faced conforming to ANSI B16.1 Class 125. Raised face flanges will not be permitted. Gaskets shall be full-faced rubber, 1/8" thick, conforming to ANSI A21.10/C110. Nuts and bolts for flanged joints shall be low alloy steel conforming to the requirements of ANSI B16.1
- D. All pipe and fittings located inside structures shall be primed with an epoxy polyamide exterior coating minimum 4 mils DFT (TNEMEC Series 66, or equal).
- E. Prior to delivery, proof of each piece of pipe being Ductile Iron must be provided. This may be done by Ring Cuts from each pipe, by means of the Ball Impression Test on each pipe, or by an approved equal method.

Section 11.06 DUCTILE IRON PIPE FOR GRAVITY SEWER MAINS

- A. Pipe shall conform to ANSI A21.51/AWWA C151 Class 50. Furnish pipe with double thickness cement mortar lining, and seal coat in accordance with ANSI A21.4. All piping shall have gasketed push-on type joints conforming to ANSI A21.11/AWWA C111.
- B. Fittings shall be ductile iron or gray iron in accordance with ANSI A21.10/AWWA C110 and ANSI A21.11/AWWA C111 Standards. Furnish fittings with double thickness cement mortar lining and seal coat consistent with the pipe.

Section 11.07 POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPE

In areas with corrosive soils or stray current, all pipes, fittings, and appurtenances shall be installed with polyethylene encasement. In the event the Drawings do not indicate any encasement or the limits of the encasement, the decision of the Authority shall determine the location where the encasement shall be used. All costs related to soil sampling, analysis, and inspection shall be borne by the Contractor.

The polyethylene encasement shall be 8 mils thick and installed in accordance with Method A of ANSI A21.5/AWWA C105.

Section 11.08 COPPER TUBING FOR WATER SERVICES

- A. Tubing: ASTM B88, Seamless, Soft Temper, Type K
- B. Fittings for copper tubing shall be cast bronze with flared or compression-type joints. Soldered joints will not be permitted.

Section 11.09 PVC PIPE FOR GRAVITY SEWER MAINS AND LATERALS

- A. Pipe and fittings shall conform to ASTM D3034, SDR-35 for mains and SDR-26 for laterals and building sewers.
- B. Elastomeric seal material shall comply with the requirements of ASTM F477. Joints shall be designed in accordance with ASTM D3212.
- C.

Section 11.10 PVC PIPE FOR SEWAGE FORCE MAINS

- A. Pipe and fittings shall conform to ASTM D2241. All joints shall be push-on type using flexible elastomeric seals meeting the requirements of ASTM D3139. Elastomeric seal material shall be in accordance with ASTM F477.
- B. The pressure class rating to be used for pipe and fittings shall be approved by the Engineer based on case-specific calculations provided for the project by the Developer. The minimum rate pipe and fittings that will be accepted are SDR 26 (160 psi pressure rating), DR 18 (150 psi AWWA C900 pressure class).

Section 11.11 PVC PIPE FOR LOW-PRESSURE SEWAGE FORCE MAINS

- A. Pipe and fittings shall conform to ASTM D1784, D3915, and ASTM D2241 – SDR 21. All joints shall be push-on type using flexible elastomeric seals.
- B. Elastomeric seal material shall comply with the requirements of ASTM F477. Joints shall be designed in accordance with ASTM D3212.
- C. All fittings shall be Iron Pipe Size (IPS) manufactured in one piece of injection-molded PVC compound meeting ASTM D1784. Fittings shall be Class 200 and conform to the requirements of SDR 21.
- D. Lateral cleanout fittings shall be Schedule 40 PVC.

Section 11.12 HDPE PIPE FOR LOW-PRESSURE SEWER

- A. High-Density Polyethylene (HDPE) pipe and fittings shall conform to ASTM D3035 and ASTM F714 – SDR 11. All joint connections shall be made using compression fittings conforming to ASTM D3035 or electro-fusion fittings conforming to ASTM F1055.
- B. All fittings shall be Iron Pipe Size (IPS) manufactured from polypropylene compound. Fittings shall have outside O-ring sealed compression ends as manufactured by Cepex, or approved equal. Buried solvent weld joints will not be permitted.

Section 11.13 UNDERGROUND SANITARY SEWER DETECTION TAPE

Detection tape shall be a minimum six (6) inches wide by 4 mils thick continuous metallic colored ribbon with the wording of "CAUTION –SEWER LINE BURIED BELOW."

Section 11.14 PART 3 – EXECUTION PREPARATION

- A. Perform trench excavation to the line and grade indicated on the Drawings and as specified in Article 6.
- B. Provide pipe bedding material around the pipe as specified in Article 6 and as shown in the Standard Detail Drawings. Place aggregate in a manner to avoid segregation and compact to the maximum density so that the pipe can be laid to the required tolerances.

Section 11.15 PIPE LAYING

- A. Pipe placement and alignment shall be accomplished only in the presence of the Authority. Adequate and suitable equipment and appliances for safe and convenient handling and laying of pipe shall be used. The Contractor shall give ample notice of the time scheduled for the pipe laying and inspection.
- B. Prior to being lowered into the trench, each pipe and fitting shall be carefully inspected, and those not meeting specifications, or which are otherwise defective shall be rejected and removed from the project. Any section of pipe that is laid and found to be defective shall be taken up and replaced with a new pipe at no additional cost to Authority.
- C. If in the opinion of the Authority, the materials furnished or the methods of installation are not in accordance with the Specifications or accepted practices for that type of work, such work may be stopped by the Authority.
- D. Pipe shall be laid true to grades as shown on the Drawings. Each section of pipe shall rest on the pipe bed for the full length of its barrel, with recesses excavated to accommodate bells and joints. Any pipe which has its grade or joints disturbed after laying shall be taken up and re-laid. The pipe sections shall be inspected, and the interior and ends of all pipes will be cleaned before lowering into the trench. During construction, the Contractor shall use all precautions to keep the pipeline clean and clear of deposits and free from injury until finally inspected and accepted. The mouth of the completed pipeline shall be properly closed, at all times, with an expanding rubber plug or approved device, except when pipe laying is in progress.
- E. Pipe shall be laid so that when completed, the interior bore will conform accurately to grades and alignment indicated by the Drawings or as directed by the Authority.
- F. Before joints are made, each pipe shall be well bedded, and no pipe shall be brought into position until the preceding length has been thoroughly secured and placed. Coupling or bell holes shall be dug sufficiently large to ensure the making of a proper joint.
- G. The maximum length of pipe for all connections to precast manhole bases shall be 6 feet. The maximum length of pipe for all connections to poured-in-place bases and connections to existing manholes shall be 2 feet.
- H. The excavation into which the pipe is being laid shall be kept free from water, and no joints shall be made underwater. Water shall not be allowed to rise in the excavation until joint is complete. Care shall be used to secure water tightness and to prevent damage to joints during backfilling. All pipe joints shall be watertight within allowances established by these Specifications.
- I. No pipe shall be laid upon a foundation into which frost has penetrated, nor any time when the Authority shall deem that there is a danger of formation of ice or penetration of frost at the bottom of excavation. Where the foundation is unstable or consists of rock a stone or gravel foundation shall be placed and tamped to form an acceptable bed for the pipe.
- J. Where sanitary sewer pipe crosses under water or gas lines, 18" of vertical separation shall be maintained. Where 18" of vertical separation cannot be maintained, the sanitary sewer shall be concrete encased 10 feet on either side of the crossing. Refer to the Standard Detail

Drawings for concrete encasement requirements. Also, when crossing water or gas lines, sewer joints shall be equidistant and as far as possible from the water or gas lines.

- K. If pipe must be cut to fit as closing pieces, such cuts shall be evenly and squarely made in a workmanlike manner with approved equipment. Injury to linings or coatings shall be satisfactorily repaired.
- L. Where pipe is laid on a radius or curvature, each section of pipe shall be deflected at its joint equally with each adjacent pipe. The maximum permitted deflection is one-half the manufacturer's allowable deflection.
- M. The minimum slope of 8" gravity sewers shall be 0.005 feet per foot.

Section 11.16 STREAM CROSSINGS

- A. Prior to the start of any construction, all Erosion and Sedimentation Controls must be placed as per the rules, regulations, and requirements of the Pennsylvania Department of Environmental Protection (PA DEP) and local County Conservation District. The Contractor is advised that the PA DEP rules, regulations, and requirements also apply to all other work on this project outside the Stream Crossing locations.
- B. Stream crossing specifications are further set forth in Article 5.00 of these specifications.

Section 11.17 WATER SERVICE INSTALLATION

- A. All new water service connections shall be 1" diameter unless otherwise noted on the Drawings. Provide each water service connection with a corporation stop and curb stop as shown on the Drawings and as specified in Article 11. The service connection beyond the curb stop shall be the responsibility of the consumer.
- B. All existing water service connections requiring repair or replacement may be repaired or replaced using the existing diameter service pipe provided that the use of the structure being served has not been changed. The minimum diameter service line for existing residential use shall be ¾."
- C. The service line extension must be laid in a straight line at right angles to the street and at a depth necessary to secure proper alignment and avoid obstacles. Three feet six inches (3.6") of cover shall be maintained for the service piping. Service pipe located within a road right-of-way shall be bedded and backfilled in accordance with Article 6.00 of these Specifications.
- D. All service connection piping 100 feet in length or less shall be installed in continuous runs from the corporation stop to the curb stop and from the curb stop to the ball valve located inside the structure. Buried couplings shall be prohibited. A meter box at the property line shall be required for service piping longer than 200 feet.
- E. Service connections at the main shall be made in accordance with the table, and where service clamps are required, they shall be Ford stainless steel tapped repair clamps or approved equal. Band, lug, tap, nuts, and bolts shall be 18-8 type 304 stainless steel. The gasket shall be gridded virgin SBR compounded for water service in accordance with ASTM D2000. An engagement of three full threads is required on connections where no service clamps are used.

Pipe Diameter	Size of Tap			
	1 Inch	1 ½ Inch	2 Inch	4 Inch
4 Inch	DT	SC	SC	TS SS
6 Inch	DT	SC	SC	TS SS
8 Inch	DT	DT	SC	TS SS
10 Inch	DT	DT	DT	TS SS
12 Inch	DT	DT	DT	TS DI
16 Inch or Larger	DT	DT	DT	TS DI

DT= Direct Tap

SC= Service Clamp (Stainless Steel repair clamp w/tap)

TS SS= Tapping Sleeve-Stainless Steel

TS DI= Tapping Sleeve Ductile Iron

Section 11.18 CRADLES AND ENCASEMENTS

Provide concrete cradles and encasement for pipeline where indicated on the Contract Drawings.

Section 11.19 WYE BRANCHES

Install tee wye branches at locations as shown on the Drawings concurrent with pipe laying operations. Use standard fittings of the same material and joint type as the pipeline into which they are installed.

Section 11.20 SANITARY LATERAL INSTALLATION

- A. All laterals are to be 4" pipe unless otherwise noted. The pipe is to conform to Section 2.03 of these Specifications.
- B. This specification is for laterals serving new construction meeting the Uniform Building Code. For repair of laterals serving buildings that require traps in the lateral, the Authority should be consulted regarding the location and type of cleanout and connection to the existing building sewer.
- C. All laterals shall be laid on a minimum slope of 2 percent. No lateral may be deeper than 9 feet at its free end, measured to the invert, unless permitted by the Engineer. Laterals shall be connected to the sewer main at a tee wye fitting or approved saddle. Laterals shall not be connected to manholes.
- D. The Contractor is to construct all laterals to the property line. The free end of all laterals must end with a bell section of pipe. The laterals must be laid on a bedding of a minimum thickness of 6". The bedding material is to be 2A coarse aggregate for ductile iron pipe and AASHTO #8 crushed stone coarse aggregate for PVC pipe.
- E. The free end of all laterals must be plugged with an approved push-on type plug. When the free end of the lateral is less than two (2) pull pipe lengths from the sewer main, or when required by the Engineer, an approved mechanical expansion plug shall be used. All plugs must be capable of withstanding the required air test and must be watertight.

- F. Excavation and backfill for all laterals shall comply with Article 6.00 of these Specifications. Rock in all lateral trenches must be removed to a point not less than two (2) feet beyond the end of the pipe.
- G. The lateral trench shall be backfilled with 2A coarse aggregate for ductile iron pipe and AASHTO #8 crushed stone coarse aggregate for PVC pipe to a height of at least 1 foot above the top of the lateral pipe. The remainder of the trench shall be backfilled according to Article 6.00 of these Specifications.
- H. The free end of all laterals must be marked by a 2" x 4" piece of lumber extending plumb from the invert of the lateral end to the top of the existing grade. The marker shall be cut flush with the existing grade and shall have reference location ties established from permanent structures. This is to be performed by the Contractor.

Section 11.21 LPSS SANITARY LATERAL INSTALLATION

- A. All laterals are to be 1-1/2" pipe unless otherwise noted. The pipe is to conform to Article 11 of these Specifications.
- B. Laterals shall be connected to the sewer main at a tee fitting as shown on the Drawings.
- C. The Contractor is to construct all laterals to a connection pit located at the property line and extend a minimum of one foot beyond the connection pit. The laterals must be laid on a bedding of a minimum thickness of 6". The pipe bedding material shall be in accordance with Article 6 of these Specifications.
- D. The free end of all laterals must be plugged with an approved push-on type plug or approved mechanical expansion plug. All plugs must be watertight.
- E. All piping and valves are to be installed in the connection pit as shown on the Drawings prior to testing. Lateral piping is to be tested with main sewer piping against the farthest upstream valve in the connection pit.
- F. Excavation and backfill for all laterals shall comply with Article 6.00 of these Specifications. Rock in all lateral trenches must be removed to a point not less than two (2) feet beyond the end of the pipe.
- G. The lateral trench shall be backfilled with AASHTO #8 crushed stone coarse aggregate for PVC pipe and screenings or Type B #3 fine aggregate to a height of at least 1 foot above the top of the pipe for HDPE. The remainder of the trench shall be backfilled according to Article 6 of these Specifications.
- H. If water exists in the lateral trench, no lateral pipe may be placed until the water is removed.

Section 11.22 BUILDING SEWERS

- A. Building sewers and fittings shall be a minimum of four (4) inch diameter for gravity sewer and one and one-quarter (1-1/4) inch for pressure sewer when installed for single-family residential properties. Building sewers for multi-family, or non-residential, shall be sized according to projected flows subject to the approval of the Authority. Building sewers shall

include an approved clean-out within ten (10) feet of the building wall. Where gravity building sewers are longer than fifty (50) feet, an additional clean out shall be installed for each fifty (50) feet or part thereof of length. Building sewers shall run straight from the inside of the wall of the building, which serves the sanitary sewer. Gravity building sewers shall be laid on a grade of not less than one-quarter (1/4) inch per foot unless approved by the Authority.

- B. Pipe materials and installation methods used in the construction of building sewers shall conform to the Pennsylvania Uniform Construction Code.
- C. In connecting house laterals to the Y-branch in the main sewer, an approved fitting shall be used. Open ends of house connections shall be securely closed with stoppers so that no trench water, earth, or other substance will enter the pipe or fittings.
- D. Where it is necessary to install a building sewer where no Y-branch has been furnished, the connections must be made with an approved type of saddle and encased in Class C concrete.
- E. Where curb is available, the Contractor, installing building sewers, shall mark the locations of curb ends by using green sewer marking paint on the curb directly above it.

Section 11.23 THRUST BLOCKS

Thrust blocks shall be provided by the Contractor where fittings are used to change the direction of pressure pipelines. Horizontal thrust blocks and vertical thrust blocks shall be in accordance with the Standard Detail Drawings. The thrust block must be formed against a solid trench wall, which is excavated by hand so as not to damage the bearing surface. The thrust blocks must be constructed so the bearing surface is in direct line with the major force created by the pipe or fitting. The bearing surface for each fitting shall be in accordance with the Standard Detail Drawing. No coupling or joint shall be covered with concrete.

Section 11.24 MAIN PRESSURE AND LEAKAGE TESTING

The AUTHORITY or Authority's representative shall be present during all main pressure testing. The method of testing shall be determined by the Authority. All references to psi (Pounds per square inch) and pressure shall refer to gauge pressure.

1. Pressure Test Method:

- A. Test each newly laid pipeline, including any valved section thereof, hydrostatically at a minimum of 200 psi or 150% above the normal operating pressure (whichever is greater) unless directed by the AUTHORITY based on the elevation of the lowest point in the pipeline corrected to the elevation of the test gauge. The maximum test pressure shall be 250 psi. Normal operating pressure shall be the anticipated maximum sustained pressure. In no instance shall the test pressure exceed the manufacture's maximum pressure rating for the pipe, or its appurtenances being tested.
- B. The pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the AUTHORITY. Slowly fill the section to be tested with potable

quality water, expelling air from the pipeline at high points if necessary. CONTRACTOR shall be responsible for the installation of corporation cocks at all high points. After all air is expelled, close air vents and corporation cocks and raise the pressure to the specified test pressure.

- C. Observe joints, fittings, and valves under test. Remove and replace any cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
- D. After visible deficiencies are corrected, the test pressure must be maintained for one continuous hour. There is no allowable pressure loss or leakage for the method.
- E. If the test of the pipe indicates pressure loss greater than that allowed, locate the source of leakage, make corrections, and retest until leakage is within allowable limits. Correct visible leaks regardless of the amount of leakage. This will be done at no additional cost to the AUTHORITY.

2. Leakage Test Method:

- A. Test each newly laid pipeline, including any valved section thereof, hydrostatically at a minimum of 200 psi or 150% above the normal operating pressure (whichever is greater) unless directed by the AUTHORITY based on the elevation of the lowest point in the pipeline corrected to the elevation of the test gauge. The maximum test pressure shall be 250 psi. Normal operating pressure shall be the anticipated maximum sustained pressure. In no instance shall the test pressure exceed the manufacture's maximum pressure rating for the pipe, or its appurtenances being tested.
- B. The pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the AUTHORITY. Slowly fill the section to be tested with potable quality water, expelling air from the pipeline at high points if necessary. CONTRACTOR shall be responsible for the installation of corporation cocks at all high points. After all air is expelled, close air vents and corporation cocks and raise the pressure to the specified test pressure.
- C. Observe joints, fittings, and valves under test. Remove and replace the cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
- D. After visible deficiencies are corrected, continue testing at the same pressure for an additional two hours to determine the leakage rate. Maintain pressure within plus or minus 5.0 psi of test pressure. Leakage is defined as the quantity of water supplied to the pipeline necessary to maintain test pressure during the period of the test.
- E. Compute the maximum allowable leakage by the following formula:

$$L = \frac{SD \sqrt{P}}{133,200}$$

Where:

L is the allowable leakage in gallons/hour
 S is the length of the section tested in feet
 D is the nominal diameter of the pipe in inches
 P is the average test pressure in psig

- F. If the line under test contains sections of various diameters, the allowable leakage shall be the sum of the computed leakage for each size.
- G. If the test of the pipe indicates leakage greater than that allowed, locate the source of leakage, make corrections, and retest until leakage is within allowable limits. Correct visible leaks regardless of the amount of leakage. This will be done at no additional cost to the Authority

Section 11.25 GRAVITY SEWER TESTING

- A. During construction and at the completion of the work, the Contractor shall make tests as directed by the Authority to ascertain if the pipe is properly aligned and the joints are tight. The Authority will witness all tests. The Contractor is responsible for providing a pressure gauge and a metering device (if required) for the test. The Contractor shall also furnish a suitable pump and all other apparatus required and shall pay all costs connected therewith. Defective work shall be repaired or replaced immediately at the Contractor's expense.
- B. Test for proper alignment of PVC pipe by passing a mandrel through all gravity sewer mains. Mandrel size shall be determined from the following table.

Nominal Pipe Size	Outside Diameter of Mandrel
4"	3.68"
6"	5.45"
8"	7.28"
10"	9.08"
12"	10.79"
15"	13.20"
18"	16.13"
21"	19.01"
24"	21.36"
27"	24.06"

- C. Test each newly installed section of gravity sewer including laterals for leakage between manholes by the low-pressure air method. All sewers shall be backfilled to a depth of not less than 2 feet above the sewer, and all openings carefully plugged before start of a test. The testing procedure shall be as follows:
- D. The air compressors to be used for the tests must be equipped to control the air entry rate and prevent the pressure from exceeding the maximum test pressure. The test shall be performed on pipe with a wet inside condition. All outlets in the section to be tested shall be fitted with air-tight plugs and braced to withstand the applied pressure.

- E. After the pipe has been wetted, the air shall be slowly admitted to the test section until a constant pressure of approximately 4.0 psig is reached. If ground water is present, determine its elevation above the spring line of the pipe by means of a piezometric tube. For every foot of ground water above the spring line of the pipe, increase the starting test pressure reading by 0.43 psig. Do not increase pressure above 10 psig. Allow pressure to stabilize for at least five (5) minutes. During this time, all plugs shall be checked for tightness with a soap solution. If leaks are found, the pressure will be released, and the plugs tightened to stop the leakage. This procedure shall be repeated until all of the plugged openings are found to be tight.
- F. Determine the test duration for a sewer section with a single pipe size from the applicable table located at the end of this Section.
- G. Record the drop in pressure during the test period. If the air pressure has dropped more than 1.0 psig during the test period, the line is presumed to have failed. If the 1.0 psig air pressure drop has not occurred during the test period, the test shall be discontinued, and the line will be accepted.
- H. If the line fails, determine the source of the air leakage, make corrections, and retest. The Contractor has the option to test the section in incremental stages until the leaks are isolated. After the leaks are repaired, retest the entire section between manholes. The Authority reserves the right to require TV inspection on any section of pipe. Any pipe found broken shall be dug up and replaced with new pipe.
- I. For testing of long sections or sections of larger diameter PVC pipes, or both, a timed-pressure drop of 0.5 psig shall be used in lieu of a 1.0 psig timed-pressure drop. If a 0.5 psig pressure drop is used, the appropriate required test time is depicted in Table 3 at the end of this Section.
- J. If lateral or service lines are included in the test, their length may be ignored for computing required test time if the test time requirements are met. If the test section fails, time shall be recomputed to include all the lateral lengths using the following formula:

$$T = 56.67 \left[\frac{(D_1^2 L_1 + D_2^2 L_2 + \dots + D_n^2 L_n)}{(D_1 L_1 + D_2 L_2 + \dots + D_n L_n)} \right] K$$

Where:

T = shortest time allowed for the air pressure to drop 1.0 psig, seconds,

K = 0.000419 (D₁ L₁ + D₂ L₂ + ... D_n L_n), but not less than 1.0,

D₁D₂, etc. = nominal diameter of distinct size pipe being tested, and

L₁, L₂, etc. = respective lengths of distinct size pipes being tested.

After successfully completing all required tests for alignment and leakage, sewer lines shall be televised in accordance with Article 11 Section 11.27.

Section 11.26 DEFLECTION TESTING OF PLASTIC SEWER PIPE

Perform vertical ring deflection testing on all portions of PVC sewer piping after backfilling has been in place for at least 30 days, but not longer than 12 months.

Limit the maximum allowable deflection for installed plastic sewer pipe to 5% of the original vertical internal diameter.

Perform deflection testing with a properly sized mandrel.

Locate, excavate, replace, and retest pipe exceeding the maximum allowable deflection at the Contractor's expense.

Section 11.27 TELEVISION INSPECTION OF GRAVITY SEWERS

- A. The Contractor shall furnish all equipment, labor, materials, and incidentals necessary for documenting the post-construction conditions of newly installed sanitary sewers by the use of closed-circuit television. All televisions shall be conducted in the presence of the Authority or their appointed agent.
- B. The Contractor shall employ only competent personnel skilled in this type of work. The Contractor shall have not less than two years' experience with closed-circuit television inspection and video recording of sewer lines. The Authority may require evidence in the form of records from previous sewer inspections to substantiate any claims concerning the ability of the Contractor and Contractor's equipment to perform as required.
- C. Any recording coverage not acceptable to the Authority shall be refilmed at the Contractor's expense. All DVDs, CDs, or tapes, and written records submitted to the Authority shall become the property of the Authority.
- D. Two (2) complete set of project DVDs, CDs, or tapes and reports shall be submitted to the Authority for approval.
- E. Each DVD, CD, or tape shall have an audio description of the location, size, and type of material of the sewer being inspected, along with all laterals, defects, cracks, leaks, or cross-connections identified. Manhole descriptions and conditions shall also be recorded. The audio-video recording shall in no way relieve the Contractor from preparing and submitting the written report.
- F. A written report of the closed-circuit television inspection shall be submitted, in duplicate, outlining the locations and the conditions found, which are indicative of leaks, breaks, growths or incrustations, debris, serious misalignment, or other adverse conditions. The report shall include, but not be limited to, the following:
 - 1. Location of beginning and terminal structure (station and offset shown on the Drawings).
 - 2. Pipeline material and size.
 - 3. Length of run and stations.
 - 4. Locations of all laterals, pipe breaks, cracks, infiltration, debris, etc. by station.
- G. The television camera used shall be one specifically designed and constructed for pipeline inspection. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The camera shall be operative in 100 percent humidity conditions; the camera shall have a minimum of 600-line resolutions. Picture quality and definition shall be to the complete satisfaction of the Authority.
- H. A self-propelled transport shall be employed when a skid-mounted television camera cannot be used or winched through the sewer line. In no case will the television camera be pulled at

a speed greater than 30 feet per minute. Radios, or other suitable means of communications, as required, shall be set up between the two manholes of the section being inspected.

- I. The cable or rod shall have a footage meter so that the location of the television camera and point of observation will be known at all times. The footage readings shall be automatically displayed on the video monitor in the television studio and shall be recorded on the permanent video recording log.
- J. To preclude the possibility of tampering or editing in any manner, all video recordings must, by electronic means, display continuously and simultaneously generated transparent digital information to include the name of the project, month, day, year, hour, minute, and seconds of the day. This transparent alpha-numeric information will appear on the extreme upper-left hand third of the screen.
- K. The locations of each manhole, identification of street in which each sewer is located and direction which televising is being done shall be provided.
- L. Recordings shall be made on digital media in Standard Play (SP) mode, and shall not have less than 180 lines of resolution. The audio-video recorder shall have sound dubbing facilities that will permit an audio track to be added to the recordings.
- M. Prior to televising, the Contractor shall clean the sewer line to permit passage of the camera. Any debris resulting from cleaning operations shall not be permitted to pass through the sewer system but shall be flushed down to and removed from the downstream manhole of the sewer line.
- N. The Contractor shall immediately repair or replace any defective work. Any pipe found broken or crushed shall be replaced by a new pipe. Repaired or replaced pipe shall be retested as required by the Authority. All sewer lines shall be televised after any repairs.

Section 11.28 AIR TEST TABLES**AIR TEST TABLE 1**

Minimum Test Time For Various Ductile Iron Pipe Sizes

Nominal Pipe Size Inches	T(time),min/100 ft.	Nominal Pipe Size Inches	T(time),min 100 ft.
3	0.2	21	3.0
4	0.3	24	3.6
6	0.7	27	4.2
8	1.2	30	4.8
10	1.5	33	5.4
12	1.8	36	6.0
15	2.1	18	2.4

AIR TEST TABLE 2

(Minimum Specified Time Required for a 1.0 psig Pressure Drop for Size and Length of PVC Pipe Indicated)

Pipe Diameter	Minimum Time	Length For Time Minimum	Time for Longer								
Specification Time for Length (L) Shown, min:s											
In.	Min:s	Time, ft.	Length, s	100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	--
6	5:40	398	0.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	--
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	--
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	--
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	--
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

AIR TEST TABLE 3

(Minimum Specified Time Required for a 0.5 psig Pressure Drop for Size and Length of PVC Pipe Indicated)

Pipe	Minimum	Length For	Time for
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Diameter, In.	Time, Min:s	Minimum Time, ft.	Longer Length, s	Specification Time for Length (L) Shown, min:s							
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.
4	1:53	597	0.190 L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	--
6	2:50	398	0.427 L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	--
8	3:47	298	0.760 L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	--
10	4:43	239	1.187 L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	--
12	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	--
15	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02
18	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51
21	9:55	114	5.235 L	9:55	13:00	17:27	21:49	26:11	30:32	34:54	39:16
24	11:20	99	6.837 L	11:20	17:50	22:48	28:30	34:11	39:53	45:35	51:17
27	12:45	88	8.653 L	14:20	21:30	28:51	36:04	43:16	50:30	57:42	64:54
30	14:10	80	10.683 L	17:40	26:40	35:37	44:31	53:25	62:19	71:13	80:07
33	15:35	72	12.926 L	21:30	32:10	43:56	53:52	64:38	75:24	86:10	96:57
36	17:00	66	15.384 L	25:30	38:20	51:17	64:06	76:55	89:44	102:30	115:20

NOTE: Consult with pipe and appurtenance manufacturer for maximum test pressure for pipe size greater than 30 in. in diameter.

Article 12.00 WATER DISTRIBUTION SPECIALTIES- GENERAL

Section 12.01 DESCRIPTION

Furnish and install all valves, valve boxes, and other piping specialties as specified herein and indicated on the Drawings to provide complete piping systems as intended.

Section 12.02 QUALITY ASSURANCE

- A. Products shall be new and the latest standard of reputable manufacturers with replacement parts available. Products contaminated with gasoline, lubricating oil, liquid, or gaseous fuels will be rejected.
- B. Potable water system products must meet the requirements of the National Sanitation Foundation (NSF) Standard 61.

Section 12.03 SUBMITTALS

- A. Submit certified dimensional shop drawings and manufacturer's product data on valve operators, including assembled weight, construction details, materials of components, and installation instructions.
- B. Submit manufacturer's maintenance instructions and complete parts lists.

Section 12.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver valves and accessories to the job site in the manufacturer's boxes or crates. Mark each valve as to size, type, and installation location. Seal valve ends to prevent the entry of foreign matter into the valve body.
- B. Store valves and accessories in areas protected from weather, moisture, and damage. Do not store materials directly on the ground.
- C. Handle valves and accessories to prevent damage to the interior and exterior surfaces.

Section 12.05 PRODUCTS SERVICE ACCESSORIES

MATERIAL SPECIFICATIONS

All materials must comply with the PA Steel Procurement Act of 1978, as amended. The following are established as the standard of type and quality:

A. CORPORATION STOPS:

1. 3/4", 1", 1 1/2" and 2" Ball Corporation Valve- Inlet - AWWA Taper, Outlet - Tube Compression. Mueller B-25008, Ford FB-1000-Q, A. Y. McDonald 4701BQ.
2. 1 1/2" and 2" Ball Corporation Valve - Inlet - Male Iron Pipe - Outlet - Tube Compression Outlet Mueller B-25028, Ford FB-1000Q, A.Y. McDonald 4704BQ.

B. CURB STOPS:

1. 3/4", 1", 1 1/2" and 2" Tube Compression Inlet and Outlet, Mueller B-25209, Ford B44-Q, A.Y. McDonald 6100Q.
2. 2" Mueller Mark II Oraseal Curb stop, FIP X FIP with drain, Mueller # H-10284. Any unit to be considered equal must have a 1/8" Drain.

C. SERVICE FITTINGS:

1. 1" X 1" Compression Wyes Ford # Y44-2-93078-01
2. 1 1/2" x 1" Compression Wyes Ford # Y44-2-93078-02

D. THREE PART UNIONS:

3/4", 1", 1 1/2", & 2" Straight Three-Part Unions - Tube Compression Inlet and Outlet, Mueller H-15403, Ford C44-Q, A.Y. McDonald 4758Q, or equal.

Section 12.06 4" TO 12" COMPRESSION RESILIENT WEDGE GATE VALVES AND TAPPING VALVES**MATERIAL SPECIFICATIONS**

All materials must comply with the PA Steel Procurement Act of 1978, as amended.

- A. Valves shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 / C515 or the latest revision.
- B. Valves shall have an unobstructed water way when fully opened equal in diameter to at least 1/4" greater than the normal valve size. (Example - 6" valve shall have a water way at least equal to 6 1/4" diameter.)
- C. All internal and external surfaces shall be dry electrostatic coated with epoxy to a minimum thickness of 8 mils (including inside of gates); said coating shall be non-toxic, impart no taste to water, and shall conform to AWWA C550 or the latest revision. Said coating shall be applied prior to assembly such that all exposed external areas, including end connection bolt holes, body to bonnet bolt holes, etc., shall be coated with epoxy. No wet sprayed or brushed on coatings permitted.
- D. Valves shall be provided with two O-Ring stem seals, with one O-Ring located above and one O-Ring below the stem collar. One anti-friction washer shall be located below and one anti-friction washer above the thrust collar. All seals between valve parts such as body and bonnet, bonnet, and bonnet cover shall be O-Rings. The stem shall be provided with an external dirt and weather seal independent of the O-Ring pressure seal.
- E. The sealing mechanism shall provide zero leakage at 250 psig cold water working pressure when installed with the line flow in either direction and shall consist of an iron gate having a vulcanized synthetic rubber coating, over the entire surface, with no rubber to metal seams or edges to the water way when in the fully closed position. Further, it shall be designed such

that no sliding of rubber on the seating surfaces is required to compress the rubber. It shall be designed such that the compression-set of the rubber shall not affect the ability of the valve to seal when pressure is applied to either side of the gate.

- F. All bolts and nuts shall be Grade 304 stainless steel and have the dimensional requirements of AWWA C509 / C515 and ANSSI 18.2.1. All body to bonnet bolting shall be of the same size and length. All bolts shall have square or hex heads. Metric bolts, socket head cap screws, or recessed Allen head-type bolts filled with hot wax will not be allowed. The valve shall be so designed that no metal fasteners or screws other than the stem nut are exposed to water.
- G. The valve body shall be ductile iron.
- H. The wedge nut shall be independent of the wedge and held in place on three sides by the wedge to prevent misalignment.
- I. All valves shall be seat tested at 250 psig cold water working pressure and shell tested at twice the rated working pressure in accordance with Section 6 of AWWA C509.
- J. All gate valves shall be M.J. X M.J. and must conform to AWWA C111 Mechanical Joint Requirements. They are to be supplied less M.J. Accessories.
- K. All Tapping Valves shall be M.J. X Tapping Flange. They are to be supplied with all Tapping Flange Accessories but without M.J. Accessories.
- L. All gate valves shall be Open Left type.

Section 12.07 16" TO 36" COMPRESSION RESILIENT WEDGE GATE VALVES AND TAPPING VALVES

MATERIAL SPECIFICATIONS

All materials must comply with the PA Steel Procurement Act of 1978, as amended.

- A. All 16" – 24" valves shall be of Resilient Wedge Gate Valve type design. All gate valves shall be rated for 250 PSIG cold water working pressure, with zero leakage. The rating shall be indelibly marked on the casting. The valves shall comply fully, in all applicable sizes, with the latest edition of ANSI/AWWA C-515, and as applicable be UL Listed and FM Approved (16"), as well as all requirements detailed herein. The manufacturer shall provide drawings and an affidavit detailing compliance with all applicable standards and specifications. Manufacturer's own interpretation of any deviation from those standards and/or specifications, as exceeding same, will not constitute compliance. All valves shall be of the same manufacturer and shall clearly bear the manufacturer's name and valve size.
- B. All ferrous components of the valve shall be constructed of Ductile Iron. All valves shall be cast with the words "DI" or "Ductile Iron," or tagged with a corrosion-resistant metal tag on the valve body. The wrench nut shall be constructed of Ductile Iron, shall have four flats at the stem connection to insure even transfer of torque to the stem. And shall bear the direction of opening complete with the word "OPEN" in ½" lettering, per paragraph 4.4.7 of AWWA C-515. The direction to open shall be LEFT.

- C. The wedge shall consist of an iron gate having a vulcanized synthetic rubber coating, over the entire surface, with no rubber to metal seams or edges to the waterway when in the fully closed position. It shall be fully encapsulated with EPDM Rubber, symmetrical in design, and shall seat equally well with the flow in either direction. In all sizes, the wedge shall incorporate the use of guides encapsulated with an engineered plastic. Double disc and/or metal style solid wedge valve designs are not allowed. The wedge to stem design shall employ the use of an independent stem nut. An integral stem nut design is not allowed.
- D. All bolts and nuts shall be grade 304 stainless steel and have the dimensional requirements of AWWA C-515 and ANSSI 18.2.1. All body to bonnet bolting shall be of the same size and length. All bolts shall have square or hex heads. Metric bolts, socket head cap screws, or recessed Allen head-type bolts filled with hot wax will not be allowed.
- E. Items shall be bronze and shall be constructed from a copper alloy with a minimum 20,000 PSI yield strength per paragraph 4.4.5.1.1 of AWWA C-515. Stem thrust collars shall be integral to the stem and shall be sealed with two O-Rings above the thrust collar and one below. Without exception, stems constructed of stainless steel, as well as designs employing two-piece independent thrust collars, will not be allowed. All stem diameters shall be as detailed in Table 4 of AWWA C-515. The stem O-Rings above the thrust collar shall be replaceable with the valve fully open and while subjected to full working pressure. O-Rings set in a cartridge-type design will not be allowed. Valves shall be equipped with thrust washers above and below the thrust collar to reduce the operating torque of the valve.
- F. All internal and external surfaces of the valve shall be electrostatically coated prior to assembly, with fusion bond epoxy, complying with the latest revision of AWWA C-550. Valves shall meet all requirements of ANSI/NSF 61. All gaskets shall be of a pressure energized O-Ring design.
- G. All Valves shall be equipped for horizontal operation, with lifting lugs or eyebolts for lifting. All valves shall be equipped with Bevel gearing in a 4 to 1 ratio to reduce operating torque. Valves employing the use of an external and/or integral bypass for torque reduction are not allowed. All operators shall be tagged with the number of turns required to fully open and close the valve.
- H. All valves shall be furnished without lower body taps and plugs.
- I. All gate valves shall be M.J. X M.J. and must conform to AWWA C111 Mechanical Joint Requirements.
- J. All Tapping Valves shall be M.J. X Tapping Flange. They are to be supplied with all Tapping Flange Accessories.
- K. All gate valves shall be Open Left type.

Section 12.08 VALVE BOXES

- A. All valve boxes supplied under this contract must be all cast iron (screw type) construction with the screw threads cast as a part of the bottom section. The Tyler Series 6850 two (2) piece screw-type valve box with a 26" top section and a 24" bottom section, or an approved equal. Valve box lids must be a cast-iron lid marked "WATER."
- B. There will be three (3) size Valve Box Extensions supplied under this contract. The first is a 14" extension Tyler # 58, the second is an 18" Tyler # 59, and the third is a 24" Tyler # 60, or an approved equal. All valve box extensions must be cast iron with the screw threads cast as part of the extension.

Section 12.09 BLOW OFF ASSEMBLY

Blow off assemblies shall be constructed as shown in the Drawings using standard materials and red brass pipe conforming to ASTM B43.

Section 12.10 FIRE HYDRANTS

- A. Fire Hydrants shall be manufactured in full compliance with this specification and shall also comply with A.W.W.A. Specification C502, latest revision. It shall also comply with Factory Mutual Research Corporation and Underwriter's Laboratories UL 246. Standard rated water working pressure shall be 250 PSI, with a test pressure of 500 PSI.
- B. The main valve closure shall be of the compression type, opening against the pressure and closing with the pressure. The main valve opening shall not be less than 6" diameter and be designed so that removal of the seat, drain valve mechanism, internal rod, and all working parts can be removed through the top of the hydrant. These parts shall be removable without disturbing the ground line joint or the nozzle section of the hydrant.
- C. The bronze seat shall be threaded into mating threads of bronze for easy field removal. Lower barrel section shall be made of ductile iron. Base bolting to be stainless steel type 304. The base of the hydrant shall be 6" mechanical joint with epoxy coating, less accessories.
- D. The draining system of the hydrant shall be bronze and activated by the main stem without the use of auxiliary rods, toggles, pins, etc. The drain mechanism shall be completely closed after no more than three turns of the operating nut in the opening direction. There shall be a minimum of four (4) inside ports and eight (8) drain port outlets to the exterior of the hydrant. Drain shut-off to be direct compression closure. Sliding drain assemblies are not acceptable.
- E. The operating nut, main stem, coupling, and main valve assembly shall be capable of withstanding output torque of 200 ft. /lbs. in opening or closing directions. There shall be an internal top housing with triple O-rings to seal operating threads from the waterway. A ball bearing in the housing shall reduce the operating torque to a maximum of 62 ft. /lbs. against full rated pressure. Thrust washer design is not acceptable.
- F. Hydrant bonnet shall be provided with a grease reservoir and lubrication system that automatically circulates the lubricant to operating stem threads and bearing surfaces each time the hydrant is operated. Downward stem travel shall be limited by a travel stop located in the upper housing of the hydrant.

- G. Nozzle section of hydrant shall be designed to permit field replacement of damaged threads without special tools, excavation, or disturbing the ground line joint. Nozzle section shall be capable of 360-degree rotation in any increment with respect to the lower barrel. Bronze nozzles are to be locked into hydrant barrel with locking lugs and have two (2) interior stainless steel allen screws for double retention. A heavy-duty O-ring shall seal nozzles against the barrel socket. The hydrant shall be capable of delivering a minimum 4800 GPM through a 4 ½" pumper connection at 100 PSI.
- H. There shall be two (2) 2½" hose connections and one (1) 4½" pumper connection. The operating nut shall be pentagonal 1½" point to flat.
- I. All hydrants shall contain an aluminum tag 2½" long x 5/8" wide x 1/16" thick, mounted to the front top flange, to be used by the Authority for stamping an ID Number on the front of the hydrant.
- J. All hydrants shall be painted with primer and two (2) coats of rust-proof silver paint minimum of 4 mils thickness.
- K. Fire hydrants shall be American – Darling Model 5 ¼" B-84-B-5.

Section 12.11 TAPPING SLEEVES DUCTILE IRON TAPPING SLEEVES

- A. All tapping sleeves shall be Mechanical Joint, suitable for use with cast iron or ductile iron pipe. All tapping sleeves must be constructed of ductile iron. Cast iron tapping sleeves are unacceptable.
- B. The outlet flange of the tapping sleeve shall conform to MSS-SP-60 Specifications. Tapping sleeves shall be supplied with split end gaskets and two (2) piece glands. Glands shall also be Ductile Iron.
- C. A test plug shall be provided in tapping sleeves to permit testing of the installed unit prior to making the tap. Tapping sleeves shall have a minimum working pressure of 200 psi and maybe Tyler M.J. Tapping Sleeves or approved equal.

Section 12.12 STAINLESS STEEL REPAIR CLAMPS & TAPPING SLEEVES

- A. Repair clamps shall be made of 18-8 type 304 Stainless Steel Band, Lifter Bar, Sidebar, Lugs, Nuts & Bolts.
- B. Repair Clamps shall have a gridded virgin SBR compounded gasket for water service as per ASTM D2000. A Buna-N-Gasket is allowed as an alternative.
- C. Repair clamps must be available with Stainless Steel Taps made of 18-8 type 304 stainless steel tig welded to the band with AWWA or IP Threads.
- D. All welds must be fully passivated to restore corrosion-resistant characteristics of the stainless steel.
- E. Tapping Sleeves must meet the same standards as repair clamps. All outlet flanges on the

tapping sleeves shall be ASTM A240 type 304 stainless steel with recesses to accept standard tapping valves.

- F. All Tapping Sleeves must include a $\frac{3}{4}$ " brass test plug.
- G. All Repair Clamps through 12" and Tapping Sleeves shall be 15" in length.
- H. For Repair Clamps 16" to 36" the length is determined on a case-by-case basis.

Section 12.13 COLD WATER METERS – DISPLACEMENT TYPE

- A. TYPE: Magnetic Drive, Sealed Register, Positive Displacement Type Oscillating Piston only as manufactured by Sensus Metering Systems.
- B. SIZE and LENGTH: Must conform to American Water Works Standard C-700 as most recently revised.
- C. CASES: All meters shall have a non-corrosive Water Works bronze (minimum 75% copper content) outer case with a separate measuring chamber that can be easily removed from the case. All meters shall have cast on them, in raised characters, the size and direction of water flow through the meter. Cast iron frost bottoms shall be provided on the $\frac{5}{8}$ X $\frac{3}{4}$, and 1" size meters. $1\frac{1}{2}$ " and 2" meters shall be the split case type with bronze lower and upper shell assemblies. The manufacturer's serial number must be permanently affixed to the main case to aid in identification and must be visible so that it can be read from directly above the water meter.
- D. EXTERNAL BOLTS AND WASHERS: All external bolts and washers shall be of corrosion-resistant material and be easily removed from the main case. All threaded main case bolt holes must be covered to aid in the removal of the bolts for repair.
- E. ENCODER REGISTER AND REMOTES: Must conform to American Water Works Standard C-707 as most recently revised.
- F. TOUCH READ ECR REGISTERS: The register must be of the straight reading type and have a full test dial on the face of the register. It shall read in gallons and be capable of direct visual reading both at the meter and by remote reading utilizing a visual interrogation device which connects through to the water meter via a Touchpad located external to the meter by a Meter Transceiver Unit (MXU) for radio-based Automatic Meter Reading (AMR). All reduction gearing shall be contained in a permanently hermetically sealed, tamperproof enclosure made of corrosion-resistant material. The register must be field replaceable by utility personnel with the use of a manufacturer-supplied field tool. The field tool must not be commercially available. Seal wiring or a frangible head screw is not acceptable.
- G. The meter register shall be provided with three (3) terminal connections. The register shall transmit the meter reading and register identification number directly to the interrogation device through the Touchpad or to the MXU when interrogated via the Radio System
- H. For installations where moisture is not a concern, the terminal connections shall be protected with a dust cover on the register. The dust cover will be of a snap-on configuration not requiring screws and be equipped with seal wire holes for security. When the meter is to be

installed in a vault or pit set installation, the terminal connections shall be permanently factory sealed to a three (3) wire interconnecting cable with an environmentally approved epoxy to prevent moisture penetration and eliminate the need for field sealing requirements.

- I. The pit lid module shall be of sturdy and tamperproof construction. The module shall allow for ease of installation on any pit lid (plastic, cast iron, or concrete) with an appropriately placed 1 $\frac{3}{4}$ " hole. The entire pit lid module shall be constructed of a suitable synthetic polymer for long service life under normal operating conditions. The module shall be compatible with the Touch Probe of either the Solid-State Interrogator or Visual Reader.
- J. The register output data shall be 7-bit ASCII (American Standard Code for Information Interchange) digital, plus an even parity bit. Upon interrogation through a Touch Pad or AMR, the register will transmit a 4 digit or 6-digit odometer reading (customer specified), 1000-gallon registration, and an 8-digit register identification number. The register identification number is to be factory set and non-programmable to protect the integrity of the system by eliminating programming duplication of identification numbers in the field. The 4 digit or 6-digit meter reading is to be interrogated from the register by direct contact of the register's odometer wheels to a circuit board that encodes the meter reading to the interrogation device. Data is to be positive true. The register's ASCII digital output is to be capable of interfacing directly to an AMR transponder to transmit data via Cable TV, Telephone, Radio Signal, or Power Lines to an AMR System.
- K. All meters must be 1,000 or 10,000-gallon registration to be determined at the time an order is placed.
- L. OUTSIDE TOUCH PAD: The outside touch pad shall be of sturdy and tamperproof construction. The touch pad shall be compatible with the Touch Probe, Touch Gun, or Smart Gun of either the Solid-State Interrogator or Visual Reader. The remote Touch Pad shall be protected from the environment with watertight seals. The remote Touch Pad shall not require a plug-in or metal-to-metal contact to complete a connection with the Interrogator's Touchpad. The meter identification number and meter reading data will be transmitted to the interrogation device by touching the interfacing gun or probe to the external cover of the remote Touchpad. The Touchpad will be provided with two (2) terminal connections to accept the two (2) conductor cable which connects it with the meter register. The remote Touchpad will have provisions to cover and seal the mounting screws to prevent tampering.
- M. MEASURING CHAMBERS: The measuring chamber shall be a suitable synthetic polymer and shall not be cast as part of the main case. All piston assemblies shall be interchangeable in all measuring chamber assemblies of the same size. The measuring chamber piston shall operate against a replaceable control roller, allowing for repair to AWWA standards. The control roller shall rotate on a stainless-steel measuring chamber steel pin to provide added strength, wear resistance, and corrosion resistance. There shall be an elastomeric seal or seals between measured and unmeasured water to prevent leakage around the measuring element.
- N. MAGNETIC COUPLING: The motion of the piston will be transmitted to the sealed register using a magnetic coupling.
- O. STRAINERS: All meters must be provided with a corrosion resistant strainer, with an effective straining area at least twice the bore diameter which can be easily removed from

the meter without the meter itself being disconnected from the pipeline.

- P. CHANGE GEARS: Change gears will not be allowed to calibrate the meter. All registers of a particular registration and meter size shall be identical and be completely interchangeable.
- Q. ACCURACY AND HEAD LOSS: Meters shall conform to current AWWA C-700 standards, most current revision, for test flows, head loss and accuracy standards
- R. PRESSURE CAPABILITY: Meters shall operate up to a working pressure of 150 psi without leakage or damage to any parts. The accuracy shall not be affected when operating at this pressure due to distortion. Accuracy shall not be affected by variations in pressure up to 150 psi.
- S. PERFORMANCE WARRANTIES: In evaluating bid submittals, warranty coverage will be considered. All bidders are required to submit their most current nationally published warranty statements for water meter main cases, encoder registers, and measuring chambers.
- T. SHIPMENT VERIFICATIONS: A statistically controlled sample of each meter shipment will be tested by the Authority to ensure each shipment meets performance and materials specifications.
- U. REJECTED MATERIALS: The manufacturer shall, at his own expense, replace or satisfactorily adjust or repair all units rejected for failure to comply with these specifications.

Section 12.14 AUTOMATIC METER READING SYSTEM METER TRANSCEIVER UNITS (MXU)

- A. GENERAL: The following specifications describe the requirements for a Radio Based Automatic Meter Reading Transceiver Unit (MXU).
- B. MXU FUNCTION: The MXU will be the interface between the meter and the radio interrogation unit. The MXU will power up when a valid alert signal is received from the reading interrogation unit. The interrogation unit will be either a handheld or vehicle-mounted device. The MXU and the interrogation device will utilize a two-way communications protocol. Following the alert signal from the interrogation unit and the transmission of the meter reading data, the interrogation unit will signal to the MXU that valid reading parameters were met and will instruct the MXU to power down.

The MXU must have the capability of utilizing a reading cycle code which is an element of the transmission protocol. The reading cycle code is Utility controlled and changes with each reading cycle. Once an MXU has been successfully interrogated and powered down using a specific reading cycle code, the MXU will not alert again until the code is changed.

The MXU will have a fixed factory set non-programmable identification number to ensure absolute identity of the unit within the system.

In addition, the MXU will have the capability of storing a Utility defined class code. The class code will be used to separate different classes of meters and differentiate the MXU in multi-Utility installations.

- C. FCC REGULATIONS: All equipment must comply with current Federal Communications Commission (FCC) requirements which include proper labeling of the MXU. The bidder must

have supported documentation available upon request to verify compliance.

- D. **MODULATION:** The radio frequency transmission from the MXU to the interrogation unit must utilize a direct sequence spread spectrum, operating in the non-licensed 902 – 928 MHz band. It shall alert using the 956 MHz from the interrogation unit.
- E. **HARDWARE:** The MXU will be housed in UV stable molded housing. The enclosure must house the complete unit that includes electronics, a battery compartment, and wire connections. The MXU will also have an internal antenna. The housing must be able to be either wall-mounted or mounted in an underground meter pit. Special mounting hardware will be supplied with the MXU. The enclosure will provide weather protection for all components of the MXU, including the capability of the unit to be submersed in a water-filled meter pit without damage.

The MXU will be secured by means of a tamper-resistant locking device so that the enclosure cannot be opened by non-Authority personnel. The internal parts of the MXU may only be accessed by authorized Authority personnel using a manufacturer-supplied field tool. The field tool MUST NOT be commercially available. Sealing wire is not acceptable.

The battery must be made of a substance and design that is readily available, appropriate for consumer use, and low toxicity. The battery cartridge must be dated for ease of age identification for warranty purposes.

MXU's that require wiring will contain easily identifiable, color-coded wires and a wiring diagram within each unit for ease of installation.

- F. **PERFORMANCE WARRANTY:** All bidders must submit their warranty and/or guarantee policy with respect to each item of the proposed equipment. The procedure for submitting warranty claims must also be provided.

As a minimum, the electronics must be warranted for twenty (20) years from the date of shipment for defects in materials and workmanship. Battery warranties will be a minimum of twenty (20) years from the date of factory shipment.

Section 12.15 ¾" DUAL CHECK BACKFLOW PREVENTER

The ¾" dual check backflow preventer cartridges shall be constructed of acetyl plastic with stainless steel springs housed in a Bronze body. Cartridge assemblies are to be supplied with O-rings attached to ensure a watertight seal between the cartridge and the inside of the body. Both cartridges are to be identical and interchangeable. Each cartridge assembly shall be so constructed that it can provide backflow prevention even with the other cartridge assembly removed from the valve body. They shall be designed for use on the outlet side of a 5/8" X ¾" or a ¾" water meter. The inlet shall have a permanently attached swivel nut for a direct connection to the water meter outlet. The outlet shall be a 1" male iron pipe thread. The ¾" backflow preventers shall have no more than 10 psi head loss at a flow of 15 GPM. The dual check backflow preventer shall conform to ASSE standard 1024-1994. All valves shall be Ford Meter Box Company model HHC133-322 for 5/8" X ¾" or ¾" meters or approved equal.

Section 12.16 1" DUAL CHECK BACKFLOW PREVENTER

The 1" dual check backflow preventer cartridges shall be constructed of acetyl plastic with stainless

steel springs housed in a Bronze body. Cartridge assemblies are to be supplied with O-rings attached to ensure a watertight seal between the cartridge and the inside of the body. Both cartridges are to be identical and interchangeable. Each cartridge assembly shall be so constructed that it can provide backflow prevention even with the other cartridge assembly removed from the valve body. They shall be designed for use on the outlet side of a 1" water meter. The inlet shall have a permanently attached swivel nut for a direct connection to the water meter outlet. The outlet shall be a 1 ¼" female iron pipe thread. The 1" backflow preventers shall no more than 10 psi head loss at a flow of 25 GPM. The dual check backflow preventer shall conform to ASSE standard 1024-1994. All valves shall be Ford Meter Box Company model HHC31-444 for 1" meters or approved equal.

Section 12.17 THREE-PART UNIONS

¾", 1", 1 ½", & 2" Straight Three-Part Unions - Tube Compression Inlet and Outlet, Mueller H-15403, Ford C44-Q, A.Y. McDonald 4758Q, or equal.

Section 12.18 RETAINING GLAND PACKS

- A. All Gland Packs shall consist of one (1) Ductile Iron Retaining Gland, one (1) Mechanical Joint Gasket, and the appropriate number of "Corten" Bolts and Nuts for installation.
- B. All Gland Packs size 4" through 12" shall be boxed and wrapped to prevent loss or damage to the component parts. All Gland Packs 16" and above may be boxed like the 4" through 12" or shall have the glands shipped on pallets with the accessories boxed.
- C. Currently approved manufacturers are:
 - Ebba Iron - Meg-A-Lugs
 - Ford - Series 1400 Wedge Action Retainer Gland.
 - All Tee Bolts and Nuts shall be made of "Corten" Steel.

Section 12.19 PART 3 – EXECUTION GENERAL

Inspect joint surfaces for structural soundness and thoroughly clean them before installation. Install valves and accessories in accordance with the manufacturer's instructions. Check and adjust valves and accessories for smooth operation.

Section 12.20 SETTING HYDRANTS, VALVES, AND VALVE BOXES

- A. All gate valves shall be set with the stems vertically above the centerline of the pipe. Special care shall be taken to avoid closing valves with sand, stones, or other substances lodged in the valve seat. Hydrants, valves, and valve boxes shall be set plumb, with valve boxes placed directly over the valves. After being correctly positioned at street grade, stone fill shall be carefully compacted around the valve box for a distance of four (4) feet on all sides.
- B. Each hydrant shall be placed upon a solid cement block, not less than four (4) inches thick and fifteen (15) inches square or as directed. The back side of the hydrant opposite the pipe connection shall be firmly wedged against the vertical face of the trench with a thrust block.
- C. Around the base of each hydrant shall be placed not less than 1 cubic yard of 2B crushed stone to ensure the complete drainage of the hydrant when closed. All backfill around hydrants

shall be in 4" layers or less and shall be thoroughly compacted to the surface of the ground. Before installing any hydrant or valve, care shall be taken to see that all foreign matter and material is removed from the interior of the barrel. The hydrant and valve shall be opened and closed to see that all parts are in working order and condition. Set hydrant so that ground bead is at or above finished grade, and safety flange is not less than 2" or more than 6" above finished grade. Hydrant shall be located 2 feet behind the curb, or as directed by the Authority or its appointed agent.

Article 13.00 SANITARY SEWAGE SPECIALTIES - GENERAL

Section 13.01 DESCRIPTION

Furnish and install all valves, valve chambers, and other piping specialties as specified herein and indicated on the Drawings to provide complete piping systems as intended.

Section 13.02 SUBMITTALS

- A. Submit certified dimensional shop drawings and manufacturer's product data on valves and valve operators, including assembled weight, construction details, materials of components, and installation instructions.
- B. Submit manufacturer's maintenance instructions and complete parts lists.

Section 13.03 QUALITY ASSURANCE

Products shall be new and the latest standard of reputable manufacturers with replacement parts available. Products contaminated with gasoline, lubricating oil, liquid or gaseous fuels will be rejected.

Section 13.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver valves and accessories to the job site in the manufacturer's boxes or crates. Mark each valve as to size, type, and installation location. Seal valve ends to prevent the entry of foreign matter into the valve body.
- B. Store valves and accessories in areas protected from weather, moisture, and damage. Do not store materials directly on the ground.
- C. Handle valves and accessories to prevent damage to the interior and exterior surfaces.

Section 13.05 PRODUCTS RESILIENT SEATED GATE VALVES

- A. Provide iron body, resilient seated, solid wedge type gate valves conforming to AWWA C509. Burred valves shall have non-rising stems with 2" square operating nuts that open by turning in a counterclockwise direction. Buried gate valves shall be Mueller Company resilient wedge valves, or approved equal, with mechanical joint ends. Interior valves shall be Mueller Company resilient wedge valves, or approved equal, with flanged ends and hand wheel operators.
- B. Provide 5-1/4" diameter three-piece cast iron adjustable valve boxes for all buried gate

valves. Valve boxes shall be of sufficient length to reach the surface of the ground but not extend above the ground surface. The word "SEWER" shall be cast in the top of the cover. Valve boxes shall be manufactured by Tyler Company or approved equal, slide on style.

- C. Refer to the Drawings for a typical installation of buried gate valves and valve boxes and for a typical installation of force main cleanout chamber.

Section 13.06 SEWAGE AIR RELEASE VALVE

- A. Sewage air release valve shall be designed to release small amounts of accumulated air during operation of a sewage force main. Valve shall close drop tight. All internal metal parts shall be stainless steel. The linkage/lever mechanism shall be removable from the valve without disassembly of the mechanism. Body and cover shall be cast iron conforming to ASTM A126, Class B. Provide backwash attachments and valves. Air release valve shall be 2-inch size with a 1/4-inch orifice for a working pressure of 150 psi. Sewage air release valves shall be manufactured by APCO Valve and Primer Corporation, or equal.
- B. Provide 2-inch gate valve for sewage air release valve. Gate valve shall be iron body with a minimum working pressure of 200 psi, double face solid wedge of bronze, bronze spindle and renewable bronze seat rings, and screw ends. Valve shall be Jenkins, or other approved valve. Refer to the Standard Details for installation details.

Section 13.07 SEWAGE COMBINATION AIR VALVES

- A. Provide single body, double orifice sewage combination air valves to allow large volumes of air to escape or enter through the large-diameter air and vacuum orifice when filling or draining a pipeline. Sewage combination air valves shall have a small diameter air release orifice to allow small pockets of air to escape when the pipeline is filled and pressurized. Valves shall be manufactured by APCO Valve and Primer Corporation, or equal.
- B. Materials of construction shall be ASTM A126; Class B cast iron body and cover; ASTM A240 stainless steel float and stem; Buna-N needle and seat; ASTM B124 bronze plug; ASTM D1233 Delrin or cast-iron leverage frame. Furnish each valve with inlet and outlet valves, quick disconnect coupling, and 5' of hose for flushing.
 - Inlet Size: 2" NPT
 - Outlet Size: 1" NPT
- C. Provide lower durometer setting for operating pressures less than 20 PSI, or as recommended by the manufacturer.

Section 13.08 PVC FLAPPER CHECK VALVES

Provide PVC swing check valves with plain ends for redundant backflow protection at the right-of-way. Rated for 150 psi working pressure.

Section 13.09 PVC BALL VALVES

Provide true union, double-entry ball valves with Viton O-ring seals, self-lubricating Teflon seats, and

2" square operating nut. Rated for 150 psi working pressure. Ball valves shall only be used in vertical position.

Section 13.10 CLEANOUT AND AIR VALVE CHAMBERS

Provide precast concrete manholes with flat slab tops and cast-iron manhole frames and covers, as specified in Article 15 and shown on the Drawings.

Section 13.11 HOSE END GATE VALVE

- A. The gate valve to be installed in the Cleanout Chamber shall be a bronze hose-end gate valve, with single wedge disc, non-rising stem, female inlet having American Standard taper pipe threads, and outlet having National (American) thread for Fire Hose Couplings and Fittings (ANSI B26) and provided complete with bronze cap and chain. Hose end gate valve shall be Figure 366 Hose Gate Valve with Figure 1309 cap and chain as manufactured by the Lunkenheimer Co., Cincinnati, Ohio, or similar hose-end gate valve and cap and chain as manufactured by Walworth or Crane Co., or equal.
- B. The valve shall be designed for minimum water working pressure of 150 psi and shall be factory tested at a pressure of 300 psi; shall have a clean waterway opening of the full nominal diameter of the valve, and shall be opened by turning to the left. The valve shall be hand wheel operated, and the operating wheel shall have cast thereon an arrow indicating the direction of the opening. The valve shall have the maker's initials, pressure rating, and year of manufacture cast on the body.

Section 13.12 PART 3 – EXECUTION INSTALLATION

Inspect joint surfaces for structural soundness and thoroughly clean them before installation. Install valves and accessories in accordance with the manufacturer's instructions. Check and adjust valves and accessories for smooth operation.

Article 14.00 FINAL GRADING AND SEEDING – GENERAL

Section 14.01 DESCRIPTION

The work of this Section includes, but is not limited to:

- Placing topsoil
- Soil conditioning
- Final grading
- Seeding
- Sodding
- Maintenance

The Seeding Tables at the end of this Section lists specific seeding requirements for temporary and permanent cover.

Section 14.02 QUALITY ASSURANCE

- A. All areas to be seeded shall be inspected by the Contractor before starting the work. Any defects such as incorrect grading, etc. shall be reported to the Authority prior to

beginning the work. The commencement of work by the Contractor shall indicate his acceptance of the areas to be seeded, and he shall then assume full responsibility for the work of this Section.

- B. Soil and soil supplement testing shall be performed by a Soils Testing Laboratory engaged and paid for by the Contractor and approved by the Authority. Collect soil samples under the direction of the Authority.

Section 14.03 SUBMITTALS

- A. Prior to use or placement of the material, submit a Statement of Compliance from the materials suppliers, together with supporting data, attesting that the composition of the following products meets specification requirements.
- Topsoil analysis
 - Fertilizer
 - Lime
 - Seed mixture(s)
- B. If soil tests are performed to justify decreased liming and fertilizer rates, submit certified soil sample analyses, including laboratory recommended soil supplement formulation.

Section 14.04 PRODUCT DELIVERY, STORAGE AND HANDLING

Deliver seed fully tagged and in separate packages according to species or seed mix. Seed, which has become wet, moldy, or otherwise damaged in transit or storage, will not be accepted.

Section 14.05 PROJECT/SITE CONDITIONS

Any soil or similar material which has been brought onto paved areas by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times.

Upon completion of work under this Section, all excess stones, debris, and soil resulting from work under this section which have not previously been cleaned up shall be cleaned up and removed from the site.

Section 14.06 PART 2 – PRODUCTS TOPSOIL

- A. Having a pH of between 6.0 and 7.5 containing not less than 2% nor more than 10% organic matter as determined by AASHTO T194.
- B. Fertile friable loam, sandy loam, or clay loam which will hold a ball when squeezed with the hand, but which will crumble shortly after being released.
- C. Free of clods, grass, roots, or other debris harmful to plant growth. Free of pests, pest larvae, and matter toxic to plants.

Grading analysis shall be as follows:

Sieve	Minimum %
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2"	100
#4	90
#10	80

Sand, silt, and clay shall be as defined by AASHTO designation M-146, and shall be present within the following ranges:

	Minimum %	Maximum %
Sand	20	75
Silt	10	60
Clay	5	30

Section 14.07 FERTILIZER

Commercial fertilizer shall conform to all applicable state laws. It shall be uniform in composition, dry, and delivered to the site in original unopened containers each bearing the manufacturer's guaranteed analysis.

Section 14.08 LIME

Raw ground limestone conforming to Section 804.2(a) PennDOT Publication 408 Specifications.

Section 14.09 SEED AND SOD

Fresh, clean, dated material from the last available crop and within the date period specified, with a date of test not more than 9 months prior to the date of sowing. Percentage of pure seed present shall represent freedom from inert matter and from other seeds distinguishable by their appearance. All seeds will be subject to analysis and testing.

Table 1 - Grass and Agricultural Seeds

Species	Minimum Guaranteed Purity (Percent)	Minimum Guaranteed Germination (Percent)
Kentucky Bluegrass (Domestic origin)	98	80
Pennfine Perennial Ryegrass	98	90
Kentucky 31 Tall Fescue	98	85
Penngift Crownvetch	99	90
Empire Birdsfoot Trefoil	99	90
Pennlawn Red Fescue (Turf Type)	98	85
Hounddog Tall Fescue (Turf Type)	98	85
Falcon Tall Fescue (Turf Type)	98	85
Mustang Tall Fescue (Turf Type)	98	85
Jamestown Fine Fescue (Turf Type)	98	85

Annual Ryegrass	98	90
Timothy	98	95
Spring Oats	90	85
Fylking Kentucky Bluegrass	98	85
Winter Rye	90	85
Winter Wheat	60	80
Red Top	92	90
Bent Grass	90	75

Sod shall be dense and well-rooted, composed of 100% Bluegrass mix, Pennsylvania Certified. Sod shall be approximately two inches (2") high, grown in the general locality where it is to be used. Sod shall be cut in uniform stripe approximately 12" or 18" x 36", but no longer than is convenient for handling.

Section 14.10 SEED MIXTURES

See Temporary and Permanent Seeding Tables at the end of this Section.

Section 14.11 INOCULANTS

- A. Inoculate leguminous seed before seeding with nitrogen-fixing bacteria culture prepared specifically for the species. Do not use inoculants later than the date indicated by the manufacturer. Use inoculants in accordance with the manufacturer's specifications. Use four times the amount of inoculants when hydroseeding a leguminous seed.
- B. Protect inoculated seed from prolonged exposure to sunlight prior to sowing. Reinoculate seeds not sown within 24 hours following initial inoculation.

Section 14.12 EROSION CONTROL NETTING

Biodegradable netting and paper soil stabilization material.

Section 14.13 MULCHING MATERIALS

Mulches for seeded areas shall be one, or a combination of, the following:

Hay and Straw

Cured to less than 20% moisture content by weight. Containing no stems of tobacco, soybeans, or other coarse or woody material. Hay mulching material shall consist of timothy hay, mixed clover, and timothy hay, or other approved native or forage grasses. Salt hay or other saline grasses are not acceptable. Straw mulching material shall be either wheat or oat straw.

Wood Cellulose

Containing no growth or germination-inhibiting substances. Green-dyed and air-dried. Packages not exceeding 100 pounds.

Moisture Content:	12% + 3%
Organic Matter (Dry oven basis):	98.6% + 0.2%
Ash Content:	1.4% + 0.2%
Minimum Water-Holding Capacity:	1,000%

Section 14.14 EXECUTION TIME OF OPERATIONS

Seeding operations shall be conducted under favorable weather conditions during one of the preferred seeding seasons listed in the Seeding Tables. At the option of, and on the full responsibility of the Contractor, seeding operations may be conducted under unseasonable conditions, except as noted herein.

Section 14.15 PREPARATION OF SUB GRADE**"Hard pan" or heavy shale:**

Plow to a minimum depth of 6". Loosen and grade by harrowing, discing, or dragging. Hand rake sub grade. Remove stones over 2" in diameter and other debris.

Loose loam, sandy loam, or light clay:

Loosen and grade by harrowing, discing, or dragging. Hand rake sub grade. Remove stones over 2" in diameter and other debris.

Section 14.16 FINISH GRADING

- A. Finish grading work shall not be started until the installation of all underground utilities and earthmoving activities have been completed. The Contractor shall be responsible for giving notice to the other Contractors whose work is affected regarding the installation of his work in order that such work may be in place in ample time to prevent any delay in the completion of the work on this contract.
- B. Finish grading shall not be started until rough grading has been approved by the Authority, site has been cleared of rubbish and debris, and trucking operations over the area are finished.
- C. The handling, moving, or working of topsoil shall be performed only when, in the opinion of the Authority, it is in a normally friable condition, suitable for such operations, moist but not wet. Under no circumstances shall topsoil be worked when wet enough to "ball up" when worked.
- D. Replace topsoil and spread over the prepared sub-grade to obtain the required depth and grade elevation. Hand rake topsoil and remove all materials unsuitable or harmful to plant growth.
- E. The final thickness of topsoil shall be not less than 6" thick after rolling with a hand roller. Finished grades shall be within the following tolerance limits:
 - ¾" deviation within a distance of 10'.
 - 1-1/2" maximum deviation.
- F. In achieving the finish grades, control points shall be set up and maintained at all times, and whenever this requirement is not met in a particular area, corrections shall be made immediately and before proceeding further with the work.

Section 14.17 TILLAGE

- A. After seedbed areas have been brought to proper compacted elevation, thoroughly loosen to a minimum depth of 5" by discing, harrowing, or other approved methods. Do not work top soiled areas when frozen or excessively wet.
- B. Distribute limestone uniformly at the rate indicated on the Seeding Tables. Thoroughly incorporate into the topsoil to a minimum depth of 4" as a part of the tillage operation.
- C. Distribute fertilizer uniformly at the rate indicated on the Seeding Tables. Incorporate into soil to depth of 4" by approved methods as part of tillage operation.
- D. Liming and fertilizer rates may be decreased if lesser rates are indicated by soil tests provided by the Contractor.

Section 14.18 SEEDING

- A. All areas of disturbed earth, not originally paved, shall be temporarily or permanently seeded immediately upon completion of work if the area is not to be re-disturbed prior to final grading and seeding. Disturbed areas (outside wetlands) which are not at finished grade, and which will be re-disturbed within one year shall be seeded with a quick-growing temporary seeding mixture and mulched. Disturbances in wetlands and/or disturbed areas that are either at finished grade or will not be re-disturbed within one year shall be seeded with a permanent seed mixture and mulched. If construction takes place during the winter months, the disturbed area shall be mulched immediately upon completion of work if the area is not to be re-disturbed prior to final grading and seeding.
- B. Uniformly sow specified seed mix by use of approved hydraulic seeder, power-operated seeder, or hand-operated seeder. Do not seed when winds are over 15 mph.
- C. Upon completion of sowing, cover seed to an average depth of ¼" by hand raking or approved mechanical methods.
- D. Upon completion of seed covering, roll the area with a roller, exerting a maximum force of 100 pounds per foot width of roller.

Section 14.19 MULCHING

- A. In general, straw mulching may be used on less critical slopes for soil erosion. On slopes greater than 3:1, jute matting, woven fiber erosion control blanket, land lass, or approved equal shall be used instead of straw mulch.
- B. Mulching shall be performed in conjunction with seeding at the conclusion of finish grading operations. Straw shall be placed uniformly in a continuous blanket at a minimum rate of three tons per acre. A mechanical blower may be used to apply mulch material, provided the machine has been specifically designed and approved for this purpose. Machines which cut mulch into short pieces, will not be permitted.
- C. Straw shall be anchored by the use of twine stakes, wire staples, paper or plastic nets, emulsified asphalt provided it is applied uniformly to the mulch at a rate of not less than 31 gallons per 1000 square yards), or by other approved methods. Mulch over top soiled areas

shall be incorporated into the soil by approved equipment.

- D. When mulching by the asphalt mix method, apply the mulch by blowing. Spray the asphalt binder material into the mulch as it leaves the blower. Apply the binder to the mulch in the proportion of 1.5 to 2.0 gallons per 45 pounds of mulch. Protect structures, pavements, curbs, and walls to prevent asphalt staining. Erect warning signs and barricades at intervals of 50 feet or less along the perimeter of the mulched area. Do not spray asphalt and chemical mulch binders onto any area within 100 feet of a stream or other body of water.
- E. Apply wood cellulose fiber hydraulically at a rate of 320 pounds per 1000 square yards. Incorporate as an integral part of the hydroseed slurry after seed and soil supplements have been thoroughly mixed.
- F. Thoroughly water mulch and seed bed immediately after completion of mulching. Soil shall be moistened to a depth of not less than 4".

Section 14.20 JUTE AND PAPER MATTING

- A. In general, jute or paper matting shall be used on the more critical slopes or as required by the Authority to prevent seed washout and soil erosion. Shape and grade the slope to be protected as required by the Drawings and Specifications. Remove rocks, clods over 1-1/2 in. in diameter, sticks and other material that will prevent contact of the matting with the soil surface.
- B. Lime, fertilize and seed in accordance with the applicable seeding standard except that for jute matting, one-half of the seed may be applied prior to laying the matting, and the remaining seed applied after laying the matting.
- C. Start laying the matting from the top of the channel or slope and unroll downgrade so that one edge of the strip coincides with the channel center. Lay a second strip parallel to the first on the other side of the channel and allow at least a two-(2) inch overlap for jute matting. If one roll of matting does not extend the length of the channel, continue downhill with additional rolls.
- D. Secure the matting by burying the top end of jute strips in a trench four (4) inches or deeper. Tamp the trench full of soil. Reinforce with a row of staples driven through the jute about four-(4) inches downhill from the trench. These staples should be about ten (10) inches apart. Then staple the overlap in the channel center. These staples should be three (3) or four (4) feet apart. The outside edges may be stapled similarly at any time after the center has been stapled. Closer stapling along the sides is required where concentrated water may flow into the channel.
- E. Succeeding strips of matting further down the channel or slope are secured in a similar manner. Strips of matting on the swale should be laid and secured as above to a height of three (3) feet above the base of the swale.
- F. Where one roll of jute matting ends and another roll begins, the end of the top strip shall overlap the trench where the upper end of the lower strip is buried. Make the overlap at least four (4) inches and staple securely.
- G. Erosion Stops: At any point, jute matting may be folded for burying in slit trenches and

secured as were the upper ends. This checks water flow and erosion that may begin under the matting. It also gives improved tie-down. The procedure is recommended on the steeper slopes of sandy soil and gentler slopes subject to seepage. Spacing varies from 25 to 100 feet as required by the Engineer or Authority.

- H. Diversions: Where diversions outlet into a waterway, the outlet should be protected with matting used in the same matter as in the main channel. The matting for the outlet is laid first so that matting in the main channel will overlap the outlet strip.
- I. Matting Soil Contact: Get contact between matting and soil by rolling after laying, stapling, and seeding are complete. Perfect contact is vital to keep water flow over (not under) the matting.
- J. Inspection: After job completion, confirm that matting is in contact with the soil at all places and that critical areas are securely stapled down.

Section 14.21 SODDING

- A. Sodding shall be required if the grades exceed two to one slope.
- B. Sod shall be planted only when the soil is moist and favorable to growth. The area to be sodded and shaped and finished to the lines and grades indicated on the Plans, and the surface loosened prior to placing the sod. The grade shall be kept moist by sprinkling, if necessary, until the sod is placed. The sod shall be placed on the prepared surface with the edges in close contact and, as far as possible, in a position to break joints. Each piece of sod laid shall be fitted and rolled or tamped into place with hand tampers or rollers not less than one hundred (100) square inches in area.
- C. Sod strips in waterways shall be laid perpendicular to the direction of flow. Butt ends of strips tightly.
- D. After rolling or tamping, sod shall be pegged or stapled to resist washout during the establishment period. Jute or another netting may be pegged over the sod for extra protection in critical areas.
- E. A sufficient quantity of water shall be applied to all sod after laying to ensure immediate growth.

Section 14.22 MAINTENANCE, GUARANTEE, AND CERTIFICATION OF ACCEPTABILITY

- A. Maintenance shall begin immediately after each portion of the lawn is planted and shall continue in accordance with the following requirements:
- B. The Contractor shall be held responsible for maintenance of lawns, including watering, weeding, sowing, cutting, and replanting as necessary for at least sixty (60) days after sowing and as much longer as is necessary to establish a uniform stand of the specified grasses and until certification of acceptability. No bare spots will be allowed. After the grass has started, all areas and parts of areas that fail to show a uniform stand of grass, for any reason whatsoever, shall be reseeded repeatedly until all areas are covered with a satisfactory growth of grass. At the time of cutting, keep mower blades not less than two and one-half (2½) inches high. The maintenance period shall continue after seeding and until the lawns

are certified acceptable by the Authority, which date of certification shall not be earlier than the date of substantial completion of the entire work.

- C. Damage resulting from erosion, gullies, washouts, or other causes shall be repaired by filling with topsoil, tamping, re-fertilizing, reseeding, or sodding, and mulching by the Contractor at his expense if such damage occurs prior to a certificate of acceptability by the Authority.
- D. The Contractor's responsibility for maintenance shall cease at the time of certification of acceptability by the Authority. During the guarantee period, the Contractor shall be held responsible for making replacements, but no maintenance will be required.
- E. At the end of the guarantee period, inspection will be made by the Authority upon written notice requesting such inspection submitted by the Contractor at least ten (10) days before the anticipated date.
- F. Lawns shall be guaranteed for one (1) year after certification of acceptability by the Authority and shall be in satisfactory condition at the end of the guarantee period, except for damage resulting from causes beyond the responsibility of the Contractor.

Certification of Acceptability:

- A. Inspection of the work of lawns to determine completion of the work under this Section will be made at the conclusion of the maintenance period and upon written notice requesting such inspection submitted by the Contractor at least five (5) days prior to the anticipated date. The condition of lawns will be noted, and determination made by the Authority, whether maintenance shall continue in any part.
- B. After inspection by the Authority, the Contractor will be notified in writing by the Authority of acceptability of all work of this Section, or if there are any deficiencies of the requirements for completion of the work. Lawn maintenance remaining to be done shall be subject to re-inspection before being certified acceptable.
- C. At the beginning of the next planting season, in which the permanent grass crop is sown, the seeded areas will be inspected. Any section not showing dense, vigorous growth at that time shall be promptly reseeded by the Contractor at his own expense. The lawns shall be watered, weeded, cut, and otherwise maintained until the end of that planting season when they will be accepted.
- D. All requirements for preparation stated in the Specifications shall be repeated for reseeding.
- E. Lawns shall be cut at least once a week and watered at least once a week if there has not been any rain.
- F. The contractor shall submit a schedule for this maintenance, which shall include soil control and conditioning with chemicals, based upon soil tests every two (2) months until lawn is fully developed and approved.

TEMPORARY SEEDING TABLE

Condition	Topsoil	Lime	Fertilizer	Seed Mix & Sowing Rate
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				(% By Weight)
Temporary Cover Mar. thru June	N/A	N/A	N/A	35% Spring Oats 35% Annual Ryegrass 30% Kentucky 31 Fescue Sow 85# per acre
Temporary Cover July thru Aug.	N/A	N/A	N/A	15% Fylking KY Bluegrass 40% Kentucky 31 Tall Fescue 45% Annual Ryegrass Sow 65 # per acre
Temporary Cover After Aug. 30th	N/A	N/A	N/A	75% Winter Rye or Winter Wheat 12% Annual Ryegrass 10% Kentucky 31 Tall Fescue 3% Red Top Sow 154 # per acre (Winter Wheat or Winter Rye in the mix = 116 lbs. or 2 bushels)

PERMANENT SEEDING TABLE

Condition	Topsoil	Lime *	Fertilizer **	Seed Mix and Sowing Rate (% By Weight)
Roadside, Non-Mowed	Yes	100# Per 1,000 Sq Ft	10-6-4 or 20-8-8	80% KY 31 Tall Fescue 20% Pennlawn Red Fescue Sow 100 Lbs./Acre March to May/August to September
Roadside, Mowed	Yes	100# Per 1,000 Sq Ft	10-6-4 or 20-8-8	50% KY Bluegrass 30% Pennlawn Red Fescue 20% Pennfine Perennial Ryegrass Sow 100 Lbs./Acre March to May/August to September
Bank Areas, Non-Mowed	Yes	100# Per 1,000 Sq Ft	10-6-4 or	45% Crownvetch or Birdsfoot Trefoil 55% Annual Ryegrass Sow 45 Lbs./Acre Anytime except September to October
Lawns	Yes	100# Per 1,000 Sq Ft	10-6-4 or 20-8-8	80% Turf Type Fescue *** 20% Pennfine Perennial Ryegrass Sow 250 Lbs./Acre March to May/August to

				September
Fields and Pasture, Non-Cultivated	No	No	10-6-4 or 20-8-8	100% Timothy Sow 45 Lbs./Acre March to May/August to September
Fields, Cultivated	No	No	10-6-4 or 20-8-8	100% Annual Ryegrass Sow 45 Lbs./Acre March to May/August to September
Woods, Sparse	No	No	10-6-4 or 20-8-8	100% Pennlawn Red Fescue Sow 175 Lbs./Acre March to May/August to September
Wetlands	Yes	No	No	10% Red Top 30% KY 31 Tall Fescue 30% Annual Ryegrass 30% Bent Grass 85 Lbs./Acre March to May/August to September

Unless lesser rate indicated by soils tests.

** Fertilizer shall be minimum 50% organic nitrogen, apply at a rate in accordance with the manufacturers' specifications for new lawns.

*** Turf Type Fescue shall be supplied in two equal parts or different species (See Table 1).

Article 15.00 CONCRETE FOR UTILITY CONSTRUCTION – GENERAL

Section 15.01 DESCRIPTION

The work shall consist of the cast-in-place cement concrete construction associated with curbs, sidewalks, pads, thrust blocks and encasements.

The Contractor shall supply all necessary labor, materials, and equipment necessary for the completion of this work.

Section 15.02 SUBMITTALS

- A. Submit a Statement of Compliance from the concrete producer, together with supporting data, attesting that the cement concrete conforms to the State Specifications for the class of concrete being used.
- B. Submit detailed shop drawings of reinforcing steel.

Section 15.03 PART 2 – PRODUCTS CEMENT CONCRETE

Ready-mixed, conforming to Section 704, Publication 408 Specifications.

Requirements for State approved batch plants design computations and plant inspection shall not apply. The acceptability of concrete will be based on conformance with the Cement Concrete Criteria specified below and the results of the specified tests.

Cement Concrete Criteria:

Class A:

28-day compressive strength: 3300 psi
Slump: 1 to 3 inches

Class C:

28-day compressive strength: 2000 psi
Slump: 2 to 6 inches

High Early Strength:

3-day compressive strength: 3000 psi
Slump: 1 to 3 inches

Cement Factor and Maximum water-cement Ratio conforming to Table A, Section 704.1(b), Publication 408 Specifications.

Section 15.04 CONCRETE ACCESSORIES**Reinforcement Bars:**

New billet-steel conforming to Section 709.1, PennDOT Publication 408 Specifications and ASTM A615, Grade 60.

Steel Wire Fabric:

Conforming to Section 709.3, Publication 408 Specifications.
Pre molded expansion joint filler:

Conforming to ASTM D1752.

Section 15.05 DURABILITY

Concrete that will be subject to potentially destructive exposure (other than wear or loading) such as freezing and thawing, severe weathering or chemicals shall contain entrained air as indicated in Table I

Table 1

Nominal Maximum Size of Coarse Aggregate (inches)	Total Air Content, Percent By Volume
3/8	6 to 10
1/2	5 to 9
3/4	4 to 8
1	3.5 to 6.5
1-1/2	3 to 6
2	2.5 to 5.5

Section 15.06 EXECUTION GENERAL

- A. Comply with Section 1001 PennDOT Publication 408 Specifications for construction requirements, including formwork, curing, and protection, and finishing of cement concrete.
- B. Excavate and shape trench bottoms and sides to accommodate thrust block forms, encasement, manhole bases, inlets, and vaults.
- C. Support pipe at the required elevation with brick or concrete block. Do not use earth, rock, wood, or organic material as supports.
- D. If concrete work is to take place in cold weather where for 3 consecutive days the average daily air temperature is less than 40 degrees Fahrenheit, and the air temperature is not greater than 50 degrees Fahrenheit for more than one-half of any 24-hour period, then the Contractor shall conform to ACI 306R-88, Cold Weather Concreting, and ACI 306.1-90, Standard Specifications for Cold Weather Concreting.

Section 15.07 CONSTRUCTION

- A. Construct cast-in-place manhole bases, curbs, sidewalks, and miscellaneous reinforced structures of Class A concrete. Class A concrete shall be central-plant-mixed.
- B. Construct reaction and support blocking, cradles, encasements, and miscellaneous mass concrete of Class C concrete. Class C concrete may be from a mobile cement concrete plant or truck mixed.
- C. Provide spacers, chairs, bolsters, ties, and other devices for properly placing, spacing, supporting, and fastening reinforcement in place.
- D. Place concrete utilizing all care to prevent displacement of pipe or fittings. Return displaced pipe or fittings to line and grade immediately.
- E. Ensure tie rods, nuts, bolts, and flanges are free and clear of concrete.
- F. Do not backfill structures until the concrete has achieved its initial set, forms are removed, and concrete work is inspected by the Authority.
- G. Perform backfilling and compaction as specified in Article 6.

APPENDIX D – STANDARD DETAIL DRAWINGS

NWWA W- WATER DETAILS

SECTION	DESCRIPTION
W1	TYPICAL GATE VALVE WITH VALVE BOX
W2	TYPICAL FIRE HYDRANT INSTALLATION
W3	STANDARD WATER SERVICE CONNECTION
W4	INLINE BLOW OFF ASSEMBLY
W5	TERMINAL BLOW OFF ASSEMBLY
W6	1 INCH DOMESTIC SERVICE METER PIT INSTALLATION
W7	1 ½ INCH OR 2 INCH DOMESTIC METER PIT INSTALLATION
W8	1 ½ INCH OR 2 INCH DCDA LINE SETTER
W9	1 ½ INCH OR 2 INCH DOMESTIC METER ASSEMBLY
W10	TAPPED TEE W/ 1 INCH DOMESTIC AND 1 INCH FIRE LINE
W11	TAPPED TEE W/ 1 INCH DOMESTIC AND 1 ½ INCH FIRE LINE
W12	ADDITION OF 1 INCH FIRE LINE TO EXISTING 1 INCH SERVICE
W13	RESIDENTIAL ¾ INCH SERVICE W/ 5/8" X ¾" METER
W14	RESIDENTIAL 1 INCH SERVICE W/ 5/8" X ¾" METER OR 1" METER
W15	NON-RESIDENTIAL ¾" SERVICE W/ ¾ INCH METER
W16	NON-RESIDENTIAL 1" SERVICE W/ 5/8" X ¾" OR 1" METER
W17	NON-RESIDENTIAL 1 ½ INCH SERVICE W/ 1 ½ INCH METER
W18	NON-RESIDENTIAL 2 INCH SERVICE W/ 2 INCH METER
W19	1" THROUGH 2" FIRE PROTECTION SYSTEMS
W20	4" THROUGH 10" FIRE PROTECTION SYSTEMS
W21	HORIZONTAL THRUST BLOCK ORIENTATION
W22	HORIZONTAL AND VERTICAL DOWNWARD THRUST BLOCK DIMENSIONS
W23	VERTICAL UPWARD THRUST BLOCKS
W24	VERTICAL DOWNWARD THRUST BLOCK ORIENTATION

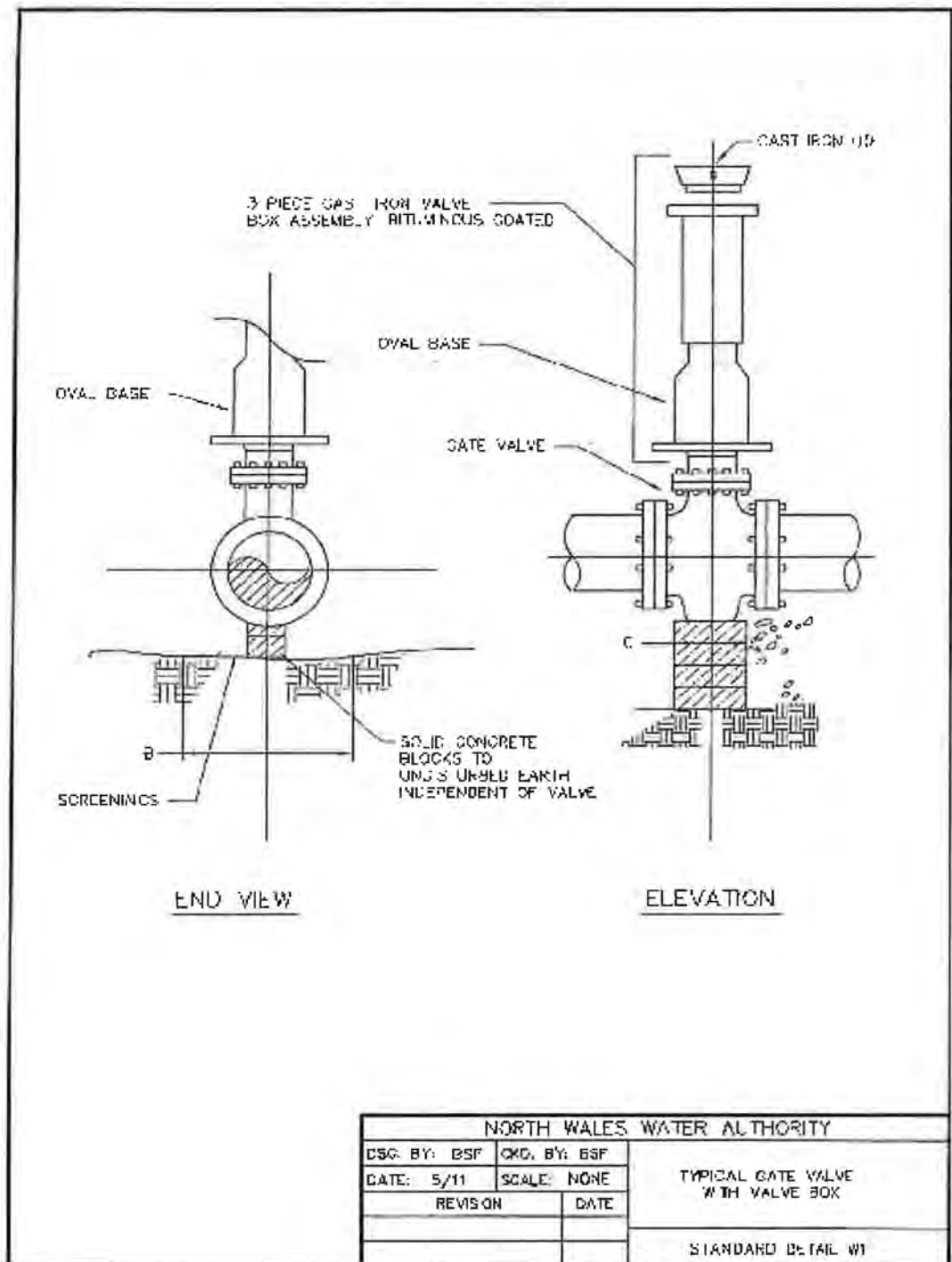
NWWA S- SEWER DETAILS

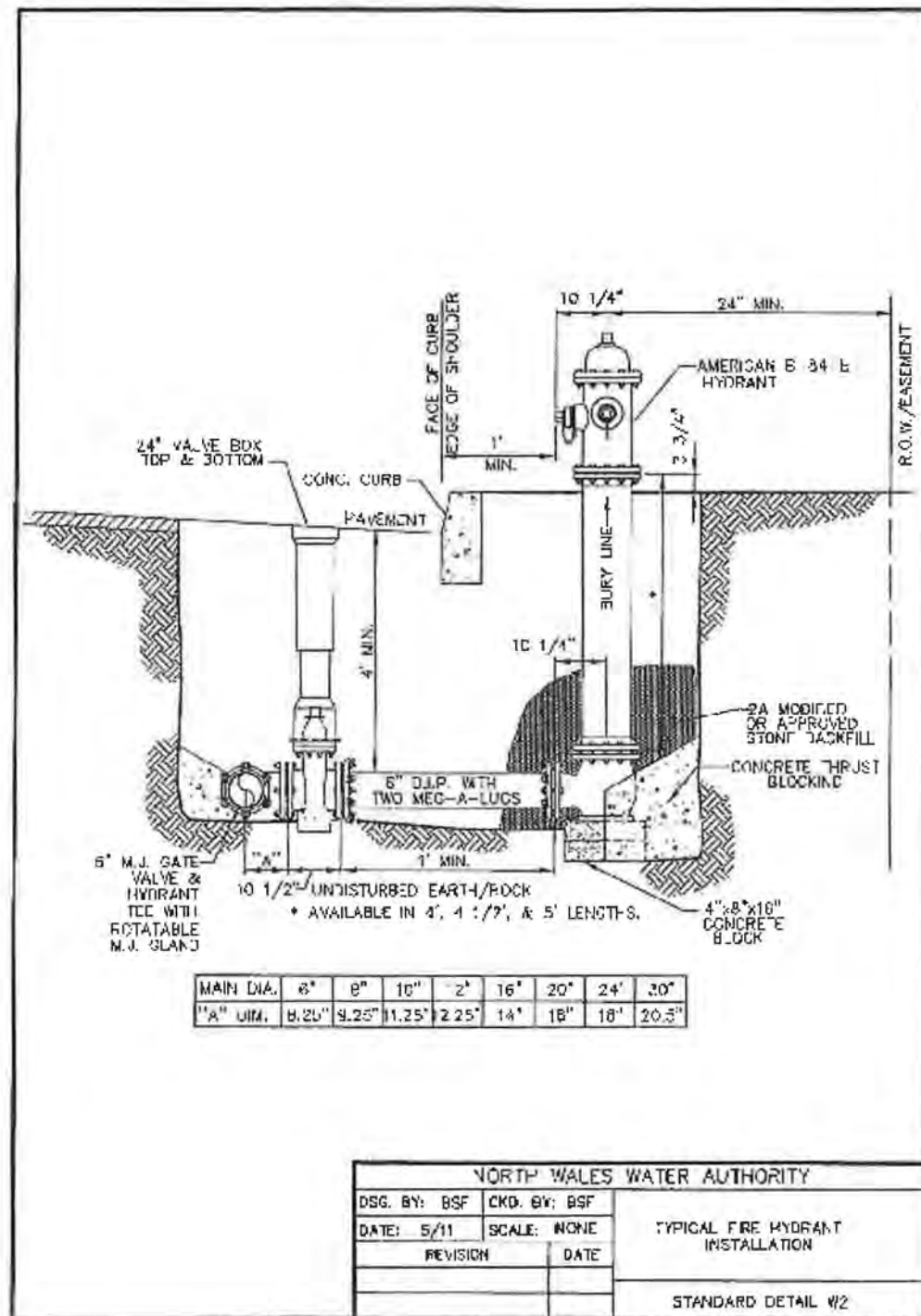
SECTION	DESCRIPTION
S1	STANDARD MANHOLE FRAME AND COVER
S2	WATERTIGHT MANHOLE FRAME AND COVER
S3	TYPE "A" STANDARD MANHOLE
S4	TYPE "B" SHALLOW MANHOLE
S5	DROP MANHOLE CONNECTION
S6	DOGHOUSE MANHOLE CONSTRUCTION
S7	POLYPROPYLENE MANHOLE STREP
S8	ALUMINUM MANHOLE STEP
S9	LATERAL CONNECTION SHALLOW SEWER (NEW CONSTRUCTION)
S10	LATERAL CONNECTION DEEP SEWER (NEW CONSTRUCTION)
S11	LPSS LATERAL CONNECTION PIT

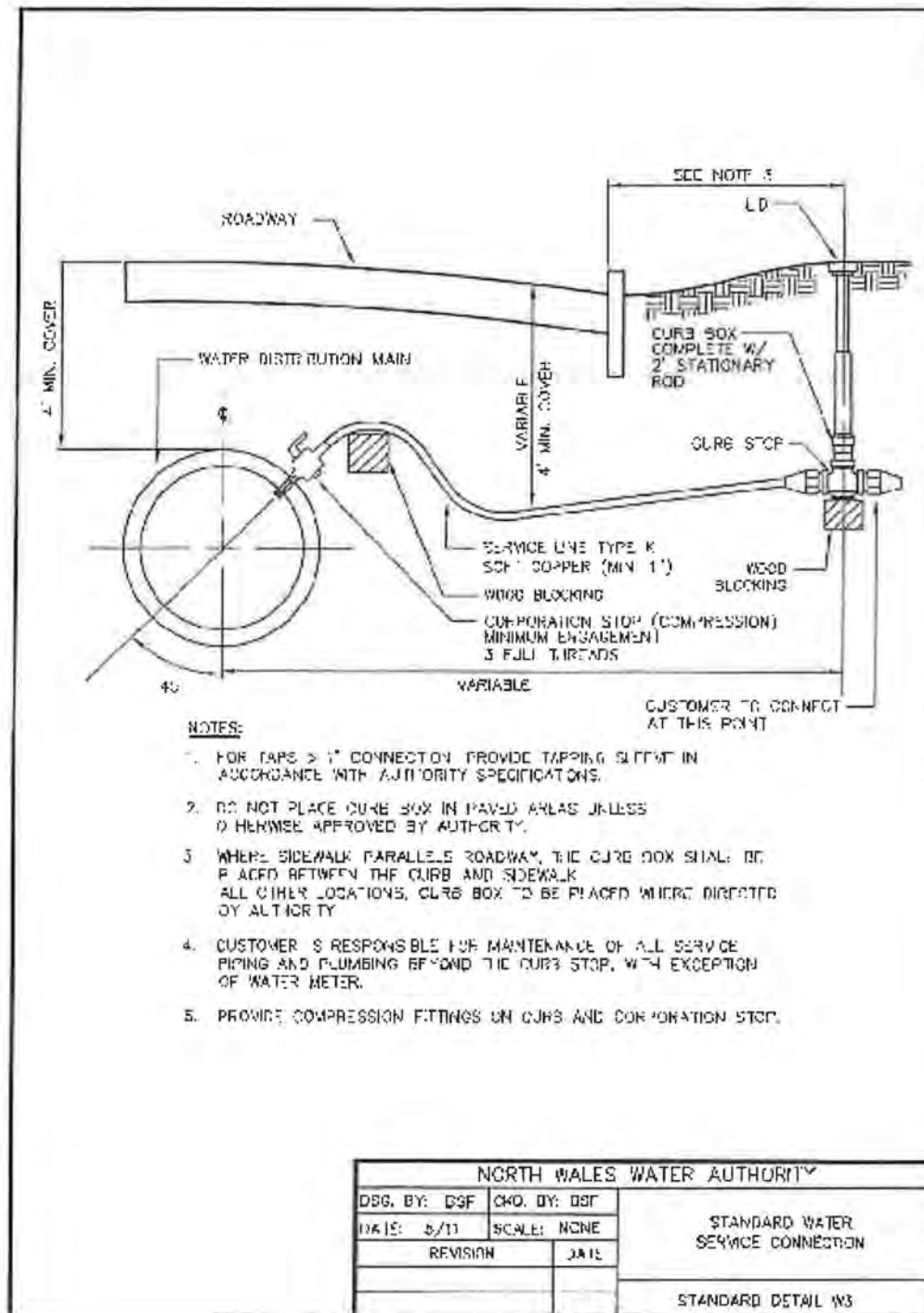
NWWA M- MISCELLANEOUS DETAILS

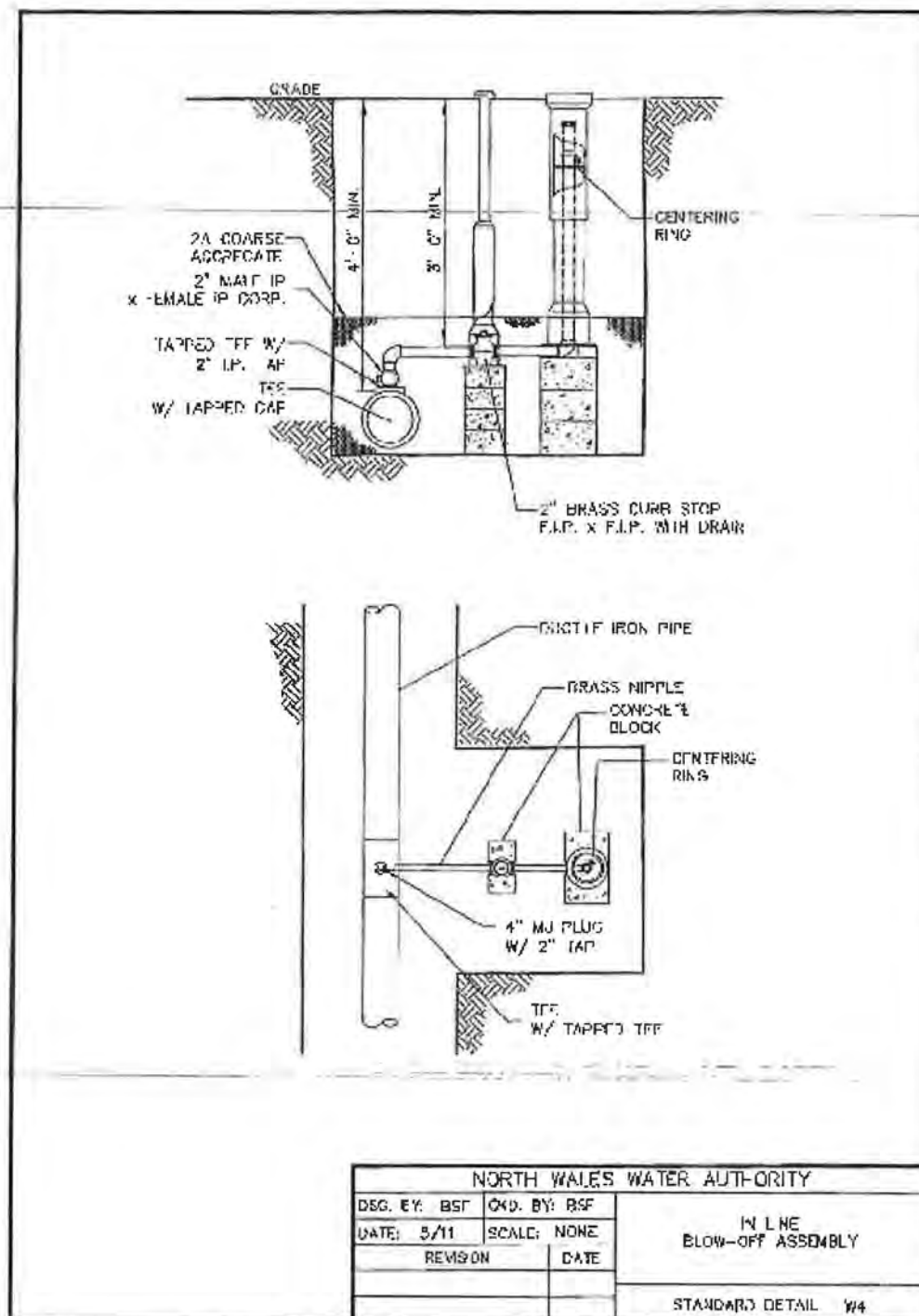
SECTION	DESCRIPTION
M1	STANDARD PIPE BEDDING
M2	CONCRETE ENCASEMENT
M3	PERMANENT PAVEMENT RESTORATION
M4	TEMPORARY PAVEMENT
M5	RESTORATION IN UNPAVED AREAS
M6	JACKING CONDUIT
M7	PIPELINE STREAM CROSSING

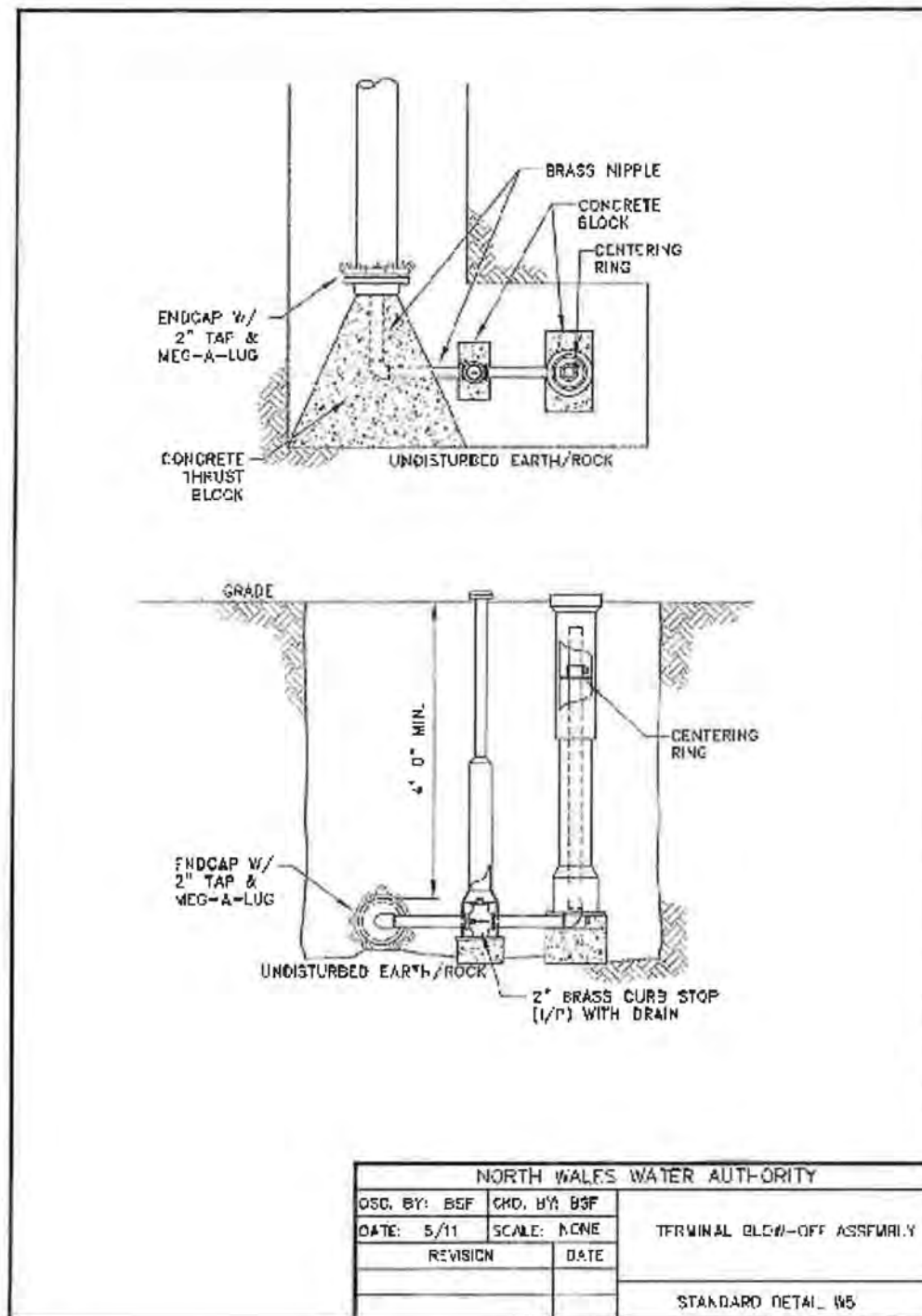
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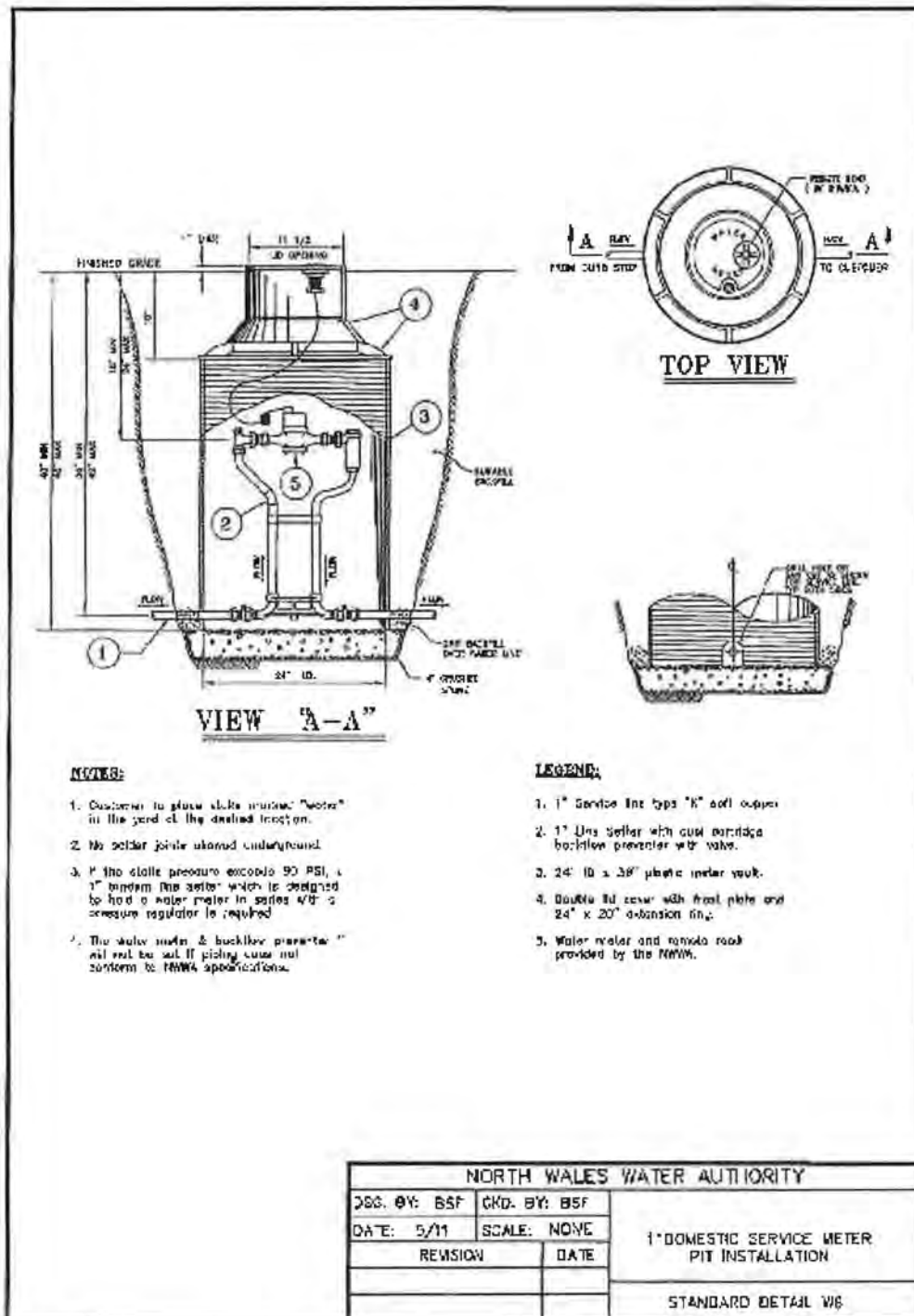


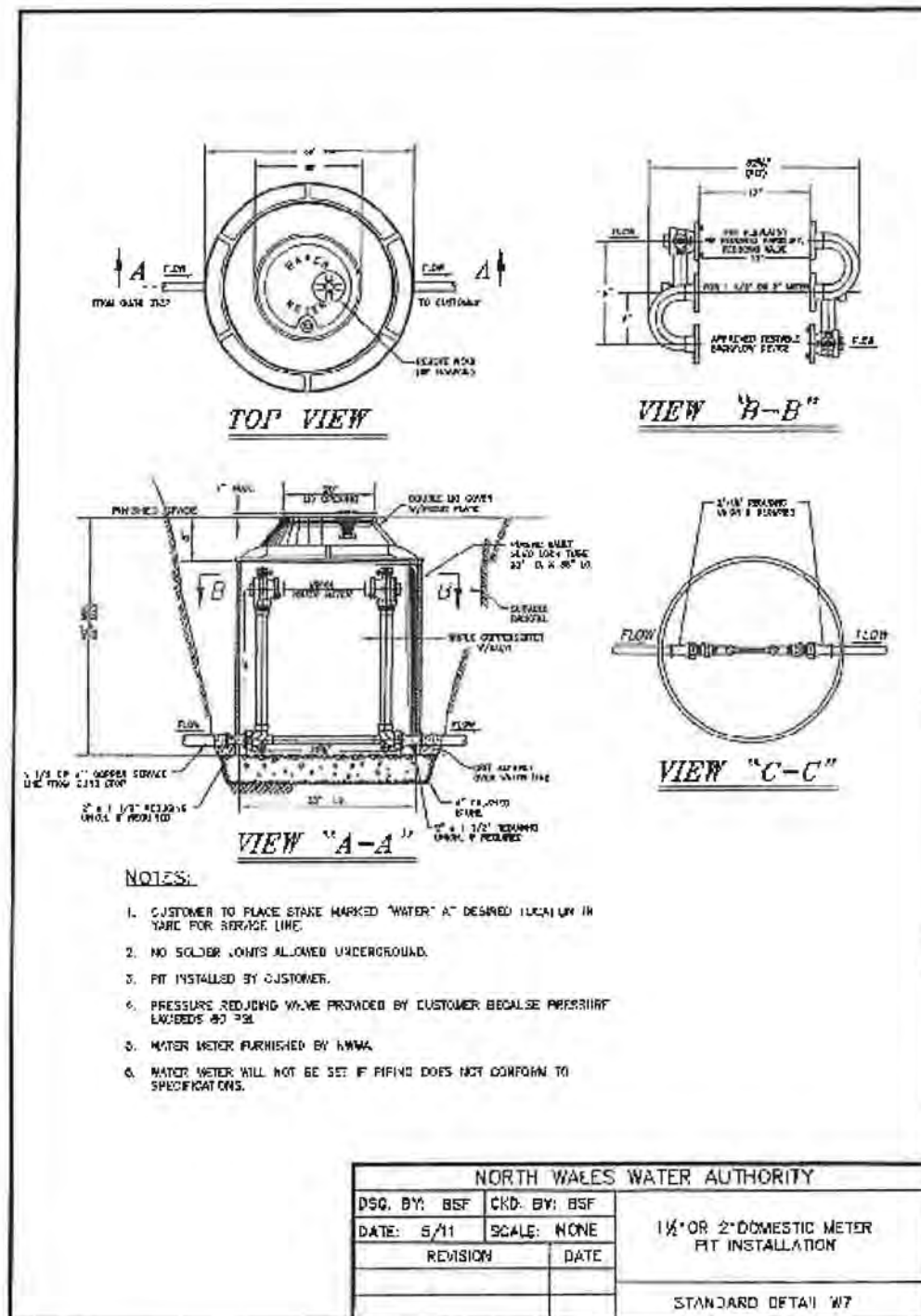


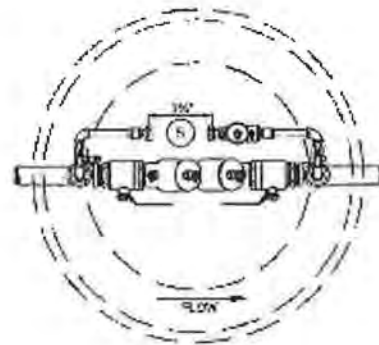




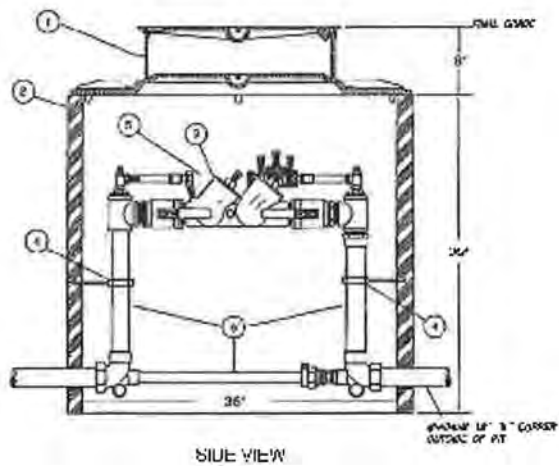








PLAN VIEW

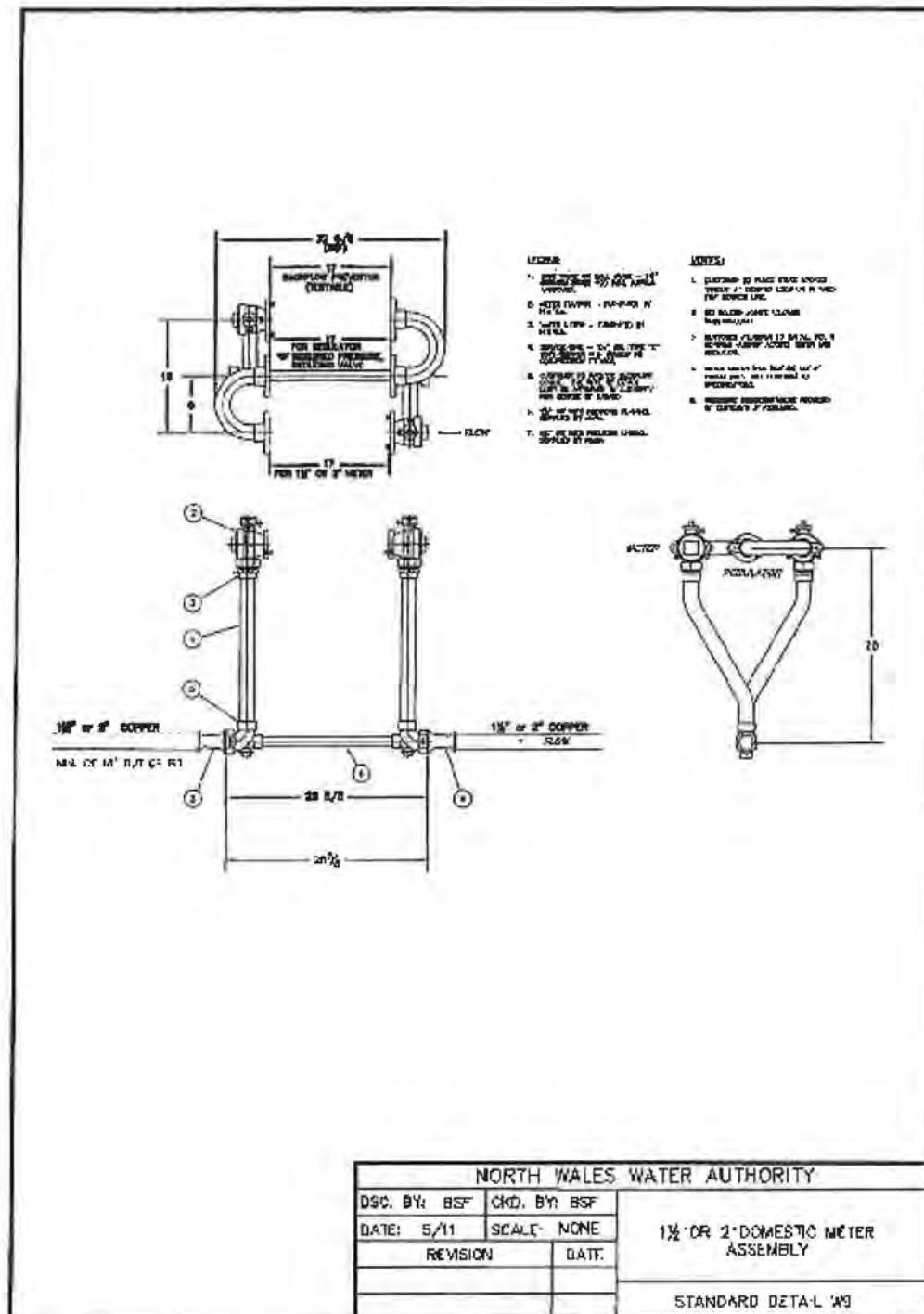


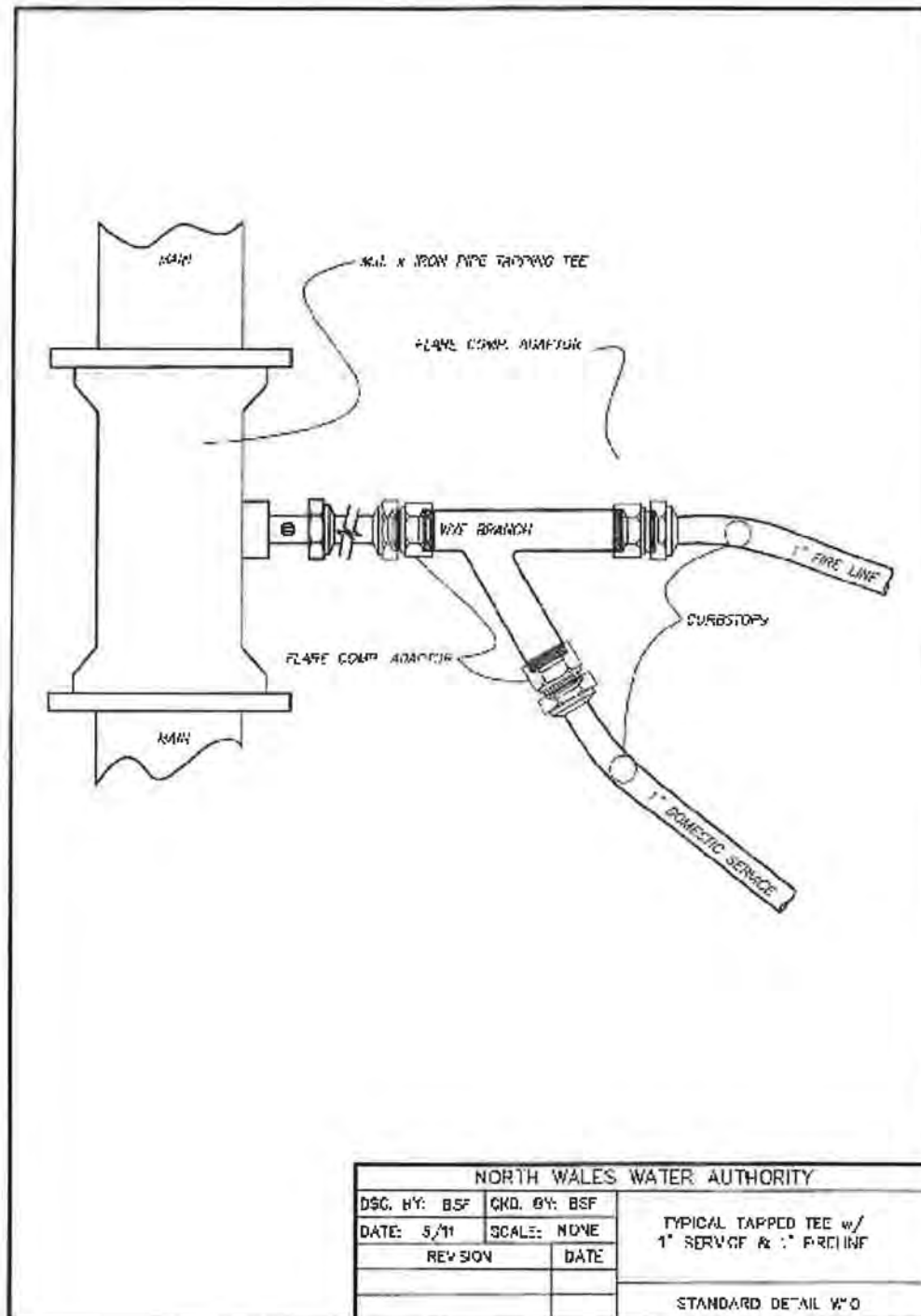
SIDE VIEW

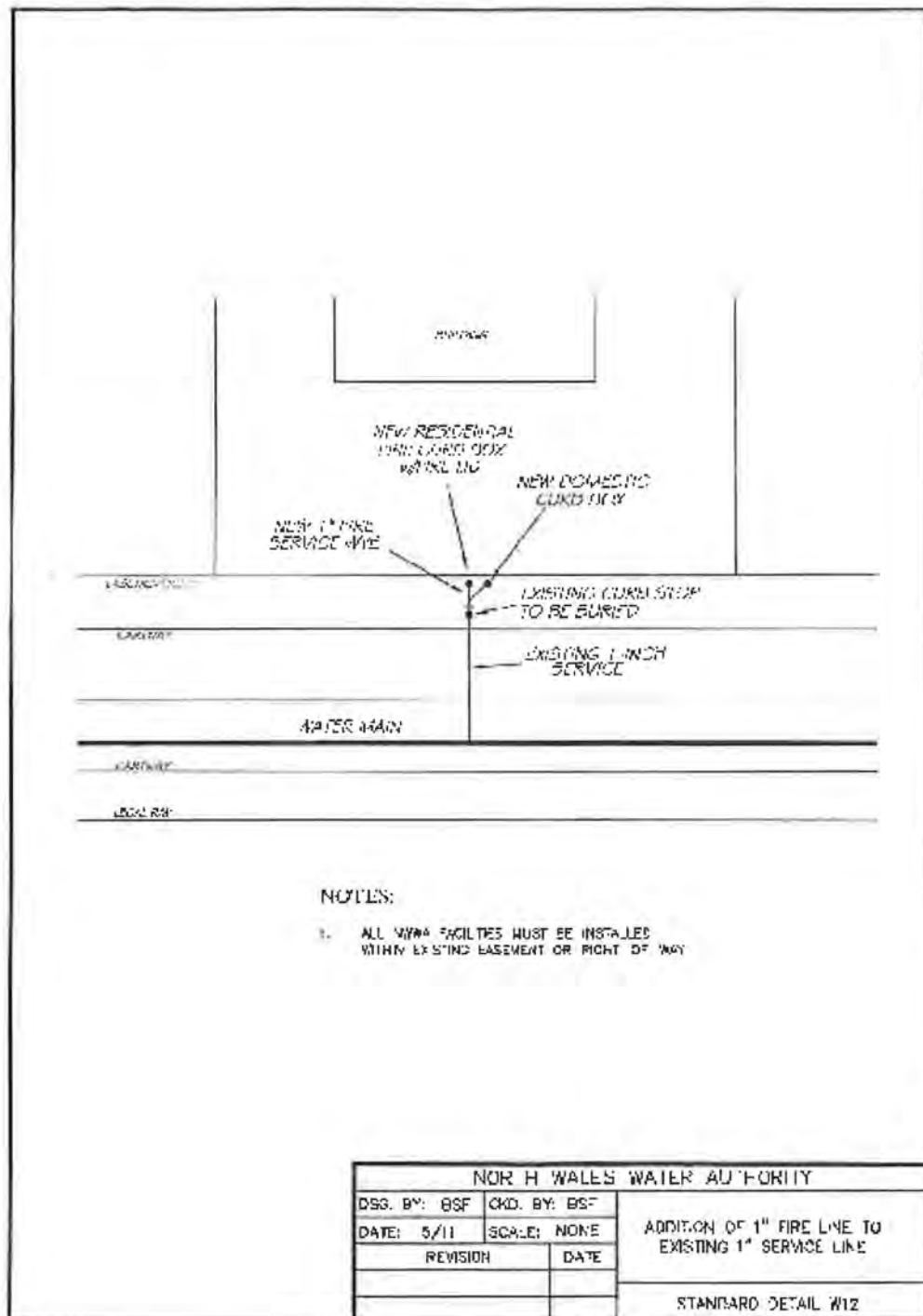
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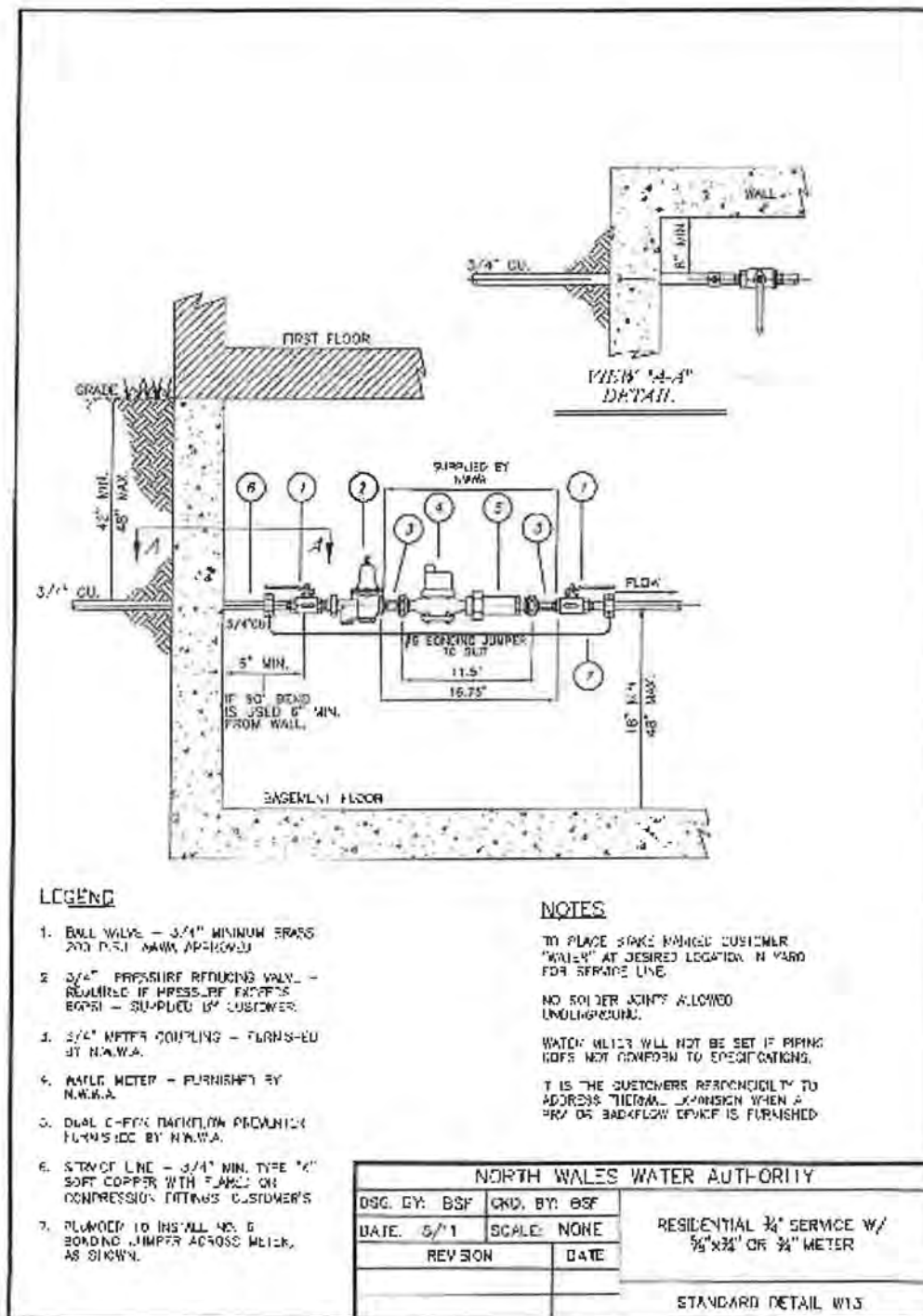
1. FORD METER COVER WITH SHAFT END, OR
EQUIV.
2. 1/2" x 36" METAL PIT
3. 1/2" x 36" COVERED WITH METAL SET BY
EQUIV.
4. PIPE JOINTS/SHROUDS
5. MOUNTING BRACKET BY METER
6. FORD METER SC-011874-01 OR EQUIV.

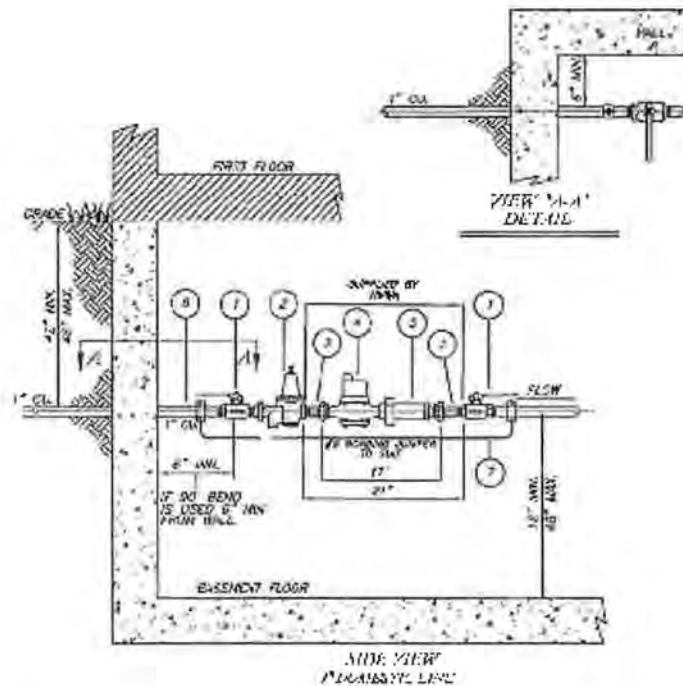
NORTH WALES WATER AUTHORITY			
DSC. BY: BSF		CHKD. BY: BSF	
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REVISION		DATE	
STANDARD DETAIL WB			











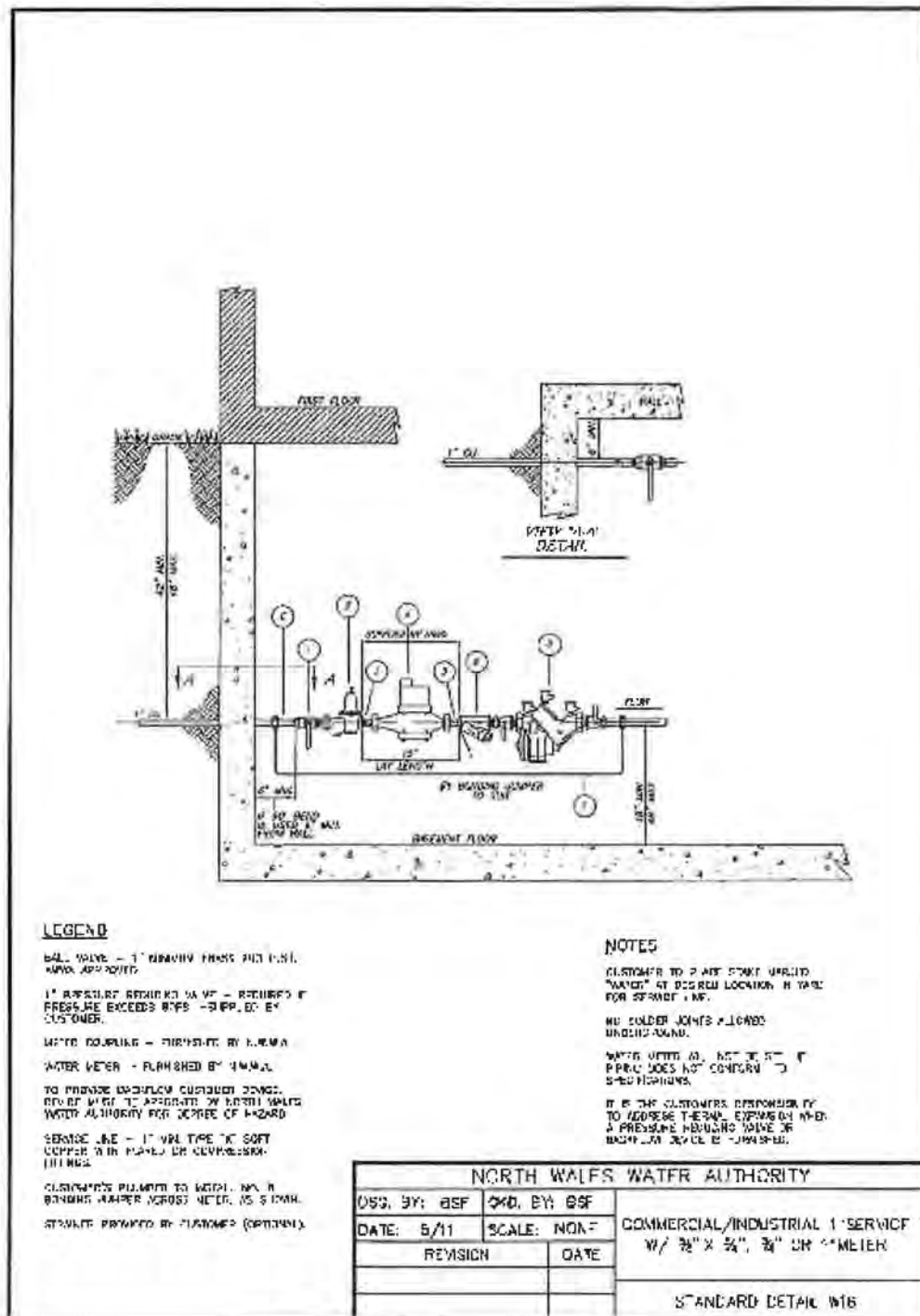
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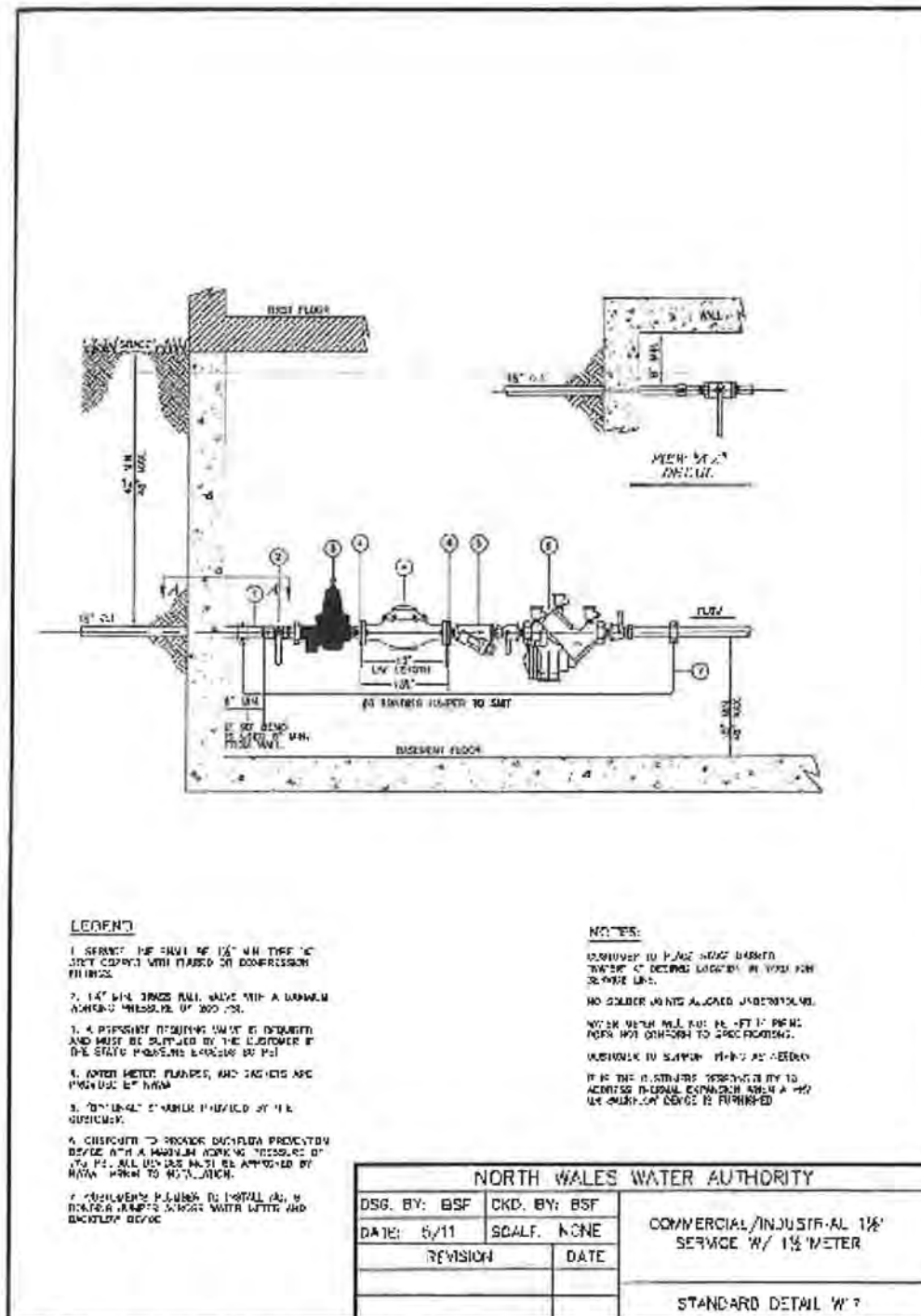
1. EIL VALVE - 1" HANDY BRASS 20/1000 ANG 1" VALVE
2. 1" PRESSURE REDUCING VALVE REQUIRED IF 1" REDUCED LOCATES ABOVE - SUPPLY BY CUSTOMER
3. 1" VEEB COUPLING - FURNISHED BY N.W.A.
4. WATER METER - FURNISHED BY N.W.A.
5. 1/2" DIA. CLIP FLOOR PLATE FURNISHED BY N.W.A.
6. SERVICE LINE - 1" MIN. 1/2" X 1/2" BORER SOFT WITH FLAPS OR CONFESSION FITTING
7. CUSTOMER'S PLUMBER TO INSTALL NO. 3 BOWING JUMPER ABOVE VALVE, AS SHOWN.

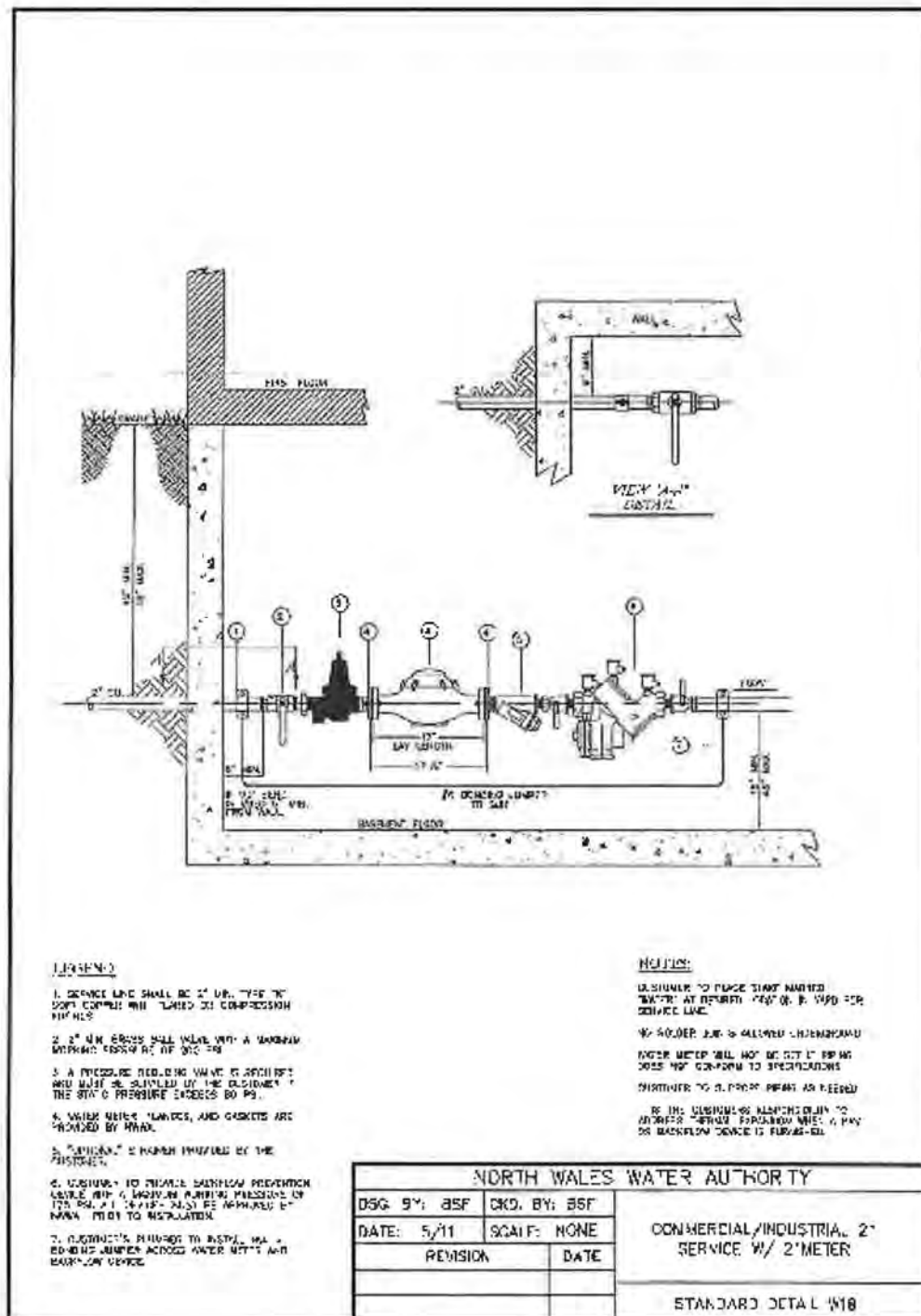
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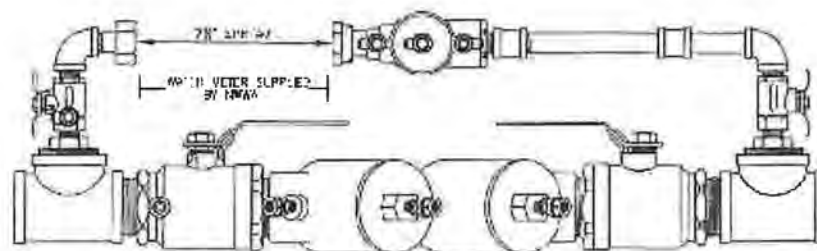
- CUSTOMER TO PLACE STAKE MARKED "WATER" AT DESIRED LOCATION IN YARD FOR SERVICE LINE.
- NO GROUND JUMPS ALLOWED UNDERGROUND.
- WATER METER WILL NOT BE SET IF P.H.G. DOES NOT COMPLY TO SPECIFICATIONS.
- IT IS THE CUSTOMER'S RESPONSIBILITY TO ADDRESS THERMAL EXPANSION WHEN A P.P.V. OR BACKFLOW DEVICE IS FURNISHED.

NORTH WALES WATER AUTHORITY			
DES. BY: BSH	CHKD. BY: BSH	RESIDENTIAL 1 SERVICE W/ 3/4" x 3/4", 3/4" OR 1 METER	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL 012	









GENERAL SPECIFICATIONS:

THE BACKFLOW PREVENTER SHALL BE A DOUBLE CHECK VALVE DETECTOR ASSEMBLY TYPE INCLUDING (4) RESILIENT SEATED TIGHT SHUTS AND 2 FULL PORT 90° ELBOWS.

THE (2) CHECK VALVES SHALL BE EQUIPPED WITH SPRINGS AND INTERLOCK UNDER 2" AND WHICH SHALL MAINTAIN A MINIMUM 1" SPAC IN THE NORMAL DIRECTION OF FLOW UNDER STAIN CONDITIONS. BOTH CHECKS AND TEST COCKS SHALL BE TOP MOUNTED FOR EASY 2" ACCESS FOR MAINTENANCE.

THE BACKFLOW PREVENTER SHALL BE SUITABLE FOR SERVICE PRESSURE UP TO 150 PSI.

THE BACKFLOW PREVENTERS THAT COMPOSE THIS ASSEMBLY MUST MEET THE FOLLOWING STANDARDS: JIS K 1372 & BS 6759, SEC. 10, 4555 1047, FMUL.

NOTES:

1. ALL DEVICES MUST BE APPROVED BY NORTH WALES WATER AUTHORITY PRIOR TO INSTALLATION.
2. WATER TIGHT AND GASKETS WILL BE PROVIDED BY NWAA.
3. THE SERVICE LINE SHALL BE TYPE "K" SOFT CONFORM WITH F.A.C.D. OF COMPRESSOR FITTINGS.
4. CUSTOMER MUST PROVIDE THE BACKFLOW DEVICE.
5. IF THE SYSTEM UTILIZED A PUMP OR IS A CHEMICAL SYSTEM THE DEVICE MUST BE AN RTDR.
6. IF THE WATER MAIN WILL ADD HOT AND COLD WATER SERVICE AT ALL BE DESCRIBED IF PUMP DOES NOT CONFORM TO SPECIFICATIONS.

NORTH WALES WATER AUTHORITY

DESIGNED BY: BSF

CHKD BY: BSF

DATE: 5/11

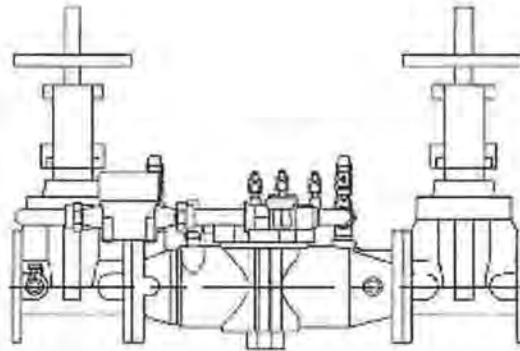
SCALE: NONE

REVISION

DATE

THROUGH 2 FIRE PROTECTION SYSTEMS

STANDARD DETAIL W19



GENERAL SPECIFICATIONS:

THE BACKFLOW PREVENTER SHALL BE A JUMP & RUN VALVE WITH AN ASSEMBLY KIT INCLUDING (4) HELICOIL SEALS, 120 COILS AND 2 FULL PORT BALL VALVES.

THE (2) CHECK VALVES SHALL BE INDEPENDENTLY ACTING AND INTERNALLY LOADED. EACH CHECK SHALL MAINTAIN A MINIMUM 1" P.D. IN THE NORMAL DIRECTION OF FLOW, UNDER STANDING CONDITIONS WITH CHECKS AND TEST COILS IN PLACE. THE COILS SHALL BE USED FOR TESTING, REPAIR AND MAINTENANCE.

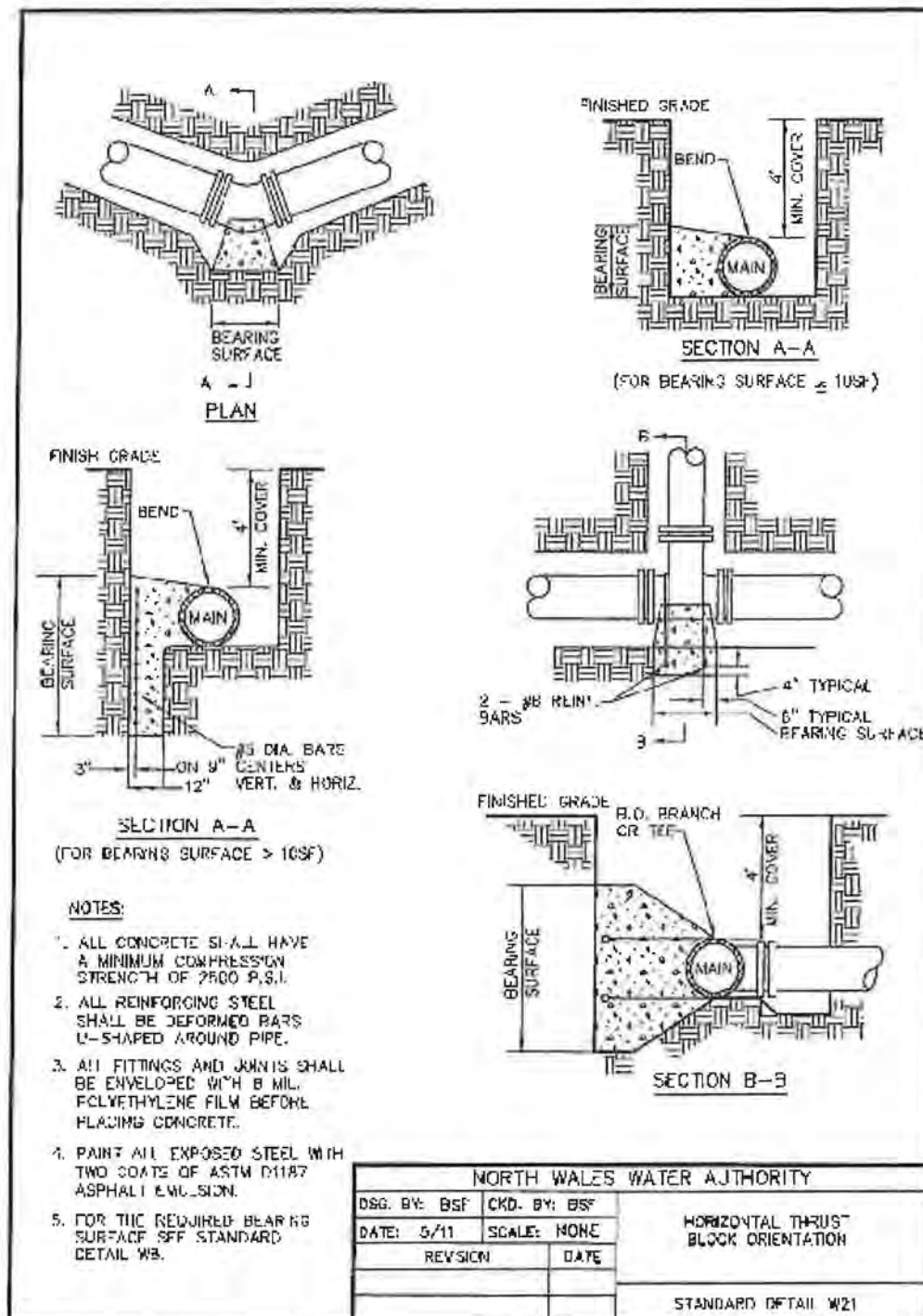
THE BACKFLOW PREVENTER SHALL BE SUITABLE FOR SUPPLY PRESSURE UP TO 175 PSI.

THE BACKFLOW PREVENTERS THAT COMPOSE THIS ASSEMBLY USE THE FM APPROVED STANDARDS: JUMP & RUN VALVE, SEC. 16, ASSE 1042, FMUL, AMMA.

NOTES:

1. ALL DEVICES MUST BE APPROVED BY NORTH WALES WATER AUTHORITY PRIOR TO INSTALLATION.
2. WATER VENCH AND JACKETS MUST BE PROVIDED BY MM.
3. CUSTOMER MUST PROVIDE THE FLOWMETER DEVICE.
4. IF THE SYSTEM UTILIZES A PUMP OR IS A CHEMICAL SYSTEM, THE DEVICE MUST BE AN RSDB.
5. THE WATER METER SHALL NOT BE SET AND (WATER) SERVICE WILL BE DISCONTINUED IF IT IS NOT CONFORM TO SPECIFICATIONS.

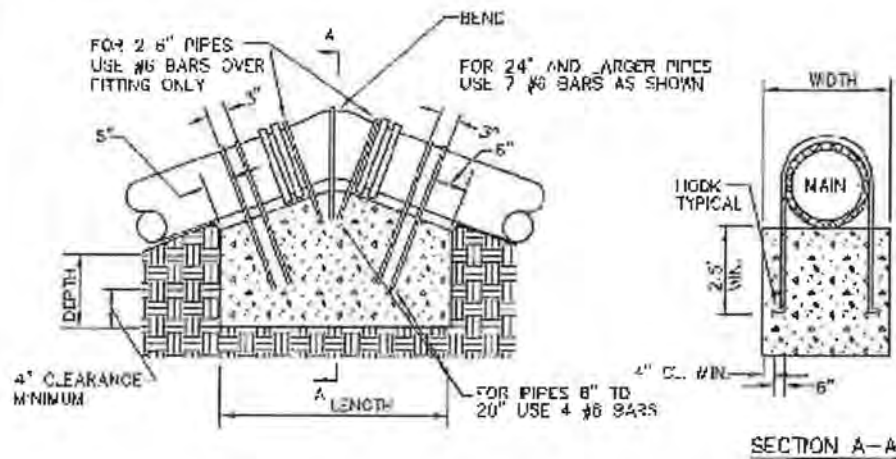
NORTH WALES WATER AUTHORITY			
DESIGNED BY: BSW	CHECKED BY: BSW	4" THROUGH 10" FIRE PROTECTION SYSTEMS	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL W20	



BEARING SURFACE AREAS HORIZONTAL THRUST & VERTICAL DOWNWARD THRUST 150 P.S.I. WORKING PRESSURE												
PIPE SIZE	3"			4"			6"			8"		
	DEGREE OF DEFLECTION			DEGREE OF DEFLECTION			DEGREE OF DEFLECTION			DEGREE OF DEFLECTION		
TYPE OF BEARING MATERIAL AND ALLOWABLE LOADS	30°	45°	90°	30°	45°	90°	30°	45°	90°	30°	45°	90°
SOFT CLAY (1,000#/SF)	2.8	3.8	2.1	1.1	1.3	4.1	5.8	2.1	1.8	1.0	8.4	11.8
SLT (1,000#/SF)	1.8	2.6	1.4	1.0	1.0	2.2	3.8	2.1	1.1	1.0	5.6	7.3
SANDY SLT (3,000#/SF)	1.0	1.3	1.0	1.0	1.0	1.4	1.5	1.0	1.0	1.0	2.8	4.0
SAND (4,000#/SF)	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.0	1.0	1.0	2.1	2.8
SANDY CLAY (6,000#/SF)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HARD CLAY (8,000#/SF)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
PIPE SIZE	10"			12"			14"			16"		
	DEGREE OF DEFLECTION			DEGREE OF DEFLECTION			DEGREE OF DEFLECTION			DEGREE OF DEFLECTION		
TYPE OF BEARING MATERIAL AND ALLOWABLE LOADS	30°	45°	90°	30°	45°	90°	30°	45°	90°	30°	45°	90°
SOFT CLAY (1,000#/SF)	21.8	30.8	18.7	8.5	4.7	37.8	42.8	23.6	12.0	6.0	41.4	53.0
SLT (1,000#/SF)	14.5	20.5	11.1	5.7	2.9	20.4	29.0	16.7	8.0	4.0	27.5	35.0
SANDY SLT (3,000#/SF)	7.3	10.1	5.6	2.8	1.4	14.0	14.0	7.5	4.0	2.0	13.2	16.8
SAND (4,000#/SF)	5.4	7.7	4.2	2.1	1.1	10.5	10.5	5.5	3.0	1.5	10.0	14.0
SANDY CLAY (6,000#/SF)	3.6	5.1	2.8	1.4	1.0	5.1	7.2	3.8	2.0	1.0	8.8	9.7
HARD CLAY (8,000#/SF)	2.4	3.4	1.9	1.0	1.0	3.4	4.6	2.6	1.5	1.0	4.8	5.3

NOTE: D.E. DENOTES DEGREE OF DEFLECTION
ALL AREAS IN SQUARE FEET.

NORTH WALES WATER AUTHORITY			
DSG. BY: BSF	CHKD. BY: BSF	HORIZONTAL AND VERTICAL DOWNWARD THRUST ELOCK DIMENSIONS	
DATE: 6/11	SCALE: NONE		
RFASION	DATE	STANDARD DETAIL W/22	



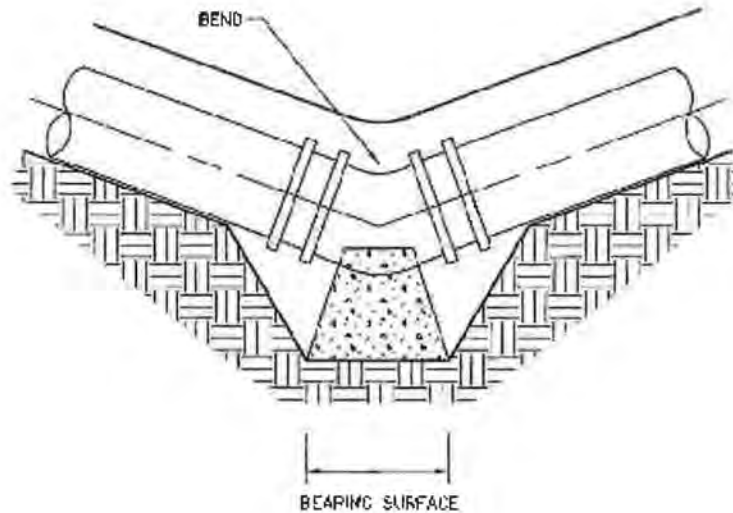
NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 P.S.I.
2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS U-SHAPED AROUND PIPE.
3. ALL FITTINGS AND JOINTS SHALL BE ENVELOPED WITH 8 MIL. POLYETHYLENE FILM BEFORE PLACING CONCRETE.
4. PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASTM D1187 ASPHALT EMULSION.

BEARING SURFACE AREAS VERTICAL UPWARD THRUST 150 P.S.I. WORKING PRESSURE									
PIPE SIZES	LENGTH			WIDTH			DEPTH		
	1'-25"	2'-25"	4'-5"	11'-25"	22'-25"	45"	11'-25"	22'-25"	45"
6" & 8"	3'	4'	6'	3'	3'	3'	2'	3'	4'
10" & 12"	4'	6'	7'	4'	4.5'	4'	2.5'	3'	4'
14" & 16"	6'	8'	11'	4.5'	4.5'	4.5'	3.5'	5'	5'

ALL AREAS IN SQUARE FEET.

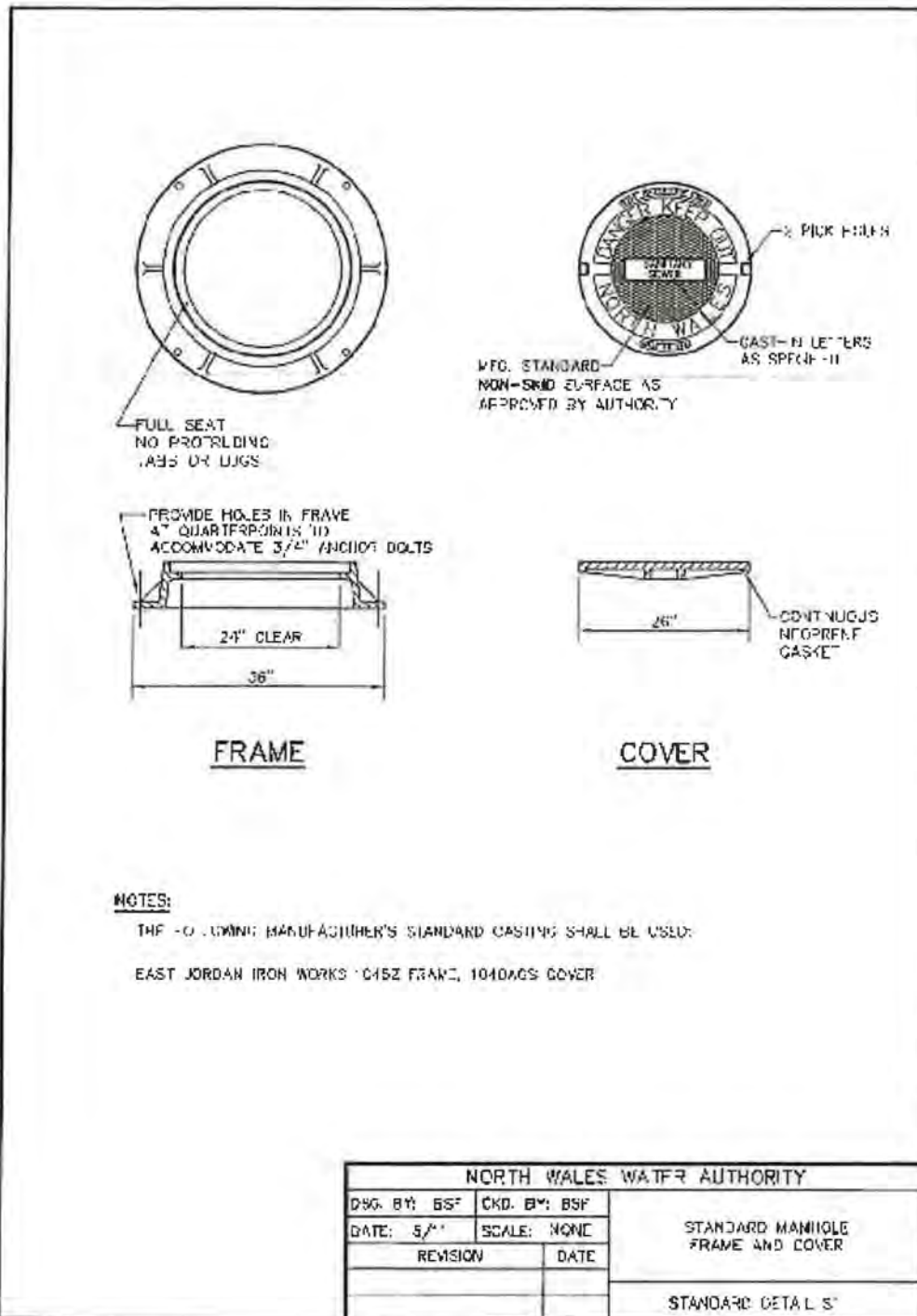
NORTH WALES WATER AUTHORITY					
DSG. BY: BSF	CKD. BY: BSF	VERTICAL UPWARD THRUST BLOCKS			
DATE: 5/11	SCALE: NONE				
REVISION	DATE				
		STANDARD DETAIL W23			

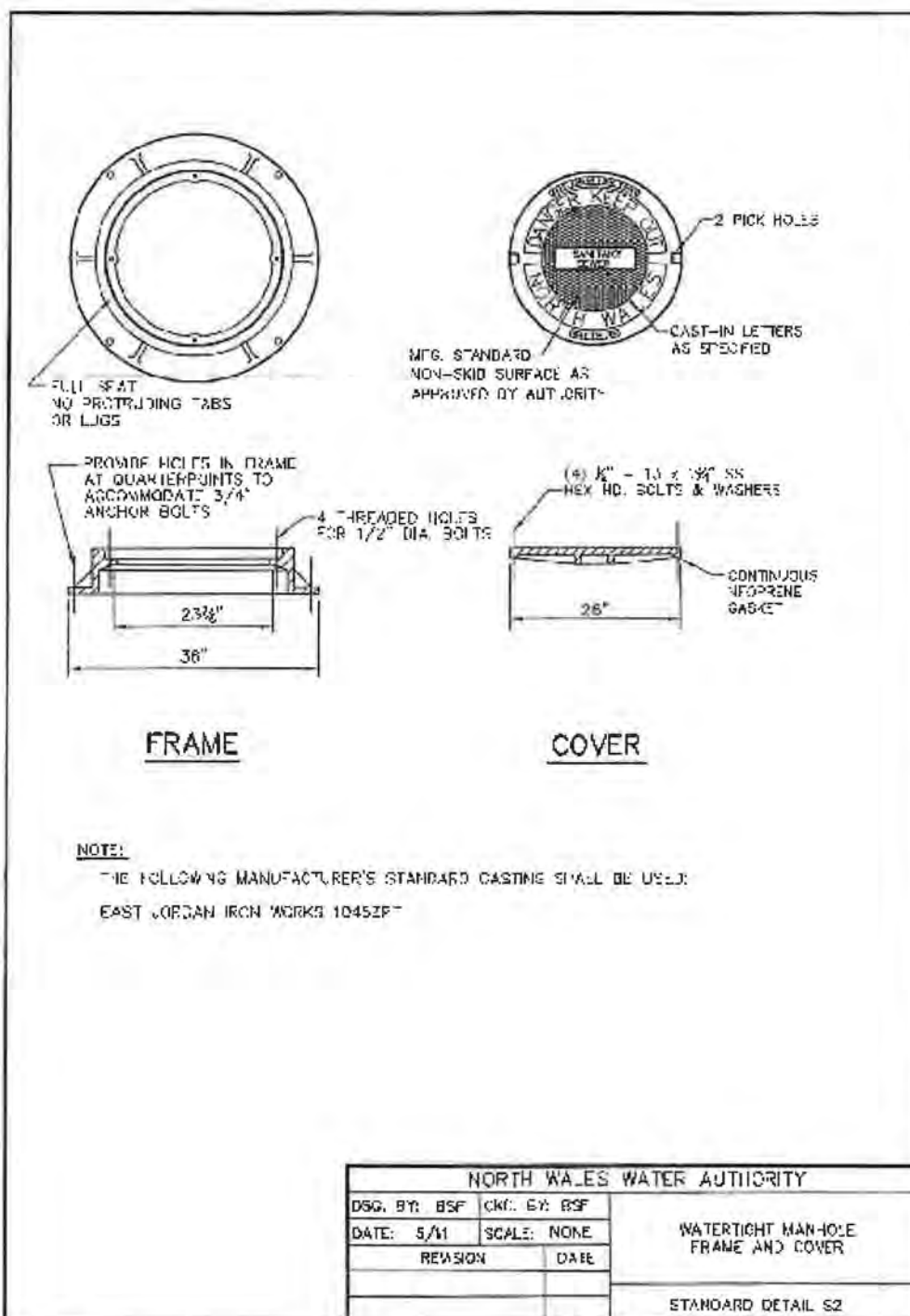


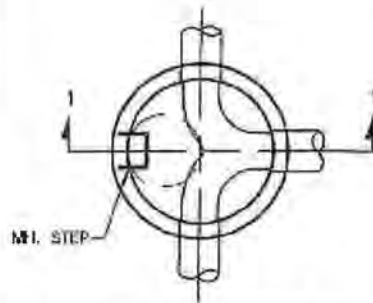
NOTES:

1. ALL CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 2500 P.S.I.
2. ALL FITTINGS AND JOINTS SHALL BE COVERED WITH POLYETHYLENE FILM BEFORE PLACING CONCRETE.
3. PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASTM D1187 ASPHALT EMULSION.
4. FOR THE REQUIRED BEARING SURFACE SEE STANDARD DETAIL W19.

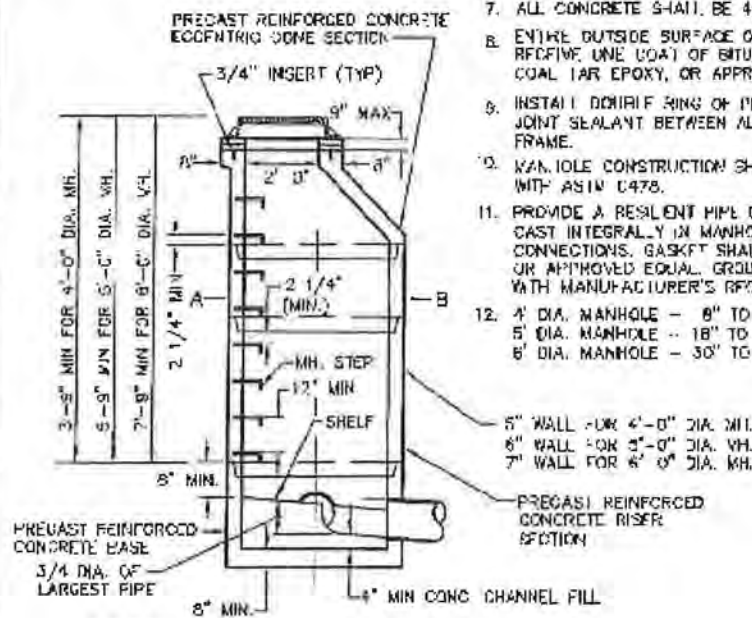
NORTH WALES WATER AUTHORITY			
DESIGNED BY: BSF	CHECKED BY: BSF	VERTICAL DOWNWARD THRUST BLOCK	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL W24	







PLAN BELOW LINE A - B



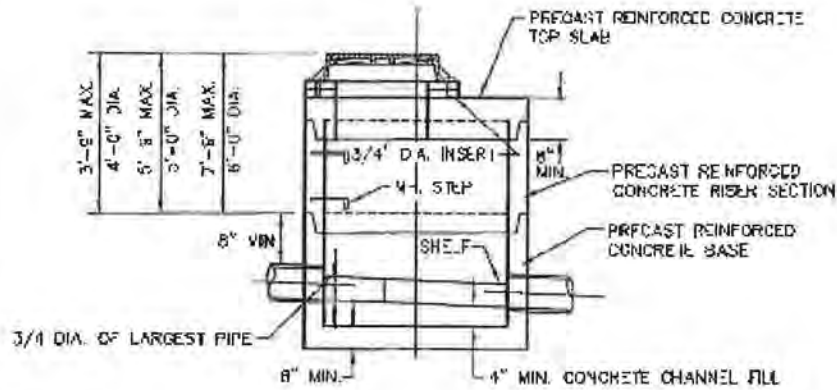
SECTION 1-1

NOTES:

1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO $3/4$ OF THE DIAMETER OF THE SOWER.
2. THE SLOPE SHALL SLOPE TOWARD THE INVERT CHANNEL "A" AT A RATE OF 1" PER FOOT.
3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS. ALL OTHER MANHOLES TO BE TYPE "A".
4. FOR MANHOLES HAVING 6' DIA. AND 8' DIA. RASF, REDUCTION IN DIAMETER TO 4' SHALL START AT THE FIRST JOINT ABOVE THE UPPEST PIPE CONNECTION TO WALL, WHERE DEPTH IS SUFFICIENT.
5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONC. SLAB OR CONCRETE SLAB WITH $2-3/4"$ DIA. BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON THE BOLT CIRCLE, FOR WATERTIGHT COVERS USE $4-3/4"$ DIA. BOLTS AT 90° ON THE BOLT CIRCLE.
6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES.
7. ALL CONCRETE SHALL BE 4000 PSI MINIMUM.
8. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE ONE COAT OF BITUMINOUS COATING, COAL TAR EPOXY, OR APPROVED EQUAL.
9. INSTALL JOINT RING OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.
10. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASIN 0478.
11. PROVIDE A RESILIENT PIPE CONNECTION GASKET CAST INTEGRALLY IN MANHOLE WALL "A" ALL PIPE CONNECTIONS. GASKET SHALL BE A-LOK CONNECTOR, OR APPROVED EQUAL. GROUT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
12. 4' DIA. MANHOLE - 8" TO 16" PIPES
5' DIA. MANHOLE - 18" TO 24" PIPES
6' DIA. MANHOLE - 30" TO 48" PIPES

NORTH WALES WATER AUTHORITY

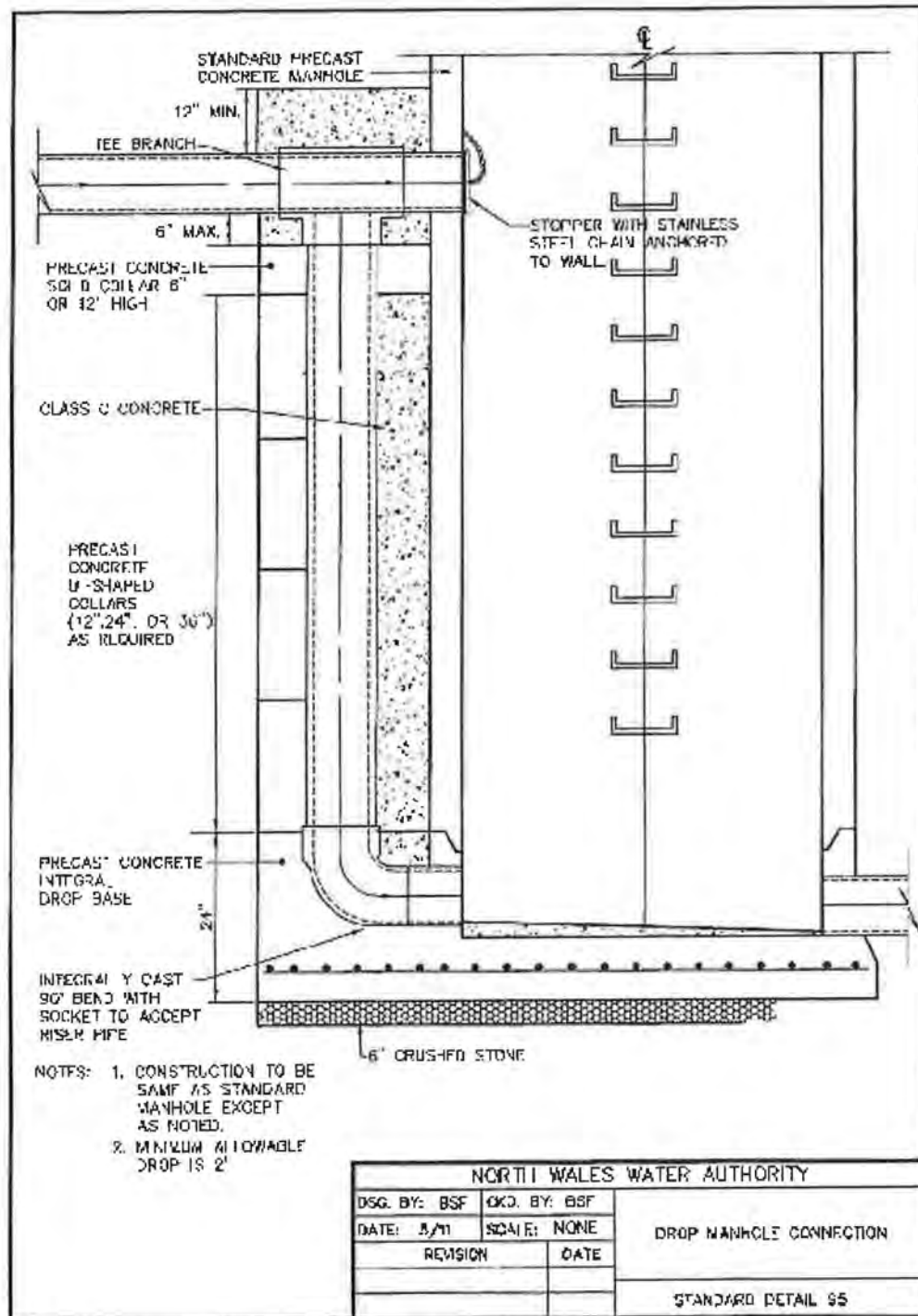
DSG. BY: BSF	CHK. BY: BSF	TYPE "A" STANDARD MANHOLE
DATE: 3/11	SCALE: NONE	
REVISION	DATE	STANDARD DETAIL S3

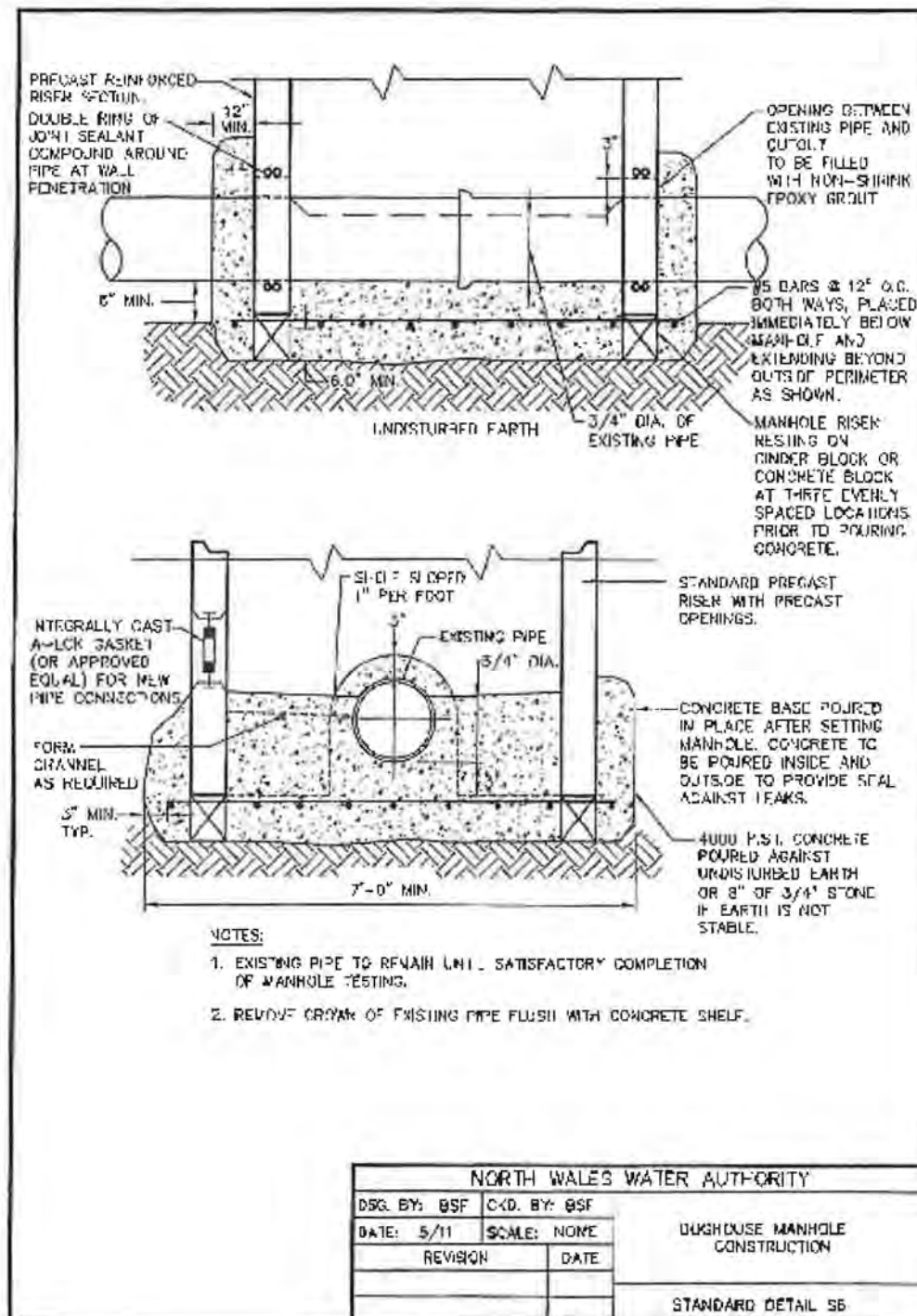


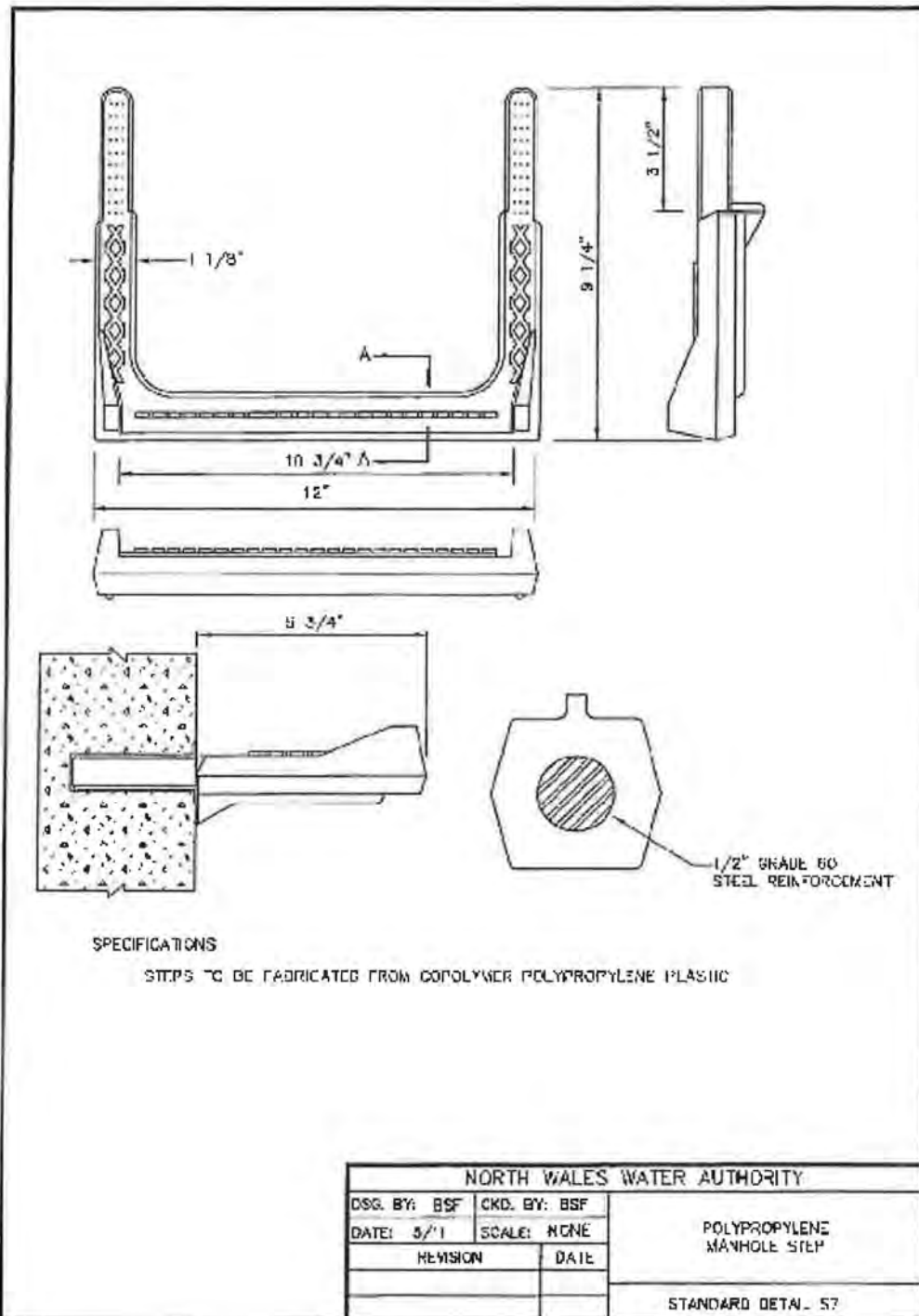
NOTES:

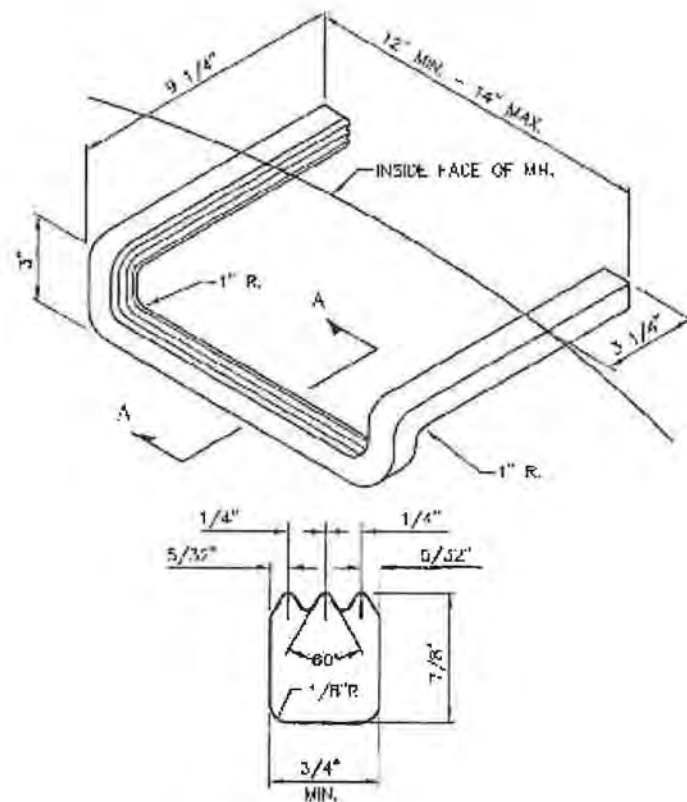
1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
2. THE SLOPE SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS. ALL OTHER MANHOLES TO BE TYPE "A".
4. FOR MANHOLES HAVING 6" DIA. AND 8" DIA. BASE, REDUCTION IN DIAMETER TO 4" SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE UNVECTION TO WALL, WHERE DEPTH IS SUFFICIENT.
5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION OR CONCRETE SLAB WITH 2 - 3/4" DIA. BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON THE BOLT CIRCLE. FOR WATERTIGHT COVERS USE 4 - 3/4" DIA. BOLTS AT 90° ON THE BOLT CIRCLE.
6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES.
7. ALL CONCRETE SHALL BE 4000 PSI MINIMUM.
8. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE ONE COAT OF BITUMINOUS COATING, COAL TAR EPOXY OR APPROVED EQUAL.
9. INSTALL DOUBLE RING OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER RAMP.
10. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C428.
11. PROVIDE A RESILIENT PIPE CONNECTION BASKET CAST INTEGRALLY IN MANHOLE WALL AT ALL PIPE CONNECTIONS. BASKET SHALL BE A-LOK CONNECTOR, OR APPROVED EQUAL, CAST IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
12. 4" DIA. MANHOLE - 8" TO 16" PIPES
8" DIA. MANHOLE - 16" TO 24" PIPES
12" DIA. MANHOLE - 30" TO 48" PIPES

NORTH WALES WATER AUTHORITY			
DSG. BY: RSF	CKD. BY: RSF	TYPE "B" SHALLOW MAN-HOLE	
DATE: 5/11	SCALE: NONE		
REVISION		DATE	
		STANDARD DETAIL S4	







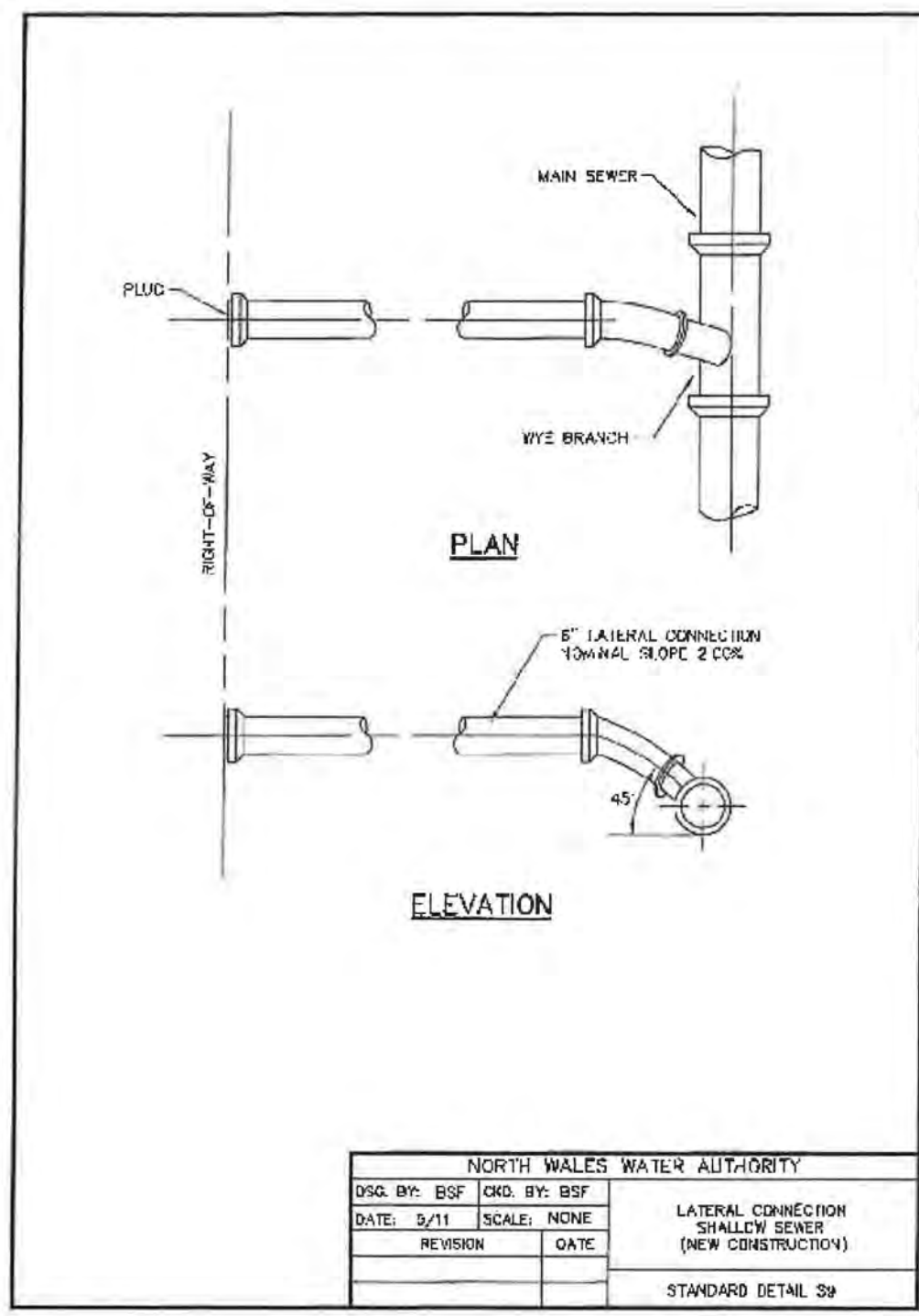


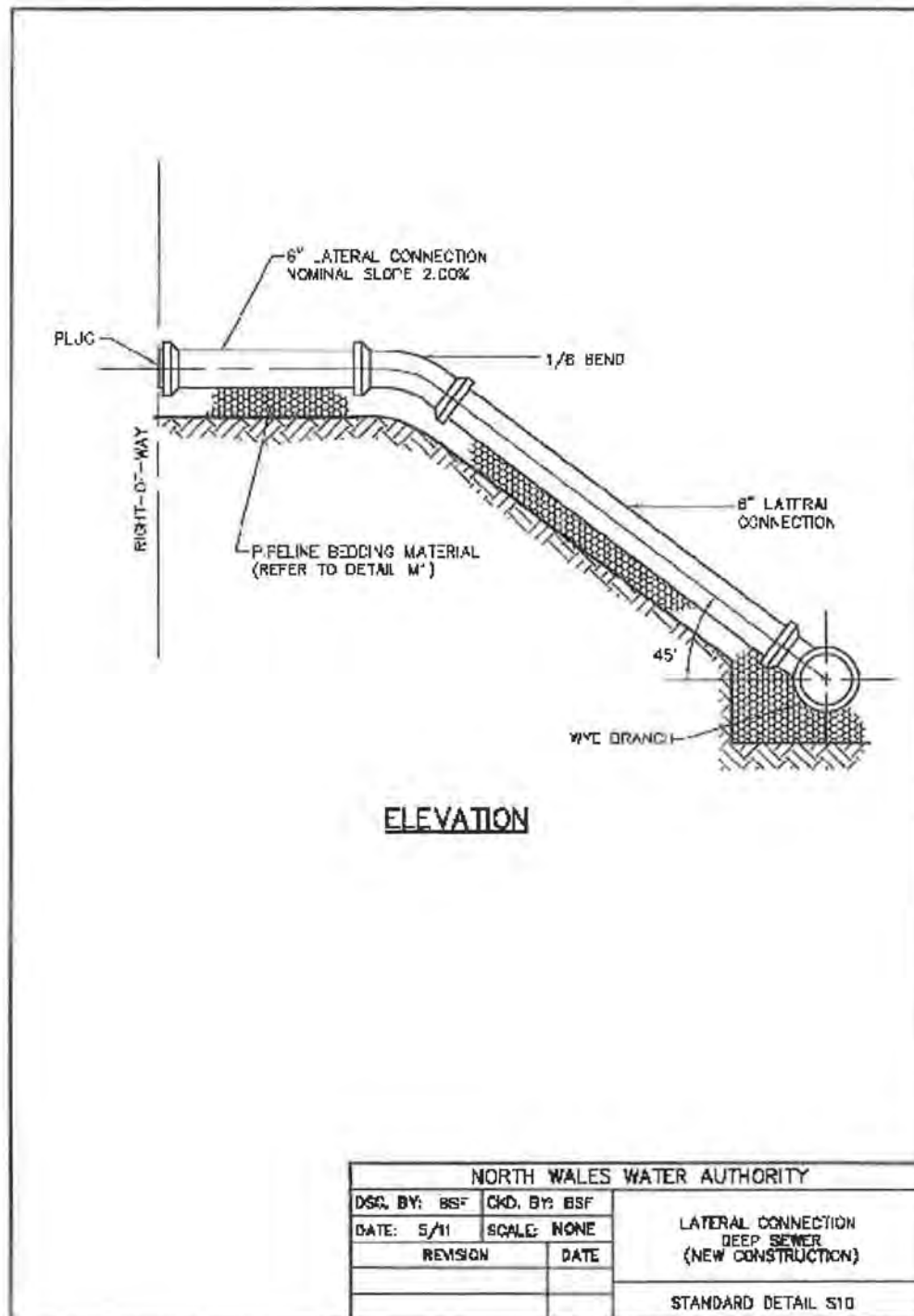
SECTION A-A

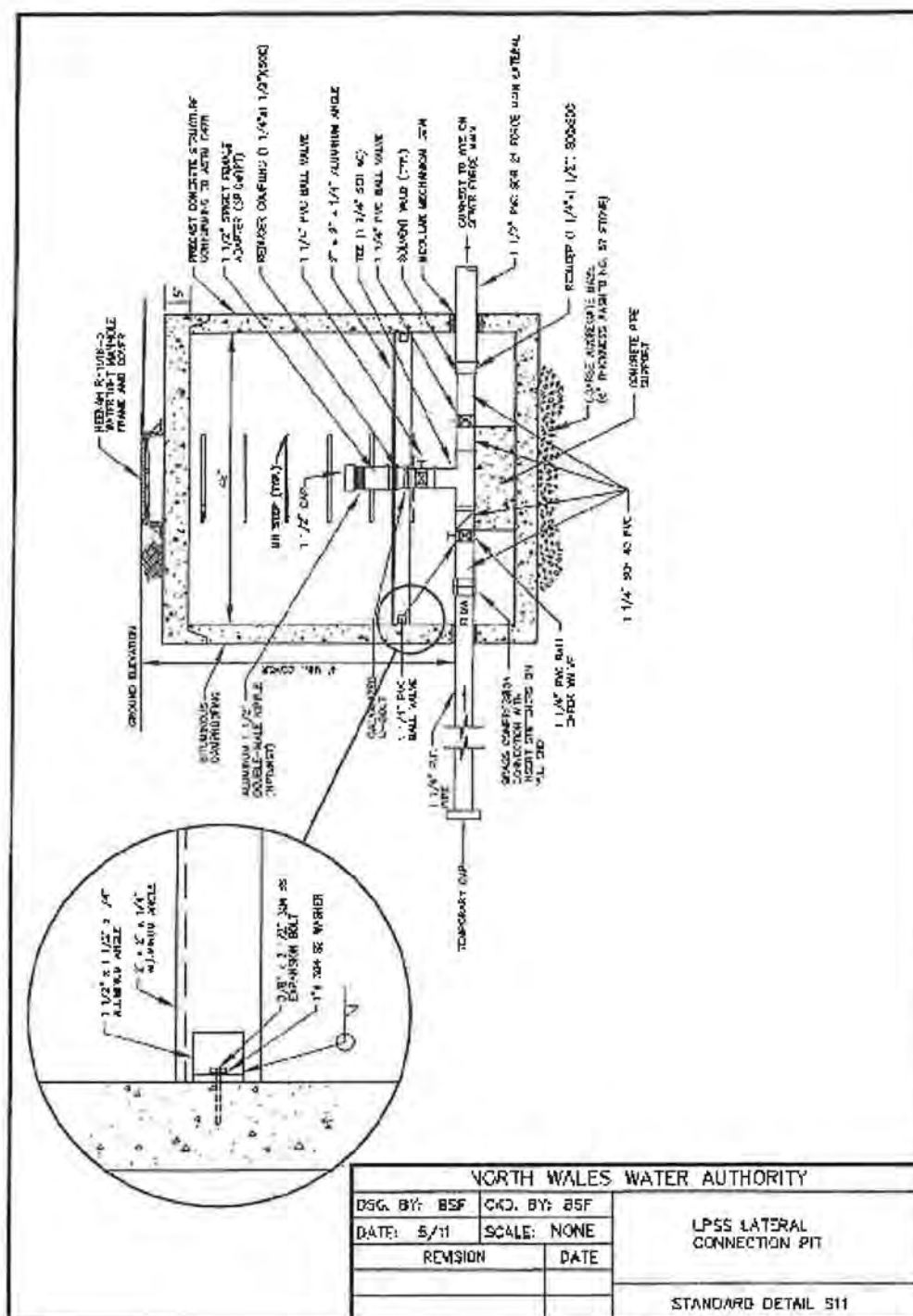
NOTES:

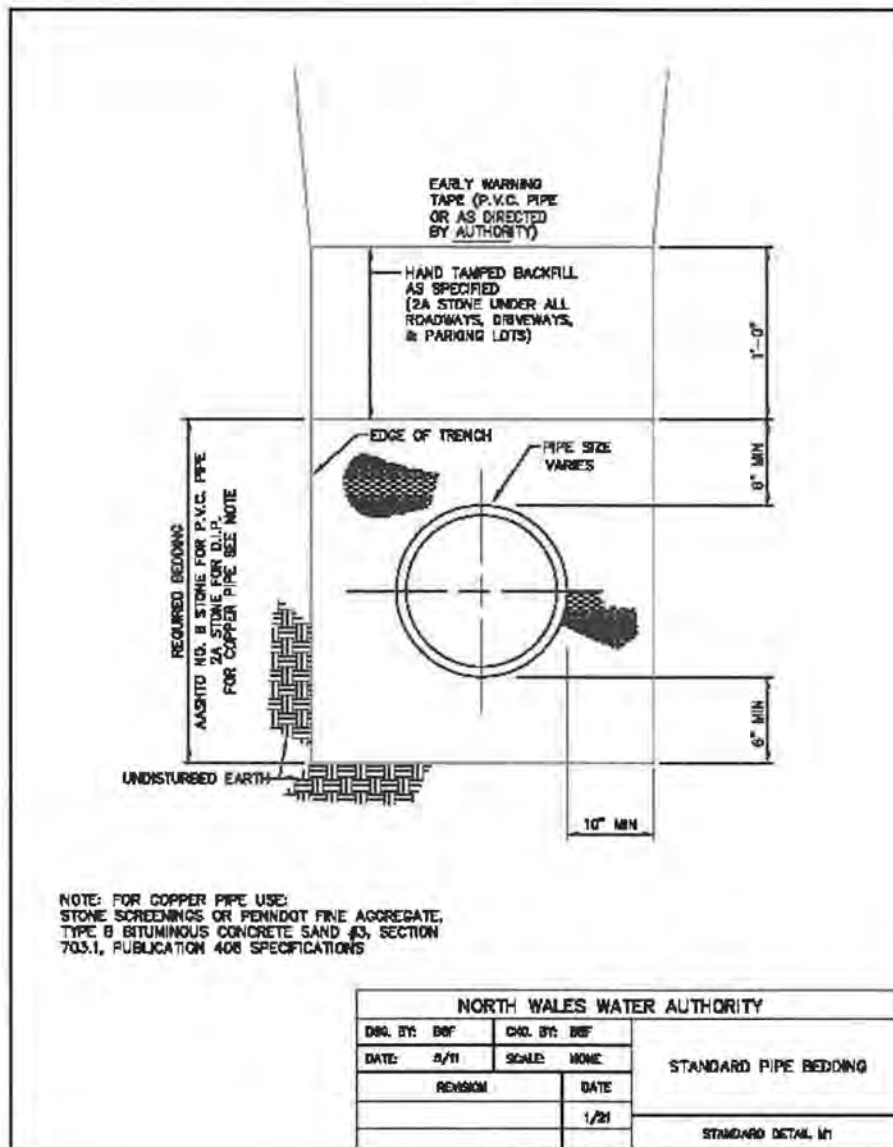
1. STEPS TO BE FABRICATED OF ALUMINUM ALLOY 6061-T6 (EXTRUDED).
2. PORTIONS OF STEPS TO BE EMBEDDED IN WALLS OF MANHOLES OR CHAMBERS TO BE DIPPED IN HEAVY BODY BITUMINOUS PAINT, OR PROVIDE PLASTIC INSERT.

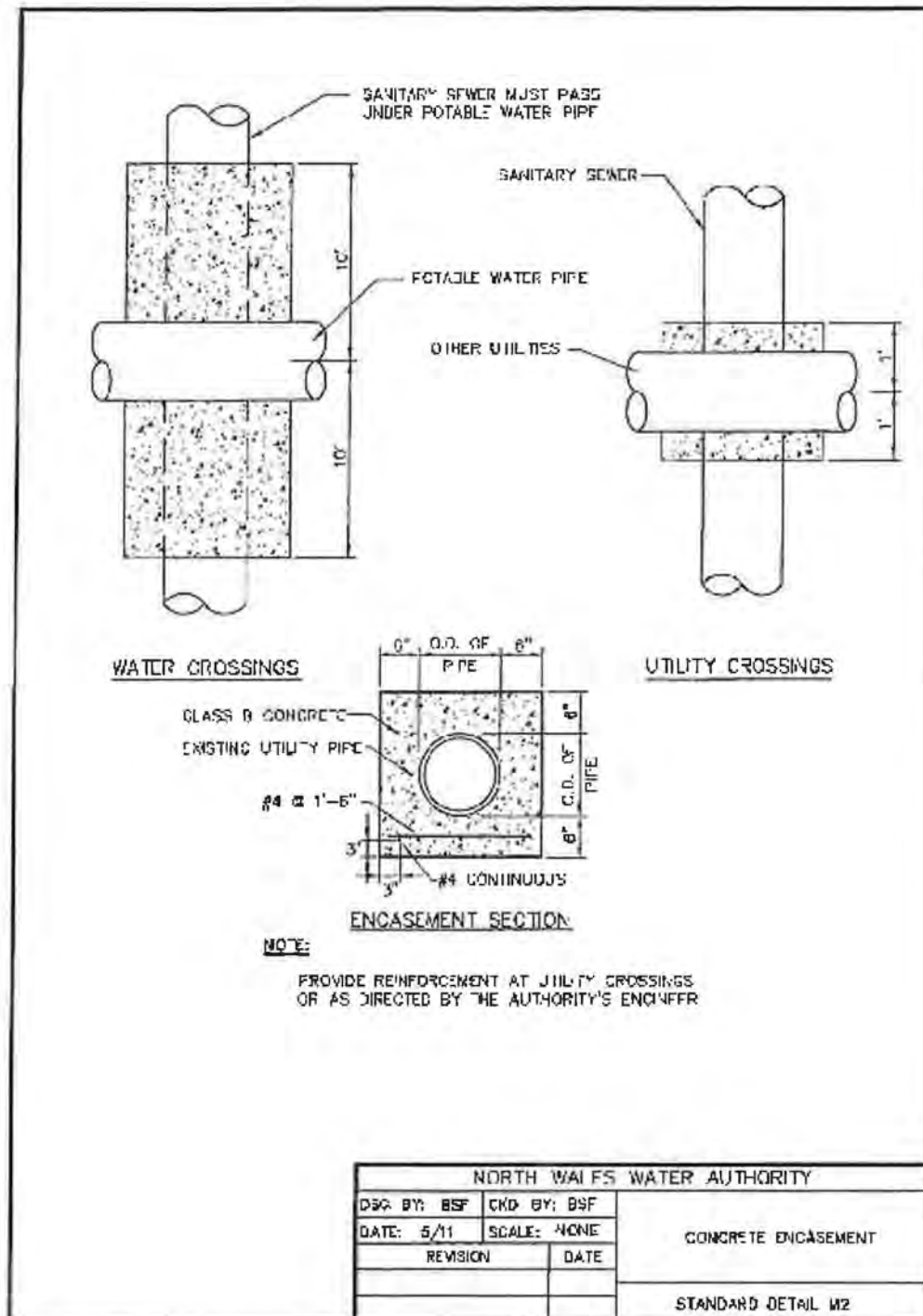
NORTH WALES WATER AUTHORITY			
DSG. BY: BSF	CHKD. BY: BSF	ALUMINUM MANHOLE STEP	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL SB	

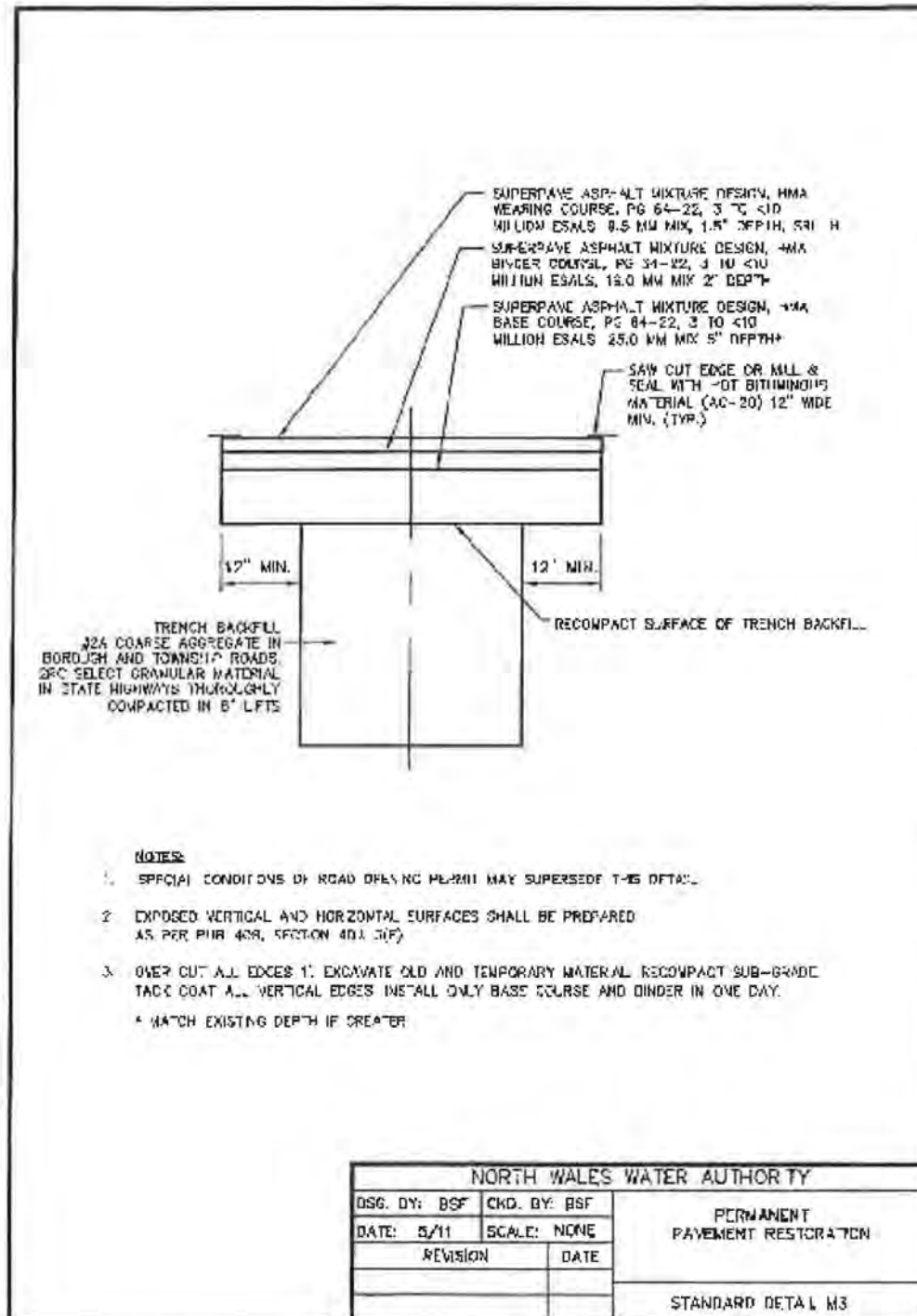


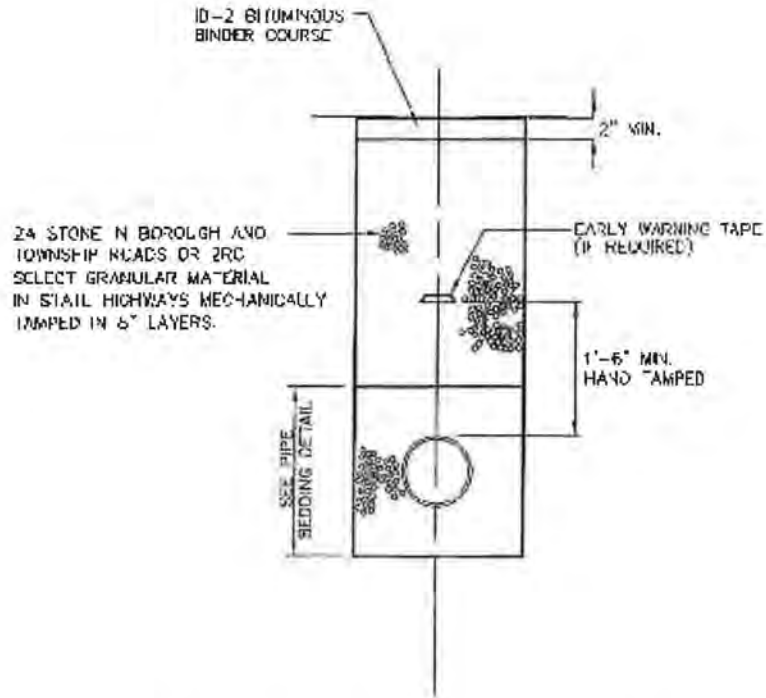








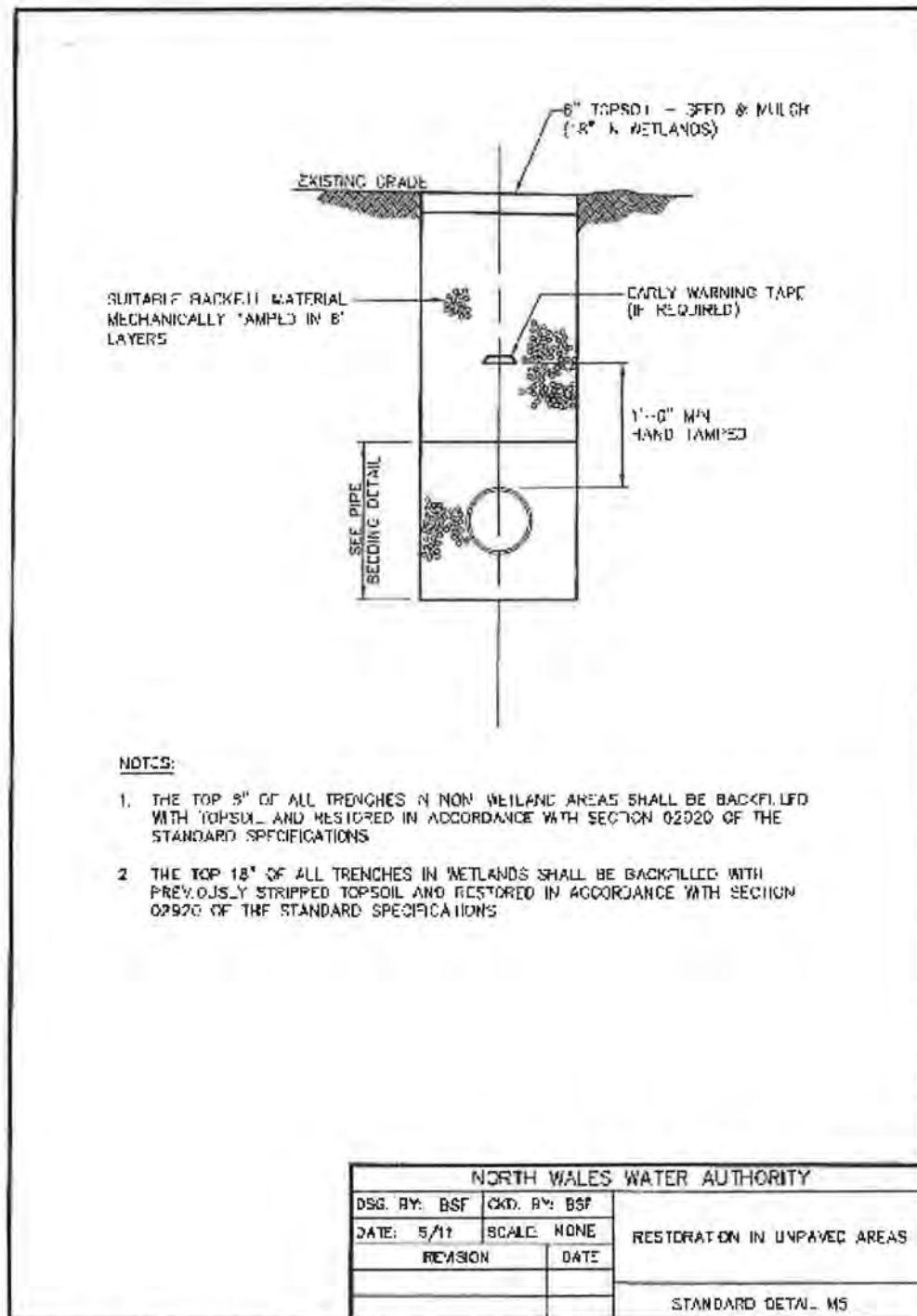




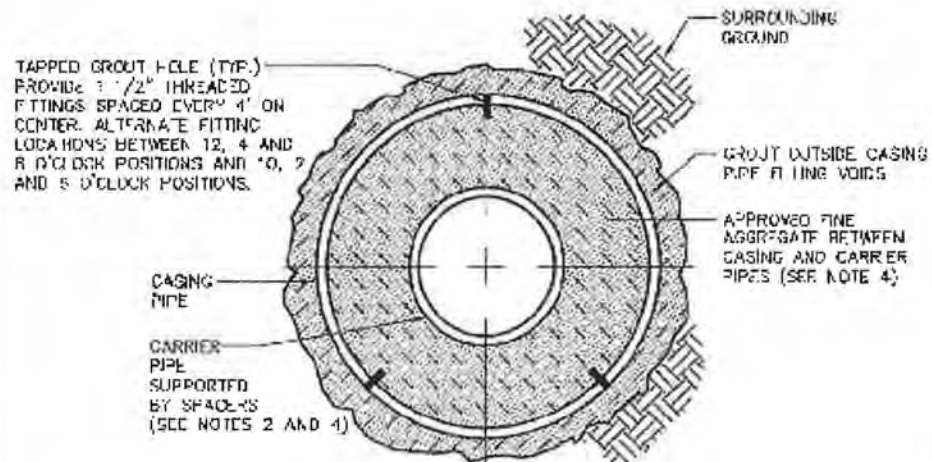
NOTES:

1. SPECIAL CONDITIONS OF TOWNSHIP ROAD OPENING PERMITS OR PENNDOT HIGHWAY OCCUPANCY PERMIT MAY SUPERSEDE THIS DETAIL.
2. CONTRACTOR TO MAINTAIN TEMPORARY PAVING, UNTIL PERMANENT PAVING IS INSTALLED.

NORTH WALES WATER AUTHORITY			
DSG. BY: BSF	CKD. BY: BSF	TEMPORARY PAVEMENT	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL M4	



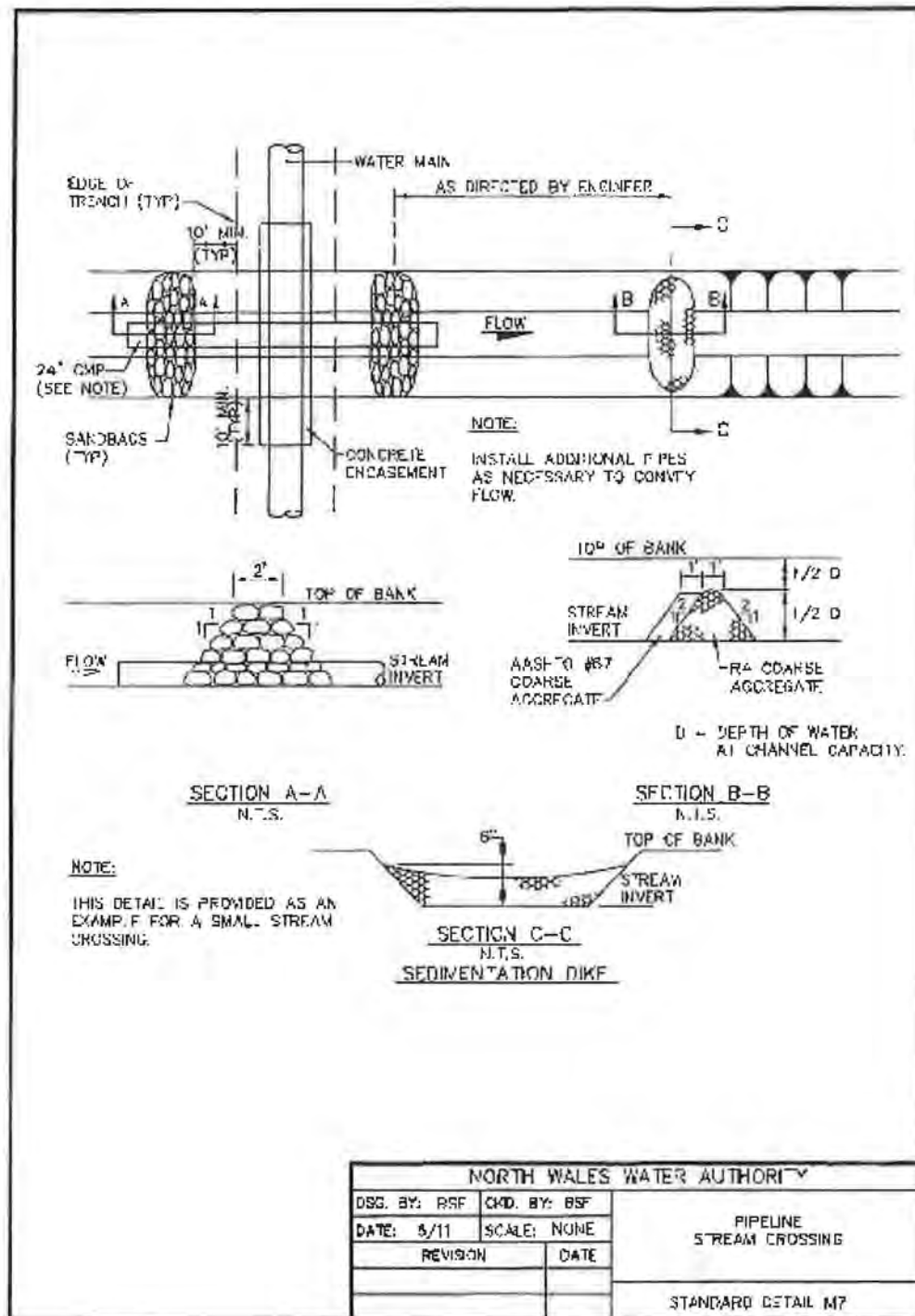
001631113 - 3201 (00000) UNPAVED RESTORATION - ALL RIGHTS RESERVED



NOTES:

1. PENNDDT REQUIREMENTS CONTROL AS APPROPRIATE.
2. PROVIDE APPROVED SPACERS AS REQUIRED TO MAINTAIN PROPER ALIGNMENT OF CARRIER PIPE.
3. ENDS OF CASING SHALL BE SEALED WITH BRICK MASONRY CONSTRUCTION AFTER ALL TESTS HAVE BEEN COMPLETED AND ACCEPTED BY ENGINEER.
4. REFER TO SECTION 02310 OF SPECIFICATIONS.

NORTH WALES WATER AUTHORITY			
DSG. BY: BSF	CKD. BY: BSF	JACKING CONDUIT	
DATE: 5/11	SCALE: NONE		
REVISION	DATE	STANDARD DETAIL M6	



APPENDIX E -WASTEWATER CONTROL REGULATIONS AND INDUSTRIAL PRETREATMENT PROGRAM

Section 1: General Provisions

A. Purpose and policy

This document sets forth uniform requirements for users of the publicly owned treatment works of Upper Gwynedd Township, and the NWWA Sewer Collection System, and enables the Authority to comply with all applicable state and federal laws, including the Clean Water Act (33 U.S.C. § 1251 et seq.) and the general pretreatment regulations (40 CFR Part 403). The objectives of this document are:

1. To prevent the introduction of pollutants into the publicly owned treatment works which will interfere with its operation.
2. To prevent the introduction of pollutants into the publicly owned treatment works that will pass through the publicly owned treatment works, inadequately treated, into receiving waters or the atmosphere, or otherwise be incompatible with the publicly owned treatment works.
3. To protect both publicly owned treatment works personnel who may be affected by wastewater, sludge, and incinerator waste in the course of their employment and the general public.
4. To promote reuse and recycling of industrial wastewater from the publicly owned treatment works.
5. To provide for fees for the equitable distribution of the cost of operation, maintenance, and improvement of the publicly owned treatment works; and
6. To enable the Authority to comply with its National Pollutant Discharge Elimination System permit conditions and disposal requirements and any other federal or state laws to which the publicly owned treatment works is subject.

B. Administration

1. This document provides for the regulation of all users of the publicly owned treatment works through the issuance of wastewater discharge permits and through enforcement of general requirements applicable to all users; authorizes monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

2. This document shall apply to all persons outside the jurisdiction of the Authority, who are, by contract or agreement with the Authority, users of the publicly owned treatment works of Upper Gwynedd Township. Except as otherwise provided herein, the Pretreatment Coordinator of the Authority shall administer, implement, and enforce the provisions of this document. Any powers granted to, or duties imposed upon the Pretreatment Coordinator may be delegated by the Pretreatment Coordinator to other Authority personnel.

C. Abbreviations and acronyms

The following abbreviations and acronyms, when used in this document, shall have the designated meanings:

1. BOD	Biochemical oxygen demand
2. CFR	Code of Federal Regulations
3. COD	Chemical oxygen demand
4. EPA	U.S. Environmental Protection Agency
5. GPD	Gallons per day
6. mg/L	Milligrams per liter
7. NPDES	National Pollutant Discharge Elimination System
8. PA DEP	Pennsylvania Department of Environmental Protection
9. POTW	Publicly owned treatment works
10. RCRA	Resource Conservation and Recovery Act
11. SIC	Standard industrial classification
12. TSS	Total suspended solids
13. USC	United States Code

D. Definitions

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this document, shall have the meanings hereinafter designated:

1) ACT or THE ACT

The Federal Water Pollution Control Act, also known as the "Clean Water Act," as amended, 33 U.S.C. § 1251 et seq.

2) ADMINISTRATOR or THE ADMINISTRATOR

The Administrator of the U.S. Environmental Protection Agency.

a) If the user is a corporation:

1. The president, secretary, treasurer, or a vice president of the corporation in charge of a principal business function or any other person who performs similar policy- or decision-making functions for the corporation; or
2. The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures

exceeding \$25,000,000 (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures

b) If the user is a partnership or sole proprietorship, a general partner or proprietor, respectively.

1. If the user is a federal, state, or local governmental facility, a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or his or her designee.
2. The individuals described in Subsections (a) through (c) above may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the Authority.

2) BEST MANAGEMENT PRACTICES

Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in SECTION 2 A and B. BMPs include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

3) BIOCHEMICAL OXYGEN DEMAND or BOD

The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedures for five days at 20° C. expressed as a concentration (mg/l), in accordance with EPA Test Method 405.1, as referenced in 40 CFR 136.3.

4) BUILDING SEWER

Sewer conveying wastewater from the premises of a user to the POTW.

5) CATEGORICAL PRETREATMENT STANDARD(S) or CATEGORICAL STANDARD(S)

National Categorical Pretreatment Standards, being any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. § 1317) which apply to a specific category of users, and which appear in 40 CFR Chapter I, Subchapter N, Parts 405 to 471.

6) CHEMICAL OXYGEN DEMAND or COD

The quantity of oxygen utilized in the chemical oxidation of organic matter which is susceptible to conversion to carbon dioxide and water and expressed as a concentration [milligrams per liter (mg/l)], in accordance with EPA Test Method 410.1, 410.2, 410.3, or 410.4, as referenced in 40 CFR 136.3.

7) COOLING WATER

The water discharged from any use such as air conditioning, cooling, or refrigeration or to which the only pollutant added is heat.

8) DIRECT DISCHARGE

The introduction of treated or untreated wastewater directly to the waters of the Commonwealth of Pennsylvania.

9) ENVIRONMENTAL PROTECTION AGENCY or EPA

The U.S. Environmental Protection Agency, or where appropriate, the term may also be used as a designation for the Administrator or other duly authorized official of said agency, including the Regional Water Protection Division Director.

10) EXISTING SOURCE

Any source of discharge, the construction or operation of which commenced prior to the publication by the EPA of proposed categorical pretreatment standards, which will be applicable to such source if the standard is thereafter promulgated in accordance with Section 307 of the Act.

11) GRAB SAMPLE

A sample which is normally taken from a waste stream, on a one-time basis, without regard to the flow in the waste stream and over a period of time not to exceed 15 minutes. When industrial wastewater volume is not sufficient for analytical purposes in fifteen-minute periods, the Pretreatment Coordinator may approve, in writing, an alternative of sampling.

12) HOLDING TANK WASTE

Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum pump trucks.

13) IMMEDIATELY

This term is based on the intent within which it is used. However, it shall at least indicate a time frame "of upon discovery" of incident, or as stated in 40 CFR Part 122.41(1)(6)(i) to (iii), 40 CFR 403.8(f)(1)(vi)(B), 40 CFR 403.8(f)(2)(v)(A) to (D), and or as specifically identified within this document.

14) INDIRECT DISCHARGE OR DISCHARGE

The discharge or introduction of pollutants (including holding tank waste), into the POTW, from any nondomestic source regulated under Section 307(b), (c), or (d) of the Act (33 U.S.C. § 1317).

15) INDUSTRIAL USER or USER

A source of indirect discharge, from an establishment, which discharges or introduces industrial wastes into the POTW.

16) INDUSTRIAL WASTE(S)

Any liquid, gaseous, radioactive, solid, or other substances, not sewage, resulting from any manufacturing or industry, or from establishment, as herein defined, and mine drainage, refuse, silt, coal mines, coal collieries, breakers, or other coal-processing operation.

17) INSTANTANEOUS MAXIMUM ALLOWABLE DISCHARGE LIMIT

The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composite sample collected, independent of the industrial waste flow rate and the duration of the sampling event.

18) INTERFERENCE

A discharge, which alone or in conjunction with a discharge or discharges from other sources, causes the inhibition or disruption of the POTWs treatment processes or operations or its sludge processes, use or disposal and, therefore, is a cause of a violation of the UGT PDES permit (including an increase in magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with any of the following statutory/regulatory provisions or permits issued hereunder or any more-stringent state or local regulations: Section 405 of the Act; the Solid Waste Disposal Act, including Title II commonly referred to as the "Resource Conservation and Recovery Act (RCRA)"; any state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the Solid Waste Disposal Act; the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection, Research, and Sanctuaries Act.

19) MEDICAL WASTE

Isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, potentially contaminated laboratory wastes, and dialysis wastes.

20) NATIONAL CATEGORICAL PRETREATMENT STANDARD(S)

Any regulation containing pollutant discharge limits promulgated by EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. § 1317) which apply to a specific category of users, and which appear in 40 CFR Chapter I, Subchapter N, Parts 405 to 471.

21) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

A permit issued to a POTW pursuant to Section 402 of the Act (33 U.S.C. § 1342).

22) NATIONAL PROHIBITIVE DISCHARGE STANDARD or PROHIBITIVE DISCHARGE STANDARD

Any regulation developed under the authority of Section 307(b) of the Act and 40 CFR 403.5.

23) NEW SOURCE

- a) Any building, structure, facility, or installation from which there is, or may be, a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards pursuant to Section 307(c) of the Act, which will be applicable to such source if such standards are thereafter promulgated in accordance with that section, provided that:
 - 1. The building, structure, facility, or installation is constructed at a site at which no other source is located; or
 - 2. The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
 - 3. The production or wastewater-generating processes of the building, structure, facility, or installation are independent of an existing source at the same site. In determining whether these are independent, factors such as the extent to which the new facility is integrated with the existing plant and the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered.
- b) Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation meeting the criteria of Subsection (a) above but otherwise alters, replaces, or adds to an existing process or production equipment.
- c) Construction of a new source as defined under this subsection has commenced if the owner or operator has begun, or caused to begin, as part of a continuous on-site construction program, including:
 - 1. Any placement, assembly, or installation of facilities or equipment; or
 - 2. Significant site preparation work, including clearing, excavation, or removal of existing buildings, structures, or facilities, which is necessary for the placement, assembly, or installation of new source facilities or equipment; or
 - 3. Entered into a binding contractual obligation for the purchase of facilities or equipment which is intended to be used in its operation within a reasonable time. Options to purchase or contracts that can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies, do not constitute a contractual obligation under this subsection.

24) NONCONTACT COOLING WATER

Water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product.

25) NON-SIGNIFICANT INDUSTRIAL USER

For the purposes of this document, non-significant industrial users are those users which do not meet the criteria listed in the definition of "significant industrial user" but warrant the issuance of a wastewater discharge permit.

26) PASS-THROUGH

A discharge which exits the POTW into waters of the state in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, are a cause of a violation of any requirement of the Authority's NPDES permit, including an increase in the magnitude or duration of a violation.

27) PERSON

Any individual, partnership, co-partnership, firm, company, corporation, association, joint-stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns. This definition includes all federal, state, and local governmental entities. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

28) pH

The logarithm (Base 10) of the reciprocal of the concentration of hydrogen ions expressed in moles per liter of solution. A measure of the acidity or alkalinity of a solution, expressed in standard units.

29) POLLUTANT

Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, municipal, agricultural, and industrial wastes, and certain characteristics of wastewater (e.g., pH, temperature, TSS, turbidity, color, BOD, COD, toxicity, or odor).

30) POLLUTION

The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water, such that harm to human health or the environment may result.

31) POTW TREATMENT PLANT

That portion of the POTW which is designed to provide treatment, including recycling and reclamation of municipal sewage and industrial waste.

32) PRETREATMENT

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in

lieu of discharging or otherwise introducing such pollutants into the POTW. This reduction or alteration can be obtained by physical, chemical, or biological processes; by process changes; or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard.

33) PRETREATMENT COORDINATOR

The person designated by the Authority to supervise the operation of the POTW and who is charged with certain duties and responsibilities by this document, or a duly authorized representative as delegated by the Pretreatment Coordinator.

34) PRETREATMENT REQUIREMENTS

Any substantive or procedural requirement related to pretreatment imposed on a user, other than a national pretreatment standard.

35) PRETREATMENT STANDARDS or STANDARDS

Pretreatment standards shall mean prohibited discharge standards, categorical pretreatment standards, and local limits.

36) PROHIBITED DISCHARGE STANDARDS or PROHIBITED DISCHARGES

Absolute prohibitions against the discharge of certain substances; these prohibitions appear in SECTION 2 A and B hereof.

37) PUBLICLY OWNED TREATMENT WORKS or POTW

A treatment works, as defined by Section 212 of the Act (33 U.S.C. § 1292), which is owned by the Authority. This definition includes any devices or systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature and any conveyances which convey wastewater to a POTW treatment plant.

38) RESIDENTIAL

Any noncommercial, nonindustrial, and nonmanufacturing facility or dwelling.

39) SEPTIC TANK WASTE

Any sewage from holding tanks such as vessels, chemical toilets, campers, trailers, and septic tanks.

40) SEWAGE

Human excrement and gray water (household showers, dishwashing operations, etc.).

41) SEWAGE SYSTEM

The Authority's collection and conveyance system which transports wastewater to the POTW treatment plant.

42) SIGNIFICANT INDUSTRIAL USER

1. A user subject to categorical pretreatment standards; or

2. A user that:

- a. Discharges an average of 25,000 gpd or more of process wastewater to the POTW (excluding sanitary, cooling, non-contact-cooling, and boiler blowdown wastewater).
- b. Contributes a process waste stream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or
- c. Is designated as such by the Authority on the basis that it has a reasonable potential for adversely affecting the POTWs operation or for violating any pretreatment standard or requirement.

3. Upon a finding that a user meeting the criteria in Subsection (b) above has no reasonable potential for adversely affecting the POTWs operation or for violating any pretreatment standard or requirement, the Authority may, at any time, on its own initiative or in response to a petition received from a user, and in accordance with procedures in 40 CFR 403.8(f)(6), determine that such user should not be considered a significant industrial user.

43) SLUG LOAD or SLUG DISCHARGE

Any pollutant released in a discharge at a flow rate or concentration which will cause a violation of the specific discharge prohibitions in 40 CFR 403.5(b) and/or 403.12(f). A slug discharge is any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge, which has a reasonable potential to cause interference or pass-through or in any other way violate the POTWs regulations, local limits or permit conditions.

44) STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE

A classification pursuant to the Standard Industrial Classification Manual issued by the United States Office of Management and Budget.

45) STATE

The Commonwealth of Pennsylvania.

46) STORMWATER

Any flow occurring during or following any form of natural precipitation and resulting from such precipitation, including snowmelt.

47) SUSPENDED SOLIDS

The total suspended matter that floats on the surface of, or is suspended in, water, wastewater, or other liquid and which is removable by laboratory filtering, in accordance with EPA Test Method 160.1, as referenced in 40 CFR 136.3.

48) WASTEWATER

Liquid and water-carried industrial wastes and sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, which are contributed to the POTW.

49) WATERS OF THE STATE

All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural, or artificial, public, or private, which are contained within, flow-through, or border upon the state or any portion thereof.

"Shall" is mandatory; "may" is permissive.

Section 2: General sewer use requirements**A. General prohibitions and standards**

No user shall contribute, introduce, or cause to be contributed or introduced, directly or indirectly, into the POTW any pollutant or wastewater which causes pass-through or interference. These general prohibitions apply to all users of the POTW, whether or not the user is subject to categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.

B. Specific prohibitions

1. No user shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater:
 - a) Pollutants that create a fire or explosive hazard in the POTW, including, but not limited to, waste streams with a closed-cup flashpoint of less than 140° F. (60° C.) using the test methods specified in 40 CFR 261.21.
 - b) Wastewater having a pH less than 6.0 or more than 10.0 standard units or otherwise causing corrosive structural damage to the POTW or equipment.
 - c) Solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference, but in no case solids greater than three inches in any dimension.
 - d) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, will cause interference with the POTW.
 - e) Wastewater having a temperature greater than 104° F. (40° C.) being discharged into the sewage system, unless prior written approval is obtained from the Authority, or which will inhibit biological activity in the POTW treatment plant resulting in

interference, but in no case wastewater which causes the temperature at the introduction into the POTW treatment plant to exceed 104° F. (40° C.).

- f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass-through.
 - g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.
 - h) Trucked or hauled pollutants, except at discharge points designated by the Authority in accordance with Subsection I hereof.
 - i) Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, is sufficient to create a public nuisance or a hazard to life or to prevent entry into the sewage system for maintenance or repair.
 - j) Wastewater containing any radioactive wastes or isotopes, except in compliance with applicable state or federal regulations.
 - k) Stormwater, surface water, groundwater, artesian well water, roof runoff, subsurface drainage, and swimming pool drainage, unless specifically authorized by the Authority.
 - l) Sludge's, screenings, or other residues from the pretreatment of industrial wastes.
 - m) Medical wastes, except as specifically authorized by the Authority.
 - n) Wastewater causing, alone or in conjunction with other sources, the POTW treatment plant's effluent to fail a toxicity test.
 - o) Detergents, surface-active agents, or other substances which may cause excessive foaming in the POTW.
 - p) Any substance which will cause the POTW to violate its NPDES and/or state solid waste disposal permit or air quality and/or receiving water quality standards.
2. When the Authority determines that a user(s) is contributing to the POTW any of the above-enumerated substances in such amounts as to cause interference with the operation of the POTW and/or POTW treatment plant, the Authority shall 1) advise the user(s) of the impact of the contribution on the POTW and/or POTW treatment plant; 2) develop effluent limitations for such user(s) to correct the interference with the POTW and/or POTW treatment plant, and 3) proceed with enforcement pursuant to the provisions of this document.

3. Pollutants, substances, or wastewater prohibited by this section shall not be processed or stored in such a manner that it has a reasonable potential to be discharged to the POTW.

C. National Categorical Pretreatment Standards

The categorical pretreatment standards found at 40 CFR Chapter I, Subchapter N, Parts 405 to 471, are hereby incorporated into this document by reference as though set forth in full.

1. Where a categorical pretreatment standard is expressed only in terms of either the mass or the concentration of a pollutant in wastewater, the Pretreatment Coordinator may impose equivalent concentration or mass limits in accordance with 40 CFR 403.6(c).
2. When wastewater subject to a categorical pretreatment standard is mixed with wastewater not regulated by the same standard, the Pretreatment Coordinator shall impose an alternate limit using the combined waste stream formula in 40 CFR 403.6(e).
3. A user may obtain a variance from a categorical pretreatment standard if the user can prove, pursuant to the procedural and substantive provisions in 40 CFR 403.13, that factors relating to its discharge are fundamentally different from the factors considered by the EPA when developing the categorical pretreatment standard.
4. A user may obtain a net gross adjustment to a categorical standard in accordance with 40 CFR 403.15.

D. Modification of National Categorical Pretreatment Standards

Where the UGT or Authority's facilities achieves consistent removal of pollutants limited by national pretreatment standards, the Authority may apply to the Approval Authority for modification of specific limits in the national pretreatment standards. "Consistent removal" shall mean a reduction in the amount of a pollutant or alteration of the nature of the pollutant by the POTW treatment plant to a less toxic or harmless state in the effluent which is achieved by the POTW treatment plant in 50% of the samples taken when measured according to the procedures set forth in Section 403.7(b)(2) of 40 CFR Part 403, General Pretreatment Regulations for Existing and New Sources of Pollution promulgated pursuant to the Act. The Authority may then modify pollutant discharge limits in the national pretreatment standards if the requirements contained in 40 CFR Part 403, Section 403.7(a)(2), are fulfilled and prior approval from the Approval Authority is obtained.

E. Dilution

No user shall ever increase the use of process water or in any way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with a discharge limitation unless expressly authorized by an applicable pretreatment standard or requirement. The Authority may impose mass limitations on users who are using dilution to meet applicable pretreatment standards or requirements or in other cases when the imposition of mass limitations is appropriate.

F. Local limits per Section 155-71 of Upper Gwynedd Township Code

1. Specific pollutant discharge limitations: local limits. In accordance with 40 CFR 403.5(c), the Upper Gwynedd Township imposes the following specific pollutant discharge limitations for all industrial users, whereby no person shall discharge wastewater containing in excess of the following: [As Amended from time to time 11-22-2010 by Ord. No. 2010-07; 3-25-2013 by Ord. No. 2013-02; 10-28-2013 by Ord. No. 2013-06]

<u>Pollutant (Total)</u>	<u>Local Limit (mg/l)</u>
Arsenic	0.09
Aluminum	13.9
Cadmium	0.003
Chlorodibromomethane	0.003
Chloroform	0.08
Chromium, total	2.22
Chromium (+6)	.15
Copper	.63
Cyanide, free	0.05
Cyanide, total	0.3
Cyanide, amenable	0.05
Dichlorobromomethane	0.005
Lead	0.04
Mercury	0.0005
Nickel	0.39
Phenols	44.0
Phosphorus	24.9
Selenium	0.02
Silver	0.07
Zinc	0.77
CBOD5	750
Ammonia	50
TSS	750
COD	1500
Residual chlorine	0.60

Oil and grease (FOG)		100
Color		200 PCU
pH		6.0- 9.0 SU
Total iron		Monitor

2. The specific pollutant discharge limitations listed above are the highest allowable concentration in any type of sample, either a grab or composite, collected over any time interval. All concentrations for metallic substances are for "total" metal unless indicated otherwise.
3. The specific pollutant discharge limitations listed above apply at the point where the wastewater is discharged to the POTW or at the point designated by the Pretreatment Coordinator.
4. The Authority reserves the right to apply the specific pollutant discharge limitations listed above to any user's wastewater discharge which is not composed of strictly domestic sewage.
5. The Authority may impose mass limitations in addition to, or in place of, the concentration-based limitations above, whereas the Authority reserves the right to establish alternate specific pollutant discharge limitations in individual industrial waste discharge permits, but only in accordance with regulatory requirements. At no time will the summation of the industrial users' discharges be greater than the allowable industrial headworks loading as determined in the Authority's most recent local limits evaluation approved by the Approval Authority. The specific pollutant discharge limitations, if more stringent than the National Categorical Standards, shall immediately supersede the National Categorical Standards.
6. All test procedures shall conform to an approved analysis method as indicated in 40 CFR Part 136, as revised.

G. Accidental discharges

1. Each user shall provide protection from accidental discharges of prohibited materials or other substances regulated by this document. Where facilities are provided to prevent accidental discharge of prohibited materials, these facilities shall be provided and maintained at the owner or users own cost and expense. In the case of an accidental discharge, it shall be the responsibility of the user, upon discovery and after assessing the situation and taking initial corrective action, if possible, to immediately telephone and notify the Pretreatment Coordinator of the incident. The notification shall include the location of discharge, type of waste, estimated concentration and volume if known, and initial corrective actions taken by the user.

2. Written notice. Within five business days following an accidental discharge, the user shall submit to the Pretreatment Coordinator a detailed written report describing the cause of the discharge, all corrective measures implemented or attempted, and measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expenses, loss, damage, or other liability which may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property, nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed under this document or other applicable ordinances or laws.
3. Notice to employees. Notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of an accidental discharge. Employers shall ensure that all employees who may cause or suffer such an accidental discharge to occur are advised of the emergency notification procedures.

H. Accidental discharge/slug control plans

1. An accidental discharge or slug control plan may be required:
 - a) For all new source users. Where required by the Authority, detailed plans showing facilities and operating procedures to provide protection from accidental discharges or slugs shall be submitted to the Authority for review and shall be approved by the Authority before construction of the facility.
 - b) For existing users, the Authority shall evaluate whether each user needs an accidental discharge/slug control plan.
2. When an existing user is required by the Authority to provide and/or modify an accidental discharge/slug control plan, the user shall provide the plan within 60 days of notification. Should the plan require construction or implementation of measures to meet compliance, the plan shall provide a schedule for those actions. After initial review, should additional information be required to provide a complete plan, it shall be furnished to the Pretreatment Coordinator within 30 days. Failure to submit a revised plan and/or failure to provide a complete plan after the thirty-day submission period may render the wastewater discharge permit void.
3. The Authority's review and approval of such plans and operating procedures shall not relieve the user from the responsibility to modify the user's facility as necessary to meet the requirements of this document.
4. An accidental discharge/slug control plan shall address, at a minimum, the following:
 - a) Description of discharge practices, including non-routine batch discharges.

- b) Description of stored chemicals.
 - c) Procedures for immediately notifying the Pretreatment Coordinator of any accidental or slug discharge, as required by this section; and
 - d) Procedures to prevent adverse impact from any accidental or slug discharge. Such procedures shall include but are not limited to, inspection and maintenance of storage areas, handling, and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, the building of containment structures or equipment, measures for containing toxic organic pollutants, including solvents, and/or measures and equipment for emergency response.
5. An approved PA DEP pollution control prevention plan may substitute for all or a portion of this plan.

I. Hauled wastewater

- 1. Septic tank waste may be introduced into the POTW only at locations designated by the Pretreatment Coordinator and at such times as are established by the Pretreatment Coordinator. Such waste shall not violate any section of this document, or any other requirements established by the Authority. The Authority may require septic tank waste haulers to obtain wastewater discharge permits.
- 2. The Authority shall require haulers of industrial waste to obtain wastewater discharge permits. The Authority may require generators of hauled industrial waste to obtain wastewater discharge permits. The Pretreatment Coordinator also may prohibit the disposal of hauled industrial waste at the POTW. The discharge of hauled industrial waste is subject to all other requirements of this document.
- 3. Industrial waste haulers may discharge loads only at locations designated by the Pretreatment Coordinator. No load may be discharged to the POTW without the prior consent of the Authority. The Authority may collect samples of each hauled load to ensure compliance with applicable standards. The Authority may require the industrial waste hauler to provide a wastewater analysis of any load prior to discharge.
- 4. Industrial waste haulers must provide a waste-tracking form for every load. This form shall include, at a minimum, the name and address of the industrial waste hauler, permit number, truck identification, names, and addresses of sources of wastewater, and volume and characteristics of wastewater. The form shall identify the type of industry, known or suspected wastewater constituents, and whether any wastewaters are RCRA hazardous wastes.

Section 3: Pretreatment of wastewater

A. Pretreatment facilities

Users shall provide wastewater treatment as necessary to comply with this document and shall achieve compliance with all applicable categorical pretreatment standards, local limits, and the prohibitions set out in SECTION 2 A and B hereof within the time limitations specified by the agency issuing the standards. Any facilities necessary for compliance shall be provided, operated, and maintained at the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the Authority for review and shall be acceptable to the Authority before such facilities are constructed. The Authority's review of such plans and operating procedures shall in no way relieve the user from the responsibility of additional or future modifications of such facilities as necessary to produce a discharge acceptable to the Authority under the provisions of this document.

B. Additional pretreatment measures

1. Whenever deemed necessary, the Authority may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only at specific points of the sewage system, relocate and/or consolidate points of discharge, separate sewage waste streams from industrial waste streams, and/or such other conditions as may be necessary to protect the POTW and determine the user's compliance with the requirements of this document.
2. The Authority may require any person discharging into the POTW to install and maintain, on its property and at its expense, a suitable storage, and flow-control facility to ensure equalization of flow. A wastewater discharge permit may be issued solely for flow equalization.
3. Grease, oil, and sand interceptors shall be provided when, in the opinion of the Authority, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil, or sand, except that such interceptors shall not be required for residential sources. All interception units shall be of type and capacity approved by the Authority and shall be so located to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned, and repaired regularly, as needed, by the user at its expense.

Section 4: Wastewater discharge permit application

A. Wastewater discharges

It shall be unlawful to discharge within any area under the jurisdiction of the Authority and/or to the POTW any wastewater except as authorized by the Authority in accordance with the provisions of this document, subject to state and federal laws and regulations.

B. Wastewater analysis

When requested by the Authority, a user must submit information on the nature and characteristics of its wastewater within 30 days of the request unless additional time is approved, in writing, by the Authority. The Authority may periodically require users to update this information.

C. Wastewater discharge permit requirement

1. No significant industrial user shall discharge wastewater into the POTW without first obtaining a wastewater discharge permit from the Authority. A user permitted by the Authority may discharge for the time period specified in the wastewater discharge permit.
2. The Authority may require other users to obtain wastewater discharge permits as necessary to carry out the purposes of this document.
3. Any violation of the terms and conditions of a wastewater discharge permit shall be deemed a violation of this document and shall subject the wastewater discharge Permittee to the sanctions set out in this document. Obtaining a wastewater discharge permit does not relieve a Permittee of its obligation to comply with all federal and state pretreatment standards or requirements or with any other requirements of federal, state, and local law.

D. Wastewater discharge permitting existing connections

Any user required to obtain a wastewater discharge permit who was discharging wastewater into the POTW prior to the effective date of this document and who wishes to continue such discharges in the future shall, within 30 days after said date, apply to the Authority for a wastewater discharge permit or request an extension of its wastewater discharge permit in accordance with this document. The Authority may issue a new or temporary wastewater discharge permit without requiring a new application from the user. When a new wastewater discharge permit is required by the Authority, a complete application shall be submitted within 90 days of written notification. No user shall cause or allow discharges to the POTW to continue after 30 days of the effective date of this document except in accordance with a wastewater discharge permit issued by the Authority unless a written extension of an existing wastewater discharge permit has been requested and/or approved by the Authority.

E. Wastewater discharge permitting new connections

Any user required to obtain a wastewater discharge permit who proposes to begin or recommence discharging into the POTW must obtain such permit prior to the beginning or recommencing of such discharge. An application for this wastewater discharge permit, in accordance with this document, must be filed at least 90 days prior to the date upon which any discharge will begin or recommence.

F. Wastewater discharge permit application contents

1. All users required to obtain a wastewater discharge permit shall complete and file with the Authority a permit application that incorporates the information prescribed in this document. The Authority may require all users to submit as part of an application the following information:
 1. Information described by SECTION 6 A and C hereof.
 - a) Description of activities, facilities, and plant processes on the premises, including a list of all raw materials and chemicals, used, or stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW.
 - b) Number and type of employees, hours of operation, and proposed or actual hours of operation.
 - c) Each product produced by type, amount, process or processes, and rate of production.
 - d) Type and amount of raw materials processed (average and maximum per day).
 - e) Site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, floor drains, and appurtenances by size, location, and elevation, and all points of discharge.
 - f) Time and duration of discharges.
 - g) Wastewater constituents and characteristics sampling and analysis shall be performed in accordance with Section 304(g) of the Act and 40 CFR Part 136, as amended; and
 - h) Any other information may be deemed necessary by the Authority to evaluate the wastewater discharge permit application.
 - i) Information on any user-specific health and safety or chemical awareness training required for Authority personnel prior to entry into the user's facility.
 2. Incomplete or inaccurate wastewater discharge permit applications will not be processed and will be returned to the user for revision. All site plans, floor plans, mechanical and plumbing plans, all other types of construction plans, and process diagrams which are subject to the requirements of this document shall be signed by an authorized representative of the user who is familiar with the information and its accuracy. It is recommended that the above information be signed and sealed by a professional engineer who is licensed in the Commonwealth of Pennsylvania to ensure compliance with sound engineering and all applicable federal, state, and local codes and statutes.

G. Application signatories and certification

All wastewater discharge permit applications and user reports must be signed by an authorized representative of the user and contain the following certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons solely responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Wastewater discharge permit decisions

The Authority will evaluate the data furnished by the user and may require additional information. Within 60 days of receipt of a complete wastewater discharge permit application, the Authority will determine whether or not to issue a wastewater discharge permit. The Authority may deny any application for a wastewater discharge permit that does not comply with the requirements of this document or applicable federal and state laws and regulations.

Section 5: Wastewater discharge permit issuance process**A. Wastewater discharge permit duration**

A wastewater discharge permit shall be issued for a specified time period, not to exceed five years from the effective date of the permit. A wastewater discharge permit may be issued for a period of less than five years, at the discretion of the Authority. Each wastewater discharge permit will indicate a specific date upon which it will expire.

B. Wastewater discharge permit contents

A wastewater discharge permit shall include such conditions as are deemed necessary by the Authority.

1. Wastewater discharge permits must contain:

- a) A statement that indicates wastewater discharge permit duration, which in no event shall exceed five years.
- b) A statement that the wastewater discharge permit is nontransferable without prior notification to the Authority in accordance with Subsections C and E hereof, and provisions for furnishing the new owner or operator with a copy of the existing wastewater discharge permit.

- c) Effluent limits, including best management practices, based on applicable pretreatment standards.
 - d) Self-monitoring, sampling, reporting, notification, and recordkeeping requirements. These requirements shall include an identification of pollutants to be monitored, sampling location, sampling frequency, and sample type based on federal, state, and local law.
 - e) A statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable federal, state, and/or local law; and
 - f) User data, based upon its application, where within its property, health and safety training is required for access.
2. Wastewater discharge permits may contain, but need not be limited to, the following conditions:
- a) Limits on the average and/or maximum rate of discharge, time of discharge, and/or requirements for flow regulation and equalization.
 - b) Requirements for the installation of pretreatment technology pollution control, or construction of appropriate containment devices, designed to reduce, eliminate, or prevent the introduction of pollutants into the POTW.
 - c) Requirements for the development and implementation of spill control plans or other special conditions, including management practices necessary to prevent accidental, unanticipated, or non-routine discharges.
 - d) Development and implementation of waste minimization plans to reduce the number of pollutants discharged to the POTW.
 - e) The unit charge or schedule of user charges and fees for the management of the wastewater discharged to the POTW.
 - f) Requirements for installation and maintenance of inspection and sampling facilities and equipment.
 - g) A statement that compliance with the wastewater discharge permit does not relieve the Permittee of responsibility for compliance with all applicable federal and state pretreatment standards, including those which become effective during the term of the wastewater discharge permit; and
 - h) Other conditions as deemed appropriate by the Authority to ensure compliance with this document and state and federal laws, rules, and regulations.

C. Wastewater discharge permit appeals

The Authority shall provide public notice of the issuance of a wastewater discharge permit. Any person, including the user, may petition the Authority to reconsider the terms of a wastewater discharge permit within 30 days of notice of its issuance.

1. Failure to submit a timely petition for review shall be deemed to be a waiver of the administrative appeal.
2. In its petition, the appealing party must indicate the wastewater discharge permit provisions objected to, the reasons for this objection, and the alternative condition, if any, it seeks to place in the wastewater discharge permit.
3. The conditions of the current wastewater discharge permit shall remain in effect pending the appeal of the new wastewater discharge permit.
4. If the Authority fails to act within 30 days, a request for reconsideration shall be deemed to be denied. Decisions not to reconsider a wastewater discharge permit, not to issue a wastewater discharge permit, or not to modify a wastewater discharge permit shall be considered final administrative actions for purposes of judicial review.
5. Aggrieved parties seeking judicial review of the final administrative wastewater discharge permit decision must do so by filing a complaint with the Court of Common Pleas of Montgomery County, Pennsylvania, within 30 days of the final administrative wastewater discharge permit decision.

D. Wastewater discharge permit modification

The Authority may modify a wastewater discharge permit for a good cause, including, but not limited to, the following reasons:

1. To incorporate any new or revised federal, state, or local pretreatment standards or requirements.
2. To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance.
3. To reflect a change in the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge.
4. Information indicating that the permitted discharge poses a threat to the UGT POTW or Authority's Collection System, Authority personnel, or the receiving waters.

5. Violation of any terms or conditions of the wastewater discharge permit.
6. Misrepresentations or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting.
7. Revision of or a grant of variance from categorical pretreatment standards pursuant to 40 CFR 403.13.
8. To correct typographical or other errors in the wastewater discharge permit; or
9. To reflect a transfer of the facility ownership or operation to a new owner or operator.

E. Wastewater discharge permit transfer

1. Wastewater discharge permits are issued to a specific user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred, or sold to a new owner, new user, different premises, or a new or changed operation without the approval of the Authority. Any succeeding owner or user shall also comply with the terms and conditions of the existing permit, as well as any additional terms or conditions which may be required as a result of the proposed transfer.
2. Wastewater discharge permits may be transferred to a new owner or operator only if the Permittee gives at least 90 days advance written notice to the Authority and the Authority approves the wastewater discharge permit transfer. The notice to the Authority must include a written certification by the new owner or operator which:
 - a) States that the new owner and/or operator has no immediate intent to change the facility's operations and processes.
 - b) Identifies the specific date on which the transfer is to occur; and
 - c) Acknowledges full responsibility for complying with the existing wastewater discharge permit.
3. Failure to provide advance notice of a transfer shall render the wastewater discharge permit void as of the date of facility transfer.

F. Wastewater discharge permit revocation

1. The Authority may in accordance with this document, revoke a wastewater discharge permit for a good cause, including, but not limited to, the following reasons:

- a) Failure to notify the Pretreatment Coordinator of significant changes to the wastewater prior to the changed discharge.
 - b) Failure to provide prior notification to the Pretreatment Coordinator of changed conditions pursuant to SECTION 6 hereof.
 - c) Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application.
 - d) Falsifying self-monitoring reports.
 - e) Tampering with monitoring equipment.
 - f) Refusing to allow timely access to the premises and records.
 - g) Failure to meet effluent limitations.
 - h) Failure to pay fines.
 - i) Failure to pay sewer charges.
 - j) Failure to meet compliance schedules.
 - k) Failure to complete a wastewater surveyor the wastewater discharge permit application.
 - l) Failure to provide advance notice of the transfer of business ownership of a permitted facility; or
 - m) Violation of any pretreatment standard or requirement or any terms of the wastewater discharge permit or this document.
2. Wastewater discharge permits shall be voidable upon cessation of operations for a period exceeding six months or transfer of business ownership. All wastewater discharge permits issued to a particular user are void upon the issuance of the new wastewater discharge permit to that user.

G. Wastewater discharge permit re issuance

A user with an expiring wastewater discharge permit shall apply for wastewater discharge permit re issuance by submitting a complete permit application, in accordance with SECTION 4 hereof, a minimum of 90 days prior to the expiration of the user's existing wastewater discharge permit. It is the responsibility of the user to request a wastewater discharge permit application form no less the 120 days prior to the expiration of the existing wastewater discharge permit. The application form shall include calibration reports on the required flow monitoring devices used during the term of the prior wastewater discharge permit.

H. Regulation of waste received from other jurisdictions

1. If another municipality, or user located within another municipality outside of the jurisdiction of the Authority, contributes wastewater to the POTW, the Authority shall enter into a binding agreement with the contributing municipality.
2. Prior to entering into an agreement required by Subsection H(1) above, the Authority shall request the following information from the contributing municipality:
 - a) A description of the quality and volume of wastewater discharged to the POTW by the contributing municipality.
 - b) An inventory of all users located within the contributing municipality that are discharging to the POTW; and
 - c) Such other information as the Authority may deem necessary.
3. A binding agreement, as required by Subsection H(1) above, shall contain the following conditions:
 - a) A requirement for the contributing municipality to adopt a sewer use ordinance that is at least as stringent as this document, an enforcement response plan, a surcharge ordinance, and local limits which are at least as stringent as those set out in SECTION 2 hereof. The requirement shall specify that such ordinance and limits must be revised as necessary to reflect changes made to the Authority's ordinances or local limits.
 - b) A requirement for the contributing municipality to submit a revised user inventory on at least an annual basis.
 - c) A provision specifying which pretreatment implementation activities, including wastewater discharge permit issuance, inspection and sampling, and enforcement, will be conducted by the contributing municipality, which of these activities will be conducted by the Authority, and which of these activities will be conducted jointly by the contributing municipality and the Authority.
 - d) A requirement for the contributing municipality to provide the Authority with access to all information that the contributing municipality obtains as part of its pretreatment activities.
 - e) Limits on the nature, quality, and volume of the contributing municipality's wastewater at the point where it discharges to the POTW.
 - f) Requirements for monitoring the contributing municipality's discharge.
 - g) A provision ensuring the Authority access to the facilities of users located within the contributing municipality's jurisdictional boundaries for the purpose of inspection, sampling, and any other duties deemed necessary by the Authority; and

- h) A provision specifying remedies available for breach of the terms of the binding agreement and authorizing the Authority to take legal action to enforce the terms of the contributing municipality's ordinance or impose and enforce pretreatment standards.

Section 6: Reporting requirements

A. Baseline monitoring reports

1. Requirements for existing users and new sources.
2. Within 180 days after either the effective date of a categorical pretreatment standard or the final administrative decision on a category determination under 40 CFR 403.6(a)(4), whichever is later, existing users currently discharging to or scheduled to discharge to the POTW shall submit to the Authority a report which contains the information listed in Subsection A(2), below. Where a user is not an existing categorical user, the user may request in writing to the Authority that the provisions of the subsection be waived.
3. At least 90 days prior to commencement of their discharge, new sources, and sources that become users subsequent to the promulgation of an applicable categorical standard, shall submit to the Authority a report which contains the information listed in Subsection A(2) below. A new source shall report the method of pretreatment it intends to use to meet applicable standards. A new source also shall give estimates of its anticipated flow and quantity of pollutants to be discharged.
4. Users described above shall submit the information set forth below.
 - a) Identifying information: the name and address of the facility, including the name of the operator and owner.
 - b) Environmental permits: a list of any environmental control permits held by or for the facility.
 - c) Description of operations: a brief description of nature, an average rate of production, and standard industrial classifications of the operations carried out by such user. This description should include a schematic process diagram that indicates points of discharge to the POTW from the regulated processes.
 - d) Flow measurement: information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from regulated process streams and other streams, as necessary, to allow the use of the combined waste stream formula set out in 40 CFR 403.6(e). Required flow measuring devices shall be approved by the Authority prior to installation. The flow measuring device(s) shall be compatible with the process involved and shall be accurate. The flow measuring device(s) shall be

calibrated semiannually, which calibration reports shall be included as part of the wastewater discharge permit application form.

e) Measurement of pollutants:

1. The categorical pretreatment standards applicable to each regulated process.
2. The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by the standard or by the Authority, of regulated pollutants in the discharge from each regulated process. Instantaneous, daily maximum, and long-term average concentrations, or mass, where required, shall be reported. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in Subsection 1 hereof.
3. Sampling must be performed in accordance with procedures set out in Subsection J hereof.
5. Certification. A statement, reviewed by the user's authorized representative and certified by a qualified professional, indicating whether pretreatment standards are being met on a consistent basis and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required to meet the pretreatment standards and requirements.
6. Compliance schedule. If additional pretreatment and/or O&M will be required to meet the pretreatment standards, the shortest schedule by which the user will provide such additional pretreatment and/or O&M. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. A compliance schedule pursuant to this section must meet the requirements set out in Subsection B hereof.
7. Signature and certification. All baseline monitoring reports must be signed and certified in accordance with SECTION 4 hereof.

B. Compliance schedule progress reports

The following conditions shall apply to the compliance schedule required by Subsection A (4) hereof:

1. The schedule shall contain progress increments (milestones) in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (such events include, but are not limited to, hiring an engineer, completing preliminary and final plans, executing contracts for major components, commencing and completing construction, and beginning and conducting routine operation);

2. No increment referred to above shall exceed nine months.
3. The user shall submit a progress report to the Authority no later than 14 days following each date in the schedule and the final date of compliance, including, at a minimum, whether or not it complied with the increment of progress, including the overall completion date, the reason for any delay, and, if appropriate, the steps being taken by the user to return to the established schedule; and
4. In no event shall more than nine months elapse between such progress reports to the Authority.

C. Reports on compliance with pretreatment standard deadline

Within 90 days following the date for final compliance with applicable categorical pretreatment standards, or in the case of a new source following commencement of the introduction of wastewater into the POTW, any user subject to such pretreatment standards and requirements shall submit to the Authority a report containing the information described in Subsection A(2)(d) and (e) hereof. For users subject to equivalent mass or concentration limits established in accordance with the procedures in 40 CFR 403.6(c), this report shall contain a reasonable measure of the user's long-term production rate. For all other users subject to pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or another measure of operation), this report shall include the user's actual production during the appropriate sampling period. All compliance reports must be signed and certified in accordance with SECTION 4 hereof.

D. Periodic compliance reports for all users

1. All significant and non-significant industrial users shall, at a frequency determined by the Authority but in no case less than semiannually, submit a report indicating the nature and concentration of pollutants in the discharge which are limited by pretreatment standards and/or contained in a valid wastewater discharge permit and the measured or estimated average and maximum daily wastewater flows for the reporting period. All periodic compliance reports must be signed and certified in accordance with SECTION 4 hereof.
2. All wastewater samples must be representative of the user's discharge. Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a user to keep its monitoring facility in good working order shall not be grounds for the user to claim that sample results are unrepresentative of its discharge.
3. If a user subject to the reporting requirement in this section monitors any pollutant more frequently than required by the Authority, using the procedures prescribed in Subsections A, I & J hereof, the results of this monitoring shall be included in the report.

E. Reports of changed conditions

1. Each user must notify the Pretreatment Coordinator of any planned significant changes to the user's operations or system which might alter the nature, quality, or volume of its wastewater at least 90 days before the change occurs.
2. The Authority may require the user to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application under SECTION 4 hereof.
3. The Authority may issue a wastewater discharge permit under SECTION 4 hereof or modify an existing wastewater discharge permit under SECTION 5 hereof in response to changed conditions or anticipated changed conditions.
4. For purposes of this requirement, significant changes include, but are not limited to, average flow increases of 20% or greater and the discharge of any previously unreported pollutants at levels that may cause pass-through or interference.

F. Reports of potential problems

1. In the case of any discharge, including, but not limited to, accidental discharges, discharges of a non-routine, episodic nature, a non-customary batch discharge, or a slug load, which may cause potential problems for the POTW, the user, upon discovery and after assessing the situation and taking initial corrective action, shall immediately telephone and notify the Pretreatment Coordinator of the incident. This notification shall include the location of the discharge, type of waste, concentration, and volume, if known, and initial corrective actions taken by the user.
2. Within five business days following such discharge, the user shall submit a detailed written report describing the cause(s) of the discharge and the measures to be taken and/or have been implemented by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liability which may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property, nor shall such notification relieve the user of any fines, penalties, or other liability which may be imposed pursuant to this document or other applicable ordinances or laws.
3. Notice shall be permanently posted on the user's bulletin board or other prominent place advising employees who to call in the event of a discharge described in Subsection F (1), above. Employers shall ensure that all employees who may cause such a discharge to occur are advised of the emergency notification procedure.

G. Reports from unpermitted users

All users not required to obtain a wastewater discharge permit may be required to provide appropriate reports to the Authority as the Authority shall require.

H. Notice of violation; repeat sampling and reporting

1. If sampling performed by the Pretreatment Coordinator indicates a violation, the Pretreatment Coordinator will repeat sampling and analysis within 30 days of becoming aware of a violation.
2. If sampling performed by the user indicates a violation, the user must notify the Pretreatment Coordinator within 24 hours of becoming aware of the violation. The user shall repeat the sampling within 96 hours and shall submit the analytical results to the Pretreatment Coordinator within 30 days of the repeat sampling.
3. Where the user believes the first reported result(s) indicating a violation(s) may be in error, the user may submit additional data to support its position with the repeat sampling results.
4. Where the user believes its facility continues in violation of its wastewater discharge permit, the user shall notify the Pretreatment Coordinator, and the ninety-six-hour repeat sampling requirement of this subsection shall commence at the point the user believes its facility has returned to compliance.

I. Analytical requirements

All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or periodic compliance report shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, as revised unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, sampling and analyses must be performed in accordance with procedures approved by the Authority.

J. Sample collection

1. Except as indicated in Subsection J (2), below, the user must collect wastewater samples using flow-proportional composite collection techniques. In the event flow proportional sampling is infeasible or not warranted in the opinion of the Authority, the Authority may authorize the use of time proportional sampling or a minimum of four grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged or frequency of grab samples acceptable to the Authority. Alternate grab sampling procedures shall be approved by the Approval Authority. In addition, grab samples may be required to show compliance with instantaneous discharge limits.
2. Samples for oil and grease, temperature, pH, cyanide, phenols, sulfides, and volatile organic compounds must be obtained using grab collection techniques [a minimum of four grab samples must be taken as per 40 CFR 403.12(b)(5)(iii) or as indicated in Subsection J(1) above].

K. Timing

Written reports will be deemed to have been submitted on the date postmarked. For reports which are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report shall govern.

L. Recordkeeping

Users subject to the reporting requirements of this document shall maintain, and make available for inspection and copying by the Authority, all records of information obtained pursuant to any monitoring activities required by this document, including documentation associated with best management practices and any additional records of information obtained pursuant to monitoring activities undertaken by the user independent of such requirements. Records shall include the date, exact place, method, and time of sampling and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used, and the results of such analyses. These records shall remain available for a period of at least three years. This period shall be automatically extended for the duration of any litigation concerning the user or the Authority or where the user has been specifically notified of a longer retention period by the Authority.

M. Notification of the discharge of the hazardous waste

1. Any user who commences the discharge of hazardous waste shall notify the Authority and the Pretreatment Coordinator, the EPA Regional Waste Management Division Director, and state hazardous waste authorities, in writing, of any discharge into the POTW of a substance which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge (continuous, batch, or other). If the user discharges more than 100 kilograms of such waste per calendar month to the POTW, the notification also shall contain the following information to the extent such information is known and readily available to the user: identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the waste stream discharged during that calendar month, and an estimation of the mass of constituents in the waste stream expected to be discharged during the following 12 months. All notifications must take place no later than 180 days after the discharge commences. Any notification under this subsection needs to be submitted only once for each hazardous waste discharged. However, notifications of changed conditions must be submitted under Subsection E hereof. The notification requirement in this section does not apply to pollutants already reported by users subject to categorical pretreatment standards under the self-monitoring requirements of Subsections A, C, and D hereof.
2. Dischargers are exempt from the requirements of Subsection M(1), above, during a calendar month in which they discharge no more than 15 kilograms of hazardous

wastes unless the wastes are acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e). Discharge of more than 15 kilograms of non-acute hazardous wastes in a calendar month or of any quantity of acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e) requires a one-time notification. Subsequent months during which the user discharges more than such quantities of any hazardous waste do not require additional notification.

3. In the case of any new regulations under Section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the user must notify the Authority, the EPA Regional Waste Management Division Director, and state hazardous waste authorities of the discharge of such substance within 90 days of the effective date of such regulations.
4. In the case of any notification made under this section, the user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

Section 7: Compliance monitoring

A. Right of entry; inspection and sampling

1. The Authority shall have the right to enter the premises of any user in which to determine whether the user is complying with all requirements of this document and any wastewater discharge permit or order issued hereunder. Users shall allow the Authority ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and the performance of any additional duties required under this document. A user shall not obstruct, block, or otherwise interfere with access to the sampling point(s).
2. Where a user has security measures in force that require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, Authority personnel shall be permitted to enter without delay for the purposes of performing specific responsibilities.
3. The Authority shall have the right to set up on the user's property or require installation of such devices as are necessary to conduct sampling and/or metering of the user's operations.
4. The Authority may require the user to install monitoring equipment, as necessary. This sampling and monitoring equipment and devices shall be maintained at all times in a safe and proper operating condition by the user at its own expense. These devices used to measure wastewater flow and quality shall be calibrated semiannually to ensure their accuracy.

5. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the user at the written request of the Authority and shall not be replaced without the approval of the Authority. The costs of clearing such access shall be borne by the user.
6. Unreasonable delay in allowing Authority personnel access to the user's premises shall be a violation of this document.

B. Search warrants

If the Authority has been refused any records or access to a building, structure, or property, or any part thereof, or if the Authority believes that there is a need to inspect and/or sample as part of a routine inspection and sampling program of the Authority designed to verify compliance with this document or any permit or order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the Authority may seek issuance of a search warrant from the appropriate judicial authority.

Section 8: Confidential information

Information and data pertaining to a user obtained from reports, surveys, wastewater discharge permit application forms, wastewater discharge permits, and monitoring programs, and from the Authority's inspection and sampling activities, shall be available to the public without restriction, unless the user specifically requests, and is able to demonstrate to the satisfaction of the Authority, that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable law. Any such request must be asserted at the time of submission of the information or data. When demonstrated by the user that such information should be held confidential and upon written request of the user, those portions of the information which disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available immediately upon request to governmental agencies for uses related to the NPDES program or pretreatment program and in enforcement proceedings involving the person furnishing the report. When any such information shall be furnished to a governmental agency, it shall be clearly identified as confidential information and shall be segregated from any non-confidential information. Wastewater constituents and characteristics and other "effluent data" as defined by 40 CFR 2.302 will not be recognized as confidential information and will be available to the public without restriction.

Section 9: Publication of users in significant noncompliance

The Authority shall publish annually, in a newspaper published within the boundaries of the service area of the POTW, a list of the users who, during the previous 12 months, were in significant noncompliance with applicable pretreatment standards and requirements. The term "significant noncompliance" shall mean:

- A. Violations of wastewater discharge limits or technical review criteria:
1. Chronic violations of wastewater discharge limits, defined here as those in which 66% or more of wastewater measurements taken during a six-month period exceed the daily maximum limit or average limit for the same pollutant parameter by any amount.
 2. Technical review criteria (TRC) violations, defined here as those in which 33% or more of wastewater measurements taken for each pollutant parameter during a six-month period equals or exceeds the product of the numeric pretreatment standard or requirement, including instantaneous limits as defined by 40 CFR 403.3(1), multiplied by the applicable criterion (1.4 for BOD, TSS, fats, oils, and grease, and 1.2 for all other pollutants except pH).
- B. Any other discharge violation that the Authority believes to have caused, alone or in combination with other discharges, interference or pass-through, including endangering the health of Authority personnel or the general public.
- C. Any discharge of pollutants that has caused imminent endangerment to the public health and welfare or to the environment or has resulted in the Authority's exercise of its emergency authority to halt or prevent such a discharge.
- D. Failure to meet, within 90 days of the scheduled date, a compliance schedule milestone contained in a wastewater discharge permit or enforcement order for starting construction, completing construction, or attaining final compliance.
- E. Failure to provide, within 45 days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical pretreatment standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules.
- F. Failure to accurately report noncompliance; or
- G. Any other violations which the Authority determines will adversely affect the operation or implementation of the local pretreatment program.

Section 10: Charges, fees, and surcharges

A. Purpose; method of establishment

It is the purpose of the section to provide for the recovery of costs from users of the POTW for the implementation of the program established herein. The applicable charges or fees shall be established by resolution and set forth in the Authority's Schedule of Charges and Fees.

B. Types of fees

1. The charges and fees established by the Authority may include the following:
 - a) Fees for reimbursement of costs of setting up and operating the required pretreatment program, including but not limited to legal, engineering, and administrative costs.
 - b) Fees for monitoring, inspections, and surveillance procedures.
 - c) Fees for reviewing accidental discharge procedures and construction.
 - d) Fees for permit applications.
 - e) Fees for filing appeals.
 - f) Fees for consistent removal by the POTW of pollutants otherwise subject to federal pretreatment standards.
 - g) Other fees as the Authority may deem necessary to carry out the requirements contained herein.
2. These fees relate solely to the matters covered by this document and are separate from all other fees chargeable by the Authority.

C. Strength surcharge

1. Any nonresidential user discharging waste to the Authority's POTW with a monthly average CBOD concentration greater than 250 milligrams per liter (mg/l) or COD concentration greater than 500 mg/l and/or ammonia nitrogen concentration greater than 25 mg/l and/or total suspended solids concentration greater than 250 mg/l, in each case measured at the source, will pay a strength surcharge in addition to the applicable volume charge. Such strength surcharge shall be in addition to and not in substitution for any actions, remedies, or penalties described herein. The strength surcharge shall be applicable for all maximum daily concentrations in excess of the requirements of this subsection.
2. The strength surcharge shall be based on the operating costs for the POTW during the previous calendar year. A cost per pound of pollutant shall be determined by dividing the total annual operating costs, including general and office, treatment plant, and operating reserve costs, by the total pounds of pollutants (CBOD or COD, ammonia nitrogen, and total suspended solids) treated during the same period. The resultant cost per pound of pollutant is then utilized to determine the surcharge amount. Strength surcharges are calculated according to the following general equation:

$$\text{Surcharge} = [(\text{Pollutant concentration} - \text{Surcharge limit}) \times (\text{Total billing period flow, mg}) \times 8.34 \times (\text{Cost per pound})] \text{ time, discharge a}$$

3. No user shall, at any time, discharge wastewater containing pollutants in excess of the daily and monthly average maximum limits established in SECTION 2 hereof. If a compliance schedule is required, the industrial user shall develop a schedule and submit this schedule to the Authority for approval within 30 days of notification by the Authority. If the industrial user fails to submit a satisfactory compliance schedule within this thirty-day period, the Authority shall develop a schedule at the user's expense. If the industrial user is in violation of or is not making satisfactory progress in completing the requirements of the compliance schedule contained in the permit, the Authority shall impose civil penalties as directed in SECTION 2 hereof.
4. The strength of the total wastes used for establishing surcharges shall be determined by qualified industrial user discharge monitoring data and/or on at least one monthly twenty-four-hour composite sample collected by the Authority or its designated representative. Additional samples may be required if repeated violations of the local limits occur.

D. Flow surcharge

The permitted flow is the purchased capacity of the collection system and the wastewater treatment facility operated by the Authority. Wastewater discharged in excess of this permitted flow by the Permittee will be cause for a flow surcharge. The basis for this surcharge is the following:

1. When the recorded volume or flow of the wastewater exceeds any of the following stated permit limitations:
 - a) Daily maximum flow.
 - b) Five-day average flow.
 - c) Daily average flow/month.
 - d) Six-month total flow.
2. Each Permittee has at least two of the above limitations.
3. The calculation used for flow surcharges is:

$$\text{Flow surcharge} = (\text{Recorded/reported flow in gallons} - \text{permitted flow in gallons}) \times \text{Cost per gallon as reflected in the discharge permit.}$$
4. Repeated flow surcharge conditions will require the Permittee to purchase additional capacity for the collection system and wastewater treatment facility at the then current prescribed rate. Failure to do so in a timely manner is cause for the Permittee to be subject to all of the enforcement actions available to the Authority.

Section 11: Administrative enforcement remedies

A. Notification of violation

When the Authority finds that a user has violated, or continues to violate, any provision of this document, a wastewater discharge permit or order issued

hereunder, or any other pretreatment standard or requirement, the Authority may serve upon that user a written notice of violation. Within 30 days of the receipt of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted by the user to the Authority. Submission of this plan in no way relieves the user of liability for any violations occurring before or after receipt of the notice of violation. Nothing in this section shall limit the authority of the Authority to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation.

B. Consent orders

The Authority may enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for noncompliance. Such documents will include specific actions to be taken by the user to correct the noncompliance within a time period specified by the document.

C. Compliance orders

1. When the Authority finds that a user has violated, or continues to violate, any provision of this document, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Authority may issue an order to the user responsible for the discharge directing that the user come into compliance within a specified time.
2. If the user does not come into compliance within the time provided, wastewater service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders also may contain other requirements to address the noncompliance, including additional self-monitoring and management practices designed to minimize the number of pollutants discharged to the sewage system. A compliance order may not extend the deadline for compliance established for a pretreatment standard or requirement, nor does a compliance order relieve the user of liability for any violation, including any continuing violation. Issuance of a compliance order shall not be a bar against or a prerequisite for taking any other action against the user.

D. Cease and desist orders

1. When the Authority finds that a user has violated, or continues to violate, any provision of this document, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, or that the user's past violations are likely to recur, the Authority may issue an order to the user directing it to cease and desist all such violations and directing the user to:
 - a) Immediately comply with all requirements; and

- b) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.
2. Issuance of a cease-and-desist order shall not be a bar against or a prerequisite for taking any other action against the user.

E. Civil penalties

1. When the Authority finds that a user has violated, or continues to violate, any provision of this document, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Authority may assess a civil penalty on such user in an amount not to exceed \$25,000 for each violation. Such civil penalties shall be assessed in accordance with the Authority's Enforcement Response Plan. In the case of monthly or other long-term average discharge limits, civil penalties may be assessed for each day during the period of violation.
2. Appeal. A user assessed with a civil penalty under the terms of this section shall have 30 days to pay the proposed penalty in full, or if the user wishes to contest either the amount of the penalty or the fact of the violation, the user must file an appeal of the action within 30 days pursuant to 2 PA.C.S.A (relating to administrative law and procedure). Failure to appeal within this period shall result in a waiver of all legal rights to contest the violation or the amount of the penalty.
3. Assessment of a civil penalty shall not be a bar against, or a prerequisite for, taking any other action against the user.

F. Emergency suspension

1. The Authority may immediately suspend a user's discharge, after informal notice to the user, whenever such suspension is necessary to stop an actual or threatened discharge which appears to present or cause an imminent or substantial endangerment to the health or welfare of persons. The Authority may also suspend a user's discharge, after notice and opportunity to respond within 48 hours after notification, which threatens to interfere with the operation of the POTW or which presents, or may present, an endangerment to the environment.
 - a) Any user notified of a suspension of its discharge shall immediately stop or eliminate its contribution. In the event of a user's failure to immediately comply voluntarily with the suspension order, the Authority may take such steps as deemed necessary, including immediate severance of the connection to the sewage system, to prevent or minimize damage to the POTW, its receiving stream, or endangerment to any individuals. The Authority may allow the user to recommence its discharge when the user has demonstrated to the satisfaction of the Authority that the period of endangerment has passed

unless the termination proceedings in Subsection G hereof are initiated against the user.

- b) A user that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, to the Authority.
2. Nothing in this section shall be interpreted as requiring a hearing prior to any emergency suspension under this section.

G. Termination of discharge

1. In addition to the provisions in SECTION 5 hereof, any user who violates the following conditions may be subject to discharge termination in accordance with terms of this document or the Enforcement Response Plan
- a) Violation of wastewater discharge permit conditions.
 - b) Failure to accurately report the wastewater constituents and characteristics of its discharge.
 - c) Failure to report significant changes in operations or wastewater volume, constituents, and characteristics prior to discharge.
 - d) Refusal of reasonable access to the user's premises for the purpose of inspection, monitoring, or sampling; or
 - e) Violation of the pretreatment standards in SECTION 2 hereof.
2. Exercise of this option by the Pretreatment Coordinator shall not be a bar to, or a prerequisite for, taking any other action against the user.

Section 12: Judicial enforcement remedies

A. Injunctive relief

When the Authority finds that a user has violated, or continues to violate, any provision of this document, a wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement, the Authority, may petition the Court of Common Pleas of Montgomery County, Pennsylvania, for appropriate legal and equitable relief, including the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the wastewater discharge permit requirements, order, or other requirement imposed by this document on activities of the user. Relief requested may also include requirements for environmental remediation. A petition for injunctive

relief shall not be a bar against or a prerequisite for taking any other action against a user.

B. Civil penalties

The Authority may institute a suit in the Court of Common Pleas at Montgomery County, Pennsylvania, for the collection of any civil penalties assessed under SECTION 11 E hereof. In such action, the Authority may recover reasonable attorney fees, court costs, and other expenses associated with enforcement activities, including sampling and monitoring expenses and the cost of any actual damages incurred by the Authority. Filing a suit for civil penalties shall not be a bar against or a prerequisite for taking any other action against a user.

C. Criminal prosecution

A user who willfully or negligently violates any provision of this document, a wastewater discharge permit, or order issued hereunder or who willfully or negligently introduces any substance into the POTW which causes personal injury or property damage, or any user who knowingly makes any false statements, representations or certifications in any application, record, report, plan, or other document filed or required to be maintained pursuant to this document, a wastewater discharge permit or order issued under this document or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required under this document may be subject to criminal prosecution in accordance with the applicable provisions of the Pennsylvania Crimes Code, 18 PA.C.S.A § 101 et seq.

D. Remedies nonexclusive

The remedies provided for in this document are not exclusive. The Authority may take any, all, or any combination of these actions against a noncompliant user.

INDUSTRIAL PRETREATMENT PROGRAM

Wastewater Discharge Questionnaire - Permit Application

This is a two-part document.

The first section will help determine if a sewer customer is required to participate in the Municipal Industrial Pretreatment Program (MIPP) – as mandated by Federal Regulations, with the second part gathering detailed information related to any facility requiring participation.

All information provided in this application will be used exclusively for us to determine the necessity of your participation in the NWWA Industrial Pretreatment Program and for those customers who must participate in preparation for processing of a Wastewater Discharge Permit.

The information being requested is required to satisfy Federal General Pretreatment Regulations 403.12, including the submittal of Baseline Monitoring Reports.

Your completed and signed application must be returned by mail or hand delivery not later than 30 days after receipt of this application.

Please forward your questionnaire to:

***North Wales Water Authority
WWTP Pretreatment Coordinator
P.O. Box 1339
North Wales, PA. 19454-0339***

Note:

In accordance with Title 40 of the Code of Federal Regulations Part 403 Section 403.14, information and data provided in this permit application that identifies the nature and frequency of discharge shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2.302. Please circle any applicable areas in red and mark them as "Confidential Business Information". General effluent composition is public information.

PART 1 WASTEWATER DISCHARGE PERMIT QUESTIONNAIRE APPLICATION

PART 1: GENERAL INFORMATION

CUSTOMER INFORMATION:

(Please complete all lines - if any lines are not applicable, mark as N/A)

Facility Name/ID: _____

Company Name: _____

Mailing Address: _____

Facility Address: _____

Local Contact Person: _____

Email Address: _____

Phone: _____ Fax: _____

Primary Business Activity: _____

SIC Code: _____

Local, State, and/or Federal environmental permits held: _____

Is wastewater from your facility discharged from any source except kitchens and bathrooms? ☐ Yes ☐ NoAre any activities conducted at your facility subject to Federal Categorical regulations? ☐ Yes ☐ No

If you answered "NO" to both of the questions above, do not complete Part 2, and you may simply sign the bottom of this page and return this form to the NWWA.

If you answered "YES" to either or both questions #11 and/or #12, you must complete both Part 1 and 2 of this form, signing the bottom of this page and returning the completed application form to the NWWA.

CERTIFICATION STATEMENT

I have examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information herein is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment.

Signature: _____ Date: _____

Printed Name: _____

PART 2 INSTRUCTIONS

GENERAL INFORMATION INSTRUCTIONS:**INDUSTRIAL USER, PLEASE:**

- a) Provide the full name of the facility for which information is being provided.
- b) Provide the legal name of the person(s) or entity owning the property or facility
- c) Provide all other information as indicated.
- d) Provide a brief description of the primary manufacturing or service activity at premise address and the applicable Standard Industrial Classification Codes (SIC) (for information and a search capability on SIC's, please see the following website: www.osha.gov/oshstats/sicser.html).
- e) List all existing environmental permits, including numbers, e.g., NPDES, WQM, etc.

DOMESTIC OR INDUSTRIAL USER

Sources may include cooling water, boiler blow down, industrial processes, etc.

If you do not know if the activities conducted at your facility are subject to Federal Categorical regulations, contact NWWA for assistance.

CERTIFICATION STATEMENT/SIGNATURE

Federal regulation 40 CFR Part 403.12 (1) states that the official signing this application must be:

A responsible corporate officer (*president, vice-president, secretary, or treasurer of the corporation*) in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million, if authorized by the corporation to sign documents; or

A general partner or proprietor; or

A duly authorized representative of an individual designated by the regulation, so long as a written authorization is submitted to Authority which specifies that the authorized person has a position of responsibility for the overall operation of the facility which generates the wastewater discharge, or responsibility for environmental matters for the company.

PLANT/PRODUCTION DATA INSTRUCTIONS**PLANT INFORMATION**

Please provide all information as indicated.

PRODUCT/SERVICE DESCRIPTION

List each separate product or service manufactured or provided by your facility.

Provide information as indicated.

Pretreatment includes any process which modifies the quality or constituents of the wastewater prior to discharge (pH adjustment, solids removal, oil/water separation, etc.).

PLANT LAYOUT DIAGRAM

Follow instructions given in Attachment A. The plant layout diagram must include: the facility boundaries (including entrances and exits), the location of municipal sewer lines (including storm water catch basins), all sewer lines and their points of discharge to the municipal system, location and identification of process

discharges, location and labeling of flow metering and/or pretreatment equipment, and location of chemical materials storage.

Processes may be identified by numbers as long as the numbers correspond with those on the Process Schematic Diagrams (see Section IV-C).

SPILL PREVENTION/WASTE DISPOSAL INFORMATION

Provide information as indicated.

Note: An Accidental Spill Prevention Plan is a document that details how and where chemicals are stored, the location of clean-up and safety equipment, spill procedures, employee spill response training, and who to contact in the event of a spill.

WATER / WASTEWATER DATA INSTRUCTIONS

INFLUENT/EFFLUENT BALANCE SHEET

This is a balance sheet. The Influent total must match the Effluent total and be allocated so water use is accounted for as accurately as possible.

CONTINUOUS/BATCH DISCHARGES

If wastewater is discharged continuously, as it is generated, provide the requested information.

If process wastewater is held for any reason and discharged as a batch, provide the requested information.

MATERIALS

Identify the materials and chemicals that you use in your business. Make sure that you include:

- chemicals used to treat raw water,
- boiler or cooling tower chemicals,
- chemicals used for cleaning the plant or equipment, and
- any chemicals used in your products or processes.

PROCESS DETAIL INSTRUCTIONS

PROCESS ACTIVITIES

Please list each separate production or process activity that takes place in your facility. Examples include cooking, equipment washing, painting, sandblasting, etching, plating, etc.

WASTEWATER GENERATING PROCESSES

List all processes, whether or not they are listed in IV-A.

Production rates may be stated in lbs./yr., sheets/hr., or other units that are appropriate to your process.

PROCESS SCHEMATIC DIAGRAM

Follow the guidance provided in Attachment B. Provide a separate diagram for each major process conducted in your facility and assign a number to each process. Numbers should correspond with numbers shown on the plant diagram (see Section 11-C).

WASTEWATER DISCHARGE PERMIT APPLICATION

PLANT/PRODUCTION DATA

PLANT OPERATION

 Is business subject to seasonal variation? ☐ Yes ☐ No

 If yes, describe:

Number of workdays per week: _____

	1 st Shift	2 nd Shift	3 rd Shift
Start /End Time of Shifts			
Number of Employees Per Shift:			
Total Number of Employees:			

PRODUCT/SERVICE DESCRIPTION

List all products manufactured or services provided by your facility:

Product or Service	SIC Code	Description

Are automatic sampling or flow monitoring devices in use?

 If yes, describe the device and its (their) location (s):

WASTEWATER DISCHARGE PERMIT APPLICATION

SPILL PREVENTION/WASTE DISPOSAL INFORMATION

Does your facility have an Accidental Spill Prevention Plan? ☐ Yes ☐ No

Do you propose to discharge, or do you currently discharge chemicals, sludge, or hazardous waste to the sanitary or storm sewers? ☐ Yes ☐ No

If yes, please elaborate:

Do you dispose of any chemicals, sludge, or hazardous wastes to locations other than municipal sewers or surface waters? ☐ Yes ☐ No

EPA/State ID No: _____

If yes, please list:

Waste Removed By	Type of Waste	Waste ID	Volume/ Frequency

WATER / WASTEWATER DATA

INFLUENT/EFFLUENT BALANCE GPD= Gallons per Day

	Influent (Water In)					Effluent (Water Out)			
Water Source	Source Code	AVG. GPD	Max GPD		Sanitary Sewer	Storm Sewer	Discharge Code	AVG. GPD	Max GPD
Sanitary									
Process									
Boiler									
Irrigation									
Products									
Evaporation									
Other:									
Total:									

Source Codes: a. municipal supply b. private well c. recycled/reclaimed d. other

Discharge Codes: a. recycled b. waste hauler c. other

CONTINUOUS / BATCH DISCHARGES

Continuous Discharge:

Hours: _____

Days of Week: _____

Batch Discharge:

Process: _____

Volume (Gals): _____ Rate (gpm): _____

Hours: _____

Days of Week: _____

MATERIALS

List materials (cleaning agents, solvents, plating solutions, process chemicals, etc.) that are regularly used in your facility that might be present in your wastewater discharge to the sanitary sewer, including accidental spills.

Type of Material	Annual Usage Amount	Estimated Loss to Sewer	Principal Chemical Characteristic

PROCESS DETAIL

PROCESS ACTIVITIES

List all process activities which occur at your facility: (ex: washing, sandblasting, painting, metal forming, electroplating, chemical formulation, etc.) Please indicate by asterisk (*), those processes that use water.

WASTEWATER GENERATING PROCESSES

For each process which generates wastewater, please list:

Process	AVG.	Regulated Discharge GPD Max	Production Rate Last Year	Current	40 CFR Category

WASTEWATER DISCHARGE PERMIT APPLICATION

PROCESS SCHEMATIC DIAGRAM

Using the guidance provided in Attachment B., provide a separate process diagram for each major process in your facility.

POLLUTANT INFORMATION

Check all that are suspected or known to be present in your manufacturing or service activities or generated as a by-product:

Volatile and semi-volatile compounds often have several synonyms. For those compounds marked by an asterisk (*), please refer to the attached Priority Pollutant Synonym Listing. However, the Chemical Abstract Service (CAS) Registry number is the same, regardless of the name. If you are unsure about the chemical content

of any product, refer to the Material Safety and Data Sheet (MSDS) where you should find both names and CAS numbers for chemicals contained in the material.

PRIORITY POLLUTANT INFORMATION

Chemical Compound	CAS #	Annual Use (lb.) (gal)(yr.)	Estimated Loss to Sewer (lb.) (gal)(yr.)	Chemical Compound	CAS #	Annual Use (lb.) (gal)(yr.)	Estimated Loss to Sewer (lb.) (gal)(yr.)
asbestos (fibrous)	1332214			a-BHC (alpha)	319846		
cyanide	57125			b-BHC (beta)	319857		
antimony	7440360			d-BHC (delta)	319868		
arsenic	7440382			g-BHC* (gamma)	608731		
beryllium	7440417			bis(2-chloroethyl)ether*	111444		
cadmium	7440439			bis(2-chloroethoxymethane)*	111911		
Chromium III	16065831			bis(2-chloroisopropyl)ether*	108601-39638329		
copper	7440508			bis(chloromethyl)ether*	542881		
lead	7439921			bis(2-ethylhexyl)phthalate*	117817		
mercury	7439976			bromodichloromethane*	75274		
nickel	7440020			bromoform*	75252		
selenium	7782492			bromomethane*	74839		
silver	7440224			4-bromophenylphenyl ether	101553		
thallium	7440280			butylbenzyl phthalate	85687		
zinc	7440666			carbon tetrachloride*	56235		
acenaphthene	183329			chlordane	57749 12789036		
acenaphthylene	208968			-3-methyl-4-chloro phenol*	59507		
acrolein	107028			chlorobenzene	108907		
acrylonitrile	107131			chloroethane*	75003		
aldrin	309002			2-chloroethylvinyl ether	110758		
anthracene	120127			chloroform*	67663		
benzene	71432			chloromethane*	74873		
Benzidine	92875			2-chloronaphthalene	90131-91587		
benzo(a)anthracene*	56553			2-chlorophenol (o,m,p)	95578		
benzo(a)pyrene*	50328			4-chlorophenylphenyl ether	7005723		
benzo(b)fluoranthene	205992			chrysene*	218019		
benzo(g,h,i)perylene*	191242			4,4'-DDD*	72548		
benzo(k)fluoranthene*	207089			4,4'-DDE*	72559		
1,2-dichlorobenzene*	124481-95501			4,4'-DDT*	50293		
1,3-dichlorobenzene*	541731			dibenzo(a,h)anthracene*	53703		
1,4-dichlorobenzene*	106467			dibromochloromethane*	124481		
3,3'-dichlorobenzidine	91941			hexachlorocyclopentadiene*	77474		
1,1-dichloroethane*	75353			hexachloroethane*	67721		
1,2-dichloroethane*	107062			indeno(1,2,3-cd)pyrene*	193395		
1,1-dichloroethylene*	75354			isophorone*	78591		

1,2-trans-d-dichloroethylene*	156605			methylene chloride*	75092		
2,4-dichlorophenol	120832			naphthalene	91203		
1,2-dichloropropane*	78875			nitrobenzene	98953		
{cis & trans}1,3-dichloropropene*	10061015			2-nitrophenol*	88755		
	10061026			4-nitrophenol*	100027		
dieldrine	60571			n-nitrosodimethylamine*	62759		
diethyl phthalate"	84662			n-nitrosodipropylamine*	621647		
2,4-dimethylphenol*	105679			n-nitrosodiphenylamine*	86306		
dimethyl phthalate	131113			PCB-1016*	12674112		
di-n-butyl phthalate	84742			PCB-1221*	11104282		
di-n-octyl phthalate*	117840			PCB-1232*	11141165		
2-meth -4,6-dinitroylphenol*	534521			PCB-1242*	53469219		
2,4-dinitrophenol	51285			PCB-1248*	12672296		
2,4-dinitrotoluene	121142			PCB-1254*	11097691		
2,6-dlnitrotoluene	606202			PCB-1260*	11096825		
1,2-diphenylhydrazine*	122667			pentachlorophenol	87865		
endosulfan I*alpha	959988			phenanthrene	85018		
endosulfan II*beta	33213659			phenol	108952		
endosulfan sulfate	1031078			pyrene	129000		
endrin	72208			2,3,7,8-tetrachlorodi-benzo-p-dioxin*	1746016		
endrin aldehyde	7421934			1,1,2,2-tetrachloroethane*	79345		
ethylbenzene	100414			tetrachloroethylene*	127184		
fluoranthene	206440			Toluene*	108883		
fluorene*	86737			toxaphene	8001352		
heptachlor	76448			1,2,4-trichlorobenzene	87616-120821		
heptachlor epoxide	1024573			1,1,1-trichloroethane	71556		
hexachlorobenzene*	118741			1,1,2-trichloroethane	79005		
hexachlorobutadiene	87683			trichloroethylene	79016		
				2,4,6-trichlorophenol	88062		
				Vinyl chloride	75014		

WASTEWATER DISCHARGE PERMIT APPLICATION

SYNONYM LISTING FOR PRIORITY POLLUTANTS

CHEMICAL COMPOUND	SYNONYM	CHEMICAL COMPOUND	SYNONYM
benzo(a)anthracene	1,2-benzanthracene 2,3-benzphenanthrene	(cis & trans)1,3-dichloropropene	(cis & trans)1,3-dichloropropylene
benzo(a)pyrene	3,4-benzopyrene	diethyl phthalate	ethyl phthalate
benzo(g,h,i)perylene	1,12-benzoperylene	2,4-dimethylphenol	2,4-xenol
benzo(k)fluoranthene	11,12-benzofluoranthene	di-n-octyl phthalate	di(2 thy\hexyl)phthalate
g-BHC(gamma)	lindane	4,6-dinitro-2--methylphenol	4,6-dinitro-ortho-creso l
bis(2-chloroethyl)ether	2,2'-dichloroethyl ether	1,2-diphenylhydrazine	hydrazobenzene
bis(2-chloroethoxy)methane	2,2'-dichloroethoxy methane	endosulfan I	a-endosulfan-alpha
bis(2 1oroisopropyl)ether	2,2'-dichloroisopropyl ether	endosulfan II	b-endosulfan-beta
bis(chloromethyl)ether	(sym)dichloromethyl ether	fluorene	(alpha)-diphenylene methane
bis(2-ethylhexyl)phthalate	2,2'-diethylhexyl phthalate	hexachlorobenzene	perchlorobenzene
bromodichloromethane	dichlorobromomethane	hexachlorocyclopentadiene	perchlorocyclopentadiene
bromoform	tribromomethane	hexachloroethane	perchloroethane
bromomethane	methyl bromide	indeno(1,3,3-cd)pyrene	2,3-ortho-phenylene pyrene
carbon tetrachloride	tetrachloromethane	isophorone	3,5,5-trimethyl-2-cyclohexen-1-one
4-chloro ethylphenol	para-chloro-meta-cresol	methylene chloride	dichloromethane
chloroethane	ethyl chloride	2-nitrophenol	para-nitrophenol
chloroform	trichloromethane	4-nitrophenol	ortho-nitrophenol
chloromethane	methyl chloride	N-nitrosodimethylamine	dimethyl-nitrosoamine
chrysene	1,2-benzphenanthrene	N-nitrosodipropylamine	N-nitroso-di-n-propylamine
4,4'-DDD	dichlorodiphenyldichloroethane p,p'-TDE	N-nitrosodi)phenylamine	diphenyl-nitrosoamine
	tetrachlorodiphenylethane	PCB-1016	Arochlor-1016
4,4'-DDE	dichlorodiphenyldichloroethylene p,p'-ODX	PCB-1221	Arochlor-1221
4,4'-DDT	dichlorodiphenyltrichloroethane	PCB-1232	Arochlor-1232
dibenzo(a,h)anthracene	1,2,5,6-dibenzanthracene	PCB-1242	Arochlor-1242

tribromochloromethane	chlorodibromomethane	PCB-1248	Arochlor-1248
1,2-dichlorobenzene	ortho-dichlorobenzene	PCB-1254	Arochlor-1254
1,3-dichlorobenzene	meta-dichlorobenzene	PCB-1260	Arochlor-1260
1,4-dichlorobenzene	para-dichlorobenzene	2,3,7,8-tetrachlorodibenzo-p- dioxin	TCDD
1,1-dichloroethane	ethylidene chloride	1,1,2,2-tetrachloroethane	acetylene tetrachloride
1,2-dichloroethane	ethylene chloride ethylene dichloride	tetrachloroethene	perchloroethylene tetrachloroethylene
1,1-dichloroethene	1,1-dichloroethylene	toluene	methylbenzene toluoyl
(trans)-1,2-dichloroethene	acetylene dichloride 1,2(trans)- dichloroethylene	1,1,1-trichloroethane	methyl chloroform
1,2-dichloropropane	propylene dichloride	1,1,2-trichloroethane	vinyl trichloride
		trichloroethane	trichloroethylene
		vinyl chloride	chloroethene chloroethylene

WASTEWATER DISCHARGE PERMIT APPLICATION

INDUSTRIAL CATEGORIES WITH PRETREATMENT STANDARDS

A categorical industrial user (CIU) is an industry that discharges, or has the potential to discharge, process waste to a POTW which is covered by a specific numerical categorical standard (including a "no discharge" limitation); even if the IU is allowed to "certify" that it does not discharge that parameter. However, a discharger that has an NPDES permit for its process wastes but discharges normal domestic sewage to a POTW would not be considered a CIU as long as there is no reasonable potential for the user to discharge the categorical waste to the POTW.

Listed below are the 40 industrial categories that have specific numerical pretreatment standards. Please note that some of these categories have subcategories that do not contain limitations. One such category is Timber Products which has sixteen subcategories (A through P), but only 3 of these have specific pretreatment standards (F, G, H). Therefore, users who fall into subcategories A through E and I through P would not be considered CIUs.

If your facility employs or will be employing processes in any of the industrial categories or business activities listed (regardless of whether they generate wastewater, waste sludge, or hazardous wastes), place a check beside the category of business activity (check all that apply).

	Industrial Category	New Source Date¹
<input type="checkbox"/>	*Aluminum Forming	11/22/82
<input type="checkbox"/>	Battery Manufacturing	11/10/82
<input type="checkbox"/>	Carbon Black Manufacturing (New Sources Only)	05/18/76
<input type="checkbox"/>	Centralized Waste Treatment	08/28/00
<input type="checkbox"/>	*Coil Coating (Phase 1)	01/12/81
<input type="checkbox"/>	*Coil Coating (Can Making)	02/10/83
<input type="checkbox"/>	*Copper Forming	11/12/82
<input type="checkbox"/>	Commercial Hazardous Waste Combustors	02/06/98
<input type="checkbox"/>	Concentrated Animal Feeding Operations (New Sources Only)	09/07/73
<input type="checkbox"/>	*Electrical & Electrical Components (Phase 1)	08/24/82
<input type="checkbox"/>	*Electrical & Electrical Components (Phase 2)	03/09/83
<input type="checkbox"/>	*Electroplating (Existing Sources Only)	08/31/82
<input type="checkbox"/>	Fertilizer Manufacturing (New Sources Only)	12/07/73
<input type="checkbox"/>	Glass Manufacturing (New Sources Only)	08/22/73
<input type="checkbox"/>	Grain Mills (New Sources Only)	12/04/73
<input type="checkbox"/>	Ink Formulating (New Sources Only)	02/26/75
<input type="checkbox"/>	Inorganic Chemicals (Phase 1)	07/24/80
<input type="checkbox"/>	Inorganic Chemicals Manufacturing (Phase 2)	10/25/83
<input type="checkbox"/>	*Iron & Steel Manufacturing	01/07/81 Subparts E-L 11/18/02 Subparts A-D, M
<input type="checkbox"/>	Leather Tanning & Finishing	07/02/79 Subparts C-1/21/87
<input type="checkbox"/>	*Metal Finishing	08/31/82
<input type="checkbox"/>	*Metal Molding & Casting	11/15/82
<input type="checkbox"/>	Nonferrous Metals Forming	03/05/84
<input type="checkbox"/>	Nonferrous Metals Manufacturing (Phase 1)	02/17/83 01/22/87 Subpart J
<input type="checkbox"/>	Nonferrous Metals Manufacturing (Phase 2)	06/27/84
<input type="checkbox"/>	Oil & Gas Extraction	02/17/95
<input type="checkbox"/>	Organic Chemicals, Plastics & Synthetic Fibers	03/21/83 12/06/91 11 New Pollutants
<input type="checkbox"/>	Paint Formulating (New Sources Only)	02/26/75
<input type="checkbox"/>	Paving & Roofing (New Sources Only)	01/10/75
<input type="checkbox"/>	Petroleum Finishing	12/21/79

Effective January 1, 2023

<input type="checkbox"/>	Pesticide Chemicals Formulating, Packaging & Repackaging	04/14/94
<input type="checkbox"/>	Pesticide Chemical Manufacturing	04/10/92
<input type="checkbox"/>	Pharmaceuticals	05/02/95
<input type="checkbox"/>	Porcelain Enameling	01/27/81
<input type="checkbox"/>	Pulp, Paper & Paperboard	01/06/81
<input type="checkbox"/>	Rubber Manufacturing (New Sources Only)	08/23/74
<input type="checkbox"/>	Soap & Detergent Manufacturing (New Sources Only)	12/26/73 Subpart Q 02/20/75 Subparts O,P,R
<input type="checkbox"/>	Steam Electric Power Generating	10/14/80
<input type="checkbox"/>	Timber Products Processing	10/31/79
<input type="checkbox"/>	Transportation Equipment Cleaning	06/25/98

¹A new source is a facility or installation from which there is a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards (see 40 CFR 403.3(k)).

*Subject to TTO.

WASTEWATER DISCHARGE PERMIT APPLICATION

Categorical Users Subject to Total Toxic Organic (TTO) Requirements:

If your business is classified within a category indicated with an asterisk on the previous page, it is classified as a federal Categorical Industrial User subject to Total Toxic Organic management requirements. To fulfill these requirements, you must disclose whether you use and discharge any of the products listed in Attachment C.

Industries that use any of the listed chemicals must test for them in their plant process effluent and submit the Total Toxic Organic (TTO) test results to the Authority to ensure compliance with federal regulations.

Asterisked industries that do not use or discharge any of the listed toxic organics are required to submit a Solvent Management Plan, along with a signed and dated statement verifying there is no discharge of TTO's from their process.

Submit either a copy of current TTO test results or a Solvent Management Plan and signed verification to the Authority with your permit application or BMR.

Provide the following (TTO) information.

Does (or will) this facility use any of the toxic organics that are listed under the TTO standard of the applicable categorical pretreatment standards published by EPA?

☐ Yes ☐ No

Has a baseline monitoring report (BMR) been submitted which contains TTO information?

☐ Yes ☐ No

Has a Toxic Organics Management Plan (TOMP) been developed?

☐ Yes (please attach a copy) ☐ No

Solvent Management Plan:

In accordance with 40 CFR 413.03(b): To petition for a waiver of monitoring of an industrial user of a Publicly Owned Treatment Works, the industrial user shall submit a Solvent Management Plan that specifies to the control authority's (Authority's) satisfaction:

The toxic organic compounds used.

The method of disposal used instead of discharging, such as reclamation, contract hauling, or incineration.

Procedures for assuring that toxic organics do not routinely spill or leak into the wastewater.

WASTEWATER DISCHARGE PERMIT APPLICATION

10 Certification Statement

Per CFR 413.03(a):

Based on my inquiry of the person or persons solely responsible for managing compliance with the pretreatment standard for total toxic organics (TTO), I certify that to the best of my knowledge and belief, no dumping of concentrated toxic organics into the waste waters has occurred since filing the last discharge monitoring report. I further certify that this facility is implementing the solvent management plan submitted to the control authority.

SIGNATURE: _____

TITLE: _____

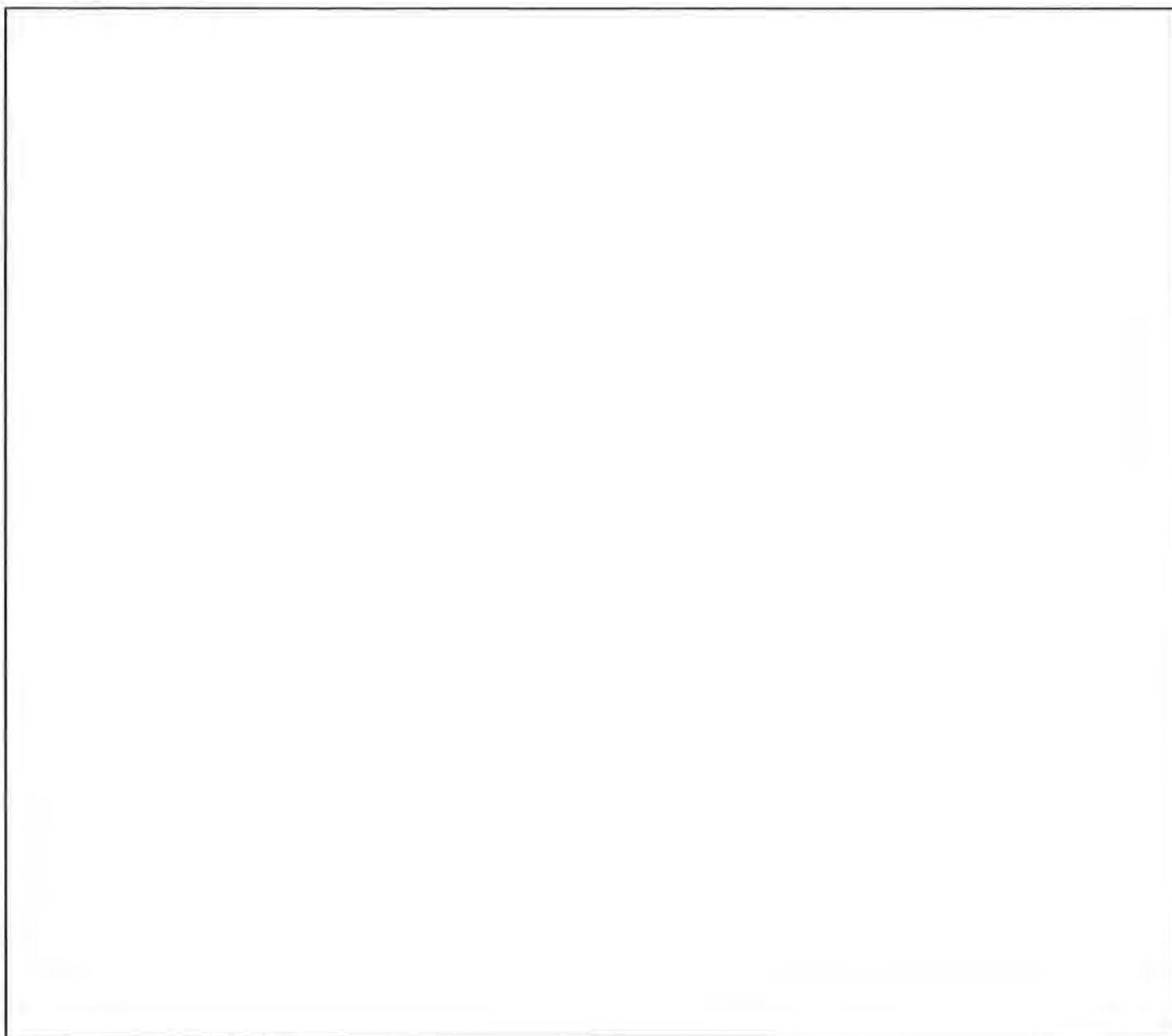
COMPANY: _____

WASTEWATER DISCHARGE PERMIT APPLICATION

INSTRUCTIONS FOR COMPLETING A PLANT LAYOUT

GENERAL INSTRUCTIONS: Please use an 8 ½" x 11" sheet of paper. A larger size or a blueprint may be substituted.

BUILDING LAYOUT: Clearly identify: (1) building outline, (2) property lines, (3) a north arrow, (4) scale of the drawing, (5) all wastewater drainage plumbing, (6) all storm drains, (7) the location of each existing and/or proposed sampling structure, (8) all side sewers, (9) all water lines and meters, (10) all wastewater generating processes, and (11) a legend for symbols.

BUILDING LAYOUTA large, empty rectangular box with a thin black border, intended for the user to draw the building layout. It occupies the majority of the lower half of the page.

APPENDIX F – AUTHORITY CONTACT INFORMATION

If you are hearing impaired or need other special communicative assistance, please contact an Authority representative at 215-699-4836, or at www.nwwater.com, or by fax at 215-699-8037, or by mail at the address below.

NWWA Montgomery County Office: (North Wales Borough)

Street Address: 200 W. Walnut Street, North Wales PA 19454

Mailing Address: PO Box 1339 North Wales PA 19454-0339

Phone: 215-699-4836

Fax: 215-699-8037

Website: www.nwwater.com

NWWA Bucks County Office: (Warrington Township)

Street Address: 1560 Easton Rd Warrington PA 18976

Mailing Address: PO Box 1018 Warrington PA 18976

Phone: 267-482-6940

Fax: 215-513-8570

Key Personnel:

Executive Director:

Robert C. Bender

Authority Solicitor:

Michael J. Clarke, Esq.

Rudolph Clarke, LLC,

Seven Neshaminy Interplex Ste. 200 Trevose PA 19053

Consulting Engineers:

Lane Bodley, P.E. / Allen Mason, P.E.

Carroll Engineering Corporation,

949 Easton Road, Warrington PA. 18976

Alternate Engineers:

Patrick DiGangi P.E.

CKS Engineers,

4259 W Swamp Rd Ste. 410, Doylestown PA 18902

Dir. of Engineering and Ops:

Bradley S. Fisher, P.E.

Assistant Operations Director:

Joseph Murphy

Finance Director:

Christine Lezoche

Human Resources Manager:

Dawn Crawford

Customer Service Manager:

Betty De Buono

APPENDIX G - WATER SERVICE MAINTENANCE PROGRAM AND AGREEMENT

The purpose of this Program is to assist North Wales Water Authority customers with the timely completion of emergency repairs to their water service lines (also previously called water laterals) and also to help mitigate customer expenses associated with the repair or replacement of water service lines. The Program is geared to residential water services; however, it may also include small non-residential water service lines up to a maximum 2" in diameter, if approved by the Authority. The Program includes only repairs or replacement of water service lines and does not include any repairs or replacement to sewer lines or laterals. The Program was previously referred to as a "Lateral Maintenance Program." Current participants in the prior NWWA "Lateral Maintenance Program" shall automatically be transferred into the Water Service Maintenance Program, subject to the terms described herein. All services and benefits of the Program shall be provided per the following descriptions, terms, conditions, and program limitations.

1. DEFINITIONS:

- a. **"Authority"** shall mean the North Wales Water Authority, or its authorized representative, having business offices in North Wales Borough, Montgomery County, and Warrington Township, Bucks County, Pennsylvania. The Authority may also be referred to as "NWWA."
- b. **"Customer"** - For purposes of this Program, a Customer shall mean and include a water Customer of the North Wales Water Authority who has been determined to be eligible to participate in this Program. This Program will typically include only residential customers of the Authority, with eligibility for participation determined in the sole and absolute discretion of the Authority, as evidenced by the written approval of the Authority as set forth in paragraph 3, below. The term customer shall also include the property owner(s) and also may include a person, partnership, association, corporation, or other entity that utilizes the services of the Authority's water system, with said Customer being legally obligated to pay the Authority for water services whether or not any agreement for water services has been executed with the Authority. Nothing herein shall release or reduce the Customers' obligation to adhere to all other Policies and Procedures, Rules and Regulations, Fee Schedule, or other regulations enacted or modified by the Authority from time to time.
- c. **"Water Service Line" (Formerly "Water Lateral")** - For purposes of this Program, the portion of the water supply line included shall also be referred to as a customer's **"Water Service."** *Water Service shall typically mean that portion of the water service line owned by the Customer, or in certain situations, the part of the line that is the responsibility of the Customer to maintain.* This portion of the Water Service Line will typically be located between the exterior wall of the building being provided with water (the "Point of Entry") and the Authority-owned curb stop or Authority exterior shut-off valve. The Water Service Line is typically located upon private property owned by the Customer. However, it may at times extend onto the common property - such as property owned by a homeowner's association ("HOA") or Condominium Association, or upon other property held in similar common ownership, being typically located within multifamily developments. An example of a Water Service Line or water lateral is illustrated in Exhibit "A," attached hereto.
- d. **Water Service (Lateral) Maintenance Agreement:** For purposes of this Program, the term "Water Service Maintenance Agreement" shall mean the written Agreement to be executed by both the Authority and the Customer, setting forth the specific terms and conditions of the Program, including but not limited to the responsibilities of the parties, the benefits included, as well as the limitations and exclusions of the Program.

In the event that a Water Service Line extends beyond the limits of a Customer's private property, including any service extending through a Customer's private property and then across or under a third party's property (including that of an HOA or Condominium property), the Authority may, in its sole discretion, require that a Water Service Maintenance Agreement is executed by both the Customer, and an authorized agent of the HOA or Condominium Association, or a similarly situated third party having an ownership interest in the property served by the Water Service Line.

- e. **"NWWA Water Main or Line"** shall mean any water line or water main owned by the Authority, further described as follows:

- (1) **Water Main:** A water distribution pipe owned and maintained by the Authority and located in the street or dedicated easement.
- (2) **Authority Water Service Line:** The water distribution pipe owned and maintained by the Authority and located between the Authority's water main and the curb stop. This does not include any part of the Water Service Line or lateral owned by the Customer.

2. **PROGRAM SERVICES:** Following Authority review and approval of a Customer's application for participation in the Water Service Maintenance Program, and after the execution of the NWWA Water Service Maintenance Agreement by all required parties, and further subject to the Customer's initial and continued payment of all applicable charges, the Authority will provide the following water service maintenance services:

- (a) After a Customer determines that a water supply problem is not being caused by a malfunction within the Customer's building, and the Customer is unable to otherwise determine the source of the problem, the Customer shall report the problem to the Authority for investigation by Authority personnel.
- (b) After an investigation by the Authority, if the Authority determines that the water supply problem reported by the Customer is caused by a defect in the participating Customer's Water Service Line, the Authority will either repair or replace the Water Service (at the sole discretion of the Authority) as needed, to restore water supply to the Customer's property. However, the Authority shall not be responsible for any repair or replacement needed due to any malfunction not involving the Water Service Line, including any occurrence inside the Customer's building beyond the Point of Entry, or for any other cause excluded from coverage under the Program pursuant to paragraph 6 hereof.

3. **ELIGIBILITY** – The determination of a Customer's eligibility to initially participate in the Program, or to continue to be granted annual renewals for such participation, shall be in the sole and absolute discretion of the Authority.

4. **RENEWAL AND TERMINATION** – After the initial Authority approval of a Customer's application, coverage pursuant to the Program will be automatically renewed on an annual basis, unless canceled in writing by the Customer or by the Authority. After the initial quarterly term(s), all water service maintenance program accounts will be renewed on a year-to-year calendar basis, beginning January 1 of each year.

The Customer's participation in the Water Service Maintenance Program, or the entire Program itself, may be terminated at any time by the Authority in its sole and absolute discretion, by providing at least thirty (30) calendar days' prior written notice of such termination to its Customer(s).

5. **ANNUAL PROGRAM FEE** – The fee for participation in the Water Service Maintenance Program shall be initially

established as follows: Residential (maximum 2" service) - \$10.00 per calendar year per service, Non-residential (3/4" and 1" service) - \$18.00 per calendar year per service, Non-residential (1 1/2" and maximum 2") - \$30.00 per calendar year per service. This fee may be billed in whole or in part, or increased or decreased by the Authority at any time at its sole discretion, subject to noting the same on the Customer's water bill and providing notice on the Authority website for a period of at least thirty (30) calendar days prior to any increase in the fee.

6. **WARRANTY** - The Authority warrants that it will provide services under this Program in accordance with the terms and conditions set forth herein. This is the Authority's sole and exclusive warranty, and the Authority disclaims any other warranties, whether written, oral, expressed, or implied, including, without limitation, warranties of merchantability and fitness for a particular purpose and warranties arising by trade custom, trade usage, course of performance of dealing, or otherwise. The Authority does not warrant, or guarantee continued and uninterrupted water service or supply as part of this Program.

7. **EXCLUSIONS FROM COVERAGE** - This Program does NOT include any storm water or sanitary sewer lines or laterals and includes only Authority-approved Water Service Lines. Additionally, the Authority shall not be responsible pursuant to this Program or otherwise for the replacement or repair of any damage caused by the intentional, wanton, reckless, or negligent conduct of the Customer, or Customer representative or agent, even if unintentional. The Authority is also not responsible for repair or replacement of any Water Service Line or lateral located in whole or in part upon property not owned in fee by the Customer unless a tri-party agreement prepared and approved by the Authority has been properly executed and is on file at the Authority offices. This requirement is effective regardless of any prior determination of Customer eligibility and participation.

8. **LIMITATIONS ON SCOPE OF COVERED REPAIRS:** - The Customer hereby indemnifies and holds harmless the Authority from, of, and against any and all liability arising from the removal, relocation, destruction, or defacement of, or damage to, any landscaping, or other physical improvements occasioned by necessary and reasonable repair or replacement of the Water Service Line. These limitations remain in effect whether the repair or replacement work is conducted or caused by the Authority, its employees and/or its agents. Any restoration of landscaping, hardscaping, fencing, trees, shrubs, irrigation systems, fencing, gates, landscape walls, driveways, parking areas, and any similar improvements, grass, and the like, shall be the sole and exclusive responsibility of the Customer.

The Authority shall not be responsible for any occasion, special, indirect, or consequential damages arising from damage to the Water Service Line, interruption of water supply or service, or otherwise, or for any delay or failure to perform hereunder due to causes or reasons beyond Authority control, including but not limited to staffing availability, conflicting emergencies being prioritized, weather conditions, force majeure, or other similar cause(s).

The Authority's obligations hereunder are limited to repair or replacement of the Customer-owned Water Service Line, the backfill of the trench to a hand-raked level, with over seeding if upon a lawn area, or by backfill and temporary trench paving if on driveway or parking areas, including whether on private property or common property. After a reasonable amount of time, Authority staff or an Authority contractor will return to make final paving repairs to the trenched area. In the unlikely event that a private lateral extends under a public roadway, the Authority will make all repairs within the public roadway as well.

9. **ASSIGNMENT** - The terms and conditions of this Program and the rights and obligations of the Customer may not be assigned without the prior written consent of the Authority. In the event the Customer enters into a contract for conveyance of Customer's property to a third party, Customer shall provide written notice to the Authority of the existence of such contract, no less than thirty (30) days prior to the scheduled date of closing.

10. **MISCELLANEOUS** -

- (a) This document shall be an exhibit to and incorporated in any Water Service Maintenance Agreement between the Authority and a Customer. Upon acceptance and approval by the Authority, the terms and conditions set forth herein and in the Water Service Maintenance Agreement shall constitute the entire Agreement between the Authority and the Customer, as to the subject matter hereof, superseding any prior statements, representations, or agreements, either expressed or implied, or as may be supplemented or superseded within the duly enacted Rules and Regulations of the Authority.
- (b) By executing the WATER SERVICE MAINTENANCE AGREEMENT, the parties thereto evidence their intent to be legally bound thereby.
- (c) This document, constituting the terms of the Water Service Maintenance Program, may not be modified except by written instrument.
- (d) The terms of the Water Service Maintenance Program shall inure to the Authority, its successors, and assigns.
- (e) The Water Service Maintenance Program shall be construed in accordance with the laws of the Commonwealth of Pennsylvania.

**WATER SERVICE MAINTENANCE PROGRAM
APPLICATION AND AGREEMENT**

PART 1: CUSTOMER APPLICATION

Customer Name: _____

Property Address: _____

Property Owner(s) Name (if different than above): _____

Customer Account Number: _____

Telephone or Email Contact: _____

The undersigned customer/owner (or legal representative) *hereby makes application and requests participation in the North Wales Water Authority (NWWA) WATER SERVICE MAINTENANCE PROGRAM*, also agreeing to permit Authority representatives to enter the property for purposes of inspecting the existing water service for purposes of determining PROGRAM eligibility. By making this application, I understand that if the property service line *is deemed eligible* for PROGRAM inclusion, I will receive both a letter of confirmation as well as a signed copy of **WATER SERVICE MAINTENANCE AGREEMENT** for my records. (If the application is denied, the NWWA will forward a letter providing a reason(s) for denial.)

I acknowledge that the full text of the **WATER SERVICE MAINTENANCE PROGRAM** is available for my review and download on the NWWA website at www.nwwater.com. (These documents may also be forwarded by NWWA mail or email upon request.)

I understand and agree that it is my (our) sole responsibility to review all terms and conditions of both the **AGREEMENT AND PROGRAM** to determine if the PROGRAM is suitable for my (our) needs. I understand and agree that if my application is approved, participation in the PROGRAM will not be activated and commence until such time that the document is signed by the applicant/customer and returned to the NWWA in person or my mail to the address indicated below, and after the NWWA has countersigned the **AGREEMENT**.

Subject to the above, I (we) submit this application for NWWA inspection and consideration and assert that the undersigned party(s) are authorized to submit this application by the owner(s).

Please sign and date this Application below:

By: _____

Date: _____

(Please be sure to complete all sections and to sign both pages 1 and 7 for return to the NWWA Business Office)

PART 2: WATER SERVICE MAINTENANCE AGREEMENT

THIS WATER SERVICE MAINTENANCE AGREEMENT ("Agreement"), dated the ____ day of _____, 20__, between NORTH WALES WATER AUTHORITY, a municipal authority organized and existing under the laws of the Commonwealth of Pennsylvania (hereinafter referred to as "AUTHORITY"), and _____, having an service address of _____, and when applicable, any Homeowners or Community Association upon which the water service is located, in whole or in part, (hereinafter referred to individually and collectively as "CUSTOMER").

RECITALS

WHEREAS, CUSTOMER represents and warrants that he/she/it is the owner and/or tenant/occupant of certain real property located at _____, being Tax Map Parcel Number _____, (if available to customer) in the municipality of _____, Bucks or Montgomery County, Pennsylvania (hereinafter referred to as "Property"); and

WHEREAS the AUTHORITY owns and operates a public water supply system (hereinafter referred to as "System") serving the Property; and

WHEREAS an underground water service line (hereinafter referred to as the "Water Service Line") on the Property connects the Property to the System; and

WHEREAS, the AUTHORITY has established a Water Service Maintenance Program (hereinafter referred to as the "Program") for the purpose of providing emergency repair or replacement of a Water Service Line owned by the Customer and for which the Customer has primary responsibility for maintenance, repair, or replacement; and

WHEREAS the terms and conditions of the Program are set forth in the AUTHORITY'S Water Service Maintenance Program Statement (hereinafter referred to as the "Program Statement" incorporated herein by reference; and

WHEREAS CUSTOMER acknowledges and agrees that the Water Service Line on Customer's Property is and will remain the private property of the CUSTOMER, or the CUSTOMER's grantee or assignee; and

WHEREAS, CUSTOMER has agreed to consent to AUTHORITY's or its designee's entry on the Property to conduct an emergency repair or replacement of the Water Service Line, subject to the terms and conditions set forth hereinafter and in the Program Statement; and

WHEREAS any terms not defined herein but defined in the Program Statement shall have the meaning(s) assigned to such terms in the Program Statement, including, without limitation, the definition of "CUSTOMER" which shall include, where applicable, any homeowners or condominium association.

NOW, THEREFORE, in consideration of the promises, covenants and agreements contained herein, and intending to be legally bound hereby, the AUTHORITY and the CUSTOMER do hereby agree as follows:

CUSTOMER's Representations. CUSTOMER warrants and represents that:

- A. CUSTOMER has title to the Property and is authorized to enter into this Agreement.
- B. CUSTOMER acknowledges that ownership of CUSTOMER's Water Service Line shall remain the property of the CUSTOMER, or CUSTOMER's successors and assigns, and CUSTOMER shall have the sole and exclusive obligation of paying the cost and expense of maintaining the Water Service Line in order to comply with AUTHORITY Rules and Regulations, except as set forth in this Agreement.

II. Water Service Maintenance Program.

- A. CUSTOMER has applied for participation in the Water Service Maintenance Program and agrees to comply with the terms and conditions of the Program, including without limitation timely payment of all fees and charges applicable to participation in the Program and cooperation with AUTHORITY, its employees, and agents, with respect to CUSTOMER'S obligations pursuant to the Program.
- B. AUTHORITY, in its sole discretion, and as evidenced by authorized signature hereon, has approved CUSTOMER'S application for participation in the Program.
- C. Participation in the Program by CUSTOMER shall commence upon execution of this Agreement by both parties (hereinafter the "Effective Date"), and shall then automatically renew on an annual basis, as of January 1 of each calendar year; provided, however, that initial renewals will automatically occur each quarter until January 1 of the calendar immediately following the Effective Date of this Agreement. Either party may cancel the *Agreement* by written notice to the other party. Such cancellation notice shall be effective upon receipt.
- D. AUTHORITY may also terminate the *Program* and cancel this Agreement at any time, in its sole and absolute discretion, by providing no less than thirty (30) days' prior written notice of such termination to CUSTOMER. In the event of termination of the Program, AUTHORITY shall return any pro-rata portion of the fee paid by CUSTOMER to the AUTHORITY, as applicable to that portion of the annual coverage terminated by such action.
- E. The non-refundable fee for participation in the Water Service Maintenance Program shall be initially established as follows: Residential (maximum 2" service) - \$10.00 per calendar year per service, Non-residential (3/4" and 1" service) - \$18.00 per calendar year per service, Non-residential (1 1/2" and maximum 2") - \$30.00 per calendar year per service. Said fees are subject to change from time to time at the sole discretion of the AUTHORITY. Any change in the fees associated with the Program shall be noted in the CUSTOMER'S billing.

III. Emergency Repair of CUSTOMER's Water Service Line

CUSTOMER shall, before requesting repair or replacement of the Water Service Line by AUTHORITY, determine at CUSTOMER'S sole cost and expense that any problem with the provision of Water Service to the Property is not attributable to a malfunction with the CUSTOMER'S building but is attributable to an unknown cause.

Upon making said determination, CUSTOMER shall report the problem to the AUTHORITY in writing and request an investigation of the identified problem. The report shall be made to the following office of the AUTHORITY:

Either the:

NWWA BUCKS COUNTY Customer Service Department at 267-482-6940, or
NWWA MONTGOMERY COUNTY Customer Service Office at 215-699-4836,
with an emailed copy to servicelinemaintenance@nwwater.com, if possible.

Following receipt of CUSTOMER'S report, AUTHORITY shall respond and investigate to determine whether the identified problem is attributable to a defect in the CUSTOMER'S Water Service Line and, if so, may repair or replace the Water Service Line, in its sole discretion, in order to restore Water Service to the Property. AUTHORITY shall not, under any circumstances, be responsible to repair or replace the Water Service Line where the malfunction is not found to be attributable to the functioning of the Water Service Line. AUTHORITY shall not be responsible for repair or replacement of the Water Service Line if the inspection reveals occurrence of a problem beyond the Point of Entry or a problem excluded from the Program, as outlined in the Program Statement.

CUSTOMER hereby consents to permit the AUTHORITY, or its designee, reasonable entry upon the Property to conduct the aforesaid inspection and to make any repairs to or replace the Water Service Line.

IV. Exclusions from Program

- Non-residential water service lines
- Lines with identified leaks or defects
- Inaccessible lines in the sole discretion of the Authority
- Repairs or replacements of trees, bushes, landscaping, sod, fences, walls, pools, sheds, patios, playground equipment, or any similar objects identified by the Authority.

V. Documentation

The CUSTOMER covenants and agrees to execute, acknowledge, and deliver hereinafter any documents necessary, or appropriate, in the opinion of the AUTHORITY's Solicitor, to carry out the terms of this Agreement, including, without limitation, any supplemental agreement referenced herein.

VI. Other Law

Nothing contained herein will relieve the CUSTOMER or the AUTHORITY from complying with any applicable requirements of any Federal or State statute or regulation, or of the ordinances of the Borough of North Wales, or of the rules, regulations, or the rate schedules of the AUTHORITY, as amended from time to time.

The CUSTOMER specifically agrees to comply with all AUTHORITY's rules, regulations, specifications, and rates presently in effect, and as amended or supplemented from time to time without notice to the CUSTOMER.

VII. Assignability

This Agreement may not be assigned by either party without the prior written consent of the other.

VIII. Waiver/Indemnity

CUSTOMER hereby agrees that the AUTHORITY shall not be liable to CUSTOMER with respect to any action taken or omitted by the AUTHORITY in furtherance of this Agreement. CUSTOMER further agrees to indemnify and hold the AUTHORITY harmless, and remise, release, and forever discharge the AUTHORITY, its employees, agents, workmen and consultants from and against any manner of accidents, claims, suits, debts, judgments, and demands, etc., whatsoever, in law or equity, arising from the AUTHORITY's actions with respect to the Repairs as set forth under this Agreement, except for claims arising from the AUTHORITY's own gross negligence, willful misconduct, recklessness or bad faith, or the gross negligence, willful misconduct, recklessness or bad faith of the AUTHORITY's employees, agents, workmen, or consultants. AUTHORITY agrees to maintain sufficient liability insurance coverage for any claims made by CUSTOMER alleging negligence on the part of the AUTHORITY or the AUTHORITY'S employees, agents, workers, or consultants.

IX. Severability

If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement shall nonetheless remain in full force and effect.

X. Integration/Modification

This Agreement sets forth the entire understanding between the parties and supersedes all prior agreements and understandings, whether written or oral. This Agreement may not be amended, supplemented, or rescinded, except by a written instrument duly executed by each of the parties.

IN WITNESS WHEREOF, and intending to be legally bound, the parties hereto set their hands and seals the date and year first above mentioned.

CUSTOMER ACCEPTANCE

 Signature

 Signature

HOMEOWNERS OR COMMUNITY ASSOCIATION (when applicable)

Printed Name of Association

Printed Name of Authorized Officer

Signature of Authorized Officer

Attest:

(Authority Signature and Approval on following page)
Application and Agreement Approved by:

NORTH WALES WATER AUTHORITY

By: _____

Title: _____

Date: _____

Attest: _____

APPENDIX H – RIGHT TO KNOW POLICY

NORTH WALES WATER AUTHORITY ADMINISTRATIVE POLICY FOR PROCESSING "RIGHT-TO-KNOW" REQUESTS

The North Wales Water Authority (NWWA) supports the public's right to view and/or receive copies of certain official records and information in balance with the legal duty to also protect certain confidential customer information and personnel information pursuant to HIPPA regulation and other similar mandates.

The following administrative policy establishes the procedure by which the North Wales Water Authority ("Authority") will handle requests for public records under the Right-to-Know Law (the "Act") as amended from time to time. (65 P.S. §§ 67.101 – 67.3104, which became effective on January 1, 2009.) This policy is intended to be illustrative and is subject to the provisions of the Act. In the event of any conflict between the terms of this policy and the provisions of the Act, the Act shall control.

Appointment of Open Records Officer

The Board of the Authority hereby designates the NWWA Executive Director (or Designee) as the Open Records Officer responsible for handling all Right to Know (RTK) requests made to the Authority, pursuant to the Act.

The Open Records Officer shall be responsible for:

- Receiving requests under the Act,
- Directing requests to others within the Authority for purposes of information gathering,
- Tracking the Authority's progress in responding to requests, and
- Issuing interim and final responses in accordance with the time limitations set forth in the Act.

Duties of the Open Records Officer

Upon receiving a formal request for Authority record(s) under the Act, the Open Records Officer, shall:

Review and respond to all official requests for information filed with the Authority.

Approve or deny, in full or in part, any such requests.

Record the date and time of Authority receipt of all written requests for public information pursuant to the Act.

Determine and record the day upon which five (5) business days shall pass from the date and time of the Authority receipt of the request.

Maintain an electronic or paper copy of all written requests, together with documentation submitted with the request.

Create a file (electronic or paper) for the request, including the materials submitted, the response, and all other related correspondence with the requester.

Right to Know Posting by Authority

The Authority shall post not less than the following information at a location within the Authority offices, readily available for public view, and on the Authority website:

Contact information for the Open Records Officer (including location address, email address and telephone number).

Contact information for the Pennsylvania Office of Open Records.
 A form, which may be used for filing a request under the Act.
 Authority regulations, policies and procedures relating to the Act.

Requirements for Review and Processing of RTK Requests.

All requests made to the Authority under the Right-to-Know Act shall be made in writing, and at a minimum, shall meet the following procedural requirements:

Identify the requester by name.
 Provide a return mailing address as well as a daytime telephone number
 Specifically identify the record or records requested.
 State whether the requester is a legal resident of the United States or a Commonwealth, local, judicial, or legislative agency.

Failure to use the proper form, and/or to provide all required information shall render the request *administratively incomplete*. The Authority shall not be required to respond to an administratively incomplete request.

"In writing," as referred above, includes all written requests, whether submitted in person, by mail, courier, by e-mail, or by facsimile.

Requesters may submit requests using either the RTK form available through the Pennsylvania Office of Open Records at www.openrecords.state.pa, or by using the RTK form available at the Authority office, or upon the Authority website at www.nwwater.com.

Right-to-Know requests must be sent or delivered to the Authority by one of the following approved methods of transmission: (1) United States mail, (2) courier, (3) express delivery, (4) overnight delivery, (5) hand-delivery, (6) facsimile or (7) e-mail. No other form of transmission is permitted.

The Authority *may*, at its sole option, from time to time, accept verbal requests for records; however, in such cases, the requester shall not be afforded the rights and remedies provided under the Act.

Right-to-Know requests must be in writing and sent or delivered to:

Attn: Open Records Officer
North Wales Water Authority
200 West Walnut Street
P.O. Box 1339
North Wales, Pennsylvania 19454
openrecords@nwwater.com

RTK requests received by the Authority after the close of regular business hours shall be deemed to have been received by the Authority on the following regular business day. This shall include any facsimile or e-mail transmission received after regular business hours. Regular business hours of the Authority are typically 9:00 a.m. to 4:00 p.m., Monday through Friday.

If a request for access to a public record is approved, the Authority shall calculate and notify the requestor of any fees required, in such case; all the applicable fees, calculated pursuant to the Act, shall be payable to and paid to the Authority prior to receiving access to the record.

Authority Processing of a RTK Request.

All requests for information pursuant to the Act shall be referred to the Open Records Officer for processing.

The Open Records Officer shall review the request for completeness, form, and clarity.

If the request is determined to be in complete form, the Open Records Officer shall proceed with processing and responding to the request.

If the Open Records Officer determines that a written request is *incomplete*, or if it lacks sufficient information and clarity to be processed, the request may be denied as being incomplete. In such case, the requestor shall be notified in writing.

When conducting the initial review of a RTK request, the Open Records Officer may (but is not required to), contact the requester in an effort to obtain additional information as needed to assist the Authority in determining the scope of information being requested and/or in otherwise responding to the request. Any timetable imposed upon the Authority in responding to any such request shall not commence until such time the RTK request is deemed complete by the Open Records Officer.

After completing the initial RTK review, the Open Records Officer shall prepare a written response to the Right-to-Know request within the timetable as provided within the Act. The written response may include approval, denial, and a request for additional time, and/or a denial of the request pending resubmission, including additional information as is referenced in paragraph (e), above.

Upon receipt of a written RTK request, the Open Records Officer shall also determine, after consultation with the Authority's Solicitor, whether any of the following applies:

The request for access requires the *redaction* of a public record.

The request for access requires the retrieval of a record stored in a remote location.

A timely response to the request for access cannot be accomplished due to bona fide and specified staffing limitations.

A legal review is necessary to determine whether the record is a record subject to access under the Act.

The requester has not complied with the Authority's policies regarding access to records.

The requester refuses to pay applicable fees authorized by the Act, or

The extent/nature of the request precludes a response within the required time period.

In the event one or more of the above seven situations applies the Open Records Officer shall send written notice to the requester (within five (5) business days) advising the requester of the issue and that the request requires further review, the reason for the review, and a date that a complete response is expected.

The Authority may deny a requester access to a record if the requester has made repeated requests for that same record, and these repeated requests have placed an unreasonable burden on the Authority. Nonetheless, such denial will not restrict the requester's right to request different records.

The Authority may also deny a requester access when timely access is not possible due to fire, flood, or other disaster, or when access to historical, ancient, or rare documents, records, archives, and manuscripts may, in the professional judgment of the curator or custodian of records, cause physical damage or irreparable harm to the record. However, to the extent possible, the contents of these records shall be made accessible to a requester even if the record itself is physically unavailable.

Appeals

If a RTK request is denied by the Authority or is deemed denied, the requester may file an appeal within fifteen (15) business days of the mailing date of the Authority's notice of denial, or within fifteen (15) business days of a deemed denial, with the Pennsylvania Office of Open Records. (Or as otherwise may be permitted by the PA Open Records Office and/or the Act.)

The appeal shall state the grounds upon which the requester asserts that the record is a record under the Act, and shall address any grounds stated by the Authority for delaying or denying the request.

Excluded Records

The following is a list of records that are exempt from access by a requester under the Act and shall be released only upon written authorization or supervision of the Authority Solicitor. To the extent the following list is more or less inclusive than the exceptions specified in Section 708(b) of the Act, the provisions of the Act shall control.

Any record, or portion of any record, which:

Could result in the loss of Federal or State funds by the Authority.

It would be likely to result in a substantial and demonstrable risk of physical harm to or the personal security of an individual.

Any record maintained by the Authority or an Agency in connection with the military, homeland security, national defense, law enforcement or other public safety agency that if publicly disclosed would be capable of jeopardizing or threatening public safety or civil preparedness or which is a public protection activity or a record that is specifically designated as being classified by an appropriate Federal or State military authority.

Any record or information which creates a reasonable likelihood of endangering the safety or the physical security of a building, public utility, resource, infrastructure, facility, or information storage system, including any Authority operational activity, or specific information pertaining to locations of sensitive system operational information, including but not necessarily limited to valves and SCADA systems, passwords to buildings and structures, computer systems, and any similar matter

Any documents or data relating to computer hardware, source files, software and system networks that could jeopardize computer security by exposing a vulnerability in preventing, protecting against, mitigating, or responding to a terrorist act

Lists of Authority infrastructure, resources, and significant special events, including those defined by the Federal Government in the National Infrastructure Protections, which are deemed critical due to their nature, and which result from risk analysis; threat assessments; consequences assessments; antiterrorism protective measures and plans; counterterrorism measures and plans; and security and response needs assessments.

Building plans or infrastructure records that expose or create vulnerability through disclosure of the location, configuration, or security of critical systems, including public utility systems, structural elements, technology, communication, electrical, fire suppression, ventilation, water, wastewater, sewage, and gas systems.

Any record of an individual's medical, psychiatric or psychological history or disability status, including an evaluation, consultation, prescription, diagnosis or treatment; results of tests, including drug tests; enrollment in a health care program or program designed for participation by persons with disabilities, including vocation rehabilitation, workers' compensation and unemployment compensation; or related information that would disclose individually identifiable health information, including HIPAA compliance.

Any record containing all or part of a person's Social Security number; driver's license number; personal financial information; home, cellular or personal telephone numbers; personal e-mail addresses; employee number or other confidential personal identification number.

A spouse's name, marital status, beneficiary, or dependent information.

The home address of a law enforcement officer or judge.

A letter of reference or recommendation pertaining to the character or qualifications of an identifiable individual unless it was prepared in relation to the appointment of an individual to fill a vacancy in an elected office.

Information regarding discipline, demotion or discharge contained in a personnel file. This subparagraph shall not apply to an Authority or Agency final action that results in demotion or discharge.

Any record pertaining to strategy or negotiations relating to labor relations or collective bargaining and related arbitration proceedings. This shall not apply to a final or executed contract or agreement between the parties in a collective bargaining procedure.

Any draft of a resolution, regulation, and statement of policy, management directive, ordinance or amendment thereto prepared by or for the Authority.

A record that reflects the internal pre-decisional deliberations of the Authority, or its members, employees or officials, or the pre-decisional deliberations between Authority members, employees or officials and members, employees or officials of another agency, including predecisional deliberations relating to a budget recommendation, legislative proposal, legislative amendment, contemplated or proposed policy or course of action or any research, memos or other documents used in the predecisional deliberations.

The strategy to be used to develop or achieve the successful adoption of a budget, legislative proposal, or regulation.

A record that constitutes or reveals a trade secret or confidential, proprietary information.

Notes and working papers prepared by or for a public official or Authority employee used solely for that official's or employee's own personal use, including telephone message slips, routing slips and other materials that do not have an official purpose.

Unpublished lecture notes, unpublished manuscripts, unpublished articles, creative works in progress, research related material and scholarly correspondence of a community college or an institution of the State System of Higher Education or a faculty member, staff employee, guest speaker or student thereof.

Academic transcripts, examinations, examination questions, scoring keys or answers to examinations. This includes licensing and other examinations relating to the qualifications of an individual and to examinations given in primary and secondary schools and institutions of higher education.

An Authority record relating to or resulting in a criminal investigation, including:

Complaints of potential criminal conduct other than a private criminal complaint.

Investigative materials, notes, correspondence, videos, and reports.

A record that includes the identity of a confidential source or the identity of a suspect who has not been charged with an offense to whom confidentiality has been promised.

Any record that includes information made confidential by law or court order, also including any record of the Authority or an Agency relating to a noncriminal investigation, any record that includes the identity of a confidential source, including individuals subject to the act of December 12, 1986 (P.L.1559, No.169), known as the Whistleblower Law and

Access to Authority's Records

When approved, access to Authority records pursuant to an RTK request shall be subject to the following policies.

Providing a requester with an appointment and physical access to a document in the Authority's office is a "response" for the purposes of the Right-to-Know Law.

Agencies, as defined under the Act, and United States residents are entitled to access to public records under the Act.

A record will be provided to the requester in the medium requested if the record currently exists in that medium. Otherwise, the record will be provided in the medium in which it currently exists. If a record is only available in

electronic form, the Authority may respond to the request by notifying the requester that the record is available through publicly accessible electronic means or that the Authority will provide access to inspect the record electronically. If the requester is unwilling or unable to access the record electronically, the requester may, within thirty (30) days following receipt of the Authority's notification, submit a written request to have the record converted to paper. The Authority shall thereafter provide access to the record in printed form within five (5) days of receipt of the written request to convert the record.

When responding to a request for access, the Authority is not required to create a record, which does not currently exist, or to compile, maintain, format, or organize a record in a manner in which the agency does not currently compile, maintain, format, or organize the record.

If the Authority grants a request for access and informs the requester that copies of the requested records are available for delivery at the Authority Offices, and the requester fails to retrieve the records within sixty (60) days of the Authority's response, the Authority may dispose of any copies which have not been retrieved and may retain any fees paid to date.

Costs

Fees for postage may not exceed the actual cost of mailing.

Fees for duplication by photocopying, printing from electronic media or microfilm, copying onto electronic media, or other means of duplication shall be established by the Pennsylvania Office of Open Records.

Additional Procedures and Regulations

The Authority reserves the exclusive right to expand upon, amend or modify, or to deviate from these regulations when deemed appropriate in the sole opinion of the Authority and or the Open Records Officer, to best adhere to the spirit and intent of the Act, and/or as necessary to protect any personal injury, criminal activity, or otherwise required to protect the public interest.

APPENDIX I –CUSTOMER BILLING- COLLECTIONS-WATER SHUT OFF

PROCESSES AND GUIDELINES FOR CUSTOMER BILLING COLLECTION OF DELINQUENT ACCOUNTS WATER SHUT OFF PROCESSING OF MUNICIPAL LIENS

These Rules, Regulations, and Procedures constitute a revision and restatement of the procedures to be employed by the North Wales Water Authority when billing and collecting current and delinquent water and sewage accounts.

ARTICLE I.

BILLINGS

1. **Rates.** The Authority reserves the right to amend the rates at any time during the fiscal year due to substantial unexpected additional expenses or reduction in income. All current rates are located in Appendix A of the Rates, Rules, and Regulations.
2. **Billing.** All bills will be mailed to those customers who are responsible for payment. In the event that the Authority has established a separate tenant account, the owner will receive a copy of all notices that are mailed to the tenant. All bills are for services that have been provided for the previous quarter or month.
3. **Failure to Receive a Bill.** Failure to receive bills will not be considered an excuse for non-payment, nor will such failure permit an extension of the period during which said bills are due. In the event that the customer does not receive a bill on or near the date that a regularly scheduled bill should arrive, it shall be the customer's responsibility to contact the Authority to plan for timely payment. The presentation of a bill to the customer is only a matter of accommodation and not a waiver of this rule.
4. **Due Date.** Quarterly bills are due on the 15th of the following month after mailing and Monthly bills are due on the last business day of the month. Quarterly accounts where payment has not been received by the due date will be deemed to be delinquent and subject to a late fee assessed on the 21st of the month. Monthly accounts where payment has not been received by the due date will be deemed delinquent and subject to a late fee assessed on the next business day following the due date. See Appendix A of the Rates, Rules, and Regulations for the current late fee amounts.
5. **Late Notice.** Within ten (10) days after a quarterly customer becomes delinquent in the payment of his bill, the Authority shall mail a Late Notice to all those responsible for the payment of the bill. The Late Notice will state to the customer that the Authority will assess to the account a Posting Fee if the delinquency is not fully satisfied within twelve (12) days. Monthly customers are notified of the assessment of a Late Fee on the next monthly bill, which will include a notice that the account is Past Due; the assessed Late Fee is due on the last business day of the current monthly bill.
6. **Posting Notice.** Ten (10) days after the Late Notice has been mailed to Quarterly customers and ten (10) days after the second monthly bill has been mailed to Monthly customers, a Posting Notice will be mailed to those responsible for payment. This Posting Notice will state to the customer that the Authority will assess to the account a Site Visit fee if the delinquency is not fully satisfied by the Due Date and will state that the property may be subject to water service termination, s. Approximately three (3) days prior to the service termination, the customer of record is notified by phone and/or E-mail of the termination date.
7. **Shut Off/Service Termination Notice.** On the day of the Site Visit, a Termination Notice showing the amount in arrears as well as the Site Visit Fee will be hand-delivered to the property. In the event a customer

has made prior payment arrangements acceptable to the Authority, a Shut Off/Service Termination Notice will not be delivered to the property unless the customer defaults on such payment arrangements.

8. **Payments.** All payments and monetary transactions are required to be made in U S Currency and Legal Tender.
9. **Returned Payments.** A returned payment fee will be charged to the customer when the financial institution fails to honor a customer's payment, whether by check or Electronic Funds Transfer (EFT). Please see Appendix A of the Rates, Rules, and Regulations for the amount of the returned payment fee. In the event of a returned payment made by the customer for restoration of water service following Shut-Off pursuant to Article II hereof, the Authority will assess a Returned Payment Fee, plus an additional Site Visit Fee of \$50.00, and in such event, water service will be terminated, and any payment for restoration of water service a second time must be made in cash or by credit card.

ARTICLE II.

COLLECTION METHODS AND PROCEDURES FOR DELINQUENT WATER AND SEWER BILLS

Introduction: The Pennsylvania Statutes provide for four separate and distinct legal remedies available to municipal authorities and other local government units for the collection of delinquent water or sewer billings, which include:

- Requiring water utility to shut off water service to premises.
- Filing a claim and lien under the Municipal Claims and Tax Lien Act.
- Filing a Scire Facias proceeding with the Sheriff's office; and/or,
- Filing an Action at Law (regular lawsuit) against the debtor.

The Authority shall exercise any or all of the above-described remedies in its sole discretion.

ARTICLE III.

WATER SHUT OFF

Introduction: The Commonwealth of Pennsylvania Statutes include provisions authorizing a municipal authority or other government entity to require a water utility to shut off the water service to a premise of a delinquent water/sewer customer, who has not paid his bill after the expiration of at least thirty (30) days from the due date of the original billing, for any rental, rate or charge for water or sewage collection and treatment. All overdue collection and treatment charges, penalties, interest, and fees of the Authority must be paid before service will be restored. The procedures required by the Pennsylvania Statutes are outlined below.

Procedure

Shutoff proceedings may be instituted against a delinquent debtor after at least thirty (30) days following the original due date provided in Article I above, if the outstanding bill has not been paid in full or, in the case where extended payment arrangements were agreed to, the debtor defaults on the terms of such payment arrangements. This shall include any accounts that have an owner/tenant declaration agreement.

Where an Owner/Landlord Ratepayer fails to make payment for water/sewer services, and in the event that (i) the Authority is notified that tenants occupy the premises and, (ii) where there is not an owner tenant declaration agreement, each tenant must be given at least thirty (30) days' notice of the service termination and the opportunity to pay the amount in arrears. The Owner/Landlord Ratepayer is required to furnish the Authority with each tenant name and address for the location in arrears. See the Utility Service Tenant Rights Act, Act 299 of 1978, 68 P.S. § 399.51 for more detailed information.

In the event the Authority finds that a tenant fails to maintain the payments on a tenant account as required, the Authority, at its sole discretion, may cancel the tenant account and require the Owner/Landlord Ratepayer to pay for the water/sewer services. See Section 6 below.

Repayment Agreement in Lieu of Termination. When a customer contacts the Authority regarding a delinquent bill, all attempts will be made to negotiate an extended repayment schedule that is acceptable both to the Authority and to the customer. Rigid standards with respect to initial minimum lump sum payments shall not be required. The factors which shall be considered in any repayment arrangement shall include (i) the size of the delinquent billing, (ii) ability of the customer to make payments on the account, (iii) terms of extended payments, and (iv) the customer's previous history of compliance with payment arrangements if any. The premises, where the accrued delinquency is greater than **\$80.00** for Quarterly billed customers and **\$50.00** for Monthly billed customers, will be subject to the physical shut-off of service. The benefit of this procedure, however, shall not apply to a customer who agreed to a payment plan and has defaulted on the repayment agreement. In the event of a returned payment made in connection with a repayment agreement, the Authority will terminate water service in accordance with established procedures as outlined herein.

- a. Water service cannot be shut off to rental property on the basis that the previous tenant was delinquent.
- b. Charges that must be paid to the Authority by the delinquent customer before water service is restored are as follows:
 - i. All service charge amounts in arrears, including an assessed penalty fee of 5% for quarterly billed customers and 2% for monthly billed customers.
 - ii. Charge for Posting Notice of Intent to shut off: \$10.00; and
 - iii. Site Visit Fee: \$50.00.

These rates are subject to change at any time. Refer to Appendix A in the Rates, Rules, and Regulations, or within the annual fee schedule.

The Authority retains the right to forego any of the above fees provided the customer enters into a payment arrangement acceptable to the Authority.

OWNER LIABILITY FOR UNPAID TENANT WATER BILL

Where the North Wales Water Authority ("Authority") has agreed to provide water service or sewer service to the tenant of a property, the owner shall be liable to pay the tenant's bill for service rendered to the tenant by the Authority after the Authority notifies the owner and the tenant within (30) days after the bill first becomes overdue. Such notification shall be provided by first-class mail to the address of the owner provided to the Authority by the owner and to the billing address of the tenant, respectively (Municipal Authorities Act, 53 P.S. § 5607 (10-11)).

BANKRUPTCY

The filing of **Bankruptcy** by a delinquent customer removes the jurisdiction to the United States Federal Bankruptcy Courts and supersedes (prohibits) any collection actions by the Authority for arrearages incurred **prior to** the filing of the bankruptcy petition.

Once the Authority has been informed of the bankruptcy filing, the customer must provide to the Authority a copy of the documents that were filed with the U.S. Bankruptcy Court. Upon receipt of notice of the filing of a bankruptcy petition, "pre-petition" charges are removed from the customer's outstanding balance and placed in the Authority's bankruptcy accounts receivable account.

Once the bankruptcy petition is filed, the Bankruptcy Code provides that the debtor has 20 days in which to voluntarily provide a security deposit to the Authority, which is intended to provide "adequate assurance" of payment for services to be provided following the date of the bankruptcy filing (*i.e.*, post-petition charges). The bankruptcy petition only prohibits efforts to collect pre-petition charges. If no such security deposit is forthcoming, the Authority may institute its normal termination procedures after the 20-day period. A notice is sent to the customer/owner by certified return receipt and regular mail with the request.

The Authority will file a claim with the U. S. Bankruptcy Court for any outstanding "pre-petition" debt associated with the customer's account.

The normal billing and termination procedures will apply to all post-petition usage and charges.

Where water service to the property has already been shut off for non-payment, and we receive notice from the customer that a bankruptcy petition has been filed, the Authority must restore service to the property.

ARTICLE IV.**MUNICIPAL CLAIMS**

The Authority qualifies as a local government entity, under **Municipal Claim and Tax Lien Law, 53 P.S. §7101 et seq.** and is eligible to file a municipal claim against real property, where the water and/or sewage collection and treatments bills are delinquent. The charge is automatically a lien against the property. The municipality must perfect the lien by filing a municipal claim in the local county Prothonotary office. Under that statute's priority of payment, the Authority obtains first-lien status ahead of all previously filed liens, except state taxes. The Authority will commence the lien filing process when a customer/property is in arrears for 90 days and has a balance due of over \$200.00, or under circumstances that require the filing of a lien in order to protect the interests of the Authority, at the sole discretion of the Authority. Provided, however, that the Authority will elect not to file a lien in the event a customer complies with an existing payment arrangement or when a court order precludes such filing. The Authority may, in its sole discretion, file subsequent liens as the outstanding balance continues to increase in increments of \$200.00.

APPENDIX J – EASEMENT ENCROACHMENT AGREEMENT FOR WARRINGTON

Easement Encroachment Agreement Warrington Township Water System Customers

THIS AGREEMENT, made this, the _ day of _____ in the year 20__, by and between North Wales Water Authority "NWWA", a Pennsylvania Municipal Authority, with Corporate offices at 200 West Walnut Street, North Wales Pa., and with a local business office at 1560 Easton Road, Warrington, Bucks County, Pennsylvania, 18976 (hereinafter the "Authority"); and _____, adult individuals with a water service street address of: _____, and a water service billing address of _____, (hereinafter the "Owners").

BACKGROUND

1. Owners own Property within the Authority service area, more specifically identified as being Bucks County Tax Map Parcel No. 50-_____, the "Property").
2. Authority is the holder of an easement or easements which cross the Property.
3. No structures or fences are permitted to be erected within the Authority easement on the Property without the Authority's prior written permission.
4. The Owners desire to erect a fence, play equipment, or other similar structure (hereinafter referred to as "Permitted Structure") on the Property within the Authority easement.
5. The Authority is willing to permit Owners to erect a Permitted Structure within an Authority easement, upon the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual promises herein contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Owners acknowledge that the Authority is the holder of an easement across Owners' Property.
2. The Authority agrees to allow the Owner to erect a Permitted Structure within the easement area, an action which the Owners are not otherwise permitted to do, subject to compliance with:
 - a. Township Building Codes and Zoning Ordinances
 - b. Subject to the additional restrictions of this Agreement, below.
3. In addition to the above, Owners acknowledge and agree that:
 - a. There may be other parties, such as the Bucks County Water and Sewer Authority, or other utilities that share the easement being considered. The North Wales Water Authority assumes no responsibility of any kind for identifying any other easement holder or party of interest, and it shall remain the owners' responsibility to identify any other party(s) from which an additional approval may be required for the intended encroachment and use by the Owner (s).

- b. No Permitted Structure erected within any Authority easement shall have a foundation of any kind or be otherwise permanently attached to the ground.
- c. Each Owner who desires to erect a Permitted Structure within an Authority easement shall first obtain an **Easement Encroachment Agreement** signed and approved by the Authority, which will be considered by the Authority only after the Owner(s) have submitted a scaled drawing of the exact proposed location for the construction or placement of the structure(s) being proposed, to the Authority, as well as the location of the water line within the easement being effected.
- d. The Owner shall be responsible for contacting PA 8-1-1 prior to any excavation, digging, drilling, or similar activity with the easement or in close proximity to the easement, providing a copy of all responses, which must be satisfactory to the Authority. *Note: 8-1-1 notices may be required at other locations in addition to the easement area, which is the sole responsibility of the Owner(s).*
- e. The Authority reserves the right to limit the exact location of any Permitted Structure erected within any Authority easement or to refuse approval of any encroachment request.
- f. Owners shall not erect or otherwise place trees, decks, pools, or patios of any kind within any Authority easement, as any encroachment must be able to be removed quickly in an emergency.
- g. If at any time, the Authority requires access to any easement area for any reason, when possible, in the sole opinion of the Authority, such as for scheduled work, the Authority will notify Owners in advance that Authority access is required. Upon such notice, Owners shall remove the Permitted Structure within the timetable required by the Authority at Owners' sole cost and expense.
- h. If Authority cannot contact Owners regarding the necessity of removing the Permitted Structure, or in any emergency, the Authority may remove the Permitted Structure and charge the full cost thereof to the Owners who shall reimburse the Authority entire cost immediately upon being notified that payment is due.
- i. The Authority shall have no obligation to replace any Permitted Structure, which is removed from an Authority easement.
- j. If Owners do not pay the entire cost of the removal of a Permitted Structure, the Authority may place a lien upon on the Property for the amount of the removal, interest, attorney's fees, and court costs, as provided by law.
- k. Any vegetation planted within any Authority easement may be removed by the Authority at the Owners' sole cost and expense if the Authority requires access to the easement. The Authority shall have no obligation to replace any vegetation removed by the Authority. NO TREES ARE PERMITTED WITHIN THE EASEMENT DUE TO POTENTIAL ROOT DAMAGE TO UNDERGROUND PIPES.
- l. The Owners hereby release the Authority, and agree to indemnify the Authority and hold the

Authority harmless from any and all suits or actions which the Owners may bring against the Authority in law or in equity, including, but not limited to, all claims whether or not arising from negligence, for any matter arising from a Permitted Structure located in an Authority easement, or the installation, maintenance, repair, or removal thereof.

- m. The Owners shall be responsible for any damage to any facilities or Property of the Authority caused by the installation, maintenance, repair, removal, or reinstallation of a Permitted Structure within any Authority easement area.
- n. Owners agree to maintain the Permitted Structure in good structural condition and repair for as long as the Permitted Structure is located within any Authority easement area. If in the sole opinion of the Authority, any Permitted Structure requires repairs, the Authority shall request that the Owners repair the Permitted Structure. If repairs are not undertaken within ten (10) days of notice to do so, the Authority may remove the Permitted Structure at the Owners' sole cost and expense as set forth in subsection e., above.
- o. The following additional provisions shall apply if the Permitted Structure is a fence installation.
 - The portion of the fence across the Easement Area shall be constructed so as to allow each section to be lifted up or removed as easily as possible and without damaging the fence. Alternatively, at the sole discretion of the Authority, the Fence Owner shall install gate(s), the design of which shall be approved by the Authority, within the Easement Area, to permit access by the Authority. The gate(s) shall include a suitable padlock system that is acceptable to the Authority.
 - A pocket shall be formed in the concrete base of each post section of the fence so that the fence may be easily dismantled in only those areas in which it is necessary to gain access to the Easement Area.
- p. This Agreement allowing the erection of a fence in the Easement Area shall not be construed to terminate or alter in any way any existing easements on the premises.
- q. This Agreement shall bind the Owners' heirs, contractors, servants, successors, purchasers, personal representatives, and assigns, as well as the Authority's officers, employees, agents, servants, successors, and assigns.
- r. This Agreement shall run with and be appurtenant to the land, and shall be recorded against the land.

4. This Agreement contains the entire Agreement between the parties. Any modifications or amendments hereto shall be in writing and shall be signed by all parties hereto.

5. Where notice to the Owners under this Agreement is required, said notice shall be mailed via first-class mail, postage prepaid, certified, or registered mail, to the Property address, or the last known address

of the Owners as shown on the records of the Authority. Failure of the Owners to accept certified or registered mail shall not bar the Authority from acting otherwise agreed upon herein.

6. This Agreement shall be interpreted under the laws of the Commonwealth of Pennsylvania.

INTENDING TO BE LEGALLY BOUND HEREBY, the parties hereto set their hands and seals the date and year first above written:

BY:
NORTH WALES WATER AUTHORITY

Date _____

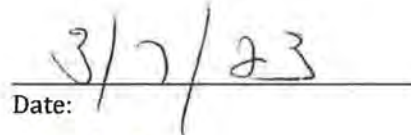
OWNERS

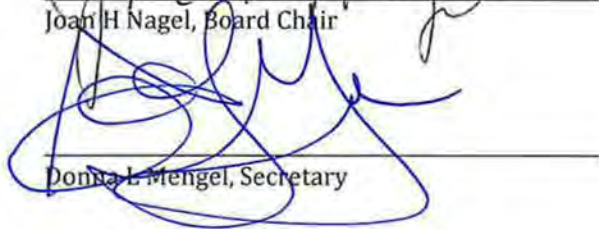
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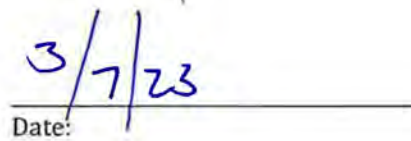
In Accordance with Resolution 2023-02 these Rates, Rules and Regulations are hereby adopted and effective January 1, 2023

North Wales Water Authority Board of Directors


Joan H Nagel, Board Chair


Date:


Donna L Mengel, Secretary


Date:

