

**Application of Pennsylvania-American Water Company for Acquisition of  
the Wastewater Assets of the Township of Sadsbury  
66 Pa. C.S. §1329  
Application Filing Checklist – Water/Wastewater  
Docket No. A-2018-\_\_\_\_\_**

18. Rates.
- b. Provide a copy of the seller's current rules and regulations for service.

**RESPONSE:**

- b. See attached Ordinances provided by the Township representing their Rules and Regulations governing the provision of wastewater service served by those connected to the System.

**SADSBURY TOWNSHIP  
CHESTER COUNTY, PENNSYLVANIA**

**ORDINANCE NO. 2000-02**

**An Ordinance Pursuant to the Second Class Township Code, as amended, Amending the Code of Ordinances of Sadsbury Township by adding a New Chapter 101 thereof, the Sadsbury Township Sewer Use Ordinance and Effective Five Days from Enactment.**

**CHAPTER 101 SEWERS**

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## CHAPTER 101 SEWERS

### ARTICLE I GENERAL PROVISIONS

#### § Section 101-1. Definitions.

Unless the context specifically indicates otherwise, the meaning of terms used in this chapter shall be as follows:

**Building Sewer.** The same as service line or house connection. The extension from the building side of an existing on site drainage system, of any structure, to the lateral of the sewer system. Also, in new construction or renovation, the line from the building to the sewer system lateral.

**Building Trap or Trap.** A device, fitting, or assembly of fittings installed on the building sewer line to prevent circulation of air between the drainage system of the building and the building sewer.

**CCA.** The City of Coatesville Authority or its successor.

**Commercial Establishment.** Any structure intended to be used wholly or in part for the purposes of carrying on a trade, business, or profession or for social, amusement, religious, educational, charitable or public uses. Exclusive of a home occupation as defined by the Township Zoning Ordinance provided non-industrial wastes are discharged.

**DEP.** The Pennsylvania Department of Environmental Protection.

**EDU.** Equivalent dwelling unit. The unit of measure based on the estimated average daily flow of sewage, measured in gallons per day, from a typical living unit. Also, the unit used to assess tapping fees. At the time of adoption of this Chapter an EDU was equal to two hundred and fifty (250) gallons of sewage per day.

**Engineer.** A professional currently registered and certified in the state of Pennsylvania as a Professional Engineer. Unless specifically identified or inferred otherwise, Engineer shall mean the Township/Authority Engineer.

**First Class Bedding.** First Class Bedding- A Cradle of AASHTO #57 stone with a minimum depth of 6" below pipe and 6" above pipe as shown on the Township's Standard Trench Detail. Form a cradle in the bedding material by means of a template conforming to the curvature of the outside surface of the bottom of the pipe, or another approved method, to provide uniform contact under, around, and above the pipe. See Drawing SL-3 in appendix.

**Fresh Air Vent.** A direct connection leading from the building trap to the outer air.

**Grease Trap.** A device(s) (tank, compartment, or chamber) used to capture animal fat when melted or soft, any oily substance present in raw wool, or any oil or viscous lubricant or similar materials which prevents same from entering the sanitary sewer conveyance and/or collection system. Also, referred to as an interceptor.

**Industrial Establishment.** Any structure intended to be used wholly or in part for the manufacturing, fabricating, processing, cleaning, laundering, or assembly of any product, commodity, or article.

**Industrial Waste.** Any solid, liquid, gaseous substance, water borne wastes, or a form of energy rejected or escaping, other than human fecal wastes and wastes directly associated therewith, from any industrial, manufacturing, trade, or business process or from the development, recovery, or processing of natural resources, as distinct from sanitary sewage. Industrial sewage is to be treated by the owner, on site, to domestic waste strength and composition.

**Lateral.** That part of the sewer system extending from the sewer main to the curb line, or if there is no curb line, to the property line or the limits of the easement. If no such lateral is provided, then lateral shall mean that place in the sewer system main provided for connection of the building sewer.

**Living unit.** Any structure, or portion thereof, utilized for separate purposes, having a separate or common kitchen and/or separate or common sanitary facilities, including but not limited to a living apartment, dwelling, or any other one family living unit.

**Multiple Unit Building.** Any house, apartment building, or any other structure having more than one living unit.

**Owner.** Any person vested with legal, equitable, sole, or partial ownership of any property served directly, or indirectly, by the sewer system.

**PenDot.** The Pennsylvania Department of Transportation.

**Plumbing Inspector/Inspector.** The person, persons, or agents of said persons appointed by the Township/Authority to enforce the terms of this ordinance.

**Property.** Any property located within the Township upon which there is erected a structure intended for continuous or periodic habitation for a living unit, occupancy, or use by human beings or animals and from which structure sanitary sewage and/or industrial wastes shall be or may be discharged. As sewer service will not be provided to empty lots, property is assumed to be improved property.

**Property Accessible to the Sewer System.** Any property which adjoins, abuts on, or is adjacent to the sewer system. See definition of property above.

**Quarter.** A time period for billing sewer charges consisting of a three month period.

**Sanitary Sewage.** The normal water conveying household and toilet wastes from residences, institutions, commercial, and industrial establishments.

**Sewer Clean-Out.** A cleanout on the service line located just inside or outside the building wall through which the sewer may be cleaned.

**Sewer System.** All facilities operated by Sadsbury Township/Authority for the collection, transportation, treatment, or disposal of sanitary sewage.

**Tapping Fee.** The fee paid by each EDU, or portion thereof, to tap into the Township/Authority sewer system. The fee is calculated as per the Municipality Authorities Act 203 of 1990, as amended.

**Township/Authority.** Sadsbury Township, Chester County, Pennsylvania, or any municipal authority or entity created by Sadsbury Township for the purpose of carrying out the provisions of this chapter.

### **§ Section 101-2. Connection to Public Sewers Required.**

- A. The owner of any property accessible to and whose occupied building(s) is within one hundred fifty (150) feet of the sewer system, shall connect the property therewith, in the manner the Township/Authority sets forth in this chapter, as amended, within sixty (60) days after notice to such owner from the Township/Authority.
- B. The notice by the Township/Authority to make a connection to the sewer, shall be consistent with the provisions of this chapter and shall consist of a written or printed document requiring the connection. The notice will specify that the connection shall be made within sixty (60) days from the date such notice is given. Such notice may be given at any time after the sewer is in place and is operational. Such notice shall be served upon the owner by personal service, registered mail, or by such methods as may be required by law.
- C. Exception. Any existing residential living unit, as of the date of enactment of this chapter, which such living unit can not make a connection without the assistance of a sewage pump, is exempt from the mandatory section of this chapter. However, this applies only to residential living units with functioning on site systems that have not been the subject of any Chester County Health Department or DEP violations or complaints. Any violations or complaints received from the foregoing agencies will automatically require the owner to purchase, install a pump, and make the connection to the sewer system. Living units with holding tanks are not exempt and will be required to make the connection. The installation and the pump purchased require approval and inspection by the Township/Authority Engineer.

### **§ Section 101-3. Use of Connection.**

- A. Use of the new connection to the sanitary sewer system will not be permitted until the installation has been inspected, tested, and approved in accordance with procedures herein set forth.
- B. No use of the sanitary sewer system will be permitted until the collection system, pumping facilities, and treatment plant have been made ready to accept sewage for disposal.
- C. Maintenance, repair, or replacement of the building sewer between the sewer main and the building served by the building sewer shall be the responsibility of the property owner. However, if the Township/Authority originally installed the lateral, and the repair, replacement, or maintenance of the lateral, or that portion of the lateral constructed by the Township/Authority, is necessitated by a defect in the lateral or any portion of the lateral, which said defect was not caused by the property owner, the Township/Authority shall be responsible for the maintenance, repair, or replacement of the lateral or that portion of the lateral, if said defect in the lateral or that portion of the lateral so affected was caused by improper construction and/or installation by the Township/Authority, or in the event the defect in the pipe is the result of a manufacturing defect.
- D. No sump pumps for the discharge of groundwater or stormwater of any kind shall be permitted to be connected and or discharged into the sanitary sewer system.

- E. The Sadsbury Township/Authority sewer system will, at this time, be connected to the CCA infrastructure. Thus, CCA will be the ultimate facility to receive and treat the sewage. The rules and regulations of CCA, as amended, are hereby adopted as the Sadsbury Township/Authority Rules and Regulations, with additions as referenced in this Chapter.

#### **§ Section 101-4. Certain discharges prohibited.**

##### **A. Disposal of Certain Materials**

1. From and after the passage of this Chapter, it shall be unlawful for any person, firm, or corporation to use any sanitary and/or storm sewer within the Township for the disposition of any residue, whether liquid or solids, removed from any cesspool, septic tank, leeching well, or any other container or reservoir used for the on-site disposal of sewage, located within or without the boundaries of the Township.
2. **Cleaning Solvents, Grease, and Grease Traps.** It shall be unlawful for any person, firm or corporation to dispose any cleaning solvent from any dry-cleaning establishment, or any residue from any grease trap, or any similar solid or liquid other than human sewage, into any municipal sanitary sewer line. Provided, however, that if such other waste, materials or refuse can be separated from such sewage or drainage by the use and installation of a grease trap, then such grease trap may be installed. Provided that such installation shall be first approved in writing by the Township/Authority and installed under its supervision, and the refuse or contents of such grease trap shall not be disposed of, drained, or poured into the municipal sanitary or storm-water sewer lines, mains or systems. All such installations shall and must be in accordance with the provisions of Section 101-34 B.
3. Any industrial or commercial entity discharging into the sewer system shall comply with the provisions of Article VI of this chapter and the rules and regulations of CCA.

#### **§ Section 101-5. Unlawful discharge of sewage or industrial wastes declared a nuisance.**

Any person who erects, constructs, uses or maintains a privy, cesspool, sinkhole, septic tank or on lot individual sewage system on any property accessible to the sewer system, or otherwise erects, constructs, uses or maintains any pipe, conduit, drain or other facility for the discharge of sanitary sewage or industrial wastes in violation of this Chapter, shall be deemed and shall be declared to erecting, constructing and maintaining a nuisance, which nuisance the Township/Authority is hereby authorized and directed to abate in the manner provided by law.

#### **§ Section 101-6. Connections to comply with requirements.**

No connection shall be made to the sewer system, except in compliance with the ordinances and resolutions, as well as such rules and regulations as may from time to time be enacted, adopted, approved or promulgated by the Township/Authority, and until all connection and tapping fees are paid.

### **§ Section 101-7. Failure to connect.**

After the expiration of the particular periods specified in § 101-2 of this chapter, if any owner of an occupied building on property, accessible to the sewer system, shall have failed to connect such property with the sewer system as required by said § 101-2, the Township shall cause to be served on the owner of such property so failing to connect to said sewer system, and also upon the occupants of the building in question, a copy of this chapter and a written notice requiring such connection to be made, and such notice shall further state the requirements shall be complied with within 30 days from the date thereof.

### **§ Section 101-8. Powers and authority of inspectors and right of access.**

- A. The Township/Authority Inspector shall have access to all parts of a premises during the construction of the sewer system, sewer laterals, and building sewers to ensure there are no illegal connections.
- B. The Township/Authority Inspector shall have access to all parts of a premises to inspect for illegal connections to the public sewer systems upon obtaining evidence of an illegal connection through the use of meters, videos, or any other means available.
- C. The property owner, of a premises where an illegal connection is found, shall give permission to the Township/Authority to enter into the premises to verify said illegal connection, and shall assume all associated costs incurred by the Township/Authority.

### **§ Section 101-9. Adoption of rules and regulations.**

The Township reserves the right to and may, from time to time, adopt, revise, amend, and re-adopt such rules and regulations as it deems necessary and proper for the use and operation of the sewer system, and all such rules and regulations shall be and become a part of this chapter.

### **§ Section 101-10. Violations and penalties.**

The provisions of Chapter 101 are declared to be for the: prevention, abatement, and regulation of water pollution; preservation and enhancement of public and private water supplies; and health, safety and welfare of the citizens of the township. Any person violating any provisions of this Chapter, upon conviction before any District Justice, shall be fined not more than \$1,000 and costs, or in default of payment thereof, by imprisonment for a term as provided by law for summary offenses. In cases where the violation is with respect to an occupied building or property accessible to the sewer system, which said property or building is or would be subject to a tapping fee, an annual sewer rental, or charge of more than one equivalent dwelling unit, the fine for violation of any provision of this Chapter shall not be more than \$1,000 for each such unit or fraction thereof and costs. Or in default of payment thereof, by imprisonment for a term as provided by law for summary offenses. Each thirty day period during which such violation of such provisions shall continue shall be deemed to be a separate offense. Each occupied building, or each living unit in a multiple unit building, whether or not the owners thereof shall be permitted to connect two or more buildings or units by a single common connection to a lateral of the sewer system or shall be required to make separate connection for each occupied building or unit, shall constitute a separate and distinct unit under the provision of this Chapter, and the persons owning occupied buildings, consisting of multiple units contained in the same structure, who violate any of the provisions of this Chapter shall

be subject to the above fines for each and every one of such occupied buildings or units which are in violation of the provisions of this Chapter.

### **§ Section 101-11. Effective Date.**

This chapter shall be effective five days from the date of enactment.

### **§ Section 101-12. Severability.**

If any of the provisions, sections, sentences, clauses, or parts of this chapter or the application of any provision hereof shall be held invalid, such invalidity shall not affect or impair any of the remainder of this chapter, it being the intention of the Board of Supervisors that such remainder shall be and remain in full force and effect.

## **ARTICLE II Tapping Fees**

### **§ Section 101-13. Fees established.**

- A. There is hereby fixed and imposed upon the owner of each property making any connection to the sewer system on or after the date hereof, directly or indirectly, including those changing the type of use of property previously connected or connecting one or more new uses through an existing connection, regardless of whether such property is connected separately or through one or more existing or new lateral sewers or sewer connections or collection lines owned by any owner other than the township, a minimum tapping fee of \$2,445 per EDU, or portion thereof, of capacity required per use for connection, as calculated pursuant to Act 203 of 1990. The minimum tapping fee components are:
1. A capacity part of \$1,266.76;
  2. A distribution or collection part of \$1,178.24; and
  3. Where applicable, a reimbursement component for \$1,178.24 (see D. below)
- B. The tapping fees represent initial tapping fees. The Township, from time to time following the completion of construction of a sewer extension, shall charge such supplemental tapping fee as prescribed in this article.
- C. The minimum tapping fee for any property or use shall be at a rate of one EDU. The tapping fee shall be determined by the Township's estimate of sewer usage for the relevant type of property use (or most similar type of sewer use) as determined by the Engineer, in consultation with Chapter 73 of the DEP regulations, where applicable. Any building, structure, or use that contains more than one use or activity shall be charged a separate tapping fee for each use or activity based upon the above classifications.
- D. The distribution or collection part of the minimum tapping fee of and the reimbursement component are hereby waived for "SSC Owners", which means the owners of real estate currently owned or equitably owned by the shareholders of SSC and of July 7, 1997 within the "SSC District". Which means the SSC Sewer District hereby established, as more full described in Appendix A-13 hereto,

in accordance with a certain Agreement dated July 7, 1997 between the Township and Sadsbury Sewer Corporation (the "SSC Agreement").

- E. The reimbursement component is hereby waived for "Existing Uses" which means those buildings, structures, or other generators of sewage located within the Township and lawfully existing as of July 7, 1997, pursuant to the SSC Agreement.

#### **§ Section 101-14. Additional fees.**

- A. Where any building connected to the sewer system shall be converted, enlarged or remodeled, or additional buildings shall be constructed on a property and connected indirectly to the sewer system through an existing lateral, so as to create or establish additional uses as classified in this article, an additional tapping fee in accordance with this article for each such additional use shall be payable by the owner of the property so improved to the township.
- B. The tapping fees imposed hereunder with respect to property connected shall be in addition to any connection fee or inspection charge imposed by the township, and any rental or other charges fixed, charged or imposed by the township by reason of the use, or availability for use, of the sewer system by such property.

#### **§ Section 101-15. Certification of use and inspection.**

Each person applying for a connection to the sewer system shall certify to the township its proposed use(s) and the reasonably anticipated sewer usage for the property to be connected, on a form prescribed by the township. The township shall have the right at any time to investigate the actual sewer usage of any property so connected in order to verify the actual sewer usage conforms to the applicant's certification and to impose additional sewer tapping fees per additional EDU's or multiples or fractions thereof, in accordance with the above tapping fee schedule in conjunction with the additional capacity requirements of such property.

#### **§ Section 101-16. Application to increase usage required.**

No residential, commercial, institutional, or industrial user shall increase its sewer usage beyond that set forth in its original application for connection, or as determined by the township at the time of connection, or beyond its existing usage on the effective date of this article, without first making application to the township for such increased usage on a form prescribed by the township and obtaining the written approval of the township. All applicants shall pay to the township such additional tapping fees per additional EDU's or multiple or fraction thereof, in accordance with the above tapping fee schedule in conjunction with the additional capacity requirements of such customer.

#### **§ Section 101-17. Decreased usage.**

No refund, rebate, or credit of tapping fees shall be made in the event of a decrease in sewer usage.

#### **§ Section 101-18. Fees nontransferable.**

No tapping fees paid under this article for any distinct lot, parcel, or property shall be transferable to

any other lot, parcel, or property.

### **§ Section 101-19. Time and methods of payment.**

Tapping fees shall be due and payable upon the township's issuance of a permit for connection. No sewage conveyance or treatment capacity shall be reserved for any person unless the applicable tapping fees have been paid in full. For increased sewer use or a change in use, the additional tapping fees shall be due and payable at the time application is made or when imposed by the township, as the case may be.

### **§ Section 101-20. Delinquent payment, penalties, and municipal liens.**

- A. Sewer tapping fees shall be subject to a penalty of 10% if not paid within 30 days of the billing date. If not paid within 60 days after becoming due, the bill plus the penalty, if unpaid, shall bear interest from the due date at the rate of 5% or fraction thereof until paid. These penalties shall be concurrent with all other remedies, legal and equitable, available to the township for collection of said fees, including but not limited to municipal lien and assumpsit remedies.
- B. All sewer tapping fees, together with all penalties and interest thereon, not paid on or before the end of 60 days from the date of each bill shall be deemed to be delinquent. It shall be the duty of the township to proceed to collect such delinquent fees, together with penalties and costs accrued thereon, including attorneys fees, either by an action of law or filing a lien(s) for the same in the Office of the Prothonotary of the Court of Common Pleas of Chester County, Pennsylvania. Such liens, together with penalty and costs accrued thereon, including attorneys' fees, shall be filed and collected in accordance with law.

## **ARTICLE III Sewer Rents**

### **§ Section 101-21. Imposition of charges.**

Beginning with the year 2000 and for each quarter of a year (3 months) thereafter, there is hereby imposed a rental fee or charge, upon the owners of the property served, for the use of the Township/Authority sewer system and the cost of sewage treatment.

- A. Expenses to be met by charges. The quarterly rental or charge shall be sufficient to meet the following classes of expenses:
  1. The amount expended annually or quarterly by the Township/Authority in the operation, administration, maintenance, repair, alteration, inspection, depreciation, or other expense in relation to such sewer system, pumping stations, and sewage treatment.
  2. Such quarterly amount as may be necessary to provide for the amortization of the indebtedness incurred by the Township/Authority in the construction or acquisition of such sewerage system, interest thereon, and such further sums as may be sufficient to pay the amount agreed to under the terms of any contract with any authority or municipality furnishing sewage disposal or treatment services to the township. Therefore, said improvements will become self liquidating.
  3. Sufficient funds as needed to establish a margin of safety of ten per centum (10%).

B. Method of determining charges. The Township/Authority finds as fact, that many properties that will be connected to the public sewers obtain water from CCA, and further that CCA has water meters installed on the said properties. The Township/Authority therefore declares that the fairest manner, in which to apportion equitably the total sewer rental or charge, is to base the charge for each property on the amount of water used by each property connected to the sewers. It is also determined that the sewer rental or charge for any property should be based, so far as practicable, on water actually consumed by said property during a specific quarter, a period of three (3) months. Those properties not connected to CCA will be required to purchase and install a water meter, specified by the Township/Authority and will be subject to additional fees as stated in the following Section § 101-23 Statements of water consumption.

C. Schedules of charges:

1. Annual rental. For the year 2000, and annually thereafter unless otherwise determined, the Owner(s) of any property situated in the township served by sewers or the sewer system of the township, shall pay the township an annual flat rental or charge for the use of said sewers or sewer system in the amount of fifty dollars (\$50.00) per EDU. The annual rental charge shall be paid at the rate of \$12.50 per quarter.
2. Meter rates. In addition to the annual rental set forth above, the owner(s) of any property situate in the township, served by the sewer system of the township, shall pay the township an annual rental charge for the used of said sewers or sewer system equal to five dollars (\$5.00) per thousand (1,000) gallons of water or part thereof consumed or used. The sewer rental charge shall be paid quarterly. The sewer rents or charges shall be based on the quantity of water used as evidenced by quarterly statements from CCA, meter readings of water meters installed by the township, or meter readings of any other public water purveyor in the township, for the purpose of measuring water used and such other meters or measuring devices as may be installed pursuant to any provisions of this article.
3. Multiple use. If it is allowed by special exception and approved by the Engineer, each case of a combination of one or more residential, commercial, industrial, or institutional establishments on one property, all having the use of the sewer system through one sewer connection, then each such establishment shall be separately charged the above mentioned annual rental and meter rate as though each were separately connected to the sewer system, and if there is only one water meter for any such combination, the township may estimate the amount of water used by each individual establishment if necessary.
4. For the year 2000 and quarterly thereafter, unless otherwise determined by resolution, all swim clubs, both public and private, situate in the Township which use well water and are served by the sewer system of the Township/Authority, shall pay to the Township/Authority an annual rental or charge for the use of the sewer system in the sum One Thousand Dollars (\$1,000.00) for water consumed, or estimated to be consumed, by the occupants of such properties. Said amount determined and declared necessary to produce revenue sufficient to meet the requirements herein before set forth.

### **§ Section 101-22. Statements of water consumption.**

The Township/Authority Secretary shall secure, from CCA, quarterly statements of the total number of gallons of water used by each individual customer or property connected to the sewerage system.

Fees shall be paid to CCA for the cost and expense incurred by their supplying the Township/Authority with this information. Such fees paid to CCA shall be included as part of the quarterly sewer rental. If in any case CCA records disclose the number of gallons of water used are for less than a full period of three months, the Township/Authority is authorized to compute the water consumption of said property for a full period, based on the use for the partial period. The costs of the Township/Authority in reading the meters of properties not customers of CCA shall be billed per Section 101-23.

**§ Section 101-23. Non metered water supply.**

- A. When a property uses water from a source other than the CCA supply system, the owner of such property shall purchase and install, without cost to the Township/Authority, an approved meter(s) to measure the quantity of water received from the other source. The only meter allowed for use is the one approved by the Township/Authority. The sewer rental based upon water received from other than the CCA supply system will be billed the same amount per gallon as a CCA customer, with the addition of the costs required for the Township/Authority to obtain the meter reading. If the owner of said property fails to install an approved meter(s) the Township/Authority shall make and furnish an estimate of the amount of water from sources other than the water supply system. Any dispute as to the estimated amount shall be submitted to the Township/Authority, whose decision on the matter shall be final for the current year/quarter.
- B. Such water meter shall be installed on the owner's private well(s) discharge pipe. The owner shall install said meter within thirty (30) days of receipt of said meter and written notice from the township to install said meter. In the event that a property owner or user shall fail to install said meter within the said thirty (30) day time period, the Township/Authority reserves the right to install such meter and bill the property owner or user for such installation.
- C. The owner of the property upon which such meter is installed shall be responsible for its installation, maintenance and safekeeping. All repairs thereto shall be authorized by the township or other public water purveyor, at the property owner's expense. Such repairs are to be performed whether necessary by ordinary wear and tear or other causes. Said charges for such installation and repairs, shall be billed to the property owner or user and said bill shall be due and payable at the same time and in the same manner as are the bills for sewer service. Such bills from and after their due date, including penalties, interest, costs and attorney fees, shall constitute a lien upon the property upon which such measuring device is installed. This shall not constitute a waiver of but shall be in addition to and concurrent with all other remedies available to the township to collect such charges. In all cases, the property owner or user shall permit the township to enter upon the premises to inspect and approve the property owner or user's installation of said meter or measuring device, or, if necessary, for the township to make the installation, and shall cooperate fully with the township or other public water purveyor in making the premises involved available for such inspection, approval or installation by the township or other public water purveyor at reasonable times.

**§ Section 101-24. Allowances for water not discharged into sewers.**

There may exist a property, upon which a sewer rental is hereby imposed, that has a significant portion of water not discharged into the sewer system of the Township/Authority. In such a case, the quantity of water, so used, may be separately measured by an auxiliary meter approved by the Township /Authority. Said meter must be purchased, installed, and maintained without cost to the Township /Authority.

### **§ Section 101-25. Change in classification of property.**

If the use or classification of any property should change within any quarterly period, the difference in the sewer rental, pro-rated on a monthly basis to the nearest calendar month, will be charged or credited, as the case may be, on the bill for the succeeding quarterly period. Additional classifications and sewer rentals may be established by the Township /Authority from time to time.

### **§ Section 101-26. Time and methods of payment.**

Sewer rentals or charges shall be paid quarterly. Billings for sewer rentals shall be sent in January, April, July, and October of each year, for the three month period immediately preceding the date of the bill. The bills for sewer rentals for the quarterly period during which a property is connected will be pro-rated on the basis of the applicable rate. All bills shall be due and payable in full within thirty (30) days of their respective dates.

### **§ Section 101-27. Delinquent payment, penalties, and municipal liens.**

- A. The charges for sewer service shall be subject to 10% penalty if not paid within 30 days after the date of the bill. If not paid within 60 days after the date of the bill, the bill plus the penalty shall bear interest from the due date at the rate of 5% per month, or fraction thereof, until paid.
- B. All persons connected to the sewer system must give the township their correct address. Failure to receive bills will not be considered an excuse for nonpayment nor permit an extension of the period during which bills are payable at face.
- C. Payments made, as evidenced by the United States Post Office mark, on or previous to the end of the period during which the bills are payable at face, will be deemed to be a payment within such period.
- D. All sewer rentals, together with all penalties thereon, not paid on or before the end of sixty (60) days from the date of each bill shall be deemed to be delinquent. All delinquent sewer rentals, all penalties and interest thereon, and all attorney fees and costs shall be a lien on the property served and shall be entered as a lien against such property in the office of the Prothonotary of Chester County and shall be collected in the manner provided by law for the filing and collection of such liens.
- E. The Township/Authority shall have the right to terminate water or sewer service from the delinquent premises as allowed by law. The delinquent owner will be charged for all costs associated with such termination and the corresponding charges for the re-establishment of water service.

### **§ Section 101-28. Revenue to be segregated from other Township funds.**

The funds received by the township from the collection of the sewer rentals, charges, and all penalties and interest thereon, as herein provided for, shall be segregated and kept separate and apart, except for purposes of investment, from all other funds of the township and shall be used only for the purpose of defraying the expenses of the township in the operation, maintenance, repair, alteration, inspection, depreciation, or other expenses in relation to such sewer system and for such payments as the township may be required to make to the City of Coatesville Authority

in connection with transportation and treatment service or under any lease or agreement it may enter into in connection with the financing of the sewer system. Such funds, however, may be invested in common with other township funds pending the use thereof for the purposes above specified, provided that the amounts of such funds and the income therefrom can at all times be traced and determined.

### **§ Section 101-29. Fees changed by resolution.**

All fees, excluding the Tapping Fee, in this Ordinance may, from time to time, be changed by resolution of the Board of Supervisors of Sadsbury Township.

### **§ Section 101-30. Grinder and ejection pumps.**

- A. No privately owned grinder or ejection pump may be connected to the sewer system until the applicant or property owner has:
  - 1. Fully complied with this article and other rules and regulations of the township, the Chester County Health Department, and DEP; and
  - 2. Received prior written approval of the township through the issuance of a sewer connection permit.
- B. All privately owned grinder and ejection pumps, and the installation, operation, maintenance and service thereof, shall comply with the technical specifications of the township as set forth in rules and regulations in effect from time to time. All privately owned grinder and ejection pumps shall be connected to the sewer system in full compliance with the rules and regulations of the township in effect from time to time.
- C. The owner of the property served by a privately owned grinder or ejection pump shall have the responsibility for maintaining, operating, repairing, and replacing the pump.
- D. The township shall have no responsibility for the purchase, operation, repair, or replacement of any privately owned grinder or ejection pump.

## **ARTICLE IV Building Sewers**

### **§ Section 101-31. Permits, regulations, and fee schedule.**

For each and every building or property, a separate permit to connect to the sewer system will be required. A separate building sewer for each building will be required. A single building sewer shall be provided for a school, apartment building, commercial use, or other multi-unit structure where the entire building is held in single ownership. If the Township/Authority determines it to be impractical to provide separate connections, a single or joint connection may be authorized for more than one property. This must be approved by the Engineer.

- A. Permits requirements and regulations.
  - 1. No person shall uncover, connect with, make any opening into or use, alter, or disturb, in any

manner, any sewer or the sewer system without first making application for and securing a permit, in writing, from the Township/Authority.

2. Application for a permit shall be made by the owner, or by his authorized agent of the property to be served
3. Permits for work to be performed within the right of way of any Federal or State Highway shall be secured from the agency with jurisdiction thereover. For work to be performed in the right of way of any Township road, a permit shall be secured from the Township.

If a sewer lateral terminates on any property beyond the existing macadam surface or improved but unpaved cartway of any Township road, but such terminus is still within the Township's right-of-way and, further, if the construction of the building sewer will not disturb any existing curb or curbing, the necessity for securing a permit otherwise required by this Section may be waived. This requires the owner to submit a written application to the Township/Authority. After review by the Engineer such waiver may be granted.

4. Permits are required for any blasting that may be required within the Township. All requirements of Sadsbury Township Ordinance 1999-10 Explosives must be fulfilled. No explosives may be stored within Sadsbury Township.

B. Inspection fees and regulations.

1. Any contractor who has scheduled an inspection, and upon arrival of the Inspector fails to be prepared for said inspection, shall receive a failed inspection and be responsible to pay a fee of \$80.00
2. Any contractor who fails an inspection shall be responsible to pay a fee of \$80.00 for said failed inspection. All subsequent inspections, whether passing or failing, will be \$80.00.
3. All inspections will be done during regular business hours of 8:00 am to 4:30 pm, Monday through Friday, excluding holidays. Any contractor who requires the Township/Authority agent to remain on the job site after 4:30 pm, to perform an inspection or any other work, will be required to advise the home owner as to why the request must be made. The contractor must further assume the associated costs for said inspections, with a minimum of two hours of time to be paid at \$80.00 per hour. For hours more than two, the rate will be at time and a half or \$120.00 per hour. Absolutely no inspections will be scheduled on week ends or holidays unless agreed to, in advance, by the inspector.
4. All associated fees with regard to failed inspections of a contractor shall be paid prior to the construction of another sewer lateral by said contractor.

**§ Section 101-32. Permits: Procedures and requirements for obtaining permits.**

No person shall make or cause to be made a connection of any property to the sewer system until such person has fulfilled each of the following conditions:

- A. Notified the Township/Authority of the desire and intention to connect their property to the sewer system.

- B. Made application for and obtained a permit from the Township/Authority. The permit application shall include a sketch of the existing and proposed building sewer.
- C. Notified the Township/Authority at least 48 hours before the time such connection will be made, in order that the Township/Authority may inspect the work of connection and witness necessary testing.
- D. Has paid to the Township/Authority any connection and/or tapping fee imposed by the Township/Authority.
- E. Such person shall certify to the Township/Authority that any contractor hired to construct the facilities to be connected to the sewer system shall possess or have purchased the instruments or insurance required by Sections (1) through (7) below:
  - 1. Performance and payment bonds as security for the faithful performance of the work and payment of all obligations incurred for construction and connection of the facilities to the sewer system.
  - 2. Insurance as required by workmen's compensation laws and supplied the certificate to the Township/Authority.
  - 3. Liability insurance for not less than 300,000 dollars for personal injury or wrongful death to any one person and in an amount of not less than 500,000 dollars per any one occurrence.
  - 4. Property damage liability insurance in an amount not less than 100,000 dollars for damages per any one occurrence and in an amount not less than 300,000 dollars for damages for all occurrences to one property.
  - 5. Automobile bodily injury liability insurance in an amount no less than 300,000 dollars for injuries, including wrongful death to any one person, and subject to the same limit for each person, in an amount not less than 300,000 dollars per one occurrence.
  - 6. Automobile property damage liability insurance in an amount not less than 100,000 dollars for damage per any one occurrence and in an amount not less than 200,000 dollars for damages per all occurrences.
  - 7. Builder's Risk Insurance in complete value form for 100 percent of the insurable value of the work, including fire and extended coverage, and also covering vandalism and malicious mischief on structures, equipment, and materials.
- F. Has received approval of all plans, specifications, contracts, or agreements and the issuance of any permits or approvals pursuant to the provisions of this chapter. Any regulations issued or adopted pursuant thereto shall not constitute a representation, guarantee, or warranty of any kind by the Township/Authority or by any official, employee, agent, or advisor of the Township/Authority as to the practicability, adequacy, functioning, or safety of any use, improvement, facility, or system installed or maintained pursuant to the aforementioned approved plans, specifications, contracts, agreements, permits, and regulations and shall not create any liability upon the Township/Authority, its officials, employees, agents, and advisors.

## **§ Section 101-33. Plumbers and Contractors to be licensed.**

Persons performing work on facilities to be connected to the sewer system shall be registered plumbers having a current license to perform work in the Township, as per Sadsbury Township Ordinance 2000-02 "Sadsbury Township Plumbers License Code".

## **§ Section 101-34. Building sewer connection rules and regulations.**

### **A. General**

1. Existing properties, with on lot septic systems. The existing building sewer line will be exposed and inspected by the Engineer. If the line is of sufficient structural integrity to allow continued use the property owner will be allowed to break said building sewer line on the building side of the sewage disposal system and continue from that point to the sewer lateral. Attachment shall be made with proper fittings to extend the sewer line to the public sewer. No cap, stopper, or plug shall be removed or punctured until permission has been granted by the Engineer. No portion of an existing building sewer that is constructed of bituminous fiber (Orangeburg) pipe or asbestos cement pipe shall be used as part of the new building sewer.
2. The contractor shall determine the difference in grade between the points of connection. If a minimum grade of 1/4 inch, or a maximum grade of 1 inch, per foot is obtained, permission will be granted to proceed. Permission to use a minimum gradient of 1/8 inch per foot may be granted by the Township/Authority in special circumstances. An appropriate notation shall be made on the permit form if 1/8 inch per foot is used. Under no circumstances is the trench to be dug before it is determined that the minimum fall can be obtained.
3. No portion of any sanitary sewer lateral or building sewer shall be used until air tested and approved in accordance with these rules and regulations.
4. All costs and expenses of construction and connection of a building sewer to the sewer system shall be borne by the owner of the property to be connected. The owner shall indemnify and save harmless the Township/Authority from all loss or damage that may be occasioned, directly or indirectly, as a result of said construction.
5. The building sewer shall be connected to the sewer system at the lateral location determined by the Township/Authority.
6. The invert of a building sewer, at the point of connection, shall be at a higher elevation than the invert of the sewer system. A smooth, neat joint shall be made and the connection of a building sewer to the lateral shall be made secure and watertight. If elevations prevent gravity flow, the owner shall furnish, install, and maintain a pump at their expense. The pump must be one approved by the Township/Authority. Refer to § Section 101-2(C) for exceptions.
7. No building sewer shall be covered until it has been inspected and approved by the Engineer. If any part of a building sewer is covered before being inspected and approved, it will be uncovered for inspection at the cost and expense of the owner of the property.
8. Every building sewer is to be maintained in a sanitary and safe operating condition by the

owner of the property. If any person shall fail or refuse, upon receipt of a written notice from the Engineer, to remedy any unsatisfactory condition with respect to a building sewer, within sixty (60) days of receipt of such notice, the Township/Authority has the right to not permit such person or entity to discharge into the sewer system. The unsatisfactory condition(s) must be remedied to the satisfaction of the Township/Authority or, at its option, it may make such repairs at the expense of the property owner and file a lien.

9. Every excavation for a building sewer must comply with OSHA requirements including sheeting, shoring, and confined space entry where applicable and shall be guarded adequately with barricades and lights to protect all persons from damage and injury. Streets, sidewalks, and other public property disturbed in the course of installing the building sewer shall be restored, at the cost and expense of the owner of the property being connected, in a manner satisfactory to the Township/Authority.
10. Whenever unique physical conditions are encountered during the construction of a building sewer, and such unique conditions require additional safeguards or the observation of specifications more stringent than those in this ordinance, the building sewer shall be constructed in accordance with such additional safeguards or specifications. Provided, however, that the unique special physical conditions and any additional specifications necessary to ensure the integrity of the building sewer shall be listed and set forth in the Rules and/or Regulations adopted by the Township pursuant to this section of the Chapter.
11. The Township reserves the right to adopt, from time to time, additional rules and regulations as it deems necessary and proper relating to connection to the sewer system, which additional rules and regulations, to the extent appropriate, shall be construed as part of this Chapter.

#### B. Grease Interceptors.

1. General Requirements. Grease or any other insoluble material capable of obstructing, damaging or overloading the building drainage or sewer system, or capable of interfering with the normal operation of the sewage treatment processes, shall not be deposited, by any means into such systems.
2. Interceptors Required. Interceptors for grease and other soluble material shall be provided as required in this section. An interceptor shall not be required for individual living units, or for any private living quarters not used for commercial purposes.
3. Approval by the Township/Authority Engineer.
  - a. Users requiring interceptors shall provide the Engineer with sufficient information describing the discharge, including drainage volumes and grease concentrations from the proposed fixtures and equipment which will be producing grease-laden discharges or drainage, and showing the materials and features of the interceptor.
  - b. The Engineer shall make the final decision concerning which fixtures and equipment shall require drainage or discharge through grease interceptors. Such decision will be based on a review of the above stated information as well as an actual inspection of the proposed fixtures and equipment on the site.
  - c. No interceptor shall be installed until the interceptor design and location have been

approved by the Township/Authority Engineer.

4. Design and Use.

- a. Interceptors shall be sized to have a grease retention capacity of not less than two (2) pounds for each gallon per minute of discharge or drainage flow. The size of each interceptor shall be approved by the Engineer. The rated capacity of each interceptor shall be identified by a permanent plate attached to the interceptor cover confirming the official Plumbing Drainage Institute (PDI) rating in gallons per minute. The design of the grease interceptor shall conform to the specifications as shown in the included appendix or an equal approved by the Engineer.
- b. Interceptors shall be equipped with devices to control the rate of discharge or drainage flows through the interceptor so that its rated flow is not exceeded.
- c. Wastewater and drainage flows, other than those requiring grease separation, shall not be discharged into any interceptor. Food waste grinders shall not discharge into any interceptor.

5. Construction. In general, interceptors shall conform to PDI-G101. The Engineer shall give approval for each interceptor type, including the material composition and configuration thereof, on an individual case basis. Drawings and specifications of approved grease interceptors shall be available for inspection at the Township office. The following interceptor types shall apply:

- a. Cast Iron Type. Composed of a cast iron body and cover with the manufacturer's applied acid-resisting coating inside and outside. The unit interior design shall incorporate removable flow baffles, threaded inlet and outlet, and internal air relief, a double wall trap with internal cleanout, and a scoriated cover with neoprene sealing gasket.
- b. Fabricated Steel Type. Composed of a welded steel body and cover with the manufacturer's applied, acid-resisting, rust-inhibitive, coating inside and outside. The unit interior design shall incorporate removable flow baffle through arrangement, threaded inlet and outlet, and internal air relief, double wall internal trap or deep seal external trap, floor level cleanout provisions, and an anti-skid cover with a neoprene sealing gasket.
- c. Special Types. Special type interceptors shall include those units which are not of the types stated previously, and are usually of greater capacity. Special interceptors may be of precast concrete construction for reasons of economy due to the larger size of such units.

6. Location. Interceptors shall be located outside for all installations. Each unit shall be serviceable on grade with the cover completely removable. The cover shall be surrounded by a house keeping pad of concrete construction. The interceptor shall be accessible at all times to the Engineer. Each proposed interceptor location shall be approved by the Engineer prior to installation.

7. Maintenance. The Engineer shall initially require a written report indicating biweekly interceptor grease draw off quantities over a three (3) month time period. Such report shall be submitted in a letter form and shall clearly indicate the owner's name and address as well as the information requested herein. The Engineer shall review the submitted report and shall

make the determination as to the frequency of interceptor grease draw-off. This schedule of grease draw-off shall be strictly followed on a continual basis until such time as the grease laden discharge or drainage is discontinued by the owner's operations, or unless subsequent experience demonstrates the need for more frequent draw-off. The Engineer reserves the right to change the schedule of grease draw-off by increasing or decreasing the frequency of draw off times, based on site inspections and observations of operations.

## **§ Section 101-35. Building sewer specifications.**

- A. Pipe Requirements. Piping installations from the sanitary sewer lateral to the building drain shall be constructed of any one, or approved combination of, the following materials:
1. Extra Heavy Cast iron Soil Pipe conforming to American Standard Assoc. and ASTM Standards, latest revision, together with neoprene gaskets. The gaskets must be made to conform with the particular brand of pipe being used and conform to ASTM C564, latest revision. All joints shall be made in accordance with the pipe manufacturer's instructions.
  2. Wherever the use of cast iron pipe is mandated in this ordinance for cleanouts, cleanout risers, screw-type plugs for cleanout risers, fresh air vents and/or fresh air vent risers, PVC may be substituted as herein provided:
    - a. The PVC is SDR 35 or Schedule 40 solid PVC which meets the requirements of ASTM D-2665;
    - b. The top elevation of all cleanout and/or vent risers shall not be less than six inches (6") above ground level;
    - c. All riser caps are made of cast iron; and
    - d. PVC Ring-tite pipe conforming to ASTM D3034-74, SDR 35 Type PSM, together with necessary fittings conforming to ASTM D1784. All pipe and fittings shall utilize rubber gasketed joints shall comply with ASTM-D-1 8-19 C-361 or C-433.
  3. It is recommended that all building sewer connections use a cast iron vent and trap assembly located outside of the building and constructed in accordance with the standard drawing. Although the Engineer recommends and prefers the use of cast iron for vent and trap assemblies, where the use of cast iron is mandated in this Ordinance for vent and trap assemblies, PVC fittings may be substituted therefor provided:
    - a. Such fittings conform to the requirements of ASTM F477 for use with SDR 35 Gravity Sewer Pipe, latest revision;
    - b. All such fittings utilize rubber gasket joints and rubber gaskets which comply with the requirements specified in ASTM D-1869, C-361 or C-443, latest revision; and
    - c. Vent and trap assemblies are encased with a minimum of six (6) inches or more of concrete.
  4. Cleanouts shall be provided for all building sewers and service connections where length of line exceeds 50 feet for 4" diameter pipe and 75 feet for pipe 6" diameter or larger. Cleanout

risers shall be constructed of cast iron pipe.

5. Building sewers passing under any stream or creek shall be constructed of Ductile iron water main pipe ANSI A21.51 and AWWA C151, Class 5 1, with mechanical joints.
6. No sewer connection pipe shall be reduced in size between the house and the sewer. All pipe shall be a minimum inside diameter of 4 inches. Pipe sizes for apartments and commercial buildings must be approved by the Township/Authority. Joints shall be permanently tight and shall prevent the admission of ground water.
7. A minimum cover of 3 feet of earth shall be provided to protect pipe from frost action and surface loading. Concrete encasement shall be provided where cover is less. All changes in grade and alignment (direction) shall be made with pipe fittings. No fittings exceeding 45 degrees will be permitted.
8. No transformation from one pipe size to another, or from one pipe material to another, will be made without the use of adapters manufactured and designed for that purpose.
9. In the specific case of PVC piping, no transformations from one pipe size to another, or from one pipe material to another will be made without the use of Fernco Joint or equivalent equal adapters manufactured and designed for that purpose. Substitute adapters must be approved by the Engineer. No cement joints will be permitted.
10. All connections to the sewer system must be made into the lateral stub, tee, or wye left for the purpose, if one exists. Where no lateral stub, tee, or wye has been provided, the sewer shall be tapped with an opening to fit a 45 degree cast iron or PVC wye saddle or 90 degrees cast iron or PVC tee saddle. The saddle shall be securely fastened by stainless steel straps provided with suitable bolts to tighten securely. The pipe and saddle shall be completely encased with 6 inches of 3,000 PSI test concrete. When the opening in the pipe has been cut too large to fit the saddle, the Township/Authority's sanitary sewer pipe must be replaced by a manufactured pipe section with a tee or wye branch of the proper size. The construction must be inspected and approved before the remainder of the connection may be made. In the case of PVC, a wye or tee saddle shall be installed using stainless steel straps provided with suitable bolts to tighten securely
11. Whenever a tee or wye branch has become broken in removing its cap in preparation to make a sewer connection, the protruding branch must be removed and a cast iron tee or wye saddle installed as described above.
12. Whenever an existing Township/Authority lateral or stub is broken, the broken end must be cut square and fitted with a duplex coupling, or that section of pipe must be replaced.
13. The mouth, or opening, of the completed building sewer shall be kept properly closed and water tight at all times during construction.
14. Cleanouts. Building sewer lines shall be vented, trapped, and a cleanout provided as follows:
  - a. Where the main sewer is in the road a cleanout shall be provided at the right-of-way line;
  - b. Where the main sewer is in an easement the cleanout shall be located one (1) foot from the

permanent easement limit;

- c. Cleanouts shall be provided in each sanitary sewer lateral at 50 foot intervals for 4" diameter pipe and at 75 foot intervals for all pipe 6" diameter and larger. Such intervals shall include lengths of lateral installed by the Township/Authority. Cleanouts shall be installed immediately downstream of any change in grade or alignment. Cleanouts shall be constructed using a sanitary tee fitting in the run of the pipe and a cast iron riser to the ground surface. The riser pipe shall be provided with a screw type plug and shall be water tight; and
  - d. A minimum of one cleanout is required per building sewer line.
15. Fresh Air Vents. A vent shall be placed as close to the building as possible, in the case of existing construction and also in the case of new construction when, in the opinion of the Engineer, adequate venting has not been provided for. Vent risers shall extend a minimum of six inches above the ground surface and shall be capped with a mushroom vent or double bend. Fresh air vents shall be at least four inches in diameter, and must be constructed of cast iron.
  16. Every cleanout and vent shall be properly supported by 2 RC, 2B crushed stone or concrete in the bottom of the trench.
  17. New connections to the sewer shall not be placed through a cesspool or septic tank. They must be placed on solid ground on the building side of a cesspool or septic tank excavation area. With the exception that, under special circumstances, cast iron water pipe (AWWA C 151 and ANSI A 21.51 Class 5 1, with mechanical joints) may be used to span a cesspool or septic tank when properly supported and anchored against shearing forces from surface loading or other settlement.
  18. The contractor shall have sufficient pumping equipment ready for use at all times on the site. All ground water which may be found in the trenches, and any other water which may get into them from any cause whatsoever, shall be pumped or bailed out so that the trench shall be dry during pipe laying and backfilling. Water shall be kept away from any mortar or concrete work until it has thoroughly set. When water is encountered, no less than 6 inches of NO. 2B coarse aggregate shall be used for the foundation for the pipe. No storm or surface water shall be allowed to enter the sanitary sewer system. If, for any reason, construction is delayed or stopped, the pipe connected to the sewer main must be capped with a water proof stopper.
  19. The contractor shall fill all existing septic tanks or cesspools with crushed stone or clean earth. Tanks shall be pumped after connection to the sewer and before backfilling.
- B. Pipe Bedding. In all trenches (both earth and rock trenches) First Class Bedding shall be provided as a foundation for all pipe, unless a concrete cradle or concrete encasement or other type of bedding is required by the Engineer.
1. When extra heavy cast iron pipe is being installed, First Class Bedding shall consist of shaping the bottom of the earth trench to fit the pipes and bells in order to support the pipe over its entire length. A minimum of 6 inches of No. 2B crushed stone bedding will be provided when rock is encountered or when required by the Engineer.

2. When PVC SDR #35 is being installed, First Class Bedding shall provide a minimum of 6 inches of crushed stone under the pipe, with backfill using the stone up to, or beyond, 6" over the pipe. Bedding material shall consist of crushed stone conforming to PenDot Publication 408, as amended, grading and quality for No. 2B course aggregate. A concrete encasement, or cradle, shall be required where extraordinary trench and surface loading can be anticipated.
3. Regardless of the type of pipe used, unsuitable material encountered in excavation, such as ashes, muck, and unstable soil, shall be removed from the site and shall not be used as backfill. When the bottom of the trench has been dug too deep, it shall be refilled to grade with 2-RC aggregate backfill, or No. 2B crushed stone backfill, and thoroughly compacted.
4. Whenever rock or water is encountered in the trench bottom, a minimum of 6 inches of 2-RC aggregate or 2B crushed stone bedding shall be required for all pipe.

#### C. Air test

1. The Inspector shall witness an air test of the building sewer from the lateral to the point of connection at the building. Both ends of the building sewer shall remain uncovered until the air testing has been completed and the installation approved. Such approval shall be noted in writing on the permit and no other evidence of such approval shall be accepted. Persons utilizing air test equipment must be familiar with its use and be familiar with the criteria for judging acceptance based on various ground water conditions encountered. The air test shall be conducted by the building sewer contractor under the direction of the Inspector, and made at the expense of the property owner.
2. The air test shall be made by attaching an air compressor or other testing apparatus to any suitable opening in the section of the pipe to be tested. All other openings of the pipe section being tested shall be plugged. The pipe shall be subjected to a minimum uniform air pressure of 4.0 PSIG on the entire section of pipe being tested. This pressure shall be maintained for a minimum duration of ten (10) minutes and that the maximum permissible pressure loss shall be five (5.0) percent.
3. The Contractor shall repair all defects or leaks of any lines failing to meet the above tests and shall re-test same until acceptable to the Township/Authority.

#### D. Backfilling

1. Upon completion of the building sewer installation, the trench, to a height of at least one (1) foot above the pipe, shall be refilled with clean earth or select stone backfill (2RC or 2B crushed aggregate) deposited in 6 inch layers. No stones or rock other than previously noted shall be permitted in the one foot backfill. Each layer shall be solidly tamped and rammed down around the sewer pipe with hand or mechanical tampers. Care shall be exercised not to disturb the pipe. In filling to the height specified, the earth shall be thrown in with hand shovels. Under no circumstances will backfilling by heavy equipment be permitted.
2. All backfill material shall be free from cinders, ashes, refuse, vegetable or organic material, or other material which, in the opinion of the Inspector is unsuitable. However, from a point

of 1 foot above the top of the pipe to the finish grade (or subgrade of pavement, driveways, walks, etc.) material containing stones up to 6 inches in greatest dimensions may be used. The trench shall be thoroughly compacted without displacement of the grade or alignment of the building sewer. Backfill material shall be free of ice and no partially open trench shall be permitted to be left open during the night when temperatures below 28 F degrees are predicted.

E. Clean-up.

Removal of debris, which may have been stored within the public rights-of-way, including road, cartway, or sidewalk, shall be removed within 24 hours of completion of the building sewer work. Any concrete sidewalk or curb removed for the purpose of making a sewer connection must be temporarily restored within 48 hours, and permanent replacement must be completed within thirty (30) days from the time installation has been approved.

**§ Section 101-36. Abandonment of existing on lot system.**

No privy vault, cesspool, sinkhole, septic tank, or similar receptacle shall be used or maintained upon any property connected to the sewer system or which shall be required by this chapter to connect to the sewer system. Every such privy vault, cesspool, sinkhole, septic tank, or similar receptacle in existence shall be abandoned when the connection to the sewer system is made. It shall be cleansed and filled under the direction and supervision of the Engineer. Failure to comply with this provision shall constitute a nuisance and such nuisance may be abated as provided by law, at the expense of the owner of the property.

**ARTICLE V  
Sewer Extensions**

**§ Section 101-37. Approval procedures.**

- A. The following procedures are intended to facilitate proper design, material selection and installation of new sewerage facilities for the purpose of protecting the public interest upon dedication of the facilities to the Township/Authority.
- B. The procedures consist of the following three phases:
  - 1. The application phase, which covers the period from project inception through final approval of the construction by the Township/Authority, inclusive of permits and execution of agreements.
  - 2. The construction phase, which covers the period from pre- construction conference through testing and certification of satisfactory construction.
  - 3. The warranty phase, which covers submission of record plans, dedication and an eighteen month warranty period.

**§ Section 101-38. Application phase.**

- A. General procedures. Any applicant desiring extension of the sewerage facilities shall make preliminary application in writing to the Township/Authority on the prescribed form and

accompanied by appropriate fees. There are three stages in the application process. Each stage requires approval by the township before proceeding with subsequent stages. These stages are:

1. Sketch plan.
2. Preliminary plan.
3. Final plan.

B. Sketch plan. When a subdivision and/or land development sketch plan is submitted to the township, the following shall apply:

1. Sketch plan requirements. The sketch plan shall show the property boundaries and their relationship to adjoining tax parcels. The plan shall provide the approximate sewer layout and the point of connection to the sewer system with manhole number of the connecting sewer indicated. Plan sheets shall be at least 22 inches by 34 inches but no larger than 30 by 42 inches.
2. Purpose of the sketch plan. The principal purpose of the sketch plan is to provide the Township/Authority with information on proposed additions to the sewerage facilities and to afford the opportunity for the prospective developer(s) and the Township/Authority to work out problems related to the timing and location of service and determine whether an easement or other arrangements are needed to serve adjacent properties. This stage of planning is not intended to provide information with regard to the final design of the sewers.
3. Potential wetland involvement. Along with the sketch plan, a readable photocopy of the appropriate soils and wetland mapping shall be included. The sources for this information shall be the Soil Conservation Service's County Soil Survey and the United States Fish and Wildlife Service's National Wetland Inventory Maps. The copies shall be no less than 8 1/2 by 11 inches in size with the proposed project area highlighted or outlined so as not to alter or conceal any soil groups, streams, springs, wetlands or other distinguishing features. The principal purpose of providing the soil and wetland maps is to ensure early recognition of potential wetland involvement.
4. Application fee. An application fee is required by the township at the time of submission of the sketch plan and application. The application fee shall be established by resolution of the Board of Supervisors.
5. Review of proposed sewer layout. The Engineer shall evaluate the existing sewerage facilities and proposed routing to ensure it is situated to serve the best interest of the public and that is consistent with the township's overall sewerage planning. This will include an analysis to determine whether adjacent properties may receive sewerage service through the proposed extension. If further study is deemed appropriate, in the sole discretion of the township, the applicant will be advised that a feasibility study of extensions of the system beyond the planned area of development will be conducted by the Engineer. An estimate of the cost of the feasibility study will be provided to the applicant for establishment of an escrow to reimburse the township for work conducted by the Engineer. The township will make such comments, including technical comments from the Engineer, if any, as it deems appropriate. Significant changes and corrections to plans based on these comments must be satisfactorily addressed before sketch plan approval will be issued.

### C. Preliminary plan.

1. The developer and his engineer shall meet with the Engineer prior to the preparation of preliminary plans to establish the technical requirements and the format for plan presentation.
2. The preliminary plans shall include the detailed design of the sewerage facilities, including, but not limited to, the location and grade of sewers. The plans must be prepared under the supervision of or by a Pennsylvania registered professional engineer acceptable to the Township/Authority whose seal, signature and registration number shall appear on each sheet of the plans. All plans must meet the current requirements of the DEP, CCA, and other controlling agencies.
3. The following specific submittals are also required, if applicable:
  - a. Rights of way and easements. If any sewer lines or other facilities are proposed outside of areas to be publicly dedicated or where off-site rights-of way are involved, such property plats and legal descriptions and indications of ownership or transfer negotiation status shall be included. Sanitary sewer easements a minimum of 25 feet wide, with a main centered in the middle, shall be provided. The easement must extend to a publicly dedicated area to facilitate vehicular access. The width of the easement may increase dependent on the depth of the sewer. Where two sanitary easements intersect or join at a ninety-degree angle, the easement shall include the fillet area of each intersection. The fillet area shall have a minimum radius of 25 feet. Additionally, should the easement be required for future construction of sewers, an easement of 40 feet may be required. All sewerage facilities must be accessible by vehicle, and easements shall be graded accordingly. Where an easement must be accessed from a road, the curb will be depressed to allow vehicle ingress and egress. Standard rights-of-way agreement(s) with legal description must be executed before final approval will be issued.
  - b. Sewage other than domestic waste. If any sewage other than domestic waste, including industrial waste, is to be discharged, the applicant shall demonstrate compliance with all applicable requirements, including those of the CCA, including any required industrial waste discharge permits or agreements.
  - c. Wetlands. If wetlands or other valuable natural resources are involved or in close proximity to the proposed project area, boundaries of these areas must be shown on the site plan. Also if permit(s) are required in association with the natural resources delineated above, a list of permits applied for shall be provided to the township, including the type of permit, the agency involved, the date the application was submitted, the agency's reference number and the agency's contact person.
  - d. Overall sewer routing. The overall sewer routing shall be presented on a site plan which indexes the applicable plan and profile pages. Each plan and profile page shall include a key index to the overall site with the presented area highlighted. Where sewer runs extend onto subsequent pages, cross-reference information shall be provided.
  - e. Planning module procedures. If required by DEP, the applicant must process a post-card application for sewerage facilities through the township to DEP. From the information provided on the form, DEP will identify the appropriate modules to be prepared. The applicant shall prepare the planning module components deemed appropriate by DEP for

submission in the name of the township. CCA must sign the module to indicate the availability of capacity prior to submission to the township. The complete planning module package must be submitted to the township. Evidence of module approval from DEP must be furnished to the township prior to obtaining final approval.

- f. Cost estimate. An itemized estimate of cost of the sewer project (materials, cost of installation, including excavation and restoration of unpaved surfaces and repaving of existing roads).
  - g. Written application for capacity. Written application requesting capacity shall be made on the form provided by the township. Such application shall not be approved nor guaranteed until final plan approval by the township and payment of the applicable tapping fees.
4. Upon receipt of the preliminary application, required submittals, and escrow deposit, the township will submit the same to the Township Engineer for review and comment. An incomplete submittal will not be accepted.
  5. A written report from the Engineer will be provided to the applicant for use by his engineer in revising the preliminary plans. The applicant will be required to revise the plans. The response shall include written correspondence responding to the Township Engineer's comments item by item. Once the plans satisfy the requirements herein, the Township Engineer will recommend preliminary plan approval. Upon receipt of the Township Engineer's recommendation, the township will review the preliminary application and advise the requesting party of the results of the review.
  6. Financial Security.
    - a. Escrow deposit. Escrow deposit in the amount of 2% of the itemized cost estimate for the project for reimbursement to the township for administrative and engineering services in reviewing the application, plans, and modules. A minimum deposit of \$2,000 is required. In the event the charges against the escrow are projected to exceed 85% of the deposit, the applicant will be notified by letter from the township to supplement the amount to cover the projected balance of charges. Any unused portion of the escrowed amount will be applied to the township's costs for inspection and testing during and after construction.
    - b. A determination will be made by the Township Engineer as to what degree the developer's plans affect the Sewage Facilities Act 537 plan of Sadsbury Township. Based on said determination and the estimated expenses thereof, an escrow account will be created to pay for any and all costs associated with the modifications of the Sewage Facilities Act 537 Plan of Sadsbury Township. No plan can reach final approval stage without approval from DEP for any amendments or alterations to the Act 537 Plan.

#### D. Final plan.

1. Schedule of construction. Each application shall include a time schedule for construction and connection.
2. Plan content and review procedure. The final plans shall contain the completed design for all sewers or other facilities required. They shall be prepared in compliance with the comments and/or conditions of the township resulting from the review of preliminary plans. The Township

Engineer and the applicant's engineer will work together to resolve all technical issues. When the Township Engineer is satisfied that all comments have been addressed, the construction plans will be submitted to the township for approval.

3. Wetlands. If wetlands (or other natural resources) are involved, evidence of permit(s) approval shall be submitted to the township. All permits applied for as outlined in the preliminary plan must be addressed by either providing evidence of the approval or written explanation indicating why the permits were not applied for.
4. Rights-of-way. If rights-of-way are involved, property plats and legal descriptions of the easement conveyed to the township must be submitted, together with the township's standard agreement and executed deeds of dedication in the form prescribed by the township.
5. Water quality management permit. When required by DEP, final plans shall be accompanied by a completed water quality management permit application prepared in the name of the township and accompanied by two sets of final plans as required by DEP.
6. Standard agreements. The following standard agreements must be executed by the applicant and returned to the township before final approval may be granted. All agreements prepared to the satisfaction of the township solicitor must be submitted no less than 10 days prior to the township's regularly scheduled monthly meeting. If the agreements are incomplete and/or incorrect, they will not be included on the township's agenda.
  - a. Tapping agreement.
  - b. Sewer extension agreement.
  - c. Rights-of-way agreement (if applicable).
  - d. Construction escrow agreement.
  - e. Reimbursement agreement (if applicable).
  - f. Industrial waste discharge agreement (if applicable).
7. Financial security.
  - a. The final application shall include the posting of financial security to ensure completion of the construction in accordance with approved plans and the requirements of the township. Financial security may be federal or commonwealth chartered lending institution irrevocable letters of credit and restrictive or escrow accounts posted with a federal or commonwealth chartered lending institution satisfactory to the township, if the lending institution is authorized to conduct such business within the commonwealth. Such security shall provide for and secure to the township the completion of the improvements within one year from the date of posting the security. The amount of financial security shall be equal to 110% of the cost of the required improvements for which financial security is to be posted. The cost shall be established by estimate acceptable to the Township Engineer.
  - b. If more than one year from the date of posting such financial security is required for completion of the required improvements, the amount of financial security may be

increased by an additional 10% for each one-year period beyond the first anniversary date from the posting of financial security or to 110% of the cost of completing the improvements as reestablished on or about the expiration of the preceding one-year period.

8. Inspection escrow. The final application shall include a deposit of 15% of the cost of the required improvements with the township in escrow to pay for inspection during the construction, testing and inspection as construction is completed, and incorporation of as built drawings. The minimum deposit is \$2,500. Any unexpended balance in the escrow will be returned; however, release of funds will not be authorized until after the township accepts dedication.

### **§ Section 101-39. Construction phase.**

Upon final plan approval by the township, the applicant must follow the following procedures:

#### **A. Pre-construction.**

1. Pre- construction meeting. The applicant or his designated construction manager must schedule a pre-construction meeting with the township's representative to review all aspects of the proposed project and construction schedule. It is the contractor's responsibility to maintain a current construction schedule and to notify the township of any changes to the schedule.
2. List of contractors. A list of contractors, subcontractors, and material suppliers must be submitted for the township's approval. The list shall include the name and telephone number of the person in charge of the contract for each contractor and subcontractor. Where paving is involved, a point of contact and phone number shall be provided to ensure the immediate repair of temporary paving deficiencies. A phone number for non working hours, evenings and holidays must be provided.
3. Material samples. Material samples and material compliance certifications shall be provided at the request of the township.
4. Highway occupancy permit. The highway occupancy permit, if applicable, will be obtained by the applicant in the name of the township. The applicant is responsible for the cost of the occupancy permit and the securing of any other municipal permits or blasting bond.
5. Start of construction. Construction shall not begin until 45 days after a letter of approval is issued by the township. It may begin sooner with written permission by the township.
6. Wetlands. If wetlands or other natural resources of concern are involved, these areas shall be delineated in the field by a qualified professional. The delineation shall be in such a manner that it is easily recognizable during all phases of construction.
7. Pre-construction video. Where construction is proposed to traverse existing properties, a pre-construction video shall be made to establish the original condition of the improved properties.

#### **B. During construction. Complete construction details are provided in Article VII Standard Specifications for Construction of Sanitary Sewers and Appurtenances.**

1. Inspection by Township.
  - a. All construction must be conducted in accordance with the latest edition of the township's technical specifications covering sanitary sewage facilities. The township will designate an inspector to act on the township's behalf during construction. The cost for inspections performed by the inspector will be paid from the escrow established from the deposit of 15% of the cost of the required sewerage improvements.
  - b. The township's inspector shall make periodic visits to the site to observe the progress and quality of the executed work and to determine, in general, if the work is continuing in accordance with the township's specifications. He will not make exhaustive or continuous on-site inspections to check the quality of the work unless he determines it is necessary due to his dissatisfaction with the contractor's work. This determination will be solely at the discretion of the Township/Authority and the Township/Authority Engineer. Notification of full time inspections will be issued to the contractor stating the reasons for such action. The contractor is obligated and shall pay any and all costs of said inspection time at a rate determined by the Township/Authority Engineer.
  - c. Neither the inspector's authority to act nor any decision made by him in good faith, either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the inspector to the applicant, contractor, any subcontractor, any of their agents or employees or any other persons performing any of the work.
  - d. The inspector will not be responsible for the construction means, methods, techniques, sequences or procedures or the safety precautions and programs incident thereto, and he will not be responsible for the applicant's or contractor's failure to perform the work in accordance with the construction documents and the township's specifications.
  - e. The inspector will not be responsible for the acts or omissions of the applicant, contractor, any subcontractor, any of their agents or employees, or any other persons performing the work.
2. Defective work. The inspector shall have the authority to disapprove or reject work which is defective, unsatisfactory, faulty or does not conform to the requirements of the township's specifications.
3. As-built drawings. The developer/applicant shall be responsible for maintaining and submitting as built drawings.
4. Partial releases of financial security. As the work of installing the required improvements proceeds, the party posting the financial security may request the township to authorize the release of portions of the financial security, as long as the progress of work remains satisfactory to the township. The time frame for requests for progress releases will be established at the pre-construction meeting and may not be less than 30 days. Any such request shall be in writing to the township, in accordance with the following:
  - a. At least 10 days prior to submitting the first application for a progress release, the applicant shall submit a schedule of values for the work, including quantities and unit prices aggregating the project estimate, satisfactory in form and substance to the township, and subdividing the work into component parts in sufficient detail to serve as a

basis for progress releases during construction. This schedule should include a category for as-built drawings and for the township's engineer to prepare the computer model and mapping. Component parts should include cost per foot for pipe installations and road restoration unit costs for manholes, etc.

- b. If the township approves the application, the township will, within 45 days of the presentation of a partial release estimate, authorize a release to the applicant on the basis of the approved partial release estimate.
- c. The township will not authorize release of more than 90% of the amount due the applicant on account of partial estimates. The retainage will be held until the township issues a certificate of satisfactory construction.

C. Following construction.

1. Inspection. Each lateral connection must be inspected by the township's inspector before being backfilled. For connections going online immediately, connection and tapping fees must be paid and a connection permit obtained before connection is made. The connection will be inspected to check fitting-to-main co-installation, confirm no additional connections have been made, and examine materials used.
2. Testing.
  - a. Testing must be conducted in the presence of the township's inspector and in accordance with the technical specifications. The costs for testing will be paid from the inspection escrow.
  - b. Each section of pipe between manholes must be tested in accordance with the technical specifications before any lateral connections are made. No lateral connections shall be made until all sections and manholes downstream of the lateral have been deemed acceptable by the township's inspector.
3. Guidelines for completeness.
  - a. When the applicant considers the entire work ready for its intended use, the applicant shall, in writing to the township's inspector, certify the work is substantially complete and request the inspector issue a certificate of satisfactory completion. Within 15 days thereafter, the applicant and the township's inspector shall make an inspection of the work to determine the status of completion. If the inspector does not consider the work substantially complete, he will notify the applicant, in writing, giving his reasons therefor. If the inspector considers the work substantially complete, he will prepare and deliver to the applicant a certificate of satisfactory construction. There shall be attached to the certificate a detailed list of each and every uncompleted item and a reasonable cost of completion.
  - b. Before the certificate of satisfactory completion is issued, the township requires the posting of financial security to secure the structural integrity of said improvements for a period of 18 months. The financial security shall be 15% of the actual cost of installation of the improvements.

## **§ Section 101-40. Warranty phase.**

- A. As-built drawings. All field notations about changes to the construction plans and a complete set of as-built drawings must be turned over to the township before the warranty period can begin. All as built drawings must be approved by the Township Engineer.
- B. Use of facilities. The township shall have permission to use the applicant's system before acceptance by the township. The applicant shall maintain said system in good and workmanlike condition for 18 months from the date the township accepts dedication.
- C. Inspection of facilities. While the system is in use, periodic inspection will be made by the township and the applicant during periods of high water table. If manhole inspection indicates excessive infiltration, a video inspection will be done at the expense of the applicant to locate leaks. Leaks shall be repaired by the applicant, at his expense.
- D. Corrective work. If corrective work and punch list items are not completed promptly, defects will be repaired by the township and the financial security held in escrow shall be used for this purpose.
- E. Televising. Prior to the end of the eighteen-month warranty period, the entire system installed by the applicant will be video inspected, at his expense, and all defects corrected at his expense.
- F. Release of Escrow. When all the above are completed to the Township/Authority's satisfaction, the Township/Authority will authorize release of the balance of funds held in escrow. At this point, the Township/Authority will accept the deed of dedication and become responsible for the operation and maintenance of the system.

## **§ Section 101-41. General provisions.**

- A. The sewerage facilities must be designed and constructed in accordance with the technical specifications established by the township.
- B. The design drawing submittals must be certified by a Pennsylvania registered professional engineer representing the applicant.
- C. Sewerage facilities proposed to serve new developments shall be properly sized to consider the ultimate needs of the area to be served, as designated by the township's Act 537 Official Sewage Plan.
- D. Sewerage facility extensions shall be designed to utilize gravity interceptors. If necessary, after evaluation of alternate means is exhausted, use of a pump station may be approved, subject to the township's plans and specifications for pump stations. Where a pump station or low pressure sewer system is proposed, the Township Engineer will investigate gravity alternatives before a pump station or low pressure system is approved.
- E. The applicant shall bear all costs incident to the application, permits, construction, inspection and dedication of the facilities.
- F. The applicant is also responsible for all costs in upgrading limiting capacities in existing down stream sewerage facilities to serve the ultimate needs of the designated area. A sufficient balance

must be maintained in an escrow account to reimburse the township for costs associated with evaluating limiting sections.

- G. The applicant must execute the appropriate agreements, in a form acceptable to the township solicitor.

### **§ Section 101-42. Connection of private sewage systems.**

No private sewerage system shall be connected to the township's sewer system, except in accordance with the township's sewer regulations, as amended from time to time. Said regulations shall apply to any existing system as of the effective date of this chapter which is not yet connected to the township's sewer system. As a condition of making connection to the sewer system, the owner of the private system shall grant to the township a perpetual easement and right of entry over the private system for the purpose of periodic inspections of said system by authorized representatives of the township. In addition, the owner of the property desiring to connect a private system to the sewer system shall cause the installation at his sole cost and expense of a sewage flow meter(s) at appropriate point(s) of connection between the private sewer and public sewer, as determined by the township. The meter and meter pit shall conform to the technical specifications of the township. Where possible, the meter pit shall be installed within a public right of way. If it is not possible to install the meter pit within the public right of way, the township shall be granted a perpetual easement so as to enable the township to have direct access to the meter. The costs of reading, maintaining, repairing and replacing the meter and the meter pit shall be the responsibility of the owner of the private system.

## **ARTICLE VI**

### **Prohibited Wastes and Pollutant Limitations**

#### **§ Section 101-43. Purpose.**

The purpose of this article is to protect the public health, welfare, and the environment, by controlling and regulating the discharge to the sewer system of harmful or injurious substances, or unacceptable quantities or volumes of waste or water.

#### **§ Section 101-44. Definitions.**

The definitions of terms and abbreviations set forth in Article IV of the Sewer Use Rules and Regulations of CCA or its assigns are adopted in their entirety for purposes of this article.

#### **§ Section 101-45. Prohibited wastes and pollutant limitations.**

- A. No person shall discharge or cause or allow to be discharged into the sewer system, directly or indirectly, any substance, pollutant, wastewater, sewage, stormwater, or combination of such which will, alone or in conjunction with other discharges, cause or contribute to interference or pass through, release flammable, toxic or irritating gasses or vapors, create toxic or dangerous conditions within the sewer system, or otherwise pose a threat to human health, property, or the environment.
- B. Where necessary to carry out the provisions and purposes of this article, the discharge of industrial wastes or wastes other than domestic wastewater may be prohibited, or may be regulated as to volume, rate of flow, concentration or mass of pollutants or other substances,

or in such other manner as may be necessary. To effect such regulation, there may be established a system of permits or licenses to discharge, or other means of control of individual sources of wastewater discharge. Conditions imposed in permits may include monitoring and reporting requirements, operational or management requirements, and such other provisions as may be necessary to ensure that the purposes of this article are carried out.

- C. In order to ascertain whether the purposes of this article, including compliance with any permit or order issued hereunder, are being met, the township may enter and inspect, at any reasonable time, without advance notice, any place, building, structure, enclosure or equipment that generates or discharges, or may generate or discharge wastes or water, or where records or data are kept, prepared or stored. Unreasonable delay or denial of entry shall constitute a violation of this article, subject to the penalties provided herein and such other remedies as shall be available at law or in equity.

### **§ Section 101-46. Adoption of rules and regulations.**

- A. CCA, or its assigns, is hereby appointed an agent of the township to adopt and implement rules and regulations to carry out the provisions of this article.
- B. To implement the provisions of this article, the following provisions of the Sewer Use Rules and Regulations of CCA, or its assigns, are approved in their entirety as rules and regulations of the Township necessary to implement the provisions of this article, and all of their provisions, including but not limited to those related to establishing prohibitions and limitations, discharge permits and their terms, monitoring, reporting and other requirements are enforceable as necessary regulations to implement the purposes of this article:

Article IV, Definitions; Article VII, Use of the Treatment Works; Article VIII, Notification, Inspection, Testing and Control for Industrial Wastes; Article IX, Discharge Permit System; Article X, Wastewater Monitoring and Reporting Requirements for Users with Industrial Waste Discharge Permits; Article XIV, Protection from Damage; and Article XVI, Surcharges.

- C. If CCA or its assigns amends or revises any of the provision listed in §101-45.B., then such amendment or revision shall be effective as provided therein, without approval or acceptance by the township, provided that the amendments or revisions do not conflict with the purposes of this article.
- D. The acceptance or non-acceptance of any rule or regulation adopted by CCA or its assigns does not in any way affect the rights, privileges, powers and duties of CCA or its assigns to conduct its affairs and manage its property. Acceptance of the enumerated rules and regulations as being appropriate expression of the purposes of this article is intended to make them enforceable by the township.
- E. The township may adopt such additional rules and regulations, regarding the discharge of sewage within the township, as it deems necessary and proper to carry out the purpose of this article. Administration and enforcement of such additional rules and regulations shall be the sole responsibility of the township.

## **§ Section 101-47. Penalties.**

- A. Any person who violates any provision of this article, including any of the rules and regulations adopted thereunder or provisions in permits or orders issued according to the rules and regulations, is guilty of a summary offense and shall upon conviction thereof, in a summary proceeding, be sentenced to pay a fine of not more than \$1,000 and costs. For the purpose of this section, each day that a violation occurs or continues to occur shall be a separate offense, and each pollutant limitation that may be violated shall be a separate offense.
- B. The provision of penalties in this article does not preclude the township or CCA or its assigns from seeking such legal or equitable relief as may be available for violations of this article or the rules and regulations adopted hereunder. Nor shall the provisions of this article preclude CCA or its assigns from proceeding under the provisions of the Publicly Owned Treatment Works Penalty Law, Act 9 of 1992, 35 P.S. §752.1 et seq. Penalties provided by this article may be sought concurrently with other non-monetary remedies, as deemed appropriate by the township or CCA or its assigns.
- C. Should the violation of any provision of this article by any person contribute to or result in violation of any state or federal law or regulation, for which the township or CCA or its assigns is held liable, whether by judicial or administrative order or the settlement of a judicial or administrative penalty action, the person shall indemnify the township or CCA or its assigns for the amount of that liability in addition to paying any penalty and costs and any damages that may be imposed for the violation under the provisions of this article.
- D. Copies of this Ordinance will be available at the office of the Township Secretary for review. If one wishes to purchase this Ordinance the prices are as follows:
  1. Articles I through VI, dealing primarily with lateral installation is \$25.00.
  2. Articles VII through VIII, dealing primarily with sewer main and lateral extensions in new development is \$50.00.
  3. A complete Ordinance Articles I through VIII is \$75.00.
  4. The above prices may be changed by Resolution of the Township/Authority.



## ARTICLE VII

### Standard Specifications for Construction of Sanitary Sewers and Appurtenances

#### § Section 101-49. Scope.

The items covered by these specifications require the contractor to furnish all labor, materials, equipment, apparatus, and tools. This includes all pipe, materials for joint connections, manholes, appurtenant structures, and sewer laterals to points of connection with building drains at the side of public or private rights-of-way, or beyond public utilities paralleling the sewer, including specials and fittings. They also require the contractor to perform all operations to complete the construction of sanitary sewers, sewer laterals, and appurtenances thereto, as shown on the drawings and as herein specified. The contractor shall install, equip, adjust, and put in operation, the completed work so as to produce a satisfactory operating whole in conformance with plans and these specifications.

These specifications are not intended to cover every procedure and work sequence. However, all safety procedures including, but not limited to, sheeting, shoring, confined space entry, and blasting shall be in accordance with the rules and regulations as set forth by OSHA. All Ordinances of Sadsbury Township as well as any County, State, or Federal regulations shall apply. If there is a conflict between regulatory agencies, the stricter of the regulations will apply.

**§ Section 101-50. Definitions.** Unless the context specifically indicates otherwise, the meaning of terms used in this chapter shall be as follows:

**Approved, Etc.** The words approved, acceptable, satisfactory, or of like import, shall mean approved by the Engineer for general conformity with design concepts. Unless another meaning is plainly intended or otherwise specifically stated. This approval shall not relieve the contractor of the responsibility for producing a complete and satisfactory end result.

**Authority.** Any Federal, State, or Municipal agency.

**Completion Certificate.** The certificate of the Engineer and approved by the Township/ Authority, indicating general conformance to plans and specifications of all work performed under the contract.

**Contractor.** The contractor employed to construct sanitary sewers and appurtenances and his agents, representatives, superintendents, or employees in accordance with Township approvals, specifications, and supervision. Contractor is used as an all encompassing term to include: a developer; a person hired by an individual home owner to install building sewers; plumbers; and so on. All contractors and subcontractors, performing sewer installation related activities, must be licensed by Sadsbury Township.

**Contractor's Engineer.** The licensed professional engineer, or his authorized representative, retained by the contractor to provide plans and specifications for the project.

**Construction Observation.** The observation of the work performed by the contractor to ascertain its conformity with Township/Authority standards and specifications.

**Contract.** The written agreement executed between the entity requiring the work to be performed

and the contractor performing the work. It covers performance of the work and the furnishing of labor, materials, and equipment in the construction of sewer extensions and appurtenances to the sewage collection system.

**Corresponding Authority.** The authority in charge of the item in question.

**Engineer.** Unless noted otherwise, Engineer will always refer to the Township/Authority Engineer. See Township/Authority Engineer.

**EPA.** The Environmental Protection Agency, a Federal organization.

**PenDot.** The Pennsylvania Department of Transportation.

**Plans.** All plans or reproductions relating to the construction of the project and made a part of the contract, and additional plans as may be required, from time to time, in order to more fully clarify contract plans and details not shown thereon.

**Plans and Specifications.** The Plans and Specifications are complementary to each other, and the requirements of any one shall be considered as requirements for all.

**Project.** The scope of work under the contract described in the specifications and shown on the plans incorporating performance, services, and materials for the whole, entirely complete, and in full.

**Specifications.** Contained in the specifications, inclusively, all definitions, descriptions, requirements, terms, stipulations, and all written supplements, made or to be made thereto pertaining to the contract, and all materials, equipment, and workmanship to be furnished under the contract.

**Subcontractor.** This term includes only those having a direct contract with the contractor, one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes materials.

**Township/Authority.** Sadsbury Township, a Township of the Second Class, governed by a three person Board of Supervisors or any sewer authority the Township may create.

**Township/Authority Engineer.** The person or organization duly appointed by the Township/Authority as consultant and authorized to observe, supervise, and maintain control of the quality of the results of the sewer work under contract. He may act directly or through authorized agents, engineers, assistants, inspectors, or other representatives acting within the scope of the particular duties entrusted to them. The word "Engineer" shall include the officers, agents, and employees of the Engineer. He has the authorization of the Township/Authority to enforce all provisions of this Ordinance and to stop said work if those provisions are not met.

**Work.** The term "work" of the contractor or a subcontractor includes labor, materials, equipment, transportation, and other facilities necessary to complete the contract.

## **§ Section 101-51. Shop drawings and specifications .**

A. The contractor's Engineer shall furnish all necessary copies of drawings and specifications to the Township/Authority and the Engineer for review. Shop drawings shall be submitted in quadruplicate to the with promptness as to avoid delay in the work. After review of these

drawings by the Engineer, the contractor shall make any corrections required, providing the Township/Authority four (4) corrected copies and such other copies as may be needed for proper prosecution of the work. The Engineer's approval of shop drawings shall not relieve the contractor from responsibility for errors or discrepancies in such drawings. All shop drawings shall be identified with the name of the project and contractor, and numbered in consecutive order. Shop drawings will be required to be furnished for manufactured manholes, frames and covers, and other required appurtenances.

- B. The contractor, when submitting the shop drawings for approval, shall do so with the understanding he has checked said drawings before submission and is satisfied they meet the requirements of the plans and specifications and will present no difficulties in completing the contract. He shall clearly note his approval on all shop drawings prior to their submission. Failure of the contractor to note his approval will be reason for the Engineer to return such submission without review. If it appears the submitted shop drawings have not been properly checked, even though the contractor's approval has been noted thereon, it will also be considered reason for the Engineer to return such submission.
- C. If the shop drawings show variations from the contract requirements because of standard shop practice or other reasons, the contractor shall make specific mention of such variations in his letter of submission so that, if accepted, suitable action may be taken for proper changes in the contract. Otherwise the contractor will not be relieved of the responsibility for executing the work in accordance with the contract even though the shop drawings have been approved.
- D. The approval of shop drawings will be general and shall not relieve the contractor from the responsibility for proper fitting and construction, or from furnishing materials and work required by the contract not indicated on the shop drawings when approved.
- E. The approval of any plans, specifications, contracts, or agreements or the issuance of any permits or approvals pursuant to the provisions of this ordinance or any regulations issued or adopted pursuant thereto shall not constitute a representation, guarantee, or warranty of any kind by the Township or by any official, employee, agent, or advisor of the Township/Authority as to the practicability, adequacy, functioning, or safety of any use, improvement, facility, or system installed or maintained pursuant to the aforementioned approved plans, specifications, contracts, agreements, permits, and regulations, and shall not create any liability upon the Township/Authority, or its officials, employees, agents and advisors.
- F. Each submission of shop drawings must be accompanied by a transmittal letter with a list of the number of drawings. All drawings must be marked with the name of the project, the name of the contractor, and be numbered consecutively. All drawings must be complete in every respect and bound in sets.
- G. The contractor shall keep one copy of all drawings and specifications on site, in good order, and available to the Township/Authority Engineer and his representatives.
- H. All drawings or plans pertaining to the project shall be submitted by the contractor, in duplicate, to the Township/Authority Engineer for review. After review of these drawings by the Township/Authority Engineer, the contractor shall instruct his engineer to make the required corrections and re-submit six corrected copies. The Township/Authority Engineer's approval of the drawings shall not relieve the contractor from responsibility for errors or discrepancies in such drawings. All drawings shall be prepared in conformance with the requirements set forth in this Ordinance

and shall be identified with the name of the project and contractor, and numbered in consecutive order.

- I. All costs associated with the submittal and review of plans and drawings will be reimbursed to the Township/Authority by the contractor. The contractor shall make payment in full for any invoice presented to him by the Township/Authority. Payment will be made no later than ten (10) days from the date of the invoice.

### **§ Section 101-52. Order of Completion.**

The Contractor shall submit to the Engineer, prior to construction, a schedule showing the order in which the contractor proposes to perform the work. The schedule will include the dates when the contractor will start the various parts of the work and the estimated dates of completion. This schedule will be updated at least once a month during the duration of the contract.

### **§ Section 101-53. Contractor to pay taxes.**

The contractor shall comply with all tax laws for the jurisdiction in which the work is being done. He shall pay all taxes for which he may be liable as a consumer or user of goods and taxes based on income from the contract or a portion thereof. The contractor shall obtain, where applicable, sales and use tax exemption certificates.

### **§ Section 101-54. Safety, protection, and emergencies.**

- A. The contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He will provide the necessary safe guards to prevent damage, injury, or loss to:
  1. All employees on the work and other persons who may be affected thereby;
  2. All work and all materials or equipment to be incorporated therein, whether in storage on or off the site; and
  3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- B. The contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property. He will erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection, including posting danger signs and other warnings against hazards.
- C. The contractor shall comply with the provisions of PA Act 38, as amended, and notify owners of adjacent utilities when progression of the work may affect them.
- D. When the use of explosives or other hazardous materials is necessary for the progression of work, the contractor will comply with all aspects of Sadsbury Township Ordinance 1999-10, as amended.

### **§ Section 101-55. Observation of Work.**

- A. The Engineer, the Township, and their representatives shall at all times have access to the work wherever it is in preparation or progress. The contractor shall provide proper facilities for such access and observation.
- B. If the contract documents, the Engineer's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the contractor shall give the Engineer timely notice of its readiness for inspection. Inspections by the corresponding authority shall be promptly made and, where practicable, at the source of supply. If any work should be covered up without the approval of the corresponding authority it must be uncovered for examination at the contractor's expense. The contractor is responsible to pay all corresponding authority expenses for inspections.

### **§ Section 101-56. Superintendence and supervision.**

- A. The contractor shall have, available on site, a competent superintendent and any necessary assistants while any work is in progress. The superintendent shall represent the contractor in his absence and all directions given to him shall be as binding as if given to the contractor. Important directions shall be confirmed in writing to the contractor. Other directions shall be so confirmed if a there is a written request. The contractor shall give efficient supervision to the work, using his best skill and attention.
- B. If the contractor finds any discrepancy between the drawings and the physical conditions of the locality, any errors or omissions in the drawings or layout, as given by points and instructions, it shall be his duty to immediately inform the contractor's Engineer, in writing. The contractor's Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the contractor's risk.

### **§ Section 101-57. Indemnity.**

- A. The contractor shall indemnify and save harmless the Board of Supervisors of Sadsbury Township and their representatives from and against all losses and all claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description brought or recovered against them by reason of any act or omission of the said contractor, his agents, or employees, in the execution of the work or in the guarding of it, and shall defend and pay the costs of defending any such suit or suits.
- B. The contractor is directed to maintain and pay for such insurance, issued in the name of the contractor, the Township/Authority and their representatives as will protect them from their contingent liability under any and all contracts.

### **§ Section 101-58. Rights of various interests.**

Wherever work being done by the Township/Authority contiguous to work covered by a contract, the respective rights of the various interests involved shall be established by the Township/Authority Engineer, in order to secure the completion of the various portions of the work in general harmony.

### **§ Section 101-59. Subcontracts.**

- A. The contractor shall, as soon as practicable after the execution of the contract, notify the Engineer,

in writing, of the names of subcontractors proposed for work. He shall not employ any the Engineer may, within a reasonable time, object to as incompetent or unfit.

- B. The contractor agrees he is as fully responsible to the Township/Authority and for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions or persons employed by himself.

**§ Section 101-60. Provisions of law.**

Every provision of law, and every clause required by Municipal, Federal, or State Regulation are required to be inserted in the contract shall be deemed to be inserted herein. The contract shall be read and enforced as though it were included herein and, if through mistake or otherwise, any such provision is not inserted, or not correctly inserted, then upon the application of either party, the contract shall forthwith be amended to make such insertion. The contractor shall give all notices required by law or regulation and shall comply with all laws, ordinances, rules, and regulations applicable to the work.

**§ Section 101-61. Workmen's Compensation Act.**

The contractor shall accept the provisions of the Workman's Compensation Act of 1917, as amended, covering any work performed by him, his partners, associates, employees, or those of any subcontractor he may employ. He must also file, with the Engineer, any Certificate of Exemption from insurance from the Bureau of Workmen's Compensation of the Department of Labor and Industry.

**§ Section 101-62. Insurance.**

- A. The contractor shall not commence work until he has obtained all insurance required under this section from a responsible insurance company(s), authorized and qualified to do business under the laws of the Commonwealth of Pennsylvania. The insurance must be approved by the Township/Authority. The contractor shall not permit any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved.
- B. The contractor shall obtain, pay for, and maintain: Employers Liability; General Public Liability with contractual indemnity coverage; and Automobile Liability Insurance that will protect the contractor, any subcontractor, owner, the Township/Authority, and their agents from claims for damages for personal injury, accidental death, and property damage which may arise from operations under the contract. This includes coverage whether such operations are performed by himself, any subcontractor, or anyone directly employed by either of them. In the event the contractor is unable to obtain the aforesaid coverage in a single policy of insurance, he shall furnish a policy covering his liability and that of his subcontractors and, in addition, an owners protective policy with respect to the liability of the Township/Authority and their agents.
- C. The amount of such insurance shall, unless otherwise specified as a special term of a contract, be as follows:

General Liability

Bodily Injury	\$250,000/\$500,000
Property Damage	\$100,000/\$300,000

### Contractor's Protective Liability

Bodily Injury	\$250,000/\$500,000
Property Damage	\$100,000/\$300,000

### Automobile Liability (Owner, non-owned, and hired automobiles)

Bodily Injury	\$250,000/\$500,000
Property Damage	\$100,000

If there is a possibility of special hazards existing in the work contemplated, they shall be covered by rider(s) to the policy or policies, as required by the Township/Authority Engineer.

- D. The contractor, during the progress of the work, shall maintain Builders' Risk Fire and Extended Coverage Insurance. Such insurance shall cover: labor and materials connected to or adjacent to the property insured; materials in place or to be used as part of the permanent construction, including surplus material, shanties, protective fences, bridges, temporary structures, miscellaneous materials, and supplies incident to the work; and such scaffolding, staging, towers, forms, and equipment not owned or rented by the contractor. The cost of which is included in the cost of work. This insurance shall not cover any tools owned by mechanics, any tools, equipment, scaffolding, or staging, the capital value of which is not included in the cost of the work. Such insurance shall be in the names of the contractor, the Engineers, and the Township/Authority as their respective interests may appear. All such insurance policies shall be open to the inspection of the Township/Authority and their representatives at all times.
- E. Copies of the policies shall be provided with each executed copy of the contract. Renewal endorsements shall be delivered as necessary, for the duration of the contract.
- F. The risk of damage to the work required to be covered by the said insurance, is that of the contractor and his surety. Failure by the contractor to maintain such insurance, or failure to collect the proceeds thereof, in case a claim, shall in no way relieve the contractor from the responsibility of completing his contract.
- G. The contractor shall, upon executing the contract, deliver to the Township/Authority proper proof of the insurance required hereunder and under § Section 101-57. Indemnity. Certificates will be proof of Public Liability, Property Damage and Workmen's Compensation Insurance. Certificates shall include type, amount, class of operations, effective dates and date of expiration of policies. An original policy for Fire Insurance must be submitted.
- H. All policies and certificates must contain an endorsement stating the policy cannot be canceled or amended without first giving Township/Authority at least 10 days notice in writing.

### **§ Section 101-63. Contractor's understanding.**

It is understood and agreed the contractor has, by careful examination, satisfied himself as to the: nature and location of the work; conformation of the ground; character, quality and quantity of the materials to be encountered; character of equipment and facilities needed to accomplish the prosecution of the work; general and local conditions; and all other matters which can in any way affect the work under the contract. No verbal agreement or conversation with any officer, agent, or employee of the Township/Authority, either before or after the execution of the contract, shall affect or modify the terms or obligations herein contained.

### **§ Section 101-64. Surveys, lines, and grades.**

The contractor's Engineer will furnish all the surveys, plans, measurements (workmen's lines and benches excepted), and other information necessary to properly construct the contemplated improvements as to the lines, grades, and dimensions as specified and called for by the plan. The contractor shall provide reasonable opportunities and facilities for setting points and making measurements. He shall not proceed until he has made timely demand upon the contractor's Engineer for, and has received from him, such points and instructions as may be necessary as the work progresses. The work shall be done in strict conformity with such points and instructions. The contractor shall protect all stakes and reference points.

### **§ Section 101-65. Existing utilities and Pennsylvania One Call.**

- A. The existence and location of underground utilities, whether or not indicated on the plans, are not guaranteed and shall be investigated and verified in the field by the contractor before starting work. Excavation in the vicinity of existing structures and utilities shall be carefully done by hand. Special care must be used by the contractor to avoid interference or damage to any operating utilities or plants. Where there is any possibility of any interference or damage, the contractor shall make arrangements with officers or owners of the utilities concerning the precautions to be used during the performance of the work. All work will be prohibited if these preparations are not completed before construction begins.
- B. The contractor must adhere to the provisions of Act 38, as amended, enacted by the General Assembly of the Commonwealth of Pennsylvania and approved by the Governor on December 12, 1991. The Act specifies the responsibilities in regard to public health and safety during excavation and demolition operations in areas of underground utilities.
- C. In order to comply with Act 38, as amended, the contractor shall call 1-800-242-1776, a one number calling system in direct contact with many utilities within the Commonwealth of Pennsylvania.

### **§ Section 101-66. Working conditions.**

No night or Sunday work requiring the presence of the Township/Authority Engineer, or his representative, will be permitted except in cases of emergency, and then only with the written consent of the Engineer.

### **§ Section 101-67. Service of Notice by the Township/Authority.**

The service of any notice by the Township/Authority to the contractor shall be considered accomplished upon completion of any one of the following procedures:

- A. When delivered, in writing or by facsimile, to the person in charge of the office used by the contractor to conduct business;
- B. When delivered, in writing, to the contractor, or any of his authorized agents, in person;
- C. When delivered, in writing or by facsimile, to the contractor, or any of his agents, at the office used to conduct the business of the Contractor at or near the work site; or

- D. When deposited in the United States Mail, postpaid, and addressed to the party intended for such service at his/her office used for conducting the business of the contract.

**§ Section 101-68. Materials, appliances, and employees.**

- A. Unless otherwise stipulated, the contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary for the execution and completion of the work.
- B. Unless otherwise specified, all materials shall be new. Both workmanship and materials shall be of good quality. The contractor shall, if requested, furnish satisfactory evidence as to the kind and quality of materials, original composition, and manufacture of all materials used in the project.
- C. The contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ any unfit person or anyone not skilled in the work assigned to them.

**§ Section 101-69. Accidents.**

- A. The contractor shall provide, on site, such equipment and medical facilities necessary to provide first-aid service to anyone who may be injured in connection with the work.
- B. The contractor must promptly report in writing to the Township/Authority all accidents what so ever arising out of the performance of the work. This applies whether on, or adjacent to the site. The report shall include any injury causing death, personal injury, or property damages. The report must provide full details and statements of witnesses. In addition, if death, serious injury, or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Township/Authority and Engineer.
- C. If any claim is made against the contractor or any subcontractor because of an accident, the contractor shall promptly report the facts in writing to the Township/Authority and Engineer, providing the full details of the claim.

**§ Section 101-70. Preservation of monuments.**

All property line and survey monuments shall be properly tied into fixed points before being disturbed, and properly reset by the contractor upon completion of the work.

**§ Section 101-71. Private property.**

- A. Where sewer lines cross private property, all rights of way and entry will be acquired by the contractor. In opening trenches across private property, the contractor shall use every means to protect all property. This includes lawns, trees, shrubbery, fences, buildings, walls, roads, water courses, natural features, or any improvements which may exist. All damages resulting from the contractor's operation shall be repaired, without charge, to the satisfaction of the Township/ Authority. Upon the contractor's refusal to do so, the repairs will be done by the Township/ Authority at the expense of the contractor. The contractor shall confine his operations to the width of the right-of-way.

- B. Before any work is to be done on private property, the contractor will provide a video tape of the entire easement area. Approval of the scope by the Township Engineer is required before commencing any work.

**§ Section 101-72. Other Permits and regulations.**

- A. Permits and licenses, including ones not mentioned in this Ordinance, necessary for the completion of the work, such as blasting permits, trenching, etc., shall be secured and paid for by the contractor from the corresponding Federal, State, County, or Municipal authority.
- B. Any blasting within Sadsbury Township is to comply with Sadsbury Township Ordinance 1999-10, as amended.
- C. The contractor shall comply with the laws, ordinances, rules, and regulations pertaining to the work as drawn and specified. If the contractor observes the drawings and specifications are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the contract. If the contractor performs any work knowing it is contrary to such laws, ordinances, rules, and regulations, and without notice to the Engineer, he shall bear all costs arising therefrom.

**§ Section 101-73. Temporary provisions for public travel.**

- A. The contractor shall perform his work in a manner as to interfere, as little as possible, with the use of any roads or adjoining property. No excavation shall be left open or other obstructions allowed to remain any longer than is absolutely necessary. The contractor shall provide all safeguards and temporary passageways necessary for the convenience and protection of all persons using said highway by day or night.
- B. The contractor shall provide, place, and maintain all signs, sign mounts, flashers, steady burn lights, barricades, temporary lighting, and all other associated traffic maintenance devices in order to adequately protect the public from harm for the duration of the construction project.
- C. When permission for detouring traffic is granted, the contractor shall post signs and maintain all detour routes to the satisfaction of the corresponding authority. No State Highway shall be closed to traffic and no work performed on a State Highway without first obtaining approval for closing from PenDot. On a State Highway, all warning signs for construction and detouring must be in accordance with PenDot current standards.
- D. At no time, during construction, shall any materials, spills, rocks, or other debris impede the flow of traffic through the job site. Any debris that has entered the traffic lanes shall be immediately cleaned up and removed. The contractor shall make every effort to protect traffic, both pedestrian and vehicular, against any possible injury or damage.
- E. The contractor shall construct and maintain bridges over excavated areas as may be necessary, or as directed by the corresponding authority, and said bridges must have sufficient structural integrity to accommodate its purpose, whether vehicular and/or pedestrian traffic. The proposed bridge shall be approved by the corresponding authority.
- F. All fire hydrants, water valves, gas valves, fire alarm boxes, and mail boxes shall be left accessible for use.

- G. If the contractor should fail to provide the necessary safeguards, as specified, the corresponding authority may provide the same and charge the cost to the contractor.

**§ Section 101-74. Damage due to high water.**

The contractor shall be responsible for all damage done, to his work, by heavy rains or floods. He shall take all reasonable precautions to protect adjoining property, by building such temporary channels to carry off the stormwater as required.

**§ Section 101-75. Partially completed work.**

Partially completed work shall mean work which is in progress, such as trenching, pipe laying, and material in place.

**§ Section 101-76. Completed work.**

- A. Completed work is defined as work which is entirely done, including removal of all tools, equipment, excess material, rubbish and debris and the clearing of sidewalks, rights-of-way, and the restoration of street surfaces to original or better condition. The same applies for lines installed on private property.
- B. The Engineer permitting a full release of funds for completed work shall in no way relieve the contractor, or his representative, of repairing defective work which may not be detected until after the said release of funds.

**§ Section 101-77. Condemned work and materials.**

- A. The contractor shall promptly remove, from the premises, all materials condemned by the Engineer. This includes materials failing to conform to the contract, whether incorporated in the work or not, and the contractor shall promptly replace his work in accordance with the contract. He shall bear the expense of making good all work of other contractors damaged by such removal or replacement.
- B. Failure or neglect on the part of the Township/Authority Engineer to condemn or reject any inferior work or materials shall not be construed as an acceptance of such work or materials, should the same become evident at a later date, prior to delivery of completion certificate by the Township/Authority to the contractor.

**§ Section 101-78. Acceptance, final estimate, and payment.**

Upon the completion of the contract, including clean up, the contractor shall notify the Township/ Authority the work is ready for final inspection. If the contract is complete, the Engineer will notify the Township/Authority of satisfactory completion so that a Completion Certificate may be issued and outstanding funds released.

**§ Section 101-79. Cleaning up.**

The contractor shall, at all times, keep the project site free from accumulations of surplus material, rubbish, and waste materials resulting from his operation. The contractor shall also restore all lawns and shrubbery damaged in the course of construction.

### **§ Section 101-80. Sanitary facilities.**

The contractor shall provide toilet facilities for the use of all personnel working on the project. Facilities shall be of the portable type and shall be kept in a clean and sanitary condition.

### **§ Section 101-81. "Or Equal" Clause.**

- A. Any reference to an item of equipment or material by a specific manufacturer's brand or trade name is intended merely as a standard. Products or materials of other manufacturers, which in the opinion of the Engineer are the equal of that specified, considering quality, workmanship, economy of operation, and are suitable for the intended purpose, will be acceptable.
- B. The contractor shall not, under any circumstance, substitute an alternate manufacturer's product or material without prior written approval of the Township/Authority Engineer.

### **§ Section 101-82. Special Requirements.**

Should there be any conflict with the General or Special Conditions, the following requirements shall govern:

- A. Where reference is made to government specifications, or to those of well known organizations such as ASTM., AWWA., etc., the latest editions shall apply;
- B. The contractor will be required to maintain, at all times during construction, the flow of sewage in the existing sewerage systems;
- C. Connections to existing sewers shall be made providing a watertight installation. Where manholes are broken into for connections, they shall be restored to original condition using materials similar to those in the existing structures;
- D. Where sewers will be constructed within State Highway rights-of-way, the contractor will make necessary applications for permits to construct such sewers through the Township Board of Supervisors. It shall be, however, the responsibility of the contractor to construct the sewers in strict conformance with the requirements of the Township and PenDot;
- E. Where sewers are to be installed within the limits of streets, all removal and replacement of street paving and restoration of shoulders shall be in strict conformance with the requirements of Sadsbury Township and PenDot;
- F. Streets shall not be unnecessarily obstructed. The contractor shall take measures to keep the streets or roads open and safe for traffic after working hours;
- G. When sewer lines cross telephone, telegraph, electric, cable TV, gas, oil, or water lines, no excavation or pipe laying shall be done at those crossings without the presence of an authorized representative from the office of the corresponding authority, i.e. Bell Atlantic, AT&T, PECO Energy, CCA, etc., and their successors;
- H. 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 made available at all times. Sewer lines and other work shall be protected at

all times against damage from uplift due to high ground water levels;

- I. The contractor shall provide a competent and reliable person delegated to be readily available and have full authority to act in his behalf in case it is necessary to deal with an emergency situation arising during after working hours.
- J. The contractor shall provide a list of responsible parties to contact on a normal or emergency basis. The list shall include telephone, fax, pager, and cell phone numbers.

## Article VIII GENERAL SPECIFICATIONS

### **§ Section 101-83. Standards.**

Municipal, Federal, and State Specifications and Standards will govern in any situation not covered in the contract documents.

### **§ Section 101-84. Traffic Control.**

- A. The contractor shall provide and maintain access to and from all properties along the line of the work. He shall also provide temporary by-passes and bridges and maintain them in a safe and usable condition whenever, in the opinion of the Engineer, detouring of traffic to parallel routes cannot be done without hardship or excessive increase in travel by the public.
- B. Where single lane by-passes are provided, the contractor shall furnish signal men to control traffic operations and minimize delays.
- C. Where directed by the Township/Authority Engineer, the contractor shall perform excavating, paving, and other operations on one-half of the road at a time to allow for movement of traffic.

### **§ Section 101-85. Detours.**

The contractor shall set up and maintain all necessary detours to the satisfaction of the Engineer and PenDot. He shall supply and erect all necessary signs along the routes approved by the Engineer and PenDot. He shall notify police, fire, school, and Sadsbury Township officials, as well as adjacent municipalities. All proposed detours shall be marked clearly on a map and submitted to the Engineer two weeks in advance of the time the detour will go into effect. The Engineer will submit the plans to PenDot for approval.

### **§ Section 101-86. Safeguards.**

- A. The contractor shall provide, erect, and maintain adequate barricades, warning signs and lights at all excavations, closures, detours, and points of danger.
- B. Dust control. It will be the responsibility of the contractor to control dust during the project by sweeping and/or the proper use of chemicals such as Calcium Chloride.
- C. Maintenance of public ways. Streets, cross walks, and sidewalks shall be kept broom clean, clear, and free for the passage of vehicles or pedestrians, unless otherwise authorized by the Engineer. Additional passageways may be required where deemed necessary.

- D. All applicable regulations of the Occupational Safety and Health Act (OSHA.) shall be complied with during the performance of the contract, including the Provisions of Confined Space Entry. Safety provisions shall be enforced by O.S.H.A. as required by law and not by the Township/Authority or its representatives.
- E. The safety provisions of 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 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.
- F. Special attention is drawn to the regulations of the Pennsylvania Department of Labor and Industry relating to trenches and excavations, tunnel construction, equipment, materials, labor, safety, sanitation, and other regulations of which the contractor shall be fully informed and 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 supervision or direction by the Township/Authority or Engineer.

#### **§ Section 101-87. Certification of materials.**

- A. The contractor shall forward to the Engineer a certification for each material used on the site. This certification shall state the materials used on the site conform with the specifications set forth herein and shall be signed by the person having responsible charge of the plant or company producing such materials.
- B. All material used in sewer construction not herein before specified, or specified on the plans, shall conform to the Material Specifications of the A.S.T.M. for that material.

#### **§ Section 101-88. Inspectors duties.**

- A. Duly authorized inspectors, performing their duties under the direction of the Engineer, may be assigned to all or any part of the work. They shall be authorized to inspect the result of work and materials furnished. If any dispute arises as to the materials furnished, or the acceptability of the final work, they shall have the authority to reject materials and/or work until the issue can be decided by the Engineer. All fees incurred by the inspectors and Engineer are paid by the contractor to the Township/Authority.
- B. The contractor shall furnish the inspector with records, as required, of the materials delivered or materials incorporated in the work.
- C. All pipe laying, concrete pouring, and masonry construction shall be done only in the presence of an inspector representing the Engineer unless specifically waived by the Engineer.

#### **§ Section 101-89. Erosion and pollution control regulations.**

- A. The contractor shall schedule and conduct his operations to minimize erosion of soils and prevent silting and muddying of streams, rivers, irrigation systems, and impoundment.
- B. Pollutants, such as fuels, lubricants, bitumen, raw sewage, and other harmful materials shall

not be discharged into or near rivers, streams and impoundment or into natural or man-made channels leading thereto. Wash water or waste from concrete mixing operations shall not be allowed to enter live streams.

- C. 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.
- D. All waterways shall be cleared as soon as practicable of false work, piling, debris, or other obstructions installed during construction operations and not a part of the finished work.
- E. Frequent fording of live streams will not be permitted.
- F. When it becomes necessary, the Engineer will inform the contractor of unsatisfactory construction procedures and operations. If the unsatisfactory construction procedures and operations are not corrected promptly, the Township/Authority may suspend the performance of other construction until the conditions have been corrected.
- G. All provisions of the erosion control plan for this project shall be followed. Erosion and sedimentation control practices shall be carried out in strict accordance with the construction drawings and the Erosion and Sediment Control Program Narrative Report. In the event no narrative report has been established, and notes concerning same are not specifically addressed on the construction drawings guidelines, the mitigation of erosion and sediment collection shall be carried out in accordance with the guidelines of "Soil Erosion and Sedimentation Control Manual" prepared by the Pennsylvania Department of Environmental Resources dated April 1991, as amended. Also, any measures undertaken must meet the current practices of the Chester County Conservation District and are subject to the approval of the Engineer.
- H. The contractor must acquire a grading permit and conform to all the regulations set forth in Sadsbury Township Ordinance 1999-07 Grading Ordinance.
- I. The contractor shall also conform to the following Erosion and Sedimentation Control Practices:
  - 1. Reduce by the greatest extent practicable the area and duration of exposure of readily erodible soils;
  - 2. Protect the soils by use of temporary vegetation, seeding, and mulch, or by accelerating the establishment of permanent vegetation. Complete and protect segments of work as rapidly as is consistent with construction schedules;
  - 3. Retard the rate of runoff from the construction site and control disposal of runoff;
  - 4. Trap sediment resulting from construction in temporary or permanent silt holding basins. This includes pump discharges resulting from dewatering operations;
  - 5. Sprinkle or apply dust suppressors or otherwise keep dust within tolerable limits on haul roads and at the site;
  - 6. Use temporary bridges or culverts where fording of streams is objectionable. Borrow areas should be at a location where pollution from the operation can be minimized. Locations should be avoided where pollution would be inevitable;

7. Should construction operations be suspended for any appreciable length of time, temporary measures for the control of erosion must be utilized;
8. Provision be made for protection against discharge of pollutants such as chemicals, fuel, lubricants, sewage, etc., into the stream;
9. All operations shall be conducted in such a manner to minimize turbidity in the stream at and below the site of the structure; and
10. The contractor shall, at all times, keep the premises free from accumulation of waste material or rubbish caused by his employees or work.

## **§ Section 101-90. Excavation and backfilling.**

### **A. General.**

1. The contractor shall furnish all labor, tools, materials, and equipment necessary to accomplish all work including, but not limited to: the clearing and grubbing of areas of work; removal of existing paving; excavation of trenches to the depth shown on plans; support of all utility lines where the proposed sewer line crosses; and the maintenance of all excavated areas and trenches. This includes: sheeting; shoring; the removal of all water; and the disposal of excess fill. Also, it includes incidental work necessary to complete the project in a first class workmanlike manner as shown on the drawings and/or as specified and directed by the Township/Authority.
2. Excavation shall include all materials regardless of character, excluding rock excavation as herein defined. Excavation shall be an open cut, unless written permission is granted by the Township/Authority to excavate by other methods or other methods are specified on the construction drawings. The Township/Authority shall be empowered to require that hard excavation be employed by the contractor where deemed necessary for proper construction.
3. All openings to be made within a State Highway shall be made in accordance with the most recent standards and specifications prescribed by PenDot, including any provisions established as conditions of approval for a PenDot Highway Occupancy Permit.
4. All openings to be made in Township roads shall be made in accordance with the permit and regulations issued by Sadsbury Township.
5. Before beginning road trenching, the contractor shall clear the work site by removing all underbrush or any other obstructions to the work. See item 7 concerning tree removal.
6. In general, road trenches may be excavated and backfilled either by machinery or by hand. Provided, however, the contractor shall use hand excavation where necessary to protect existing structures, utilities, and private or public properties. And provided, further, that backfilling shall be done by hand to the extent hereinafter specified.
7. If construction is on a right of way other than in a road or street, no cutting, removal of trees, or cutting of main tree roots may be done unless permission has been obtained from the Township/Authority. All work must be done in such a manner that the damage to the trees and other plantings is kept to a minimum. Any damage to trees, such as nicks, gouges, or

broken limbs, shall be trimmed and painted with tree wound paint. Any tree damaged beyond repair shall be replaced at no cost to the Township/Authority and/or owner of the property. Maximum diameter of trees used for replacement shall be 4 inches. The above restrictions also apply to trees or plants adjacent to a street, road, or highway right of way.

8. All the requirements of Chapter 129, Articles XIII and XIV, Sections 129-60 through Section 129-73 of the Sadsbury Township Code (Overlay Districts) must be complied with.

## **§ Section 101-91. Trenching.**

### **A. Lengths of Trenches**

The Township/Authority Engineer shall have the right to limit the length of trench to be left opened in advance of work. The Township/Authority may at anytime be empowered to require the contractor to backfill open trenches where pipe has yet to be laid if such trench is being left opened for an unreasonable period of time and/or only overnight, if it is deemed necessary to be in the best interest of the health, safety, and welfare of the public. Such backfilling shall be performed by the contractor even if the contractor must stop other work to backfill. The contractor shall not again open said trench until he is prepared to complete the operation. If the contractor refuses to backfill, the Township/ Authority shall be authorized to do so and expenditures for said work shall be the sole responsibility of the contractor. Excavation of all trenches, unless otherwise authorized, shall not exceed twenty (20) feet in advance of pipe laying.

### **B. Width and Depth of Trenches.**

1. The trenches shall be at a width and depth shown on the construction drawings, and specified or as directed by the Engineer in order to provide for the intended grade. Sides of trenches shall be kept as vertical as possible. The width of trench shall be taken as the nominal diameter of the pipe at the bell plus an additional one (1) foot on either side. Where sheeting is used this trench width shall be taken as the measured distance between interior faces of sheeting. In no case shall stringers and walling strips be placed in such a way as to interfere with the proper compaction of earth or granular material around the pipe.
2. Where the proposed foundation for the pipe, as determined by the Engineer, is to be situated on a suitable earth material for bedding purposes, the contractor shall excavate the trench along the grade to receive the pipe with the bottom around the bell being excavated in such a way as to insure the pipe's bedding throughout the pipe's length and to provide room for properly making the joint connections. This may be done without the use of a granular or coarse aggregate foundation, except that when PVC pipe is being used a six (6) inch minimum coarse aggregate foundation shall be provided for its entire length.
3. Where trenches have been excavated below proper grade (over excavated) the contractor shall be required to bring the bedding to its proper grade by the use of a coarse aggregate foundation unless other suitable material is found to be acceptable by the Engineer. Trenches that have been over-excavated and subsequently filled to proper grade with suitable material shall be properly and thoroughly compacted prior to pipe installation. The adequacy of the tamped trench to receive the pipe will be determined by the Engineer.

- C. Relocation of guide and alignment of trenches. The Township/Authority reserves the right to change the alignment and grade of the proposed pipe installation as shown on the construction drawings. These changes may be due to the presence of obstructions or other conditions making

the realignment and/or grade adjustment necessary, more desirable, or advantageous to the Township/Authority. Such changes will not entitle the contractor to additional compensation over the agreed cost for installation. Also the contractor shall not be entitled to claim damages from the Township/Authority as a result of these changes, even if these changes require the contractor to abandon trenches already excavated. These excavated trenches, however, shall be backfilled at the contractor's expense.

D. Trench foundation preparation.

Irregularities and cavities occurring in earth or rock excavation, at trench bottoms or tunnels, shall be filled to the required elevation with clean earth, or other approved material and firmly compacted before the installation of pipe lines. It should be noted, however, that if in the opinion of the Engineer, the proper grade for pipe installation has been encountered and the soil condition composed of unsuitable foundation material, the bottom of the trench shall be excavated to an additional depth. This additional depth shall be filled with gravel and/or crushed aggregate placed and properly compacted to the proposed grade as directed by the Engineer.

E. Clearing, grubbing, and storage of materials.

1. The contractor shall clear and grub the surface over the proposed trench line in accordance to Section 200 of the most recent revisions of the PenDot Specifications. Curbs, sidewalks, gutters, flagstones, and paving material removed from trenches shall be stored at locations designated by the Engineer. Any curbs, sidewalks, gutters, flagstones, paving material, or suitable trench backfill that become damaged or lost through the careless removal, wasteful storage, neglect, disposal, or use shall be the responsibility of the contractor.
2. The contractor shall be responsible for permanently restoring, repaving, and replacing any and all areas disturbed as a result of excavating trenches for a greater width than is necessary, excavation outside the limits of work, or disturbing areas through negligence.

F. Trenching Machines

Trenching machines may be used, but the Contractor will be held responsible for all damages to private property, State, Federal, or Municipal highways, or any overhead or underground structures.

**§ Section 101-92. Backfilling of trenches.**

- A. Backfilling shall be done as promptly as is consistent with non-injury to the pipe joints, but no backfilling shall be done before the Engineer gives permission.
- B. Backfilling shall be done in layers of 6 inches in depth and each layer shall be thoroughly tamped by a vibrating compactor to optimum density. For a depth of not less than two feet above the top of the pipe, fine earth or sand, free from stones, shall be placed by hand. Tamping at joints shall be done by hand and with great care, so joints will not be injured.
- C. Backfill materials consisting of 2B aggregate shall be placed around the pipe. Sufficient material shall be worked under the haunch of the pipe to provide adequate side support. Caution shall be taken to prevent movement of the pipe during placing of the material under the pipe haunch. The depth of the initial backfill shall be to no less than 4 inches above the top of the pipe. Compaction shall be done carefully to prevent crushing or distorting the pipe.

- D. The remainder of backfill material shall be placed, moistened if necessary, and compacted with gasoline driven compactor in suitable layers according to equipment used.
- E. Where specified by the Engineer and in all State Highways, trenches shall be backfilled with PenDot Specification 2 RC material which conforms to Section 703, Publication 408 of the Department. Material shall be placed in suitable layers and compacted to optimum density. Trenches shall be backfilled with this material from a point 12 inches above the top of the barrel of the pipe to the bottom of the paving section to be installed. Compacting of backfill in State Highways by puddling or jetting will not be permitted.
- F. The contractor is advised the use of unsuitable material for backfill of trenches will not be permitted, and borrow material will be required to provide stability and safe conditions for loading on the sewer pipes.
- G. The best of materials excavated shall be used in backfilling in a manner approved by the Engineer. Frozen material shall not be used for backfilling. Selected earth, sand, or gravel shall be provided in rock trenches and used as backfill in the manner herein described, to a height of 2 feet above the top of the sewer. The balance of the backfill for the trench shall be, in all cases, good earth, sand, or gravel containing stones not exceeding 6 inches in dimension, but not exceeding 20% by proportion of backfill volume.
- H. Backfilling or tamping with trenching machines is prohibited.
- I. Upon completion of backfilling, the streets or property shall be cleaned, surplus material removed, and the surface restored to the condition in which it was before ground was broken. All materials left in public highways shall become the property of the contractor, and shall promptly be removed by same.
- J. Where traffic conditions warrant, or work is to be stopped for an extended period, the entire trench shall be backfilled to permit traffic to pass. Backfilling of the entire trench will not be required for an overnight work stoppage except in isolated instances for safety.
- K. Irrespective of location of sewer construction, within public or private rights-of-way, backfilling shall be accomplished with an equal degree of compaction as specified above.
- L. The contractor shall backfill all excavations as rapidly as practicable, following the inspection and approval of work by the Township/Authority.
- M. No part of a pipe line or other structure needing tested, located, or measured, shall be filled until required tests and measurements have been made by the Township/Authority. Only then will permission be given to backfill. Any backfilling done without authorization shall be uncovered by the contractor.
- N. No ashes, putrescible refuse, large stones, or other material of an unsatisfactory character shall be used in backfilling. All suitable excess material from trenches and other excavations on the contract shall be used for backfill.
- O. In the event additional material is needed, the contractor shall obtain borrow material from approved sources. All borrowed material shall be of satisfactory quality for the required purposes. In certain locations, grading and filling of adjacent ground may be required by the Township/Authority.

- P. The space between pipe and sides of trench shall be backfilled by hand and thoroughly tamped with a light tamper in layers not to exceed four (4) inches in thickness to a depth of at least one (1) foot above top of pipe.
- Q. After completion of backfill, all material not used therein, shall be removed and disposed of by the contractor in such a manner and designation approved by the Township/Authority. All roads, sidewalks, and other places on line of work shall be left free, clean, and in good order.
- R. All removal and cleaning-up shall be the responsibility of the contractor. If he fails to do such work after receipt of notice, the work can be performed by the Township/Authority and the cost charged to the contractor.
- S. The contractor shall maintain all backfilled excavations in proper conditions as specified. All depressions appearing in backfilling excavations shall be promptly repaired. If he fails to make repairs within forty eight (48) hours after receipt of written notice from the Township/Authority, the same may backfill said depression and charge its cost to the contractor. In an emergency, the Township/Authority take action on any dangerous depression without giving previous notice to the contractor and charge the cost to the contractor.
- T. The contractor shall be required to compact all backfill materials to a minimum of 95% of the materials maximum dry density as determined by A.S.T.M. D-698-64T (Standard Proctor).
- U. During or after backfill operations, the Township/Authority may order the contractor to take soil compactions tests in conformance with A.S.T.M. Standard Procedures or other available methods. If determined by the Authority that any lift does not meet 95% of the maximum dry density, the contractor shall be required to dig test holes, as directed by the Township/Authority at various levels, throughout the backfill, at the contractors expense, for additional testing. If the additional tests indicate unsatisfactory compaction the contractor shall remove all unsatisfactory backfill and re-compact same to the required standards at their expense.

**§ Section 101-93. Temporary paving.**

- A. Temporary paving on Sadsbury Township roads shall consist of two inches of cold patch. On State roads, temporary paving shall conform to PenDot Form M948 B which states, "Temporary restoration shall consist of a minimum of eight (8) inch stone base with a coat of two (2) inch bituminous material, and shall be kept in place a minimum of ninety (90) days. Temporary paving on trenches in State and Township roads shall be maintained by the contractor until final paving is installed. The top surface of the temporary paving shall be flush with the surface of the existing paving. Any special conditions contained in the PenDot permit for the project will take precedence.
- B. Where the sewer is installed along or across a road shoulder, the top 18 inches will be 2RC material which shall be laid and compacted as part of the trench backfill. This restoration shall extend a minimum of 12 inches on either side of the trench. If the length of trench exceeds 50 feet, the shoulder must be shot with 30 gal. per square yard of RT-6C bituminous material. In the event of settlement, more stone will be added to bring the ditch to the level of the surrounding shoulder.
- C. The contractor shall be responsible for the maintenance of all ditches. In the event of settlement outside of paved areas, he shall promptly fill the ditch. In the event of settlement within paved areas, the contractor shall promptly fill the ditch to the level of the paved surface with

temporary paving.

- D. The contractor shall have men available on weekends and holidays in the event that any temporary paving settles sufficiently to make travel on the roads hazardous. The contractor will be required to continuously maintain all temporary paving, without compensation, until it is replaced by the permanent paving. All unpaved areas or streets shall be regraded as soon as trenches are backfilled.

### **§ Section 101-94. Excavation.**

A. Excavated material.

Excavated material shall be so placed as not to unreasonably interfere with travel on the streets and driveways by the occupants of adjoining property or with access to fire hydrants. Surface loam, sod, etc., shall be kept separate from the remainder of the excavated material and replaced in its original position after backfilling of the trench. All surplus excavation not disposed of as stated above, shall be removed from the site of the work by the contractor, but none shall be deposited on private property, unless written consent of the owner(s) has been filed with the Engineer. In business districts, important thoroughfares, narrow streets, or in limited working areas, material excavated from trenches may be required to be removed from the street, as soon as excavated, to temporary storage areas or used as backfill within the trench excavation. When it is necessary to haul soft or wet materials over the streets, the contractor shall provide suitable tight vehicles to prevent spillage.

B. Removal of water from excavation.

The contractor is responsible for keeping all excavations free of water during the construction process at their sole expense. The contractor shall at all times have ample equipment and means available on site by which they may de-water the excavated areas or trenches. The equipment and means shall include, but are not limited to, pumps, power source, labor, and other tools. Well points are an acceptable means by which dewatering may be propagated and shall be utilized wherever necessary in order to maintain dry conditions. Any methods proposed by the contractor as a means to de-water excavated areas are subject to the approval of the Engineer.

C. Condition of Excavation

1. The contractor shall be solely responsible for the conditions of all his/her excavations including the maintenance thereof. Any slides or cave-ins shall be promptly removed.
  2. Regardless of whether or not the use of bracing or sheeting and shoring has been mandated by the Township/Authority, the contractor shall be solely responsible for the condition of the excavations. Failure of the Township/Authority to give direction concerning the size of timer sections, sheet piling, and/or the methods of placement of piling, sheeting, bracing, and shoring shall not relieve the contractor of any responsibility for the condition of the excavation. Any delay requiring an excavation to be open longer than usual shall not relieve the contractor from his obligation to properly and adequately protect the excavation from slides, cave-ins, or slipping.
- D. Test pits, ordered in advance by the Township/Authority, shall be made by the contractor along the line and site of work in order to determine the composition of subsurface materials and/or the exact location of utility lines.

- E. Miscellaneous Excavation The contractor shall do any excavating work as may be necessary as directed by the Township/Authority. All such excavation shall be subject to the same conditions and requirements specified for trench excavation.

**§ Section 101-95. Rock excavation and blasting.**

- A. Rock shall be considered any material which requires drilling, blasting, wedging, or any means over and above direct removal by large power shovel and/or simple hard tools.
- B. Where blasting is necessary, and only after receiving a permit, it shall be performed by an experienced and licensed blaster. All blasts shall be carried out in strict accordance with the laws and regulations of the State, County, and Federal agencies. All blasting must comply with Ordinance 1999-10, as amended, of Sadsbury Township. No storage of explosives is permitted in Sadsbury Township.

**§ Section 101-96. Tunneling.**

- A. Only when permission is granted by the Township/Authority shall tunneling operations be used as a method for pipe installation.
- B. If tunneling operations are approved, sufficient openings shall be provided for the joining of pipe sections, placement of sleeves, and proper backfilling and compaction around the pipe or pipe structure. Tunnels shall use timber or steel sheeting and shall be constructed only by approved methods of the Township/Authority.

**§ Section 101-97. Sheeting and shoring.**

A. General

The contractor shall support the sides and ends of all excavation wherever necessary with braces, sheeting, shores, or stringers of the quality and character hereinafter specified. All timbering, under pinning, or sheet piling shall be put in place by men skilled in such work and shall be arranged allowing it to be withdrawn, as backfilling proceeds, without injury to the structures or property. If, in the opinion of the Engineer, the timbering material is not of proper quality or sufficient size, or not properly placed, the contractor shall, upon notice, procure and place said timbering in a satisfactory manner. If contractor fails to do so, the work may be ordered stopped until the contractor is in compliance.

B. Materials

All timber used for sheeting, bracing, shoring, forming, or in foundations, shall be of approved quality and required dimension. Except where allowable for temporary work, it shall be sound, straight, and free from cracks, shakes, and large or loose knots. Where conditions require it, sheeting shall be tongued and grooved, grooved and splined, or steel sheet piling.

C. Sheeting Left in Place

1. All timbering shall be withdrawn as the backfilling is being done except where, and to such extent as the Engineer shall order, in writing, that said timbering be left in place. The contractor shall cut off any sheeting, wherever ordered, and shall remove the material without compensation. However, said sheeting shall be cut off at least twelve (12) inches below

finished grade.

2. Wherever necessary in quick sand, soft ground, or for the protection of any structure or property, sheeting shall be driven, at the contractor's expense, to such a depth below the bottom of the trench required by the Engineer.

### **§ Section 101-98. Watertight construction of pipe.**

- A. Every precaution must be taken to obtain water tight construction of all joints in pipe. The same precautions must be taken for all connections with manholes and "Y" or "T" branches, extensions of laterals, and construction of drop connections.
- B. All ground water, from any cause whatsoever, shall be pumped or bailed out so that the trench shall be dry during pipe laying and backfilling.
- C. All water pumped from the trenches shall be disposed of in a manner satisfactory to the Engineer.
- D. When standard de-watering methods cannot maintain proper dry trench conditions, the contractor shall lower the water table below the trench bottom by well points and pumping, and provide pumps of sufficient capacity for de-watering excavations.

### **§ Section 101-99. Sequence of Construction.**

- A. Manholes and sewer mains shall be constructed and completed in sequence with service connections being constructed.
- B. Temporary paving in public roads shall be placed immediately after completion of trench backfill, and permanent paving shall be placed in accordance with State, Federal, and local regulations. All street surfaces shall be cleaned.
- C. Failure of the contractor to comply with these requirements shall be sufficient reason for the Township/Authority to stop all other work, pending compliance with these requirements.

### **§ Section 101-100. Pipe Installation.**

#### **A. General**

1. After the trench has been brought to the specified grade, the pipe and specials shall be laid. All pipe shall be laid with the bell or couplings upgrade. Pipe laying shall be done only in presence of an inspector and the contractor shall give ample notice to the Engineer before laying pipe, so an inspection can be performed. All pipe, before being lowered into the trench, shall be inspected and both ends shall be cleaned. The contractor shall not have more than 20 feet of trench open at any one time.
2. Pipes shall be thoroughly cleaned before they are laid and shall be kept clean until acceptance of completed work. Open ends shall be provided with a stopper carefully fitted so as to keep dirt and other substances from entering the main. A stopper shall be kept in the end of the line when work is not in progress.

3. Pipe shall be laid so the interior bore will conform accurately to the grades and alignment indicated by the construction drawings or as directed by the Engineer.
4. 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 in place. Coupling or bell holes shall be dug sufficiently large to insure a proper joint. All joints shall be made in strict conformance with the manufacturer's recommendation.
5. The excavation shall be kept free from water and no joints shall be made under water. Water shall not be allowed to rise in an 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 the established specifications.
6. No pipe shall be placed upon a foundation into which frost has penetrated, or at any time when the Township/Authority shall deem there is a danger of the 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 at the depths and locations directed by the Engineer.
7. The Lateral Pipe shall be installed in a trench separate from any water service and the lines shall have a minimum horizontal separation of 10 feet. The pipe shall be of cast iron or PVC SDR-35 where it connects to the main and laid on a grade of 1/4" per ft. In special cases 1/8" per ft. will be allowed.
8. Only in special circumstances, as determined by the Engineer, may the lateral be installed in the same trench as the water service. If permitted, in writing, the two lines shall be separated by a bench of undisturbed earth. Water and sewer lines shall have a horizontal separation of no less than three (3) feet. The top of the sewer shall be at least 18 inches below the invert of the water main. The sewer pipe material shall be cast iron or PVC SDR-35 at the point of connection and shall be installed with approved joints being water-tight and root proof.
9. If conditions prevent the above vertical separation, or when the water service must cross beneath a lateral, the bottom of the lateral shall be at least eighteen (18) inches above the top of the water service line and the lateral shall be of cast iron pressure pipe with push-on or mechanical joints, at least ten (10) feet on either side of the crossing.
10. When a lateral is installed on filled or unstable ground, it shall be push-on or mechanical joint cast iron pressure pipe.

#### B. Line and Grade.

1. Care shall be taken to lay the pipe to true lines and grades as given by the contractor's Engineer or as mandated by the Township/Authority. All pipe shall be laid, to line and grade, using the laser beam method, or the double string method. Laser beam equipment shall be of the type that shines a beam through the pipe so that the grade and line may be checked easily. Correctness of the laser beam setting shall be verified at each manhole and in the middle of each run of pipe.
2. The grade, as shown on the profile, is the inside bottom of the pipe and to which the work must conform. All pipe shall be laid true to line and grade with bells, or couplings, on up grade. Under no conditions shall pipe be laid in water or on subgrade containing frost,

or when trench conditions are unsuitable for such work. The contractor's Engineer will set all stakes for lines and grades. The contractor must maintain and keep the stakes uncovered so they can be examined at any time. Stakes shall be placed at a minimum of every 50 feet, and the contractor shall be required to check the line and grade in order to insure accuracy. Lesser intervals shall be used only if permitted by the Township/Authority Engineer.

#### C. Pipe Bedding

1. In all trenches, whether earth or rock, special bedding shall be provided for all pipe foundations. All pipe shall be laid with a smooth, uniform invert.
2. All pipe barrels and bells shall be bedded uniformly on special bedding. This bedding shall consist of 2B (#57) stone which conforms to Section 7.03.2, Publication 408 of PenDot, including latest revisions, extending a minimum of 6 inches over the top of the pipe.
3. For pipe in wet areas a minimum of 6" of 2B (#57) stone which conforms to Section 7.03.2, Publication 408 of PenDot shall be required for bedding under the pipe. "Clay Dams" made with clay soil, may be required to prevent constant water flow through the under drain. These dams shall be a minimum of two feet thick and shall fill the entire trench cross section to a point a maximum of two feet above the top of the pipe.
4. Depth of this special bedding shall be such that no water will reach the bottom of the pipe until backfilling is completed.

#### D. Pipe Mouth Stoppered

1. During construction, the mouth of the completed sewer shall always be kept properly closed when pipe laying is not actually in progress. An expanding rubber plug is used to prevent the entrance of any water, earth, stones, or other debris. Employees shall not walk on, over, or otherwise disturb the finished lines. The contractor shall take any and all other measures to keep the sewer clean and free from deposits and protect the lines from injury until final inspection and acceptance by the Township/Authority Engineer.

E. Damage to sewer. If the sewer is damaged from any cause, or becomes either partly or completely filled with dirt, stones, sand, or other debris, the contractor shall make all necessary repairs and remove such material to the satisfaction of the Engineer.

F. Recommendations of pipe manufacture. Recommendations of manufacturer must be followed in laying pipe with special joints.

#### G. Laterals and fittings.

1. As shown on the plans, or as directed by the Engineer, the contractor shall lay 4 inch to 6 inch PVC pipe to the road right-of-way line. If utilities run parallel to the road, laterals shall be extended at least 24 inches beyond the utility. The contractor shall make the connections to the sewer by means of wye or tee branch fittings. Cast Iron saddles may be used with the permission of the Engineer and installed per the instruction of the pipe or saddle manufacturer. In private rights-of-way, pipe will be installed to the edge of the right-of-way.
2. The lateral pipe shall be property capped with a cap made especially for the size and type of pipe in use, and shall be properly blocked to permit air testing. All laterals shall be

physically marked by a 2 x 4 inch board extending plumb from the capped end of the lateral to 18 inches above the ground surface. The 2 x 4 shall be painted red on top. Tunneling shall be used only with the Engineer's permission, and the lateral shall be marked with an 18-inch metal rod driven directly over the capped end. The capped end shall be blocked securely to prevent the cap from blowing off during the air testing. Upon completion of the work the contractor shall supply the Township/Authority with an as built plan showing the location and depth of all lateral stubs.

3. All laterals shall be laid on a minimum 1/4 inch per foot grade unless approved, in writing, by the Engineer.

#### H. Concrete cradle.

1. Where directed by the Engineer or as shown on the plans, the contractor shall carry the excavation 6 inches deeper than the bottom of the pipe bell, and lay the pipe in 3000# mix high, early strength, concrete. Care shall be taken in laying the pipe in the concrete so as to secure an even bearing.
2. Concrete cradle shall be considered a 3000# mix high, early strength, concrete of a minimum thickness of 6 inches placed around the lower 2/3 of the pipe. See detail drawing.
3. All concrete in this section shall be certified, central plant mix.

#### I. Concrete encasement.

1. Where directed by the Engineer, or as shown on the plans, the contractor shall carry the excavation 6 inches deeper than the bottom of the pipe bell, and lay the pipe in 3000 # mix high, early strength, concrete. Care shall be taken in laying the pipe in the concrete so as to secure an even bearing.
2. Pipe encased in concrete shall be considered as encased entirely in 3000# mix high, early strength, concrete of a minimum thickness of 6 inches. See detail drawing.
3. All concrete in this section shall be certified central plant mix.

- J. Infiltration. The contractor shall clean all debris from pipes and repair all apparent leakage. After which, the infiltration of water from any manhole to manhole section of the contract shall not exceed 100 gallons per inch of inside pipe diameter per mile of sewer per 24 hours where ground water is encountered above the sewer line.

#### K. Air testing.

1. In addition to infiltration testing, the Township/Authority will require the performance of Line Acceptance Testing using low pressure air. The test shall be performed at the expense and with the full cooperation of the contractor. It shall be performed according to stated procedures and in the presence of the Township/Authority Engineer.
2. Equipment used shall meet the following minimum requirements:
  - a. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected;
  - b. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking;

- c. All air used shall pass through a single control panel;
- d. Three individual hoses shall be used for the following corrections:
  - i. From control panel to pneumatic plugs for inflation;
  - ii. From control panel to sealed line for introducing the low pressure air;
  - iii. From sealed line to control panel for continually monitoring the air pressure rise in the sealed line.

3. Procedures: All pneumatic plugs shall be seal tested before being used in the actual test. One length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be introduced into the plugs to 25 psi. The sealed pipe shall be pressurized to 5 psi. The plugs shall hold against this pressure without bracing and without movement of the plugs out of the pipe. After a manhole to manhole reach of pipe has been completed, cleaned, and the pneumatic plugs are checked, the plugs shall be placed in the line at each manhole and inflated to 25 psi. Low pressure air shall be introduced into sealed line until the internal air pressure reaches 4 psig greater than the average back pressure of any ground water that may be over the pipe. At least two minutes shall be allowed for the air pressure to stabilize. After the stabilization period (4.0 psig minimum pressure in pipe), the air hose from the control panel to the air supply shall be disconnected. The portion of line being tested shall be termed "Acceptable" if that portion does not lose air at a rate greater than 0.02 cfm per square foot of internal pipe surface when tested at an average pressure of psig greater than the back pressure exerted by ground water that may be over the invert of the pipe at the time of the test.

4. The above requirements shall be accomplished by performing the test as follows: The time required in minutes for the pressure to decrease from 4.0 to 3.5 psig (greater than the average back pressure of any ground water that may be over the pipe) shall not be less than the time shown for the given diameters in the following table:

Pipe Diameter In Inches	Minutes
4	2.0
6	3.0
8	4.0
10	5.0
12	5.5
15	7.5
18	8.5
21	10.0

5. In areas where ground water exists, the contractor shall install a 1/2" diameter capped pipe nipple, approximately 10 inches long, through the manhole wall on top of one of the sewer lines entering the manhole. This shall be done at the time the sewer line is installed. Immediately prior to the performance of the line acceptance test, the ground water shall be determined by removing the pipe cap, blowing air through the pipe nipple into the ground so as to clear it, and then connecting a clear plastic tube to the pipe nipple. The hose shall be held vertically and a measurement of the height in feet of water over the invert of the pipe shall be taken after the water has stopped rising in this plastic tube. The height, in feet,

shall be divided by 2.3 to establish the pounds of pressure that will be added to all readings. (For example, if the height of water is 11 1/2 feet, then the added pressure will be 5 psig. This increases the 4.0 psig to 9.0 psig, and the 3.5 psig to 8.5 psig. The allowable drop of 1/2 pound and the timing remain the same.)

6. If the installation fails to meet this requirement, the contractor shall determine, at his own expense, the source of leakage. He shall then repair or replace all defective materials and/or workmanship.

L. Final inspection.

1. Each section of installed sewer will be visually inspected by the Engineer prior to final testing. The pipe shall: be true to both line and grade; contain no breaks; show no leaks; show neither obstructions or the projection of connecting pipes into the main pipe and; contain no debris or other deposits which shall in any way reduce the full cross section area of the pipe.
2. Any section of pipe not complying with the inspection criteria, as determined by the Engineer, shall be promptly corrected, replaced, or repaired by the contractor at his own expense. Methods employed for the correction shall be approved by the Engineer.
3. In addition, deflectometer testing shall be required for sections of PVC or Polyethylene pipe installed. After notification from the contractor of the schedule for testing, the Engineer will select the lines to be tested. A deflection greater than 5 degrees will be deemed sufficient reason to cause the work to be rejected. Rejected work will be corrected by the contractor at his own expense in a manner acceptable to the Engineer.
4. If 50 percent or more of the tested linear feet of PVC or Polyethylene sewer fail the deflectometer test, the Contractor shall be required to test the remaining linear feet of PVC or Polyethylene sewer at his own expense. The deflection tests that are to be run shall be performed without pulling devices of any sort. If Rigit bells or mandrels are used they shall have diameters equal to 95% of the inside diameter of pipe being tested.
5. Force mains shall be hydrostatically field tested to a pressure point 50 P.S.I. in excess of the operating pressure of the main. This pressure shall be maintained for a period of not less than one (1) hour.
6. The contractor shall repair all defects of any nature on mains failing to meet the above tests and shall re-test same until acceptable to the Township/Authority.
7. In addition to testing for water leakage the Township/Authority reserves the right to inspect the inside of all sewer lines by the TV camera method, at the contractor's expense.

M. Force mains. Force mains shall be installed as called for on the plans for the project. All specifications covering the laying of gravity sewers shall apply to the laying of force mains.

1. Cast iron or PVC pipe of the class called for on the approved plans shall be used. Joints may be special or mechanical and shall be installed in accordance with good practice and the manufacturer's directions and the Township/Authority. Pipe shall be bedded in 2B crushed stone.

2. Pipe shall be cut in a neat and workmanlike manner with an approved cutting device to insure a good joint.
3. Thrust Blocks: Thrust blocks shall be installed at all points where the bend is greater than 10 degrees and at all tees, caps, valves, and reducers and where shown on the plans.
  - a. Thrust blocks shall be constructed of 3000 PSI concrete. Care shall be taken when pouring to prevent the inclusion of foreign matter.
  - b. Care shall be taken to prevent the concrete from flowing over or near any joint in a manner as to obstruct the use or access to the joint for future maintenance or addition of pipes.
  - c. At points where a bend is effected by bending the pipe at the coupling, thrust blocking shall be installed at least 1 foot from the coupling.

N. Incidental Items of Work: Unless thrust blocks are called for, all fittings at bends in force mains shall be firmly wedged against the vertical face of the trench in order to prevent the fittings from being blown off the line when under pressure. Where pipe ends are left for future connections, they shall be valved, plugged, or capped, as directed by the Engineer. Where connections are made between new work and old force mains, the connections shall be made in a thorough and workmanlike manner to the satisfaction of the Engineer.

O. Hydrostatic Tests:

1. The contractor shall supply all materials and labor necessary for testing the system.
2. After the pipe has been laid and partially backfilled, all newly laid pipe or valved section shall be subjected to a hydrostatic pressure test. Pressure shall be maintained 50% in excess of normal working pressure or 150 pounds per square inch, whichever is greater, for a period of one hour. Each valved section shall be slowly filled with water at the specified test pressure. This water shall be supplied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The contractor will also be required, if necessary, to provide suitable taps in the pipe for the purpose of inserting gauges required for testing.
3. All pipe fittings, valves and joints shall be examined carefully during the pressure test and any leaking joints or fittings repaired or replaced. Any cracked pipe or fittings shall be removed and replaced. The test shall be repeated until satisfactory to the Engineer. Section of force main to be tested at one time shall not exceed 1000 linear feet.

P. Leakage.

1. During the hydrostatic tests, provisions shall be made to measure the quantity of water Necessary to maintain test pressure. No pipe installation shall be accepted unless the Leakage (evaluated on a pressure basis of 150 pounds per square inch) is less than 100 U.S. gallons per 24 hours per mile, per inch of diameter of pipe of 12 foot lengths, 75 U.S. gallons for 16 foot lengths, and correspondingly varied for other lengths of pipe.
2. Evaluation of the actual to the leakage under the assumed basic pressure of 150 pounds per square inch shall be calculated by the application of the ratio determined from the square

root of the respective pressures.

Q. Air Relief Valves on Force Main.

1. An air relief valve shall be furnished and installed on the force main in manhole at all high points in the force main. The air valve shall be of the type equivalent to Simplex type "AVS" with gate valves and flushing connection, Clow Co. or approved equal. See Detail Drawing.

R. Connections to manholes.

1. An approved manhole adapter shall be used to form a water tight connection between the pipe and the manhole. It shall be a coupling or a rubber ring precast or grouted directly into the manhole, or an approved equal.
2. The pipe shall not terminate in the coupling, but shall extend into the manhole a sufficient distance to properly connect the sewer pipe entering from the side of the manhole with the main channel.

S. Anchoring pipe on steep slopes.

1. Whenever the slope of the pipe is 20 percent or greater, pipe anchors as shown on the detail drawing shall be used. Spacing or anchors shall be as shown on the detail drawing.

**§ Section 101-101. Sewer structures.**

A. Manholes.

1. Manholes shall be constructed as shown on the plans, or as may be directed by the Engineer. Details are shown in the detail drawings.
2. Precast concrete manholes shall be used unless permission to use brick is given in writing. Precast manholes used shall be water tight and of the eccentric cone type. All manholes shall conform to A.S.I.M. C-478-61T, or latest revision.
3. Precast bases shall be used and shall be bedded on a minimum of 6 inches of 2B stone or  $\frac{3}{4}$  inch stone. Lengths of pipe immediately adjacent to each manhole shall have a maximum length of 6 1/2 feet. Joints of manholes and pipe entry shall be sealed with a round rubber gasket as specified in Sections 5.7 and 4.1 of A.S.T.M. C-361. Insides and outsides of joints shall be smoothed off with mortar. Outsides of manholes shall be coated with two coats of bitumastic material. Sections of manhole shall be set so that the manhole steps form a straight ladder. Concrete under and around manholes shall be 3000 PSI mix. In junction manholes, care shall be taken to properly connect the sewer pipes entering from the sides with the main channel. All such connecting channels shall be molded in the concrete base of proper size, cross sections, to the required grade, and finished smooth.
4. Concrete for manhole foundations, if brick manholes are permitted, shall be 3000 PSI mix. The contractor shall carry the excavation from 6 to 89 inches lower than the bottom of the concrete foundation, filling this space with spalls or crushed stone to act as an under drain and cover the underdrain with a layer of paper or cloth sufficiently heavy to prevent the mortar in the concrete from penetrating into the base.

5. All brick masonry shall be carefully laid using cement mortar of thickness and dimensions as shown in the Standards. Bricks must be laid on a bed of cement mortar and then pushed into place, so that the mortar pushed ahead of the brick will completely fill the space to the previously laid block of the same course. Joints shall not be more than 1/2 inch in thickness, and all brick must be sewer brick and shall be thoroughly wet before laying, preferably by immersion. Brick masonry shall not be laid or cement work of any kind done when the temperature is below 40 degrees Fahrenheit.
6. The walls of brick manholes shall be plastered on the outside with a 3/4 inch coat of cement mortar, and shall be corbelled so that there is a straight side where steps are placed, and shall be carried up to such a height that when the casting is placed thereon, it shall not project above the finished grade of the street. The two courses must be 24 inches in inside diameter. The inside of the walls shall have wiped joints as noted on the detail drawings.
7. Ground Water. In constructing manholes, all ground water shall be kept away from newly poured concrete or freshly laid brick work until cement has properly set and until a water-tight job is obtained. Manholes which admit ground water after completion must be repaired to the satisfaction of the Township/Authority.
8. Shallow Manholes. Where required because of limited depth, precast manholes shall be constructed in accordance with the detail drawing.
9. Setting Castings. All manhole frames and covers shall be set true to line and grade. Frames and covers shall conform to requirements set forth under Materials. When set in a road or paving the frame shall be sloped to conform to the existing paving and shall not project above or below. Four 3/4 inch anchor bolts shall be used to secure the frame to the manhole after a minimum one-inch diameter ring of Plastic Butyl Rubber Joint Sealant, conforming to Federal specification SS-5-002 10, has been placed under the frame. The sealant ring shall be placed in such a manner that tightening of the anchor bolts will cause a continuous watertight seal to be formed between the manhole structure and the cast iron frame.
10. Manhole Steps. Steps shall be set in masonry along the straight side of the manhole to form a ladder, and spaced not exceeding 12 inches center to center. In manholes where there are drop connections of more than 4 feet, an additional step shall be placed in the wall opposite to the step which is nearest to 3 feet below the upper opening of each drop connection.
11. Manholes shall be constructed promptly as the sections of the sewer between them are completed and, unless this is done, the Township/ Authority shall have authority to stop trenching and pipe laying until manhole construction is completed.

B. Drop connections.

1. In all junction manholes where the grade line of one sewer is two feet greater, than that of the other, or if directed by the Township/Authority, the connection shall be made by means of a "drop connection." See detail drawing.
2. The pipe and fittings used for the drop connection shall be of the same type and class as used for the sewer line coming into and exiting the manhole. Concrete for encasing pipe shall be 3000 PSI mix high early strength and shall be certified.
3. Care shall be taken to have all pipes laid to correct lines and grades, as established by the

contractor's Engineer.

- C. All other appurtenances and structures will be constructed according to the detail drawing.
- D. Manholes shall be installed at the end of each line, at all changes in grade, size or alignment, and at distances not greater than 350 feet between them.
- E. Watertight manhole covers. Watertight manhole covers and frames shall be as shown on the detail drawings. This type cover and frame shall be used whenever the manhole is located within the 100-year flood plain as well as wherever dictated by good design practice.

## **§ Section 101-102. Material specifications.**

### **A. Concrete.**

1. All concrete shall consist of plant mix or "ready mix" concrete unless job mixed concrete is permitted by the Township/Authority Engineer. All ready mixed cement shall conform to A.S.T.M. C-94. The producer of the concrete shall be approved by the Township/Authority Engineer and certificates of test materials and proportions shall be furnished by the supplier as many times as may be required. The Township/Authority Engineer shall have the right to inspect the plant of the supplier at any time.
2. Job mixed concrete shall conform to all applicable specifications for ready mix concrete contained herein and all concrete shall be mixed in an approved mixer.
3. Cement shall conform to A.S.T.M. C- 150, Type 11 or A.S.T.M. C- 175 for Air Entraining Cement. Air Entrained Concrete shall be used for all walk and curb replacement and other exposed concrete work and shall contain 3 to 6 percent of air.
4. Coarse and Fine Aggregate shall conform to A.S.T.M. C-33, and shall be graded to produce a dense concrete. Maximum size of aggregate shall be 3/4 inch.
5. Water shall be clean, free from deleterious amounts of acids, alkalis, or organize materials. Maximum water content shall be 6.6 gallons per sack, including free moisture in aggregate. No concrete exposed to the action of freezing weather shall have more than 6 gallons of water per sack of cement. No frozen, lumped or caked materials shall be used.
6. Proportions. All materials for concrete shall be proportioned by weight and once the proportions required for the desired concrete are obtained, they shall not be changed without permission.
7. Strength of Concrete. Concrete for general use shall develop a compressive strength of 3000 PSI when tested in accordance with the Standard Method of Making Compression Tests of Concrete of the American Society for Testing Materials. Samples of Concrete shall be taken by the contractor as and when directed by the Engineer, and tests shall be made at the expense of the contractor by a reputable laboratory approved by the Engineer. State Department of Highways Class "A" concrete shall be used for concrete base under State Highways.
8. Slump. Slump tests shall be made by the contractor throughout the course of the work and as required by the Engineer. A slump cone shall be provided by the contractor for the Engineer's use. Slump of concrete shall be 2 to 4 inches. Slump shall be determined by A.S.T.M. C-143.

9. **Temperature for Concrete Work.** No concrete or cement work shall be done when the atmospheric temperature is below 40 degrees F., except under special conditions when heaters are employed. No anti-freezing ingredient shall be mixed with concrete or cement work. Freshly laid concrete shall be covered approved shelters, and means shall be provided for keeping the air beneath the shelters warm and moist by live steam or other methods. The Engineer shall approve the method of protecting all concrete.
10. **Small Quantities of Concrete:** If small quantities of concrete are mixed by hand, the fine aggregate and cement shall be mixed dry in a steel mortar box until the mixture is an even and uniform color throughout. It shall then be wet with the proper quantity of water and thoroughly mixed by hoes. The crushed stone shall be spread on a wooden or steel platform to make a bed of uniform thickness, and after being wet the mortar shall be added and the whole mass turned with square edged shovels until it is thoroughly mixed.
11. Concrete additives shall be used only with the permission of the Engineer and in accordance with the manufacturer's directions.
12. **Curing.** Provision must be made for maintaining concrete in a moist condition for a period of five days after placement, except that for hi-early strength concrete moist curing shall be provided for two days.
13. White pigmented concrete curing compound shall be applied in conformance with the manufacturer's directions to all curb and walk replacement and all other above-grade concrete work.
14. The basis for final acceptance of concrete shall be the specified minimum allowable compressive strength at 28 days in terms of tests of standard specimens cured under standard laboratory conditions for moist curing as determined on samples taken from the transportation unit at the point of discharge.
15. The contractor shall provide the Engineer with a carbon copy of each original delivery ticket accompanying loads of ready-mixed concrete for each day's pour. The manufacturer shall certify, on each delivery ticket, the proportions selected will produce concrete of the quality specified and that the mix has the desired air content and slump.
16. The contractor shall also furnish a statement to the Engineer giving the proportions by weight (dry) of cement and of fine and coarse aggregates used in the manufacture of each class of concrete.
17. All rejected concrete shall be promptly removed and replaced at the expense of the contractor.
18. During the work, compression test specimens may be required by the Engineer. All tests shall be made in accordance with A.S.T.M. Standards C-31 and C-39.
19. The contractor shall assume all cost of all preliminary and field tests on the concrete as well as any corrective measures.
20. Forms shall conform to the shape, lines, and dimensions of the members as called for on the plans, and shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together so as to maintain position and shape. The Engineer may require that only wooden forms be used on certain structures.

21. Depending on the method of curing used, the forms shall not be removed within forty-eight (48) hours after the concrete has been placed. No rubbing to correct irregularities will be permitted until the full curing period has elapsed.
22. After removal of forms and the curing period has elapsed, all unsightly ridges or lips shall be removed and undesirable local surfaces bulges shall be remedied. All voids and holes left by the removal of tie rods shall be reamed and neatly filled with dry-patching mortar (pre-shrunk) mixed with one (1) part cement and two (2) parts fine aggregate or as directed by the Engineer. The cement used in the mortar shall be a blend of Portland Cement and White Portland Cement properly proportioned so the final color of the cured mortar will be the same as the color of the surrounding concrete. Defective concrete shall be repaired by removing or cutting out the unsatisfactory material and placing new concrete, formed with keys, dovetails, or anchors to attach it securely in place. Concrete for patching shall be drier than the usual mixture and shall be thoroughly tamped into place. All unformed surfaces of concrete not to be covered by additional concrete or backfill, shall have a wood float finish without additional mortar.
23. Adequate equipment shall be provided for heating of concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials or materials containing ice shall be used.
24. All concrete materials and all reinforcement, forms, fillers, and earth which the concrete is to contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees F, all concrete placed in the forms shall have a temperature of between 70 degrees F. and 80 degrees F., and adequate means shall be provided for maintaining a temperature of not less than 70 degrees F. For three (3) days or 50 degrees for five (5) days except that when high-early strength concrete is used the temperature shall be maintained at not less than 70 degrees F for two (2) days or 50 degrees F for three (3) days or for as much time as is necessary to insure proper curing of the concrete. The housing, covering or other protection used in connection with curing shall remain in place and intact at least twenty four (24) hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing.
25. Connections shall be made by the contractor at such a time and in such a manner as the Township/Authority may direct. Any customers to be affected by the plugging of mains shall be notified by the contractor and all plugs will be placed under the direction of the Township /Authority representative. Connections shall be completed as quickly as possible to keep inconvenience at a minimum. If deemed necessary by the Township/Authority, connections will be made at night. Any existing facilities that must be removed to make connections shall be removed by the contractor.

## B. Reinforcing Steel

1. Reinforcing steel shall be formed bars complying with A.S.T.M. A-15-58T, or the latest revision, rolled from new billets of identified heats manufactured by the open-hearth process. Welded wire fabric shall conform to A.S.T.M. A-82 or A-185 and shall be 6" x 6" x 6/6 unless otherwise shown in the details or standards.

C. Steel Casing Pipe

1. Shall have a minimum diameter as shown on drawings or specified herein and have a minimum yield strength of 35,000 psi. Pipe shall be uncoated and of the following minimum thickness:

Diameter	Minimum Thickness
18	0.344 inches
20	0.375 inches
24	0.438 inches
30	0.501 inches
36	0.626 inches
42	0.688 inches

2. Joists shall be of the butt and weld type construction suitable for jacking.

D. Brick. Sewer brick shall conform to the requirement of AASHTO Designation M91 for Grade SS sewer bricks.

E. Castings

1. Ferrous castings shall be manufactured of uniform quality, free from blowholes, porosity, hard spots, shrinkage, distortion, or other defects. Also castings shall be smooth and well cleaned by shot blasting. Materials used in the manufacturer of castings shall conform to the requirements of ASTM A48-76, Class 30 or better, for Gray Iron or ASTM At36-77 for Ductile Iron. The castings shall be coated with asphalt paint resulting in a smooth casting tough and tenacious when cold and not tacking or brittle. All manholes frames and covers shall be watertight unless written authorization is received from the Township/Authority approving an alternative. The contractor shall submit details or the watertight frames and covers they propose using to the Engineer for approval prior to installation.

F. Crushed Aggregate or Granular Backfill. Where specified, crushed aggregate backfill shall conform to PenDot Specifications, latest revisions, for AASHTO Number 57 modified stone. Formerly acceptable 2B modified as specified in PenDot form 408. Granular backfill, when specified shall consist of 2RC aggregate as specified in PenDot Publication 408, latest revision.

G. Mortar. All mortar specified shall consist of one (1) part cement to two (2) parts sand or fine aggregate. One volume of sand shall be one cubic foot; one volume of cement shall be ninety four (94) pounds.

H. Portland Cement. All Portland cement shall conform to A.S.T.M. C- 150 Type 1.

I. Reinforcement. All reinforcing base shall be free from rust or other material inhibiting the concrete bonding process. Placement, splicing, tying, bending, and protection of reinforcing base shall be in accordance to the PenDot 1994 Specifications, latest revisions.

J. Construction Joints. All constructions joints not indicated on the construction plans shall be constructed and formed as to least impair the strength of the structure. Where a joint is to be made, the abutting concrete surfaces shall be thoroughly cleaned. Also all vertical joints shall be thoroughly wetted and slushed with a coat of neat cement grout immediately preceding the placement of the new concrete.

K. Watertight Joints. Whenever new concrete surfaces abut old concrete surfaces, the contractor shall provide a water-tight joint. The joint sealant shall be an Igas joint sealant. The joint shall

be primed with Igas primer and the joint shall be made in strict accordance with the manufacturer's recommendations.

L. Sand. Sand shall conform to the requirement of A.S.T.M. C-144.

M. Stone or Gravel Foundations.

1. Stone or Gravel Foundation shall consist of crushed stone or "run of pit" gravel that shall be clean, sharp, trap rock, and free of loan, organic matter, soft or flaky materials, or other deleterious material. Prior to the stone or gravel being brought on the site, the size, type, and source must be approved by the Engineer. Maximum permissible stone size for foundations shall be No. 2 stone, approximately 3/4", as specified by PenDot form 408 1976 edition. Under the Penn DOT 1994 Specifications AASHTO number 67 stone shall be considered acceptable.
2. Stone shall be placed in the bottom of the trench in approximately six (6) inch layer and thoroughly compacted. The contractor shall then excavate the top portion of the stone foundations so that the stone conforms to the external radius of the pipe.

N. Water. Water used in mixing or curing of Portland Cement Concrete shall be reasonably clean, and free from vegetable matter, oil, acid, alkali, sugar, or any foreign substance.

O. Manholes and Manhole Construction

1. Manholes shall be constructed of concrete channels and bottoms, brick or concrete walls, galvanized, wrought iron, or aluminum alloy steps and/or cast iron frames and covers as indicated.
2. Manhole construction shall conform to design of applicable standard details. made part of these specifications and other details set forth herein. In constructing the base, a slab of concrete shall first be poured. After slab has set the walls forming the sides of manhole shall be constructed. The base shall then be completed by constructing channels, using form work for straight or curved channels, and filling in the space around forms with concrete up to a point equal to two-thirds of the diameter of the largest pipe passing through the manhole. The top surface shall be neatly trowelled off and given a slight slope from sides toward center.
3. The precast concrete sections shall have a four (4), five (5) or six (6) foot internal diameter, with a two (2) foot diameter at the top of the cone section. The joints shall be Manufacturer's Standard. "Pipeline" tight, with embeco type mortar grout joint with approved epoxy additive. The risers and cone sections shall be adequately reinforced in accordance with A.S.T.M. C-478 specifications.
4. All brick manholes shall have both inner and outer walls targeted.

P. Cast Iron

1. The contractor shall furnish and install all cast iron fittings and castings where needed. Unless otherwise called for, fittings shall be A.S.T.M. Standard A-48, Class 30, and shall be coated with bitumin paint before delivery.
2. All castings shall conform to the Standards set forth in the detail drawings.

3. All cast iron must be tough and have an ultimate tensile strength of 35,000 pounds per square inch with a light gray fracture. All castings shall be free from cracks, cold shuts or blow holes, straight, true to pattern, and have a workmanlike finish.

Q. Manhole Frames and Covers.

1. Ferrous casting shall be manufactured by Neenah Foundry Company, Neenah, Wisconsin, or approved equal. They shall be of uniform quality, free from blowholes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well cleaned by shot blasting. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky and not brittle.
2. Castings shall be designed for AASHTO Highway Loading Class HS-20. Material used in manufacturing of castings shall conform to ASTM designation A48-Class 35 Gray Iron. Tensile Test Bars made from each heat, from which castings are poured, must be tested by a fully accredited laboratory. A Notarized Certificate for these Test Bars must be provided to verify minimum Tensile Strength of 35,000 psi.
3. All castings shall be manufactured true to pattern; component parts shall fit together in a satisfactory manner. Round frames and covers shall have machined bearing surfaces to prevent rocking and rattling under traffic. Covers and frames shall be interchangeable.
4. Self-Sealing Lids shall be used and shall have a continuous one piece round gasket which is designed to press fit within a precisely machined Dovetail Groove in the bearing surface of the lid. The gasket material shall be Neoprene of a composition with good sealing, abrasion resistance, and low compression set qualities. Gluing of gasket will be prohibited.
5. Manufacturer's shop drawings must be submitted to the Engineer for approval prior to manufacture. The Engineer shall retain the right to reject castings not conforming to this specification and or approved submittal drawings.
6. Where shown on the plans or required by the Engineer, the Contractor shall install a water tight manhole cover and frame in place of the regular manhole cover and frame. The water tight manhole frame and cover shall be as shown on the detail drawings.

R. Cast Iron Pipe. Where specified on the plans, cast iron pipe shall be used. Cast iron pipe shall conform to Federal Specifications WW-P-421 and shall be 150 pound class. All cast iron pipe shall be of the bell and spigot type with special joints or mechanical joints. The joint shall be approved by the Engineer before use and installed in accordance with the manufacturer's instructions. Another acceptable joint is the "slip-on" joint made by the insertion of a large rubber gasket into the soil pipe hub such as "dual-tite", "multi-tite" and "ty-seal".

S. Ductile Iron Pipe. When ductile iron pipe is designated, all pipe shall be ductile iron, push-on joint or mechanical joint, and shall conform to ASA-A2 1.51 (AWWA C- 15 1). All pipes shall be coated outside and seal coated inside. All joints shall make use of rubber gaskets to effect a seal. All joints shall be in accordance with ASA Specification A2 1.11.

T. PVC Plastic Gravity Sewer Pipe. This specification designates general requirements for unplasticized polyvinyl chloride (PVC) Plastic Gravity Sewer Pipe with integral bell and spigot joints for the conveyance of domestic sewage.

1. **Materials.** Pipe and fittings shall meet extra-strength minimum of SDR-35 of the requirements of ASTM specification D3034-74. Elastomeric gasket, if rubber, should comply with the physical requirements specified in ASTM-D-1 819, C-361 or C-433.
2. **Pipe.** All pipe shall be suitable for use as a gravity sewer conduit. Provisions must be made for contraction and expansion at each joint with a rubber ring. The bell shall consist of an integral wall section with a solid cross-section rubber ring factory assembled, securely locked in place to prevent displacement. Sizes and dimensions shall be as shown in this specification. Standard lengths shall be 20 ft. And 12.5 ft. +/- 1 inch. At manufacturer's option, random Lengths of not more than 15% of total footage may be shipped in lieu of standard lengths.
3. **Fittings.** All fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with the pipe.
4. **Physical and Chemical Requirements.** Pipe shall be designed to pass all tests at 73 degrees F (+/- 3 degrees F).
5. **Deflection.** Deflections due to earth loading on PVC sewer pipe shall be limited to a maximum of 5%, as calculated by the Spangler equation (Note: Refer to the 1970 edition of the American Society of Civil Engineers Manual of Practice No. 37, Chapter 9, Section E, Subsection 1, latest revisions).
6. **Pipe Stiffness.** Minimum pipe stiffness: (F/ y) at 5% deflection shall be 46 psi for all sizes when tested in accordance with ASTM Method of Test D2412 External Loading Properties of Plastic Pipe by Parallel-Plate Loading.
7. **Joint Tightness.** Two sections of pipe shall be assembled in accordance with the manufacturer's recommendation. Joint shall be tested in accordance with ASTM D3212-73T, "Joints for Drain and Sewer Plastic Pipe Using Flexible Elastomeric Seals."
8. **Flattening.** There shall be no evidence of splitting, cracking, or breaking when the pipe is tested as follows:  
  
 Flatten specimen of pipe, six inches long between parallel plates in a suitable press until the distance between the plates is forty percent of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within two to five minutes.
9. **Drop Impact Test.** Pipe (6" long section) shall be subjected to impact from a free falling tup (20-lb. Tup A) in accordance with ASTM Method of Test D2444. No splitting (denting is not a failure) shall be evident when the following energy is impacted:
 

Nominal size in inches	4	6	8	10	12
Ft. Lbs.	150	210	210	220	220
10. **Installation.** PVC sewer piping installations should be made in accordance with ASTM D-232 1, "Underground Installation of Flexible Thermoplastic Sewer Pipe", and with the following supplementary recommendations:

- a. The particle size of Class I materials should be 1/4 inch to 1 1/2 inch.

- b. Class I and Class II backfill materials as listed in ASTM D-2321 are to be normally used with PVC sewer pipe. Class III materials are permissible upon consent of the Engineer. Class IV and Class V materials are not recommended for bedding, haunching, or initial backfill.
- c. Where high water tables or flowing water is likely to be present, it is recommended that Class I materials should be used for bedding, haunching, and initial backfill. If water is present, the trench must be dewatered during construction.
- d. When compacting the soil around the pipe, care should be employed to only compact the sides.
- e. Joint assemblies shall be made in accordance with the manufacturer's recommended procedure.

#### U. Testing and certification of materials.

1. All suppliers of materials incorporated into the project shall supply notarized statement in duplicate stating their material complies with the specifications set forth herein.
2. Notarized certification of tests made at the plant on all pipe shall be provided.
3. All materials will be tested periodically by the methods specified previously. The contractor shall render all necessary labor, materials, and equipment necessary for collecting, packaging, and identifying all samples.

### **§ Section 101-103. Replacement over trenches.**

#### A. Trench Paying Restoration

1. The contractor shall meet all requirements of PenDot and/or Municipal regulations where the sewer crosses or is adjacent to their paving. In State Highways, the requirements of the PenDot Form 945-B, latest revision, and the State Highway's Inspector shall govern. Temporary paving shall be installed within 48 hours after backfilling the trench. Permanent paving shall not be replaced until a minimum of 90 days has elapsed after backfilling.

#### B. State Roads.

1. Restoration of all trenches in State roads shall conform to PenDot specifications and the requirements delineated in the Highway Occupancy Permit.
2. State Road Overlay: Where required on State roads, there shall be a complete road overlay of a minimum of 1 1/2 inch compacted thickness of I.D. 2 wearing material with tack coat. Width of paving shall conform to the existing width of paving. Length shall be as required by the PenDot Material and installation shall conform to PenDot Specifications. Where complete overlay is required, the total depth of bituminous concrete surface and base course over the trench shall not be less than 7 1/2 inches. Trench cutbacks, tack coats and sealers shall equally apply as required under 1. above.

#### C. Township Roads

1. Longitudinal and Lateral. Base course for repaving on all local roads shall be bituminous base course unless a crushed stone base course is approved in writing by the Engineer. Bituminous concrete base course shall conform to PenDot Specifications, Publication 408, Section 305. Just prior to placing the permanent paving, the existing paving shall be cut back 12 inches on each side of the trench. This cutback shall be to a depth sufficient to contain the entire cross-section of replaced paving. The edge of the cut shall be neat and straight. Minimum depth of bituminous concrete base course laid shall not be less than 5 inches. Prior to placement of any bituminous concrete, the edges of the cut shall be painted with Class BM- I asphaltic cutback.
  2. Crushed stone or slag used for base courses shall be #3A or #4 ballast and shall conform to PenDot Specifications. Crushed stone or slag shall be laid in place, chocked with screenings and rolled with at least a ten ton roller in 4 inch layers until a firm, stable base is obtained. Prior to laying the bituminous concrete, the base course shall be broomed to expose the ballast and provide a bonding surface for the surface courses. Thickness shall be as shown in the detail drawings. One inch of limestone screenings shall be placed under all crushed stone base courses.
  3. All roads shall be restored with a minimum of 2 inch ID-2 binder course and 1 1/2 inch ID-2 wearing course. The I.D. 2 shall be made with B.M. I asphalt unless the Engineer approves another. These materials shall conform to PenDot Specifications with respect to composition and laying procedures. Thickness of each course shall be after compaction and shall conform to the detail drawings. Finished paving shall be smooth and conform in grade to the surrounding paving. All compaction shall be done with at least a ten ton roller.
  4. Prior to placement of any bituminous concrete, the edges of the cut shall be painted with Class B.M. I asphalt cutback. Edges of the finished paving shall have hot poured Class A- I asphalt cement applied as a sealer
  5. Township Road Overlay: Where required, there shall be a complete overlay of 1 1/2 inch compacted thickness of I.D. 2 surface material, with tack coat. Width of paving shall conform to the existing width of paving and present uniform edges throughout. Where bituminous base course is used with the 1 1/2 inch overlay, the depth of the base paving shall be increased 2 inches and brought level to the original road paving surface. Where crushed stone or slag base is used for base course with the 1 1/2 inch overlay, a 2 inch ID-2 binder course shall be placed and brought level to the original road paving surface. Trench cut backs, tack coats and sealers shall equally apply as required under the parameters of this section.
- D. Paving that has been scarred or cut by the contractor's equipment outside the trench shall be cut to a minimum depth of 1 1/2 inch and paved with bituminous concrete wearing course. The edges of the patch will be sealed with hot poured Class A- I asphalt sealer.
- E. All paving that settles shall be replaced by the contractor. Settled paving shall be removed to the base course and the edges cut square. Paving shall then be replaced according to the above specifications and the edges shall be resealed.
- F. The contractor shall arrange with all utilities to reset water and gas boxes and manhole frames and covers not conforming with the finished grade of paving. If necessary, the contractor shall reset manhole frames and covers for the sanitary sewer.

- G. Temporary paving. Temporary paving shall be installed and maintained as specified in the Trenching and Backfilling Section, immediately upon backfilling of the trench.
- H. Restoration. Prompt restoration is of the utmost importance to maintain access to homes and places of business and to maintain public relations. If it is the opinion of the Engineer that complete restoration is not proceeding fast enough behind pipe laying operations, he shall notify the contractor, in writing, to correct the situation. If, within seven (7) calendar days after the date of notice, the Contractor has not corrected the situation, the Township/Authority shall stop all excavation and pipe laying operations until restoration is brought up to date.

#### **§ Section 101-104. Sidewalks.**

- A. Concrete Sidewalks. The existing sidewalk shall be broken off evenly at the nearest "groove" or "dummy joint" on both side of the trench. The sidewalk shall be replaced using reinforcement and thickness as shown in the detail drawings. The width of the replaced sidewalk shall conform to that of the old sidewalk (4" minimum). The replaced sidewalk shall be finished in a workman-like manner. Concrete used shall be 3000 psi concrete. Concrete shall be sprayed with a white pigmented membrane curing compound immediately after its initial set.
- B. Bituminous Sidewalks. The ends of existing sidewalks shall be cut square on both side of the trench and replaced according to the detail drawings. Width of the replaced sidewalk shall conform to the old sidewalk, and it shall be finished in a workmanlike manner. All bituminous sidewalks shall be rolled.

#### **§ Section 101-105. Curb Replacement.**

- A. Concrete Curb. All concrete curb shall be replaced in 10 foot sections with expansion joints every 30 feet. Straight sections shall be formed with steel forms and curved sections with plywood forms. All curb shall be constructed using 3500 psi concrete and finished in a workman like manner. Surfaces of concrete curb shall be rubbed or brushed. All curb shall be constructed with a cross-section the same as that of the existing curb. Concrete shall be sprayed with a white pigmented membrane curing compound immediately after-its initial set.
- B. Bituminous Curb. Bituminous curb shall be replaced in a workmanlike manner with a cross-section equal to that of the existing curb. In the event that the curb was machine laid, the replaced curb shall be machine laid also. Bituminous material used shall be I.D. 2 wearing course.
- C. Granite Curb. Granite curb shall be replaced in 4 to 8 foot sections and shall consist of granite or bluestone of approved quality free from structural defects. Curb shall be cut square on the front and top and 3 inches down in the back. Cross-section of replaced curb shall equal that of the existing curb. All joints are to be no wider that 1/4 inch and shall be set on 12 inch x 12 inch 3000 psi concrete chairs. Wherever possible, the existing granite curb will be removed before construction.
- D. Rubble Curb and Gutter. Shall be replaced in a workmanlike manner to conform to the existing curb or gutter. Materials shall conform to those used in the original gutter.

#### **§ Section 101-106. Driveway Replacement.**

- A. Bituminous drives shall have the existing faces cut square. The subgrade shall be rolled with a

5-ton roller until hard and the paving replaced as shown in the detail drawings. 4" minimum crushed stone for the base shall be 2B or 3A and shall conform to PenDot Specifications. After the stone is in place, it shall be choked with fines and rolled until it forms a firm, stable base for the paving. The surface of the base shall be broomed until it is substantially free of fines with coarse stone exposed to provide a good bonding surface for the paving.

- B. The paving shall consist of a 2" I.D. 2 wearing course asphaltic concrete that conforms to PenDot specifications. The asphaltic concrete shall be rolled with a powered roller weighting a minimum of 5 tons until it is compacted and smooth and blends with the surrounding paving. Thickness of the various layers shall be as shown in the detail drawings. Edges of the finished paving shall be sealed with hot Class A- I asphalt cement.
- C. Concrete Drives. All edges shall be cut square. The concrete shall be of 3500 psi mix or Class A cement concrete and shall conform to the detail drawing. Reinforcement shall be as shown in the detail drawing. The concrete shall blend smoothly with the old pavement, be smooth and have a broom finish. Concrete shall be sprayed with a white pigmented membrane curing compound immediately after its initial set.
- D. Stone Drives. Shall have the subgrade thoroughly tamped and covered with 4 inches of 2B stone. After the stone is in place, it shall be choked with fines, then broomed and tamped until it becomes stable.

**§ Section 101-107. Restoration of Grassed Areas.**

- A. Grass areas shall be restored as soon as practical after backfilling of the trench. However, planting will be limited to work days between the fifteenth of March and the fifteenth of October of the same year.
- B. Topsoil will be placed over the trench to a minimum depth of 4 inches and on other damaged areas to a minimum depth of 2 inches. The topsoil and surrounding areas shall then be raked smooth and be free from all stones, wood, and other debris. A commercial 10- 10- 10 fertilizer shall then be applied at a rate of 10 pounds per 1000 square feet and mixed into the topsoil for a depth of 2 inches. Grass seed of the specified composition shall then be spread evenly at a rate of 6 pounds per 1000 square feet by means of a mechanical spreader over the trench and any surrounding area. All seeded areas shall be rolled with a lawn roller weighing not more than 100 pounds per foot of width.
- C. Grass seed shall be mixed and certified to be as follows:

	Lawn Mixture Parts	Percentage Purity	Germination
Kentucky Bluegrass	35%	90%	85%
Pennlawn Fescue	25%	90%	85%
Pennfine Ryegrass	15%	90%	85%
Annual Ryegrass	15%	90%	85%
Red Top	10%	90%	85%

- D. Slopes and Banks: Any area to be seeded having a slope of 5% or greater shall be mulched with seed and weed-free salt hay, not moldy or rotten, at the rate of one 75 lb. Bale per 1000 square feet. Slopes in excess of 3:1 shall also be covered with jute matting and installed per manufacturer's recommendation.

E. Sod.

1. Sod shall be at least 60 percent perennial grass, strongly rooted, and free of pernicious weeds. It shall be mowed to a height not to exceed 2 inches before lifting and shall be of uniform thickness with not over 1 1/2 inch or less than 1 inch of soil. All sod shall meet the requirement of PenDot Publication 408 as far as composition and installation requirements.
2. All sod shall be set and in place within 48 hours of being cut. Due consideration shall be given to weather conditions. Dried out sod will be rejected whenever, in the judgment of the Engineer, survival is doubtful.
3. Surfaces on which sod is to be laid, will be firmed with a light roller and dampened before the sod is put down. Sod pieces shall fit snugly to prevent water from lifting them.
4. Tamping: Each piece of sod shall be tamped sufficiently to bring the under surface into firm contact with the soil.
5. Each strip or section of sod shall be staked securely with at least one wooden stake for each 2 square feet of sod. Stakes measuring 1/2 " x 1 x 12' shall be driven flush with the top of the sod, with the long face parallel to the slope contour, sod strips to be 2 feet 0 inches O.C. The contractor shall keep the sodded areas adequately moist.

F. Maintenance: Watering will depend on weather conditions, but maintaining favorable moisture conditions for seed germination is the responsibility of the contractor.

G. Guarantee: The contractor shall guarantee germination, maintain plantings, up to and including the second cutting, and shall re-seed or re-sod as often as necessary to insure ninety percent coverage of the affected area. It is the Contractor's responsibility to restore all seeded and sodded areas to a smooth and even surface with a dense, uniform growth of grass. Final payment of the Contract will not be made until these conditions are satisfied.

H. Clean Up. All rubbish and other material will be removed from the premises and the entire job will be left in a condition satisfactory to the Engineer. In areas where work has been on or near paving, the paving shall be swept or flushed clean to the satisfaction of the Engineer.

I. In a few instances it will be apparent that a particular property owner has gone to additional expense and effort to establish a fine lawn. In these cases the contractor will use grass seed of the same type and quality of the surrounding lawn. Seed application will be at the rate of 7 pounds per 1000 square feet.

J. Hydro-Seeding. In lieu of other mechanical seeding operations, Hydro-Seeding (technique of mixing seed, fertilizer and a green fiber mulch into a homogenous slurry which is then sprayed on the area being seeded) may be substituted.

K. All slopes of 5% or over will be "tack-coated." Rates and types of materials shall be approved by the Engineer before applying.

- L. Special Seasonal Seeding. Should it become necessary, in the opinion of the Engineer, to perform lawn work and restoration of grassed areas beyond the normal planting cut-off of the fifteenth of October, the contractor will be required to use the following late fall seeding formula, with mulch, as a protective winter cover only:

Description	Application Rate
Winter Rye	10 lbs. Per 1,000 Sq. Ft.
Annual Rye	6 lbs. Per 1,000 Sq. Ft.

## § Section 101-108. Supplemental requirements.

### A. Private property.

1. Where the sewer lines are proposed to be located on private property, the owner or responsible party for sewer construction will obtain easements and/or permission from the property owner to enter thereon for the purpose of constructing sewers prior to construction. The contractor shall confine his operations to as narrow limits as possible to install sewers.
2. The contractor shall conduct his work so there will be a minimum disturbance of the property crossed. All work on private property shall be done in such a manner as to avoid the unnecessary cutting of vegetation and other disturbance not actually obstructing the installation of the sewers. Any damage to the property shall be made good by the contractor at his expense. Upon completion of the work, the contractor shall clean up the disturbed areas and restore them to a condition at least equal to that previously existing.

### B. Clean up.

1. During the progress of the work and until the completion and final acceptance thereof, all pipe lines and their appurtenances shall be kept thoroughly clean throughout. Obstructions or deposits, discovered at any time, shall be removed at once by the contractor without extra compensation. After completion of work and prior to testing, all pipe lines and their appurtenances shall be left clean, free, and in good order.
2. On or before the completion of work, the contractor shall, without charge, tear down and remove all trailers, temporary buildings, and other structures built by him. He shall remove all rubbish and debris from any grounds he has occupied and shall leave the line of the work in a clean and neat condition.

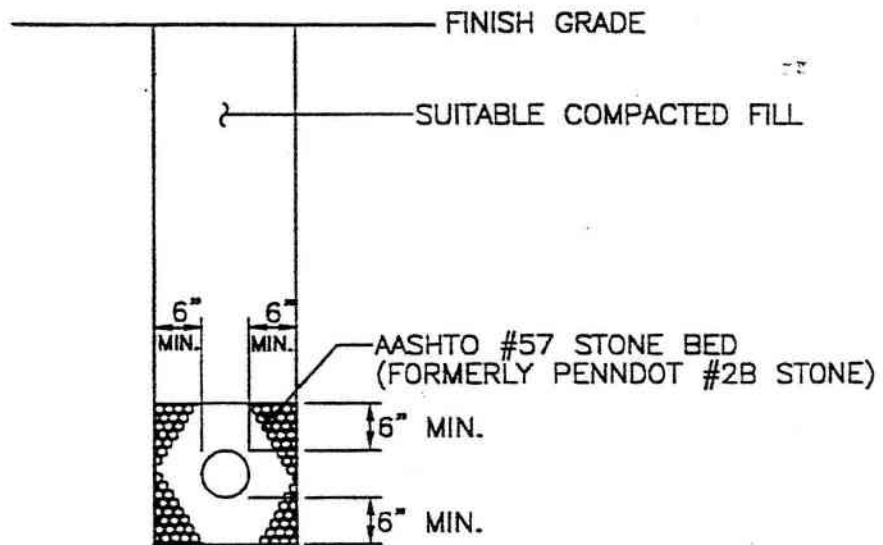
### C. Pump station.

1. Pump Stations shall be constructed using a pre-fabricated lift station with dual pumps and an auto start motor fed by natural gas. If gas is not available, diesel fuel may be used. The pump station will be as manufactured by Gorman Rupp or an approved equal. All installation requirements shall conform to manufacturer's requirements.
2. All pump stations shall require the installation of a meter pit or metering facility. All metering devices must be approved by the Township/Authority prior to installation.

### D. Conformance to required rules and regulations.

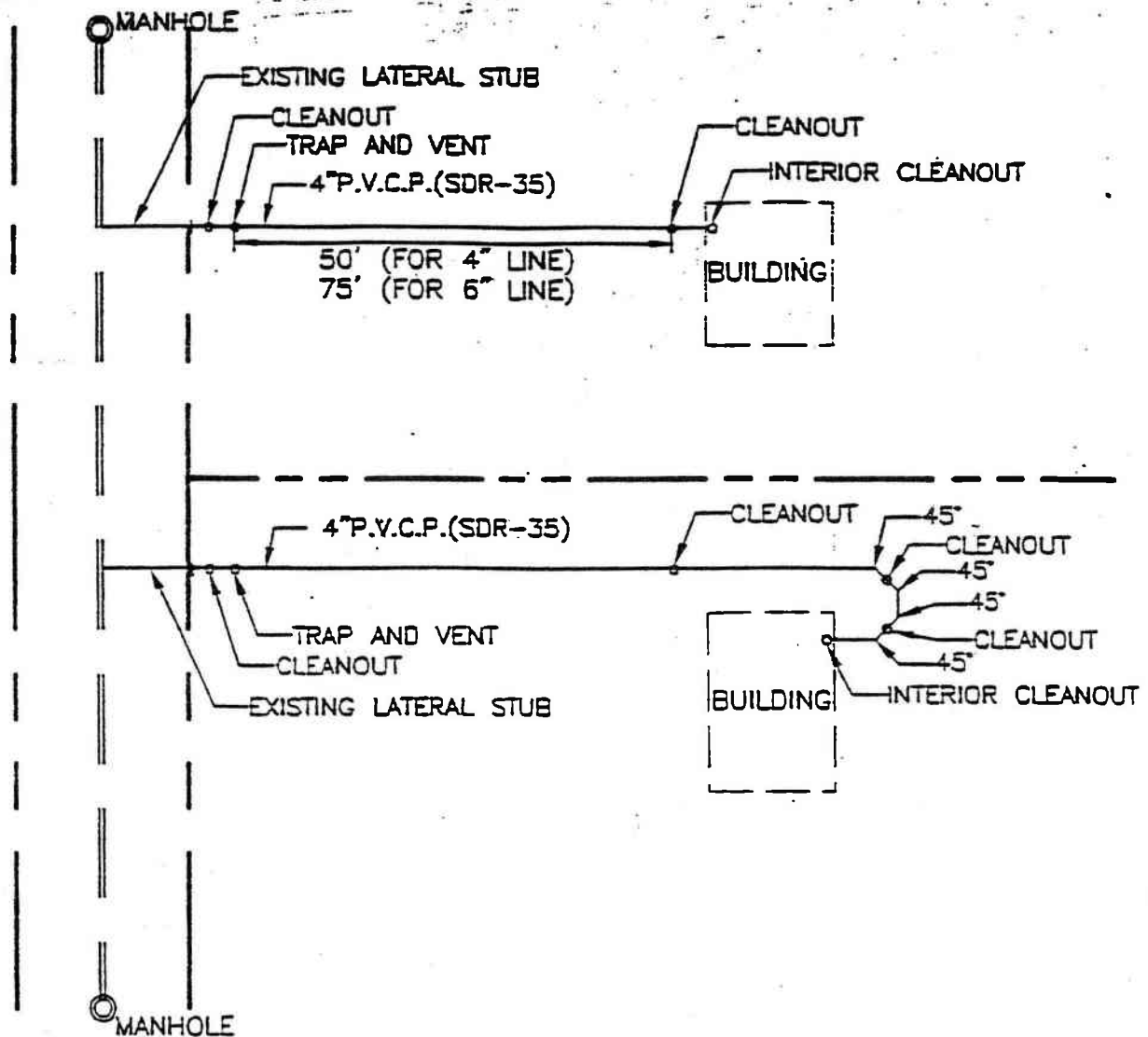
1. Prior to proceeding with any work the contractor shall secure the necessary permits from all the governing regulatory agencies and. municipal bodies.
  2. During the execution of the work the contractor shall comply with all applicable rules and regulations of the governing regulatory agencies and municipal bodies including, but not limited to OSHA, DEP, EPA, PenDot and Sadsbury Township.
  3. In accordance with the provisions of Pennsylvania Act 38, the contractor shall be responsible for verifying the location of all existing underground utility installations within the project area. Owners of the respective utilities involved shall be notified by the contractor at least 48 hours in advance of the commencement of any excavation by the contractor in the project area. No permits to begin work will be granted until the requirements of Pennsylvania One Call are met.
- E. Copies of this Ordinance will be available at the office of the Township Secretary for review. If one wishes to purchase this Ordinance the prices are as follows:
1. Articles I through VI, dealing primarily with lateral installation is \$25.00.
  2. Articles VII through VIII, dealing primarily with sewer main and lateral extensions in new development is \$50.00.
  3. A complete Ordinance Articles I through VIII is \$75.00.
  4. The above prices may be changed by Resolution of the Township/Authority.





# SADSBURY TOWNSHIP TYPICAL TRENCH DETAIL





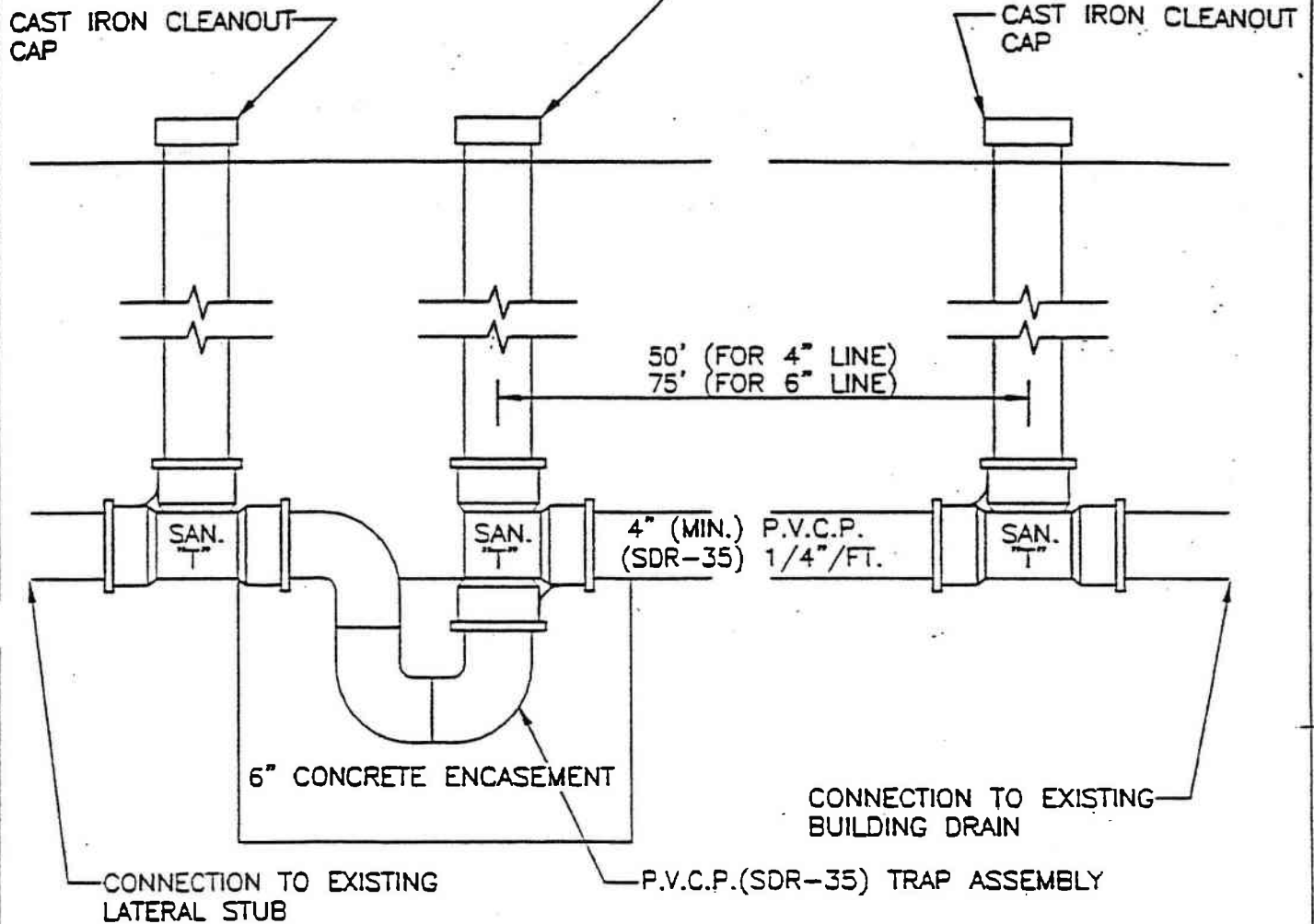
**NOTES:**

1. ALL PIPES ARE TO BE BEDDED AND COVERED WITH #57 STONE 6" UNDER AND OVER PIPES.
2. EXISTING CESSPOOL TO BE PUMPED AND BACKFILLED.
3. P.V.C.P. (SDR-35) SHALL HAVE "HARCO" FITTINGS CONFORMING TO ASTM D1784,D1819,C-361 OR C-433.
4. CONNECTIONS TO EXISTING BUILDING DRAINS SHALL BE SCHD 40 TO SDR-35 ADAPTOR (SOLVENT WELDED PIPE TO GASKETED PIPE) OR CAST IRON TO SDR-35 DOUBLE HUB CAST IRON COUPLING OR "FERNCO JOINT".

## SADSBURY TOWNSHIP TYPICAL BUILDING SEWER DETAIL



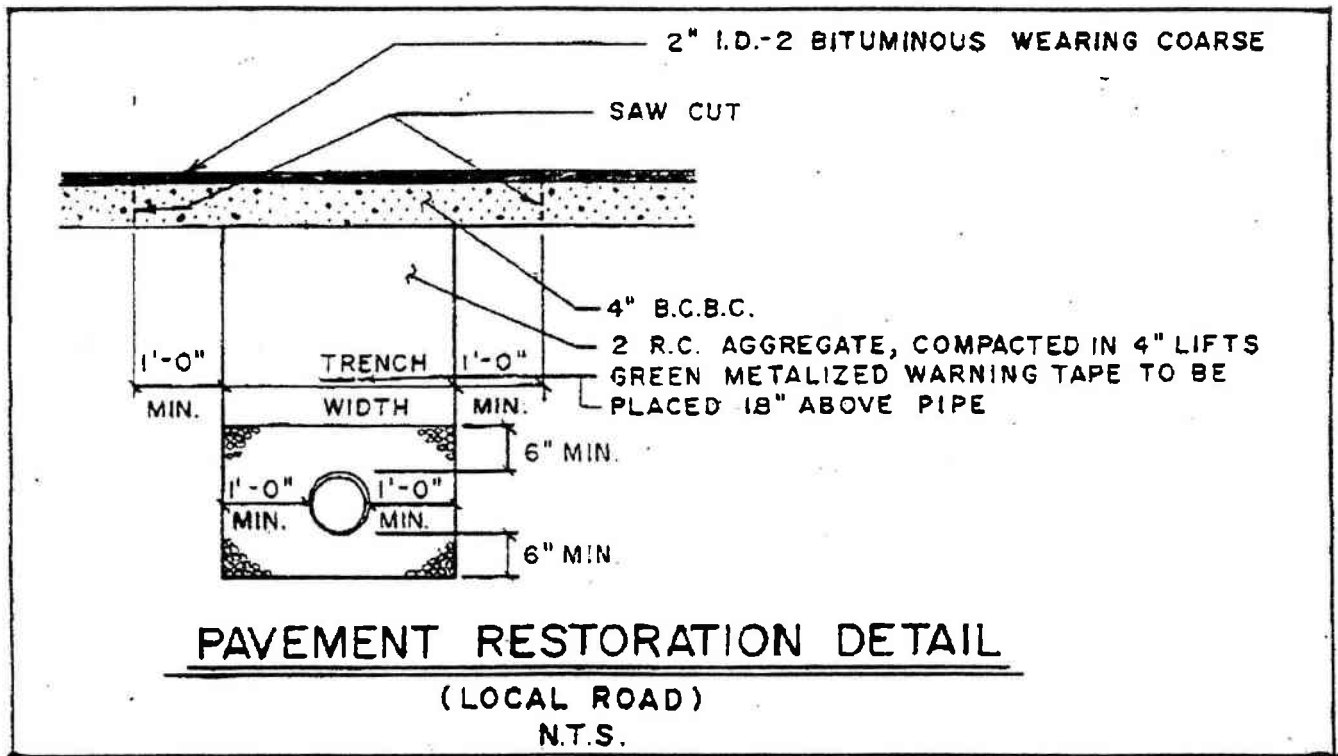
RICHMOND MODEL L-2304 CAST IRON PHILADELPHIA  
 TYPE VENT BOX WITH CAST IRON COVER SECURED BY  
 AN OVERLAPPING LUG AND SINGLE SCREW OR  
 APPROVED EQUAL (6" ABOVE GRADE OR FLUSH WITH  
 GRADE IN SIDEWALK AREA)



## SADSBURY TOWNSHIP

# TYPICAL TRAP AND CLEAN OUT DETAIL

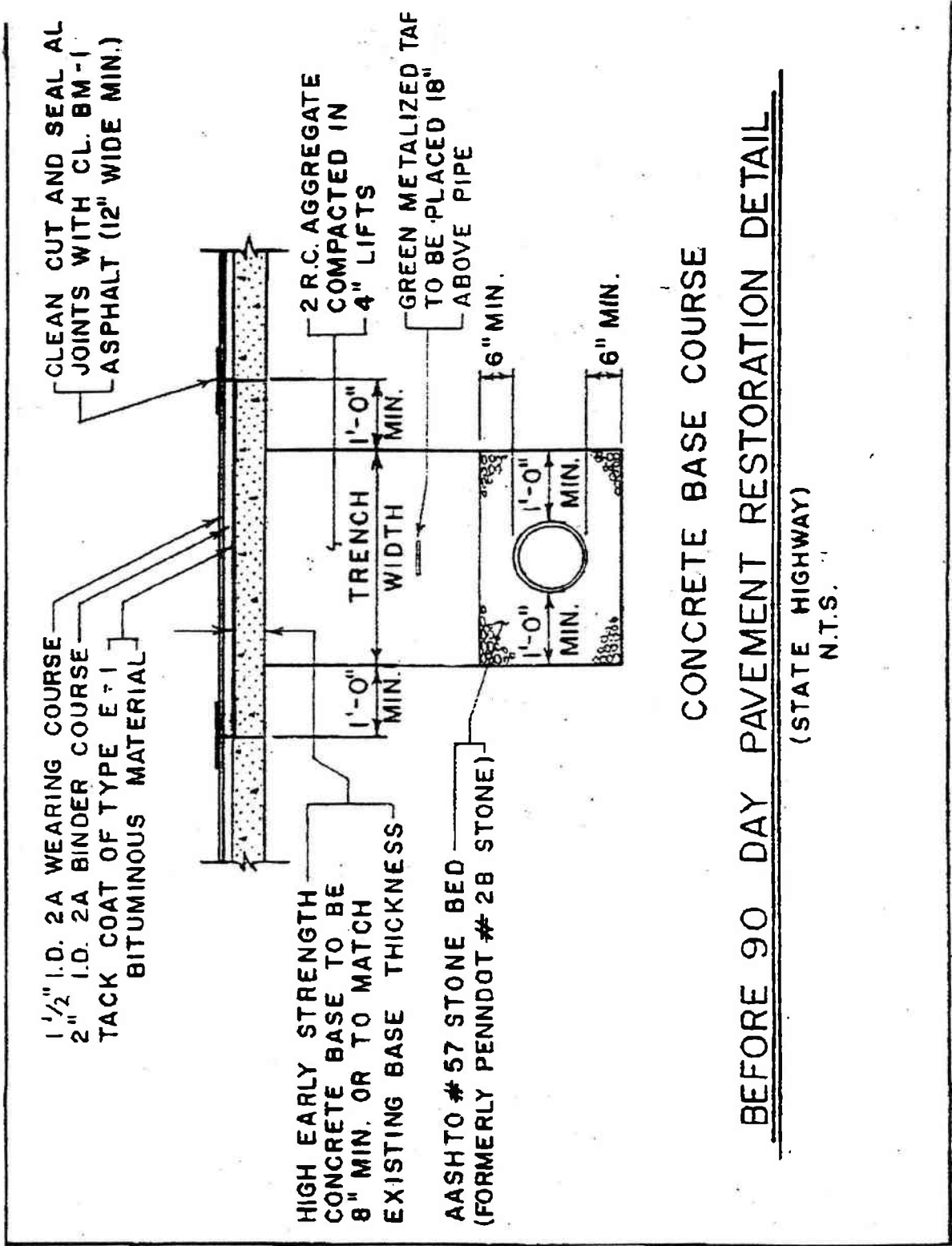




**SADSBURY TOWNSHIP**

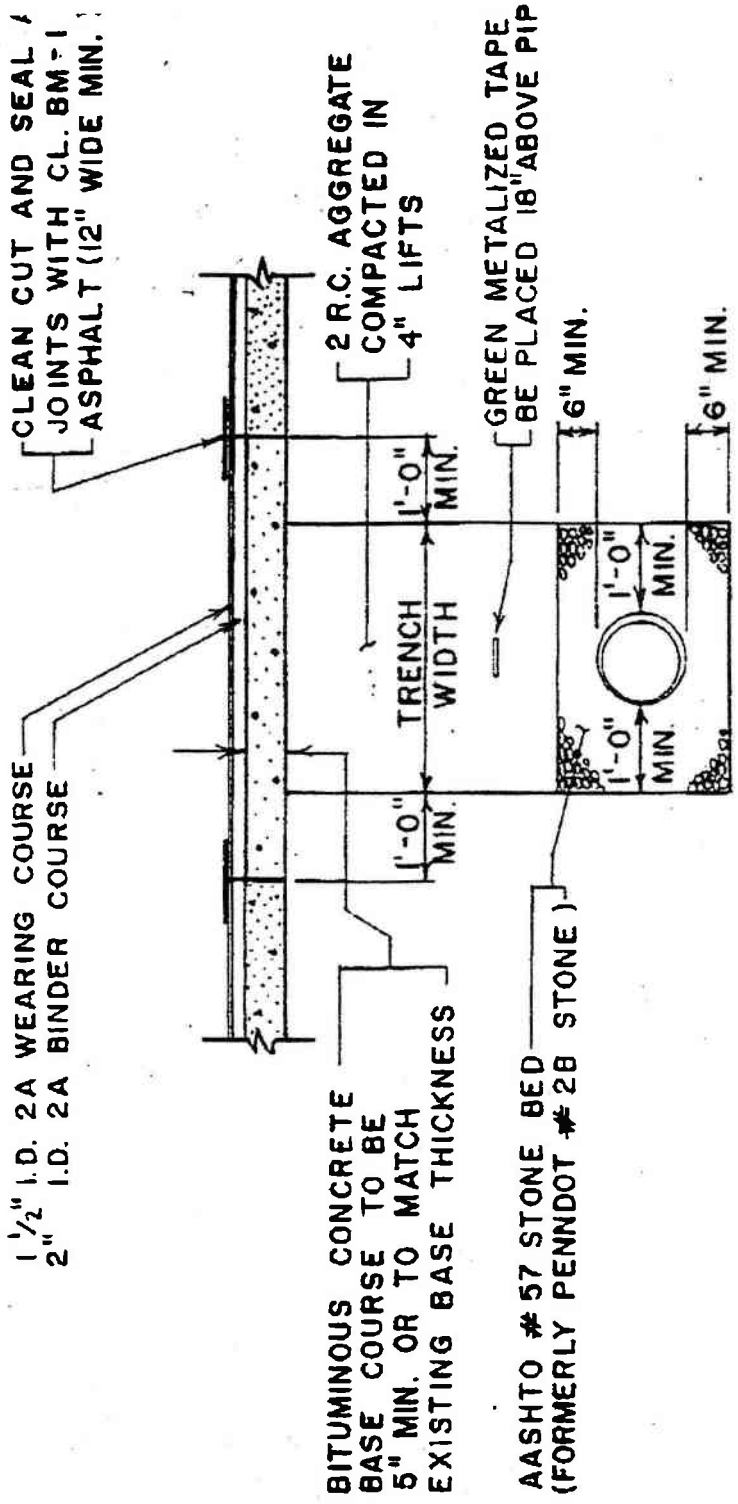
**PAVEMENT RESTORATION DETAIL**





SADSBURY TOWNSHIP  
BEFORE 90 DAY PAVEMENT AND  
RESTORATION DETAIL





BITUMINOUS CONCRETE BASE COURSE  
AFTER 90 DAY PAVEMENT RESTORATION DETAIL  
(STATE HIGHWAY)  
N.T.S.

SADSBURY TOWNSHIP  
AFTER 90 DAY PAVEMENT AND  
RESTORATION DETAIL



# Modern

Concrete Septic Tank Company  
P.O. Box 3270, Millersburg, PA 17041  
Phone: (717) 337-5112

This section shows various designs for grease interceptors. Almost any size tank can be made into a grease interceptor with minor modifications. The important thing to remember is the higher and longer the tank the more efficient it will perform.

The purpose of a grease interceptor (trap) is to remove grease or oil from the influent prior to discharge to an absorption field or sewer. This is especially important in cases such as restaurants, schools, hospitals, motels, garages, and other large volume users, or where substantial amounts of grease or oil exist. Grease interceptors should be specified whether discharge is into a sewer, or on-site absorption field since clogging of sewer pipes, or the absorption field is a serious concern.

A precast concrete grease interceptor can have a single or double compartment. The two compartment tank is normally used with high flows or where efficient removal of grease is of primary concern. It is most important to install the grease interceptor as close as possible to the source of the wastewater (usually the kitchen) where it is still hot and grease separation is more efficient. Grease interceptors should also be easily accessible for cleaning. Unfortunately, many times tanks are undersized. Remember that a restaurant which is open eight hours per day with 75 seats should have a minimum 2,000 gallon grease interceptor. Please specify accordingly.

- REMEMBER:
- Always specify a grease interceptor when treating commercial kitchen wastes.
  - Place close to kitchen with access for cleaning.
  - Avoid undersizing.

## SADSBURY TOWNSHIP GREASE TRAP DETAILS

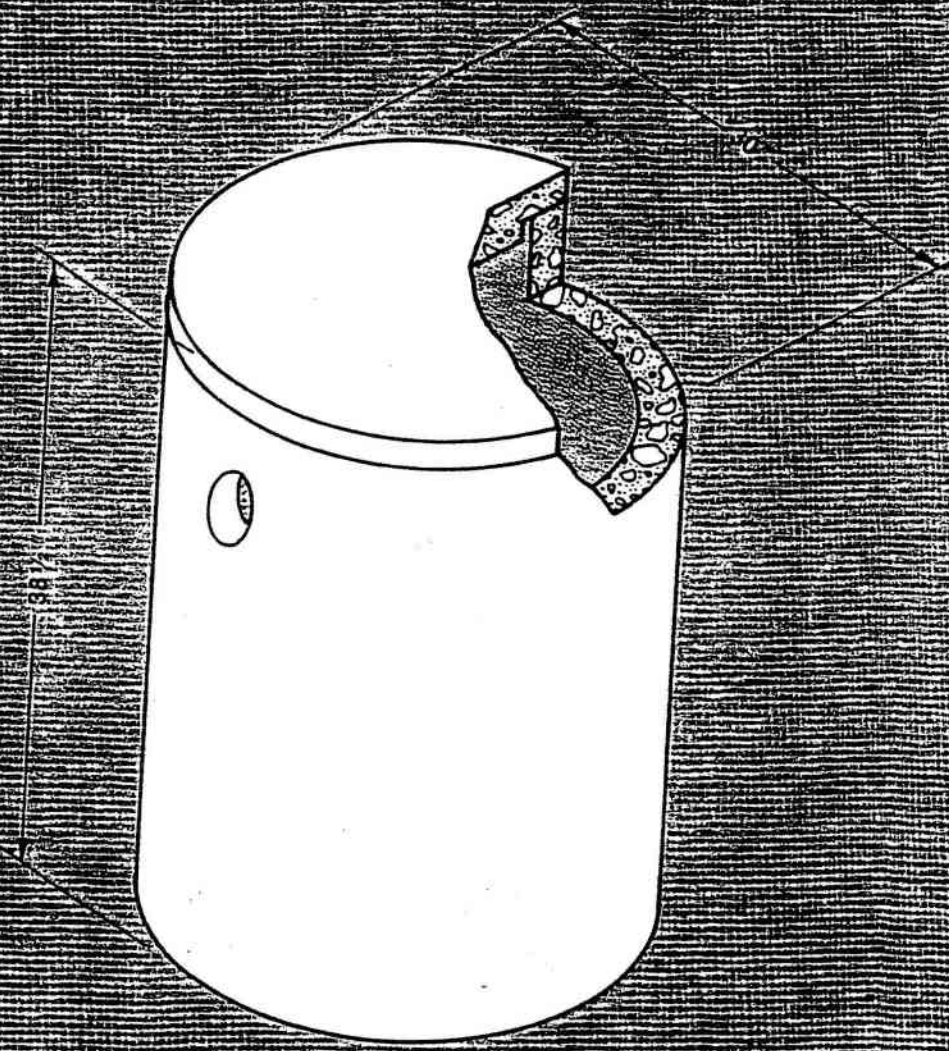


# Modern

Concrete Septic Tank Company

P.O. Box 339, Ottsville, PA 18942

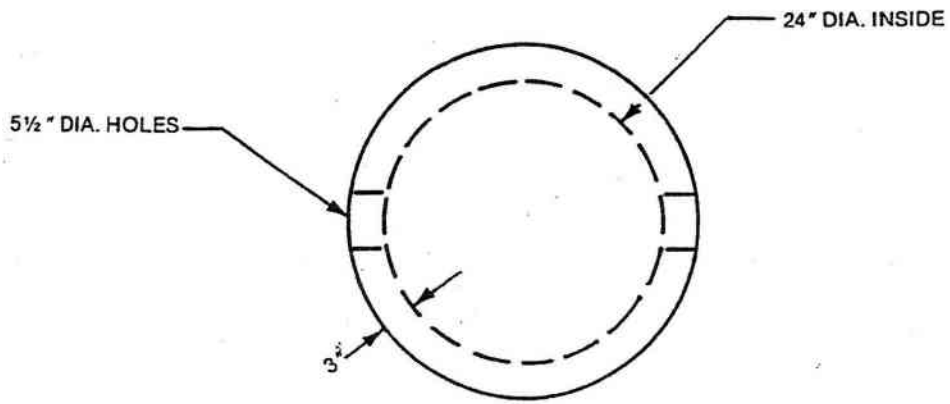
Phone: (215) 847-5112



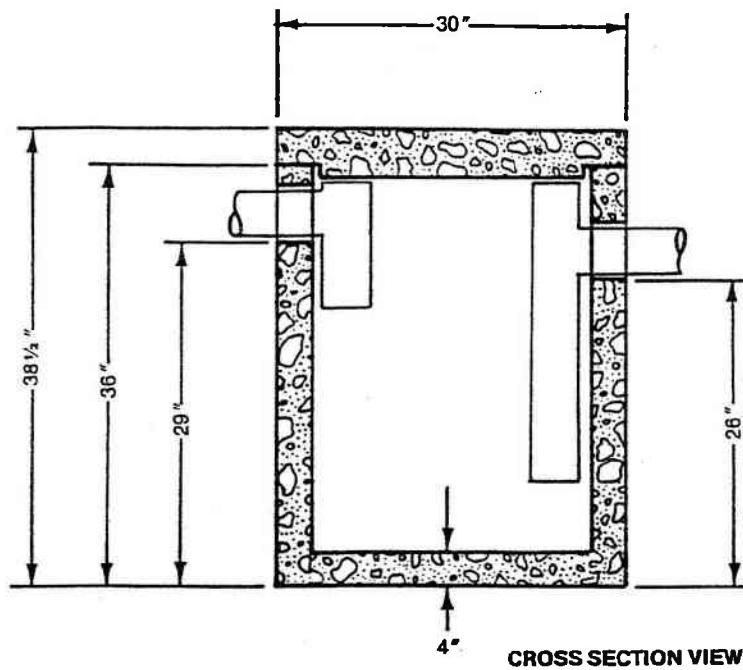
45 GALLON GREASE INTERCEPTOR



# 45 GALLON GREASE INTERCEPTOR



PLAN VIEW



CROSS SECTION VIEW

## SPECIFICATIONS

- **Concrete Minimum Strength** — 3,500 P.S.I. @ 28 Days
- **Steel Reinforcement** — 6" x 6" x 10 ga. wire mesh in sides and bottom  
— #3 Rebar in lid
- **Design** — Grease Interceptor shall be as manufactured by  
**MODERN CONCRETE SEPTIC TANK COMPANY**

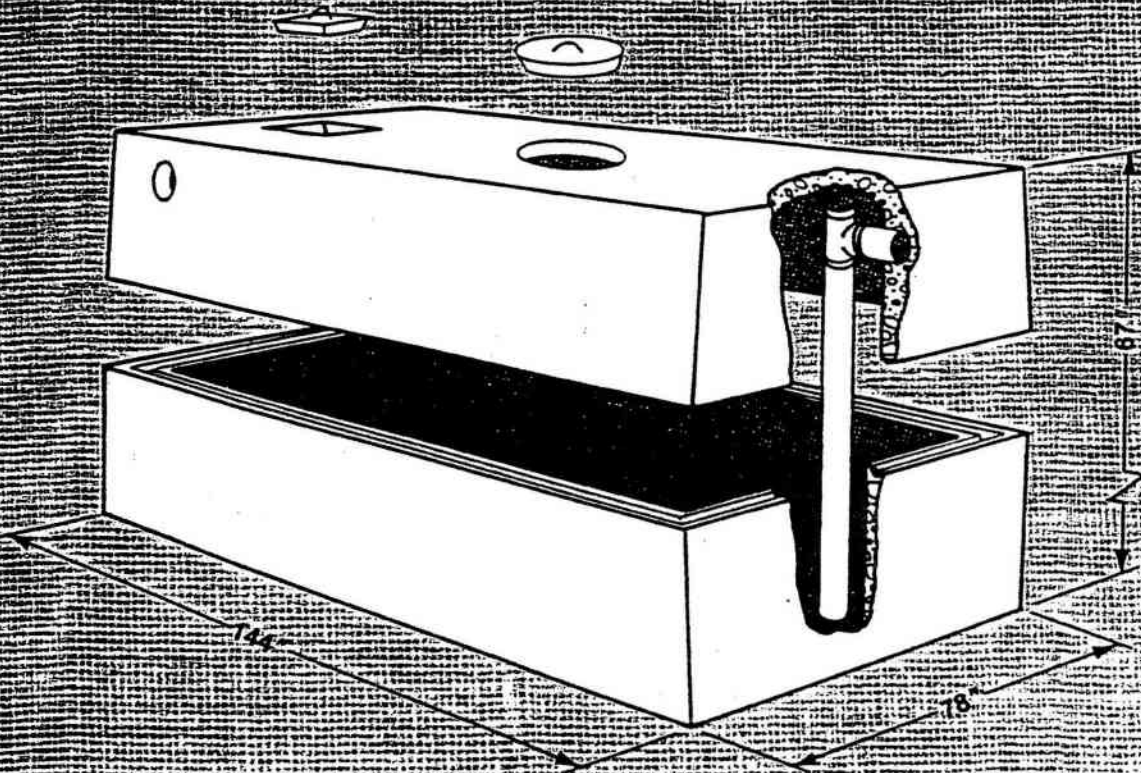


# Modern

Concrete Septic Tank Company

P.O. Box 339, Durham Rd., Ottsville, PA 18942-0339

Phone: (215) 847-5112 FAX: (215) 847-8760

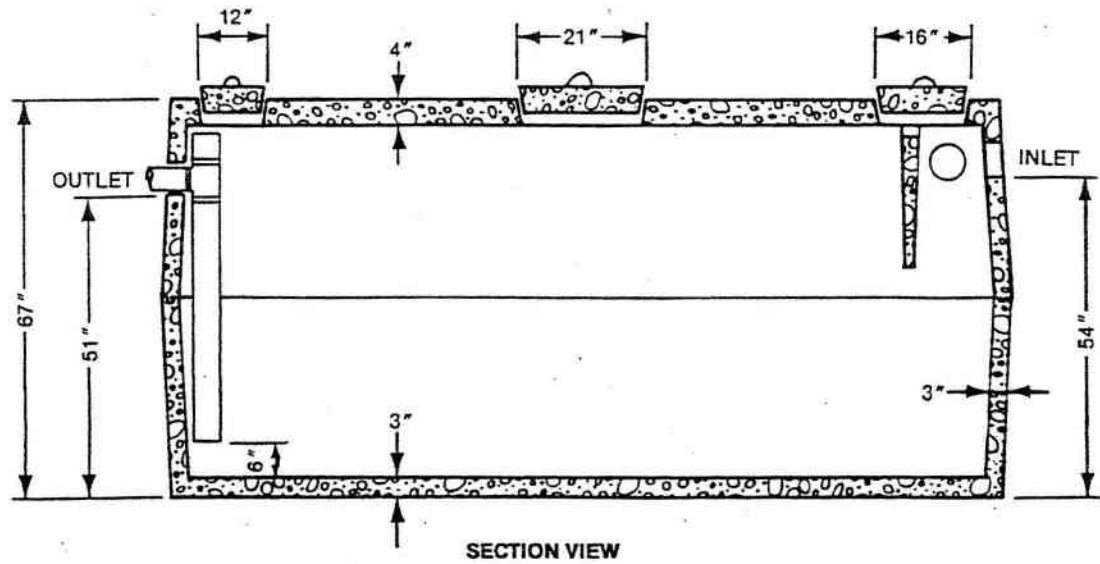
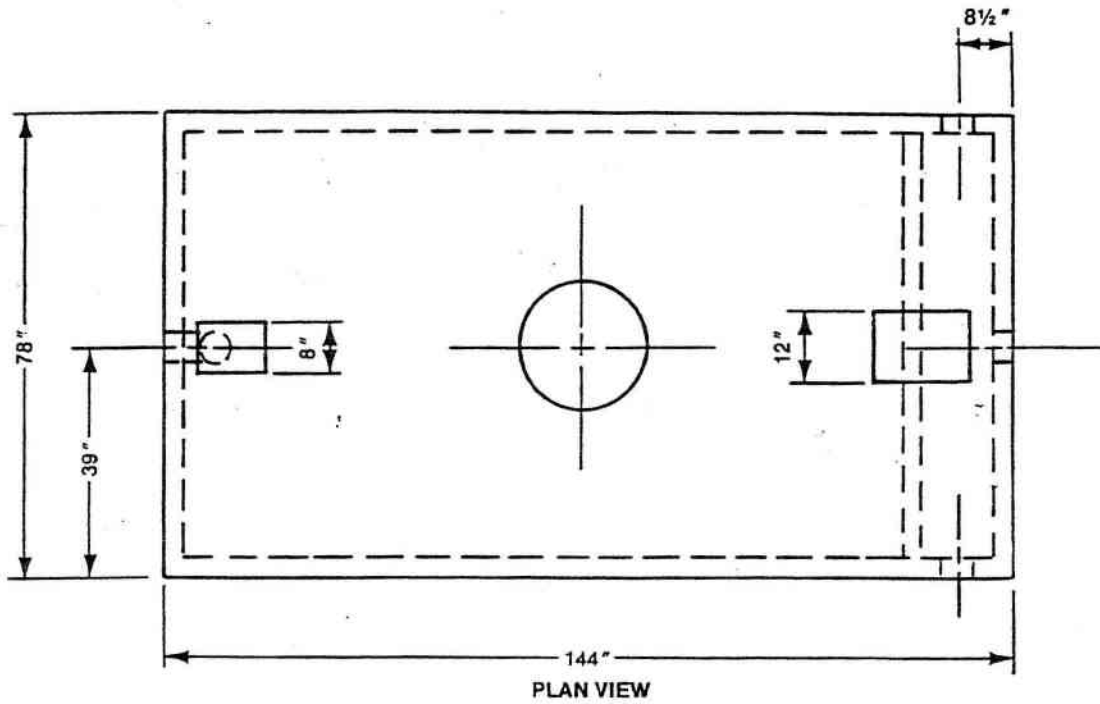


2,000 GALLON GREASE INTERCEPTOR

PAGE A-10



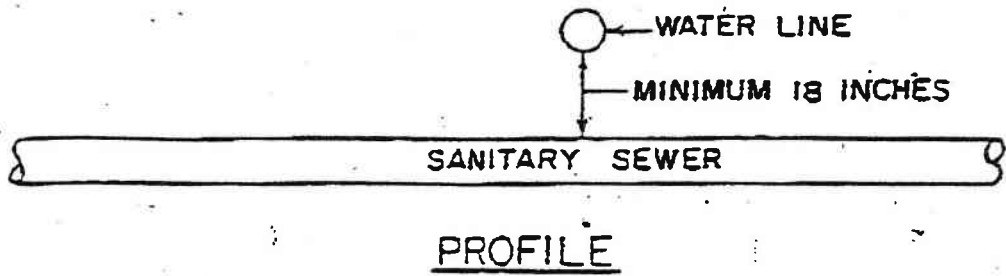
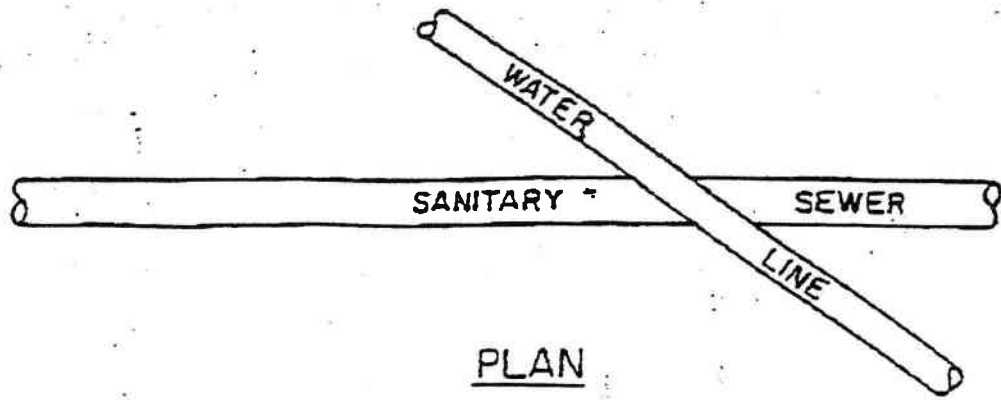
# 2,000 GALLON GREASE INTERCEPTOR



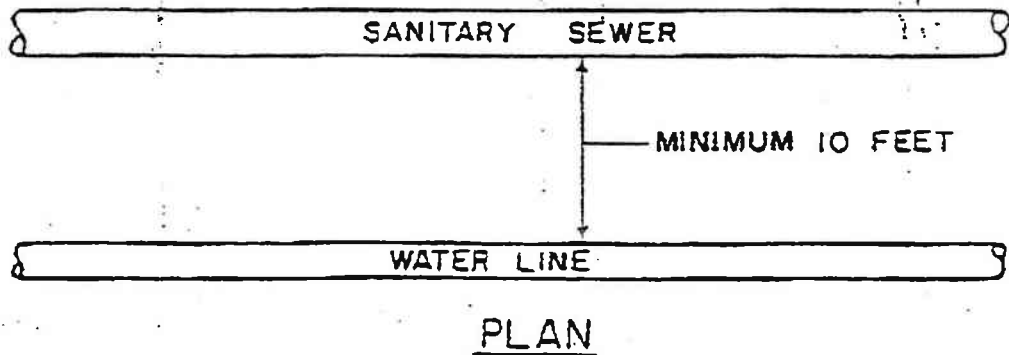
## SPECIFICATIONS

- **Concrete Minimum Strength** — 3,500 P.S.I. @ 28 Days
- **Steel Reinforcement** — 6" x 6" x 10 ga. wire mesh in sides, lid, and bottom  
— #3 Rebar in lid and bottom
- **Design** — As manufactured by  
MODERN CONCRETE SEPTIC TANK COMPANY





WATER AND SEWER LINE CROSSINGS



PARALLEL WATER AND SEWER LINES

NOT TO SCALE

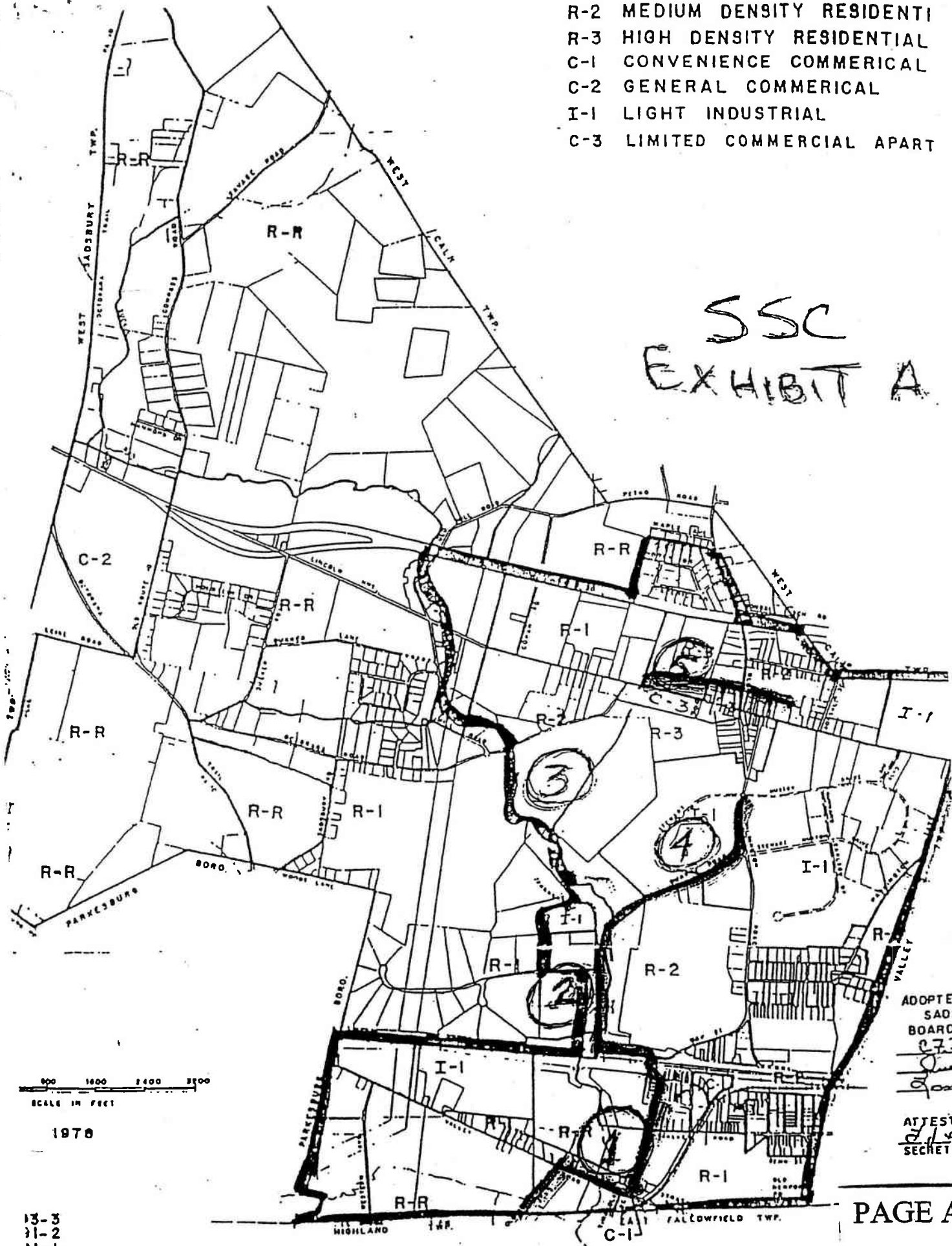
SADSBURY TOWNSHIP

TYPICAL WATER AND SEWER LINE CROSSINGS



- R-2 MEDIUM DENSITY RESIDENTI
- R-3 HIGH DENSITY RESIDENTIAL
- C-1 CONVENIENCE COMMERCIAL
- C-2 GENERAL COMMERCIAL
- I-1 LIGHT INDUSTRIAL
- C-3 LIMITED COMMERCIAL APART

SSC  
EXHIBIT A



0 1000 2000 3000  
SCALE IN FEET

1978

ADOPTED  
SADS  
BOARD  
C. J. J.  
*[Signature]*

ATTESTE  
*[Signature]*  
SECRETAR

- 13-3
- 11-2
- 11-1
- 17-2
- 3-4

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations.

In the second section, the author provides a detailed breakdown of the company's revenue streams. This includes sales from various product lines and services. The analysis shows that while one product line is currently the primary source of income, diversification into new markets is essential for long-term growth.

The third section addresses the company's financial health and liquidity. It highlights the need for a robust cash flow management strategy to ensure that all operational needs are met. The author suggests implementing regular financial reviews to identify potential areas of concern before they become critical.

Finally, the document concludes with recommendations for future strategic planning. It suggests that the company should focus on innovation and customer engagement to stay competitive in a rapidly changing market. The author also recommends seeking professional advice from accountants and legal counsel to navigate complex financial and regulatory environments.