

**SOUTH CONNELLSVILLE BOROUGH
FAYETTE COUNTY, PENNSYLVANIA**

**SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY
REIDMORE ROAD SANITARY SEWER EXTENSION
PROJECT**

JUNE 2026

Prepared For:

**SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY
1503 South Pittsburgh Street
South Connellsville, PA 15425**

Prepared By:

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TECHNICAL SPECIFICATIONS (SEE TABLE OF CONTENTS OF TECHNICAL SPECIFICATIONS)

DRAWINGS

ADVERTISEMENT FOR BIDS

Sealed bids for the South Connellsville Municipal Authority Reidmore Road Sanitary Sewer Extension Project, County of Fayette, will be received by South Connellsville Municipal Authority at their Borough Building at 1503 South Pittsburgh Street, Connellsville, PA 15425, until 3:00 P.M., local prevailing time on Monday, July 13th, 2026.

The bids will be publicly be opened and read aloud at the Borough Municipal Building at **6:00 P.M.** on Monday, July 13th, 2026.

The work consists of the installation of approximately 1,400 linear feet of 8" sanitary sewer line along Reidmore Road, South Connellsville Borough.

Each proposal shall be accompanied by security in the form of a certified check or bid bond payable to the order of South Connellsville Municipal Authority in the amount not less than ten percent (10%) of the total bid in accordance with provisions of the Contract Documents.

The Issuing Office for the Bidding Documents is: **Widmer Engineering Inc., 225 West Crawford Avenue, Connellsville, PA 15425**. Electronic PDF copies, suitable for printing, of the Contract Documents may be viewed and downloaded at the Widmer Engineering website @ www.widmerengineering.com under the tab "Bids". Electronic PDF documents are available at no charge. Hard copies will not be distributed.

The Contractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, national origin or handicap;

South Connellsville Municipal Authority reserves the right to reject any or all bids, or to waive any informalities in the biddings.

Bids may be held by the South Connellsville Municipal Authority for a period of forty-five (45) days from the date of opening of bids for the purpose of reviewing bids and investigating the qualifications of bidders prior to awarding the Contract.

Addenda, if any, will be issued to only those persons who are registered as having obtained Contract Documents.

South Connellsville Borough is an Equal Opportunity Employer and does not discriminate because of race, color, religious creed, handicap, ancestry, national origin, age or sex.

Kelly Addis
Secretary
South Connellsville Municipal Authority

Proof of Publication Required (**must advertise twice**)

INSTRUCTIONS TO BIDDERS

1. DEFINITIONS

Whenever in these Contract Documents the following words, terms and expressions, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

Owner: Party of the First Part or First Party to this Contract, acting directly or through any agency, officer or employee duly authorized to act for the said party in the execution of the work required by this Contract.

Engineer: The person or organization duly authorized by the Owner to observe and inspect the execution of this Contract, acting directly or through properly authorized agents, engineers, assistants, inspectors, superintendents or other representatives acting severally within the scope of the particular duties entrusted to them.

Contractor: Party of the Second Part or Second Party to this Contract, acting directly or through his authorized lawful agents, legal representatives, or employees, appointed to act for said party in the performance of the work under Contract, or the Surety in case of default.

Surety or Sureties: The corporate body or bodies approved by the Owner, who are bound with and for the Contractor and who are primarily liable for the satisfactory and acceptable execution and fulfillment of this Contract, and/or the prompt payment in full for labor and materials as provided in the bonds.

Contract: The written agreement executed by and between the Owner and the successful Bidder including collectively all of the Contract Documents, covering the performance of the work and the furnishing of labor and materials in the construction of the Project. Also, any and all supplemental agreements which could reasonably be required to complete the construction contemplated.

Contract Documents: The Contract Documents consist of the Advertisement for Bids, Instruction to Bidders, Bid Proposal, Certification of Non-Segregated Facilities, Bid Bond, Non-Collusion Affidavit of Prime Bidder, Statement of Bidder's Qualifications, Wage Rates (if any), Addenda (if any), Notice of Award, Agreement, Nondiscrimination Clause, Stipulation Against Liens, Performance Bond, Labor and Material Payment Bond, Detailed Breakdown of Lump Sum Bid (if any), Notice to Proceed, Application and Certificate for Payment, Continuation Sheet, Change Order(s) (if any), Certificate of Substantial Completion, Maintenance Bond, General Conditions, Drawings and Technical Specifications.

Specifications: Collectively, all of the definitions, descriptions, directions, provisions, requirements, terms and stipulations contained in the Contract Documents, and all written supplements thereto, made or to be made, pertaining to the Contract, and the materials and workmanship to be furnished under the Contract.

Drawings or Plans: Collectively, all of the drawings or plans (or reproductions of them) pertaining to the construction of the Project and attached to the Contract or otherwise made a part thereof. Also, such supplementary drawings as the Engineer may issue from time to time in order to elucidate or clarify said Contract Drawings, or for showing details which are not shown thereon, or for the purpose of showing changes in the work as authorized under Article 27 of the section entitled General Conditions.

Contract Price: The lump sum(s) or unit price(s) bid by the Contractor and named in the Proposal, or the total of all payments made or to be made under the Contract at the lump

sum(s) or unit price(s), as the case may be.

Bidder: Any individual, firm or corporation submitting a Proposal for the work contemplated herein, acting directly or through a duly authorized representative.

Proposal or Bid or Bid Proposal: The written offer of a Bidder submitted on the approved form prepared for the purpose, to perform the work and to furnish the labor and materials embraced in this Contract, for the consideration of payment at the prices stated.

Proposal Security: The required security furnished with the proposal by a Bidder as guaranty of his ability and intent to qualify for award of the Contract and to enter into a Contract with the Owner for the performance of the work and to furnish satisfactory bonds, as required, if the work involved in the proposal is awarded to him. This may be a money deposit in the form of a draft or a certified check on a solvent bank, or, if permitted, a bid bond.

Certified Check: When the Advertisement indicates that a certified check is required, each Bidder shall submit with his proposal a certified check drawn upon a solvent clearing house bank, and the Bidder who has had the Contract awarded to him and who fails to promptly and properly execute the required Contract and bonds shall forfeit said check.

Bid Bond: When permitted, in lieu of certified checks, bid bonds to be approved by the Owner, may be furnished by the Bidders and their Sureties, conditioned upon the successful Bidder promptly and properly executing the required Contract and bonds.

Performance Bond: The approved and executed form of security furnished by the Contractor and his Surety as a guaranty of good faith to execute and complete the work in accordance with the terms of the Contract Documents.

Labor and Material Payment Bond: The approved and executed form of security furnished by the Contractor and his Surety as a guaranty of good faith to promptly pay or cause to be paid in full such sums as may be due for material furnished and/or labor supplied or performed, services rendered in the prosecution of the work under the Contract.

Notice to Proceed: A written notice to the Contractor, from the Owner or Engineer, of the date on or before which the former is to begin prosecution of the work and on which the Contract period starts.

Project: All the necessary performance and materials required for the satisfactory completion of the work under the Contract as described in the other Contract Documents.

Site: The area which has been secured or reserved by the Owner for use in the performance of the Contract.

Final Estimate: The estimate made by the Engineer to the Owner of the final price of all work performed under the Contract.

Subcontractor: A person, firm or corporation having a direct contract with the Contractor to perform part of the latter's Contract; such as one who installs or furnishes and installs at the site, equipment forming a permanent part of the Contract work, or who furnishes labor at the site for work required by the Contract in accordance with the Contract Documents. This term does not include individual workmen furnishing labor only, nor one who merely furnishes material not worked to a special design.

"Directed", etc.: Wherever in these Contract Documents the words "directed", "required", "permitted", "ordered", "instructed", "designated", "considered necessary", "prescribed", or

words of like import are used, it shall be understood that the direction, requirements, permission, order, instruction, designation, or prescription, etc., of the Engineer is intended, unless otherwise specifically stated.

"Approved", etc.: The words "approved", "acceptable", "satisfactory", or words of like import, shall mean approved by, or acceptable or satisfactory to, the Engineer, unless another meaning is plainly intended or otherwise specifically stated.

2. RECEIPT OF BIDS

The place to which Proposals must be delivered, the amount of Proposal Security required, and the date, time and place of opening of Proposals, are stated in the Advertisement. The proposal form indicates the location and description of the project to be constructed, and shows the approximate quantities of work to be performed and materials to be furnished, if a unit price contract.

3. STATEMENT OF BIDDER'S QUALIFICATIONS

Each bidder shall, upon request of the Owner, submit on the form furnished for that purpose a statement of the Bidder's qualifications, his experience record in constructing the type of improvements embraced in the Bid Proposal, and his organization and equipment available for the work contemplated; and, when specifically requested by the Owner, a detailed financial statement. The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract, and the Bidder shall furnish the Owner all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

4. COLLUSIVE AGREEMENTS

Each Bidder submitting a Bid to the Owner for any portion of the work contemplated by the Contract Documents on which bidding is based shall execute and attach thereto, an affidavit substantially in the form herein provided, to the effect that he has not colluded with any other person, firm or corporation in regard to any Bid submitted.

5. BIDDER RESPONSIBILITY

The Bidder is required to carefully examine the site of the project, the Contract Documents, and all other forms pertinent to the work contemplated. It will be assumed that he has satisfied himself as to the conditions to be encountered, the character, quality, and quantities of work to be performed and materials to be furnished, and the requirements of the Contract Documents. No allowance or concession will be made for lack of such information on the part of the Contractor.

Whenever information concerning subsurface materials or conditions is given on the Drawings, it is understood, in the absence of any qualifying notation, that it was obtained in the usual manner and the location, depths, and character of the material have been recorded in good faith. There is no expressed or implied agreement that the depths or the character of the material have been correctly indicated and Bidders should take into account the possibility that conditions affecting the cost or quantities of work to be done may differ from those indicated.

6. APPROXIMATE ESTIMATE OF QUANTITIES

The Bidder's attention is directed to the fact that, in contracts based on unit prices the estimate of quantities of work to be done and materials to be furnished is approximate and is given only as a basis of calculation upon which to determine the lowest bidder. The Owner does not assume any responsibility that the quantities shall be obtained in the construction of the Project, nor shall the Contractor plead misunderstanding or deception because of such estimate of quantities, or of the character of the work or location, or other conditions pertaining thereto. The Owner reserves the right to increase or diminish any or all of the above mentioned quantities of work or to omit any of them, as it may deem necessary and such increase or decrease of the quantities given for any of the items shall not be considered as sufficient grounds for granting an increase in the unit prices bid, except as set forth in Article 27 of the Section entitled General Conditions.

7. PREPARATION OF PROPOSAL

Using the proposal form provided herewith, all bid prices shall be written or typed in ink, in the blank spaces provided for each item, with the amounts extended if a unit price bid, and all amounts totaled. In the event of any discrepancy between the written amounts and the numerals, the written amounts shall govern, and will be considered as being the price bid.

In the unit price bids, the determination of the lowest bid will be based solely on the total results of computations of the estimated quantities and the prices bid including a combination of alternates authorized by the Proposal.

The Bidder shall sign his name and give his business address in the spaces provided therefor. If the Proposal is made by a partnership, it shall be signed by all partners. If made by a corporation, it shall be signed in the name of the corporation by one of the officers thereof and shall have affixed the seal of the corporation.

8. PROPOSAL SECURITY

Each Proposal shall be accompanied by security in the form of a certified check, or, when specifically permitted, a bid bond, payable to the Owner, in the amount indicated in the Advertisement. Within seven (7) days after the opening of bids, the securities therefor will be returned excepting those which the Owner elects to hold until the award is made and the successful bidder qualifies and executes the Contract. Such Proposal Security of the successful Bidder shall be forfeited to the Owner as liquidated damages if the successful Bidder fails to execute and deliver the Contract in conformity with the form of Agreement, and furnish bonds and insurance certificates as specified within ten (10) days after notification by the Owner of the acceptance of his bid. The security of the successful Bidder will be returned to him when the Contract is executed by both parties hereto. If all Proposals are rejected, the securities therefor will be returned immediately after the determination of such rejection.

9. WITHDRAWAL OF PROPOSALS

All Bidders specifically waive any right to withdraw a Proposal after it has been submitted to the Owner, except as hereinafter provide. A Bidder may withdraw a Proposal provided the Bidder makes a request to do so by telephone, telegraph, or in writing to the Owner and provided that such requests reach the office of the Owner not later than the day previous to the date set for opening thereof. Requests by telephone or telegraph must be

confirmed in writing, by the Bidder in person, or by an accredited representative of the Bidder before the time set for the opening of Proposals. No bids may be withdrawn for the period of time stipulated in the Proposal.

10. RIGHT TO REJECT PROPOSALS

The unqualified right is reserved by the Owner to waive any informalities in, or reject any or all proposals as may be deemed to the best interest of the Owner. Proposals which contain any omission, erasures, alterations, additions not called for, conditional bids, or irregularities of any kind, or Proposals otherwise regular which are not accompanied by Proposal Security, may be rejected as informal. Proposals in which the bid prices are obviously unbalanced may be rejected.

11. CHANGES PRIOR TO THE OPENING OF BIDS

During the period allowed for preparation of bids, the Bidders may be furnished addenda or bulletins for additions to or alterations of the Contract Documents, which shall be included in the work covered by the proposal and become a part of the Contract Documents. If any prospective bidder is in doubt as to the true meaning of any part of the Contract Documents, he may submit to the Engineer a written request for an interpretation thereof. The Bidder submitting the request will be responsible for its prompt delivery. An interpretation of the Contract Documents will be made only by an addendum duly issued and a copy of such addendum will be mailed or delivered to each prospective bidder on record. The Owner will not be responsible for any other explanations or interpretations of the Contract Documents.

12. SCOPE OF WORK

Unless otherwise provided it is the intent of the Contract Documents to prescribe a complete project which the Bidder proposes to construct, by furnishing all labor, materials, equipment, tools, necessary utilities and other facilities, and performing all work necessary or incidental to such construction, in full compliance with the Contract Documents.

13. SUBMITTING PROPOSAL

Proposals, accompanied by the Proposal Security, and all Addenda, if any, shall be submitted in an opaque, sealed envelope, addressed to the Owner. The name of the Bidder shall appear in the upper left-hand corner of the envelope and the title and number of the Contract shall appear in the lower left-hand corner.

14. AWARD AND EXECUTION OF CONTRACT

When a Proposal received has been determined to be satisfactory, a Contract will be awarded to the lowest responsible Bidder within the time specified in the Proposal.

The Bidder to whom the award is made shall execute the Contract and return it, together with the properly executed Bonds and insurance certificates, to the office of the Owner, within the time specified in the Proposal.

If the Contractor executes his Contract as herein provided and the Contract is not executed by the Owner within thirty (30) days after the receipt thereof from the Contractor, the Owner upon written request of the Contractor will return the Proposal Security. In such event, the award of the Contract shall be considered as annulled.

The Contract, surety bonds, and insurance certificates shall be executed in triplicate or in as many copies as the Owner may require.

15. CANCELLATION OF AWARD

The Owner reserves the right to cancel the award of any Contract at any time prior to its execution by the Owner.

16. SURETY BONDS

With the execution and delivery of this Contract the successful Bidder receiving the Contract award will be required to furnish, within the time specified, in Article 7, a "performance bond" covering faithful and satisfactory performance of the work contracted, in an amount not less than one hundred percent (100%) of the total contract price, and a "labor and material payment bond" in an amount not less than one hundred percent (100%) of the Contract amount, covering payment in full for all services rendered, and materials furnished.

17. INDEMNITY AND INSURANCE

The Contractor shall not commence work under this Contract until he has obtained all insurance required under this paragraph and such insurance has been approved by the Owner and Engineer, nor shall the Contractor allow any subcontractor to commence work on a subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

A. Compensation Insurance

The Contractor shall take out and maintain during the life of this contract, Workmen's Compensation Insurance for all of his employees employed at the site of the project, and in case any work is sublet, the Contract shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the Contractor. The Contractor, shall at all times, indemnify and save harmless the Owner, of and from all claims for Workmen's Compensation which may be made by any employee of the Contractor or his subcontractors.

B. The Contractor shall take out and maintain during the life of this Contract such Public Liability and Property Damage Insurance as shall protect him, the Owner, and the Engineer from claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. Hazards insured against for property damage liability shall include explosion, collapse, underground object, and blasting to the extent that any such exposure exists. The amounts of such insurance shall be non-deductible and as follows:

1) Public Liability

In an amount not less than \$1,000,000.00 for injuries, including accidental death, to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000.00 on account of one accident.

2) Property Damage

In an amount not less than \$1,000,000.00, with an aggregate of \$1,000,000.00.

The same limits apply to coverage to be provided on any automobiles or trucks used at the site. The policies shall be written on an occurrence basis.

The Contractor shall indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

In any and all claims against the Owner or the Engineer or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, the indemnification obligation under this Article shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

The obligations of the Contractor under this Article shall not extend to the liability of the Engineer, his agents or employees arising out of (a) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications or (b) the giving of or the failure to give directions or instructions by the Engineer, his agents or employees provided such giving or failure to give is the primary cause of injury or damage.

C. Builder's Risk Insurance

The Contractor during the progress of the work and until final acceptance by the Owner upon completion of the entire Contract, shall maintain insurance on all work included in the Contract against loss or damage by fire, lightning, wind, explosion, and those perils covered by extended coverage endorsement and vandalism and malicious mischief on the completed value form, in the names of the Owner and the Contractor as their respective interests may appear in an amount equal to one hundred percent (100%) of the insurable value of each building or structure and materials included in this Contract as shall fully protect the interest of the Owner and the Contractor; the risk of damage to the construction work due to the perils covered by said insurance, as well as any other hazards which might result in damage to the construction work, is that of the Contractor

and Surety, and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

D. Railroad Protective Liability and Property Damage Insurance

When the Contract includes work on or under railroad rights-of-way, properties, or areas adjacent to the Railroad, the Contractor shall take out and maintain during the life of the Contract, Railroad protective liability and property damage insurance in amounts as requested by the railroads.

The Contractor shall submit certificates or other documentary evidence to the Owner for approval, covering Workmen's Compensation Insurance, and Public Liability and Property Damage Insurance, and Builder's Risk Insurance, and Railroad Protective Liability and Property Damage Insurance if required.

Each certificate or other documentary evidence presented shall contain therein or have contained in a rider attached thereto and made a part thereof, a clause to the effect that the insurer will notify the insured and the Owner in writing five (5) days prior to cancellation of the policy. The certificate for each policy shall be executed in triplicate.

18. CANCELLATION OF CONTRACT

As soon as practicable after the satisfactory execution of the Contract by both parties, written notice to proceed with the work will be given to the Contractor. If such notice is not given within ninety (90) days after Contract execution, and the delay is not caused by the Contractor or accepted by him in writing, the Contract may be declared null and void.

If the Contractor incurs any expense in furtherance of the Contract prior to receipt of the Notice to Proceed, he does so on his own responsibility.

19. COMPLETION TIME AND LIQUIDATED DAMAGES

The Bidder shall understand that the time limit indicated for completion of this Contract shall be **120 (One Hundred Twenty) calendar days** from the "Notice to Proceed", and the amount of liquidated damages to be charged against the Contractor shall be **\$100.00 per day**. The amounts deducted are liquidated damages not penalties.

20. WAGES AND SALARIES

PENNSYLVANIA PREVAILING WAGE RATES ARE REQUIRED FOR THIS PROJECT.

21. EQUAL EMPLOYMENT OPPORTUNITY

Attention of Bidders is particularly called to the requirement for insuring that employees and applicants for employment are not discriminated against because of race, color, religion, sex or national origin.

22. RESIDENT WORKMEN

According to Section 754, Public School Code of Pennsylvania, 1949, as amended, laborers and mechanics employed shall have been residents of the Commonwealth of at least 90 days prior to their employment. Failure to comply with this provision shall be sufficient legal reason to refuse payment of the contract price to the Contractor.

23. HUMAN RELATIONS ACT

The provisions of the Pennsylvania Human Relations Act, Act 222 of October 27, 1955 (P.L. 744) (43 P.S. Section 951, et. seq.) of the Commonwealth of Pennsylvania prohibits discrimination because of race, color, religious creed, ancestry, age, sex, national origin, handicap or disability by employer, employment agencies, labor organizations, contractors, and others. The Contractor shall agree to comply with the provisions of this Act, as amended.

24. STANDARD OF QUALITY

The various materials and products specified by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe a material or product as minimum standard that is desired and acceptable. Where proprietary names are used, whether or not followed by the words "or approved equal", that shall be subject to equals only as approved by the Engineer.

25. STEEL PRODUCTS PROCUREMENT ACT

In accordance with Act No. 3 of the 1978 General Assembly of the Commonwealth of Pennsylvania, approved March 3, 1978, if any steel products are to be used or supplied in the performance of the Contract, only steel products produced in the United States as defined therein shall be used or supplied in the performance of the Contract or any subcontracts thereunder.

26. MAINTENANCE BOND

Attention to Bidders is particularly called to the requirement that the Contractor must provide the Owner with a one (1) year maintenance bond in the amount of 100% of the Contract amount upon completion of said project. Said bond shall be in effect for a period of one (1) year from the date indicated on the Certificate of Substantial Completion or as required by Articles 9 and 33 in the General Conditions.

BID PROPOSAL

Contractor's Name _____
 Address _____
 Telephone Number _____
 Fax Number _____
 e-mail _____
 Federal I.D. Number _____
 Date _____

To: SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY
 1503 South Pittsburgh Street
 South Connellsville, PA 15425

For: Reidmore Road – Sanitary Sewer Extension Project

Prospective Bidders:

1. Pursuant to and in compliance with your request inviting proposals for the construction of the above project and having carefully examined the contract documents, prepared by Widmer Engineering Inc., comprised of the drawings; specifications and all other documents bound therewith; together with all addenda or bulletins thereto; and being familiar with the site and the various conditions affecting the work, the undersigned hereby offers to furnish all plant, labor, supervision, materials, supplies, equipment, and other facilities and things necessary or incidental to the work as required by and in strict accordance with the applicable provisions of the plans and specifications, contract documents, and of all addenda or bulletins issued by the Owner for the unit prices named in the following schedule.

**BID PROPOSAL – REIDMORE ROAD SANITARY SEWER EXTENSION
 PROJECT**

Item No.	Description	Quantity	Unit Price	Total Amount
1.	8" SDR-35, 0-6" Depth, Trench Detail "B"	614 LF		
2.	8" SDR-35, 6-10" Depth, Trench Detail "B"	735 LF		
3.	8" SDR-35, 10-14" Depth, Trench Detail "B"	66 LF		
4.	8" Stream Crossing	10 LF		
5.	4" Diameter Manhole, 0-6' Deep	6 EA		
6.	Vertical Manhole Cover (Over 6')	9 VF		
7.	Standard Manhole Frame and Cover	6 EA		

8.	8" x 6" Wye Branch and Plug	2 EA		
9.	6" Service Lateral, Trench Detail "B"	46 LF		
10.	Connection to Existing Manhole	1 EA		
11.	Superpave Asphalt, 19.0 mm PG 64-22 HMA, 0 to 0.3 million ESAL's, SRL-E, to include a 3.0" Binder Course for Ditchline Restoration, Complete in place.	397 SY		
12.	Superpave Asphalt, 9.5 mm PG 64-22 HMA, 0 to 0.3 million ESAL's, SRL-E, to include a 1.5" Wearing Course for Ditchline Restoration, Complete in place.	397 SY		

TOTAL BID AMOUNT: \$_____ (Digits)

TOTAL BID AMOUNT IN WORDS:_____

ALTERNATE BID PROPOSAL – ADDITION OF CURB TO CURB 1.5" OVERLAY RESTORATION

1.	Superpave Asphalt, 9.5 mm PG 64-22 HMA, 0 to 0.3 million ESAL's, SRL-E, to include a 1.5" Wearing Course for Curb to Curb Overlay, Complete in place.	1,507 SY		
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2. The total bid amount is to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.
3. The above prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work as specified.
4. The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informality in the bidding.
5. The Bidder agrees that this bid shall be good and may not be withdrawn for a period of **forty five (45) calendar days** after the scheduled closing time for receiving bids.
6. Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal Contract dated within ten (10) days and deliver a Surety Bond or Bonds as required by these Specifications. The bid security attached in the sum of _____ 10% (\$_____) is to become the property of the Owner in the event the Contract and Bonds are not provided within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.
7. The Bidder agrees to commence the Contract work upon receipt of a written "Notice to Proceed" from the Owner and to fully complete the project within one hundred twenty **(120) consecutive calendar days** thereafter. The Bidder further agrees to pay as liquidated damages, the sum of **\$100.00 for each calendar day** thereafter.

8. The undersigned represents that he is in receipt of the following number of addenda issued by Widmer Engineering Inc. (If no addenda are issued, insert the word "none" in the following space) _____.
9. By submission of this Bid, each Bidder certifies, and in the cause of a joint Bid, each party thereto certifies as to its own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.
10. To the extent he deems it necessary or desirable, the Bidder has reviewed the Drawings and Project Manual, visited the proposed building site and made all site, soil and subsurface tests and independently verified the location of all underground utilities and other structures and obstructions.
11. The Bidder represents that he has had ample opportunity to request clarification from the Owner and the Engineer about any part of the Drawings and Contract Documents which are not entirely clear to him or about which he has any questions or reservations and that, to the extent he has requested clarifications, he has received satisfactory responses.
12. The Bidder has carefully reviewed the Drawings and Contract Documents for the purpose of detecting any inconsistencies between the Drawings and Specifications (or any items included in the Drawings but not in the Specifications, or in the Specifications but not on the Drawings), and, to the extent he has observed any such inconsistencies and/or omissions, he has duly noted them and has had an adequate opportunity to request clarification from the Owner and the Engineer, and he has received a satisfactory response with respect thereto.
13. The bidder is required to submit an experience statement with this Bid.

Respectfully submitted,

(SEAL)

BIDDER

BY: _____
(Signature)

TITLE: _____

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees, any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity Clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or natural origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity Clause, and that he will retain such certifications in his files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. ss 1001.

Date: _____, 20____

Name of Bidder

BY _____

TITLE _____

Official Address:

BID BONDPROJECT: **Reidmore Road Sanitary Sewer Extension**

BID DATE: _____

PRINCIPAL
(NAME AND MAILING ADDRESS)SURETY
(NAME AND MAILING ADDRESS)_____

KNOW ALL MEN BY THESE PRESENTS that the above-named Principal and Surety are held and firmly bound unto **South Connellsville Municipal Authority**, hereinafter called the Owner, in the sum of ten percent (10%) of the Principal's Bid on the above Project, for the payment whereof the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1) If the Principal's Bid is determined by the Owner to be the successful Bid and the Principal shall qualify as the successful Bidder by meeting the Owner's standards regarding financial responsibility, competency, experience, reputation and quality of previous work, and shall duly execute and deliver the Contract prepared by the Owner for the Project, and provide the required bonds and insurance certificate(s), or

2) If the Principal's Bid is determined by the Owner to be an unsuccessful Bid, and this bond is returned to the Principal,

Then this obligation shall be void and of no effect; otherwise to remain in full force and virtue; and,

PROVIDED FURTHER, that in case of default by the Principal in any respect, action on this Bond may be begun forthwith, and the Principal and Surety, jointly and severally, do hereby authorize the empower any attorney of any Court of Record of Pennsylvania, or elsewhere, to appear for and to enter judgment against them, jointly and severally, for the aforementioned sum, with or without defalcation, with costs of suit, release of errors, without stay of execution and with ten percent (10%) attorney fees added for collection; and waiving inquisition on any real estate and exemption of any property whatsoever, authorizing condemnation of the same and immediate issuance of writ of execution, and releasing and waiving relief from any and all appraisement, stay of execution, or exemption laws of any State, now in force or hereinafter to be passed.

Signed, sealed and delivered this _____ day of _____,
20____.

ATTEST OR WITNESS:

_____(SEAL)
(Name of Principal)

Signature Title

BY_____
Signature Title

ATTEST OR WITNESS:

_____(SEAL)
(Name of Surety)

BY_____
Attorney-in-fact

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)
) ss:
 County of _____)

_____, being first duly sworn, deposes and says that:

(1) He is _____
 (Owner, partner, officer, representative or agent)

of _____, the Bidder that has submitted the attached Bid;

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or to refrain from submitting a Proposal in connection with such Contract, or has in any manner, directly or indirectly sought by unlawful agreement or connivance with any other Bidder, firm or person to fix the price or prices in said subcontractor's Proposal, or to secure through collusion, conspiracy, connivance, or unlawful agreement or any advantage against the Owner or any persons interested in the proposed Contract; and

(5) The price(s) quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties of interest, including this affiant.

(Signed) _____

Title: _____

Subscribed and sworn to before me
 this _____ day of _____,
 20____.

(Signed) _____

Title: _____

My Commission Expires: _____

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered, and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder.
2. Permanent main office address.
3. When organized.
4. If a corporation, where incorporated.
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.)
7. General character of work performed by your company.
8. Have you ever failed to complete any work awarded to you? If so, where and why?
9. Have you ever defaulted on a contract?
If so, where and why?

9. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed.

10. List your major equipment available for this Contract.

11. Experience in construction work similar in importance to this project.

12. Background and experience of principal members of the organization, including the officers.

14. Credit available: \$_____.

15. Provide Bank reference: _____.

16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner?_____.

17. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals comprising the Statement of Bidder's Qualifications.

Dated this _____ day of _____, 20__.

Name of Bidder: _____

By:_____

Title:_____



COMMONWEALTH OF PENNSYLVANIA

PUBLIC WORKS EMPLOYMENT VERIFICATION FORM

Date _____

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

☐ Contractor ☐ Subcontractor (check one)

Contracting Public Body _____

Contract/Project No _____

Project Description _____

Project Location _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project Name:	South Connellsville Municipal Authority - Reidmore Road Sewer Extension
General Description:	~1,400 LF sanitary sewer extension along Reidmore Road in South Connellsville Borough. One stream crossing required. Two laterals to install. Pavement restoration of road required.
Project Locality	South Connellsville Borough
Awarding Agency:	South Connellsville Municipal Authority
Contract Award Date:	7/13/2026
Serial Number:	26-05845
Project Classification:	Heavy/Highway
Determination Date:	6/17/2026
Assigned Field Office:	Pittsburgh
Field Office Phone Number:	(412)565-5300
Toll Free Phone Number:	(877)504-8354
Project County:	Fayette County

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 26-05845 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2024		\$43.40	\$29.51	\$72.91
Asbestos & Insulation Workers	8/1/2025		\$45.10	\$30.31	\$75.41
Boilermakers	6/1/2016		\$40.90	\$27.61	\$68.51
Bricklayer	6/1/2025		\$41.05	\$25.86	\$66.91
Bricklayer	12/1/2025		\$41.55	\$26.36	\$67.91
Bricklayer	6/1/2026		\$42.20	\$26.71	\$68.91
Carpenters - Piledriver/Welder	1/1/2025		\$43.38	\$22.72	\$66.10
Carpenters - Piledriver/Welder	1/1/2026		\$44.63	\$23.47	\$68.10
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2024		\$41.49	\$19.93	\$61.42
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2025		\$43.34	\$19.93	\$63.27
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2026		\$42.11	\$23.36	\$65.47
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2027		\$43.26	\$24.35	\$67.61
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2028		\$44.45	\$25.19	\$69.64
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2029		\$45.72	\$26.01	\$71.73
Cement Masons	7/1/2024		\$34.57	\$25.09	\$59.66
Cement Masons	6/1/2025		\$35.52	\$25.64	\$61.16
Cement Masons	6/1/2026		\$36.02	\$26.14	\$62.16
Drywall Finisher	1/1/2025		\$34.01	\$24.63	\$58.64
Drywall Finisher	6/1/2025		\$35.16	\$25.98	\$61.14
Drywall Finisher	6/1/2026		\$36.59	\$27.30	\$63.89
Electricians & Telecommunications Installation Technician	12/27/2024		\$50.86	\$32.69	\$83.55
Electricians & Telecommunications Installation Technician	12/26/2025		\$53.11	\$33.72	\$86.83
Elevator Constructor	1/1/2025		\$61.07	\$40.05	\$101.12
Elevator Constructor	1/1/2026		\$63.71	\$40.89	\$104.60
Glazier	9/1/2024		\$37.06	\$31.89	\$68.95
Glazier	9/1/2025		\$38.70	\$33.75	\$72.45
Iron Workers	6/1/2024		\$39.89	\$36.47	\$76.36
Iron Workers	6/1/2025		\$41.50	\$37.36	\$78.86
Iron Workers	6/1/2026		\$43.50	\$37.91	\$81.41
Laborers (Class 01 - See notes)	1/1/2025		\$27.32	\$19.96	\$47.28
Laborers (Class 01 - See notes)	1/1/2026		\$27.82	\$20.46	\$48.28
Laborers (Class 02 - See notes)	1/1/2025		\$27.47	\$19.96	\$47.43
Laborers (Class 02 - See notes)	1/1/2026		\$27.97	\$20.46	\$48.43
Laborers (Class 03 - See notes)	1/1/2025		\$30.47	\$19.96	\$50.43
Laborers (Class 03 - See notes)	1/1/2026		\$30.97	\$20.46	\$51.43
Laborers (Class 04 - See notes)	1/1/2021		\$23.57	\$19.32	\$42.89
Landscape Laborer (Skilled)	1/1/2025		\$25.79	\$18.78	\$44.57
Landscape Laborer (Skilled)	1/1/2026		\$26.79	\$19.03	\$45.82
Landscape Laborer (Tractor Operator)	1/1/2025		\$26.09	\$18.78	\$44.87

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 26-05845 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Landscape Laborer (Tractor Operator)	1/1/2026		\$27.09	\$19.03	\$46.12
Landscape Laborer	1/1/2025		\$25.37	\$18.78	\$44.15
Landscape Laborer	1/1/2026		\$26.37	\$19.03	\$45.40
Millwright	6/1/2020		\$41.68	\$20.32	\$62.00
Operators (Class 01 - see notes)	6/1/2025		\$42.72	\$24.79	\$67.51
Operators (Class 01 - see notes)	6/1/2026		\$43.74	\$25.29	\$69.03
Operators (Class 02 -see notes)	6/1/2025		\$36.67	\$24.79	\$61.46
Operators (Class 02 -see notes)	6/1/2026		\$37.67	\$25.29	\$62.96
Operators (Class 03 - See notes)	6/1/2025		\$33.88	\$24.79	\$58.67
Operators (Class 03 - See notes)	6/1/2026		\$34.88	\$25.29	\$60.17
Painters Class 6 (see notes)	6/1/2024		\$32.14	\$24.93	\$57.07
Painters Class 6 (see notes)	6/1/2025		\$34.16	\$25.81	\$59.97
Painters Class 6 (see notes)	6/1/2026		\$35.26	\$26.51	\$61.77
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		\$62.82	\$22.72	\$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		\$64.70	\$23.47	\$88.17
Piledrivers	1/1/2025		\$41.88	\$22.72	\$64.60
Piledrivers	1/1/2026		\$43.13	\$23.47	\$66.60
Plasterers	6/1/2024		\$33.14	\$21.04	\$54.18
Plasterers	6/1/2026		\$34.59	\$22.59	\$57.18
Plumbers and Steamfitters	6/1/2025		\$41.47	\$27.71	\$69.18
Plumbers and Steamfitters	6/1/2026		\$42.92	\$28.45	\$71.37
Pointers, Caulkers, Cleaners	6/1/2025		\$40.66	\$21.99	\$62.65
Pointers, Caulkers, Cleaners	12/1/2025		\$41.50	\$22.50	\$64.00
Pointers, Caulkers, Cleaners	6/1/2026		\$42.20	\$22.80	\$65.00
Roofers	6/1/2025		\$39.91	\$20.76	\$60.67
Roofers	12/1/2025		\$41.21	\$21.46	\$62.67
Roofers	6/1/2026		\$42.00	\$23.17	\$65.17
Sheet Metal Workers	7/1/2024		\$43.00	\$33.96	\$76.96
Sheet Metal Workers	7/1/2025		\$45.00	\$35.16	\$80.16
Sign Makers and Hangars	7/15/2024		\$32.32	\$25.82	\$58.14
Sign Makers and Hangars	7/15/2025		\$33.48	\$26.41	\$59.89
Sprinklerfitters	4/1/2024		\$46.45	\$28.62	\$75.07
Sprinklerfitters	4/1/2025		\$49.75	\$29.21	\$78.96
Sprinklerfitters	4/1/2026		\$52.82	\$30.56	\$83.38
Stone Masons	12/1/2022		\$38.56	\$23.61	\$62.17
Terrazzo Finisher	6/1/2025		\$41.73	\$19.03	\$60.76
Terrazzo Finisher	12/1/2025		\$42.75	\$19.51	\$62.26
Terrazzo Finisher	6/1/2026		\$43.82	\$19.94	\$63.76
Terrazzo Mechanics	6/1/2025		\$41.13	\$21.28	\$62.41
Terrazzo Mechanics	12/1/2025		\$42.15	\$21.76	\$63.91
Terrazzo Mechanics	6/1/2026		\$43.22	\$22.19	\$65.41
Tile Finisher	6/1/2025		\$33.24	\$18.36	\$51.60
Tile Finisher	12/1/2025		\$33.99	\$18.71	\$52.70
Tile Finisher	6/1/2026		\$34.82	\$18.98	\$53.80

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 26-05845 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Tile Setter	6/1/2025		\$40.15	\$22.80	\$62.95
Tile Setter	12/1/2025		\$40.80	\$23.25	\$64.05
Tile Setter	6/1/2026		\$41.66	\$23.49	\$65.15
Truckdriver class 1(see notes)	1/1/2025		\$36.43	\$23.21	\$59.64
Truckdriver class 1(see notes)	1/1/2026		\$37.93	\$23.71	\$61.64
Truckdriver class 2 (see notes)	1/1/2025		\$36.89	\$23.52	\$60.41
Truckdriver class 2 (see notes)	1/1/2026		\$38.39	\$24.02	\$62.41
Window Film / Tint Installer	10/1/2019		\$25.00	\$2.63	\$27.63

BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGES PROJECT RATES

Project: 26-05845 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2025		\$41.35	\$22.09	\$63.44
Carpenter	1/1/2026		\$42.60	\$22.84	\$65.44
Carpenter Welder	1/1/2025		\$42.85	\$22.09	\$64.94
Carpenter Welder	1/1/2026		\$44.10	\$22.84	\$66.94
Carpenters - Piledriver/Welder	1/1/2025		\$43.38	\$22.72	\$66.10
Carpenters - Piledriver/Welder	1/1/2026		\$44.63	\$23.47	\$68.10
Cement Finishers	1/1/2025		\$35.94	\$27.50	\$63.44
Cement Masons	1/1/2020		\$32.84	\$21.10	\$53.94
Electric Lineman	6/3/2024		\$53.97	\$31.05	\$85.02
Electric Lineman	6/2/2025		\$57.10	\$31.63	\$88.73
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2024		\$39.89	\$36.47	\$76.36
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2025		\$41.50	\$37.36	\$78.86
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2026		\$43.50	\$37.91	\$81.41
Laborers (Class 01 - See notes)	1/1/2025		\$33.70	\$26.00	\$59.70
Laborers (Class 01 - See notes)	1/1/2026		\$34.70	\$27.00	\$61.70
Laborers (Class 02 - See notes)	1/1/2025		\$33.86	\$26.00	\$59.86
Laborers (Class 02 - See notes)	1/1/2026		\$34.86	\$27.00	\$61.86
Laborers (Class 03 - See notes)	1/1/2025		\$34.25	\$26.00	\$60.25
Laborers (Class 03 - See notes)	1/1/2026		\$35.25	\$27.00	\$62.25
Laborers (Class 04 - See notes)	1/1/2025		\$34.70	\$26.00	\$60.70
Laborers (Class 04 - See notes)	1/1/2026		\$35.70	\$27.00	\$62.70
Laborers (Class 05 - See notes)	1/1/2025		\$35.11	\$26.00	\$61.11
Laborers (Class 05 - See notes)	1/1/2026		\$36.11	\$27.00	\$63.11
Laborers (Class 06 - See notes)	1/1/2025		\$31.95	\$26.00	\$57.95
Laborers (Class 06 - See notes)	1/1/2026		\$32.95	\$27.00	\$59.95
Laborers (Class 07 - See notes)	1/1/2025		\$34.70	\$26.00	\$60.70
Laborers (Class 07 - See notes)	1/1/2026		\$35.70	\$27.00	\$62.70
Laborers (Class 08 - See notes)	1/1/2025		\$36.20	\$26.00	\$62.20
Laborers (Class 08 - See notes)	1/1/2026		\$37.20	\$27.00	\$64.20
Millwright	6/1/2024		\$47.59	\$23.72	\$71.31
Millwright	6/1/2025		\$49.72	\$23.72	\$73.44
Operators (Class 01 - see notes)	1/1/2025		\$40.39	\$24.23	\$64.62
Operators (Class 01 - see notes)	1/1/2026		\$41.96	\$24.66	\$66.62
Operators (Class 02 -see notes)	1/1/2025		\$40.13	\$24.23	\$64.36
Operators (Class 02 -see notes)	1/1/2026		\$41.70	\$24.66	\$66.36
Operators (Class 03 - See notes)	1/1/2025		\$36.48	\$24.23	\$60.71
Operators (Class 03 - See notes)	1/1/2026		\$38.05	\$24.66	\$62.71
Operators (Class 04 - See notes)	1/1/2025		\$36.02	\$24.23	\$60.25
Operators (Class 04 - See notes)	1/1/2026		\$37.59	\$24.66	\$62.25
Operators (Class 05 - See notes)	1/1/2025		\$35.77	\$24.23	\$60.00
Operators (Class 05 - See notes)	1/1/2026		\$37.34	\$24.66	\$62.00
Operators Class 1-A	1/1/2025		\$43.39	\$24.23	\$67.62

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 26-05845 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 1-A	1/1/2026		\$44.96	\$24.66	\$69.62
Operators Class 1-B	1/1/2025		\$42.39	\$24.23	\$66.62
Operators Class 1-B	1/1/2026		\$43.96	\$24.66	\$68.62
Painters Class 1 (see notes)	6/1/2022		\$34.45	\$22.82	\$57.27
Painters Class 2 (see notes)	6/1/2024		\$38.09	\$24.93	\$63.02
Painters Class 2 (see notes)	6/1/2025		\$40.36	\$25.81	\$66.17
Painters Class 3 (see notes)	6/1/2024		\$40.66	\$24.93	\$65.59
Painters Class 3 (see notes)	6/1/2025		\$43.68	\$25.81	\$69.49
Painters Class 3 (see notes)	6/1/2026		\$45.08	\$26.51	\$71.59
Painters Class 4 (see notes)	6/1/2019		\$28.20	\$20.06	\$48.26
Painters Class 5 (see notes)	6/1/2019		\$22.91	\$20.06	\$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		\$62.82	\$22.72	\$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		\$64.70	\$23.47	\$88.17
Piledrivers	1/1/2025		\$41.88	\$22.72	\$64.60
Piledrivers	1/1/2026		\$43.13	\$23.47	\$66.60
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		\$48.43	\$40.28	\$88.71
Truckdriver class 1(see notes)	1/1/2025		\$36.43	\$23.21	\$59.64
Truckdriver class 1(see notes)	1/1/2026		\$37.93	\$23.71	\$61.64
Truckdriver class 2 (see notes)	1/1/2025		\$36.89	\$23.52	\$60.41
Truckdriver class 2 (see notes)	1/1/2026		\$38.39	\$24.02	\$62.41

**SOUTH CONNELLSVILLE BOROUGH
FAYETTE COUNTY, PENNSYLVANIA**

**SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY
REIDMORE ROAD SANITARY SEWER EXTENSION PROJECT
PROJECT NO. 24654**

ADDENDUM NUMBER ____

DATE _____

All Contractors who may be bidding on the work under this Contract shall read and observe this Addendum and any future Addenda.

Every Bidder shall note that while certain requirements in this Addendum may be specifically noted as applying to a particular page, section, and/or plan in the Contract Documents, such changes shall apply also to any other page, section, and/or plan where the change is relevant.

All Contractors who are bidding on this work shall take cognizance of the revisions, changes, additions, or deletions shown in this and future Addenda and shall provide for the same in their Bid. **PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ON THE BID PROPOSAL.**

Please be advised of the following changes:

WIDMER ENGINEERING INC.

**Kerry L. Bell, P.E.
Project Manager**

Date _____

Contractor _____

NOTICE OF AWARD

Project Description: South Connellsville Municipal Authority
Reidmore Road Sanitary Sewer Extension Project
WE# 24654

Dear:

South Connellsville Municipal Authority has accepted the bid of _____ for the above-referenced project in the amount of \$ _____. They intend to enter into an agreement with your company to proceed with the project contingent upon being provided the documents listed below.

You are required by the Instructions to Bidders to execute and furnish three (3) copies of the following documents, which are included herewith for your use:

1. Three (3) executed copies of the attached agreement.
2. Three (3) copies of the performance and payment bond in the amount of 100% of the contract price.
3. Three (3) copies of your certificate of insurance naming South Connellsville Borough as an additional insured.
4. Three (3) executed copies of the attached "Stipulation Against Liens".

The above documents must be submitted within 20 days of the date of this letter.
We look forward to working with you on this project. Should you have any questions or require additional information, please do not hesitate to call.

Yours very truly,
WIDMER ENGINEERING, INC.

Kerry L. Bell, P.E.
Project Manager

Enclosures
Cc: South Connellsville Municipal Authority

AGREEMENT

THIS AGREEMENT, made this ___ day of _____ 2026, by and between the South Connellsville Municipal Authority, hereinafter called OWNER, and _____, doing business as a Corporation hereinafter called "CONTRACTOR".

WITNESSETH, that the OWNER and the CONTRACTOR mutually agree to the following:

1. The CONTRACTOR, for and in consideration of the payment herein specified and agreed to by the OWNER hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work, labor and other services necessary for the construction and completion of the PROJECT as described herein.

The OWNER will pay the CONTRACTOR for the performance of the AGREEMENT, in current funds, subject to additions and deductions as provided in the GENERAL CONDITIONS of the CONTRACT AGREEMENT, the sum of _____ (\$_____).

The Contract Documents prepared by Widmer Engineering Inc., hereinafter called ENGINEER, are made part of this AGREEMENT.

2. The PROJECT location and description being situated as follows:

WE #24654 – South Connellsville Municipal Authority
Reidmore Road Sanitary Sewer Extension Project
Fayette County, PA

The work includes installation of ~1,400 L.F. of sanitary sewer line.; complete in place.

3. The CONTRACTOR further covenants and agrees that all work shall be performed in the best and most workmanlike manner. He also agrees that all materials furnished and labor performed shall be in strict and complete conformity in every respect, with all parts of this AGREEMENT and shall be subject to the inspection and acceptance of authorized representatives of the OWNER. In the event that any portion of the work (including materials supplied pursuant thereto) performed by the CONTRACTOR is rejected by the authorized representatives as defective, unsuitable, or unacceptable, the CONTRACTOR agrees to remove and replace all such rejected portions of work in conformance with this AGREEMENT and to the satisfaction of and at no expense to the OWNER. The CONTRACTOR further covenants that prompt payment will be made in full for all labor and materials used in the performance of work on this PROJECT.
4. The CONTRACTOR covenants and agrees that all work (including, but not limited to, all labor performed and all materials supplied) on this PROJECT shall be performed and completed to the satisfaction of the OWNER on or before the expiration of **one hundred twenty (120) calendar days** after written Notice to Proceed with work has been given by the OWNER. If for any reason, except as provided in the GENERAL CONDITIONS, the CONTRACTOR fails to complete all work on this PROJECT to the satisfaction of the ENGINEER within the aforementioned time allowed, the OWNER shall deduct from any sums due or which may become due the CONTRACTOR **one hundred dollars (\$100.00)** for each calendar day used in excess of the aforementioned number of days allowed, or, in case a completion date is fixed, for each calendar day elapsing between the completion date and the actual date of completion. If no sums are due the CONTRACTOR, the CONTRACTOR agrees to remit to the OWNER the aforementioned sum for each day used

in excess of the time allowed for completion of the PROJECT. The amounts deducted or remitted under this paragraph are liquidated damages not penalties.

5. The CONTRACTOR further covenants and warrants that he has had sufficient time to examine the site of the project to determine the conditions to be encountered; that he is fully aware and knows of the conditions to be encountered; and that he has based the BID PROPOSAL prices on his own independent examination and investigation of the project site and conditions, and has not relied on any subsurface information furnished to him by the OWNER, or its agents or its consultants.
6. The CONTRACTOR shall not do any work (including, but not limited to, the supply of labor and/or materials) not covered by the CONTRACT DOCUMENTS, unless such work has been authorized in writing by the ENGINEER. In no event shall the CONTRACTOR incur any liability by reason of refusing to obey any verbal directions or instructions that he might be given to perform additional or extra work. Likewise, the OWNER will not be liable for any work performed as additional or extra work, unless such work is required of the CONTRACTOR in writing by the ENGINEER. All such work which might have been performed by the CONTRACTOR without such written order first being given shall be at the CONTRACTOR'S risk, cost and expense, and the CONTRACTOR hereby covenants and agrees compensation for such unauthorized work.
7. It is further distinctly agreed that the CONTRACTOR shall not assign this AGREEMENT, or any part thereof, nor any right to any sums to be paid him hereunder, nor shall any part of the work to be done or material furnished under this AGREEMENT be sublet, without the consent in writing of the OWNER.
8. The OWNER will pay to the CONTRACTOR in the manner at such times as set forth in the GENERAL CONDITIONS such amounts as required by the CONTRACT DOCUMENTS. When a BID PROPOSAL is made on a Lump Sum Basis, the CONTRACTOR agrees to submit, to the ENGINEER, a detailed breakdown of costs to serve as a basis of estimate for periodic payment during construction.
9. It is also agreed and understood that the acceptance of the final payment by the CONTRACTOR shall be considered as a release in full of all claims against the OWNER arising out of, or by reason of, the work done and materials furnished under this AGREEMENT.
10. In order to secure proper and complete compliance with the terms and provisions of this AGREEMENT, the CONTRACTOR shall provide a bond in a sum equal to one hundred percent (100%) of the contract price of the work to be done. The CONTRACTOR shall also secure an additional bond in the same amount for the prompt payment in full for all labor and materials supplied in performing work on this PROJECT. The CONTRACTOR shall also secure an additional bond in the same amount for maintenance of the completed project for a period of one (1) year from the date of final acceptance by the OWNER. All bonds are attached hereto.
11. The CONTRACTOR in undertaking the work to be performed under the terms of this AGREEMENT, covenants and agrees to comply with the required contract provisions set forth in the Nondiscrimination Clause which is attached.

12. The term "CONTRACT DOCUMENTS" means and includes the following:
- (a) ADVERTISEMENT FOR BIDS
 - (b) INSTRUCTIONS TO BIDDERS
 - (c) SPECIAL INSTRUCTIONS TO BIDDERS
 - (d) BID PROPOSAL
 - (e) CERTIFICATION OF NON-SEGREGATED FACILITIES
 - (f) BID BOND
 - (g) NON-COLLUSION AFFIDAVIT OF PRIME BIDDER
 - (h) STATEMENT OF BIDDER'S QUALIFICATIONS
 - (i) WAGE RATES
 - (j) ADDENDA (if any)
 - (k) NOTICE OF AWARD
 - (l) AGREEMENT
 - (m) NONDISCRIMINATION CLAUSE
 - (n) STIPULATION AGAINST LIENS
 - (o) AFFIDAVIT RE: ACCEPTING PROVISIONS OF THE WORKMAN'S COMPENSATION ACT
 - (p) PERFORMANCE BOND
 - (q) LABOR AND MATERIAL PAYMENT BOND
 - (r) DETAILED BREAKDOWN OF LUMP SUM BID (if any)
 - (s) NOTICE TO PROCEED
 - (t) APPLICATION AND CERTIFICATE FOR PAYMENT
 - (u) CONTINUATION SHEET
 - (v) CHANGE ORDER(S) (if any)
 - (w) CERTIFICATE OF SUBSTANTIAL COMPLETION
 - (x) MAINTENANCE BOND
 - (y) GENERAL CONDITIONS
 - (z) **TECHNICAL SPECIFICATIONS, PREPARED BY THE ENGINEER**
13. The CONTRACTOR agrees to execute and record a STIPULATION AGAINST LIENS in the form provided herewith prior to commencement of any work required thereby, or the acquisition of any materials therefor.
14. This AGREEMENT, including all CONTRACT DOCUMENTS, shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this AGREEMENT in **three (3) copies** each of which shall be deemed an original on the date first above written.

ATTEST:

OWNER: SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY

By _____

Name _____

Name _____

Title _____

Title _____

(SEAL)

ATTEST:

CONTRACTOR:

Name_____

Name_____

Title_____

Address_____

(SEAL)

(Use only when Contractor is a Corporation)

Certification:

I, _____, certify that I am the _____ of the Corporation named as CONTRACTOR herein; that _____ who signed this AGREEMENT on behalf of the CONTRACTOR, was the _____ of said Corporation; that said AGREEMENT was duly signed for and in behalf of said Corporation by authority of its governing body, and is within the scope of its corporate powers.

(Corporate Seal)

Title:_____

NONDISCRIMINATION CLAUSE

During the term of this Contract, the Contractor agrees as follows:

1. Contractor shall not discriminate against any employee, applicant for employment, independent contractor or any other person because of race, color religious creed, ancestry, national origin, age or sex. Contractor shall take affirmative action to insure that applicants are employed, and that employees or agents are treated during employment, without regard to their race, color, religious creed, handicap, ancestry, national origin, age or sex. Such affirmative action shall include, but is not limited to: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training. Contractor shall post in conspicuous places, available to employees, agents, applicants for employment and other persons, a notice to be provided by the contracting agency setting forth the provisions of this nondiscrimination clause.
2. Contractor shall in advertisements or requests for employment placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, handicap, ancestry, national origin, age or sex.
3. Contractor shall send each labor union or workers' representative with which it has a collective bargaining agreement or other contract or understanding, a notice advising said labor union or workers' representative of its commitment to this nondiscrimination clause. Similar notice shall be sent to every other source of recruitment regularly utilized by Contractor.
4. It shall be no defense to a finding of noncompliance with this nondiscrimination clause that Contractor had delegated some of its employment practices to any union, training program or other source of recruitment which prevents it from meeting its obligations. However, if the evidence indicates that the Contractor was not on notice of the third-party discrimination or made a good faith effort to correct it, such factor shall be considered in mitigation in determining appropriate sanctions.
5. Where the practices of a union or of any training program or other source of recruitment will result in the exclusion of minority group persons, so that Contractor will be unable to meet its obligations under this nondiscrimination clause, Contractor shall then employ and fill vacancies through other nondiscriminatory employment procedures.
6. Contractor shall comply with all state and federal laws prohibiting discrimination in hiring or employment opportunities. In the event of Contractor's noncompliance with the nondiscrimination clause of this Contract or with such laws, this contract may be terminated or suspended, in whole or in part, and Contractor may be declared temporarily ineligible for further contracts, and other sanctions may be imposed and remedies invoked.
7. Contractor shall furnish all necessary employment documents and records to, and permit access to its books, records and accounts by, the contracting agency for purposes of investigation to ascertain compliance with the provisions of this clause. If Contractor does not possess documents or records reflecting the necessary information requested, it shall furnish such information on reporting forms supplied by the contracting agency.
8. Contractor shall actively recruit minority subcontractors and women subcontractors or subcontractors with substantial minority representation among their employees.
9. Contractor shall include the provisions of this nondiscrimination clause in every subcontract, so that such provisions will be binding upon each subcontractor.
10. Contractor obligations under this clause are limited to the Contractor's facilities within Pennsylvania or, where the contract is for purchase of goods manufactured outside of Pennsylvania, the facilities at which such goods are actually produced.

Contractor Signature _____ Date _____

STIPULATION AGAINST LIENS

SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY	)	IN THE COURT OF COMMON
OWNER	)	PLEAS OF _____ COUNTY,
	)	PENNSYLVANIA
	)	
VS.	)	
	)	
	)	
Contractor	)	NO. _____ MECHANICS LIEN
	)	DOCKET

WHEREAS, the above-said Owner is about to execute contemporaneously herewith a contract with the above-said Contractor, for the construction of WE #24654 –South Connellsville Municipal Authority Reidmore Road Sanitary Sewer Extension Project as required by the Contract Documents.

NOW THEREFORE, _____ 2026, at the time of and immediately before the execution of the Contract and before any authority has been given by the said Owner, to the said Contractor to commence work on the said project or purchase of materials for the same, in consideration of the making of the said Contract with the Contractor and for the further consideration of one dollar (\$1.00) paid to the said Contractor by the said Owner, it is agreed that no mechanic's claims or other liens shall be filed against the Project or the estate or title of Owner in the System or any part thereof, or the appurtenances thereto by the said Contractor nor any subcontractor, nor by any of the materialmen or workmen or any person for any materials or labor or extra materials or labor purchased or furnished in connection with the construction of the said project or any part thereof, the right to file such claims of liens being expressly waived and relinquished herewith.

(SEAL)

SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY

ATTEST:

BY _____

TITLE _____

CONTRACTOR

(SEAL)

ATTEST:

BY _____

TITLE _____

AFFIDAVIT RE:
ACCEPTING PROVISIONS OF THE WORKMAN'S COMPENSATION ACT

State of _____

County of _____

SS:

(Name of Officer, if Corporation)

(Title of Officer, if Corporation)

(Name of Contractor)

being duly sworn according to law deposed and says that he/they/it has/have accepted the provisions of the Workmen's Compensation Act of 1915 of the Commonwealth of Pennsylvania, with its supplements and amendments, and has/have insured his/their/its liability thereunder in accordance with the terms of said Act with _____ Company.

(Contractor)

Signature of Officer or Agent

SWORN to and subscribed before me this _____ day of _____, 20____.

(Notary Public)

My Commission Expires:

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____
_____, as
Principal, and _____, as
Surety, are held and firmly bound unto the South Connellsville Municipal Authority, its certain attorney,
successors, or assigns (hereinafter called Obligee) in the sum of
_____ (\$_____)
lawful money of the United States, for the payment of which sum well and truly to be made, we bind
ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, said Principal has entered into a certain contract with said Obligee, dated _____, (hereinafter called the Contract) for WE #24654 – South Connellsville Municipal Authority Reidmore Road Sanitary Sewer Extension Project, which Contract and Specifications for said work shall be deemed a part thereof as fully as if set out herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal shall faithfully perform the contract on his part as of the time and in the manner therein provided and satisfy all claims and demands incurred in or for the same, or growing out of the same, or for injury or damages to persons or property in the performance thereof, and shall fully indemnify and save harmless the said Obligee from any and all cost and damage which the said Obligee may suffer by reason of the Principal's failure to do so, and shall fully reimburse and repay the said Obligee any and all outlay and expense shall be null and void, otherwise it shall remain in full force and virtue.

The said Surety for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder or the Specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED, AND DELIVERED IN THREE (3) ORIGINAL COUNTERPARTS this _____ day of _____, 20____.

Witness:

(Individual Principals sign here)

Title: _____ (SEAL)

Title: _____ (SEAL)

	Title: _____ (SEAL)
_____	_____
	Title: _____ (SEAL)
Attest:	(Corporate Principal sign here)
By _____	_____
Title: _____	By: _____
	Title: _____ (SEAL)
	(Surety sign here)

	BY: _____
	Title: _____ (SEAL)

The rate of the premium charged is \$ _____ per thousand.

The total amount of the premium charges is \$ _____.

(The above must be filled in by the Corporate Surety.)

It is hereby further stipulated and agreed that if the Principal is non-Pennsylvania corporation neither Principal nor the Surety shall be discharged from liability on this bond, nor the bond surrendered, until such Principal files with the Obligee a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all taxes, penalties and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation contributions, penalties and interest due the Commonwealth of Pennsylvania from the said Principal, or any non-Pennsylvania corporation subcontractor thereunder, or for which liability has accrued, but the time for has not arrived as required by the Act of June 10, 1947, P.O. 493, 8 P.S. Sec. 23, amended.

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____

_____, as Principal, and

_____, as Surety, are

held and firmly bound unto the Borough of South Connellsville, its certain attorney, successors, or assigns

(hereinafter called Obligee) in the sum of _____

(\$_____) lawful money of the United States, for the payment of which sum well and truly to

be made, we bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has entered into a certain contract with said Obligee, dated _____, hereinafter called the Contract, for WE #24654 –South Connellsville Municipal Authority Reidmore Road Sanitary Sewer Extension Project, which Contract and Specifications for said work shall be deemed a part thereof as fully as if set out herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal and all subcontractors to whom any portion of the work provided for in said Contract is sublet and all assignees of said Principal and of such subcontractors shall promptly make payment for all material furnished, labor supplied or performed, rental for equipment employed, and services rendered by public utilities in or in connection with the prosecution of the work, whether or not the said material, labor, equipment or services enter into and become component parts of the work or improvement contemplated in said Contract, or in any amendment or extension of or addition to said Contract, then the above obligation shall be void; otherwise to remain in full force and effect. PROVIDED, however, that his bond is subject to the following conditions and limitations.

- (a) All person who have performed labor, rendered services or furnished materials or machinery, shall have direct right of action against the Principal and Surety on this bond, which right of action shall be asserted in proceedings instituted in the State in which such labor was performed, services rendered or materials furnished (or where labor has been performed, services rendered or materials furnished under said Contract in more than one state, then in any such state). Insofar as permitted by the laws of such state, such right of action shall be asserted in a proceeding instituted in the name of the Obligee to the use and benefit of the person instituting such action and any or all other persons having claims hereunder, and any other person having claims hereunder shall have the right to be made party to such proceeding (but no later than two years after the complete performance of said Contract and final settlement thereof) and to have such claim adjudicated in such action and judgment rendered thereon.
- (b) The Surety shall not be liable hereunder for any damages or compensation recoverable under any workmen's compensation or employer's liability status.
- (c) In no event shall this Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than two years after the complete performance of said Contract and final settlement thereof.
- (d) As used herein: The term "person" refers to any individual firm or corporation who has furnished materials or machinery or public utility services to be used on or incorporated in the work or the prosecution thereof provided for in said Contract or in any amendment or extension or addition to

said Contract, and/or to any person engaged in the prosecution of the work provided for in said Contract or in any amendment or extension of or addition to said Contract who is an agent, servant or employee of the Principal or of any subcontractor, or of any assignee of said Principal or of any subcontractor and also anyone so engaged who performs the work of a laborer or of a mechanic regardless of any subcontractor, or any assignees of said Principal or of said subcontractor, and such laborer or mechanic, but shall not include office employees not regularly stationed at the site of the work.

The said Surety for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder or the Specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED, AND DELIVERED IN THREE (3) ORIGINAL COUNTERPARTS this _____ day of _____, 20__.

Witness:

(Individual Principals sign here)

Title: _____ (SEAL)

Title: _____ (SEAL)

Title: _____ (SEAL)

Title: _____ (SEAL)

Attest:

(Corporate Principal sign here)

By _____

Title: _____

By: _____

Title: _____ (SEAL)

(Surety sign here)

BY: _____

Title: _____ (SEAL)

The rate of the premium charged is \$ _____ per thousand.

The total amount of the premium charges is \$_____.

(The above must be filled in by the Corporate Surety.)

It is hereby further stipulated and agreed that if the Principal is non-Pennsylvania corporation neither Principal nor the Surety shall be discharged from liability on this bond, nor the bond surrendered, until such Principal files with the Obligee a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all taxes, penalties and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation contributions, penalties and interest due the Commonwealth of Pennsylvania from the said Principal, or any non-Pennsylvania corporation subcontractor thereunder, or for which liability has accrued, but the time for has not arrived as required by the Act of June 10, 1947, P.O. 493, 8 P.S. Sec. 23, amended.

NOTICE TO PROCEED

TO:

DATE:
PROJECT: Reidmore Road Sanitary Sewer Extension Project

You are hereby notified to commence WORK in accordance with the Agreement dated _____
_____, 20____, on or before _____, 20____, and you are to complete the WORK within One
Hundred Twenty (120) consecutive calendar days thereafter. The date of completion of all WORK
is therefore _____, 20____.

BY: Kerry L. Bell, P.E.

TITLE: Project Manager

CONTRACTOR ACKNOWLEDGEMENT

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

This the _____ day of _____, 20____.

BY _____

Title _____

APPLICATION AND CERTIFICATION FOR PAYMENT

PAGE ONE OF PAGES

TO (OWNER):	PROJECT:	APPLICATION NO:	1	Distribution to:
South Connellsville Municipal Authority	South Connellsville Municipal Authority			OWNER
1503 South Pittsburgh Street	Reidmore Road Sanitary Sewer Extension Project	PERIOD TO:		ENGINEER
South Connellsville, PA 15425				CONTRACTOR
FROM:	VIA (ENGINEER):	ENGINEER'S	Widmer Engineering Inc.	
		PROJECT NO:	WE #24654	

CONTRACT FOR: South Connellsville Borough

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY			
Change Orders approved in		ADDITIONS	DEDUCTIONS
TOTAL			
Approved this Month			
Number	Date Approved		
TOTALS			
Net change by Change Orders			

The undersigned Contractor certifies that to the best of the contractor's knowledge, information and belief the work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payment received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____

Date: _____

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

Application is made for Payment, as shown below, in connection with the Contract.

Continuation Sheet is attached.

1. ORIGINAL CONTRACT SUM	\$	_____
2. Net change by Change Orders	\$	_____
3. CONTRACT SUM TO DATE (Line 1±2)	\$	_____
4. TOTAL COMPLETED & STORED TO DATE	\$	_____
(Column G on Continuation Sheet)		
5. RETAINAGE:		
a. _____ % of Complete Work	\$	_____
(Column D+E on Continuation Sheet)		
b. _____ % of Stored Material	\$	_____
Total Retainage (Line 5a+5b or		
Total in Column I on Continuation Sheet)		
6. TOTAL EARNED LESS RETAINAGE	\$	_____
(Line 4 less Line 5 Total)		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	\$	_____
8. CURRENT PAYMENT DUE	\$	_____
9. BALANCE TO FINISH, PLUS RETAINAGE	\$	_____
(Line 3 less Line 6)		

State of:	County of:
Subscribed and sworn to before me this	day of _____, 20_____
Notary Public:	
My Commission expires:	

AMOUNT CERTIFIED	\$	_____
(Attach explanation if amount certified differs from the amount applied for.)		
ENGINEER:		

By: _____	Date: _____
This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.	

CONTINUATION SHEET

PAGE OF PAGES

APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.

APPLICATION NUMBER: 1

APPLICATION DATE:

In tabulations below, amounts are stated to the nearest dollar.

PERIOD TO:

Use Column I on Contracts where variable retainage for line items may apply.

ENGINEER'S PROJECT NO: WE #24654

[illegible]

CHANGE ORDER

OWNER
ENGINEER
CONTRACTOR
FIELD
OTHER

☐
☐
☐
☐
☐

PROJECT: Reidmore Road Sanitary Sewer Extension Project
(name, address) South Connellsville Municipal Authority
1503 South Pittsburgh Street
South Connellsville, PA. 15425

CHANGE ORDER NUMBER: 1

TO (Contractor)

ENGINEER'S PROJECT NO: WE #24654

CONTRACT FOR: South Connellsville Municipal Authority

CONTRACT DATE:

You are directed to make the following changes in this Contract:

The original Contract Sum was	\$	
Net Change by previous Change Orders	\$	
The Contract Sum prior to this Change Order was	\$	
The Contract Sum will be (increased)(decreased)(unchanged) by this Change Order	\$	
The new Contract Sum including this Change Order will be	\$	
The Contract Time will be (increased)(decreased)(unchanged) by		(0) Days
The Date of Completion as of the date of this Change Order therefore is		

ENGINEER	CONTRACTOR	OWNER
Address	Address	Address
BY	BY	BY
DATE	DATE	DATE

CERTIFICATE OF SUBSTANTIAL COMPLETION

OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

PROJECT: Reidmore Road Sanitary Sewer Extension Project
(name, address) South Connellsville Municipal Authority
1503 South Pittsburgh Street
South Connellsville, Pa 15425

ENGINEER: Widmer Engineering Inc.

ENGINEER'S PROJECT NUMBER: WE #24654

TO (Owner):

CONTRACTOR:

CONTRACT FOR: South Connellsville Municipal Authority

CONTRACT DATE:

DATE OF ISSUANCE:

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found to be substantially complete. The date of Substantial Completion of the Project or portion thereof designated above is hereby established as
which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Engineer, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing.

Widmer Engineering Inc.

ENGINEER

BY

DATE

The Contractor will complete or correct the Work on the list of items attached hereto within
Date of Substantial Completion.

days from the above

CONTRACTOR

BY

DATE

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at (time) on (date).

OWNER

BY

DATE

The responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note--Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage; Contractor shall secure consent of surety company, if any.)

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____,
 as Principal, and _____,
 as Surety, are held and firmly bound unto South Connellsville Municipal Authority, (hereinafter
 called the Obligee), the sum of _____ Dollars
 (\$ _____), for payment of which sum will and truly be made, we bind
 ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly
 by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas said Principal has entered into a
 certain Contract, hereto attached, with said Obligee dated _____, 20____,
 for WE #24654 – South Connellsville Municipal Authority Reidmore Road Sanitary Sewer Extension
 Project.

NOW, THEREFORE, if the Principal shall remedy without cost to the Obligee any defects which
 develop during a period of one (1) year from the date of completion and acceptance of the work
 performed under said Contract provided such defects, in the judgment of the Obligee or his
 successor having jurisdiction in the premises, are caused by defective inferior materials or
 workmanship, then this obligation shall be void; otherwise it shall remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their
 several seals this _____ day of _____, 20____, the name and corporate
 seal of each corporate party being hereto affixed and these presented duly signed by its
 undersigned representative, pursuant to authority of its governing body.

Witness:

(Individual Principals sign here)

Title: _____ (SEAL)

Title: _____ (SEAL)

Title: _____ (SEAL)

Title: _____ (SEAL)

Attest:

(Corporate Principal sign here)

By _____

Title: _____

By: _____

Title: _____ (SEAL)

(Surety sign here)

BY: _____

Title: _____ (SEAL)

The rate of the premium charged is \$ _____ per thousand.

The total amount of the premium charges is \$ _____.

(The above must be filled in by the Corporate Surety.)

GENERAL CONDITIONS

1. CONTRACT DOCUMENTS

All of the Contract Documents are complementary, and the requirements of any one shall be considered as the requirements of all.

- A. In the event the Contractor discovers any discrepancy in the Contract Documents, the matter shall immediately be submitted to the Engineer, whose decision therein shall be final. The Contractor will not be held responsible for the discovery of such discrepancies, but any work done on the item involved after such discovery, and prior to authorization by the Engineer, will be done at the Contractor's risk.
- B. In case of any discrepancy between scaled dimensions and figures, figured dimensions shall govern. In case any work dimension is not given on the Drawings, the Contractor shall obtain the figure from the Engineer. In no case shall the Contractor determine such dimensions by scaling the Drawings.
- C. Deviations from the Contract Documents required by the exigencies of construction shall be determined by the Engineer only and authorized in writing.
- D. Supplemental detailed drawings and instructions shall be furnished by the Engineer when and as he determines that such drawings and instructions are required for successful completion of the Project.
- E. Unless otherwise provided, the Contractor will be furnished two (2) copies of the Contract Documents free of charge, with additional copies, if required, being furnished at cost.
- F. At all times, the Contractor shall keep on the Project Site, available to the Engineer and his representatives, one (1) copy of the Contract Documents.

2. ENGINEER'S STATUS DURING CONSTRUCTION

The Engineer shall be the Owner's representative during the construction period. All instructions of the Owner to the Contractor shall be issued through the Engineer. The duties and responsibilities and the limitations of authority of the Engineer as the Owner's representative during construction are set forth in these General Conditions and shall not be extended without written consent of the Owner and Engineer.

The Engineer will 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 proceeding in accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspections to check the quality of the work nor will he be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions incident thereto. His efforts will be directed toward providing assurance for the Owner that the completed Project will conform to the requirements of the Contract Documents, but he will not be responsible for the Contractor's failure to perform the work in accordance with the Contract Documents. On the basis of his on-site observations as an experienced and qualified design professional, he will keep the Owner informed of the progress of the work and will endeavor to guard the Owner against defects and deficiencies in the work of contractors.

The Engineer will have authority to disapprove of or reject work, which is defective; i.e., it is unsatisfactory, faulty or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test or approval. He will also have authority to require special inspection or testing of the work, whether or not the work is fabricated, installed or completed.

If the Owner and Engineer agree, the Engineer will provide one or more full time Resident Project Representatives to assist the Engineer in carrying out his responsibilities at the site.

Neither the Engineer's authority to act under this Article nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any subcontractor, any of their agents or employees or any other person performing any of the work.

3. ENGINEER'S INTERPRETATIONS AND DECISIONS

The Engineer will issue with reasonable promptness such written clarifications or interpretations (in the form of drawings or otherwise) as he may determine necessary for the proper execution of the work, such clarifications and interpretations to be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim therefore as provided in Article 27.

The Engineer will be the initial interpreter of the terms and conditions of the Contract Documents and the judge of the performance thereunder. In his capacity as interpreter and judge he will exercise his best efforts to insure faithful performance by both the Owner and the Contractor. He will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the work or the interpretation of or performance under the Contract Documents shall be referred initially to the Engineer for decision, which he shall render in writing within a reasonable time.

Either the Owner or the Contractor may demand arbitration with respect to any such claim, dispute or other matter that has been referred to the Engineer, except any which have been waived by the making or acceptance of final payment, such arbitration to be in accordance with Article 5. However, no demand for arbitration of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which the Engineer has rendered his decision or (b) the tenth day after the parties have presented their evidence to the Engineer if he has not rendered his written decision before that date. No demand for arbitration shall be made later than thirty days after the date on which the Engineer rendered his written decision in respect of the claim, dispute or other matter as to which arbitration is sought, and the failure to demand arbitration within said thirty days' period shall result in the Engineer's decision being final and binding upon the Owner and the Contractor. If the Engineer renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but shall not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.

4. ORDER OF WORK: USE OF COMPLETED PORTIONS

The Contractor shall complete any portion or portions of the work in such order of time and shall direct the application of forces to any portion of the work, as in the judgment of the Engineer is required. The Owner shall have the right to take possession of and use any completed or partially completed portions of the work even though the time for completing

the entire work or such portions may not have expired, but such taking possession and use shall not be deemed as acceptance of that portion of work by the Owner.

5. ARBITRATION

All decisions of the Engineer shall be final except in cases involving time or financial considerations, which, if no agreement regarding such cases is reached, shall be subject to arbitration. The demand for and procedure of arbitration, and the selection of arbitrators shall conform to the practice recommended by the Joint Conference on Standard Construction Contracts, as set forth in the "Standard General Conditions for Engineering Construction", issued by said Joint Conference.

6. ENGINEERING STAKES

Unless otherwise indicated in other sections of the Contract Documents, the Contractor shall furnish, set and maintain without cost to the Owner, suitable stakes, grade boards, temporary structures, templates and other materials for establishing and maintaining points, marks, and lines, and shall furnish the Engineer with such assistance as he may require in checking such points, marks, or lines and in checking measurements necessary in the prosecution of the work.

The Contractor shall be held responsible for the preservation of all stakes and marks.

7. DEFECTIVE WORK

When any material not conforming to the requirements of the Contract Documents has been delivered upon the site of the Project or incorporated in the work, or when any work performed is of inferior quality, such material or work shall be considered as defective and shall be immediately removed and renewed or made satisfactory as directed by the Engineer, at the expense of the Contractor. Failure or neglect on the Engineer, to condemn or reject any bad or inferior work or materials shall not be construed to imply an acceptance of such work or materials, if such bad or inferior material or work becomes evident at any time prior to the final acceptance of the work and the release of the Contractor by the Owner; nor shall it be construed as barring the Owner at any subsequent time from the recovery of damage in such sum of money as may be needed to build anew all portions of the work in which fraud was practiced or improper materials hidden, whenever found.

The Contractor shall remove at his own expense any work or material condemned, and shall rebuild and replace the same without extra charge, or in case the Engineer should not consider the defect of sufficient importance to require the Contractor to rebuild or replace any imperfect work or material, he shall have the power and is hereby authorized to make an equitable deduction from the stipulated price.

The Contractor shall promptly move from the premises all materials condemned by the Engineer as failing to conform to the Contract Documents whether incorporated in the structure or not, and the Contractor shall promptly replace his own work in accordance with the Contract and without expense to the Owner, and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, or if materials previously condemned and removed from the site of the work are subsequently found at the same or other site of work, the Owner may remove them and may store the material at the expense of the Contractor. If

the Contractor does not pay the expenses of such removal within ten (10) days thereafter, the Owner may, upon ten (10) days written notice, deduct all the costs and expenses of such removal from any monies that may be due the Contractor.

8. MATERIALS

- A. The Contractor shall furnish the Engineer, promptly after the award or execution of the Contract, with a complete statement of the origin, composition and manufacture of all materials to be used in the construction of the Project. Only materials conforming to the requirements of the Contract Documents and approved by the Engineer shall be used in the work.
- B. Representative preliminary samples of the materials, of the character and quality prescribed in the Contract Documents, shall be submitted when indicated or directed, for advance examination or test, and written approval of the quality of such samples shall be received by the Contractor prior to obtaining materials from the respective sources of supply.
- C. Samples of all materials requiring laboratory tests shall be taken under the direction or supervision of, or in the manner prescribed by the Engineer, and such materials shall not be used until accepted as the result of such tests, and then only so long as the quality of the material remains equal to that of the accepted sample. The acceptance at any time of any material shall not be a bar to its future rejection if it is subsequently found to be defective or inferior in quality of uniformity to the material specified.
- D. Required laboratory tests of materials shall be made by a testing laboratory or agency selected or approved by the Engineer and in accordance with the methods indicated herein. When standard specifications and serial numbers of technical societies and associations are stipulated, the reference shall be construed to be the latest of such specifications and serial numbers.
- E. The Contractor shall be responsible for payment for all laboratory tests, mill inspection and tests conducted by the testing laboratory or agency at the shops or mills of the producers.
- F. For tests or inspections conducted by, and at the option of, the Engineer, at sites other than the testing laboratory and not under the jurisdiction thereof, the Contractor, without cost to the Owner, shall furnish all material, labor, tools, and equipment, and every facility for the verification of the accuracy of all scales, measures and testing equipment, necessary for such tests or inspections.
- G. The Contractor shall permit or arrange with the producer to permit the Engineer or any agent of the testing laboratory to inspect or test any and all material being used or to be used, at any time before, during or after its preparation, or while being used during the progress of the work or after the work has been completed.
- H. Materials shall be stored so as to insure preservation of their specified quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other hard and clean surfaces, and not on the ground, and shall be placed under cover when directed. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without permission of the Owner or lease of the property.

- I. If any material intended for use in the construction of this Project has been inspected and rejected after such materials have been delivered to the Site, all such rejected material shall be immediately removed from the property by the Contractor.

9. EQUIPMENT AND MACHINERY

All apparatus, mechanisms, equipment, machinery and manufactured articles for incorporation in the work shall be the new and unused standard products of recognized reputable manufacturers.

Unless otherwise specifically provided in the Contract Documents, all workmanship, equipment, materials, and articles incorporated in the work covered by this Contract are to be of the highest quality and grade of their type. Whenever in the Contract Documents, any material, article, device, product, fixture, form, type of construction, or process is indicated or specified by patent or proprietary name, by name of the manufacturer, or by catalog number, such shall be deemed to be used for the purpose of establishing a standard and shall be deemed to be followed by the words "or approved equal."

Where the Contractor desires to use a non-specified item or method, which is considered to be an "approved equal" to the item or method specified, the approval of the Engineer must be obtained. The Engineer shall be the sole judge as to the quality of the item or method proposed by the Contractor.

All equipment and machinery, and parts and assemblies thereof, entering into the work shall be tested as specified. Unless waived in writing by the Engineer all field and operating tests shall be made in the presence of the Engineer or his authorized representative. When such a waiver is issued, sworn statements in duplicate of the tests made and the results thereof shall be furnished to the Engineer by the Contractor or manufacturer. Costs of all tests and trials, with the exception of the Engineer's expenses, shall be borne by the Contractor and shall be included in the Contract Price. Inspections or tests of apparatus, machinery, or equipment shall be made at the option of the Engineer at the point of production, manufacturer, installation or shipment.

Unless otherwise provided in the Agreement all machinery and equipment, parts and assemblies thereof to be furnished and installed by the Contractor, shall be guaranteed against defective materials and workmanship by the Contractor for a period of one (1) year from the date indicated on the Certificate of Substantial Completion. In the event of failure of any part or parts during the period specified, due to the above causes, the affected part or parts shall be replaced by the Contractor promptly upon notice of the Owner. In the event of failure of prompt replacement by the Contractor, such replacement may be made by the Owner at the Contractor's expense.

10. OBSERVANCE OF LAWS

The Contractor shall at all times observe and comply with all Federal and State laws and local by-laws, ordinances and regulations in any manner affecting the conduct of the work or applying to employees on the Project, as well as all orders or decrees which have been promulgated or enacted, or which may be promulgated or enacted, by any legal bodies or tribunals having authority or jurisdiction over the work, materials, equipment, employees or the Contract.

11. REGULATIONS OF THE DEPARTMENT OF LABOR AND INDUSTRY

Special attention is drawn to the regulations of the State Department of Labor and Industry relating to trenches and excavations, tunnel construction, equipment, materials, labor, safety, sanitation, and other regulations on which the Contractor shall be fully informed and with which he shall fully comply.

The Contractor shall receive no additional compensation for sheeting, bracing and shoring, or other work or materials required on his part solely for the purpose of conforming to the regulations of the State Department of Labor and Industry. Observance of and compliance with said regulations shall be solely and without qualification the responsibility of the Contractor, without reliance or superintendence of or direction by the Owner or Engineer.

12. SANITARY CONVENIENCES

Sanitary conveniences complying with the regulations of the State Health Department or other bodies having jurisdiction therewith, shall be provided for the use of the workmen, and their exclusive use strictly enforced.

13. PERMITS AND LICENSES

With the exception of Pennsylvania Department of Transportation, Pennsylvania Department of Environmental Resources, and Railroad crossing permits, which will be obtained by the Owner, the Contractor shall procure all necessary permits and licenses, pay all charges and fees, therefore, and shall give all notices necessary and incident to the proper and lawful prosecution of the work. The cost thereof shall be included in the prices bid for the various items scheduled in the Proposal.

Where work is to be done by the Contractor in placing any pipe or other construction under or within the right-of-way of the Pennsylvania Department of Transportation, Pennsylvania Department of Environmental Resources or railroad company, the Contractor shall be guided by the requirements of the agency or company involved, and shall consult with the officials thereof, relative to the installation. If the agency or railroad company requires any of their personnel to be on hand for supervisory duties in connection with the work, all charges relative to payment for such services shall be borne by the Contractor.

14. PATENTS AND ROYALTIES

The Contractor agrees to indemnify and save harmless the Owner from all suits or actions of every nature and description brought against him, for or on account of the use of patented appliances, products, or processes, or the infringement of any patent, trademark, or copy-right, and the Contractor shall pay all royalties and license fees in connection therewith.

15. NO WAIVER OF LEGAL RIGHTS

Neither the Owner nor the Engineer shall be precluded or stopped by any measurements, estimate or certificate made or given by them or by their agents or employees, under any provisions or provision of the Contract at any time, either before or after the completion and acceptance of the work and payment thereof pursuant to any measurements, estimate or certificate, from showing the true and correct amount and character of the work performed and materials furnished by the Contractor or from showing at any time, that any such measurement, estimate or certificate is untrue or incorrectly made in any particular, or that the work or materials or any part thereof, do not conform in fact to the Contract Documents. The Owner shall have the right to reject the whole or any part of the

aforesaid work or materials, should the said measurements, estimate, certificate of payments be found, or be known to be inconsistent with the terms of the Contract, or otherwise improperly given, and the Owner shall not be precluded and stopped, notwithstanding any such measurements, estimate, certificate and payment in accordance therewith and from demanding and recovering from the Contractor or his Surety such damages as the Owner may sustain by reason of the Contractor's failure to comply with the terms of the Contract Documents or on account of any overpayment made on any estimate or certificate. Neither the acceptance by the Owner, the Engineer, or any of their agents or employees, nor any certificate by the Owner for payments of money, nor any payments for, or acceptance of the whole or any part of the work by the Owner or Engineer, nor any extension or remission of time, nor any possession taken by the Owner or his employees shall operate as a waiver of any portion of the Contract or any power herein reserved by the Owner, or any right to damages herein provided, nor shall any waiver of any breach of the Contract be held to be a waiver of any other or subsequent breach. All remedies provided in this Contract shall be taken and construed as cumulative; that is, in addition to each and every other remedy provided.

16. CARE OF PUBLIC AND PRIVATE PROPERTY

The Contractor shall take all necessary precaution to prevent damage to all overhead and underground structures and to protect and preserve property within or adjacent to the Project and shall be responsible for damage thereto. Special care must be used by the Contractor in the prosecution of the work in order to avoid interference or damage to any operating utilities or plants. However, where there is a possibility of such interference or damage, the Contractor shall make satisfactory arrangements with responsible officers or with the Owners of the utilities or plants, covering the necessary precautions to be used as safeguards during the performance of the work by the Contractor.

Such arrangement shall be made before work is started and shall be subject to the approval of the Engineer which approval will not be considered as releasing the Contractor from any responsibility for the acts of himself or his employees or representatives. The Contractor shall protect all land monuments and property markers, which will be affected by the construction until they have been correctly referenced. Monuments and markers, which are disturbed by the Contractor during the construction of the Project or otherwise, shall be satisfactorily reset by him at his expense when and as directed. The Contractor shall make good any damage or injury to public or private property and shall promptly make restitution for, or proceed to repair or otherwise restore such damage or injury to property as may be deemed necessary by the Engineer. The Contractor will be held responsible for the protection of or damage done to trees to be left standing and if any are damaged, the Contractor shall have them promptly repaired at his own expense by a qualified tree surgeon, or replaced as required.

17. PRELIMINARY INSPECTION

Unless the requirement is waived by the Engineer, prior to the start of actual construction operations, the Contractor or his authorized representative shall go over the project accompanied by the Engineer or his designated representative and shall observe for himself, with the approved Drawings before him, all pertinent conditions relative to the Contract, including the status of rights-of-way and structures, obstructions, or other objects to be removed, altered or changed.

18. SAFETY AND PROTECTION: EMERGENCIES

The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to:

- A. All employees on the work and other persons who may be affected thereby.
- B. All the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and
- C. 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.

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 or to protect them from damage, injury or loss. 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 and promulgating safety regulations. He will notify owners of adjacent utilities when prosecution of the work may affect them. When the use or storage of explosives or other hazardous materials is necessary for the prosecution of the work, the Contractor will exercise the utmost care and will carry on such activities under the supervision of properly qualified personnel. All damage, or loss to any property referred to above caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, will be remedied by the Contractor, except damage or loss attributable to the fault or drawings or specifications or to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor.

The Contractor will designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be in the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner and the Engineer.

In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or Owner, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the Engineer prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved. If the Contractor believes that additional work done by him in an emergency, which arose from causes beyond his control, entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore, as provided in Article 27.

19. VIOLATION OF CONTRACT

The Owner, upon written notice from the Engineer, or other satisfactory proof, and after having given written notice to the Contractor and his Surety of delay, neglect, or default on the part of the Contractor, shall have full power and authority, without violating the Contract, to declare the Contractor in default on any of the following counts:

- A. Failure to begin work within the time specified in the Notice to Proceed;

- B. Failure to perform the work with sufficient properly skilled workmen and/or proper equipment, or with sufficient materials to insure the completion of said work in accordance with the terms of the Contract;
- C. Neglect or refusal to remove materials or perform anew such work as may be rejected as defective or unsuitable;
- D. Halting prosecution of the work without approval of the Engineer;
- E. Insolvency or bankruptcy, or committing any act of bankruptcy or insolvency;
- F. Allowing a final judgment to stand unsatisfied for a period of forty-eight (48) hours;
- G. Making an assignment for the benefit of creditors;
- H. Failure or refusal, within ten (10) days after written notice, by the Owner, to make payment or show cause why payment should not be made, of any amounts due for labor or materials;
- I. Failure to protect, repair, or make good any damage or injury to property as provided in Article 16;
- J. If a receiver or liquidator shall be appointed for the Contractor or for any of his property and shall not be dismissed within twenty (20) days after such appointment or the proceedings in connection therewith shall not be stayed on appeal within the said twenty (20) days after such appointment;
- K. If the Contractor shall refuse or fail to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or any duly authorized extension thereof) or shall fail to complete the work within said period; or
- L. If the Contractor should fail or refuse to regard laws, ordinances or the instruction of the Engineers, or otherwise be guilty of a substantial violation of any provisions of this Contract;
- M. If the Contractor should fail to maintain the Insurance required under Article 17 of the Instructions to Bidders for the life of the Contract.

After the Owner has declared the Contractor in default, and given him three (3) days written notice, the Owner shall have authority to take the prosecution of the work out of the hands of the Contractor, and appropriate or use any materials and equipment of the Contractor assembled for the Project, and may enter into a contract for the completion of the work.

Should the Owner elect to take the prosecution of the work out of the hands of the Contractor, the Owner may at its option, notify and require the Surety to complete the Contract according to Contract terms, or the Owner may, at its option, complete the Contract with its own forces, in which case the Owner may take all right, title and interest in and to the equipment and materials owned by the Contractor and assembled for use in the execution of the Contract.

If the completion of the Contract by any of the methods described above results in financial loss to the Owner, the Owner may dispose of any of the remaining equipment and materials taken over without further legal processes. Any equipment or materials not required for completion or recoupment of loss or for legal charges against the Contract, or any balance remaining from the disposition of materials and equipment, after deducting losses by the Owner, shall be turned over to the party legally or equitably entitled thereto.

20. CONTRACTOR'S RIGHT OF TERMINATION

If, after Notice to Proceed is given, the work is stopped by order of the Owner for a continuous period of sixty (60) days for any cause other than weather conditions or any act of the Contractor, the Contractor shall have the right to terminate this Contract after seven (7) days' written notice to the Owner of such action, provided that order to resume work is not issued by the Owner within such period of seven (7) days. Failure by the Owner to make payment to the Contractor within fifteen (15) days after expiration of the time allowed for such payment by the Contract Documents shall give the Contractor the right to suspend work until payment is made, or at his option, after seven (7) days' notice in writing, should the Owner, continue in default, to terminate this Contract. The Owner shall be barred from making any claim against the Contractor for delay in completion of the work due to the suspension or failure to pay.

In the event of such Contract termination, the Contractor shall be paid as provided in the Contract for all work done and completed in accordance therewith and he shall also be paid, as determined by the Engineer for all extra costs incurred by him due to termination of the Contract, but shall not be paid any amount for loss of anticipated profit on any work not done or not completed.

21. RESPONSIBILITY OF CONTRACTOR

The Contractor shall be responsible for the entire Project determined by the Contract Documents, from the date of the starting of the work until it is accepted as evidence by approval of the Completion Certificate by the Owner. He shall be responsible for removals, and replacements due to action of the elements and all other causes except as otherwise provided in the Contract Documents. The Contractor shall keep the Contract under his own control and it shall be his responsibility to see that the work is properly supervised and carried on faithfully and efficiently. The Contractor shall supervise the work personally or shall have a competent superintendent or representative, who shall be on the site of the Project at all working hours to receive orders and directions from the Engineer and who shall be clothed with full authority by the Contractor to execute such orders without delay and make arrangements for all necessary materials, equipment and labor.

Renewals or repairs necessitated because of defective materials or workmanship, or due to action of the elements or other natural causes, including fire and flood, prior to the acceptance as determined by the Completion Certificate, shall be done anew in accordance with the Contract Documents at the expense of the Contractor.

22. CONTRACT TIME

The Contract time for completion of the work based either upon consecutive calendar days or a definite calendar date, shall be as specified in the Agreement.

If a number of calendar days is specified, Sundays and legal holidays shall not be included

in the computation of the number of consecutive calendar days used in completion of the Contract.

On the basis either of calendar days or of date of completion, in computing the time spent in the execution of the work, no allowance will be made for days or parts of days on which work was suspended or delayed in consequence of an act or omission, such as the non-delivery of materials, or breakdowns of equipment, or failure of the Contractor to obtain or employ sufficient labor or equipment to prosecute the work, or other such reasons or causes which are the responsibility of the Contractor.

Adjustments or extensions of the calendar days or the date of completion will be granted only as hereinafter specified.

If the Engineer in writing suspends the work wholly or in part, as set forth in Article 24 of this Section, but not for reasons, which are the responsibility of the Contractor, the time for completion of the work may be extended by the Engineer. After such suspension of work has expired the Contractor shall have a sufficient time to complete the work remaining to be done, at the rate of progress originally determined by the Owner for the performance of the work and extension of contract item may be made accordingly. In the event working time is extended as aforesaid, such action shall not be construed as relieving the Contractor from his responsibility for lack of satisfactory progress prior to such suspension period. In the event the working time is extended as aforesaid and the Contractor was ahead of the schedule, as estimated by the Engineer, at the time work was suspended, due credit will be given for such advanced progress in computing the extension.

If the Contractor shall be delayed in the completion of the work by reason of unforeseeable or inevitable causes beyond his responsibility, without his fault or negligence, the period specified for completion of the work may be extended by such time as shall be determined by the Engineer, provided that application for extension be made, in writing by the Contractor, not later than two (2) weeks following the dates for which said extension is claimed.

The question of whether or not there is a justifiable cause for granting an extension of time as herein provided shall be determined by the Engineer on the basis of the conditions encountered or leading to such causes. No additional payment will be allowed for damage to or reconstruction of work, previously performed by the Contractor, by or on account of such causes. No extensions of time shall be deemed a waiver by the Owner of any obligations of the Contractor under the terms of the Contract nor as relieving the Contractor from full responsibility thereunder.

Suspension of work due to unsuitable weather or unfavorable conditions will be considered as valid causes for extension of the contract working time, with written approval of the Engineer.

23. LIQUIDATED DAMAGES

For each calendar day, with the exception of Sundays and legal holidays, that any work shall remain uncompleted after the time specified for the completion of the work provided for by the Agreement, the sum per calendar day specified in the Agreement, shall be deducted by the Owner from monies due the Contractor, not as a penalty but as liquidated damages. Extensions may be made by the Engineer, at his discretion, over the period specified for the completion of the work, for causes for which the Contractor is not responsible and which must delay the completion of the work, and in such case the

Contractor shall become liable for liquidated damages for delays commencing from the date on which the extended period shall expire.

Liquidated damages when charged as provided herein, shall be deducted from the Final Estimate amount payable to the Contractor or his Surety. If the total amount chargeable as liquidated damages exceeds the amount payable to the Contractor or the Surety, then such excess shall be paid to the Owner by the Contractor or his Surety.

24. TEMPORARY SUSPENSION OF WORK

The Engineer shall have authority to suspend the work wholly or in part, due to unsuitable weather, or such other conditions as are considered unfavorable for the suitable prosecution of the work, or due to the failure on the part of the Contractor to carry out orders given or to perform any provisions of the Contract, or due to unforeseen conditions which had not been provided for in estimating the Contract time required for completion of the work. No claim for damages or loss of profit may be advanced by the Contractor by reason for such temporary suspension.

If the Engineer suspends the work in part, he shall have authority to direct the Contractor to perform such other parts or items of work which, in his opinion, may be performed with favorable results and advantageously for the time of completion of the Project, and shall notify the Contractor accordingly in writing.

If it should become necessary to suspend work for a sustained or an indefinite period, the Contractor shall store all materials satisfactorily, and he shall take every precaution to prevent damage or deterioration of the work performed. The Contractor shall resume work after such suspension upon written notice from the Engineer. All of the work outlined in this article shall be performed at the Contractor's expense.

25. CONTRACTOR'S SUPERVISION AND SUPERINTENDENCE

The Contractor will supervise and direct the work efficiently and with his best skill and attention. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. Before undertaking the work he will carefully study and compare the Contract Documents and check and verify all figures shown thereon and all field measurements. He will at once report in writing to the Engineer any conflict, error or discrepancy which he may discover. The Contractor will be responsible to see that the finished work complies accurately with the Contract Documents.

The Contractor will keep on the work at all times during its progress a resident superintendent satisfactory to the Engineer. The superintendent shall not be replaced without the consent of the Engineer except under extraordinary circumstances. The superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communications given to the superintendent shall be as binding as if given to the Contractor.

The Contractor will provide competent, suitably qualified personnel to survey and layout the work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order among his employees at the site.

The Engineer will not be responsible for the acts or omissions of the Contractor, or any subcontractors, or any of his or their agents or employees or any other persons performing any of the work.

26. NONCOMPLIANCE OF CONTRACTOR

In addition to the elective measures the Owner may take for violation of the Contract as provided in Article 19, he shall also have the discretionary right to take any or all of the following actions if the Contractor fails, neglects, or refuses to comply with the requirements of Articles 7, 16, 18, 24, 32 or 33.

- A. He may shut down the work until the requirements of the violated articles are met by the Contractor. In such event no remission will be made in working time for the period for which the work is shut down.
- B. He may withhold payment of estimates for work completed until the requirements of the violated article are met by the Contractor.
- C. He may enter upon the Project and perform such work as may be necessary to meet the requirements of the article violated and deduct the cost thereof from monies due or which may become due the Contractor or the Surety, or in the absence of any monies due the Contractor or the Surety, he shall be fully reimbursed for such costs by the Contractor or the Surety.

However, if the Contractor fails to comply with the requirements of Article 24, the Owner shall not proceed as provided herein until three days after written notice to the Contractor and his Surety that such action will be taken.

27. CHANGES IN WORK AND CONTRACT PRICE

A. Change in Work

Without invalidating the Agreement, the Owner may, at any time or from time to time, order additions, deletions or revisions in the work. These will be authorized by Change Orders. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in (B) following.

Additional work performed by the Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Price, except in the case of an emergency affecting the safety of persons or the work or property at the site or adjacent thereto. In such cases the Contractor, without special instruction or authorization from the Engineer or Owner, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the Engineer prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved. If the Contractor believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in (B) below.

It is the Contractor's responsibility to notify his Surety of any changes affecting the general scope of the work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The Contractor will furnish proof of such adjustment to the Owner upon request.

B. Change in Contract Price

The Contract Price constitutes the total compensation payable to the Contractor for performing the work. All duties, responsibilities and obligations assigned to or undertaken by the Contractor shall be at his expense without change in the Contract Price. The Contract Price may only be changed by a Change Order.

If the Contractor is entitled by the Contract Documents to make a claim for an increase in the Contract Price, his claim shall be in writing delivered to the Owner and the Engineer within 7 days of the occurrence of the event giving rise to the claim. All claims for adjustments in the Contract Price shall be determined by the Engineer if the Owner and Contractor cannot otherwise agree on the amount involved. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order.

The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

- (1) Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
- (2) Where the Contract has been awarded for a lump sum price or where a significant portion of the Contract Price is based on a lump sum price by application of unit prices resulting from the breakdown of the lump sum Contract Price as required by Article 30.
- (3) Where the change in work is not covered by unit prices available from (1) or (2) above, the following methods in the order given shall then apply:
 - a. By mutual acceptance of a lump sum amount.
 - b. By cost and a percentage of these costs to cover overhead and profit. Costs shall only include labor (payroll, payroll taxes, fringe benefits, workman's compensation, etc.) materials, equipment, and other incidentals directly related to the work involved. The addition for overhead and profit shall not exceed twenty (20) percent of these costs.

28. MEASUREMENT

All work completed under this Contract shall be measured by the Engineer according to the United States Standard measures. No extra or customary measurements of any kind shall be allowed in measuring any work, only the actual lengths, areas, solid contents, weights, or numbers, shall be considered and the lengths shall be measured on center lines of the work, whether the same be straight or curved, unless specified differently.

29. PRESENTATION OF CONTRACTOR'S CLAIMS

Neither the Contractor nor the Surety shall be entitled to present any claims to the Owner or the Board of Arbitration, either during the prosecution of the work or upon completion of the Contract, for additional compensation for work performed or any other cause, unless the Contractor or Surety shall have given the Owner notice of intention to present such claims within (10) ten days from the happening of the event, thing, or occurrence giving

rise to the alleged claim. However, the Contractor or Surety shall not be denied the right to present any claim, which is based on differences in measurements or errors of computations which were not disclosed until preparation of the Final Estimate.

30. PAYMENTS TO CONTRACTOR

Partial payments on the Contract will be made during the progress of the work based on the value of the work done except as provided in Article 29, and in accordance with the provisions of the Agreement. These partial payments are merely estimates and subject to correction in any succeeding estimate or in the final payment, and shall not bind the Owner to the acceptance of any materials furnished or work done. Completed additional or extra work which has been approved by the Engineer will be included in partial payments. On lump sum contracts, the Contractor shall prepare an itemized breakdown of the value of the several classes of work, which after approval will be used by the Engineer on computing the value of work done and amounts due on current estimates.

Certain material stored but not yet incorporated into the work may be included in partial payments only when the Contractor provides invoices to show that such material has been received by the Contractor and delivered to an approved location, and when said material will not be stored for more than ninety (90) days. The Contractor may be paid 100% of the cost of the material, less the pro-rata share of the retainage provided that the cost does not exceed ninety percent (90%) of the Contract Price for the contract item and the cumulative costs do not exceed twenty-five percent (25%) of the current Contract amount.

The cost of surplus stored material, which payment previously has been made to the Contractor but has not been incorporated in the final measured work, will not be included in the final payment. Surplus stored material is the property of the Contractor.

Once each month, the Contractor shall prepare and submit to the Engineer an estimate of the value of work completed to the end of the period covered by the estimate. Ninety percent (90%) of such value less the aggregate of previous payments will be normally paid to the Contractor within thirty (30) days following the date of the Owner's regular meeting.

However, in situations where the Project is being funded through state and/or federal funds such as the Community Facilities Program or the Community Development Block Grant Program, the Contractor will be paid at the time when such funding is disbursed to the Owner from the federal or state agency.

When construction is fifty percent (50%) complete, periodic payments will be increased to ninety-five percent (95%) of the value of the work completed less the aggregate of previous payments.

Upon substantial completion of the work and operational and beneficial occupancy has been attained, as determined by the Engineer, the retained amounts shall be reduced to an amount necessary to assure completion of the work as determined by the Engineer.

Upon completion of all work under the Contract, the Engineer will determine whether final payment is in order. Upon such determination by the Engineer, a Final Estimate will be prepared by the Contractor with payment being made in accordance with the procedure and requirements of Article 31.

31. ACCEPTANCE AND FINAL PAYMENT

Unless otherwise provided in the Agreement, upon notification by the Contractor that he has completed the work under the Contract, the Engineer shall make an inspection to determine whether the work is fully completed. The Contractor shall at his own expense, provide the Engineer with all labor, tools or equipment that may be required by the Engineer in making such inspection.

As soon as practicable after such inspection and after the Engineer is satisfied that the work is fully completed, the Contractor will compute the entire amount of each item of work performed and the Contract value thereof, the amount and value of all additions, and the amount and value of all deductions, if applicable; and will from this, prepare a Final Estimate and present it to the Engineer.

The Engineer shall either approve the Final Estimate or request that the Contractor revise the Final Estimate.

If necessary, it shall be the duty of the Contractor to revise and return the Final Estimate to the Engineer within fifteen (15) days from the date the Final Estimate is returned by the Engineer. If the Contractor fails to return the executed Final Estimate or notify the Engineer in writing of his rejection within said fifteen (15) days, the Engineer will consider any objections raised and will direct the Contractor to either resubmit the Final Estimate or submit a revised Final Estimate.

Upon receipt of the Final Estimate from the Contractor, or upon failure of the Contractor to accept or reject the Final Estimate within the time designated, the Engineer shall submit to the Owner said Final Estimate certifying the final price of all work performed under the Contract.

Unless the Owner rejects the Final Estimate, payment will be made to the Contractor based on this Final Estimate normally within thirty (30) days of the Owner's regular meeting at which the Final Estimate is presented to the Owner. However, in situations where the Project is being funded through state and/or federal funds such as the Community Facilities Program or the Community Development Block Grant Program, the Contractor will be paid at the time when such funding is disbursed to the Owner from the federal or state agency.

If liquidated damages have been determined by the Owner to be applicable to this Contract and are to be deducted from the amount due the Contractor under the Final Estimate, the Owner shall inform the Contractor in writing of the deductions to the amount due and of the net amount to be paid, and payment of the net amount will be made to the Contractor.

In the event that the Owner rejects the Final Estimate, the Owner will direct the Contractor to revise the Final Estimate and resubmit it to the Engineer.

In the event mutual agreement on the Final Estimate between the Owner and Contractor cannot be obtained, arbitration procedures in accordance with Article 5 will be used.

The Owner may withhold final payment pending receipt of:

- A. A written statement in a form satisfactory to the Owner and under seal from the Surety that payment of the amount shown in the Final Certificate to the Contractor shall not relieve the Surety of any obligations to the Owner as set forth in the Surety's bonds.
- B. An affidavit and such other satisfactory evidence as may be required that all labor,

material, and indebtedness arising out of performance of the Contract have been paid; and that all other claims against the Contractor or subcontractors arising out of performance of the Contract either have been paid or that the Contractor has in force such Public Liability and Property Damage Insurance as will fully protect him and his subcontractors from any such claims as may be pending or that may there after arise; and

C. A satisfactory Maintenance Bond.

The action of the Owner by which the Contractor is to be bound and work concluded, according to the terms of the Contract, shall be evidenced by payment of the Final Certificate. All prior certificates or estimates upon which payments have been made being partial payments and subject to correction in the final payment.

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance, Labor and Material Payment or Maintenance Bonds.

32. PAYMENT TO CONTRACTOR AND INDEMNIFICATION

All work covered by partial payment made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the owner to require the fulfillment of all terms of the Contract Documents.

The Contractor will indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, material, men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived.

If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, his Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the Contract documents by the Owner to the Contractor, and the Owner shall not be liable to the Contractor for any such payments made in good faith.

If the Owner fails to make payment within thirty (30) days after approval by the Engineer and the Owner, or within seven (7) days after the Owner receives payment from the state and/or federal funding services, whichever is later, in addition to other remedies available to the Contractor there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the Contractor.

33. CONTRACTOR'S GUARANTEE

The Contractor shall guarantee his work, and shall remedy without cost to the Owner any defects which may develop therein during the guarantee period. The guarantee period shall be for one (1) year from the date as certified by the Engineer when the Project's construction is substantially complete for the Project to be utilized for the purpose for which it is intended. In the event that the date of substantial completion precedes the date upon which the Owner initiates utilization of the Project, the guarantee period will then commence upon the date which the Owner utilizes the project or the date of final payment, whichever comes first.

Upon written request by the Contractor, the Engineer will consider establishing separate dates of substantial completion and guarantee period for separate parts of the Project which will be utilized prior to other parts of the Project.

If after written notice to the Contractor and his surety, the Contractor fails to remedy such defects, the Owner may declare the Contractor in default and may notify and require the surety to remedy such defects under the terms of the Maintenance Bond.

34. SUBCONTRACTS

The Contractor shall, as soon as practicable after the signing of the Contract, notify the Owner through the Engineer in writing of the names of any subcontractors proposed for the principal parts of the work and for such others as the Engineer may direct, and shall not employ any that the Engineer may, within a reasonable time, object to as incompetent or unfit.

The Engineer shall, on request of any subcontractor, furnish to that subcontractor, wherever practicable, evidence of the amounts certified in his account.

The Contractor agrees that he is as fully responsible to the Owner 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 of persons directly employed by him. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the Owner.

35. RELATIONS OF CONTRACTOR AND SUBCONTRACTORS

The Contractor agrees to bind every subcontractor and every subcontractor agrees to be bound by the following provisions of this article, unless specifically noted to the contrary in a subcontract approved in writing as adequate by the Owner.

A. The subcontractor agrees:

- 1) To be bound to the Contractor by the terms of the Contract Documents and to assume toward him all the obligations and responsibilities that he, by these Contract Documents, assumes towards the Owner.
- 2) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment.
- 3) To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the Contractor in the manner provided in these Contract Documents for like claims by the Contractor upon the Owner, except that the time for making claims for extra cost is one (1) week.

B. The Contractor agrees:

- 1) To be bound to the subcontractor by all the obligations that the Owner assumes to the Contractor under the Contract Documents and by all the provisions thereof affording remedies and redress to the Contractor from the Owner.
- 2) To pay the subcontractor, upon the issuance of certificates, the amount allowed to the Contractor on account of the subcontractor's work to the extent of the subcontractor's interest therein.
- 3) To pay the subcontractor, upon the issuance of certificates, so that at all times the total payments shall be as large in proportion to the value of the work done by the subcontractor as the total amount certified to the Contractor is to the value of the work done by the latter.
- 4) To pay the subcontractor to such extent as may be provided by the Contract Documents or the subcontract, if either of these provides for the earlier or larger payments than the above.
- 5) To pay the subcontractor on demand for his work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should issue even though the Engineer fails to issue it for any cause not the fault of the subcontractor.
- 6) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically named in the subcontract.
- 7) That no claim for services rendered or materials furnished by the Contractor to the subcontractor shall be valid unless written notice thereof is given by the Contractor to the subcontractor during the first ten (10) days of the calendar month following that in which the claim originated.

C. The Contractor and subcontractor agree:

- 1) That nothing in this Article shall create any obligation on the part of the Owner to pay, or to see to the payment of, any sums to any subcontractor.

36. USE OF LANDS

The Owner shall provide the lands upon which the work under this Contract is to be done except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of materials, together with right of access thereto. The Contractor shall conduct no operations outside the lines of the property leased or owned or authorized for such use by the Owner without permission of the Owner.

37. WORKING CONDITIONS

- A. No night, Sunday, or holiday work requiring the presence of the Engineer or his representative will be permitted except in cases of emergency, and then only with the written consent of the Engineer and to such an extent as he may judge necessary.
- B. No work shall be done under this Contract when in the opinion of the Engineer, the weather is unsuitable for good and careful work to be performed. Should the

severity of the weather continue such that the work cannot be prosecuted successfully, the Contractor, upon order of the Engineer, shall cease all such work until directed to resume the same. In the latter case, suitable extension of time shall be allowed to compensate for time actually lost as provided for in Article 22.

- C. The Contractor shall arrange for and be responsible for a sufficient amount of illumination at all times, subject to the direction of the Engineer, to carry on all phases of the work.

38. PROGRESS CHARTS

Unless the requirement is waived by the Engineer, the Contractor shall, within seven (7) days after issuance of Notice to Proceed, prepare and submit to the Engineer for approval, a practicable and feasible schedule showing the order in which the Contractor proposes to carry on the work, the dates on which he will start the several salient features (including procurement of equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale so as to appropriately indicate the percentage of work completed at any time. The Contractor shall enter the actual progress at the end of each month and shall immediately deliver to the Engineer three (3) copies of the same.

39. NOTICE

The service of any notice by the Owner or Engineer to the Contractor or by either party of the Contract to the Engineer or other party of the Contract, shall be considered accomplished upon completion of any one of the following procedures.

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

40. CLEANING SITE

The Contractor shall at all times keep the Project Site free from accumulations of waste material or rubbish caused by the work. Before the work will be considered as having been completed, the Contractor shall clean and remove from the Project and adjacent property all surplus and discarded materials, equipment and temporary structures, and restore, where applicable, to the extent as required by other sections of these Contract Documents.

41. PUBLIC CONVENIENCE AND SAFETY

The Contractor shall conduct the work so as to insure the least obstruction to pedestrian

and vehicular traffic. The convenience of the general public and of residents adjacent to the Project shall be provided for in an adequate and satisfactory manner. Unless otherwise directed, sidewalks and crossings shall be kept open for pedestrians. Streets shall not be unnecessarily obstructed and unless the Engineer authorizes the complete closing of a street, road, or alley, the Contractor shall provide for the maintenance of traffic thereon at his own expense.

The Contractor shall construct and maintain without compensation such adequate and approved temporary bridges over excavations as may be necessary or directed for the accommodation of pedestrians and vehicles.

Where fire hydrants are adjacent to the work they shall be at all times readily accessible to fire apparatus, and no material or other obstruction shall be placed within fifteen (15) feet of any such hydrant.

42. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and 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 is not correctly inserted, then upon application of either party, the Contract shall forthwith be physically amended to make such insertion.

43. LIENS

No liens shall be allowed for labor or materials furnished.

44. RIGHT OF PROPERTY IN MATERIALS

Nothing in this Contract shall be considered as vesting in the Contractor any right of property in materials used, after they shall have been attached to or incorporated in the work, nor in materials which have been estimated for partial payment, but all such materials, upon being so attached, incorporated or estimated, shall become the property of the Owner.

45. ADVERTISING

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

46. OMITTED

47. COMPLIANCE WITH REGULATORY BODIES

Compliance with the regulations of any State, County, or Municipal Authority or of any Public Utilities such as the railroad, power and telephone companies shall not constitute the basis for additional compensation because of such compliance.

48. DEFENSE COSTS

The Owner and the Contractor agree that in the event either of them institutes a lawsuit against the other under this Contract, the plaintiff in such lawsuit shall pay to the defendant a portion of the defense costs, including investigations, engineering fees, attorney's fees, expert witnesses' fees and any other expenses of defense which may be incurred. Such portion of the defense costs shall bear the same relation to the total defense costs as the dollar amount of the plaintiff's claims which were not sustained by the court bears to the total dollar amount of the plaintiff's claims. The plaintiff shall pay such portion of the defense costs to the defendant within thirty (30) days after the defendant furnished the plaintiff with an itemized listing of the defense costs incurred.

**SOUTH CONNELLSVILLE BOROUGH
FAYETTE COUNTY, PENNSYLVANIA**

TECHNICAL SPECIFICATIONS

FOR THE

SOUTH CONNELLSVILLE MUNICIPAL AUTHORITY

REIDMORE ROAD SEWER EXTENSION PROJECT

JUNE 2026

PREPARED BY:

WIDMER ENGINEERING INC.

225 West Crawford Avenue
Connellsville, PA 15425
(724) 626-1909 - Phone
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WE #24654

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END OF SECTION

SECTION 01001

SPECIAL PROVISIONS

PART 1 - GENERAL

1.1 Section Includes:

- A. Special Provisions related to the Technical Specifications.

PART 2 - PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 Scope of Work.

- A. The Contractor shall furnish all labor, materials, equipment, machinery, apparatus and tools, and perform all operations necessary to install, equip and put into satisfactory operation, the work specified herein and shown on the Drawings.

All work shall be done in accordance with applicable portions of the Specifications. Any labor, materials, equipment, or apparatus not specifically mentioned herein or shown on the Drawings, which may be necessary for the proper completion of the entire work or of the individual items thereof, within the intent of these Specifications and Drawings, shall be furnished by the Contractor without additional compensation.

3.2 Specifications Incorporated By Reference.

The latest edition of the Pennsylvania Department of Transportation (PennDOT) Publication 408 Specifications, and all supplements thereto, are incorporated by reference into these Technical Specifications.

3.3 Standard Drawings Incorporated By Reference.

The latest edition of the Pennsylvania Department of Transportation (PennDOT) Standard Drawings are incorporated by reference into these Technical Specifications.

3.4 Local Roads.

- A. The Contractor shall cooperate with municipal officials in maintaining safe and passable conditions on all roads, streets, and alleys affected by the work. Detours may be established only with written approval of officials having jurisdiction. A copy of such approval must be submitted to the Engineer and approved by him before becoming effective. Nothing in this section shall operate to release the Contractor from his responsibilities under his Surety Bond.

No permanent pavement shall be installed from October 31 through April 1. During this period, disturbed surfaces shall be temporarily paved by Engineers approval in accordance with other sections of these Technical Specifications and Pennsylvania Department of Transportation (PennDOT) Publication 408, latest revision.

SPECIAL PROVISIONS

3.6 Traffic Control Plan (attached to the construction drawings)

- A. When working within the right-of-way of state roads, the Contractor shall conform to the traffic control requirements of the Pennsylvania Department of Transportation's (PennDOT) Publication No. 203, all other applicable PennDOT publications, and as required by any applicable PennDOT permit(s) for the project. The Contractor's attention is directed to the Traffic Control Plan included as an attachment to the construction drawings. The Traffic control plan has been approved by PennDOT and shall be properly executed by the Contractor. The implementation of the Traffic Control Plan shall be considered incidental to the project work within the right-of-way of state roads. The Contractor will receive no additional compensation for implementing the traffic control measures.
- B. Contractor shall coordinate and get all approval for all detours with PennDOT, the Township, the Borough, and other Contractors. The Contractor shall notify all involved emergency services three (3) working days prior to a detour being installed.

3.7 Existing Utilities.

- A. The Contractor is cautioned of the existence in the project area of underground utility lines. Every reasonable effort has been made to show the existence and location of the known utility lines in the general area of project construction. However, this information cannot be guaranteed as being accurate.

The depth and size of all existing utilities in the project area shall be verified in the field by the Contractor with a representative from the appropriate utility company. The Contractor shall be responsible for notifying all utility companies at least seventy-two (72) hours before any work commences on this project.

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3.8 Construction Stake-Out

The Contractor is responsible for the stakeout of all construction work included in this Contract. The Contractor shall furnish the Engineer with such assistance as he may require in checking any alignment, elevation or measurement of the Contractor's work.

3.9 Record Drawings

The Contractor's attention is directed to the requirement of providing Record drawings. The Record drawings must include; 1) **all manholes need to have GPS coordinates** 2) distance from manhole to manhole, 3) top and invert elevations of manholes, 4) wye station from the lower manhole, and 5) depth of lateral at the end of the pipe.

Inspector will use the data from 2 through 4 to fill out a Manhole to Manhole run sheet that will be used to total quantities for month pay applications.

3.10 Stream Crossings/Encroachments

- A. All stream crossings/encroachments shall be made in accordance with the Plans and Specifications and all requirements of the Pennsylvania Department of Environmental Protection Water Obstruction and Encroachment Permit(s) and/or Pennsylvania Department of Environmental Protection and Department of Army Corps of Engineers Joint Application For Pennsylvania Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers Section 404 Permit, as applicable, which are attached to and made part of these Technical Specifications.

3.11 Erosion and Sedimentation Control Plan

- A. A copy of the required Erosion and Sedimentation Control Plan for the Project is provided with the Plans and/or Specifications. It is the responsibility of the Contractor to adhere to all requirements which are stated and shown on the Erosion and Sedimentation Control Plan. These requirements are regulated by the County Soil Conservation Agency, which is capable of ordering work stoppage on any project which does not comply with the Soil Erosion and Sedimentation Control measures. It is the sole responsibility of the Contractor to construct and maintain these measures throughout the project within the time limit specified for project completion. No time extensions will be justified for work stoppage due to insufficient compliance with the Erosion and Sedimentation Control Plan.

3.12 Photographs/Videotape

The Contractor shall furnish two (2) copies of photographs to the Engineer along with 2 copies of the PennDOT photos to be turned in with Bonds. The photographs shall be digital color photographs and shall also be provided on a CD. The photographs shall be taken before construction begins. The photographs shall show all areas affected by the construction. Keep in mind that the sewer lines may need to be moved if a conflict arises after the one calls are made. Additional photographs shall be taken in critical areas where work is adjacent to sidewalks, walls, fences, structures, trees, etc. These will be used for homeowner complaints and if the photo does not show the issue, the contractor will need to make the issue right. The Contractor shall also clearly video all areas at which work shall take place. All DVDs shall be neatly labeled, dated, and identified. Two (2) copies of DVDs shall be furnished to the Engineer.

The Contractor shall furnish the following information, on either 40 or 100 scale drawings, the position of each photograph (marked by the identification number) and an arrow to show the direction of the view or give the drawing number and the photo number between the manhole numbers.

3.13 Special Requirements

- A. Right of Ways

The Authority has obtained a 20 foot permanent and 20 foot temporary right-of-way from the property owners for installing sewers on private property. While installing the sewers, the Contractor must stay within the 20 foot temporary right-of-way, unless permission is given by the property owner or by the Engineer to work outside of the required right-of-way. This requirement for

staying within the right-of-way applies to the actual sewer construction work and also to the storage of materials and equipment.

When the Contractor is working within or along public roads, he must not disturb any private property outside of the public right-of-ways.

B. Cut Sheets and Photos

Cut sheets with elevations at 25 foot intervals or as needed to determine pay depths must be prepared by the Contractor and provided to the Engineer before the installation of sewer lines.

The Bidder's attention is directed to the requirements for pre-construction photographs. No site clearing or sewer installation will be authorized by the Engineer until the requirements regarding pre-construction photographs are met by the Contractor.

C. State Road and Township Road Paving and Payment Requirements

The Contractor's attention is directed to the special requirements for State Road and Township Road paving and payment requirements as shown on the detail sheets attached to the construction drawings.

The Contractor must repave all pavement he disturbs; however, he will only be paid for the width as shown on the trench details.

Where required, the Contractor shall use 2A modified material to adjust the existing unpaved berms to match the new height of asphalt. The adjustment and material will be considered incidental to the asphalt replacement items.

D. Excess Material

It is the Contractor's responsibility to obtain an approved site, and to haul and place the excess material on the approved site. The Contractor must obtain the required approvals from the DEP, and must obtain a signed agreement from the property owner. The removal and disposal of the excess material shall be done at no additional cost to the Authority. All liabilities associated with the disposal of the excess material shall be borne by the Contractor. Any disposal material generated during the project must be disposed of at a properly permitted, commercially available disposal facility or a NFS acquired site, provided the site and disposal complies with all applicable. Federal, State and Local environmental laws or a disposal site may be acquired to dispose of materials.

E. Test Holes and Existing Utilities

The Contractor's attention is directed to the requirement for making test holes to determine the location of existing utilities prior to installing a sewer line. The excavation of test holes is especially critical for determining the placement of manholes to avoid conflicts with existing waterlines and other utilities. (Incidental to the Project)

F. Erosion Controls

The erosion controls shown on the drawings and specified herein are the minimum required erosion controls for the project. It is the contractor's responsibility to add additional erosion controls required by regulatory agencies at no additional cost to the Authority.

G. Temporary Paving

Any open cuts made in the pavement of State Roads must be paved with temporary pavement by the end of each day on which the open cut was made. The Engineer reserves the right to require that the Contractor also install temporary pavement in open cuts in Township Roads.

H. Restoration Work and Testing

In the event that the restoration work and the testing of the sewer lines, manholes, and force mains have not been completed within 60 days after the installation of the line, the Owner reserves the right to withhold all payments to the Contractor until the required restoration and testing have been completed and approved by the Engineer. If the weather conditions prevent this happening, the engineer can recommend postponing until weather permits. If the restoration is not completed when weather is permitted, payment will be withheld until completed.

I. Watertight Sewer System

Before the Engineer and the Authority authorize that the final payment be made to the Contractor, the Engineer will inspect the sewer system to verify that the sewer system is not experiencing any ground water infiltration. If any water infiltration is found by the Engineer, the Contractor must locate the sources of the infiltration and must do the work required to eliminate the infiltration. The final payment will not be made to the Contractor until the Contractor has eliminated the infiltration to the satisfaction of the Engineer and the Authority.

K. Time of Work

Work is only to be performed on a 40 hour work week, Monday through Friday. The work day will not start before 7am and will end no later than dusk. The Contractor will be charged for the inspection fees if he desires to work anything over 40 hours per week, including holiday time. The Contractor will only be permitted to work over 40 hours per week if the inspector is available. Work shall not be permitted on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, the Day after Thanksgiving, or Christmas Day. If one of the previously mentioned holidays fall on Saturday, the Contractor shall not work on the Friday before the holiday, and if the holiday falls on a Sunday, the Contractors shall not work on the Monday after the holiday.

L. Steel Products Procurement Act

In accordance with Act No. 3 of the 1978 General Assembly of the Commonwealth

of Pennsylvania, approved march 3, 1978, if any steel products are to be used or supplied in the performance of the Contract, only steel products produced in the United States as defined therein shall be used or supplied in the performance of the Contract or and subcontracts thereunder. Contractor and supplier will need to sign off for the American Iron and Steel requirements for this project.

- M. All Contracts
All Manholes that are located in a stone road, alley, driveway, etc. is to have a 6' X 6' paved square around it using the 3" binder pay item to prevent snow plows from hitting them. See paving section for payment.
- N. This project may have areas that have rock that will be encountered. There is no extra cost to the Authority for this. Payments are made by the line items on the Bid Form for each of the Contracts.
- O. The Maintenance Bond is for 2 years from the time of Substantial Completion.

PART 4 - BASIS OF PAYMENT

- 4.1 Special Provisions – Incidental. No additional compensation.

END OF SECTION

SECTION 01060**EROSION AND SEDIMENTATION CONTROL MEASURES****PART 1 - GENERAL****1.01 DESCRIPTION****A. Governmental Requirements:**

PA DER Title 25, Chapter 102, Rules and Regulations Governing Erosion Control.

B. Work areas include:

The work areas included are those ground areas disturbed by pipeline installation and those ground areas disturbed by the demolition and regrading work required for this Project. Provisions for temporary and permanent measures/facilities for erosion and sedimentation control are specified herein and are identified on the construction drawings. Specific conditions at any particular location may require a variation of the methods illustrated. Variations to the methods identified herein are subject to the advance approval of the Engineer.

C. Related work described elsewhere:

- | | |
|------------------------------------|---------------|
| 1. Measurement and Payment | Section 01150 |
| 2. Demolition, Clearing & Grubbing | Section 02100 |

PART 2 - PRODUCTS**2.01 GENERAL**

All materials utilized for the control of erosion and sedimentation shall conform to the requirements of the Commonwealth of Pennsylvania Department of Environmental Resources and, unless are specifically described herein, shall be as selected by the Contractor subject to the approval of the engineer. The Contractor is referred to the "Directory of Soil Erosion and Sedimentation Control Practices" published by the PA Department of Environmental Resources for additional guidance.

PART 3 - EXECUTION**3.01 GENERAL EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION**

The following section sets forth erosion and sedimentation control measures that are generally applicable to the entire Project. These provisions are applicable to the period during which construction is underway. The Contractor shall at all times adhere to these principles:

- A. The length of trench open at any given time shall be held to a minimum. In no event will the length of open trench exceed 200 feet. To the greatest extent possible, construction activities shall be scheduled so that trenches can be backfilled at the close of the working day and minimum quantity of excavated material will be stockpiled and subject to loss.
- B. Top soil shall be stripped, stockpiled, and protected from loss for later use as a top layer backfill.
- C. All stockpiles and excavated material shall be stored in such a manner as to prevent loss from wind, rain, and/or natural or construction-caused activities. Straw bale barriers or filter fabric fence of the type shown on the Drawings shall be installed on the down slope side of storage piles or excavated areas where the potential for significant erosion exists. The Engineer will direct the Contractor to install straw bale barriers or filter fabric fence when in his opinion the potential for significant erosion exists. Examples of conditions under which the Engineer will call for straw bale barriers or filter fabric fence include: when stockpiles or excavated material is on or is near steep slopes; when the size of the stockpiled or excavated materials exceeds 25 cubic yards; and when the stockpiles or excavated material is stored on a surface which permits little attenuation of silt carried by runoff (Pavement, bare soil, etc.).
- D. All water pumped or drained from the excavation shall either be directed through a straw bale barrier or to a sediment basin, as shown on construction drawings so that suspended silt is removed from the flow.
- E. When weather conditions or construction schedules do not permit implementation of the permanent control measures outlined in Part 3.01, then temporary control measures and facilities shall be used to prevent washing of excavated materials and erosion and newly backfilled areas. These measures can involve seeding with fast growing annuals such as rye, ryegrass, sudan grass or other locally adapted vegetation which provides quick protection yet can be worked into the soil when the site is prepared for final seeding of permanent species. If weather conditions do not permit the establishment of a vegetative cover, then an acceptable organic mulch must be provided to completely cover the disturbed area and prevent erosion during the period until permanent seeding can be initiated. Hay or straw mulch may be used for this purpose applied at a minimum rate of 2.5 tons per acre. If steep slopes as defined in Part 3.05 below are encountered then additional precautions involving netting and matting must be employed.
- F. Diverting surface water away from the area to be affected with diversion ditches.
- G. All slopes, ditches or any disturbed areas shall be stabilized as soon as possible after final grading or final earth moving has been completed.
- H. All runoff within the affected area shall be collected and diverted to control facilities for removal of suspended solids.
- I. Remaining earth moving activities shall be planned in such a manner as to minimize

the aerial extent of the affected area.

3.02 OPERATION AND MAINTENANCE REQUIREMENTS

Operation and maintenance of the control measures and facilities will be the responsibility of the General Contractor. Inspections will be done on a regular basis with inspections occurring immediately after heavy rains to determine the need for any repair or rills and swales, sediment cleanout of ponds, reseeding bare areas and keeping sediment and debris clear of pond inlets and outlet structures, ditches and culverts.

3.03 PLAN OF IMPLEMENTATION

All erosion and sedimentation control measures will be implemented prior to the commencement of any site grading.

3.04 SPECIAL REQUIREMENTS FOR STEEP SLOPE AREAS

Temporary mulches are susceptible to movement on steep slopes due to the forces of wind or water. The seeds distributed on steep slopes can also be easily dislodged before they have had the opportunity to begin to form a stable cover. Mulch must be properly anchored and seeded areas must be properly protected by netting or matting it temporary or permanent erosion control is to be established on steep slopes.

The Construction Drawings provided complete topographic information along and adjacent to the proposed fill embankment. This topography is shown in the form of 1 foot contour intervals. Whenever a slope greater than 35% is encountered for more than 5 feet, then the following additional precautions will be taken.

- A. Peg and twine, jute matting or twisted paper netting will be used to stabilize areas that have been covered with mulching due to delays in permanent restoration and/or stabilize areas that have been mulched and seeded for permanent restoration. Asphalt spray will not be accepted as a matting agent.
- B. The Contractor will periodically reinspect the areas treated as described in Part 3.03 above and restore areas that may have been damaged prior to the restoration or permanent vegetation.

3.05 RIPRAP REQUIREMENTS AND INSTALLATION

TABLE 4.7c Maximum Permissible Velocities for Rock Lined Channels and Riprap				
NSA No.	Graded Rock Size (In.)			Permissible velocity fps*
	Max.	D ₅₀	Min.	
R-1	1.5	.75	No. 8	2.5
R-2	3	1.50	1	4.5
R-3	6	3	2	6.5
R-4	12	6	3	9.0
R-5	18	9	5	11.5
R-6	24	12	7	13.0
R-7	30	15	12	14.5

* Permissible velocities based on rock at 165 lbs. per cubic foot. Adjust velocities for other rock weights used. See Figure 4.6.

A. Rock-Lined Channels - Rock (riprap) - lined channels may be sized in accordance with the procedures contained in Section 4.D.2 of the Erosion and Sedimentation Pollution Control Program Manual. Through the use of Table 4.7c, a direct procedure is available to size the riprap lining based on the listed maximum permissible velocity and the following conditions:

1. The channel alignment is straight and gradually turning.
2. Channel side slopes will be no steeper than 1 vertical on 2 horizontal.
3. The placement thickness will be 1.25 times the maximum rock size shown in Table 4.7c.
4. Rock will be crushed and have a unit weight of 165 lbs./cubic foot. See Figure 4.6 for adjustments based on using rock with a unit weight other than 165 lbs./cu. ft.
5. Filter rock will be sized and installed in accordance with Table 4.8.

TABLE 4.8 Filter Rock for Rip Rap Installation*		
Riprap Size NSA No.	Filter Blanket Requirements	
	Size - NSA No.	Placement Thickness
R-1	FS-1	N/A
R-2	FS-1	N/A
R-3	FS-2	3
R-4	FS-2	4
R-5	FS-2	6
R-6	FS-3	8
R-7	FS-3	10
R-8	FS-3	12

* This is a general standard. Soil conditions at each site should be analyzed to determine actual filter size.

Factors for adjustment of piece weights designated in Tables 4.7c and 5.4 for riprap or armor stone.

Example: If stone has unit weight of 150 pcf, multiply weights of maximum, average, and minimum sizes in table by factor of 1.5.

- The following information has been taken from the Commonwealth of Pennsylvania Department of Environmental Protection Office of Water Management Erosion and Sedimentation Control Program Manual.

PART 4 - BASIS OF PAYMENT

- 4.1 Erosion and Sedimentation Control Measures – Incidental. No additional compensation.

END OF SECTION

SECTION 01300SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. To provide a means of monitoring the progress of the Work as may be required by these Specifications, the General Contractor shall furnish to the Engineer a construction progress schedule as specified in this Section.
2. To assure that the products furnished and methods of construction/ installation provided under the various Contracts of this Project are in conformance with the intent of the Drawings and these Specifications, each Contractor shall submit sufficient testing data; Manufacturer's data and pertinent information; certifications; installation drawings and instructions; shop drawings; samples; and/or requests for substitutions as required by and in strict conformance with the provisions of this Section.
3. The General Contractor is responsible for all scheduling for all trades. He shall not allow or direct materials of any trade to be installed prematurely or when it is obvious that such materials may be damaged by subsequent work of other trades. In case of disputes as to timeliness of any installation, the Engineer shall make the determination including any protective measures required.

B. Related Work described elsewhere:

1. It is the intent of this Section to establish minimum standards of procedure for submittals and/or substitutions regarding all products, materials and/or methods furnished or provided under the various Contracts of this Project. Therefore, the provisions of this Section shall apply equally to all other Sections of these Specifications and shall be deemed a part of all other Sections as if reproduced entirely within each Section whether or not this Section is specifically referred to therein. In certain instances, particular other Sections may specify standards of procedure covering submittals and/or substitutions, which parallel those of this Section. This duplication is not meant to impart a greater or lesser degree of importance to any of the parties involved in this Project or to provide further clarification of specific additional information required. In the event that any conflict exists between any standards of procedure established in this Section and those of any other Section, the stricter requirement shall govern.
2. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by Manufacturer's name and catalog number or by reference to recognized industry standards.

SUBMITTALS AND SUBSTITUTIONS

PART 2 - PRODUCTS

2.1 CONSTRUCTION PROGRESS SCHEDULE

- A. The General Contractor shall prepare a Construction Progress Schedule showing the order in which each Contractor and Subcontractor proposes to carry on his Work, as well as other salient features, including submissions of shop drawings and samples and procurement of materials, in order to meet the dates of completion. All prime Contractors and major Subcontractors shall be consulted in the preparation of this Schedule and shall signify their approval of the finished Schedule by affixing their signatures on it prior to submittal to the Engineer.
- B. Each activity in the Schedule shall be identified and a time for the performance of such activity indicated. Each activity on the Schedule shall be preceded by all Work that must be accomplished prior to that activity. All abbreviations, codes and/or symbols used shall be explained on the Schedule or on an accompanying separate sheet.
- C. The General Contractor shall submit to the Engineer for approval, within thirty (30) days after the award of the Contracts, six (6) copies of the Schedule, plus the number of copies to be returned. The General Contractor shall also update, and resubmit the Schedule monthly thereafter until completion of the Work. Updated Schedules shall have completed activities removed or indicated as such. Whenever modifications are made to the Contract which add or delete activities and/or revise time of completion, the Schedule shall be revised and resubmitted to the Engineer within 10 days after such modification is authorized.
- D. In the event that the Work is behind schedule, the Schedule shall be revised through the use of overtime work or by other means, so that the Work will be completed within the Contract time. Under these circumstances, overtime work shall be performed at no additional cost to the Owner.

2.2 SHOP DRAWINGS AND SPECIFICATIONS

- A. Equipment plans and specifications:
 - 1. Prior to the fabrication of equipment to be furnished under these Contracts, the Contractors shall submit to the Engineer for approval the Manufacturer's detailed specifications and drawings covering the equipment proposed. The specifications and drawings shall show the materials and details of construction of the equipment, illustrations, scale details, sizes, dimensions, capacities, and layout in sufficient detail to indicate its relative location and/or incorporation with adjacent concrete or other facilities.
 - 2. Such drawings shall show the principal dimensions, weight, structural and operating features, performance characteristics, control and wiring diagrams, space required, clearances, type and/or brand of finish or shop coat, grease fittings and other such items depending on the subject of the drawings. When it is customary to do so, when the dimensions are of

particular importance, or when so specified, the drawings shall be certified in writing by the Manufacturer as correct for this Project.

3. When so specified or if considered by the Engineer to be acceptable, Manufacturer's specifications, catalog data, descriptive matter, illustrations and other products may be submitted for approval in place of shop and working drawings. In such case the requirements shall be as specified for shop and working drawings, insofar as applicable.

B. Type of prints required:

Unless otherwise specifically directed by the Engineer, all shop drawing prints shall be rendered in blue or black line on white background.

C. Number of prints required:

The Contractors shall submit ten (10) copies plus the number of copies to be returned of all shop drawings, specifications, and other items submitted under this Section.

D. The American Iron and Steel:

The American Iron and Steel requirements are in effect for this project and the Manufacturer's Steel Certification form (Attachment #6 in Upfront Specs) is to be filled out and supplied with all submittals to the engineer.

The Contractor Steel Certification form (Attachment #5 in Upfront Specs) to be filled out for substantial completion to be executed.

2.3 SAMPLES

A. Accuracy of sample:

Unless otherwise specifically directed by the Engineer, all samples shall be of the precise article proposed to be furnished and shall show the maximum variations in color, texture and/or permissible defects.

B. Number of samples required:

The Contractor shall submit all samples in the quantity which is required to be returned plus one which will be retained by the Engineer. All samples shall be identified by an appropriate tag or label listing the name of the Project; the Owner's name; the Engineer and the Contractor as well as the exact identification of the sample. Tags or labels shall be large enough to provide a blank space for approval stamps.

2.4 COLORS AND PATTERNS

A. General:

Unless the precise color and pattern is specifically described in the Contract Documents and whenever a choice of color or pattern is available in a specified product, the Contractor shall submit accurate color charts and pattern charts to the Engineer for his review and selection of color and/or pattern.

B. Comparative analyses:

Unless all available colors and patterns have identical costs and identical wearing capabilities and are identically suited for the installation, the Contractor shall provide the relative costs and capabilities of each.

2.5 APPROVED EQUAL MATERIALS AND PRODUCTS

A. Engineer's approval required:

1. The various materials and products specified in the Contract Documents by name and description are provided to establish a standard of quality. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe a material or product as a minimum standard that is desired and acceptable. Where proprietary names are used, whether or not followed by the words "or approved equal", "equal to", or "or equal" equal materials and products may be approved by the Engineer provided that the Bidder follows the guidelines under the following item 2 and item 3 below.
2. **Any Bidder who desires to have alternate manufacturer's equipment considered as equal to that named in these specifications shall do the following: The Bidder shall submit to the Engineer three (3) copies of detailed computations, shop drawings, certified, stamped, and sealed by a Registered Pennsylvania Professional Engineer, samples, and/or manufacturer's literature as required to document that the proposed equal material or product meets or exceeds these specifications. The shop drawings shall clearly identify and illustrate and discrepancies or revisions required to make the alternate equipment fit, connect, and operate as the intended design, including electrical design and charge requirements. The prospective bidder and/or alternate manufacturer shall pay all costs to the Engineer for design engineering and construction costs (if any) required to make the alternate equipment fit and work in accordance with these Contract Documents. The submission must be done (per IFB Art 11) no later than five (5) days prior to the bid opening or at any time after contract award.**
3. **Upon completion of review of the submitted material, the Engineer shall determine whether the alternate item meets or exceeds the specifications. If the Engineer determines that the alternate material is acceptable and meets or exceeds the specifications, the Engineer shall notify all prospective bidders of this determination by Addendum. By doing this, all Bidders will have the option to formulate their Bid using either the specified item or the "approved equal" item.**

If the Engineer deems that an alternate material is not considered equal to that specified, he shall notify only the Bidder or manufacturer's agent who

submitted the prequalification material of his denial.

The decision of the Engineer regarding whether to approve an alternate material or item shall be final.

B. Availability of specified items:

1. The Contractor shall verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the Work.
2. In the event specified items will not be available, the Contractor shall so notify the Engineer prior to the opening of bids.
3. Costs of delays because of non-availability of specified items, when the Engineer determines that such delays could have been avoided by the Contractor, will be charged to the Contractor as necessary and shall not be borne by the Owner. When such delays could not have been avoided by the Contractor, an appropriate extension of Contract Time will be granted to the Contractor. There shall be no additional costs charged to the Owner by the Contractors for such time extensions.

2.6 OPERATION AND MAINTENANCE INSTRUCTIONS AND MANUALS

The various Sections of these Specifications require submittal of ten (10) or more copies of various installation, operation and maintenance instructions and other data relative to the equipment and other items requiring any degree of operation and/or maintenance attention on a regular basis or which may require repair at any time and which are furnished under each respective Contract. Of these ten (10) or more copies, all shall be furnished either along with the shop drawing submittals or prior to the installation of the respective items.

PART 3 - EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

The Contractor shall completely identify each submittal and resubmittal by showing at least the following information:

- A. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
- B. Name of Project as it appears on these Specifications and the Contract Name and Number to which the submittal applies.
- C. Drawing number and Specifications Section number to which the submittal applies.
- D. Whether this is an original submittal or a resubmittal.

3.2 COORDINATION OF SUBMITTALS

SUBMITTALS AND SUBSTITUTIONS

A. General:

Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:

1. Determine and verify all field dimensions and conditions, materials, catalog numbers, and similar data.
2. Coordinate as required with all trades and with all public agencies involved.
3. Secure all necessary approvals from public agencies and others and signify by stamp or other means that they have been secured.
4. Clearly indicate all deviations from the Contract Documents.
5. Submittals shall be marked with the date, the checker's name and stamped "Approved for Submittal," or bear some other indication of the Contractor's approval. Submittals not marked in this manner will be returned for correction without action by the Engineer.

B. Grouping of submittals:

Unless otherwise specifically permitted by the Engineer, the Contractor shall make all submittals in groups containing all associated items. The Engineer may reject partial submittals as not complying with the provisions of the Contract Documents.

3.3 TIMING OF SUBMITTALS

A. General:

1. The Contractor shall make all submittals far enough in advance of scheduled dates of installation to provide all required time for reviews, for securing all necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.
2. No material shall be purchased or fabricated especially for this Project until the required shop and working drawings have been submitted and approved by the Engineer as conforming to the Contract requirements. All materials and Work involved in the construction shall then be as represented by said drawings.
3. The Engineer's approval of shop and working drawings will follow a general check made to ascertain conformance with the design concept and functional result desired of the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the Work of all trades.

4. The Engineer's review will be made as soon as practical following receipt of each submittal. In scheduling, at least ten (10) full working days shall be allowed for the Engineer's review following his receipt of each submittal.

B. Delays:

Costs of delays occasioned by tardiness of submittals may be backcharged as necessary and shall not be borne by the Owner.

3.4 CERTIFICATIONS AND TESTS

Certifications and reports of tests, when required under the various sections of these Specifications, shall be submitted in the same quantities as specified for shop drawings in 2.2-C above.

3.5 CONSTRUCTION PHOTOGRAPHS

- A. The General Contractor shall provide clear, sharp, color progress photographs monthly, starting when the Work begins and continuing for as long as the Work is in progress; photographs of the completed project; and interior and/or exterior views as required by the Engineer.
- B. The number of views required monthly shall be from three to six, depending on the progress of Work. Views shall be provided of the general construction area before structural Work begins and pre-construction photographs shall be taken and delivered to the Engineer prior to construction. Photographs shall be 8" x 10" in size and in color, and provided in duplicate. Each photograph shall contain an identifying number and shall be inserted in clear vinyl pages in numerical order. Each page should be bound in a 3-ring type binder with an index coordinating each photograph to its specific location and/or Drawing number. Negatives shall be filed in a similar fashion in numerical order. Each binder shall contain a statement of verification as to name of photographer and dates of photography. Photographs shall be taken at each site of the major portions of the Contract Work as directed by the Engineer. Coverage should include all pertinent features which may be affected by the construction activities, including but not limited to such items as driveways, sidewalks, landscaping, trees, retaining walls, fences, building exteriors, and visible utilities. Photographs shall be taken only during periods of clear visibility. Subsequent views indicating progress shall be submitted to the Engineer each month, in conjunction with the current Monthly Estimate. Photographs shall be in color, 3-1/2" x 5" in size or larger, and shall be submitted in duplicate and dated.
- C. After all construction Work has been completed and the site has been graded and cleared of debris and equipment, the Contractor shall take two (2) views in color of the completed construction at each site of the major portions of the Contract Work as directed by the Engineer. These will be the final project photographs and the Contractor shall have his photographer consult with the Engineer regarding choice of views. All negatives, along with two enlarged prints of each view (minimum 11" x 14") shall be delivered to the Engineer as a part of the Contract close-out documents.

SUBMITTALS AND SUBSTITUTIONS

PART 4 – BASIS OF PAYMENT

- 4.1 Submittals and Substitutions – Incidental. No separate payment will be made for Submittals and Substitutions.

END OF SECTION

SECTION 01500

MOBILIZATION

PART 1 GENERAL

1.1 Section Includes

- A. Mobilization.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

- 3.1 This work is the assembly and set-up of the general plant required to comply with the contract and with local and state laws and regulations. General plant includes contractor's offices, shops, plants, storage areas, and sanitary or other facilities, if required. The work includes obtaining the required permits, insurance, bonds, and any other initial items required for the start of the work.
- 3.2 Provide adequate material and furnishings required. These material and furnishings will not be considered a part of the other completed contract items.

PART 4 BASIS OF PAYMENT

- 4.1 Mobilization – Incidental. No additional compensation.

END OF SECTION

SECTION 01505

CONSTRUCTION STAKE-OUT

PART 1 - GENERAL

1.1 Section Includes

- A. Construction Stake-Out.

1.2 Submittals

- A. Submit proof of professional registration of the Professional Engineer or Registered Surveyor employed or subcontracted to perform construction stake-out services.
- B. Submit one (1) copy of all field notes to the Engineer.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

- 3.1 Using generally accepted surveying methods, the Contractor's Registered Surveyor or Professional Engineer shall stake-out all horizontal and vertical elements as required by the Plans and prepare grade sheets as required.

PART 4 - BASIS OF PAYMENT

- 4.1 Construction Stake-Out – Incidental. No additional compensation.

END OF SECTION

SECTION 02102CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 Section Includes

- A. Clearing and grubbing.

PART 2 - PRODUCTS

Not Included

PART 3 - EXECUTION

3.01 Clearing and Grubbing

- A. The Contractor shall not proceed with clearing and grubbing prior to the Engineer's review of the construction stake-out.
- B. Clearing and grubbing shall consist of the removal of all trees, brush and other vegetation, old structures, fences, walls, guiderail posts, guiderail, signs, direction markers, sidewalks, curbs and pavement from site of the work, which will be required to be removed so that the planned construction may be made. The Contractor shall dispose of all such material. All live trees shall be protected and not removed unless permitted or ordered by the Engineer. The method of clearing, including the use of bulldozers, shall be at the option of the Contractor. However, he will not be permitted to cover up brush and similar debris with earth. All work under this heading shall be done sufficiently ahead of topsoil removal and excavation so as not to interfere with those operations. The Contractor shall remove stumps and large roots and refill the depression with suitable compacted earth fill where necessary to bring the grade back to its original elevation or final grade.
- C. All brush, stumps, roots, etc., cleared or grubbed from the site shall be burned or otherwise disposed of in a manner satisfactory to the Engineer. Burning if permitted by the Engineer, shall be conducted under guard at all times, and each Contractor shall exercise every possible precaution to prevent fires from getting out of hand and destroying adjacent property, or from causing unnecessary smoke nuisance and/or hazards. Burning will not be permitted where local ordinances or State or Federal laws prohibit same. When in the opinion of the Engineer, weather is not conducive to non-nuisance or non-hazardous burning, burning operations shall be suspended at his discretion until conditions are satisfactorily improved. Regardless of whether the Engineer has or has not suspended such operations, any and all damages resulting from burning shall be the Contractor's responsibility.
- D. The Contractor shall remove all salvageable surface items, over the area to be excavated; and he shall properly separate, classify, store, protect and preserve such materials and items for use in backfilling, resurfacing, replanting or otherwise replacing the area of construction to its original condition prior to construction, except as may hereinafter be noted.

CLEARING AND GRUBBING

- E. For all cultivated, landscaped areas, all shrubbery, hedges and small trees in the area of construction shall be carefully removed, stored, and preserved for reuse upon completion of construction, unless otherwise authorized by the Engineer. Large trees which cannot be safely transplanted or reasonably replaced shall be left standing unless permission is specifically granted by the Engineer to remove the tree. Where trees are to be permanently removed, the Contractor shall be responsible for the complete removal of the tree.
- F. For all cultivated, landscaped areas, the lawn sod shall be cut and removed for the width of expected excavation within the right-of-way. The topsoil in these areas of excavation shall be stripped off to a depth of at least eight (8) inches and replaced upon completion of backfilling. All grass areas not to be excavated shall be protected from permanent damage.
- G. All fencing, mailboxes, drainage pipes, doghouses, clothes posts, steps, ornamental lawn fixtures and the like which may be in the way of construction shall be carefully removed and placed temporarily in a place convenient to the property owner until construction is completed and then replaced in their original condition and location.
- H. All property corners in the line of work shall be properly referenced before excavation begins. As soon as the backfilling and compaction operations have been completed, the property corners shall be replaced in the exact position of the original corner, utilizing an equal or better marker than the original.

PART 4 - BASIS OF PAYMENT

- 4.1 Clearing and Grubbing – Incidental. No additional compensation.

END OF SECTION

SECTION 02200**EXCAVATION, BACKFILLING AND GRADING****PART 1 - GENERAL****1.01 DESCRIPTION****A. Work included:**

Excavating, backfilling and grading required for this Work includes, but is not necessarily limited to: excavating, filling and backfilling for structures, footings, foundations, slabs, utilities, drainage, manholes, etc.; trenching and trench backfilling; rough and finish grading of the site; restoration of disturbed surfaces; dewatering; furnishing and installing all required shoring, sheeting and bracing; furnishing and installing granular cushion or fill under all interior and exterior concrete slabs; furnishing of sub-base and base courses for paving; furnishing and installing rip-rap; and such other Work as shown on the Drawings, as required by these Specifications, or as may be reasonably inferred there from.

B. Classification:

The Contractor shall make a personal examination of the sites in which the improvements are to be installed and determine for himself the extent and character of any Work that may be required. All excavation shall be unclassified and no additional payment shall be made for hand excavation or for removal of rock, shale, masonry or other materials encountered in this Project.

C. Underground utilities:

1. Attention is directed to the fact that there may be underground utilities located in the vicinity of the Work. Some of these have been indicated on the Drawings; however, the completeness and accuracy of the information presented therein or elsewhere in these Specifications is not guaranteed.
2. The Contract shall comply with Pennsylvania Act 287-1974 which requires the Contractor to notify all utilities serving the site three (3) days before starting to excavate. The utilities, in turn, are required to respond within two (2) days of receipt of notification and give the location of their lines.

D. O.S.H.A.:

The Contractor shall perform his Work so as to comply fully with the regulations of O.S.H.A. (Occupational Safety and Health Administration) of the U.S. Department of Labor, latest revision.

1.02 QUALITY CONTROL

- A. Testing and inspection of fill materials and compaction Work shall be performed in accordance with the provisions of these Specifications.
- B. Test results shall be submitted to the Engineer in accordance with the provisions of Section 01300 of these Specifications.

1.03 JOB CONDITIONS

- A. Dust control:
 - 1. The Contractor shall use all means necessary to control dust on or near the Work and on or near all off-site borrow areas, if such dust is caused by the Contractor's operations during performance of the Work or if results from the condition in which the Contractor leaves the site.
 - 2. The Contractor shall thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other Work on the site.
- B. Protection:
 - 1. The Contractor shall use all means necessary to protect all materials of this Section before, during, and after installation and to protect all objects designated to remain.
 - 2. In the event of damage, the Contractor shall immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 FILL MATERIAL, GENERAL

- A. All fill material shall be in accordance with these Specifications and subject to approval of the Engineer.
- B. For approval or imported fill material, the Contractor shall notify the Engineer at least four (4) working days in advance of his intention to import material; designate the proposed borrow area; and shall have the approved testing laboratory analyze samples as necessary from the borrow area and make sufficient acceptance tests to prove the quality of the material.

2.02 FILL MATERIAL

- A. In general, unless other material is indicated on the Drawings or required by these Specifications, material from the excavation may be used for backfilling trenches and around structures provided that it meets the applicable requirements set forth

herein. Materials needed in addition to that available from construction operations shall be obtained from approved borrow pits or deposits at no additional cost to the Owner.

- B. All backfill material shall be generally well-graded from fine to coarse and free from large clods; roots; cinders; vegetation; ashes; refuse; boulders, large rock, shale pieces or lumps larger than 6 inches in any dimension with no more than 15 percent of the rocks or lumps larger than 2-1/2 inch in any dimension; organic material or any other deleterious substances. Backfill material shall not be frozen or excessively wet so as to impair proper field compaction. All backfill material shall be of such nature that, after it has been placed and compacted, it will make a dense, stable fill.
- C. Where layers of crushed stone, screened gravel or sand are called for on the Drawings or required by these Specifications for granular cushion beneath certain structures, slabs pipes or other facilities, material conforming to the following particle size gradation shall be provided.

Percent Passing by Weight

<u>Square Mesh Sieve Size</u>	<u>Crushed Stone or Screened Gravel</u>	<u>Sand</u>
1-1/2 inch	100	100
1 inch	90-100	100
3/4 inch	---	100
1/2 inch	25-60	100
Number 4	0-15	95-100
Number 8	0-5	80-100
Number 16	1	50-85
Number 30	---	25-60
Number 50	---	10-30
Number 100	---	2-10
Number 200	---	0-5

- D. Other types of fill materials will be considered by the Engineer for use on a case-by-case basis provided that the Contractor submits sufficient evidence as to the suitability and acceptability of the particular materials for the intended application.
- E. Suitable or selected fill materials shall be kept separated from unsuitable materials and shall not be permitted to be contaminated therewith. Contaminated materials shall not be used for trench or structural backfill and shall be removed from the site or used for site grading as required herein.
- F. Imported fill materials shall conform to Paragraph 2.02 (B) above and, in addition, shall be predominantly granular with max. particle size of two inches and a plasticity index of 12 or less. Imported cohesionless materials shall conform generally to the gradation requirements listed above for sand.

- G. All fill material placed within 3 feet of the base of buildings, footings and/or slabs shall conform to Paragraph 2.02 (F) above and, shall have a plasticity index of 15 or less.

2.03 RIP-RAP

Rip-rap where called for on the Drawings shall conform to the requirements of these Specifications.

2.04 OTHER MATERIALS

All other materials not specifically described but required for proper completion of the Work of this Section shall be as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.01 GENERAL

- A. Prior to all Work of this Section, the Contractor shall become thoroughly familiar with the site, the site conditions, and all portions of the Work falling within this Section.
- B. The Contractor shall not allow or cause any of the Work performed or installed to be covered up or enclosed by Work of this Section prior to all required inspections, tests and approvals. Should any of the Work has been completely tested, inspected and approved, the Contractor shall restore the Work by enclosing or covering as required, all at no additional cost to the Owner.
- C. Before beginning excavation and/or filling Work, the topsoil from all areas to be affected shall be stripped to a depth of 6 inches and shall be stored at a location designated by the Engineer. After completion of the major construction Work, the topsoil shall then be replaced as the upper layer of backfill to a depth of not less than six (6) inches so that the final grade shall be as required by the Drawings. If additional topsoil over and above that salvage from the site is required in order to maintain the 6 inches of depth specified, the Contractor shall furnish and install same at no cost to the Owner.
- D. Backfill around all structures and in all trenches shall be carried to the grade indicated on the Drawings and/or specified herein.
- E. All open excavation, piles of material, freshly backfilled or uncompacted areas which present hazards to personnel or equipment on the construction site shall be adequately barricaded and posted with battery-operated warning lights, signs and other safety-related items as required by any local, state, or federal regulations governing same or, in the absence of any such regulation, to the satisfaction of the Owner.

- F. Backfill under structures or pavements shall, in general, be compacted to 95 percent of Standard Proctor Density, and all other backfill shall be compacted to 90 percent of Standard Proctor Density unless otherwise noted herein.
- G. All excavation materials not used in backfill or final grading operations shall be disposed of by the Contractor at his own expense.
- H. No blasting shall be permitted to be performed in relation to this Work.

3.02 FINISH ELEVATIONS AND LINES

For setting and establishing finish elevations and lines, the Contractor shall secure the services of a qualified engineer or surveyor acceptable to the Engineer and shall carefully preserve all data and all monuments set by such engineer or surveyor and, if displaced or lost, immediately replace them to the satisfaction of the Engineer and at no additional cost to the Owner.

3.03 SHEET PILING, SHORING AND BRACING

- A. The Contractor shall furnish, install and maintain such sheeting, shoring and bracing as may be required to facilitate dewatering; to support the sides of the excavations; to prevent the movement of earth which could in any way diminish the width of the excavation below that necessary for construction or otherwise injure persons in or about the Work; endanger adjacent structures; cause excavations to extend beyond the Owner's property lines; or delay Work.
- B. Whenever possible, sheeting shall be driven ahead of the excavation to avoid loss of material from behind the sheeting. If it is necessary to excavate below the sheeting, care shall be taken to avoid trimming behind the face along which the sheeting will be driven. Care should be taken to prevent voids outside the sheeting, but if voids are formed, they shall be filled immediately with sand and compacted.
- C. The Engineer may require that sheeting, shoring and/or bracing installed for excavation be left in place in order to protect adjacent facilities or structures. Where such is not required in these Specifications or shown on the Drawings, the Contractor will be reimbursed as stipulated in the General Conditions of these Specifications. All other sheeting may be salvaged when the removal of same will not present a hazard to the adjacent facilities or to the safety of the Contractor's personnel.
- D. All sheeting, shoring and bracing not to be left in place shall be carefully removed in such a manner as not to present a hazard to the safety of the workmen or to endanger the construction of other structures. All voids left or caused by withdrawal of sheeting shall be immediately backfilled and well-compacted. The Contractor shall be fully responsible and liable for any bodily injury or property damage resulting from any improper or premature removal of sheeting, shoring or bracing.

3.04 DEWATERING

- A. At all times during construction the Contractor shall provide, place, operate and maintain ample means and devices with which to remove promptly, and dispose properly all water entering trenches and other excavations, or water that may flow along or across the site of the Work and shall keep said excavations dry until the structures and appurtenances to be built therein have been completed to such extent that they will not be damaged by the discontinuance of dewatering operations. At that time, such temporary means and devices shall be removed.
- B. The Contractor shall provide, install and operate pumping equipment of suitable capacity as necessary to maintain all excavations free of surface and subsurface water. He shall dispose of pumped water in accordance with approved E & S plan. Standby pumps will be required to be maintained at the site of the Work of this Section.

3.05 EXCAVATION NEAR EXISTING STRUCTURES/FACILITIES

- A. The Drawings show those underground utility lines and appurtenances for which such location information was either made available to the Engineer or was observed by the Engineer in the field. Neither the number of such underground facilities nor their respective types, sizes and/or locations can be assured or guaranteed. It is therefore the responsibility of the Contractor to obtain such additional information as is required to properly complete the Work in compliance with these Specifications and to contact the owners of the various utilities in the area prior to starting and to maintain communications with these owners during performance of the Work.
- B. The location of all power and telephone poles along the route of the Work and the overhead lines supported by all such poles shall be observed and located by the Contractor prior to commencement of the Work.
- C. The Contractor shall be completely and solely responsible and liable for any and all property damages, bodily injuries, financial losses and interruption of service that result from or are attributable to his construction activities and that affect gas lines, electric lines, telephone lines, drain lines and storm sewer lines, and all appurtenances and service facilities connected thereto. Restoration of all damaged or disturbed facilities shall be accomplished immediately after such facilities have been found to be damaged or disturbed, in accordance with the directions of the respective utility company or private owner and at no cost to the Owner.
- D. Gas, power and telephone service shall be maintained with a minimum of interruption throughout the construction of the Project. No such service shall be intentionally interrupted without the approval of the respective utility company concerned and without first giving due warning to any affected parties.

- E. The proposed Work is in proximity to overhead power lines which transmit electric current at high voltages and which, if disturbed or contacted during construction, would be hazardous to construction personnel and/or other persons. The Contractor shall therefore properly protect such wire, pole supports, or other power line appurtenances to avoid disturbances to those facilities, and shall operate all machinery and conduct all other construction activities in a manner which will assure protection of all construction personnel and other persons against said hazards. Work in the vicinity of the existing underground gas lines and appurtenances is also hazardous because, under certain conditions, such materials are flammable and/or explosive, and the Contractor shall avoid disturbance and/or displacement of those facilities and shall provide all temporary and permanent supports and other required protection to prevent exposure of same to construction personnel and/or other persons. Where such lines are exposed during construction and leakage is detected, construction Work in those areas shall be immediately suspended, the owner or owners of the affected lines shall be immediately advised of the condition, and the construction Work shall not resume until all repairs have been properly completed.
- F. The Contractor shall thoroughly instruct all his personnel and those of any subcontractor or materialsman involved in the Work so that appropriate and complete safety Work practices are observed at all times. He shall also provide all personnel with all tools, clothing, protective glasses, mechanical air blowing equipment to ventilate manholes and other chambers, explosive atmosphere detectors, ladders, harnesses and other safety-related equipment. No Work shall be performed under any unsafe conditions and, if same is detected at any time, the Contractor shall suspend operations immediately and not resume his activities until remedial measures have been taken or until the unsafe situation has otherwise been completely overcome.
- G. The Contractor's attention is directed to the fact that some of the proposed Work may interfere with existing underground utilities. The Contractor shall provide all temporary and permanent supports and other required protection or relocate these utilities. The Contractor shall be completely responsible for the cost of protection, relocating, repairing, or the reconstruction of all existing underground piping and utilities, regardless of size, that are disturbed because of his construction activities. There shall be no extra cost to the Owner for any relocation, reconstruction or repair of existing underground piping and utilities.
- H. After the appropriate utility companies and the Owner have located their lines, ducts, conduits, structures and other facilities in the field, the Contractor shall locate precisely the position, orientation and depth of all lines, ducts, conduits and other facilities that might conflict with his Work. Any unexpected conflict that becomes evident shall be immediately reported to the Engineer. Failure of the Contractor to notify the Engineer of such interference's far enough in advance will render the Owner not liable for any additional expenses incurred by the Contract while the utility is being relocated.
- I. The cost of supporting or protecting conflicting lines or other obstructions shall be

at the Contractor's expense whether performed by him, the utility or the Owner.

- J. As the excavation approaches pipes, conduits, or other underground structures, digging by conventional trenching machine methods shall be done with extreme care. No extra compensation shall be given if manual excavation is necessary to locate or construct utilities and/or underground structures.

3.06 PROTECTION OF EXISTING STRUCTURES/FACILITIES

- A. The Contractor shall maintain in place or remove and replace all interfering pipes, manholes, poles, wires, curbing, property line markers, survey monuments and other structures of facilities throughout the performance of the Work.
- B. If such structures and/or utilities are preserved in place, they shall be carefully supported and protected from injury or damage by the Contractor. In the event they are injured or damaged, the Contractor shall notify the appropriate party so that acceptable steps may be taken to repair any and all damage due to temporary provisions, or if not properly restored by him, the Owner may have the repairs made at the expense of the Contractor.
- C. If, due to the nature of their installation or policy, any utility requires the restoration Work to be done by its own forces, the cost of such Work shall be at the Contractor's expense.
- D. In addition to temporary support of utilities and structures, the Contractor shall provide for permanent support of these items by backfilling and thorough compacting with special material. This fill shall be placed and compacted to a height which will insure the stability of the pipe or obstruction to be supported.
- E. In an emergency affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization by or from the Owner, is obligated to act immediately to prevent such threatened damage, injury or loss. If the Contractor believes that the additional Work done by him in such an emergency, which arose from causes beyond his control, entitles him to an increase in the Contract Price and/or an extension of the Contract Time, he may make a claim therefore as provided in the General Conditions of these Specifications.
- F. In the event of bodily injury to anyone due to the Contractor's Work, he shall secure prompt medical assistance. In the event of property damage, or an evident hazard of possible property damage the Contractor shall act without notice immediately to restore the damaged property or service or to act to prevent the damage whenever property is damaged or imperiled or important services are interrupted or imperiled.
- G. If the Contractor is notified by the Owner to correct such service disruptions or to act to prevent an apparent possible interruption, which notification shall be confirmed in writing, he shall so act immediately. If the Contractor fails to so act within three (3) working days after any such notice, the Owner may act to restore

such important service or to prevent the disruption of a service and charge the cost thereof to the Contractor if the situation is due to his Work.

H. The Contractor shall notify the Owner immediately, for his review and determination of treatment, in any of the following events:

1. Discovery of an unforeseen obstruction.
2. The occurrence of the need to make permanently stable any nearby or adjacent pipe, pole, manhole, structure, or other facility.
3. The failure of any temporary support of a pipe, pole, manhole, structure, or other facility.
4. The discovery of a particular area where undesirable settlement may occur.

3.07 EXCAVATION AND BACKFILL FOR STRUCTURES

A. General Description of Work:

The Work under this item shall include the furnishing of all materials, labor, supervision, tools and equipment necessary to perform all excavation, backfill and disposal or storage, as required, of all surplus material or material required for the proper execution of Work. This Work will include but not necessarily be limited to the following:

1. Removal of existing construction and facilities where necessary.
2. Clearing and grubbing.
3. The loosening, loading, removing, transporting and disposing of all existing structures designated to be removed and wet or dry materials necessary to be removed for the purpose of construction.
4. The construction of ditches required for collection and drainage of surface and subsurface water.
5. All excavation and backfill Work incidental to the proper construction of structures.
6. Furnishings and installation of required sheeting, shoring and bracing; all pumping, bailing and removing of water; and any and all protective Work required.
7. Disposal of excess excavated material and/or spoil.
8. Rough and finish grading of the site.

B. Excavation for Structures:

1. Cut limits:

- a. The excavation for all structures shall be to the lines, grades, and limits as shown on the Drawings and/or as required for proper installation of construction, and shall be sufficient to allow for construction and removal of all formwork; for dewatering purposes; and for other construction needs. No additional compensation will be allowed for additional excavation or backfill that might be necessary to eliminate stoppages or the Work caused by slides due to the nature of the excavated materials, due to movement of equipment, or such other conditions. The Contractor must determine the extent of excavation and backfill required for execution of the Work.
- b. The Contractor will be permitted to machine excavate to within three (3) inches of the bottom of footings, floors and foundations, but shall excavate to final grade by the use of hand shovels in order to insure undisturbed final grade. Any foundation areas which are overcut, disturbed final grade. Any foundation areas which are overcut, disturbed or made unsuitable as a result of the Contractor's operations shall be repaired as required below, at no additional cost to the Owner.

2. Unsuitable Bottom:

In the event that the material encountered at the bottom of the excavation is not suitable for foundations or other Work, as determined by the Engineer, the excavation shall be carried to such additional depth as ordered by the Engineer. The Contractor will be reimbursed for such additional Work as stipulated in the General Conditions of these Specifications, provided that the unsuitable nature of the bottom material did not result from the Contractor's operations.

3. Overcutting:

- a. The Contractor shall excavate to the exact elevations necessary unless otherwise directed by the Engineer.
- b. If excavated below the elevations shown for footings, pilings, foundation walls and other structures, the excavation may, subject to the discretion and advance approval of the Engineer on a case-by-case basis, be backfilled with select fill materials as described under Paragraph 2.02 (C) of this section or Class C concrete. In some cases, the structure design may be revised in order that it bear on undisturbed soil.
- c. Any increase in cost resulting from backfilling or increasing the size of the footings or foundations because of overcutting shall be borne

by the Contractor.

4. Slabs on earth:

- a. Where slabs occur on earth, all loose, shattered or spongy materials and all loam, organic or other undesirable materials shall be removed to a depth sufficient to encounter solid material of suitable load-bearing capacity.
- b. Where slabs on fill occur, the fill shall be placed in accordance with Paragraph 3.07 (C) below.

C. Backfilling for Structures:

1. General:

- a. Placement and compaction of material shall begin only after permission has been given by the Engineer. No material shall be placed or compacted when it is too wet or frozen or when the subgrade of previously placed material is too wet or frozen. The Engineer shall determine when conditions are suitable for placing and compacting material. All loam, topsoil and other material judged to be unsuitable by the Engineer shall be removed before any material is placed and compacted.
- b. Where excavated material or any portion thereof is deemed unsuitable for use as backfilling material, the Contractor shall procure and place approved "special" backfill materials, such as crushed stone, screened gravel or sand. The backfill around structures shall be placed in layers not exceeding six (6) inches in thickness, each of which shall be thoroughly compacted by mechanical means sufficient to prevent subsequent settlement. Machine backfilling will not be permitted.

2. Structural Fill:

- a. Structural fill material shall be compacted by suitable power equipment sufficient to bring the field density, as determined by "Test for Density of Soil in Place by the Sand Cone Method" (ASTM D1556-64), to within the following percentage of the maximum density as determined by the "Tests for Moisture-Density Relations of Soils, Using 10 lb. Rammer and 18-inch Drop" (ASTM D1557-70 Modified Proctor Compaction Test).
 - 1. Soil - Not less than 95 percent.
 - 2. Granular Material - Not less than 97 percent.
 - 3. The moisture content of the material at the time of

compaction shall not be more than 2 percentage points above the optimum moisture content.

- b. Material which is deposited in one day shall be spread, shaped, brought to optimum moisture content and compacted the same day unless otherwise directed by the Engineer.
- c. In the event inclement weather or unforeseen circumstances render impractical the spreading and compaction of the material during the first 24-hour period, the material shall be spread and scarified as directed by the Engineer.

3. Backfill around structures:

- a. The placement of material shall be carried out symmetrically around structures in lifts not to exceed eight (8) inches of loose material, which shall be maintained as nearly horizontal as is possible to avoid differential or non-uniform loading of exterior walls. In this regard, the maximum permissible differential elevation of backfill at any given time will be four (4) feet.
- b. Compaction of material shall be at a moisture content equal to or slightly above optimum as determined by the Modified Proctor Compaction Test. It shall be done by mobile mechanical equipment not closer to the structure than the depth of the structure below finished grade unless otherwise approved by the Engineer.
- c. Each layer of material shall be compacted to an in-place density greater than 95 percent of the maximum as determined by the Modified Proctor Compaction Test.
- d. At points which cannot be reached by mobile mechanical equipment, suitable power-driven tampers shall be used to achieve the same degree of compaction. Backfilling around concrete structures shall start only after the concrete has reached the specified 28-day compressive strength and finishes have been applied and appropriately cured.
- e. Backfill against structure foundation walls shall begin only after the top slab is in place and has obtained sufficient strength to give support to the walls.

4. Testing:

- a. The optimum moisture content and the maximum density of each type of material used for structural fill and backfill shall be determined by "Tests for Moisture Density Relations of Solid, Using 1-0lb. Rammer and 18-inch Drop" (ASTM D1557-70 or AASHTO T-180-60).

- b. The field moisture content of materials being compacted shall be determined by "Laboratory Determination of Moisture Content of Soil" (ASTM D2216-71). The field density of compacted material shall be determined by either "Test for Density of Soil in Place by the Sand-Cone Method" (ASTM D1556-64) or "Test for Density of Soil by the Rubber Balloon Method" (ASTM D2167-66).
 - c. The Contractor shall perform field density and field moisture content tests on each lift of material to insure to the satisfaction of the Engineer that the requirements of this Section of these Specifications are being complied with. Field compaction test including reference tests in number not to exceed one (1) compaction test per 2000 square feet
 - d. Reports verifying these test results shall be submitted to the Engineer and the Contractor shall notify the Engineer when and where the tests are to be made so that the Engineer can observe the tests.
5. All structures designed to contain water shall be tested for water-tightness, using standard approved procedures, before any backfill is placed above the respective footings.

3.08 EXCAVATION AND BACKFILL FOR PIPE LINES

A. Open excavation:

- 1. Unless otherwise indicated on the Drawings, all pipe lines shall be laid in open trenches. The depth of such trenches shall be such that the pipe, in its installed position, will comply with the lines and grades shown on the Drawings, or with the lines and grade established by the Engineer in the field. Unless otherwise indicated on the Drawings, the minimum cover for pipe lines conveying liquids shall be four (4) feet. Minimum cover for gas lines shall be two (2) feet.
- 2. The Contractor shall make a personal examination of the locations in which the pipe lines are to be constructed to determine for himself the extent and character of any rock which may be encountered. All excavation shall be unclassified and no extra payment will be made for hand excavation or for rock, masonry, paving, boulders, shale, timbers or other natural or artificial materials encountered in the trenching operations.
- 3. Where excavation is to be made along roads or traveled ways, the Contractor shall familiarize himself with the requirements of the governing body having jurisdiction of said property and shall pattern his operations accordingly. In the event that the governing body has established no requirements, the Contractor shall limit his trench excavation to the limits hereinafter described. He shall schedule his operations so that at least one

lane of traffic is always open unless he is specifically permitted to do otherwise by both the governing body having jurisdiction over the roadway and the Engineer. Where the flow of traffic must be restricted, or rerouted due to activities of the Contractor, the Contractor shall be responsible for providing all barriers, signage, temporary traffic surfaces and traffic control personnel necessary to insure the safe movement of traffic around the site of the Work and sufficient to the requirements of any governing body of jurisdiction.

4. The Contractor shall shape trenches which are located adjacent to existing above-ground or underground structures and/or facilities or in other confined areas so that such structures and facilities are properly protected against damage or disturbance resulting from settlement or displacement. Adequate sheeting, shoring and/or bracing shall be installed and maintained to provide such protection and the Contractor shall be responsible for all damages resulting to such structures and/or facilities as the result of his failure to use adequate supports as well as those resulting from any other construction activities.
5. Should the Contractor's operations imperil foundations for new or existing structures, he shall provide concrete underpinning piers or supports for such structures at no additional cost to the Owner. Concrete used for underpinning piers shall consist of materials as described in Division 3 of these Specifications.
6. Any excavation where the depth of a trench with vertical sides is four (4) feet or greater or which presents a hazard to personnel working in the trench because of embankments, stockpiling of excavated materials along the top of the trench or other such condition, the Contractor shall provide adequate and suitable means of shoring, sheeting and/or bracing to prevent the trench walls from collapsing and to protect his personnel working in the trench. The system of shoring shall be as required in Paragraph 3.03 of this Section.
7. In excavation for all pipelines where made in open cut and where space permits, the banks of the trench from the ground surface to a depth not closer than 1 foot above the top of the pipe may be excavated to non-vertical and non-parallel planes. In no case shall the side walls of the trench in the pipe zone, defined as all that trench area below a point of 12 inches above the top of the pipe in its installed position, be permitted to be other than vertical and parallel planes equidistant from the pipe centerline.

The horizontal distance between the vertical planes shall be no greater than the outside diameter of the pipe plus 24 inches. The Contractor is cautioned that if the pipe zone trench widths are exceeded, he shall install the pipe in a concrete cradle or provide other special trench backfilling procedures which will result in a final installation equal to that specified, subject to the approval of the Engineer.

8. Where the available space does not permit, where the trench is through pave areas or where existing or proposed above ground or underground structures may be endangered, the sides of the trench above the pipe zone shall be excavated to vertical and parallel planes. The horizontal distance between the vertical planes shall be no greater than necessary to permit construction of the pipeline with all required sheeting, shoring and bracing in place.
9. No pipe shall be installed under any circumstances bearing on rock or a rock projection. All bell holes shall be excavated before the pipe is lowered in the trench. Bell holes shall be no larger than required to permit proper jointing.
10. For all pipelines, the bottom of the trenches shall be excavated and overcut a minimum of six (6) inches below the bottom of the outside of the pipe as determined from the finished grade shown on the Drawings or established in the bottom of the pipe barrel with sand, crushed stone or other similar material approved by the Engineer. In all other respects, the requirements of this Section shall apply.
11. Where muck, quicksand, soft clay, swampy or other material is encountered in the trench bottom which, in the opinion of the Engineer, is unsuitable for pipe foundation subgrade or backfill, such material shall be removed to a depth satisfactory to the Engineer. The trench shall then be backfilled to grade with acceptable material and mechanically compacted in successive layers of not greater than four (4) inches. For the removal and replacement of such unsuitable materials to a depth greater than six (6) inches below the bottom of the pipe, and when authorized by the Engineer, the Contractor shall be reimbursed in accordance with the General Conditions.
12. Materials excavated from trenches shall be stored or deposited within the rights-of-way established for this Work unless the Contractor secures permission writing from adjacent property owners to use their property for this purpose.
13. The Contractor shall schedule his excavation and backfill operations so that no more than 100 feet of trench remains open at one time. All such open trench and piles of deposited materials and all freshly backfilled or uncompacted trench areas shall be adequately barricaded and posted with suitable battery-operated warning lights, signs and other safety-related equipment provided in accordance with local, state or federal governmental requirements, or in the absence of same, to the satisfaction of the Engineer.

B. Excavation in paved areas:

1. The Contractor shall at all times care not to excavate beyond the temporary construction lines where such are shown on the Drawings unless otherwise authorized by the Engineer.

2. When it is necessary during trenching for pipe laying to cut and remove paving, the removal shall be done by or under the direction of the Contractor responsible for replacing the paving.
3. The pavement to be removed shall be saw-cut through the wearing and base courses if bituminous, and through the concrete course if concrete. The removal of pavement and disposal of spoil shall be accomplished before and not coincidentally with the excavation Work.

C. Concrete cradle and/or encasement:

1. Concrete cradle and/or encasement is required to be furnished and installed at the locations shown on the Drawings and under all sewer pipe within the excavated areas around manholes and other structures or where the specified trench widths are exceeded. Said cradle and encasement material shall consist of concrete as described in Division 3 of these Specifications. Care shall be exercised in placing encasement or cradle to provide adequate anchorage for the sewer pipe lines in order to preclude flotation and/or displacement of the pipe.
2. The Contractor shall provide and install all reinforcing steel that may be required or shown on the Drawings to assure adequate strength for concrete cradle or encasement.

3.09 PIPE BEDDING AND EMBEDMENT

A. Pipe bedding:

All pipe lines shall be supported on a granular bedding material approved by the Engineer. The minimum thickness shall be six (6) inches at the bottom of the pipe, and it shall be installed for the full width of the trench, beginning at a minimum of six (6) inches below the bottom of the pipe and along the sides of the pipe to the horizontal centerline of the pipe. This bedding material shall be placed on both sides of the pipe simultaneously for the full width of the trench and shall be mechanically tamped in layers not to exceed four (4) inches, to not less than 97 percent of the maximum density as specified under Paragraph 3.07 (C) of this Section.

B. Flexible piping (PVC and ABS/PVC composite pipe) shall have Class I bedding, as described in ASTM D-2321 and modified here:

1. All pipe shall be supported on an embedded in granular bedding material as described in Part 2.02 of this section. The bedding and embedment shall be deposited in four (4) inch layers on both sides of, six (6) inches below and to 12 inches above the top of the pipe and carefully compacted. Tamping within 12 inches of the pipe shall be by hand tamping. Subsequent compaction shall be performed

with mechanical tampers which have a zone of influence less than the depth from the point of usage to the top of the pipe. In no case shall compactors of the hydrohammer type be utilized within 48 inches of the pipe surface and shall be utilized more than such distance from the pipe surface only if pipe embedment has previously been compacted to at least 85% of Standard Proctor Density.

Bell holes in the bedding shall be provided at each joint to permit proper assembly of the joint while maximizing uniform pipe support. In cold or freezing weather, the max. size of aggregate in the special materials shall be 3/4-inch.

2. Embedment and backfill shall be such that diametric deflection of the pipe due to the pressure of backfill shall not exceed 7.5 percent of the actual inside pipe diameter for PVC pipe and 5 percent of the actual inside pipe diameter for PVC pipe and 5 percent of same for ABS/PVC composite pipe. Due to the importance of proper bedding and embedment of PVC and ABS composite pipe, the Contractor shall lay and backfill not less than 200 feet of pipe and test it for compliance with the max. 7.5 percent for PVC pipe and 5 percent for ABS/PVC composite pipe allowable vertical ring deflection. This procedure will demonstrate if the Contractor's bedding and embedment procedure is adequate. The Contractor shall furnish the pipe Manufacturer's written approval of his method of installation as developed from his initial installation.

C. Pipe Zone backfill:

Backfill in the pipe zone above the pipe bedding material to an elevation of one (1) foot above the top of the respective pipe shall be of selected excavated and compactable material free from rocks, boulders, and stones greater than 3/4 inch in maximum dimension. The material shall be uniformly placed on both sides of the pipe in 4-inch layers for the full trench width and shall be mechanically tamped in place. If necessary to achieve thorough compaction, the material shall be moistened during the tamping process.

D. Backfill above the pipe zone:

1. Insofar as is practical, the material excavated during the trenching operations shall be utilized as backfill above the pipe zone to an elevation equal to the bottom of top soil or other special surface treatments. The Engineer shall determine whether material is unsuitable and, upon the Engineer's notice, unsuitable material shall be disposed of and suitable selected fill materials shall be brought in from an outside source, at no additional cost to the Owner.
2. Those trenches which are located along or across traveled ways, or

in the berms of streets, roads, parking areas or other traffic use area which must be made safe for vehicular traffic as soon as possible, shall be backfilled above the pipe zone with compactable material, free from rocks or boulders greater than four (4) inches in maximum dimension. The materials shall be placed and tamped with mechanical tampers in successive layers not to exceed four (4) inches in vertical depth. Where permanent type pavement is required, a temporary fill shall be placed thereon prior to paving.

3. Where excavation is made through planted, cultivated, lawned or similar areas, the topsoil shall be removed and separately stored. Backfill material and placement shall be the same as previously specified, except that the backfill shall be carried to within six inch of the final grade. The topsoil salvaged from the excavation (or brought in from an outside source) shall then be placed to approximately one (1) inch above the adjacent grade, rolled with a light roller, and seeded or planted to a condition equivalent to that existing before the commencement of construction.
4. Trenches which are located in areas not specified in these Specifications or noted on the Drawings to be seeded or sodded, or for which surface settlement is not important in the opinion of the Engineer, may be filled above the pipe zone with a compatible material free from rocks or boulders larger than eight (8) inches in maximum dimension. However, the Contractor shall place the material in layers no greater than 12 inches in vertical depth and shall tamp as required to assure that no excessive voids are present in the backfill. He shall carry the backfill in this manner to grade. He shall then add backfill neatly rounded over the trench to a sufficient height to allow for settlement to grade after consolidation. Future settlements within a period of one year following Contract close-out shall immediately rectified by adding material to bring the surface to a little above the grade.
5. The Contractor shall make up all deficiency in backfill material at his own expense.
6. In the event that the Contractor desires to attain compaction by flooding the backfill, such methods may be approved by the Engineer, subject to demonstration by the Contractor that satisfactory end results can be achieved. In any event, any trench settlements occurring within one (1) year after the date of Contract close-out shall be required to be rectified by the Contractor at no extra cost to the Owner.
7. Particular care shall be exercised by the Contractor in backfilling trenches located along or crossing roadways, roadway berms, parking areas, and other traveled ways, such that the resumption of normal traffic patterns will occur reasonably soon after the pipe in

those areas has been installed.

3.10 DISPOSAL OF UNSATISFACTORY AND/OR EXCESS EXCAVATED MATERIAL

Where the Contractor encounters boulders, rocks, spongy or swampy materials, old paving materials, masonry, debris, or other materials determined by the Engineer to be unsatisfactory for use as backfill or backfill becomes excessively wet, frozen, or otherwise unsuitable, the same shall be disposed of by the Contractor at no extra cost to the Owner. All excess material remaining after completion of trench backfilling and all excavated material replaced by special backfill shall be similarly disposed of by the Contractor in the same manner at no extra cost to the Owner.

3.11 ROUGH AND FINISH GRADING OF THE SITE:

- A. Fill material shall be installed up to subgrades to accommodate finish grades as shown on the Drawings for pavements, grass or other surface treatments. Prior to placing the fill, the area shall be compacted in the manner described under Part 3.07 of this Section.
- B. The fill material shall be spread in 6 inch layers. Each layer shall be compacted using equipment such a vibrating rollers, equipment with caterpillar treads having traction lugs, or sheepsfoot rollers. Hand air tampers are acceptable in confined quarters. The compacted area shall be covered at least twice by the equipment.

3.12 INSTALLATION OF RIP-RAP

Rip-rap shall be furnished and installed where shown on the Drawings, in accordance with the provisions of these Specifications.

PART 4 – BASIS OF PAYMENT

- 4.01 Excavation, Backfilling and Grading – Incidental. No additional compensation will be provided for Excavation, Backfilling and Grading. The cost associated with Excavation, Backfilling and Grading shall be included in the Unit price bid for the items specified in the Bid Schedule.

END OF SECTION

SECTION 02270

SOIL EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 Section Includes

- A. Soil Erosion and Sedimentation Control.

1.2 Submittals

- A. Submit manufacturer's certifications of materials to the Engineer.

PART 2 - PRODUCTS

- 2.1 All materials shall meet the requirements of the latest edition of the Erosion and Sediment Pollution Control Program Manual published by the Commonwealth of Pennsylvania, Department of Environmental Resources, Office of Resources Management, Bureau of Soil and Water Conservation, Division of Soil Resources and Erosion Control.

PART 3 - EXECUTION

- 3.1 Construct and maintain all measures required by the Soil Erosion and Sedimentation Control Plan attached to these Specifications and as indicated in the Plans.

PART 4 - BASIS OF PAYMENT

- 4.1 Soil Erosion and Sedimentation Control – Incidental. No additional compensation.

END OF SECTION

SECTION 02480LANDSCAPING**PART 1 - GENERAL****1.01 DESCRIPTION**

- A. The Contractor shall furnish all labor, materials, tools, equipment and products for final grading, application of topsoil, soil and amenders, fertilizer, mulch, seeding and/or sodding as shown on the Drawings and/or herein specified.
- B. The Contractor shall furnish all labor, materials, tools, supervision, equipment and services necessary to complete fully this portion of the work as shown on the drawings or herein specified or both, as follows:
 - 1. Finish Grading - Removal of trash and stones, grading to specified slope and contour, and furnishing and applying topsoil.
 - 2. Preparation of Planting Areas - Furnishing and applying lime, fertilizer, and physical conditioning materials and incorporating same into the soil.
 - 3. Planting Materials - Supplying plant materials of quality and species and/or varieties specified. Planting shall be performed in an approved manner and maintenance shall be supplied for a specified period.
- C. Related Work described elsewhere:
 - 1. Erosion and Sedimentation Control Measures Section 01060
 - 2. Demolition, Clearing and Grubbing Section 02102
 - 3. Excavation, Backfilling, and Grading Section 02200

1.02 QUALITY ASSURANCE

The Contractor shall procure from the local Agricultural Agent a pH analysis of the topsoil to be applied to the site and his recommendations as to the amount of limestone (agricultural) screenings, if any, needed to bring the pH of the soil up to a value between 6 and 8. The sample of the topsoil submitted to the Agricultural Agent shall be a composite of not less than 10 site samples.

PART 2 - PRODUCTS**2.01 TOPSOIL AND SOIL CONDITIONING MATERIALS**

- A. Topsoil shall be natural surface soil from well-drained areas of loam or sandy loam nature containing less than 30% silt and less than 12% clay. It shall be free of weeds, roots, sticks, stones or other extraneous matter.

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- B. Fertilizers shall be delivered to site in original bags and protected at all times prior to application against mechanical or weather damage.
 - 1. Superphosphate shall be of standard quality containing not less than 20% available phosphate.
 - 2. Basic fertilizer shall be a 0-20-20 analysis: 20% available phosphate derived from superphosphate and 20% water-soluble potash derived from muriate of potash.
 - 3. Starter fertilizer shall be 10-5-5 complete analysis fertilizer with 10% nitrogen having 35% or more of the total nitrogen as water-insoluble nitrogen. Nitrogen may be derived from a natural organic material or a ureaform compound (38% N, Minimum Availability Index = 45). The 5% available phosphate shall be derived from superphosphate and 5% water-soluble potash derived from muriate of potash.
- C. Lime shall be standard ground limestone containing a minimum of 50% lime oxides (calcium oxide plus magnesium oxide), 98% passing a 20 mesh sieve and a minimum of 40% passing a 100 mesh sieve.
- D. Reed-Sedge Peat or Sphagnum Moss Peat shall have an organic matter content of 80% minimum and a water holding capacity of 400% minimum.
- E. Mushroom manure shall be composed of well-rotted cattle or stable manure with an admixture of 15% to 30% topsoil and shall have been used for the commercial growing of at least one crop of mushrooms. It shall be free of sawdust, refuse, shavings and harmful chemicals.
- F. Wood chips shall be the by-product of twigs and branches that have been processed through a chipper.
- G. Straw shall be either wheat or oat straw, clean and free of weeds and other extraneous matter.

2.02 SEED

- A. In seeding operations conducted as part of the Work of this Section, the Contractor shall use seed exclusively which conforms to the Pennsylvania Seed Act of 1965, Act No. 187, and applicable regulations of the Pennsylvania Department of Agriculture, Bureau of Plant Industry.
- B. In selecting seed to be used in this Work, the Contractor shall adhere to the following requirements:
 - 1. Have the Pennsylvania Department of Agriculture, Bureau of Plant Industry, conduct purity and germination analysis, following the current Rules for Testing Seeds of the Association of Official Seed Analysis.

2. Use certified Crownvetch, Kentucky Bluegrass, Perennial Rye Grass, Pennsylvania Red Fescue, or Red Fescue seed.
 3. Use Penngift crownvetch seed, pretested by the Pennsylvania Department of Agriculture, in 10-pound (net) waterproof containers, with a tag attached to each bag showing a Pennsylvania Department of Transportation number to verify pretesting and conformance to specifications.
 4. Use a premixed seed with an inspection tag stamped, dated and signed by the Department of Agriculture inspector and sewn into the inside top of each bag. Seed from containers that are not sealed or that have been stored with herbicides or seed which has a test date older than nine months shall not be used. Seed to be used in the Work of this Section shall have been inspected and sampled as specified, or sampled by individual species and lot number and mixed on the Project site under Department supervision.
- C. Seed inoculation employed by the Contractor shall be a standard acceptable commercial product for treating leguminous seed and shall consist of a suitable carrier containing a culture of nitrogen-fixing bacteria specific for the seed to be inoculated. Inoculant containers shall be kept sealed until they are empty. At all times, suitable storage at a moderate temperature must be provided. The Contractor shall not use inoculant after the expiration date shown on the container.

PART 3 - EXECUTION

3.01 GENERAL

- A. All areas shall be tilled to a depth of four (4) inches prior to placement of topsoil. The entire subgrade shall be raked and all stones and debris over 1-1/2 inches in maximum dimension must be removed.
- B. Topsoil as specified shall be placed to a minimum depth of four (4) inches and brought to grades indicated on the Drawings. Trash, lumps and stones exceeding 1-1/2 inches in maximum dimension shall be removed from all areas prior to seeding or sodding.
- C. Peat as specified (2-1/2 cubic yards per 1000 sq. ft.), lime (65 pounds per 1000 sq. ft.) and basic fertilizer (50 pounds per 1000 sq. ft.) shall be thoroughly incorporated into the soil to a depth of five (5) inches.
- D. Starter fertilizer (25 pounds per 100 sq. ft.) shall be applied and worked to a depth of one (1) inch. All areas shall be fine-graded and firmed with a light roller.
- E. Seeding shall be done at such time of the year when climatic conditions of temperature and moisture are suitable for growth within the following seeding dates:

Spring

March 15 - June 1

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Fall

August 15 - October 15

If required, the Engineer may modify these dates upon receipt of a written request from the Contractor.

- F. Seed shall be Blue Tag Certified. It shall have been tested for germination and purity by acceptable methods within a period of 9 months prior to delivery.
- G. Seed for each area shall be divided into two equal parts, each area to be seeded in two passes, with the second seeding to be over the first at a right angle to it.
- H. If a distributor is used which deposits seed on the surface, the seed shall be covered by smoothing harrow, hand rake or cultipacker.
- I. Unless a cultipacker seeder has been employed, areas shall be firmed after seeding by light rolling or cultipacking.
- J. Straw mulch as specified shall be applied uniformly at a rate of 100 pounds per 1000 sq. ft.
- K. Seeded areas shall be maintained by watering, weeding, reseeding, mowing and other operations for at least 45 days and as much longer as necessary to establish a close stand of grass at an average height of 2-1/2 inches.

3.02 INOCULATING LEGUMES

The Contractor shall inoculate leguminous seed with the proper cultures in accordance with the Manufacturer's directions. Prior to sowing, inoculated seed shall be protected from prolonged exposure to sunlight. Seed not sown within 24 hours shall be reinoculated. When seed is applied by hydraulic seeders, four (4) times the Manufacturer's recommended rate shall be utilized.

3.03 WEED CONTROL

Approved herbicide shall be applied at a rate recommended by the Manufacturer after the grass is planted as soon as a new growth of weeds appears.

3.04 MAINTENANCE

The Contractor shall water, weed, mow, prune and otherwise promote healthy growth, maintain and protect seeded and sodded areas, until final acceptance by the Owner.

3.05 REPLACEMENTS

At the beginning of the next planting season after that in which the permanent grass crop is sown, the seeded and sodded areas will be inspected. If grass growth is unacceptable over one-fourth or more of the total area, the total unacceptable area shall again be prepared and reseeded or sodded as described above and maintained by watering and mowing through the planting periods.

PART 4 – BASIS OF PAYMENT

- 4.01 Landscaping – Incidental. No additional compensation will be provided for Landscaping. The cost associated with Landscaping shall be included in the Unit price bid for the items specified in the Bid Schedule.

END OF SECTION

SECTION 02500

TEST PITS

PART 1 - GENERAL

1.1 Section Includes

- A. Test Pits

1.2 Related Sections

- A. Section 02610-Plant-Mixed Bituminous Concrete Courses

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

- 3.1 In accordance with Pennsylvania Act 287, contact Pennsylvania One-Call (1-800-242-1776) to have all utilities located in the field.

- 3.2 Prior to commencement of construction, at all locations where potential vertical conflicts exist between utility lines (marked and/or observable from the surface, e.g. combined sewer systems) and the location of proposed facilities, construct test pits to determine the following:

- A. Location
- B. Elevation of the top of utility.
- C. Utility size (outside diameter).

Provide this information in writing to the Engineer. Do not commence construction until the information is reviewed by the Engineer and adjustments, if necessary, are made to the Drawings.

PART 4 - BASIS OF PAYMENT

- 4.1 Test Pits – Incidental.

No separate payment will be made for test pits for pipeline utilities and appurtenances. The cost for test pits shall be included in the cost of the pipeline utilities or appurtenances for which the test pits are made.

END OF SECTION

SECTION 02555**EXCAVATION AND BACKFILL FOR PIPELINE UTILITIES AND APPURTENANCES****PART 1 - GENERAL****1.1 Section Includes**

- A. Excavation and backfill, classification, trench excavation including sawcutting of existing pavement, explosives and blasting, accommodation of traffic, accommodation of drainage, pumping, embankment, backfilling trenches, restoration, temporary paving and restoration of paved traveled areas, protection of property and structures, obstruction shown on drawings, removal of obstructions, and clean up.
- B. This Section is applicable to waterlines, sanitary sewer lines, storm sewer lines, other utility lines, and related appurtenances.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION**3.1 Excavation and Backfill - General**

- A. The Contractor shall excavate, protect and backfill all foundations, trenches, and other excavations that may be necessary for completing the work to be done under the Contract. All excavation shall be in open cuts, except where and to such extent as the Engineer may authorize or direct that same be done by boring or jacking, or where such is specified in the Special Requirements or Drawings. Trenches may be, in general, excavated and backfilled either by machinery, or by hand as the Contractor may elect; provided however, that the Engineer is empowered wherever he shall decide that such necessity exists, to direct that hand excavation be employed. The Contractor shall have no claim for extra compensation due to the fact that hand, instead of machine, excavation may be necessary from any cause whatever.
- B. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the lines and grades or depths indicated by the Drawings, as specified herein, or as directed by the Engineer. Embankments shall be prepared in accordance with the Specifications, and as necessary to bring the ground surface to finished grade elevations for areas as shown on the Drawings or directed by the Engineer. All excavated material not required for backfill or embankment shall be removed and wasted or otherwise disposed of as directed or specified.

3.2 Classification

- A. All trench excavation as required by the Drawings and Specifications, shall be considered as unclassified excavation, with no additional payment being made in the event rock, quicksand, muck or other unsuitable material is encountered in the construction of such work.

3.3 Trench Excavation

- A. The Engineer shall have the right to limit the amount of trench opened in advance of backfilling. Generally a length of 100 feet of open trench will be permitted.
- B. In case more material is excavated from any trench than can be backfilled over the completed pipe or can be stored on the street or within the limits of the right-of-way, leaving space for the traffic and drainage as herein provided, the excess material shall be removed to a site mutually agreeable to the Owner and Contractor. The Contractor is responsible for providing this site and any soil and erosion control and permitting which is required. The Contractor shall at his own cost and expense, bring back as much of the material removed as may be required to properly backfill the trench. If not of the proper kind or if so directed by the Engineer, the Contractor shall, at his own cost and expense, furnish such other suitable material as may be necessary.
- C. All removal and protection of pavement of will be done in accordance with Pennsylvania Code Title 67 Transportation, latest revision. In case the Contractor removes or disturbs any pavement on account of settlement, slides, blasting, or cave-ins, the Contractor is required to replace all such pavement removed or disturbed without additional compensation. Pavement shall be saw cut prior to excavation, and the edges of the pavement shall be protected and maintained by the Contractor until the repaving is completed.
- D. For excavation in paved areas, the backhoe out-rigger pads shall be equipped with rubber blocks to protect the pavement areas. When utilizing the loader bucket for stabilization, it shall also be blocked.

3.4 Explosives and Blasting

- A. The Engineer shall be empowered to regulate the character and strength of any explosives used, and the manner of their use and storage. Only small amounts of any explosives shall be kept at any place and they shall be kept under lock, the key to be only in the hands of a trustworthy person. Great care shall be taken in handling dynamite and similar explosives during freezing weather. Caps and exploders shall not be kept in the same place as explosives. Blasts shall be properly matted and securely covered.
- B. The Contractor shall be solely responsible for injury to persons or property that may result from his use of explosives, and the exercise of, or failure to exercise control on the part of the Engineer shall in no way relieve him of responsibility for injury or

damage resulting from their use.

- C. If allowed, the blasting work shall be performed by a licensed and competent blasting contractor in accordance with State Regulations (Chapter 211 of Departments Rules and Regulations), having current acceptable insurance coverage in amounts satisfactory to the Engineer.
- D. The Contractor must secure a permit from the Pennsylvania Fish Commission if blasting is to be done in or along a stream. In addition, the local waterways patrolman must be notified when explosives are to be used.

3.5 Accommodation of Traffic

- A. Streets shall not be unnecessarily obstructed and unless the Engineer, in writing, shall authorize the complete closing of the street, the Contractor shall take such measures at his own expense, as may be necessary to keep the street or road open and safe for traffic.
- B. The Contractor shall employ traffic control measures in accordance with Pennsylvania Department of Transportation Publication 203 Work Zone Traffic Control, latest revision.
- C. The Contractor shall construct and maintain, without extra compensation, such adequate and proper bridges over excavations as may be necessary or as directed for the safe accommodation of pedestrians or vehicles. The Contractor shall furnish and erect without cost to the Owner, substantial barricades at crossings of trenches, or along the trench, to protect the traveling public.
- D. The Contractor shall not obstruct fire hydrants.
- E. The roadway on one side of the line of work shall be kept open at all times.
- F. The streets, crosswalks, and sidewalks shall be kept clean, clear and free for the passage of vehicles or pedestrians, unless otherwise authorized in writing by the Engineer. A straight and continuous passageway on sidewalks and over crosswalks, at least three feet in width, shall be preserved free from all obstructions.
- G. Where deemed necessary, such additional passageway as may be directed shall be maintained free of obstructions.
- H. In narrow or congested streets or alleys, when so directed, the Contractor shall complete his work up to a point designated by the Engineer before opening the work ahead, in order to give access to garages and other places. The Contractor shall in all cases so arrange his work as to cause the least inconvenience to property owners consistent with the proper prosecution of the work as determined by the Engineer.

3.6 Accommodation of Drainage

- A. Gutters, sewers, drains and ditches shall be kept open at all items for surface drainage. No damming or ponding of water in gutters or other waterways will be permitted, except where stream crossings are necessary and then only to an extent which the Engineer shall consider necessary. The Contractor shall not direct any flow or water across or over pavements except through approved pipes or properly constructed troughs; and he shall, when so required and at his own cost and expense, provide pipes or troughs of such sizes and lengths as may be required and place the same as directed. The grading in the vicinity of pipe trenches shall be controlled so that the ground surface is properly pitched to prevent water running into the trenches.

3.7 Pumping

- A. The Contractor shall keep all excavations free from water, at his own expense, while installation work is in progress, and to such extent as may be necessary while excavation work alone is being carried on. The Contractor shall build all dams and other devices necessary for this purpose, including lowering the water table below trench bottom by well points and pumping, and provide and operate pumps of sufficient capacity for dewatering the excavations. He shall provide for the disposal of the water removed from excavations in accordance with the approved E & S plan and in such manner as shall not cause injury to the public health, to public or private property, to the work of other contractors, to any portion of the work completed or in progress, or produce any impediment to the use of the highways, roads, lanes and streets by the public.

3.8 Embankment

- A. Where embankment is necessary to support the foundations of or cover the pipe, it shall be made to the height, width and slopes shown on the Plans or as directed. The entire embankment or such portion thereof as may be deemed necessary by the Engineer, shall be made prior to the construction of the pipe or the foundation thereof at such time and in such order as the Engineer may direct.
- B. The material for embankment shall be deposited in layers of not more than eight inches in thickness; each layer shall be separately compacted by heavy pavers' rammers. No breaks or irregularities in the distribution of the material or the formation of the layers will be allowed. The whole embankment shall be carried up evenly to the height given by the Engineer in such a manner as to make a compact and solid foundation. When pipe is to be laid in a fill, the embankment shall be brought to a height at least one foot above the proposed top of the pipe before the trench is excavated. The embankment shall then be excavated to the proper form and grade and the pipe placed thereon; after which the embankment shall be carried up to a height of not less than three feet above the top of the pipe, the material being placed and rolled or rammed in layers as above described.
- C. In case the embankment over the pipe should obstruct any natural drainage, the Contractor will be required to do any work and furnish any material necessary to preserve natural drainage, to the satisfaction of the Engineer.

3.9 Backfilling Trenches

- A. After the pipeline and its appurtenances have been constructed, all trenches shall be backfilled with the material indicated in the Trench Details included in the Drawings to a height twelve inches (12) above the top of the pipe and solidly rammed down and tamped around the pipe under it, with mechanical tampers and proper tools made for this purpose. The remainder of the trench shall be backfilled to the required height in layers not exceeding eight (8) inches in thickness. Mechanical tampers shall be used do as to obtain maximum compaction of the material.
- B. Compaction of all trenches along and across State roads and Local roads, travelways, and shoulders shall be in accordance with Pennsylvania Code Title 67 Transportation, latest revision, and the latest edition of the Commonwealth of Pennsylvania, Department of Transportation Publication 408.
- C. After the pipe is satisfactorily laid, backfill the trench with coarse aggregate, as shown on the Standard Drawings. Complete the backfill with suitable material. Place material in 4-inch layers; however, 8-inch layers will be permitted when using vibratory compaction equipment, provided backfill material is suitable for compacting testing. When coarse aggregate backfill is not required, backfill the entire trench with the material indicated for a trench condition. Thoroughly compact each layer of backfill with mechanical tampers, or by other acceptable methods for the full trench width to a height of not less than 1 foot above the pipe top. Compact to not less than 100% of the determined dry weight density of the backfill material. The Contractor shall perform field density and field moisture content tests on each lift of material to insure to the satisfaction of the Engineer that the requirements of this Section of these Specifications are being complied with. Field compaction test including reference tests in number not to exceed one (1) compaction test per 2000 square feet
- D. All backfilled surfaces shall be maintained flush with the adjacent undisturbed surfaces.
- E. As the trenches are filled in and the work completed, the Contractor shall, at his own cost and expense, remove and dispose of all surplus earth, stone, slag, or other material from the work, in such manner and at such point or points as he may select or provide, subject to the approval of the Engineer; or he may deposit the same, either with or without rehandling, at any point or points on the lines of the work covered by the Contract, if so directed by the Engineer; and shall leave all roads, sidewalks and other places free, clear and in good order. In case the Contractor shall fail or neglect to do so, or to make satisfactory progress in doing so, within 24 hours after the receipt of a written notice from the Engineer, the Owner may remove such surplus material and clear the roadways, sidewalks and other places, and the cost of said work shall be charged to the Contractor and deducted from any moneys due or to become due him under the Contract.

3.10 Restoration

- A. Upon completion of all compacted backfilling of non-topsoil excavation, the top soil previously removed and stored shall be replaced and mounded over the backfilled area. Immediately upon backfilling of the trench for the entire length over each individual property, the entire disturbed area of this property shall be cleaned of all debris, graded and fine-raked. Thereafter, all shrubbery, hedges, trees, fences, walkways, etc., shall be replaced to a condition of equal to that before construction. Reseeding of the backfilled area within the reasonable limits of the construction is required. However, the careful replacement of the soil, the prompt cleanup and raking of the construction area on each property, the complete replacement of all removed surface items and the continued maintenance of the top surface of the trench shall be strictly enforced. In the event that the trench surface compacts in some places lower than the original grade, these areas shall be refilled with top soil, whether or not available on the property upon which the depression occurs. The Contractor shall be required to periodically inspect all mounded areas of backfill and repair and maintain these areas as necessary until no further compaction results. Reseeding and mulching must be done within twenty (20) days of backfilling, weather permitting. Hydro-seeding methods are acceptable.

3.11 Temporary Paving and Restoration of Paved Traveled Areas

- A. In all paved areas other than State Highways and in all unpaved areas used as thoroughfares, road shoulders, driveways or parking areas, the Contractor shall provide over all backfilled excavations a temporary paving consisting of a layer of crushed stone. Contractor shall maintain these temporary crossings, without additional compensation, until permanent pavement is placed. No additional compensation will be allowed for this layer of crushed stone or for any excavation required to place permanent pavement.
- B. The Contractor, at his option, may elect to provide the permanent replacement of any bituminous paving immediately after backfilling is completed. In such cases, the requirements for temporary crushed stone are waived.
- C. Temporary restoration of a pavement or paved shoulder may be required by the Engineer prior to permanent restoration, under the following:
 - 1. The base shall consist of compacted select granular material with a surface of 2-inch bituminous material. If the existing pavement structure includes a course of subbase material, it shall be replaced to a depth equal to the existing course depth with material meeting the requirements of Section 350.2 of Publication 408, latest revision.
 - 2. Temporary pavement restoration shall be completed before traffic is allowed to travel on the disturbed area. The temporary pavement may be kept in place for up to 6 months or as specified in the Pennsylvania Department of Transportation Highway Occupancy Permit (if applicable), if it is properly maintained.
 - 3. The temporary pavement shall be removed and permanent restoration performed.

Paint Identification. Upon completion of pavement or paved shoulder restoration, the restoration date shall be painted immediately adjacent to the restored cut but not in an area where tires normally contact the pavement. The painted date shall indicate the month and year numerically.

The numerals shall be 6 to 9 inches in height. The paint shall be color coded as follows: blue (water), yellow (gas-petroleum), red (electric), orange (communications), and green (sewer). The paint shall be maintained for 2 years after the acknowledged completion of the permitted work. If the pavement or shoulder is being overlaid for more than 100 linear feet, the PennDOT District Office may, upon request, exempt the permittee from complying with this subsection.

Appurtenances to Underground Installations. Requirements relating to appurtenances to underground installations shall include:

1. The top of every manhole, valve box or other access to the facility shall be at the same elevation as the surface in which it is located.
 2. The surface surrounding manhole covers located in paved shoulders shall be paved with 4 inches bituminous concrete base course a distance of at least 1 foot around the structure to prevent washouts.
 3. A manhole, including those cast-in-place, shall be constructed in compliance with current industry standards and Section 713.2(c) of PennDOT Publication 408, latest revision.
- D. The Contractor shall be responsible for any injury or damage resulting from lack of required trench maintenance during the prescribed maintenance period.

3.12 Responsibility for Condition of Excavation

- A. The Contractor shall be responsible for the condition of all excavations made by him. All slides and cave-ins shall be removed without extra compensation, at whatever circumstances they may occur.
- B. The neglect, failure, or refusal of the Engineer to order the use of bracing or sheeting, or a better quality, grade or section, or larger sizes of steel or timber, or to order sheeting, bracing, struts, or shoring to be left in place or the giving or failing to give orders or directions as to the manner or method of placing or driving sheeting, bracing, jacks, wales, rangers, etc., shall not in any way or to any extent relieve the Contractor of any responsibility concerning the condition of excavation or of any of his obligations under the contract; nor shall any delay, whether caused by any action or want of action on the part of the Contractor, or by any act of the Owner, or his agents, or employees, resulting in the keeping of an excavation open longer than would otherwise have been necessary, relieve the Contractor from the necessity of properly and adequately protecting the excavation from caving or slipping, nor from any of his obligations under the Contract relating to injury of persons or property, nor entitle him to any claim for extra compensation.

3.13 Trench Shoring

The Contractor shall provide all labor, material, and tools to furnish sheeting, shoring, and bracing as required by Department of Labor and Industry Regulations and the Federal Occupational Safety and Health Act of 1970 (including all amendments). Trench shoring and bracing shall also be provided to protect other adjacent utilities.

Shoring shall not be removed until the permanent work is in proper condition to receive the load. The cost of shoring will be included in the unit price bid for sewer line. No additional payment for shoring will be authorized.

3.14 Protection of Property and Structures

- A. The Contractor shall, at his own expense, sustain in their places, and protect from direct or in-direct injury, all pipes, tracks, walls, buildings, and other structures or property in the vicinity of his work, whether above or below the ground, or that may appear in the trench. He shall at all times have a sufficient quantity of timber and plank, chains, ropes, etc., on the ground and shall use them as necessary for sheeting his excavations and for sustaining or supporting any structures that are uncovered, undermined, endangered, threatened, or weakened.
- B. The Contractor shall take all risks attending the presence or proximity of pipes, poles, tracks, walls, building and other structures and property, of every kind and description, in or over his trenches, or in the vicinity of his work, whether above or below the surface of the ground; and he shall be responsible for all damages and assume all expense for direct or indirect injury, caused by his work to any of them, or to any person or property by reason of injury to them, whether such structures are or are not shown on the Drawings.
- C. The Engineer reserves the right under such conditions to stop the excavation or any other part of the work, and to require the Contractor to complete the pipeline and the backfilling up to such a point as the Engineer may direct before proceeding further with the excavation, and the Contractor shall not thereby become entitled to demand or to receive any allowance or compensation, other than an extension of the Contract Time for as many days the Engineer may determine that the work was delayed by such stoppage.
- D. If a homeowner believes that the contractor has damaged or destroyed existing drainage pipes, etc. belonging to the homeowner, then the homeowner, at their own expense, should hire a plumber to video inspect the drain lines in question. If upon review of the video it is shown that the contractor is at fault, the contractor must reimburse the homeowner for the video inspection cost as well as the cost of repairs.

3.15 Obstructions Shown on Drawings

- A. Certain information regarding the reputed presence, size, character, and location of existing underground structures has been shown on the Contract Drawings. There

is no certainty of the accuracy of this information, and it shall be considered by the Contractor in this light. The location of underground structures shown may be inaccurate and other obstructions than those shown may be encountered. The Contractor hereby distinctly agrees that the Owner is not responsible for the correctness or sufficiency of the information given, or on account of the insufficiency or absence of information regarding obstructions either revealed or not revealed by the Drawings; and that he shall have no claim for relief from any obligation or responsibility under the Contract, in case the location, size, or character or any pipe or other underground structure is not indicated on the Drawings, or in case any pipe or other underground structure is encountered that is not shown on the Drawings.

3.16 Removal of Obstructions

- A. Should the position of any pipe, conduit, pole, or other structures, above or below the ground be such as, in the opinion of the Engineer, to require its removal or realignment, changes will be done as extra work, or will be done by the Owner of the obstructions, without cost to the Contractor. But the Contractor shall uncover and sustain the structures at his own expense before such removal and before and after such change as constituting part of the Contract; and the Contractor shall not be entitled to any claim for damage or extra compensation on account of the presence of said structure, or on account of any delay in the removal or rearrangement of the same.
- B. The Contractor shall not interfere with any persons, firms, or corporations, or with the Owner in protecting, removing, changing, or replacing their pipes, conduits, poles, or other structures; but he shall suffer said persons, firms, corporations, or the Owner, to take all such measures as they may deem necessary or advisable for the purpose aforesaid, and the Contractor shall thereby be in no way relieved of any of his responsibilities under the Contract.
- C. At railway or railroad track crossings, any expense to which the owner of the trackage is put, in shoring up tracks, or in maintaining traffic shall be borne by the Contractor whether the same is billed directly to him, or the Owner. Should any such bill be unpaid by the Contractor, before final payment under the Contract is made, the Owner shall be empowered to pay said bill and retain the amount thereof, from any moneys due, or to become due the Contractor.
- D. Except for trees in the direct line of construction which have not been specifically designated to be left standing, the Contractor shall not cut down or destroy any other trees unless specifically authorized to do so by the Engineer; and the Contractor shall have no claim for extra compensation owing to the fact that he may be required to excavate by hand or tunnel in the vicinity of trees required to be left standing, or remove, preserve and restore a tree, or replace a damaged or destroyed tree.

3.17 Site Work and Cleanup

- A. It shall be the responsibility of the Contractor to keep the site neat and clean as the

work progresses. Prior to final acceptance, the structure, machinery, and appurtenant materials, as well as the site on which the pipeline is located, shall be thoroughly cleaned and made pleasing in appearance. Should the Contractor fail to keep clean-up current, the Engineer is authorized to shut down all parts of the job until clean-up is current.

PART 4 - BASIS OF PAYMENT

4.1 Excavation and Backfill for Pipeline Utilities and Appurtenances – Incidental.

No separate payment will be made for excavation and backfill for pipeline utilities and appurtenances related to the installation of water lines, sanitary sewer lines, or storm sewer lines and related appurtenances. The cost for excavation and backfill shall be included in the Lump Sum price bid for the items specified in the Bid Schedule.

END OF SECTION

SECTION 02565

MATERIALS AND INSTALLATION OF STORM SEWERS
AND RELATED APPURTENANCES

PART 1 GENERAL

1.01 Section Includes

- A. Storm sewer pipeline.

1.02 Related Sections

- A. Section 02555 - Excavation and Backfill for Utility Pipelines and Appurtenances.

1.03 Quality Assurance

Reject materials contaminated with gasoline, lubricating oil, liquid or gaseous fuel, aromatic compounds, paint solvent, paint thinner, or acid solder.

1.04 Product Delivery, Storage, and Handling

A. Delivery and Handling

1. Do not place materials on private property without written permission of the property owner.
2. During loading, transporting, and unloading, exercise care to prevent damage to materials.
3. Do not drop pipe or fittings. Avoid shock or damage at all times.
4. Take measures to prevent damage to the exterior surface or internal lining of the pipe.

B. Storage

1. Pipe may be strung along alignment where approved by the Engineer.
2. Do not stack pipe higher than recommended by the pipe manufacturer.

PART 2 PRODUCTS

2.01 High Density Polyethylene Pipe and Fittings

- A. Equal to Advanced Drainage Systems, Inc. N-12 High Density Polyethylene Pipe and Fittings with corrugated exterior and a smooth interior (Manning's n-value of 0.010 to 0.012).

PART 3 EXECUTION

3.01 Laying Pipe in Trenches

- A. Prepare trench excavation to the line and grade indicated in the Plans and as specified in Section 02555.
- B. Give ample notice to the Engineer in advance of pipe laying operations.
- C. Maintain no less than three batter boards or their equivalent between adjoining inlets, junction boxes, or manholes during pipe laying operations, or use laser alignment instruments.
- D. Lower pipe into trench using handling equipment designed for the purpose to assure safety of personnel and to avoid damage to pipe. Do not drop pipe.
- E. Lay pipe proceeding up-grade with the bell or groove pointing upstream.
- F. Lay pipe to a true uniform line with the barrel of the pipe resting solidly in bedding material throughout its length. Excavate recesses in bedding material to accommodate joints, fittings, and appurtenances. Do not subject pipe to a blow or shock to achieve solid bearing or grade.
- G. Lay each section of pipe in such a manner as to form a close concentric joint with the adjoining section and to avoid offsets in the flow line.
- H. Clean and inspect each section of pipe before joining. Assemble to provide tight, flexible joints that permit movement caused by expansion, contraction, and ground movement. If unusual joining resistance is encountered or if the pipe cannot be fully inserted in to the bell, disassemble joint, inspect for damage, reclean joint components, and reassemble joint.
- I. Assemble joints in accordance with recommendation of the manufacturer.
- J. Check each pipe installed as to line and grade in place. Correct deviation from line and grade immediately. A deviation from the

designed grade as shown on the Contract Drawings, or deflection of pipe joints, may be cause for rejection.

- K. Place sufficient compacted backfill on each section of pipe, as it is laid, to hold firmly in place.
- L. Clean interior of the pipe as work progresses. Where cleaning after laying is difficult because of small pipe size, use a suitable swab or drag in the pipe and pull forward past each joint immediately after the jointing has been completed.
- M. Keep trenches and excavations free of water during construction.
- N. When the work is not in progress, and at the end of each work day, securely plug open ends of pipe and fittings to prevent trench water, earth, or other substances from entering the pipes or fittings.

3.02

Backfilling and Trenching

- A. Backfill pipeline trenches only after examination of pipe laying by the Engineer.
- B. Backfill trenches as specified in Section 02555.

PART 4

BASIS OF PAYMENT

4.01

Storm Sewer – Linear Foot

Including storm sewer; test pits; clearing and grubbing; excavation; shoring; bedding; backfill; clay plugs; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, scrub shrub plantings, and maintenance; testing; and by-pass pumping.

Measurement for payment of storm sewers with slopes less than 30 percent will be made horizontally along the pipeline from inside edge to inside edge of inlets / manholes.

Measurement for payment of storm sewers with slopes of 30 percent or more will be made along the centerline of the pipe from inside edge to inside edge of inlets / manholes.

Measurement used for payment of these items shall be the "as built" horizontal distance from centerline of inlet / manhole to centerline of inlet / manhole minus four feet (4'). No deduction in length shall be made for service connections. Depth classes will not be used for this pay item.

END OF SECTION

SECTION 02570

MATERIALS AND INSTALLATION OF SANITARY SEWER LINES AND RELATED APPURTENANCES

PART 1 - GENERAL

1.1 Section Includes

- A. Sanitary sewer
- B. Sewage Force Main
- C. Service Laterals
- D. Bored and Open Cut Steel Casing
- E. Stream Crossings

1.2 Related Sections

- A. Section 01001 – Special Provisions
- B. Section 01300 – Approved Equal Materials and Products and Submittals
- C. Section 01500 – Mobilization
- D. Section 01505 – Construction Stake-out
- E. Section 02102 – Clearing and Grubbing
- F. Section 02270 – Soil Erosion and Sedimentation Control
- G. Section 02500 - Test Pits
- H. Section 02555 - Excavation and Backfill for Pipeline Utilities and Appurtenances
- I. Section 02651 - Sanitary Sewer and Sewage Force Main Pipeline Testing
- J. Section 02825 - Topsoil, Seeding, Mulching, and Maintenance

1.3 Quality Assurance

- A. Reference Standards
 - 1. American National Standards Institute (ANSI):
 - A21.4 Cement-Mortar Lining for Cast-Iron and Ductile Iron Pipe and Fittings
 - A21.11 Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings
 - A21.51 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
 - 2. American Society for Testing and Materials (ASTM):
 - A53 Specification for Pipe, Steel, Black and Hot-Dipped Zinc-Coated, Welded and Seamless
 - D1785 Specification for Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
 - D2241 Specification for Polyvinyl Chloride (PVC) Plastic Pipe (SDR-PR)
 - D3033 Specification for Type PSP Polyvinyl Chloride (PVC) Sewer Pipe and Fittings
 - D3034 Specification for Type PMS Polyvinyl Chloride (PVC) Sewer Pipe and Fittings

- D3139 Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
- D3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- F679 Specification for Polyvinyl Chloride (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings

- B. Reject materials contaminated with gasoline, lubricating oil, liquid or gaseous fuel, aromatic compounds, paint solvent, paint thinner, or acid solder.

1.4 Product Delivery, Storage, and Handling

- A. Delivery and Handling
 - 1. Do not place materials on private property without written permission of the property owner.
 - 2. During loading, transporting, and unloading, exercise care to prevent damage to materials.
 - 3. Do not drop pipe or fittings. Avoid shock or damage at all times.
 - 4. Take measures to prevent damage to the exterior surface or internal lining of the pipe.
- B. Storage
 - 1. Pipe may be strung along alignment where approved by the Engineer.
 - 2. Do not stack pipe higher than recommended by the pipe manufacturer.
 - 3. Store gaskets for mechanical and push-on joints in a cool, dry location out of direct sunlight and not in contact with petroleum products.

PART 2 - PRODUCTS

2.1 Ductile Iron Pipe

- A. Pipe
 - 1. ANSI A21.51, Thickness Class as shown.
 - 2. Standard cement-mortar lining, ANSI A21.4.
- B. Fittings
 - 1. Ductile-iron or gray iron, ANSI A21.10.
 - 2. Provide with standard lining as for ductile iron pipe.
- C. Joints: ANSI A21.11
 - 1. Where not specifically shown on the Contract Drawings, joints may be either mechanical joint or push-on joints.
- D. Rubber gaskets, lubricants, glands, bolts and nuts: ANSI A21.11.

2.2 Polyvinylchloride (PVC) Sewer Pipe

- A. Gravity Sewer Pipe and Fittings
 - 1. Pipe 15" diameter and smaller: ASTM D3033 or ASTM D3034, SDR-35.
 - 2. Pipe 18" to 27" diameter: ASTM F679, PS-46.

3. Flexible Elastomeric Seals: ASTM D3212 Seal Material: ASTM F477.

B. Pressure Sewer Pipe and Fittings

1. Pressure-Rated
 - a. ASTM D2241, Pressure rating as shown, 125 minimum.
2. Schedule-Rated
 - a. ASTM D1785, Schedule rating as shown.
3. Flexible Elastomeric Seals: ASTM D3139 Seal Material: ASTM F477

2.3 Concrete

A. PennDOT Publication 408 Class A.

2.4 Steel Casing Pipe

A. Steel casing pipe shall conform to all applicable requirements of ASTM A-53. The inside diameter of the casing pipe shall be at least 4 inches greater than the largest outside diameter of the carrier pipe. Steel pipe shall have a minimum yield strength of 35,000 PSI. Casing pipe shall have a thickness as follows:

<u>Nominal Diameter (IN)</u>	<u>W/O Protective Coating</u>
Under 14	0.251 Inches
14 and 16	0.282 Inches
18	0.313 Inches
20	0.344 Inches
22	0.375 Inches
24	0.407 Inches

B. Provide full circumference welded joints.

2.5 Timber Skids

A. Pressure treated, cut to a cross-sectional size to allow placement of the carrier pipe in the casing and to support the barrel of the carrier pipe. Provided with notches to accommodate fastening. Treat notches at time of pipe installation.

B. Creosoting: AASHTO M133.

2.6 Steel Strapping

A. ASTM A36.

2.7 Casing Spacers

A. Carbon Steel as manufactured by Advance Products and Systems, Inc., CCI Pipeline Systems, Inc., or equal.

2.8 End Seals/End Caps

A. 1/8" synthetic rubber as manufactured by Advance Products and Systems, Inc., CCI Pipeline Systems, Inc. or equal. Secure with T-304 stainless steel clamps with 100% non-magnetic worm gear mechanism.

2.9 Sand (fine aggregate)

- A. Section 703.1, PennDOT Publication 408 Specifications, Type A.

2.10 Grout

- A. One part portland cement (ASTM C150), and 6 parts mortar sand mixed with water to a consistency applicable to pressure grouting.

2.11 Rip-Rap

- A. Rock Gradation as per National Stone Association (NSA). Class as indicated in Plans or Details.

PART 3 - EXECUTION

3.1 Laying Pipe in Trenches

- A. Prepare trench excavation to the line and grade indicated in the Plans and as specified in Section 02555-Excavation and Backfill for Pipeline Utilities and Appurtenances.
- B. Give ample notice to the Engineer in advance of pipe laying operations.
- C. Maintain no less than three batter boards or their equivalent between adjoining manholes during pipe laying operations, or use laser alignment instruments.
- D. Lower pipe into trench using handling equipment designed for the purpose to assure safety of personnel and to avoid damage to pipe. Do not drop pipe.
- E. Lay pipe proceeding up-grade with the bell or groove pointing upstream.
- F. Lay pipe to a true uniform line with the barrel of the pipe resting solidly in bedding material throughout its length. Excavate recesses in bedding material to accommodate joints, fittings, and appurtenances. Do not subject pipe to a blow or shock to achieve solid bearing or grade.
- G. Lay each section of pipe in such a manner as to form a close concentric joint with the adjoining section and to avoid offsets in the flow line.
- H. Clean and inspect each section of pipe before joining. Assemble to provide tight, flexible joints that permit movement caused by expansion, contraction, and ground movement. Use lubricant recommended by the pipe or fitting manufacturer for making joints. If unusual joining resistance is encountered or if the pipe cannot be fully inserted in to the bell, disassemble joint, inspect for damage, reclean joint components, and reassemble joint.
- I. Assemble joints in accordance with recommendation of the manufacturer.
 - 1. Push-on Joints
 - a. Clean the inside of the bell and the outside of the spigot. Insert rubber gasket into the bell recess.
 - b. Apply a thin film of gasket lubricant to either the inside of the gasket or the spigot end of the pipe, or both.

- c. Insert the spigot end of the pipe into the socket using care to keep the joint from contacting the ground. Complete the joint by forcing the plain end to the bottom of the socket. Mark pipe that is not furnished with a depth mark before assembly to assure that the spigot is fully inserted.
- 2. Mechanical Joints
 - a. Wash the socket and plain end. Apply a thin film of soapy water. Slip the gland and gasket over the plain end of the pipe. Apply soapy water to gasket.
 - b. Insert the plain end of the pipe into the socket and seat the gasket evenly in the socket.
 - c. Slide the gland into position, insert bolts, and finger-tighten nuts.
 - d. Bring bolts to uniform tightness. Tighten bolts 180 degrees apart, alternately.
- J. Disassemble and remake improperly assembled joints using a new gasket.
- K. Check each pipe installed as to line and grade in place. Correct deviation from line and grade immediately. A deviation from the designed grade as shown on the Contract Drawings, or deflection of pipe joints, will be cause for rejection.
- L. Place sufficient compacted backfill on each section of pipe, as it is laid, to hold firmly in place.
- M. Clean interior of the pipe as work progresses. Where cleaning after laying is difficult because of small pipe size, use a suitable swab or drag in the pipe and pull forward past each joint immediately after the jointing has been completed.
- N. Keep trenches and excavations free of water during construction.
- O. When the work is not in progress, and at the end of each work day, securely plug open ends of pipe and fittings to prevent trench water, earth, or other substances from entering the pipes or fittings.
- P. When the vertical separation between the sanitary sewer and existing waterlines is less than 18 inches, the sanitary sewer line shall be concrete encased for a minimum of 10 feet on either side of the waterline.
- Q. Deflection
 - 1. When it is necessary to deflect pressure sewer mains from a straight alignment horizontally or vertically, do not exceed the following limits:
 - a. Ductile Iron Pipe: Deflection of joints shall not exceed that shown in the following table:

MAX DEFLECTION - INCHES PER LENGTH											
LAYING LENGTH	CIP/DIP SIZE										
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
12 FT.	12.5	12.5	12.5	12.5	12.5	12.5	8	7	7	7	7
16 FT.	17	17	17	17	17	17	10	10	10	10	10
18 FT.	19	19	19	19	19	19	11	11	11	11	11
20 FT	21	21	21	21	21	21	12	12	12	12	12

3.2 Wye Branches and Tees

- A. Install wye branches or pipe tees concurrent with pipe laying operations. Use standard fittings of the same material and joint type as the pipeline into which they are installed.
- B. For taps into an existing pipeline, use a saddle wye or tee with stainless steel clamps or core drill pipe and install watertight resilient boot. Mount saddles with solvent cement or gasket and secure with metal bands. Layout holes with a template and cut holes with a mechanical hole cutter.

3.3 Laterals

- A. Construct laterals in accordance with the Details in the Drawings.
- B. Install an approved watertight plug, braced to withstand pipeline test pressure thrust, at the termination of the lateral. Install a temporary marker stake extending from the end of the lateral to 1-foot above finished grade.

3.4 Thrust Restraint

- A. Provide thrust blocking or restrained joints for pressure pipeline at all bends, tees, and changes in direction.

3.5 Backfilling and Trenching

- A. Backfill pipeline trenches only after examination of pipe laying by the Engineer.
- B. Backfill trenches as specified in Section 02555-Excavation and Backfill for Pipeline Utilities and Appurtenances.

3.6 Boring

- A. Push the pipe into the ground with a boring auger rotating within the pipe to remove the spoil. Do not advance the cutting head ahead of the casing pipe except for that distance necessary to permit the cutting teeth to cut clearance for the pipe. The machine bore and cutting head arrangement shall be removable from within the pipe. Arrange the face of the cutting head to provide a barrier to the free flow of soft material.

- B. If unstable soil is encountered during boring retract the cutting head into the casing to permit a balance between the pushing pressure and the ratio of pipe advancement to quantity of soil.
- C. If voids should develop greater than the outside diameter of the pipe by approximately one inch, grout to fill voids. Grouting to fill voids will be at the expense of the Contractor.
- D. Provide full circumference welded joints.

3.7 Carrier Pipe Installation

- A. Place the carrier pipe as shown in the Details. Exercise care to prevent damage to pipe joints when carrier pipe is placed in casing.
- B. Support pipeline within casing so that no external loads are transmitted to carrier pipe. Attach casing spacers in accordance with the manufacturer's recommendations to the barrel of carrier pipe. Do not rest carrier pipe on bells.
- C. Close ends of casing with end caps/end seals in accordance with the manufacturer's recommendations.

3.8 Detectable Tape

- A. Detectable tape shall consist of a minimum thickness .5 mils solid aluminum foil core running the full length and width, encased in a protective, high visibility, color coded inert plastic jacket that is impervious to all known alkalis, acids, chemical reagents and solvents found in soil. Foil to be visible on unprinted side. Minimum overall thickness 5.5 mils. Minimum weight 2-1/2 pounds/1" X 1,000 ft. unit. Tape shall be 3" wide, green in color, marked sewer, shipped in a roll, and magnetically detectable.

PART 4 - BASIS OF PAYMENT

4.1 (size) Sanitary Sewer (depth class, trench detail) - Linear Foot.

Including sanitary sewer; test pits; clearing and grubbing; excavation; shoring; bedding; backfill; clay plugs; green magnetic tape labeled sanitary sewer; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, scrub shrub plantings, and maintenance; testing; and by-pass pumping.

Measurement for payment of sanitary sewers with slopes less than 30 percent will be made horizontally along the pipeline from inside edge to inside edge of manholes.

Measurement for payment of sanitary sewers with slopes of 30 percent or more will be made along the centerline of the pipe from inside edge to inside edge of manholes.

Measurement used for payment of these items shall be the "as built" horizontal distance from centerline of manhole to centerline of manhole minus four feet (4'). No deduction in length shall be made for service connections.

4.2 (size) Sanitary Sewer in (size) Bored Steel Casing - Linear Foot.

Including test pits; clearing and grubbing; boring pits; steel casing pipe; welding; supports; end caps; sanitary sewer; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching and maintenance; and testing.

Measurement for this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.3 (size) Sanitary Sewer in (size) Open Cut Steel Casing - Linear Foot.

Including test pits; clearing and grubbing; excavation; shoring; backfill; steel casing pipe; welding; supports; end caps; sanitary sewer; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.4 (size) Sanitary Sewer Stream Crossing - Linear Foot.

Including test pits; clearing and grubbing; excavation; shoring; sanitary sewer; concrete encasement; trench plugs; backfill; green magnetic tape labeled sanitary sewer; rip-rap; erosion and sedimentation control; erosion control blankets seeded with wetland seed mixture and held in place with live stakes, maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.5 Concrete Anchor – Each.

Including concrete, reinforcing steel; clearing and grubbing; excavation; backfill; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; and topsoil, seeding, mulching, and maintenance.

4.6 (size) Service Lateral (Trench Detail) - Linear Foot.

Including service lateral; test pits; clearing and grubbing; excavation; shoring; bedding; backfill; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing. Depth classes will not be used for this pay item.

4.7 (size) Wye Branch and Plug – Each.

Including wye and plug; temporary marker stake; test pits; clearing and grubbing; excavation; shoring; bedding; backfill; erosion and sedimentation control; maintenance and

protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing. Depth classes will not be used for this pay item.

4.8 (size) Sewage Force Main (Depth Class, Trench Detail) - Linear Foot.

Including sewage force main; test pits; clearing and grubbing; excavation; shoring; backfill; detectable tape; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.9 (size) Sewage Force Main in (size) Bored Steel Casing - Linear Foot.

Including test pits; clearing and grubbing; boring pits; steel casing pipe; welding; supports; end caps; sewage force main; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.10 (size) Sewage Force Main in (size) Open Cut Steel Casing - Linear Foot.

Including test pits; clearing and grubbing; excavation; shoring; backfill; steel casing pipe; welding; supports; end caps; sewage force main; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.11 (size) Sewage Force Main Stream Crossing - Linear Foot.

Including test pits; clearing and grubbing; excavation; shoring; sewage force main; concrete encasement; backfill; rip-rap; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.12 (size) (fitting) – Each.

Including fitting; clearing and grubbing; excavation; concrete blocking; backfill; detectable tape; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing.

4.13 (size) Concrete Encasement of Sanitary Sewer or Sewage Force Main Closely Crossing Water Main - Linear Foot.

Includes concrete encasement in accordance with the details on the drawings.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.14 Connection to Work Constructed by Others – Each.

Includes watertight connection to manholes, sanitary sewers, or force mains as shown on the drawings. Depth classes will not be used for this pay item.

4.15 (size) Service Lateral on Private Property (Trench Detail) – Linear Foot.

Including service lateral; test pits; connection to existing service lateral; wye; clean out; cap; clearing and grubbing; excavation; shoring; bedding; backfill; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing. Depth classes will not be used for this pay item.

4.16 (size) Sewage Force Lateral (Trench Detail) – Linear Foot

Including sewage force lateral; test pits; clearing and grubbing; excavation; sewage force lateral and all required fittings including curb stop; connection to sanitary sewer or force main; shoring; backfill; detectable tape; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching, and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

Depth Classes will not be used for this pay item.

4.17 (size) Bored Sewage Force Lateral – Linear Foot.

Including test pits; clearing and grubbing; boring pits; sewage force lateral; connection to sanitary sewer or sewage force main; erosion and sedimentation control; maintenance and protection of vehicular and pedestrian traffic; topsoil, seeding, mulching and maintenance; and testing.

Measurement of this pay item with slopes less than 30 percent will be made horizontally along the pipeline. Measurement for this pay item with slopes of 30 percent or more will be made along the centerline of the pipe.

4.18 Trench Plugs-Incidental to the project.

END OF SECTION

SECTION 02602

SUBGRADE

PART 1 - GENERAL

1.1 Section Includes

A. Subgrade

PART 2 - PRODUCTS

Not Included.

PART 3 - EXECUTION

3.1 Subgrade shall be constructed in accordance with PennDOT Publication 408, Section 210 "Subgrade."

PART 4 - BASIS OF PAYMENT

4.1 Subgrade – Incidental.

Subgrade will be considered incidental to the immediate overlying pavement structure and will not be paid for separately.

END OF SECTION

SECTION 02604

SUBBASE

PART 1 - GENERAL

1.1 Section Includes

A. Subbase

PART 2 - PRODUCTS

- 2.1 Subbase shall conform to the latest edition of the Pennsylvania Department of Transportation Publication 408 Specifications (PennDOT Publication 408), Section 350 "Subbase."

PART 3 - EXECUTION

- 3.1 Subbase shall be constructed in accordance with PennDOT Publication 408, Section 350 "Subbase."

PART 4 - BASIS OF PAYMENT

- 4.1 Subbase – Incidental.

Subbase will be considered incidental to the immediate overlying pavement structure and will not be paid for separately.

END OF SECTION

SECTION 02610PLANT-MIXED BITUMINOUS CONCRETE COURSES AND GRAVEL ROAD COURSES**PART 1 - GENERAL****1.1 Section Includes**

- A. Plant-Mixed Bituminous Concrete Courses
- B. Asphalt Cement
- C. Bituminous Tack Coat
- D. Gravel Access Road

1.2 Related Sections

- A. Section 02602 - Subgrade
- B. Section 02604 - Subbase

1.3 Job Conditions

- A. Control of Traffic
 - 1. Take measures to control traffic during repaving operations. Do not allow traffic on repaved areas until authorized by the Engineer.
 - 2. Employ traffic control measures in accordance with PennDOT Publication 203 - "Work Zone Traffic Control."
- B. Restore existing pavement outside of the limits of the work that is damaged by the Contractor's operations to its original condition at the expense of the Contractor.
- C. Traffic Lines and Markings
 - 1. Furnishing and application (painting) of necessary roadway traffic lines and/or symbols.
 - 2. Except as modified herein, the work shall conform to the applicable portions of the Pennsylvania Department of Transportation Publication 408, Section 961 and Section 962.
 - 3. Provide the Engineer with the manufacturer's instructions for the mixing ratios for the materials, application temperatures, proper mixing techniques and any other data on proper installation.
 - 4. Furnish plastic pavement markings and traffic paints as manufactured by a supplier listed in PennDOT Publication Bulletin 15.

PART 2 - PRODUCTS

- 2.1 Plant-Mixed Bituminous Concrete Courses shall conform to the latest edition of the Pennsylvania Department of Transportation Publication 408 Specifications (PennDOT Publication 408), Section 409 "Superpave Mixture Design, Standard and RPS Construction of Plant-Mixed HMA Courses", with the following exception(s):
 - A. Section 401.2 Material. Supplier certification of materials shall be accepted in lieu of all material proportion and mixture tests.
- 2.2 Asphalt cement shall be AC-20 conforming to PennDOT Publication 408, Section 702

"Bituminous Material".

- 2.3 Bituminous Tack Coat shall conform to PennDOT Publication 408, Section 460 "Bituminous Tack Coat".
- 2.4 Gravel road courses, materials and thickness as called for in the detail shown on the drawings.

PART 3 - EXECUTION

- 3.1 All Plant-Mixed Bituminous Concrete Courses, Asphalt Cement, Bituminous Tack Coat, and Gravel Access Roads shall be constructed in accordance with PennDOT Publication 408.

PART 4 - BASIS OF PAYMENT

- 4.1 Plant-Mixed Bituminous Concrete Courses - Square Yard.

Payment for Plant-Mixed Bituminous Concrete Courses shall be made on a square yard basis for the depth indicated on the applicable details in the Plans including subgrade preparation; subbase; maintenance and protection of vehicular and pedestrian traffic; asphalt cement; and bituminous tack coat including restoring required painted roadway lines and/or symbols.

- 4.2 Temporary Paving – Square Yard.

- 4.3 Manhole Paving – Square Yard

Manhole castings in stone are to have a 6' X 6' paving area around them to prevent snow plows from hitting them.

- 4.4 Asphalt Cement – Incidental.

Asphalt Cement shall be included as incidental to Plant-Mixed Bituminous Concrete Courses.

- 4.5 Bituminous Tack Coat – Incidental.

Bituminous Tack Coat shall be included as incidental to Plant-Mixed Bituminous Concrete Courses.

END OF SECTION

SECTION 02651**SANITARY SEWER AND SEWAGE FORCE MAIN PIPELINE TESTING****PART 1 - GENERAL****1.1 Section Includes**

- A. Testing Gravity Sewer Pipelines
 - 1. Low pressure air test
 - 2. Infiltration test
- B. Testing Pressure Pipelines
 - 1. Hydrostatic leakage test
- C. Deflection Testing of Plastic Pipe

1.2 Quality Assurance

- A. Test Acceptance
 - 1. No tests will be accepted until the results are below the specified maximum limits.
 - 2. The Contractor shall, at his own expense, determine and correct the causes of test failure and retest until successful test results are achieved.

1.3 Job Conditions

- A. Do not allow personnel in manholes during pressure testing.
- B. Provide relief valves set at 10 psig to avoid accidentally over-pressurizing gravity sewer line during low pressure air testing.

PART 2 - PRODUCTS**2.1 Air Test Equipment**

- A. Air compressor
- B. Air supply line
- C. Shut-off valve
- D. Pressure regulator
- E. Pressure relief valve
- F. Stop watch
- G. Plugs
- H. Pressure gauge, calibrated to 0.1 lbs/sq. in.

2.2 Infiltration Test Equipment

- A. Weirs

2.3 Hydrostatic Test Equipment

- A. Hydro pump
- B. Pressure hose
- C. Water meter
- D. Test connections
- E. Pressure gauge, calibrated to 0.1 lbs/sq. in.

2.4 Deflection Test Equipment

- A. Go, No-Go mandrels
- B. Pull/retrieval ropes

PART 3 - EXECUTION

3.01 Preparation

- A. Backfill trenches in accordance with Section 02555-Excavation and Backfill for Pipeline Utilities and Appurtenances.
- B. Provide pressure pipeline with concrete reaction support blocking.
- C. Flush pipeline to remove debris. Collect and dispose of flushing water and debris.
- D. Clean pipelines by propelling a snug fitting rubber ball through the pipeline with water from the upstream manhole to the downstream manhole. Investigate and correct any stoppage of the cleaning ball. Collect and dispose of cleaning water and debris.
- E. Lamping
 - 1. After flushing and cleaning, lamp gravity pipeline in the presence of the Engineer.
 - 2. Assist the Engineer in the lamping operation by shining a light at one end of each pipeline section between manholes. The Engineer will observe the light at the other end. Pipeline that has not been installed with uniform line and grade will be rejected. Remove and re-lay rejected pipeline sections. Re-clean and lamp until pipeline section achieves a uniform line and grade to the satisfaction of the Engineer.
- F. Plug outlets, wye-branches and laterals. Brace plugs to offset thrust.

3.2 Testing Gravity Sewer Pipelines

- A. Low Pressure Air Tests
 - 1. Test each newly installed section of gravity sewer line between manholes.
 - 2. Slowly introduce air pressure to approximately 4.0 psig.
 - a. If ground water is present, determine its elevation above the springline of the pipe by means of a piezometric tube. For every

foot of ground water above the springline of the pipe, increase the starting air test pressure reading by 0.43 psig. Do not increase pressure above 10 psig.

3. Allow pressure to stabilize for at least five (5) minutes. Adjust pressure to 3.5 psig or the increased test pressure as determined above if ground water is present. Start the test.
4. Test:
 - a. Determine the test duration for a sewer section with a single pipe size from the table below:

Low Pressure Air Test - Test Times			
Nominal Pipe Size	T (time) Min/100 Ft.	Nominal Pipe Size	T (time) Min/100 Ft.
4	.3	21	3.0
6	.7	24	3.6
8	1.2	27	4.2
10	1.5	30	4.8
12	1.8	33	5.4
15	2.1	36	6.0
18	2.4		

- b. Record the drop in pressure during the test period. If the air pressure has dropped more than 1.0 psig during the test period, the line is presumed to have failed. If the 1.0 psig air pressure drop has not occurred during the test period, the test shall be discontinued and the line will be accepted.
- c. If the line fails, determine the source of the air leakage, make corrections and retest. The Contractor has the option to test the section in incremental stages until the leaks are isolated. After the leaks are repaired, retest the entire section between manholes.

B. Testing Pipe over 36" Diameter

1. Pipe over 36" diameter shall be subjected to a visual interior inspection.

3.3 Testing Pressure Sewer Pipelines

A. Hydrostatic Leakage Test

1. Test each newly laid pressure pipeline, including any valved section thereof, hydrostatically at 1.5 times the working pressure of the pipeline based on the elevation of the lowest point in the pipeline corrected to the elevation of the test gauge. Obtain test pressure from the Engineer.
2. Slowly fill the section to be tested with water, expelling air from the pipeline at the high points. Install corporation stops at high points if necessary.

After all air is expelled, close air vents and corporation stops and raise the pressure to the specified test pressure. Subject test section to test pressure for minimum of 2 hours.

3. Observe joints, fittings and valves under test. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
4. After visible deficiencies are corrected, continue testing at the same test pressure for an additional two hours to determine the leakage rate. Maintain pressure within plus or minus 5.0 psi of test pressure. Leakage is defined as the quantity of water supplied to the pipeline necessary to maintain test pressure during the period of the test.
5. Compute the maximum allowable leakage by the following formula:

$$L = \frac{ND \sqrt{P}}{7,400}$$

Where:	L	is the allowable leakage in gallons/hour
	N	is the number of joints in the section tested
	D	is the nominal diameter of the pipe in inches
	P	is the average test pressure in psig

If the line under test contains sections of various diameters, the allowable leakage shall be the sum of the computed leakage for each size.

6. If the test of the pipe indicates leakage greater than that allowed, locate the source of the leakage, make corrections and retest until leakage is within allowable limits. Correct visible leaks regardless of the amount of leakage, at contractors expense.

3.4 Deflection Testing of Plastic Sewer Pipe

- A. Perform vertical ring deflection testing on all portions of PVC and ABS sewer piping, in the presence of the Engineer, after backfilling has been in place for at least 30 days but not longer than 12 months.
- B. The maximum allowable deflection for installed plastic sewer pipe shall be limited to 5% of the original vertical internal diameter.
- C. Perform deflection testing with a deflectometer, calibrated, television, or a properly sized 'Go, No-Go' mandrel. The mandrel(s) shall be constructed at the Contractor's expense and subject to the approval of the Engineer. The mandrel(s) shall conform with ASTM Specification D3034 and have a diameter not less than 95 percent of the average inside diameter of the pipe. Testing shall be performed without mechanical pulling devices.
- D. Pipe exceeding the allowable deflection shall be located, excavated, replaced, and retested at the sole expense of the Contractor.

PART 4 - BASIS OF PAYMENT

4.1 Sanitary Sewer Pipeline Testing - Incidental. No additional compensation.

END OF SECTION

SECTION 02825**TOPSOIL, SEEDING, MULCHING, AND MAINTENANCE****PART 1 - GENERAL****1.1 Section Includes**

- A. Topsoil
- B. Seeding
- C. Mulching
- D. Maintenance

1.2 Applicable Standard Tables

- A. Seeding Restoration Table (attached)

1.3 References

- A. Commonwealth of Pennsylvania, Department of Transportation, Publication 408 Specifications current edition with all supplements. (PennDOT Publication 408)
- B. Pennsylvania Seed Act of 1965, Act 187, as amended.
- C. Agricultural Liming Materials Act of 1978, P.L.15, No. 9 (3P.S.132.1), as amended.
- D. Pennsylvania Soil Conditioner and Plant Growth Substance Law, Act of December 1, 1977, P.L. 258, No. 86 (3P.S.68.2), as amended.
- E. Rules for Testing Seeds of the Association of Official Seed Analysts.
- F. AASHTO T194.

1.4 Definitions

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 Regulatory Requirements

- A. Comply with regulatory agencies for seed mixture, fertilizer, and herbicide composition.

1.6 Quality Assurance

- A. Provide seed mixture in containers showing percentage of seed mix, date of production, net weight, date of packaging, and location of packaging.

- B. The Contractor has the option of using soil testing to justify decreasing lime and fertilizer rates. When soil testing is selected by the Contractor, the soil and soil supplement testing shall be performed by a Soils Testing Laboratory engaged and paid for by the Contractor and approved by the Engineer. The Contractor shall collect soil samples under the direction of the Engineer.

If soil tests are performed to justify decreased liming and fertilizer rates, the Contractor shall submit certified soil sample analysis, including the laboratory's recommended soil supplement formulation.

PART 2 - PRODUCTS

2.1 Topsoil

- A. Having a pH of between 6.0 and 7.0, containing not less than 2% nor more than 10% organic matter as determined by AASHTO T194.
- B. Fertile friable loam, sand loam, or clay loam which will hold a ball when squeezed with the hand, but which will crumble shortly after being released.
- C. Free of clods, grass, roots, or other debris harmful to plant growth.
- D. Free of pests, pest larvae, matter toxic to plants, and weeds.
- E. Topsoil removed under Section 02300-Earthwork may be reincorporated into this work. Additional topsoil, as required, shall be furnished by the Contractor at no additional cost to the Owner.

2.2 Seed

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

TABLE 1 - GRASS AND AGRICULTURAL SEEDS			
Species	Minimum Guaranteed Purity (Percent)	Maximum Weed Seed (Percent)	Minimum Guaranteed Germination (Percent)
Kentucky Bluegrass (<i>Poa pratensis</i>) Domestic Origin; min. 21 lb. per bushel	90	0.20	80
Perennial Ryegrass (<i>Lolium perenne</i> , var. Pennfine)	95	0.15	90
Kentucky 31 Fescue (<i>Festuca elatior arundinacea</i>)	98	0.25	85
Crownvetch (<i>Coronilla varia</i> , var. Penngift)	99	0.10	70
Pennlawn Red Fescue (<i>Festuca rubra</i> , var. Pennlawn)	98	0.25	90
Annual Rye Grass (<i>Lolium multiflorum</i>)	95	0.15	90
Timothy (<i>Phleum pratense</i>)	98	0.25	95

2.3 Seed Mixtures

- A. See "Seeding Restoration Table" at end of this Section.

2.4 Inoculant

- A. Inoculant leguminous seed before seeding with nitrogen fixing bacteria culture prepared specifically for the species.
- B. Do not use inoculant later than the date indicated by the manufacturer.
- C. Protect Inoculated seed from prolonged exposure to sunlight prior to sowing.
- D. Reinoculate seed not sown within 24 hours following initial inoculation.

2.5 Fertilizer

- A. Basic Dry Formulation Fertilizer
 - 1. Analysis 0-20-20 and as defined by the Pennsylvania Soil Conditioner and Plant Growth Substance Law.
- B. Starter Fertilizer
 - 1. Analysis 10-5-5 or 12-6-6 as defined by the Pennsylvania Soil Conditioner and Plant Growth Substance Law.

2.6 Lime

- A. Raw ground limestone conforming to Section 804.2(a), of PennDOT Publication 408.

2.7 Mulching Materials

- A. Mulches for seeded areas shall be one, or a combination of, the following:
 - 1. Hay
 - a. Cured to less than 20% moisture content by weight.
 - b. Contain no stems of tobacco, soybeans, or other coarse or woody material.
 - c. Timothy hay or mixed clover and timothy hay.
 - 2. Straw
 - a. Cured to less than 20% moisture content by weight.
 - b. Contain no stems of tobacco, soybeans, or other coarse or woody material.
 - c. Wheat or oat straw.
 - 3. Wood Cellulose
 - a. No growth or germination inhibiting substances.
 - b. Green, air dried. Packages not exceeding 100 pounds.
 - c. Requirements:

Moisture Content:	12% $\pm$ 3%
Organic Matter:	98.6% $\pm$ 0.2% on the oven dry basis.
Ash Content:	1.4% $\pm$ 0.2%
Minimum Water-Holding Capacity:	1,000%

4. Mushroom Manure
 - a. Organic origin, free of foreign material larger than 2" and substances toxic to plant growth.
 - b. Organic Matter: 20% minimum
 - c. Water-Holding Capacity: 120% minimum
 - d. pH: 6.0

2.8 Accessories

- A. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
- B. Erosion Fabric: Jute matting, open weave.
- C. Stakes: Softwood lumber, chisel pointed.
- D. String: Inorganic fiber.

PART 3 - EXECUTION

3.1 Preparation of Subgrade

- A. "Hard pan" or heavy shale
 1. Plow to a minimum depth of 6".
 2. Loosen and grade by harrowing, discing, or dragging.
 3. Handrake subgrade. Remove stones over 2" in diameter and other debris.
- B. Loose loam, sandy loam, or light clay
 1. Loosen and grade by harrowing, discing, or dragging.
 2. Handrake subgrade. Remove rocks over 2" in diameter and other debris.

3.2 Placing Topsoil

- A. Place topsoil and spread over the prepared subgrade to obtain the required depth and grade elevations. Final compacted thickness of topsoil not less than 3 1/2". Compact with a roller weighing not over 120 pounds per foot width of roller or by other acceptable means, as directed.
- B. Handrake topsoil and remove all materials unsuitable or harmful to plant growth.
- C. Do not place topsoil when the subgrade is frozen, excessively wet, or extremely dry.
- D. Do not handle topsoil when frozen or muddy.

3.3 Tillage

- A. After seed bed areas have been brought to proper compacted elevation, thoroughly loosen to a minimum depth of 5" by discing, harrowing, or other approved methods. Do not work topsoiled areas when frozen or excessively wet.

- B. Liming
 - 1. Distribute limestone uniformly at a rate of 100 pounds per 1,000 square feet.
 - 2. Thoroughly incorporate into the topsoil to a minimum depth of 4".
 - 3. Incorporate as a part of the tillage operation.
- C. Basic Fertilizer
 - 1. Distribute basic fertilizer uniformly at a rate of 50 pounds per 1,000 square feet.
 - 2. Incorporate into soil to a depth of 4" by approved methods.
 - 3. Incorporate as a part of the tillage operation.
- D. Liming and Fertilizer rates may be decreased if lesser rates are indicated by soil tests provided by the Contractor.

3.4 Finish Grading

- A. Remove unsuitable material larger than 2" in any dimension.
- B. Uniformly grade surface to the required contours without the formation of water pockets.
- C. Rework areas which puddle by the addition of topsoil and fertilizer. Rerake.
- D. Distribute starter fertilizer at the following rates:
 10-5-5: 50 pounds per 1,000 square feet.
 12-6-6: 33 pounds per 1,000 square feet.
- E. Incorporate starter fertilizer into the upper 1" of soil.

3.5 Seeding

- A. Uniformly sow specified seed mix by use of approved hydraulic seeder, power-drawn drill, power-operated seeder, or hand-operated seeder or by hand. Do not seed when winds are over 15 mph.
- B. Upon completion of sowing, cover seed to an average depth of 1/4" by hand raking or approved mechanical methods.

3.6 Mulching

- A. Mulch within 48 hours of seeding.
- B. Place hay and straw mulch in a continuous blanket at a minimum rate of 1,200 pounds per 1,000 square yards.
 - 1. Anchor hay or straw mulch by use of twine, stakes, wire staples, paper, or plastic nets.
 - 2. Emulsified asphalt may be used for anchorage provided it is applied uniformly at a rate not less than 31 gallons per 1,000 square yards.
 - 3. Apply approved chemical mulch binders at the manufacturer's

recommended rate.

- C. Chemical mulch binders or a light covering of topsoil may be used for anchorage when the size of the area precludes the use of mechanical equipment.
- D. Apply wood cellulose fiber hydraulically at a rate of 320 pounds per 1,000 square yards.
 - 1. Incorporate as an integral part of the slurry after seed and soil supplements have been thoroughly mixed.
- E. Spread mushroom manure uniformly to a minimum depth of 1/2" or to the depth indicated on the drawings.
- F. When mulch is applied to grass areas by blowing equipment, the use of cutters in the equipment will be permitted to the extent that a minimum of 95% of the mulch is 6" or more in length. For cut mulches applied by the blowing methods, achieve a loose depth in place of not less than 2".
- G. When mulching by the asphalt mix method, apply the mulch by blowing. Spray the asphalt binder material into the mulch as it leaves the blower. Apply the binder to the mulch in the proportion of 1.5 to 2.0 gallons per 45 pounds of mulch.
 - 1. Protect structures, pavements, curbs, and walls to prevent asphalt staining.
 - 2. Erect warning signs and barricades at intervals of 50 feet or less along the perimeter of the mulched area.
 - 3. Do not spray asphalt and chemical mulch binders onto any area within 100 feet of a stream or other body of water.

3.7 Seed Protection

- A. Cover seeded slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- B. Lay fabric smoothly on surface, bury top end of each section in 6 inch (150 mm) deep excavated topsoil trench. Provide 12 inch (300 mm) overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
- C. Secure outside edges and overlaps at 36 inch (900 mm) intervals with stakes.
- D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.

3.8 Maintenance

- A. Maintenance includes watering, weeding, cleanup, edging and repair of depressions, washouts or gullies.
- B. Those areas which do not show a prompt catch of grass within 14 days of seeding shall be reseeded until complete grass catch occurs.

PART 4 - BASIS OF PAYMENT

- 4.1 Topsoil, Seeding, Mulching, and Maintenance – Incidental.
No separate payment will be made for topsoil, seeding, mulching, and maintenance.

END OF SECTION

OSEEDING RESTORATION TABLE

Restoration Condition	Topsoil	Lime*	Basic Fertilizer	Starter Fertilizer	Seed Mix & Sowing Rate (% By Weight)
Temporary Condition (**)	N/A	N/A	N/A	N/A	100% Annual Ryegrass Sow 9# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Roadside; Non-mowed	Yes	100# per 1,000 Sq. Ft.	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	80% Kentucky 31, Fescue 20% Pennlawn Red Fescue Sow 21# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Roadside; Mowed	Yes	100# per 1,000 Sq. Ft.	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	50% Kentucky Bluegrass 30% Pennlawn Red Fescue 20% Perennial Ryegrass Sow 21# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Bank Areas	Yes	100# per 1,000 Sq. Ft.	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	45% Crownvetch 55% Annual Ryegrass Sow 9# per 1,000 Sq. Yds. Anytime except Sept. & Oct.
Lawns	Yes	100# per 1,000 Sq. Ft.	0-20-20 @ 50# per 1,000 Sq. Ft.	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	50% Kentucky Bluegrass 30% Pennlawn Red Fescue 20% Perennial Ryegrass Sow 21# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Open Fields	No	No	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	100% Timothy Sow 9# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Open Fields; Cultivated	No	No	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	100% Annual Ryegrass Sow 9# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.
Wood: Sparse	No	No	No	10-5-5 @ 50# per 1,000 Sq. Ft. <u>or</u> 12-6-6 @ 33# per 1,000 Sq. Yds.	100% Red Fescue Sow 36# per 1,000 Sq. Yds. Mar. thru May/Aug. thru Sept.

* Unless lesser rate indicated by soils tests.

** Unless otherwise specified in the Erosion and Sedimentation Control Plan